

Draft
Preliminary Site Assessment Report Site 53

**Naval Weapons Station Seal Beach
Detachment Fallbrook
Fallbrook, California**

July 2015
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Prepared by:



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Executive Summary

This report presents the results of the Preliminary Site Assessment (PSA) activities at Site 53 at Naval Weapons Station (NAVWPNSTA) Seal Beach Detachment Fallbrook, Fallbrook, California. Site 53 is in the administration (developed) area of NAVWPNSTA Seal Beach Detachment Fallbrook on the eastern edge of the installation between buildings 40 and 41 (Figure 2). In September 1994, the activity personnel advised Naval Facilities Engineering Command (NAVFAC) Southwest that the odor of fuel was detected during trenching operations associated with landscaping activities in the vicinity of Building 41. Activity personnel recalled that a buried concrete tank used to fire an older model building heating system had been removed several years previously. The contents of the tank are unknown; however, it is believed it may have contained diesel or kerosene. During such landscaping activities, an unknown quantity of soil was removed from Site 53 in an attempt to remove all of the fuel-contaminated soil. The soil was disposed offsite, but confirmation soil sampling was not conducted.

The objectives of the PSA were 1) to determine the presence of contamination at Site 53 as a result of historical releases associated with the former underground storage tank (UST) and associated piping, 2) determine the nature, type, and source of soil contamination at Site 53, and 3) assess whether a threat to human health and/or the environment exists from chemicals released to the environment, and if it does pose a threat, whether the threat requires further investigation.

The PSA main activities included conducting interviews with base personnel associated with the facility, reviewing documents and databases, performing a site reconnaissance, and completing a soil investigation to determine the presence of contamination as a result of site-related activities and the potential impact to groundwater. In addition, a screening level human health and ecological risk assessments were completed to present a preliminary conceptual site model.

Soil samples were collected from six borings advanced to a maximum depth of 30 feet below ground surface (bgs) using a limited access rig (LAR) equipped with a hollow stem auger (HSA). All 21 soil samples were analyzed for total petroleum hydrocarbons as diesel and as kerosene (TPH-d and TPH-k) by United States Environmental Protection Agency (USEPA) Method 8015B, polycyclic aromatic hydrocarbons (PAHs) by USEPA Method 8270C SIM, and volatile organic compounds (VOCs) by USEPA Method 8260B.

Top soil consisted of fine-grained sandy silt encountered to approximately 5 to 10 feet bgs indicative of previous landscaping activities. Underlying the top soil was fine- to coarse-grained silty gravel consisting of decomposed granite to the maximum depth investigated.

Soil sampling data suggest minor releases occurred as a result of former UST leaks and/or associated underground piping and/or that the majority of the impacted soil was removed during the 1994 landscaping activities. TPH-d was detected at a concentration greater than the San Francisco Bay (SFB) Regional Water Quality Control Board (RWQCB) environmental screening levels (ESLs) in only one soil sample. 1-methylnaphthalene was

detected at a concentration greater than the USEPA risk-based soil screening level (SSL) for protection of groundwater. TPH-k was not detected in any of the soil samples collected. VOCs and PAHs were either not detected or detected at concentrations less than their screening levels. All detected concentrations were less than their associated human health screening levels. Generally, highest concentrations were detected within the suspected location of the former UST. The extent of contamination is limited both vertically and laterally to within the suspected UST location; however, the lateral extent to the north could not be completely determined because of the presence of underground utilities that restricted sampling activities. Soil samples collected from one boring south of Building 41 did not contain analyzed compounds exceeding screening levels; therefore, the assessment of the area to the south is considered complete.

Water-saturated conditions were encountered in one soil boring at approximately 26 feet bgs. A photo-ionization detector (PID) (calibrated for isobutylene) reading of 30 parts per million volume (ppmv) was measured in the sample collected at 28 feet bgs in this same boring. A temporary well casing was installed in the soil boring. After a 24-hour equilibration period, depth to groundwater was measured at 14.2 feet bgs using a water level indicator. No observations of impacted groundwater (i.e., free product sheen or odor) were noticed on the water level indicator during gauging. These lines of evidence suggest impacts to groundwater are unlikely. Furthermore, the vertical distribution of contaminants in soil does not indicate vertical migration of chemical impacts to groundwater.

Both a screening level human health risk assessment (SLHHRA) and a screening-level ecological risk assessment (SLERA) were completed for Site 53. Exposure to soil (0 to 10 feet bgs) from direct contact (incidental ingestion, dermal contact, and inhalation of chemicals of potential concern [COPCs] released from soil to outdoor air) was evaluated for current and future industrial/office workers and for hypothetical future residents. Likewise, exposure to soil from direct contact/root uptake by plants, direct contact/ingestion by soil invertebrates, and incidental ingestion and food chain uptake by birds and mammals was evaluated for potential ecological receptors. Results of the SLHHRA and SLERA indicate that concentrations present at Site 53 do not pose an unacceptable risk to human health or the environment.

Based on the results of this PSA, No Further Action status is recommended for Site 53.

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Acronyms and Abbreviations

µg/kg	microgram per kilogram
°F	Fahrenheit
bgs	below ground surface
COPC	chemicals of potential concern
CSM	conceptual site model
DTSC	Department of Toxic Substances Control
EDR	Environmental Data Resources, Inc.
ELRC	excess lifetime cancer risk
ESL	environmental screening level
ESV	ecological screening value
HI	hazard index
HQ	hazard quotient
HSA	hollow stem auger
IDW	investigation-derived waste
IRP	Installation Restoration Program
KCH	CH2M HILL Kleinfelder, A Joint Venture
LAR	limited access rig
Malcolm Pirnie	Malcolm Pirnie, Inc.
mg/kg	milligram per kilogram
NAVFAC	Naval Facilities Engineering Command
Navy	United States Department of the Navy
NEESA	Naval Energy and Environmental Support Activity
NAVWPNSTA	Naval Weapons Station
PAH	polycyclic aromatic hydrocarbon
PID	photo-ionization detector
ppmv	parts per million volume
PSA	Preliminary Site Assessment
QC	quality control
RBC	risk-based concentration
RSL	regional screening level
RWQCB	Regional Water Quality Control Board

SFB	San Francisco Bay
SIM	selective ion monitoring
SLERA	screening-level ecological risk assessment
SLHHRA	screening level human health risk assessment
SSL	soil screening level
TPH-d	total petroleum hydrocarbon as diesel
TPH-e	total petroleum hydrocarbon - extractable
TPH-k	total petroleum hydrocarbon as kerosene
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VOC	volatile organic compound

1.0 Introduction

CH2M HILL Kleinfelder, A Joint Venture (KCH) prepared this Preliminary Site Assessment (PSA) Report for Site 53 at Naval Weapons Station (NAVWPNSTA) Seal Beach Detachment Fallbrook, Fallbrook, California (Figure 1). This work is being performed under Naval Facilities Engineering Command (NAVFAC) Southwest Contract Number N62473-09-D-2622, Contract Task Order Number 0071 for the United States Department of the Navy (Navy). The work described in this report is based on the PSA Work Plan prepared for Site 53 (KCH, 2014).

1.1 Report Objective

The primary objective of this report is to present the results of the PSA for Site 53 at NAVWPNSTA Seal Beach Detachment Fallbrook, Fallbrook, California. Results are presented in an effort to determine the need for further investigation or recommend no further action for Site 53. Other objectives of the report include the development and presentation of a preliminary conceptual site model (CSM).

1.2 Scope of Work

In response to the above objectives of this PSA and in accordance with the Site 53 PSA Work Plan (KCH, 2014), the following scope of work was performed at Site 53:

- **Historical Documentation** – Information from Environmental Data Resources, Inc. (EDR) was requested, compiled, and reviewed as part of this report. In addition, historical information was requested from personnel associated with Site 53.
- **Site Reconnaissance** – A site reconnaissance was performed to document the existing conditions at Site 53.
- **Personnel Interviews** – Interviews were conducted with personnel associated with the historical and current activities at Site 53.
- **Field Investigation** – Soil samples were collected from six borings and analyzed for polycyclic aromatic hydrocarbons (PAHs), total petroleum hydrocarbons as diesel (TPH-d), total petroleum hydrocarbons as kerosene (TPH-k), and volatile organic compounds (VOCs).
- **Preliminary Conceptual Site Model** – A preliminary CSM was developed to summarize Site 53 conditions, the distribution and concentration of chemicals of potential concern (COPCs), potential receptors and exposure pathways, and land use data available for Site 53.
- **Screening-Level Human Health Risk Assessment (SLHHRA)** – A SLHHRA was performed using soil analytical results to address exposures that may result under reasonably anticipated potential uses of Site 53 and the surrounding areas.

- **Screening-Level Ecological Risk Assessment (SLERA)** – A SLERA was performed to identify potential habitats, ecological receptors, and exposure pathways and to evaluate potential risks to ecological receptors that may use Site 53 under current and reasonably anticipated future conditions.
- **Reporting** – This PSA Report was written to present the assessment results.

2.0 Background

Information summarizing the site description and history, site geology, hydrology, climate, and previous investigations is presented in the following subsections.

2.1 Site Location and Description

NAVWPNSTA Seal Beach Detachment Fallbrook is located approximately 53 miles north of San Diego in northern San Diego County, California, approximately 9 miles inland from the Pacific Coast (Figure 1). Detachment Fallbrook is bordered on the west by Marine Corps Base Camp Pendleton and is south of the Santa Margarita River. The base currently occupies 8,852 acres, but only 274 acres are developed. The remaining acreage is mostly open space because of the Explosive Safety Quantity Distance arcs required for the magazines.

Site 53 is in the administration (developed) area of NAVWPNSTA Seal Beach Detachment Fallbrook on the eastern edge of the installation between buildings 40 and 41 (Figure 2). In approximately September 1994, the activity personnel advised NAVFAC that the odor of fuel was detected during trenching operations associated with landscaping around Building 41. Activity personnel recalled that a buried concrete tank used to fire an older model building heating system had been removed several years previously. The contents of the tank are unknown; however, it is believed it may have contained diesel or kerosene. During landscaping operations an unknown quantity of soil was removed from Site 53 in an attempt to remove all of the fuel-contaminated soil. The soil was disposed offsite, but confirmation soil sampling was not conducted.

Historical records were searched but did not yield additional information regarding the former underground storage tank (UST) or its removal. No other Installation Restoration Program (IRP) or UST sites are present in the vicinity of Site 53. In addition, no historical soil borings or groundwater wells have been advanced within or around Site 53.

2.2 Regional Geology

NAVWPNSTA Seal Beach Detachment Fallbrook is in the Peninsular Ranges geomorphic province, which is characterized by a series of northwest-trending ranges and valleys. The geomorphic province is dominated by the igneous and metamorphic rocks of the Peninsular Range batholith. Four bedrock types have been identified within the boundaries of Detachment Fallbrook: gabbro, granodiorite, tonalite, and etavolcanic/metasedimentary (SES-TECH, 2012).

2.3 Regional and Site Hydrology

NAVWPNSTA Seal Beach Detachment Fallbrook is part of two coastal watersheds: the Santa Margarita River and the San Luis Rey River. The Santa Margarita River, Fallbrook Creek, and Pilgrim Creek make up the three major surface water bodies within the detachment. The Santa Margarita River provides an important water supply by restoring groundwater aquifers used by local residents and the United States Marine Corps. Fallbrook

Creek would naturally be an intermittent or ephemeral stream within the Santa Margarita watershed, but it is now a perennial stream because of runoff from agricultural and urban irrigation. Pilgrim Creek is located on the northeast end of Oceanside, and its flow is augmented in the summer months by runoff from an upstream nursery's water supply.

Detachment Fallbrook lies within the Santa Margarita River watershed, which consists of alluvial river basins with significant water-bearing sediments bounded by hills of largely non-water-bearing crystalline rocks (Brown and Caldwell, 2002). Groundwater at NAVWPNSTA Seal Beach Detachment Fallbrook occurs within alluvial deposits and fractures in the granitic bedrock. Groundwater gradients generally follow local topography (Brown and Caldwell, 2002).

As designated in the Comprehensive Water Quality Control Plan for the San Diego Basin (RWQCB, 1994), Site 53 is located in the Santa Margarita Hydrologic Unit. Groundwater within this hydrologic unit is designated as beneficial for municipal and agricultural use, and potentially beneficial for industrial use.

Available information indicates that no groundwater monitoring or supply wells have been installed in the vicinity of Site 53. A potable water supply well was reportedly completed in fractured granitic bedrock approximately 1 to 1.25 miles north of Site 53. This well is likely situated across a drainage divide from Site 53 because of its distance and the intervening topography (NEESA, 1985). Neither the alluvium nor the fractured crystalline rock aquifer encountered in this well have adequate yield to be considered a reliable source of water for the station (NEESA, 1985); thus, the well is not useful as a potable water source.

2.4 Climate

The climate at NAVWPNSTA Seal Beach Detachment Fallbrook is typical of the coastal Southern California climate and is characterized by mild winters, cool summers, and infrequent rainfall. The annual average temperature in the Detachment Fallbrook vicinity is 75.7 degrees Fahrenheit (°F). Summer temperatures range from 66°F at night to 90°F during the day. Precipitation ranges from 13.7 to 17.1 inches per year. December is the wettest month, with a yearly mean of 3.60 inches of precipitation, and July is the driest, with a yearly mean of 0.02-inch of precipitation. Summers at Detachment Fallbrook are punctuated by the Santa Ana (offshore) winds (Malcolm Pirnie, 2006; Weathercurrents, 2013).

2.5 Summary of Previous Investigations

No previous investigations have been conducted at Site 53. As previously discussed, the fuel odor and stained soil was reported during trenching operations associated with landscaping activities in the vicinity of Building 41. Activity personnel recalled that a buried concrete tank used to fuel an older model building heating system had been removed several years previously. During landscaping operations, soil was removed from Site 53 in an attempt to remove fuel-contaminated soil. The soil was disposed offsite, but confirmation soil sampling was not conducted.

3.0 Pre-Field Investigation

Information summarizing the activities conducted prior to and in support of the PSA field investigation is presented in the following subsections. These activities included observations from the Site 53 reconnaissance, interviews with Navy personnel, and obtaining and reviewing EDR that are relevant to Site 53.

3.1 Site Reconnaissance

Prior to conducting the site reconnaissance, access and security clearance requirements were coordinated with the Navy Remedial Project Manager. KCH conducted site reconnaissance with the Navy to assess and document current conditions at Site 53. The Navy provided the required personnel to accompany/escort the site reconnaissance team which included Carlos Lau (KCH Field Team Leader) and Gus Thrasher (KCH Task Order Manager). The site reconnaissance team also observed the location of buildings 40 and 41, extent and condition of Site 53 vegetation and ground cover, and the presence of service utilities (under and aboveground) for site access restrictions, as well as other features relevant for the preparation of the PSA Work Plan (KCH, 2014). Photographs were taken to document conditions during the site visit and are presented in Appendix A.

The following observations were made during the reconnaissance:

- Site 53 is in the administration (developed) area of NAVWPNSTA Seal Beach Detachment Fallbrook on the eastern edge of the installation between buildings 40 and 41.
- Site 53 is predominantly urban/landscaped. The administration area is bordered by open space to the north, south, and west. The town of Fallbrook is located to the east of Site 53.
- The terrain between buildings 40 and 41 slopes sharply north to south towards Building 41 and then flattens approximately 10 feet from the footprint of Building 41.
- Asphalt, concrete, lawns, and landscaping provide surface cover at and around Site 53. The area immediately in the suspected location of the former UST is unpaved and used for landscaping.
- The surface soil throughout the landscaping area appears to be imported backfill. No evidences (i.e., visual or odors) of fuel-related contamination were noted.
- The building heating and electrical transformer room is located on the north side of Building 41 near the suspected location of the former UST, suggesting the UST may have been plumbed in into this room for heating purposes.
- Multiple underground and aboveground utilities appear to service Building 41, restricting access for drilling operations. Building 41 as-built was not available; however, utility drawings were obtained to aid in the field activities.

3.2 Personnel Interviews

A list of personnel knowledgeable of Site 53 operations was requested of the Navy for interviewing purposes to further understand the site history and obtain additional information to support the development of the work plan and the preliminary CSM. This included personnel who may have been present during the landscaping activities when the hydrocarbon odor and stained soil was discovered or were present while the former UST was active. The Navy reported that site knowledge was limited to the information available at the time of the project kick-off (see Section 2.1).

On September 12, 2013, during a project scoping session, base personnel indicated being present at Building 41 during the landscaping and stained soil removal activities. It was reported by the worker that the stained soil and a fuel odor were observed underneath the outer footprint of Building 41 during these activities; however, contaminated soil from underneath the building footprint was allegedly not completely removed to protect the integrity of the building. The contractor responsible for landscaping and/or soil removal activities, as well as the volume removed and disposed of, were unknown. The suspected location of the impacted area was generally confirmed by the interviewee. No additional information was provided.

3.3 Environmental Data Resources

As part of the PSA environmental due diligence and risk management, environmental and historical land use records was requested from EDR, Inc. The following reports were obtained for Site 53 and are presented in Appendix B:

- Radius Map Report
- Recovered Government Archive
- Historical Reports
- Certified Sanborn® Maps
- Historical Aerials
- Historical City Directories
- Historical Topographic Maps
- Tax Map Report
- Lien and AUL Report

3.3.1 Physical Setting Findings

Site 53 is located approximately 710 feet above sea level. The general surface topography gradient is south and both east and west. The surface topography may be indicative of surficial groundwater flow. Three groundwater wells are present within the one-third of a mile radius around Site 53; however, the groundwater flow direction was reportedly variable (see Appendix B).

According to the report, the area where Site 53 is located presents coarse sandy loam in the surface. The hydrologic group is class B with moderate infiltration rates, and moderately well and well-drained soils with moderately coarse textures.

3.3.2 Environmental Records Findings

No environmental or historical land use records directly associated with Site 53 were encountered. Therefore, the existence and location of the former UST could not be confirmed. Likewise, the details of activities associated with the removal of the former UST and surrounding stained soil could not be confirmed by the records search (see Appendix B).

According to the report, several environmental sites are located within a one-third of a mile radius from Site 53. Table 1 presents a summary of these sites with an overview of findings and status. All of these sites are reported to be at elevations lower than Site 53, with the nearest site being located approximately 0.25 mile away from Site 53 (see Appendix B). In addition to the sites reported by EDR, Inc. (Appendix B), several IRP and Munitions Response Program sites are located within NAVWPNSTA Seal Beach Detachment Fallbrook. These sites are also presented in Table 1.

Based on the distance and elevation of these sites relative to Site 53, it is unlikely that they represent a potential source of the impacts to soil at Site 53.

3.3.3 Aerial Photographs Findings

An aerial photograph from 1946 shows the presence of two parallel buildings constructed north to south in the future location of Building 40 and 41. These parallel buildings are not visible on the 1953, 1964, and 1974 aerial photographs. Four new buildings are first visible on the 1980 aerial photograph, suggesting these buildings were constructed between 1974 and 1980. Trees and plants are first noticeable in between buildings 40 and 41 (Site 53) in the 1990 aerial photograph. No evidences of earthmoving are noticeable in the aerial photographs thereafter.

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4.0 Field Investigation

The following subsections include a summary of the field activities conducted and an interpretation of the data obtained to determine the presence of contamination at Site 53 as a result of historical releases associated with the site and the potential for these releases to impact human health and/or the environment.

4.1 Field Investigation

4.1.1 Field Activities and Deviations

Between January 21 and January 23, 2015, a total of six borings (S53-SB01 through S53-SB06) were advanced down to 30 feet below ground surface (bgs) (or until refusal or groundwater was encountered) at Site 53 using a limited access rig (LAR) using a hollow stem auger (HSA). Two of the soil borings (located within the suspected location of the UST) were continuously sampled. All other borings were sampled every 5 feet. Soil samples were collected for laboratory analysis from soil horizons with conditions indicating the presence of contamination (i.e., staining, odors, or elevated photo-ionization detector [PID] readings) chosen at the discretion of the field geologist and/or engineer. If such conditions were not encountered, soil samples for laboratory analysis were collected at 5, 10, 20, and 30 feet bgs as feasible. Soil samples were analyzed by EMAX Laboratories, Inc. for PAHs using United States Environmental Protection Agency (USEPA) Method 8270C SIM, TPH-d and TPH-k using USEPA Method 8015B, and VOCs using USEPA Method 8260B. All these activities were completed in accordance with the Site 53 PSA Work Plan (KCH, 2014). The data and project quality objectives are summarized in Table 2. The location of these borings is presented on Figure 2. Table 3 presents a summary of the sampling program.

The following deviations to the Site 53 PSA Work Plan (KCH, 2014) occurred in the field:

- Multiple underground utilities were present across Site 53. These utilities included electrical, gas, water (both service and irrigation), and sewage. The proposed boring locations were therefore modified to accommodate site restrictions.
- One boring (S53-SB01) was completed down to approximately 5 feet bgs because of refusal encountered after three attempts. Unmarked utilities causing the refusal were uncovered. Given the limited Site 53 area, field observations, and completed borehole distribution, a need for a further attempt was deemed unnecessary.
- Saturated conditions were encountered in only one of the six boreholes (S53-SB04); therefore, a temporary well casing was installed in only one borehole. Because the groundwater evidence was inconsistent, no surveying was conducted on the temporary well casing and therefore the general flow direction was not calculated with only one data point.

4.2 Field Observations

Soil boring logs that detail soil and groundwater field observations are included in Appendix C.

Top soil consisting of fine-grained sandy silt was encountered to approximately 5 to 10 feet bgs. The top soil appeared to be indicative of previous landscaping activities. Underlying the top soil was fine- to coarse-grained silty gravel consisting of decomposed granite to the maximum depth sampled (30 feet bgs).

Blow counts were recorded for each soil sample interval collected. The blow counts recorded during drilling through the decomposed granite were measured up to the maximum allowable count of 50 blows per 6 inches of sampler advancement. Fifty or greater blow counts is indicative of very dense material.

Saturated conditions were encountered in one soil boring (S53-SB04) at approximately 26 feet bgs. A PID reading (30 parts per million volume [ppmv]) was measured at this boring at 28 feet bgs. A temporary well casing was installed in the soil boring and groundwater was allowed to equilibrate for 24 hours prior to gauging. After a 24-hour equilibration period, depth to groundwater was measured at 14.2 feet bgs using a water level indicator. No observations of impacted groundwater (i.e., free product sheen or odor) were noticed on the water level indicator during gauging.

Groundwater was not observed in S53-SB05 and S53-SB06 even though soil samples were collected below 26 feet bgs (S53-SB01, S53-SB02, and S53-SB03 were not sampled to 26 feet bgs because of refusal). The low permeability of the decomposed granite may confine groundwater at depths variable enough to prohibit encountering groundwater at the intervals sampled during the investigation.

PID readings were measured in three soil borings: S53-SB01, S53-SB03, and S53-SB04. The PID readings were recorded in shallow soil (3 feet bgs) in S53-SB01, shallow and deep soil (up to 18.5 feet bgs) in S53-SB03, and in deep soil (28 feet bgs) in S53-SB04. These soil borings are separated by approximately 30 feet. The highest PID readings observed were measured from ground surface to approximately 5 feet bgs at S53-SB03 (53 to 102 ppmv) where stained soil and a petroleum odor were also noted. Soil samples were collected for laboratory analysis at 0.5 and 5 feet bgs from this boring. PID readings were observed throughout the borehole of S53-SB03 down to the refusal depth: 6.5 ppmv at 18.5 feet bgs. PID readings were not elevated at S53-SB02 and S53-SB05, therefore, it appears that the horizontal extent of impacted soil is delineated to the east.

The vertical extent of impacted soil based on PID readings is unknown at S53-SB01 and S53-SB03 because of refusal at 4.8 and 21 feet bgs, respectively. Because of site access limitations (see Section 4.1.1), the five northern soil borings were oriented in a single line. Therefore, the horizontal extent of impacted soil is unknown to the north, south, and west of S53-SB01, S53-SB03, and S53-SB04.

4.3 Nature and Extent of Contamination

All soil samples were analyzed for TPH-d and TPH-k by USEPA Method 8015B, VOCs by USEPA Method 8260B, and PAHs by USEPA Method 8270C SIM. Sample depths and analytical methods for samples collected from Site 53 are summarized in Table 3. Detected concentrations and exceedances of the screening levels are summarized in Table 4. For a complete dataset, see Appendix D. Two cross sections (A - A' and B - B') showing lithology, visual and olfactory observations, and detected concentrations are presented on Figures 3 and 4, respectively. Full laboratory reports are presented in Appendix E.

4.3.1 Soil

Out of the 21 soil samples, only seven contained detectable concentrations of TPH-d (see Table 4). The highest concentration (5,600 milligrams per kilogram [mg/kg]) was detected in the 5-foot soil sample from S53-SB03 and exceeds the San Francisco Bay (SFB) Regional Water Quality Control Board (RWQCB) environmental screening level (ESL) (100 mg/kg). This concentration also exceeds the SFB RWQCB ESL for the protection of groundwater (570 mg/kg). Other detected TPH-d concentrations ranged from 15 to 70 mg/kg at S53-SB01, S53-SB04, and S53-SB06, suggesting the extent of TPH-d is limited both in lateral and vertical extent. Soil samples from S53-SB02 and S53-SB05 did not contain detectable concentrations of TPH-d. These results correlate well with the PID readings and further confirm the extent of contamination is limited to the west between S53-SB03 and S53-SB05. In addition, the detections confirm the former UST suspected location and suggest UST and/or associated piping releases occurred and impacted Site 53; however, the impacted area is limited to the first 5 feet of soil.

TPH-k was not detected in any of the soil samples (see Table 4), suggesting that kerosene was not contained within the former UST and/or no releases occurred while the UST contained this fuel.

Soil samples collected at Site 53 contained detectable concentrations of the following VOCs (see Table 4) with their corresponding highest concentrations (with estimated concentrations flagged as J [see Section 4.4]): 1,2,4-trimethylbenzene (60 micrograms per kilogram [$\mu\text{g}/\text{kg}$] in the 5-foot soil sample from S53-SB03), 2-butanone (8.6 J $\mu\text{g}/\text{kg}$ in the 0.5-foot soil sample from S53-SB03), 4-isopropyltoluene (110 $\mu\text{g}/\text{kg}$ in the 5-foot soil sample from S53-SB03), acetone (130 $\mu\text{g}/\text{kg}$ in the 0.5-foot soil sample from S53-SB03), carbon disulfide (1.4 J $\mu\text{g}/\text{kg}$ in the 5-foot soil sample from S53-SB06), methylene chloride (3.2 J $\mu\text{g}/\text{kg}$ in the 10-foot soil sample from S53-SB02, 5-foot soil sample from S53-SB04, and 10-foot soil sample from S53-SB06), naphthalene (12 $\mu\text{g}/\text{kg}$ in the 5-foot soil sample from S53-SB03), n-butylbenzene (140 $\mu\text{g}/\text{kg}$ in the 5-foot soil sample from S53-SB03), o-xylene (17 $\mu\text{g}/\text{kg}$ in the 5-foot soil sample from S53-SB03), propylbenzene (18 $\mu\text{g}/\text{kg}$ in the 5-foot soil sample from S53-SB03), sec-butylbenzene (62 $\mu\text{g}/\text{kg}$ in the 5-foot soil sample from S53-SB03), and tert-butylbenzene (2 J $\mu\text{g}/\text{kg}$ in the 5-foot soil sample from S53-SB03).

Several of these VOCs were only detected in the 5-foot soil sample from S53-SB03 and highest concentrations were generally detected in this same soil sample (see Table 4). None of the concentrations exceeded associated screening levels, suggesting VOCs do not pose a threat to human health or the environment.

Soil samples collected at Site 53 contained detectable concentrations of the following PAHs (see Table 4) with their corresponding highest concentrations (with estimated concentrations flagged as J [see Section 4.4]): 1-methylnaphthalene (8,000 µg/kg), 2-methylnaphthalene (140 µg/kg), acenaphthalene (600 µg/kg), benzo[a]anthracene (20 µg/kg), benzo[a]pyrene (8.7 J µg/kg), benzo[b]fluoranthene (9.6 J µg/kg), benzo[g,h,i]perylene (7.9 J µg/kg), benzo[k]fluoranthene (4.9 J µg/kg), chrysene (17 µg/kg), fluoranthene (71 µg/kg), fluorine (1,600 µg/kg), deno[1,2,3-c,d]pyrene (5.5 J µg/kg), phenanthrene (2,300 µg/kg), and pyrene (61 µg/kg).

All these highest concentrations were detected in the 5-foot soil sample from S53-SB03 (see Table 4). Other soil samples that contained detectable concentrations of PAHs include the 0.5-foot soil sample from S53-SB01, the 11.5-foot soil sample from S53-SB03, the 28-foot soil sample from S53-SB04, and the 5-foot soil sample from S53-SB06. Out of all the PAH detections, only one detection exceeded associated screening levels. 1-methylnaphthalene exceeded the USEPA soil screening level (SSL) for the protection of groundwater (5,800 µg/kg). However, PAH extent is limited both laterally and vertically. Deeper soil samples from the same boring did not contain PAHs exceeding screening levels. Like TPH-d results, soil samples from S53-SB02 and S53-SB05 did not contain detectable concentrations of PAHs, suggesting the extent of contamination is limited to the west between S53-SB03 and S53-SB05 and to the east between S53-SB03 and S53-SB04. No human health or ecological screening levels were exceeded.

As described in Section 4.2, top soil consisting of fine-grained sandy silt was generally encountered to approximately 5 to 10 feet bgs and appears to be indicative of previous landscaping activities. A set of soil samples (those collected shallower than 10 feet bgs) may have been collected within the suspected fill following the guidelines specified in Section 4.1. It should be remembered that the actual UST location and depth, and the extent, depth, and volume of the excavation completed when the UST was removed, as well as the backfill source and its environmental quality, are unknown. However, visual and olfactory field observations and chemical data suggest that the analytical program is appropriate to evaluate the nature and extent of potential releases from the former UST.

One boring (S53-SB06) was advanced south of Building 41 to determine the presence of contamination underneath and south of Building 41. The following analytes were detected at the corresponding highest concentrations (with estimated concentrations flagged as J [see Section 4.4]): TPH-d (45 mg/kg), methyl-ethyl-ketone (3.2 J µg/kg), acetone (34 µg/kg), carbon disulfide (1.4 J µg/kg), methylene chloride (3.2 J µg/kg), phenanthrene (2.3 J µg/kg), and pyrene (1.8 J µg/kg). All these concentrations were generally one order of magnitude lower than those detected at S53-SB03 and were all less than their human health and ecological screening levels (see Table 4). Moreover, potential for vapor intrusion into Building 41 is unlikely because of the nonvolatile nature of the UST content (diesel) and highest detected concentrations of VOCs all well below the screening criteria. These results suggest that although fuel releases may have occurred and migrated south and underneath Building 41, concentrations would unlikely pose a threat to humans and/or the environment.

4.3.2 Groundwater

Saturated conditions were encountered in one soil boring (S53-SB04) at approximately 26 feet bgs. A temporary well casing was installed in the soil boring and groundwater was allowed to equilibrate for 24 hours prior to gauging. After the 24-hour equilibration period, depth to groundwater was measured at 14.2 feet bgs using a water level indicator. No observations of impacted groundwater (i.e., free product sheen or odor) were noticed on the water level indicator during gauging.

Visual and olfactory observations from S53-SB04 did not indicate petroleum impacts in groundwater. In addition, no compounds were detected in the soil samples collected in this soil boring, with the exception of the 28-foot soil sample (saturated zone) (see Table 4). All detections were considered estimated (with the exception of TPH-d), and all were less than their associated screening levels, indicating that although these compounds are present in the saturated zone, their potential to impact groundwater is low. Furthermore, available information indicates that no groundwater monitoring or supply wells have been installed in the vicinity of Site 53, and the nearest potable water supply well (1 to 1.25 miles north of Site 53) does not have adequate yield to be considered a reliable source of water for the station (NEESA, 1985); thus, the well is not useful as a potable water source.

Only one soil sample collected had concentrations exceeding screening levels for the protection of groundwater. The sample collected at 5 feet bgs from S53-SB03 contained TPH-d and 1-methylnaphthalene at concentrations exceeding screening levels for the protection of groundwater (see Table 4). This sample is approximately 10 feet above the soil saturation point encountered at S53-SB04. Deeper soil samples from S53-SB03 did not contain analytes exceeding screening levels, and no analytes were detected between 12 and 28 feet bgs (see Figures 3 and 4). As indicated by the soil analytical results, the general downward migration of petroleum contamination may be inhibited as a result of the relatively low permeability of the decomposed granite observed in the field.

Based on these lines of evidence, groundwater impacts are unlikely and are not expected to pose a threat to human health or the environment. Therefore, investigation of groundwater was not deemed necessary.

4.4 Data Quality and Validation

Analytical data from the PSA were assessed in accordance with the procedures and specifications contained in the Site 53 PSA Work Plan (KCH, 2014). This section and Table 5 summarize the overall results and quality of the data for Site 53. Data flags were assigned according to the quality control (QC) acceptance limits defined in the Site 53 PSA Work Plan (KCH, 2014) as follows:

- J = Analyte concentration was considered an estimated value because one or more QC specifications were not met or because concentration was greater than the method detection limit but less than the project quantitation limit (low-level detects).
- J = Analyte concentration was estimated.
- R = Rejected result; identification and/or quantitation could not be verified because critical QC specifications were not met.

U = Analyte was not detected.

UJ = Analyte was not detected. The sample quantitation limit was estimated.

The data collected from PSA during this investigation were of acceptable quality. Of 2,423 reported results, nine data points were qualified as not detected because of low-level method blank contamination (0.37 percent), six were qualified as not detected because of low-level field blank contamination (0.25 percent), and 10 data points were qualified as not detected because of trip blank contamination (0.41 percent). 41 data points were estimated “J, UJ, R” qualified by the laboratory concentrations because of QC exceedances (1.7 percent), and 89 data points were “J” qualified by the laboratory as estimated concentrations because of low-level detects (3.7 percent). There were 11 data points rejected because of low response factor response in the calibration standards (0.1 percent). The data were 99.5 percent complete, and the quality of the analytical program and laboratory data was sufficient to meet the project data quality objectives.

A full discussion of data quality for this PSA at Site 53 is presented in the data validation report (Appendix F).

4.5 IDW Management

Investigation-derived waste (IDW) was generated during the PSA field investigation. The source of this waste included soil cuttings from all completed and attempted boreholes, as well as decontamination water during soil sampling. A total of 10 drums containing soil and one drum containing water were temporarily stored near Site 53, within NAVWPNSTA Seal Beach Detachment Fallbrook, for later profiling and disposal.

One composite soil sample was collected from the soil-containing IDW drums (S53-IDW-SO-012315) and one sample was collected from the water-containing IDW drum (S53-IDW-AQ-012315). Both samples were analyzed by EMAX Laboratories, Inc. for PAHs using USEPA Method 8270C SIM, TPH-p using USEPA Method 8015B, TPH-e using USEPA Method 8015B, VOCs using USEPA Method 8260B, Title 22 metals using USEPA Method 6020, and mercury using USEPA Method 7060. The dataset for these IDW samples is presented in Appendix D.

Both waste streams were profiled as nonhazardous waste and hauled offsite on April 13, 2015 for disposal by Soclaris Contracting. Soil waste was transported to Soil Safe in Adelanto, California, and water waste was transported to Demenno Kardon in Compton, California.

5.0 Screening-Level Human Health and Ecological Risk Assessments

Results of the screening-level human health risk evaluation and habitat and ecological pathway assessment are summarized in this section. Analytical results from 21 soil samples collected from six locations were used in these risk assessments. The soil samples were analyzed for TPH-d, TPH-k, VOCs, and PAHs.

5.1 Screening-Level Human Health Risk Assessment

A SLHHRA was completed as part of this PSA report to estimate human health risks for exposure to detected COPCs in soil at the Site 53.

5.1.1 Potential Receptors and Exposure Pathways

Exposure to soil (0 to 10 feet bgs) from direct contact (incidental ingestion, dermal contact, and inhalation of COPCs released from soil to outdoor air) was evaluated for current and future industrial/office workers and for hypothetical future residents. Risks for exposure to soil determined for the unrestricted (hypothetical residential) exposure scenario are considered protective for construction workers because the construction worker would experience exposure with less frequency and duration.

5.1.2 SLHHRA Methodology

The SLHHRA for Site 53 is based on Department of Toxic Substances Control (DTSC) guidelines (DTSC, 2011; DTSC, 2014) for screening-level risk assessments. The SLHHRA approach involves use of maximum detected concentrations and conservative, non-site-specific assumptions incorporated into risk-based concentrations (RBCs) to estimate cumulative cancer risks and noncancer hazard indices (HIs). If cumulative cancer risk and noncancer HI estimates are found to be acceptable using the conservative, default assumptions inherent in the SLHHRA approach, then acceptable risks and hazards would also be expected when considering (less conservative) site-specific conditions. That is, if risks and hazards are found to be acceptable based on the SLHHRA, then further evaluation of human health risks is not warranted.

As recommended by DTSC (2011), data for specific TPH-indicator chemicals were used to assess potential human health risk from TPH contamination. Nonchemical-specific TPH data were excluded from evaluation in the risk assessment because they are considered inadequate and insufficient to evaluate risk from TPH contamination (DTSC, 1993). Detections of specific TPH indicator chemicals at Site 53 include VOCs and PAHs in soil. VOCs were analyzed using USEPA Method 8260B, and PAHs were analyzed in soil samples using USEPA Method 8270 with selective ion monitoring (SIM); the SIM method has a more sensitive (lower) detection limit for PAHs than the standard, non-SIM method.

USEPA (2015) industrial and residential regional screening levels (RSLs) for soil were used as RBCs to evaluate current and future industrial/office worker and hypothetical future

residential exposure to soil from direct contact exposure pathways. When available, DTSC (2014)-preferred risk-based screening levels for soil were used as RBCs in lieu of USEPA RSLs. Both the USEPA (2015) RSLs and DTSC (2014)-preferred screening levels are RBCs for individual chemicals that correspond to a cancer risk of 1×10^{-6} (for carcinogens) or a hazard quotient of 1 (for noncarcinogens). Exposure routes incorporated in the soil RBCs include incidental ingestion, dermal contact, and inhalation of chemicals released from soil to outdoor air. These routes are consistent with the soil direct contact exposure pathways that are potentially complete for Site 53.

5.1.2.1 Cumulative Cancer Risk Estimation Approach

The potential for cancer effects is evaluated by estimating excess lifetime cancer risk (ELCR). This risk is the incremental increase in the probability of an individual developing cancer as a result of exposure to site contamination (up to 26-year exposure duration, averaged over a lifetime), in addition to the background probability of developing cancer (i.e., if no exposure to site chemicals occurs). In the United States, the background probability of developing cancer for men is a little less than one in two, and for women a little more than one in three (American Cancer Society, 2008).

For cancer risk estimates, the maximum concentration for each detected COPC was divided by the corresponding RBC. This ratio was then multiplied by the target risk level of 1×10^{-6} associated with the RBC to give a chemical-specific ELCR.

Although synergistic or antagonistic interactions might occur between cancer-causing chemicals and other chemicals, information is generally lacking in the toxicological literature to quantitatively predict the effects of these potential interactions. Therefore, cancer risks are treated as additive within an exposure route in this assessment. This approach is consistent with the USEPA guidelines on chemical mixtures (1986). The cumulative ELCR for multiple COPCs was computed as the sum of the chemical-specific ELCRs, as shown in the following equation:

$$ELCR = \left[\left(\frac{conc_x}{RBC_x} \times TR_x \right) + \left(\frac{conc_y}{RBC_y} \times TR_y \right) + \left(\frac{conc_z}{RBC_z} \times TR_z \right) \right]$$

where:

- ELCR = cumulative excess lifetime cancer risk
- conc_{x...z} = maximum concentration of chemical x...z (milligrams per kilogram [mg/kg])
- RBC_{x...z} = risk-based concentration of chemical x...z in soil (mg/kg)
- TR_{x...z} = target risk corresponding to RBC_{x...z}

5.1.2.2 Cumulative Noncancer Hazard Estimation Approach

For noncancer effects, the likelihood that a receptor will develop an adverse effect is estimated by comparing the level of exposure for a particular chemical (represented in this SLHHRA as the maximum soil concentration) with the highest level of exposure that is considered protective (represented as the RBC). This ratio is termed the hazard quotient (HQ), and the sum of HQs is termed the hazard index (HI).

This evaluation estimates the noncancer HI using the following equation:

$$HI = \left[\left(\frac{conc_x}{RBC_x} \right) + \left(\frac{conc_y}{RBC_y} \right) + \left(\frac{conc_z}{RBC_z} \right) \right]$$

where:

- HI = noncancer hazard index
- conc_{x...z} = maximum concentration of chemical x...z (mg/kg)
- RBC_{x...z} = risk-based concentration of chemical x...z in soil (mg/kg)

5.1.3 Risk Screening Results

The soil RBCs used for this SLHHRA and the risk screening results are provided in Table 6.

5.1.3.1 Hypothetical Residential Exposure Scenario

For the hypothetical residential exposure scenario, the ELCR from maximum concentrations of all carcinogenic COPCs in 0 to 10 feet bgs soil is 1×10^{-6} , which does not exceed either the USEPA target risk range of 1×10^{-6} to 1×10^{-4} or the DTSC point of departure of 1×10^{-6} . The HI for noncarcinogenic chemicals in soil is 0.006 for this scenario, which is well below the USEPA and DTSC threshold value of 1.

5.1.3.2 Industrial/Office Worker Exposure Scenario

For the industrial/office worker exposure scenario, the ELCR from maximum concentrations of all carcinogenic COPCs in 0 to 10 feet bgs soil is 2×10^{-7} , which does not exceed either the USEPA target risk range of 1×10^{-6} to 1×10^{-4} or the DTSC point of departure of 1×10^{-6} . The HI for noncarcinogenic chemicals in soil is 0.0007 for this scenario, which is well below the USEPA and DTSC threshold value of 1.

5.1.4 Conclusions of the SLHHRA

Based on the available analytical data for soil samples collected during the site investigation, and the assumptions used for the SLHHRA, there is no unacceptable risk to human health identified for Site 53.

5.2 Screening-Level Ecological Risk Assessment

A SLERA was performed to identify potential ecological habitats, ecological receptors, and exposure pathways and to evaluate potential risks to ecological receptors that may use Site 53 under current and reasonably anticipated future conditions.

The SLERA was performed in general accordance with the following guidance:

- *Guidance for Ecological Risk Assessment at Hazardous Waste Sites and Permitted Facilities* (DTSC, 1996)
- *Final Guidelines for Ecological Risk Assessment* (USEPA, 1998)
- *The Role of Screening-Level Risk Assessments and Refining Contaminants of Concern in Baseline Ecological Risk Assessments* (USEPA, 2001)

5.2.1 Approach

The SLERA includes development of a preliminary ecological CSM including identification of potential habitats, ecological receptors, and exposure pathways, and a screening of available data against conservative media-based ecological screening values (ESVs) for potentially exposed receptor groups. A scientific management decision point is completed following the screening steps to recommend Site 53 for further evaluation in a predictive assessment or to recommend Site 53 for No Further Action for ecological receptors.

5.2.2 Ecological Conceptual Site Model

Site 53 is in the administration (developed) area of NAVWPNSTA Seal Beach Detachment Fallbrook on the eastern edge of the installation between buildings 40 and 41. The administration area is bordered by open space to the north, south, and west. The town of Fallbrook is located to the east of Site 53.

Site 53 is located within the Morro Hill topographical quadrant (Figure 5) and is part of the Southern California Coast Ecoregion. The Fallbrook, Temecula, and Bonsall quadrants are within a 1-mile buffer of Site 53. Site 53 is predominantly urban/landscaped. Buildings and pavement are the dominant features. Yards are a mixture of grass or gravel/bare ground mulch with nonnative grasses, small perennials, shrubs, and trees including oak (*Quercus spp.*) and eucalyptus (*Eucalyptus spp.*). The area immediately in the suspected location of the former UST is unpaved and use for landscaping. The open space bordering the administration area is predominantly grassland with intermittent dirt roadways and munitions magazines.

Special status plants and wildlife species that may occur within the 1-mile buffer of Site 53 were identified from the California Natural Diversity Database (CDFW, 2015) and are presented in Table 7. Habitats at Site 53 are marginal and wildlife would be more attracted to the nearby open spaces. The majority of the special status plants and wildlife listed in Table 7 are unlikely to occur on Site 53. Birds and mammals may pass through, but it is unlikely that they would remain long term.

- Potential ecological exposure pathways must include the following elements:
 - Contaminant source (e.g., chemical spill)
 - Mechanism for release and transport (e.g., runoff)
 - Exposure point (e.g., soil)
 - Feasible route of exposure (e.g., ingestion)
 - Ecological receptor (e.g., small mammal)
- The following exposure pathways may be complete for ecological receptors at Site 53, however, extent of exposure is consisted limited:
 - Direct contact/root uptake by plants
 - Direct contact/ingestion by soil invertebrates
 - Incidental ingestion and food chain uptake by birds and mammals

5.2.3 Soil Screening

A conservative screening was completed using available site data and ESVs. The available data were evaluated and the maximum detected concentrations in surface (0 to 0.5 foot bgs) and subsurface (0.5 to 5 foot bgs) were retained for screening as these depth intervals represent the majority of potential ecological exposures.

Soil ESVs were identified for plants, invertebrates, birds, and mammals. For purposes of the SLERA, the minimum ESV among all receptor groups was used. ESVs were selected from the following sources:

- USEPA ecological soil screening levels (2008)
- Los Alamos National Laboratory ecological screening levels (LANL, 2012)

The maximum detected concentrations in each depth interval were compared to ESVs as shown in Table 8. There were no exceedances of the ESVs.

5.2.4 Conclusions of the SLERA

Based on the available analytical data for soil samples collected during the site investigation, and the assumptions used for the SLERA, there is no unacceptable risk to ecological receptors identified for Site 53.

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6.0 Preliminary Site Conceptual Model

The preliminary CSM includes a summary of the pertinent geological, hydrogeological, and surface drainage factors that influence the fate and transport of contaminants reported at Site 53. The preliminary CSM also identifies potential receptors and applicable exposure scenarios.

6.1 Conceptual Routes of Migration

6.1.1 VOC Contaminants

This section discusses the behavior of VOCs in the subsurface and describes the migration of contaminants through the vadose and groundwater (saturated) zones, with an emphasis on transport of soil gas in the shallow vadose zone. When released to the environment, VOCs seep into the ground where they can continue to move through the vadose zone through infiltration or volatilized as soil gas. In addition, some contaminants are adsorbed to soil particles. Gravity can move the dissolved contaminants vertically through the vadose zone into the saturated zone. The contaminants can then be transported laterally by downgradient flow paths of infiltrated water, and in directions independent of gravity by diffusive and advective soil gas movement in the vadose zone.

A relatively minor release might be contained as residual within the vadose zone. In a larger release, contaminants could move through the vadose zone to the groundwater. Contaminants can be carried from sources by rainwater and free liquids into surface soils and the subsurface overburden by the process of infiltration. Generally, areas such as Site 53 with buildings, storm drains, and extensive asphalt and concrete have lower rates of infiltration.

In the environment, the concentration and composition of VOCs will change over time because of naturally occurring chemical, physical, and biological processes. Together, these processes are referred to as natural attenuation. Primary transformation processes include hydrolysis, reductive dehalogenation, microbial co-metabolism, and oxidation. These transformation processes can generate VOCs from contaminants of even moderate or low volatility (e.g., fuels and other organic wastes) and produce molecular diffusion gradients in the subsurface. They can also decrease the concentration of some VOCs over time.

6.1.2 Non-VOC Contaminants

This section discusses the behavior of non-VOCs in the subsurface and summarizes the migration of contaminants through the vadose to groundwater (saturated) zones. The non-VOC contaminant types considered are PAHs and TPH.

Non-VOC contaminants can be carried from sources by rainwater and free liquids into surface soils and the subsurface overburden by infiltration. Infiltration is the most significant mechanism for migration; however, runoff, airborne dust, and soil relocation during construction are also possible.

Generally, areas such as Site 53, with buildings, storm drains, and extensive asphalt and concrete have lower surface infiltration rates. Areas with little pavement and those with topographically low areas where surface water can pond have the highest potential for infiltration. Once the contaminants have infiltrated into the vadose zone, they can continue to move through the vadose zone with infiltration. Most of the contaminants are adsorbed to soil particles. However, gravity can move the dissolved contaminants vertically through the vadose zone into the saturated zone.

Although the vadose zone migration pathways discussed above are possible, the non-VOC contaminant types considered for this PSA are generally considered relatively immobile in the vadose zone. Non-VOC compounds, such as PAHs, have much lower vapor pressures than VOCs and are less likely to be present in soil gas. Migration of non-VOCs into the atmosphere through soil gas is therefore expected to be minor, largely because of the lower vapor pressures of these contaminants.

PAHs also tend to have lower values of Henry's Law constant and aqueous solubility, and higher organic carbon partition coefficients than VOCs. As a result, PAHs tend to bind to soil particles and do not dissolve as readily in pore water or groundwater. These characteristics limit the migration of most non-VOC organics considered in this PSA through the vadose zone and into the saturated zone.

6.2 Primary Source of Contamination and Release Mechanisms

The primary source of contamination at Site 53 is the suspected former UST located just north of Building 41. The UST is believed to have supplied fuel for heating to Building 41. The release mechanisms include subsurface leaks from the UST or associated piping, and releases during UST servicing, emptying, and/or refilling operations. The presence of UST associated above or below ground lines is unknown. No additional sources were identified during the PSA.

6.3 Affected Media

A limited volume of subsurface soil appears to be impacted by site-related releases. The impacted media is limited to the former location of the UST. The 5-foot soil sample from S53-SB05 contained concentrations of TPH-d and 1-methylnaphthalene exceeding screening levels for the protection of groundwater (see Table 4). Impacted (exceeding screening levels) subsurface soil does not extend deeper than 5 feet bgs. The lateral extent of contamination is limited to the east and west by soil borings S53-SB04 and S53-SB05, respectively. Contamination does not seem to have extended south of Building 41. The lateral extent of contamination to the north (uphill) could not be determined because of the presence of underground utilities; however, based on the location of the completed borings, maximum concentrations are believed to be determined.

Surface soil at Site 53 is not impacted as a result of site-related activities, suggesting aboveground releases did not occur, or impacted soil was removed during the 1994 landscaping activities. Likewise, the vertical distribution of contamination and visual and olfactory observations from the PSA suggest groundwater at Site 53 is unlikely to be impacted by site-related activities.

6.4 Potential Receptors and Exposure Routes

Land uses at Site 53 are currently primarily industrial and mixed use (e.g., office, commercial, and warehouse). Although future land uses are not known with certainty, Site 53 land use is not expected to change in the foreseeable future. The potential receptors likely exposed to site contamination include industrial/office workers. A hypothetical residential exposure approach was considered as a conservative approach. Exposure routes to potential human receptors considered at Site 53 include incidental ingestion, dermal contact, and inhalation of chemicals released from soil to outdoor air.

Likewise, potential ecological receptors (i.e., plants, birds, and mammals) may be exposed to site contamination by direct contact/root uptake by plants, direct contact/ingestion by soil invertebrates, and incidental ingestion and food chain uptake by birds and mammals.

It should be noted, however, that SLHHRA and SLERA results suggest there is no unacceptable risk to these potential human and ecological receptors (see Sections 5.1 and 5.2).

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7.0 Conclusions and Recommendations

This PSA was conducted to assess the presence of contamination at Site 53 as a result of historical releases associated with the former UST and associated piping, and to assess the potential for these contaminants to affect nearby environmental and/or human targets, and if they pose a threat, whether the threat requires further investigation and to determine the nature, type, and source of soil contamination at Site 53. The PSA activities were conducted in accordance with the PSA Work Plan (KCH, 2014). This section provides conclusions and recommendations based on the findings of the PSA.

7.1 Conclusions

Soil data suggest releases occurred as a result of former UST and/or associated piping leaks. Generally, the highest concentrations of detected compounds were detected within the suspected location of former UST.

TPH-d and 1-methylnaphthalene were detected at concentrations greater than their SFB RWQCB ESL and USEPA SSL for the protection of groundwater, respectively, in only one soil sample. These concentrations were less than their associated screening levels for the protection of human health.

TPH-k, VOCs, and all other PAHs were either not detected or detected at concentrations less than their screening levels.

The extent of contamination is limited both vertically and horizontally to within the suspected UST location; however, the lateral extent to the north (uphill) could not be completely determined because of the presence of underground utilities that restricted sampling activities.

Groundwater was encountered in only one of the six soil borings. Free product and/or fuel odors were not noted in any of the completed soil borings near the water table. Furthermore, the distribution of contaminants does not indicate vertical migration towards groundwater and therefore, impacts to groundwater are unlikely.

Results of the SLHHRA indicate that there is no unacceptable risk to human receptors identified for Site 53. The total cancer risks from exposure to soil at Site 53 for both the industrial/office workers and hypothetical future resident do not exceed either the USEPA target risks range of 1×10^{-6} to 1×10^{-4} or the DTSC point of departure of 1×10^{-6} . The HI for noncarcinogenic chemicals in soil are also well below the USEPA and DTSC threshold value of 1. Concentrations in soil were all less than the RBCs.

Results of the SLERA indicated that there is no unacceptable risk to ecological receptors identified for Site 53. Concentrations in soil were all less than the ESVs.

7.2 Recommendations

Based on the conclusions presented in this report there is no evidence of a potential threat to human health or the environment as a result of site-related activities; therefore, No Further Action status is recommended for Site 53.

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Tables

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TABLE 1

Environmental Records Findings Summary for Site 53
 PSA Site 53, NAVWPNSTA Seal Beach Detachment Fallbrook, California

Site	Distance from Site 53 (miles)	Direction	Elevation (feet asl)	Elevation relative to Site 53	Comments
Federal RCRA Generator List					
NAVWPNSTA Seal Beach Detachment Fallbrook ⁽¹⁾	-	Southeast	656	Lower	Large quantity generator Waste codes ⁽²⁾ : D001, D005 - D011, D018. F002, F003, and F005
IRP Site 27 - Eucalyptus Grove Landfill	~1.8	Southwest	-	Lower ⁽³⁾	Hazardous waste disposed with refuse A Feasibility Study has been completed and recommends long term monitoring.
IRP Site 28 - Former PCP Dip Tank	~0.8	West-Southwest	-	Lower ⁽³⁾	Leak from tank containing pentachlorophenol (PCP) Site closed as of October 2013 No evidence of releases. No further action
IRP Site 29 - Incinerator Landfill	~0.7	Southwest	-	Lower ⁽³⁾	Small quantities of waste disposed with refuse Site closed as of December 2013 No evidence of a landfill. No further action
IRP Site 30 - Former Oil Switch and Transformer Storage Area	~0.7	Southwest	-	Lower ⁽³⁾	Oil spilled from oil switches and transformers Oil may have contained polychlorinated byphenils (PCBs) Site is undergoing a Site Inspection (SI)
IRP Site 31 - Former Battery Shop Disposal Area	~0.6	Southwest	-	Lower ⁽³⁾	Neutralized battery waste discharge Site is undergoing a SI
IRP Site 32 - Paint Shop Disposal Area	~0.6	Southwest	-	Lower ⁽³⁾	Waste caustic soda solution discharge Extended Site Inspection (ESI) is underway
IRP Site 34b - Dunnage Disposal Site 2	~1.2	West-Southwest	-	Lower ⁽³⁾	Metal, wood, automobiles, ammo cans, and other waste disposal Site is undergoing a SI
IRP Site 34d - Dunnage Disposal Site 4	~1.4	Southwest	-	Lower ⁽³⁾	Metal banding and wood pallets disposed Site is undergoing a SI
IRP Site 34e - Dunnage Disposal Site 5	~3.0	Southwest	-	Lower ⁽³⁾	Metal banding and electronic parts disposed No further action is being evaluated
MRP Site UXO 1 - QE Test Area	~2.0	Southwest	-	Lower ⁽³⁾	Formerly IRP Site 26 (burn and disposal area) A Remedial Investigation (RI) report is currently being prepared
MRP Site UXO 2 - Small Arms Range	~0.7	South-Southwest	-	Lower ⁽³⁾	An RI is expected to be completed in 2016 The removal action for the target berm is scheduled for 2020
MRP Site UXO 3 - Dunnage Disposal Site 1	~0.9	West-Southwest	-	Lower ⁽³⁾	Formerly known as IRP Site 34a Potential burial of munitions An RI is expected to be completed in 2015
MRP Site UXO 4 - Dunnage Disposal Site 3	~1.8	West-Southwest	-	Lower ⁽³⁾	Formerly known as IRP Site 34c Potential burial and disposal of munitions An RI report is currently being prepared
MRP Site UXO 5 - Salvage Yard Burial Area	~0.8	North-Northwest	-	Lower ⁽³⁾	Formerly know as IRP Site 33 Potential burial area for munitions and dunnage An RI report is currently being prepared
MRP Site UXO 6 - Depot Lake Ordnance Disposal Area	~1.5	West	-	Lower ⁽³⁾	Potential disposal of munitions An RI is expected to be completed in 2016
MRP Site UXO 7 - Lower Lake Ordnance Disposal Site	~2.5	Southwest	-	Lower ⁽³⁾	Potential disposal of munitions An RI is expected to be completed in 2017

TABLE 1

Environmental Records Findings Summary for Site 53
 PSA Site 53, NAVWPNSTA Seal Beach Detachment Fallbrook, California

Site	Distance from Site 53 (miles)	Direction	Elevation (feet asl)	Elevation relative to Site 53	Comments
State and Tribal - Equivalent CERCLIS					
Palm Enterprises Treatment Facility	0.123	East-Southeast	652	Lower	Corrective action constructed Human exposure and groundwater migration controlled No further action granted in 2010
State and Tribal Landfill and/or Solid Waste Disposal Site List					
Fallbrook Recycling and Transfer	0.305	East-Northeast	651	Lower	Large volume transfer Accepted waste: construction/demolition, mixed municipal Multiple installations and violations No cases listed
State and Tribal Leaking Storage Tank List					
Circle K Store #659	0.281	East	632	Lower	Non-generator LUST cleanup site (gasoline) Abate method: excavate and treat Case closed in 1994
Fallbrook Sanitary District	0.328	Southeast	671	Lower	LUST cleanup site (gasoline) Abate method: excavate and treat Case closed in 1993
Additional Environmental Records					
Maxwell's Foreign Car Service	0.208	East-Southeast	624	Lower	None
Mr. Tires & Auto Repair	0.223	East	632	Lower	None
Auto Mechanic Rios	0.223	East	632	Lower	None
Fallbrook Service Center	0.305	East-Northeast	651	Lower	LUST cleanup site (diesel) Case closed in 2001
East Brothers Grove Service	0.649	East-Northeast	677	Lower	None

Notes:

asl = above sea level

ESI = Extended Site Investigation

IRP = Installation Restoration Program

LUST = leaking underground storage tank

MRP = Munitions Response Program

NAVWPNSTA = Naval Weapon Station

PCB = polychlorinated byphenils

PCP = pentachlorophenol

RI = Remedial Investigation

SI = Site Investigation

UXO = unexploded ordnance

⁽¹⁾ The following IRP and MRP sites are within NAVWPNSTA Seal Beach Detachment Fallbrook and are not presented in the EDR Report (Appendix B).⁽²⁾ EPA waste codes⁽³⁾ Qualitative relative elevation estimated based on topography maps

TABLE 2

Data and Project Quality Objectives for Site 53

PSA Site 53, NAVWPNSTA Seal Beach Detachment Fallbrook, California

Objective	Sample Location(s)	Objective Met?	Explanation
Project Quality Objectives			
Are PAHs, TPH as diesel, TPH as kerosene, and/or VOCs in soil at concentrations greater than the screening level for the protection of groundwater (i.e., San Francisco Bay RWQCB SSLL)?	S53-SB01 through S53-SB06	Yes	Section 4.3.1
Is free product present in groundwater as a result of site-specific contamination (i.e., UST releases)?	S53-SB01 through S53-SB06	Yes	Section 4.2 Section 4.3.2
Are PAHs, TPH as diesel, TPH as kerosene, and/or VOCs present in soil and/or groundwater within and around the former location of the UST at concentrations greater than applicable Project Action Limits?	S53-SB01 through S53-SB06	Partially	Section 4.3
Do habitat and ecological exposure pathways exist at Site 53?	Not Applicable	Yes	Section 5.2.2
Data Quality Objectives			
Assess the presence of PAHs, TPH as diesel and kerosene, and VOCs in soil within and around the suspected location of the former UST. In addition, these borings will help to assess the potential for these constituents to affect nearby environmental and/or human targets.	S53-SB01 through S53-SB05	Partially	Section 4.2 Section 4.3
Assess the presence of PAHs, TPH as diesel and kerosene, and VOCs in soil underneath Building 41 and downgradient of the suspected location of the former UST.	S53-SB06	Yes	Section 4.2 Section 4.3
Assess the presence of PAHs, TPH as diesel and kerosene, and VOCs in groundwater beneath Site 53 as a result of vertical migration from former UST historical releases. In addition, determine the potential presence and nature of free product at Site 53.	S53-SB01 through S53-SB06	Yes	Section 4.2 Section 4.3

Notes:

PAH = polycyclic aromatic hydrocarbon

RWQCB = Regional Water Quality Control Board

SSLL = soil screening level for leaching concerns

TPH = total petroleum hydrocarbon

UST = underground storage tank

VOC = volatile organic compound

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TABLE 3

Analytical Program Summary for Site 53

PSA Site 53, NAVWPNSTA Seal Beach Detachment Fallbrook, California

Investigation	Sample Location	Sample Date	Method	Depths (feet bgs)
PSA for Site 53	S53-SB01	01/23/2015	SW8015B	0.5
			SW8260B	0.5
			SW8270C SIM	0.5
	S53-SB02	01/21/2015	SW8015B	5, 10, 20
			SW8260B	5, 10, 20
			SW8270C SIM	5, 10, 20
	S53-SB03	01/22/2015 & 01/23/2015	SW8015B	0.5, 5, 11.5, 16.5, 18.5
			SW8260B	0.5, 5, 11.5, 16.5, 18.5
			SW8270C SIM	0.5, 5, 11.5, 16.5, 18.5
	S53-SB04	01/22/2015	SW8015B	5, 10, 20, 28
			SW8260B	5, 10, 20, 28
			SW8270C SIM	5, 10, 20, 28
	S53-SB05	01/22/2015	SW8015B	5, 10, 20, 30
			SW8260B	5, 10, 20, 30
			SW8270C SIM	5, 10, 20, 30
	S53-SB06	01/21/2015	SW8015B	5, 10, 20, 30
			SW8260B	5, 10, 20, 30
			SW8270C SIM	5, 10, 20, 30

Notes:

bgs = below ground surface

PSA = Preliminary Site Assessment

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TABLE 4

Organic Chemicals Reported Above Laboratory Limit of Detection
 PSA Site 53, NAVWPNSTA Seal Beach Detachment Fallbrook, California

Sample Location	Sample Date	Sample Depth (feet)	Sample Type	Matrix	Chemical Class	Method	Chemical	Result	Units	USEPA Flag	Screening Level Exceeded ⁽¹⁾
S53-SB01	01/23/2015	0.5	N	SO	TPH	SW8015B	TPH - Diesel	25	mg/kg		
					VOCs	SW8260B	2-Butanone	3.6	µg/kg	J	
						SW8260B	Acetone	43	µg/kg		
					PAHs	SW8270C SIM	Benzo[g,h,i]perylene	2.0	µg/kg	J	
						SW8270C SIM	Fluoranthene	2.0	µg/kg	J	
						SW8270C SIM	Pyrene	1.9	µg/kg	J	
S53-SB02	01/21/2015	5	N	SO	TPH	SW8015B	No chemicals detected				
					VOCs	SW8260B	2-Butanone	2.6	µg/kg	J	
						SW8260B	Acetone	69	µg/kg		
					PAHs	SW8270C SIM	No chemicals detected				
					TPH	SW8015B	No chemicals detected				
					VOCs	SW8260B	No chemicals detected				
S53-SB02	01/21/2015	10	N	SO	TPH	SW8015B	No chemicals detected				
					VOCs	SW8260B	No chemicals detected				
					PAHs	SW8270C SIM	No chemicals detected				
S53-SB02	01/21/2015	20	N	SO	TPH	SW8015B	No chemicals detected				
					VOCs	SW8260B	No chemicals detected				
					PAHs	SW8270C SIM	No chemicals detected				
S53-SB03	01/23/2015	0.5	N	SO	TPH	SW8015B	TPH - Diesel	20	mg/kg		
					VOCs	SW8260B	2-Butanone	8.6	µg/kg	J	
						SW8260B	Acetone	130	µg/kg		
					PAHs	SW8270C SIM	Benzo[b]fluoranthene	3.1	µg/kg	J	
						SW8270C SIM	Fluoranthene	3.4	µg/kg	J	
						SW8270C SIM	Phenanthrene	2.0	µg/kg	J	
						SW8270C SIM	Pyrene	3.2	µg/kg	J	

TABLE 4

Organic Chemicals Reported Above Laboratory Limit of Detection
 PSA Site 53, NAVWPNSTA Seal Beach Detachment Fallbrook, California

Sample Location	Sample Date	Sample Depth (feet)	Sample Type	Matrix	Chemical Class	Method	Chemical	Result	Units	USEPA Flag	Screening Level Exceeded ⁽¹⁾
S53-SB03	01/22/2015	5	N	SO	TPH	SW8015B	TPH - Diesel	5,600	mg/kg		SFB RWQCB ESL
					VOCs	SW8260B	1,2,4-Trimethylbenzene	54	µg/kg	J	
						SW8260B	2-Butanone	7.8	µg/kg	J	
						SW8260B	4-Isopropyltoluene	97	µg/kg	J	
						SW8260B	Acetone	36	µg/kg	J	
						SW8260B	Isopropylbenzene	3.2	µg/kg	J	
						SW8260B	Naphthalene	12	µg/kg	J	
						SW8260B	n-Butylbenzene	120	µg/kg	J	
						SW8260B	o-Xylene	14	µg/kg	J	
						SW8260B	Propylbenzene	15	µg/kg	J	
						SW8260B	sec-Butylbenzene	56	µg/kg	J	
						SW8260B	tert-Butylbenzene	1.3	µg/kg	J	
					PAHs	SW8270C SIM	1-Methylnaphthalene	8,000	µg/kg		USEPA SSL GW
						SW8270C SIM	2-Methylnaphthalene	140	µg/kg		
						SW8270C SIM	Acenaphthene	600	µg/kg		
						SW8270C SIM	Acenaphthylene	230	µg/kg		
						SW8270C SIM	Benzo[a]anthracene	20	µg/kg		
						SW8270C SIM	Benzo[a]pyrene	8.7	µg/kg	J	
						SW8270C SIM	Benzo[b]fluoranthene	9.6	µg/kg	J	
						SW8270C SIM	Benzo[g,h,i]perylene	7.9	µg/kg	J	
	SW8270C SIM	Benzo[k]fluoranthene	4.9	µg/kg	J						
	SW8270C SIM	Chrysene	17	µg/kg							
	SW8270C SIM	Fluoranthene	71	µg/kg							
	SW8270C SIM	Fluorene	1,600	µg/kg							
	SW8270C SIM	Indeno[1,2,3-c,d]pyrene	5.5	µg/kg	J						
	SW8270C SIM	Phenanthrene	2,300	µg/kg							
	SW8270C SIM	Pyrene	61	µg/kg							

TABLE 4

Organic Chemicals Reported Above Laboratory Limit of Detection
 PSA Site 53, NAVWPNSTA Seal Beach Detachment Fallbrook, California

Sample Location	Sample Date	Sample Depth (feet)	Sample Type	Matrix	Chemical Class	Method	Chemical	Result	Units	USEPA Flag	Screening Level Exceeded ⁽¹⁾
S53-SB03	1/22/2015	11.5	N	SO	TPH	SW8015B	TPH - Diesel	15	mg/kg		
					VOCs	SW8260B	No chemicals detected				
					PAHs	SW8270C SIM	1-Methylnaphthalene	20	µg/kg	J J	
							2-Methylnaphthalene	1.7	µg/kg		
							Acenaphthene	3.0	µg/kg		
Fluorene	12	µg/kg									
Phenanthrene	19	µg/kg									
S53-SB03	1/22/2015	16.5	N	SO	TPH	SW8015B	No chemicals detected				
					VOCs	SW8260B	No chemicals detected				
					PAHs	SW8270C SIM	No chemicals detected				
S53-SB03	1/22/2015	18.5	N	SO	TPH	SW8015B	No chemicals detected				
					VOCs	SW8260B	No chemicals detected				
					PAHs	SW8270C SIM	No chemicals detected				
S53-SB04	1/22/2015	5	N	SO	TPH	SW8015B	No chemicals detected				
					VOCs	SW8260B	No chemicals detected				
					PAHs	SW8270C SIM	No chemicals detected				
S53-SB04	1/22/2015	10	N	SO	TPH	SW8015B	No chemicals detected				
					VOCs	SW8260B	No chemicals detected				
					PAHs	SW8270C SIM	No chemicals detected				
S53-SB04	1/22/2015	20	N	SO	TPH	SW8015B	No chemicals detected				
					VOCs	SW8260B	No chemicals detected				
					PAHs	SW8270C SIM	No chemicals detected				

TABLE 4

Organic Chemicals Reported Above Laboratory Limit of Detection
 PSA Site 53, NAVWPNSTA Seal Beach Detachment Fallbrook, California

Sample Location	Sample Date	Sample Depth (feet)	Sample Type	Matrix	Chemical Class	Method	Chemical	Result	Units	USEPA Flag	Screening Level Exceeded ⁽¹⁾
S53-SB04	01/22/2015	28	N	SO	TPH	SW8015B	TPH - Diesel	70	mg/kg		
					VOCs	SW8260B	No chemicals detected				
					PAHs	SW8270C SIM	Benzo[a]anthracene	4.8	µg/kg	J	
						SW8270C SIM	Benzo[a]pyrene	1.9	µg/kg	J	
						SW8270C SIM	Benzo[b]fluoranthene	3.0	µg/kg	J	
						SW8270C SIM	Chrysene	3.5	µg/kg	J	
SW8270C SIM	Fluoranthene	7.2	µg/kg	J							
SW8270C SIM	Pyrene	7.8	µg/kg	J							
S53-SB05	01/22/2015	5	N	SO	TPH	SW8015B	No chemicals detected				
					VOCs	SW8260B	No chemicals detected				
					PAHs	SW8270C SIM	No chemicals detected				
S53-SB05	01/22/2015	10	N	SO	TPH	SW8015B	No chemicals detected				
					VOCs	SW8260B	No chemicals detected				
					PAHs	SW8270C SIM	No chemicals detected				
S53-SB05	01/22/2015	20	N	SO	TPH	SW8015B	No chemicals detected				
					VOCs	SW8260B	No chemicals detected				
					PAHs	SW8270C SIM	No chemicals detected				
S53-SB05	01/22/2015	30	N	SO	TPH	SW8015B	No chemicals detected				
					VOCs	SW8260B	No chemicals detected				
					PAHs	SW8270C SIM	No chemicals detected				
S53-SB06	01/21/2015	5	N	SO	TPH	SW8015B	TPH - Diesel	45	mg/kg		
					VOCs	SW8260B	2-Butanone	3.2	µg/kg	J	
						SW8260B	Carbon disulfide	1.4	µg/kg	J	
					PAHs	SW8270C SIM	Benzo[a]pyrene	1.5	µg/kg	J	
						SW8270C SIM	Phenanthrene	2.3	µg/kg	J	
SW8270C SIM	Pyrene	1.8	µg/kg	J							

TABLE 4

Organic Chemicals Reported Above Laboratory Limit of Detection
 PSA Site 53, NAVWPNSTA Seal Beach Detachment Fallbrook, California

Sample Location	Sample Date	Sample Depth (feet)	Sample Type	Matrix	Chemical Class	Method	Chemical	Result	Units	USEPA Flag	Screening Level Exceeded ⁽¹⁾
S53-SB06	01/21/2015	10	N	SO	TPH	SW8015B	No chemicals detected				
					VOCs	SW8260B	No chemicals detected				
					PAHs	SW8270C SIM	No chemicals detected				
S53-SB06	01/21/2015	20	N	SO	TPH	SW8015B	No chemicals detected				
					VOCs	SW8260B	No chemicals detected				
					PAHs	SW8270C SIM	No chemicals detected				
S53-SB06	01/21/2015	30	N	SO	TPH	SW8015B	TPH - Diesel	19	mg/kg		
					VOCs	SW8260B	No chemicals detected				
					PAHs	SW8270C SIM	No chemicals detected				

Notes:

Shading and bolding indicates the reported concentration exceeded a screening level.

⁽¹⁾ The screening levels are the most conservative value among the USEPA Regional Screening Levels, San Francisco Bay RWQCB Tier I ESLs (ESLs), and Ecological Soil Screening Levels (Eco-SSLs), where available. The San Francisco Bay RWQCB ESL is the lowest value amongst a range of parameters that includes soil screening levels for leaching concerns (SLL).

µg/kg = micrograms per kilogram

J = estimated value

mg/kg = milligram per kilogram

N = normal environmental sample

PAH = polycyclic aromatic hydrocarbon

SO = soil matrix

SFB RWQCB ESL = San Francisco Bay Regional Water Quality Control Environmental Screening Level

SSL GW = soil screening level for the protection of groundwater

TPH = total petroleum hydrocarbons

USEPA = United States Environmental Protection Agency

VOC = volatile organic compound

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TABLE 5

Data Quality Control Summary for Site 53

PSA Site 53, NAVWPNSTA Seal Beach Detachment Fallbrook, California

Method	Samples per Method ^a	Number of Reported Results	Estimated Results ^b		Rejected Results ^c		Percent Completeness	
			No.	%	No.	%	No.	% ^d
SW8015B	25	50	0	0.0	0	0.0	50	100
SW8260B	26	1,716	30	1.7	11	0.6	1705	99.4
SW8270C SIM (PAH)	25	2,808	0	0	0	0.0	2808	100

Notes:

^a Includes field duplicate and normal samples.^b Results flagged J, J+, J-, or UJ.^c Results flagged R.^d % Complete = ([reported results-unusable results]/reported results)*100 as defined in the Sampling and Analysis Plan (SAP) - Preliminary Site Assessment for Site for Site 53, WS37 Usability Assessment (KCH, 2014).

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TABLE 6

Screening-Level Human Health Risk and Hazard Estimates for Exposure to Soil (0 to 10 feet bgs)
 PSA Site 53, NAVWP/NSTA Seal Beach Detachment Fallbrook, California

Analyte	Maximum Concentration (mg/kg)	Hypothetical Residential Exposure Scenario						Industrial/Office Worker Exposure Scenario					
		Carcinogenic RBC ^a (mg/kg)	Risk Ratio	Percent Contribution	Noncarcinogenic RBC ^a (mg/kg)	Hazard Quotient	Percent Contribution	Carcinogenic RBC ^a (mg/kg)	Risk Ratio	Percent Contribution	Noncarcinogenic RBC ^a (mg/kg)	Hazard Quotient	Percent Contribution
1,2,4-Trimethylbenzene	0.054 J	--	--	--	58	9.31E-04	14.6%	--	--	--	240	2.25E-04	30.8%
1-Methylnaphthalene	8.0	17	4.71E-07	36.1%	4,100	1.95E-03	30.5%	73	1.10E-07	69.6%	53,000	1.51E-04	20.7%
2-Butanone	0.0086 J	--	--	--	27,000	3.19E-07	0.0%	--	--	--	190,000	4.53E-08	0.0%
2-Methylnaphthalene	0.14	--	--	--	230	6.09E-04	9.5%	--	--	--	3,000	4.67E-05	6.4%
4-Isopropyltoluene	0.097 J	--	--	--	1,900	5.11E-05	0.8%	--	--	--	9,900	9.80E-06	1.3%
Acenaphthene	0.6	--	--	--	3,500	1.71E-04	2.7%	--	--	--	45,000	1.33E-05	1.8%
Acenaphthylene	0.23	--	--	--	3,500	6.57E-05	1.0%	--	--	--	45,000	5.11E-06	0.7%
Acetone	0.13	--	--	--	61,000	2.13E-06	0.0%	--	--	--	670,000	1.94E-07	0.0%
Benzo[a]anthracene	0.02	0.15	1.33E-07	10.2%	1,700	1.18E-05	0.2%	2.9	6.90E-09	4.4%	23,000	8.70E-07	0.1%
Benzo[a]pyrene	0.0087 J	0.015	5.80E-07	44.4%	1,700	5.12E-06	0.1%	0.29	3.00E-08	19.1%	23,000	3.78E-07	0.1%
Benzo[b]fluoranthene	0.0096 J	0.15	6.40E-08	4.9%	1,700	5.65E-06	0.1%	2.9	3.31E-09	2.1%	23,000	4.17E-07	0.1%
Benzo[g,h,i]perylene	0.0079 J	--	--	--	1,700	4.65E-06	0.1%	--	--	--	23,000	3.43E-07	0.0%
Benzo[k]fluoranthene	0.0049 J	0.38	1.29E-08	1.0%	1,700	2.88E-06	0.0%	1.3	3.77E-09	2.4%	23,000	2.13E-07	0.0%
Carbon disulfide	0.0014 J	--	--	--	770	1.82E-06	0.0%	--	--	--	3,500	4.00E-07	0.1%
Chrysene	0.017	3.8	4.47E-09	0.3%	1,700	1.00E-05	0.2%	13.0	1.31E-09	0.8%	23,000	7.39E-07	0.1%
Fluoranthene	0.071	--	--	--	2,300	3.09E-05	0.5%	--	--	--	30,000	2.37E-06	0.3%
Fluorene	1.6	--	--	--	2,300	6.96E-04	10.9%	--	--	--	30,000	5.33E-05	7.3%
Indeno[1,2,3-c,d]pyrene	0.0055 J	0.15	3.67E-08	2.8%	1,700	3.24E-06	0.1%	2.9	1.90E-09	1.2%	23,000	2.39E-07	0.0%
Isopropylbenzene	0.0032 J	--	--	--	1,900	1.68E-06	0.0%	--	--	--	9,900	3.23E-07	0.0%
Naphthalene	0.012 J	3.8	3.16E-09	0.2%	130	9.23E-05	1.4%	17	7.06E-10	0.4%	590	2.03E-05	2.8%
n-Butylbenzene	0.12 J	--	--	--	580	2.07E-04	3.2%	--	--	--	2,200	5.45E-05	7.5%
o-Xylene	0.014 J	--	--	--	650	2.15E-05	0.3%	--	--	--	2,800	5.00E-06	0.7%
Phenanthrene	2.3	--	--	--	1,700	1.35E-03	21.2%	--	--	--	23,000	1.00E-04	13.7%
Propylbenzene	0.015 J	--	--	--	3,300	4.55E-06	0.1%	--	--	--	22,000	6.82E-07	0.1%
Pyrene	0.061	--	--	--	1,700	3.59E-05	0.6%	--	--	--	23,000	2.65E-06	0.4%
sec-Butylbenzene	0.056 J	--	--	--	450	1.24E-04	1.9%	--	--	--	1,600	3.50E-05	4.8%
tert-Butylbenzene	0.0013 J	--	--	--	530	2.45E-06	0.0%	--	--	--	2,000	6.50E-07	0.1%
		Cumulative Risk	1E-06	100%	Hazard Index	0.006	100%	Cumulative Risk	2E-07	100%	Hazard Index	0.0007	100%

Notes:

^a RBC = risk-based concentration. The sources of RBCs are provided in Section 5.1.2. If the DTSC HHRA Note 3 screening level was more conservative than the USEPA screening level, then the DTSC value was used preferentially over the value recommended by USEPA.

Highlighted cells show screening level from DTSC's HHRA Note 3 Table.

The noncancer RBC for acenaphthene was used as a surrogate for acenaphthylene.

The noncancer RBC for cumene was used as a surrogate for 4-isopropyltoluene and isopropylbenzene.

The noncancer RBC for pyrene was used as a surrogate for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz[a,h]anthracene, indeno[1,2,3-c,d]pyrene, and phenanthrene.
 mg/kg = milligrams per kilogram

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TABLE 7

Special Status Species Potentially Occurring within 1-Mile Buffer of Site 53
 PSA Site 53, NAVWPNSTA Seal Beach Detachment Fallbrook, California

Common Name	Scientific Name	Listing Status				Quadrant			
		Federal Status	State Status	CDFW Status	CA Rare Plant Rank	Morro Hill	Fallbrook	Temecula	Bonsall
Plants									
California screw moss	<i>Tortula californica</i>	--	--	--	1B.2			•	
Campbell's liverwort	<i>Geothallus tuberosus</i>	--	--	--	1B.1		•		
Shevock's copper moss	<i>Mielichhoferia shevockii</i>	--	--	--	1B.2			•	
Chaparral sand-verbena	<i>Abronia villosa</i> var. <i>aurita</i>	--	--	--	1B.1	•	•	•	
San Diego ambrosia	<i>Ambrosia pumila</i>	FE	--	--	1B.1			•	•
Rainbow manzanita	<i>Arctostaphylos rainbowensis</i>	--	--	--	1B.1		•	•	
Jaeger's milk-vetch	<i>Astragalus pachypus</i> var. <i>jaegeri</i>	--	--	--	1B.1			•	
South coast saltscale	<i>Atriplex pacifica</i>	--	--	--	1B.2	•			
Thread-leaved brodiaea	<i>Brodiaea filifolia</i>	FT	CE	--	1B.1	•	•		
Orcutt's brodiaea	<i>Brodiaea orcuttii</i>	--	--	--	1B.1			•	
Santa Rosa Basalt brodiaea	<i>Brodiaea santarosae</i>	--	--	--	1B.2		•		
Lewis' evening-primrose	<i>Camissoniopsis lewisii</i>	--	--	--	3	•	•		
Payson's jewelflower	<i>Caulanthus simulans</i>	--	--	--	4.2		•	•	
Southern tarplant	<i>Centromadia parryi</i> ssp. <i>australis</i>	--	--	--	1B.1	•			
Smooth tarplant	<i>Centromadia pungens</i> ssp. <i>laevis</i>	--	--	--	1B.1	•		•	
Orcutt's pincushion	<i>Chaenactis glabriuscula</i> var. <i>orcuttiana</i>	--	--	--	1B.1	•	•	•	•
Southern mountain misery	<i>Chamaebatia australis</i>	--	--	--	4.2		•		•
Long-spined spineflower	<i>Chorizanthe polygonoides</i> var. <i>longispina</i>	--	--	--	1B.2		•		
San Miguel savory	<i>Clinopodium chandleri</i>	--	--	--	1B.2		•	•	
Small-flowered morning-glory	<i>Convolvulus simulans</i>	--	--	--	4.2	•	•		
Paniculate tarplant	<i>Deinandra paniculata</i>	--	--	--	4.2			•	•
Western dichondra	<i>Dichondra occidentalis</i>	--	--	--	4.2	•			
Many-stemmed dudleya	<i>Dudleya multicaulis</i>	--	--	--	1B.2	•	•		
Sticky dudleya	<i>Dudleya viscida</i>	--	--	--	1B.2	•	•	•	
Pendleton button-celery	<i>Eryngium pendletonense</i>	--	--	--	1B.1	•			
Palmer's grapplinghook	<i>Harpagonella palmeri</i>	--	--	--	4.2			•	
Curving tarplant	<i>Holocarpha virgata</i> ssp. <i>elongata</i>	--	--	--	4.2		•	•	•
Vernal barley	<i>Hordeum intercedens</i>	--	--	--	3.2	•	•		
Mesa horkelia	<i>Horkelia cuneata</i> var. <i>puberula</i>	--	--	--	1B.1			•	
Ramona horkelia	<i>Horkelia truncata</i>	--	--	--	1B.3		•		
Southwestern spiny rush	<i>Juncus acutus</i> ssp. <i>leopoldii</i>	--	--	--	4.2	•			
Santa Lucia dwarf rush	<i>Juncus luciensis</i>	--	--	--	1B.2		•		
Coulter's goldfields	<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	--	--	--	1B.1			•	
Robinson's pepper-grass	<i>Lepidium virginicum</i> var. <i>robinsonii</i>	--	--	--	4.3	•	•	•	
Ocellated humboldt lily	<i>Lilium humboldtii</i> ssp. <i>ocellatum</i>	--	--	--	4.2		•		
Intermediate monardella	<i>Monardella hypoleuca</i> ssp. <i>intermedia</i>	--	--	--	1B.3		•		
Chaparral nolina	<i>Nolina cismontana</i>	--	--	--	1B.2				•
Chaparral rein orchid	<i>Piperia cooperi</i>	--	--	--	4.2		•		
Fish's milkwort	<i>Polygala cornuta</i> var. <i>fishiae</i>	--	--	--	4.3		•	•	
White rabbit-tobacco	<i>Pseudognaphalium leucocephalum</i>	--	--	--	2B.2		•		
Engelmann oak	<i>Quercus engelmannii</i>	--	--	--	4.2		•	•	•
Parry's tetracoccus	<i>Tetracoccus dioicus</i>	--	--	--	1B.2	•	•	•	•
Crustaceans									
Riverside fairy shrimp	<i>Streptocephalus woottoni</i>	FE	--	--	--	•		•	
San Diego fairy shrimp	<i>Branchinecta sandiegonensis</i>	FE	--	--	--	•	•		
Fish									
Arroyo chub	<i>Gila orcuttii</i>	--	--	SSC	--	•	•	•	
Amphibians									
Arroyo toad	<i>Anaxyrus californicus</i>	FE	--	SSC	--	•	•	•	•
California red-legged frog	<i>Rana draytonii</i>	FT	--	SSC	--	•			
Coast Range newt	<i>Taricha torosa</i>	--	--	SSC	--	•	•		
Western spadefoot	<i>Spea hammondi</i>	--	--	SSC	--	•	•	•	
Reptiles									
Coast patch-nosed snake	<i>Salvadora hexalepis virgulata</i>	--	--	SSC	--		•	•	
Coronado Island skink	<i>Plestiodon skiltonianus interparietalis</i>	--	--	SSC	--	•	•	•	•
Orangethroat whiptail	<i>Aspidoscelis hyperythra</i>	--	--	SSC	--	•	•	•	•
Red-diamond rattlesnake	<i>Crotalus ruber</i>	--	--	SSC	--	•	•	•	•
Two-striped garter snake	<i>Thamnophis hammondi</i>	--	--	SSC	--	•	•	•	
Western pond turtle	<i>Emys marmorata</i>	--	--	SSC	--	•	•	•	

TABLE 7

Special Status Species Potentially Occurring within 1-Mile Buffer of Site 53
 PSA Site 53, NAVWPNSTA Seal Beach Detachment Fallbrook, California

Common Name	Scientific Name	Listing Status				Quadrant			
		Federal Status	State Status	CDFW Status	CA Rare Plant Rank	Morro Hill	Fallbrook	Temecula	Bonsall
Birds									
American peregrine falcon	<i>Falco peregrinus anatum</i>	FD	CD	FP	--	•			
Bald eagle	<i>Haliaeetus leucocephalus</i>	FD	CE	FP	--	•			
Bell's sage sparrow	<i>Artemisospiza belli belli</i>	--	--	WL	--		•	•	
Burrowing owl	<i>Athene cucularia</i>	--	--	SSC	--	•	•	•	
California horned lark	<i>Eremophila alpestris actia</i>	--	--	WL	--	•			•
California least tern	<i>Sternula antillarum browni</i>	FE	CE	FP	--	•			
Clark's marsh wren	<i>Cistothorus palustris clarkae</i>	--	--	SSC	--	•			
Coastal cactus wren	<i>Campylorhynchus brunneicapillus sandiegensis</i>	--	--	SSC	--	•	•		•
Coastal California gnatcatcher	<i>Poliophtia californica californica</i>	FT	--	SSC	--	•	•	•	
Cooper's hawk	<i>Accipiter cooperii</i>	--	--	WL	--	•	•	•	•
Double-crested cormorant	<i>Phalacrocorax auritus</i>	--	--	WL	--	•			
Ferruginous hawk	<i>Buteo regalis</i>	--	--	WL	--	•	•	•	
Golden eagle	<i>Aquila chrysaetos</i>	--	--	FP ; WL	--	•	•	•	•
Grasshopper sparrow	<i>Ammodramus savannarum</i>	--	--	SSC	--	•	•		
Least Bell's vireo	<i>Vireo bellii pusillus</i>	FE	CE	-	--	•	•	•	•
Least bittern	<i>Ixobrychus exilis</i>	--	--	SSC	--				•
Loggerhead shrike	<i>Lanius ludovicianus</i>	--	--	SSC	--	•			•
Long-eared owl	<i>Asio otus</i>	--	--	SSC	--	•			
Merlin	<i>Falco columbarius</i>	--	--	WL	--	•			
Mountain plover	<i>Charadrius montanus</i>	--	--	SSC	--				•
Northern harrier	<i>Circus cyaneus</i>	--	--	SSC	--	•	•		•
Olive-sided flycatcher	<i>Contopus cooperi</i>	--	--	SSC	--			•	•
Prairie falcon	<i>Falco mexicanus</i>	--	--	WL	--	•			
Sharp-shinned hawk	<i>Accipiter striatus</i>	--	--	WL	--			•	•
Short-eared owl	<i>Asio flammeus</i>	--	--	SSC	--			•	
Southern California rufous-crowned sparrow	<i>Aimophila ruficeps canescens</i>	--	--	WL	--	•		•	•
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	FE	CE	-	--	•	•	•	•
Swainson's hawk	<i>Buteo swainsoni</i>	--	CT	-	--	•		•	•
Tricolored blackbird	<i>Agelaius tricolor</i>	--	CE	SSC	--	•			•
Vaux's swift	<i>Chaetura vauxi</i>	--	--	SSC	--	•			
Vermilion flycatcher	<i>Pyrocephalus rubinus</i>	--	--	SSC	--	•			•
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	FT	CE	-	--			•	•
White-faced ibis	<i>Plegadis chihi</i>	--	--	WL	--	•			•
White-tailed kite	<i>Elanus leucurus</i>	--	--	FP	--	•	•		•
Willow flycatcher	<i>Empidonax traillii</i>	--	CE	-	--	•			•
Yellow warbler	<i>Setophaga petechia</i>	--	--	SSC	--	•	•	•	•
Yellow-breasted chat	<i>Icteria virens</i>	--	--	SSC	--	•	•		•
Yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>	--	--	SSC	--			•	
Mammals									
American badger	<i>Taxidea taxus</i>	--	--	SSC	--	•			
Dulzura pocket mouse	<i>Chaetodipus californicus femoralis</i>	--	--	SSC	--	•	•	•	•
Los Angeles pocket mouse	<i>Perognathus longimembris brevinasus</i>	--	--	SSC	--			•	
Northwestern San Diego pocket mouse	<i>Chaetodipus fallax fallax</i>	--	--	SSC	--	•		•	
Pacific pocket mouse	<i>Perognathus longimembris pacificus</i>	FE	--	SSC	--	•			
Pallid bat	<i>Antrozous pallidus</i>	--	--	SSC	--	•	•		•
Pocketed free-tailed bat	<i>Nyctinomops femorosaccus</i>	--	--	SSC	--	•	•	•	
San Diego black-tailed jackrabbit	<i>Lepus californicus bennettii</i>	--	--	SSC	--	•	•		
San Diego desert woodrat	<i>Neotoma lepida intermedia</i>	--	--	SSC	--	•		•	•
Stephens' kangaroo rat	<i>Dipodomys stephensi</i>	FE	CT	-	--	•	•	•	•
Western mastiff bat	<i>Eumops perotis californicus</i>	--	--	SSC	--	•	•	•	•
Coast horned lizard	<i>Phrynosoma blainvillii</i>	--	--	SSC	--	•	•	•	•

Notes:

Federal Status

FE = Federally Endangered

FT = Federally Threatened

State Status

CE = California Endangered

CT = California Threatened

California Department of Fish and Wildlife Status

FP = fully protected

SSC = species of special concern

WL = watch list

TABLE 7

Special Status Species Potentially Occurring within 1-Mile Buffer of Site 53
 PSA Site 53, NAVWPNSTA Seal Beach Detachment Fallbrook, California

Common Name	Scientific Name	Listing Status				Quadrant			
		Federal Status	State Status	CDFW Status	CA Rare Plant Rank	Morro Hill	Fallbrook	Temecula	Bonsall

California Rare Plant Rank

1A = Presumed extinct in California and rare/extinct elsewhere

1B = rare, threatened, or endangered in California and elsewhere

1B.1 = seriously threatened in California

1B.2 = fairly threatened in California

1B.3 = not very threatened in California

2B = rare, threatened, or endangered in California, but more common elsewhere

2B.1 = seriously threatened in California

2B.2 = fairly threatened in California

2B.3 = not very threatened in California

3 = plants about which more information is needed

3.1 = seriously threatened in California

3.2 = fairly threatened in California

3.3 = not very threatened in California

4 = plants of limited distribution

4.1 = seriously threatened in California

4.2 = fairly threatened in California

4.3 = not very threatened in California

Source:

California Department of Fish and Wildlife (CDFW). 2015. California Natural Diversity Database, QuickView Tool in BIOS 5 www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp. Accessed April 4.

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TABLE 8

Soil Screening for Potential Ecological Risks

PSA Site 53, NAVWPNSTA Seal Beach Detachment Fallbrook, California

Chemical Class	Chemical	Units	Maximum Detect		Screening Levels		Exceed?	
			Surface Soil	Subsurface Soil	ESL	Source	Surface Soil	Subsurface Soil
PAH-HighMW	Benzo[a]anthracene	µg/kg	nd	20	1,100	USEPA, 2008	No	No
	Benzo[a]pyrene	µg/kg	nd	8.7	1,100	USEPA, 2008	No	No
	Benzo[b]fluoranthene	µg/kg	nd	9.6	1,100	USEPA, 2008	No	No
	Benzo[g,h,i]perylene	µg/kg	2	7.9	1,100	USEPA, 2008	No	No
	Benzo[k]fluoranthene	µg/kg	nd	4.9	1,100	USEPA, 2008	No	No
	Chrysene	µg/kg	nd	17	1,100	USEPA, 2008	No	No
	Indeno[1,2,3-c,d]pyrene	µg/kg	nd	5.5	1,100	USEPA, 2008	No	No
	Pyrene	µg/kg	3.2	61	1,100	USEPA, 2008	No	No
PAH-LowMW	1-Methylnaphthalene	µg/kg	nd	8,000	29,000	USEPA, 2008	No	No
	2-Methylnaphthalene	µg/kg	nd	140	29,000	USEPA, 2008	No	No
	Acenaphthene	µg/kg	nd	600	29,000	USEPA, 2008	No	No
	Acenaphthylene	µg/kg	nd	230	29,000	USEPA, 2008	No	No
	Fluoranthene	µg/kg	3.4	71	29,000	USEPA, 2008	No	No
	Fluorene	µg/kg	nd	1,600	29,000	USEPA, 2008	No	No
	Naphthalene	µg/kg	nd	12	29,000	USEPA, 2008	No	No
	Phenanthrene	µg/kg	2	2,300	29,000	USEPA, 2008	No	No
TPH	TPH - Diesel	µg/kg	25	5,600	--	--	--	--
VOC	1,2,4-Trimethylbenzene	µg/kg	nd	54	1,400 ^a	LANL, 2012	No	No
	2-Butanone	µg/kg	8.6	7.8	360,000	LANL, 2012	No	No
	4-Isopropyltoluene	µg/kg	nd	97	--	--	--	--
	Acetone	µg/kg	130	69	1,200	LANL, 2012	No	No
	Carbon disulfide	µg/kg	nd	1.4	820	LANL, 2012	No	No
	Isopropylbenzene	µg/kg	nd	3.2	--	--	--	--
	n-Butylbenzene	µg/kg	nd	120	--	--	--	--
	o-Xylene	µg/kg	nd	14	1,400	LANL, 2012	No	No
	Propylbenzene	µg/kg	nd	15	--	--	--	--
	sec-Butylbenzene	µg/kg	nd	56	--	--	--	--
tert-Butylbenzene	µg/kg	nd	1.3	--	--	--	--	

Notes:

^a Xylene used as a surrogate

-- = not available, not applicable

nd = non-detect

ESL = ecological screening level

Sources:

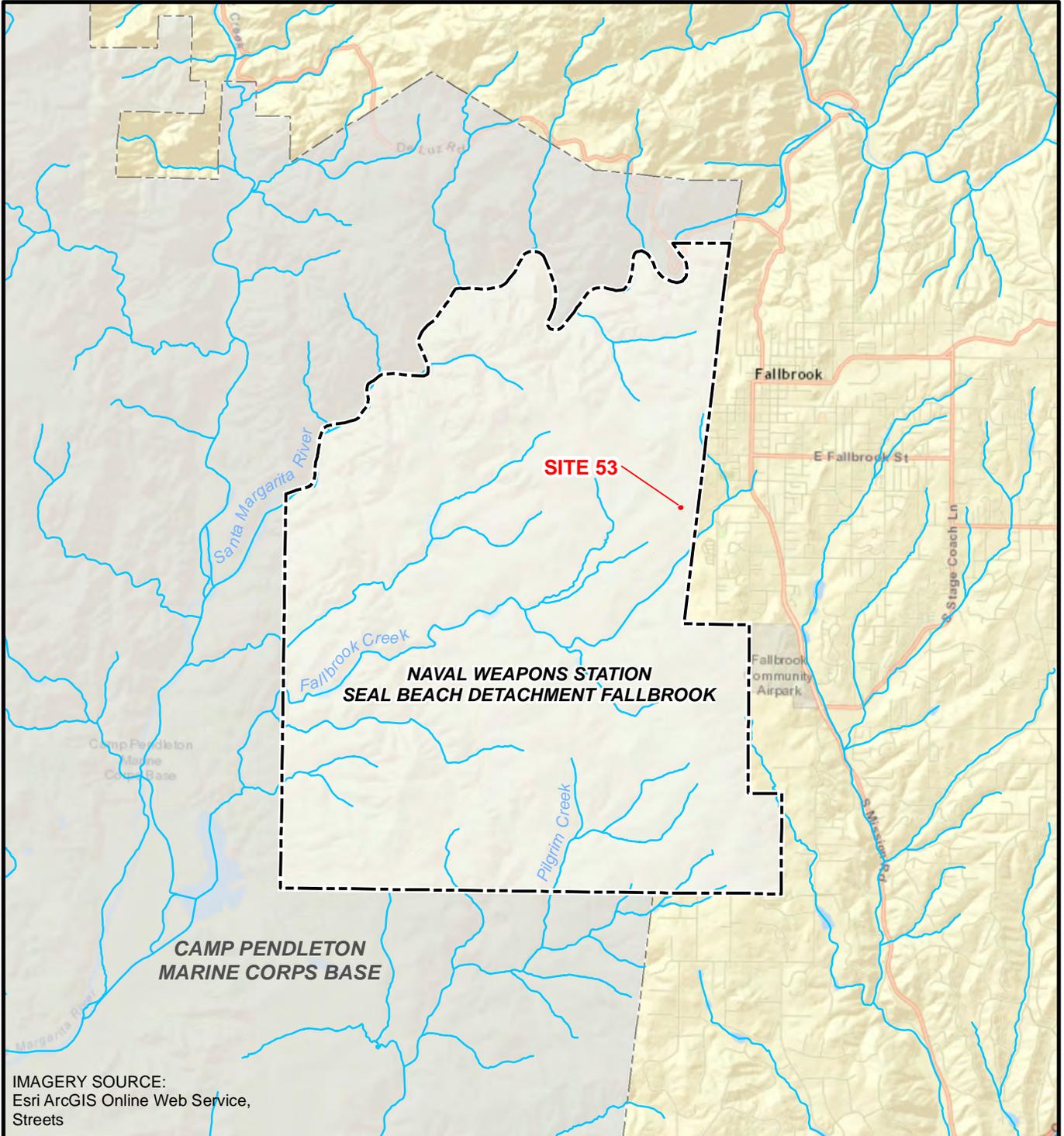
Los Alamos National Laboratory (LANL). 2012. EcoRisk Database release 3.1. LA-UR-12-24548.

<http://www.lanl.gov/community-environment/environmentalstewardship/protection/eco-risk-assessment.php>.United States Environmental Protection Agency (USEPA). 2008. Ecological Soil Screening Levels. <http://www.epa.gov/ecotox/ecossl>.

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Figures

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IMAGERY SOURCE:
Esri ArcGIS Online Web Service,
Streets



- LEGEND**
-  SITE LOCATION
 -  FACILITY BOUNDARY
 -  WATERCOURSE

NOTE:
NAVWPNSTA = Naval Weapons
Station



Site Location	
Preliminary Site Assessment Report - Site 53 NAVWPNSTA Seal Beach Detachment Fallbrook, California	
	
FIGURE 1	

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LEGEND

- SOIL BORING
- GAS LINE
- SEWER LINE
- APPROXIMATE LOCATION OF FORMER DIESEL UST
- APPROXIMATE LOCATION OF CROSS SECTION

NOTES:
 UST = Underground Storage Tank
 NAVWPNSTA = Naval Weapons Station

IMAGERY SOURCE:
 Esri ArcGIS Online Web Service,
 World Imagery 5/3/2010

Site 53 Features and Boring Locations

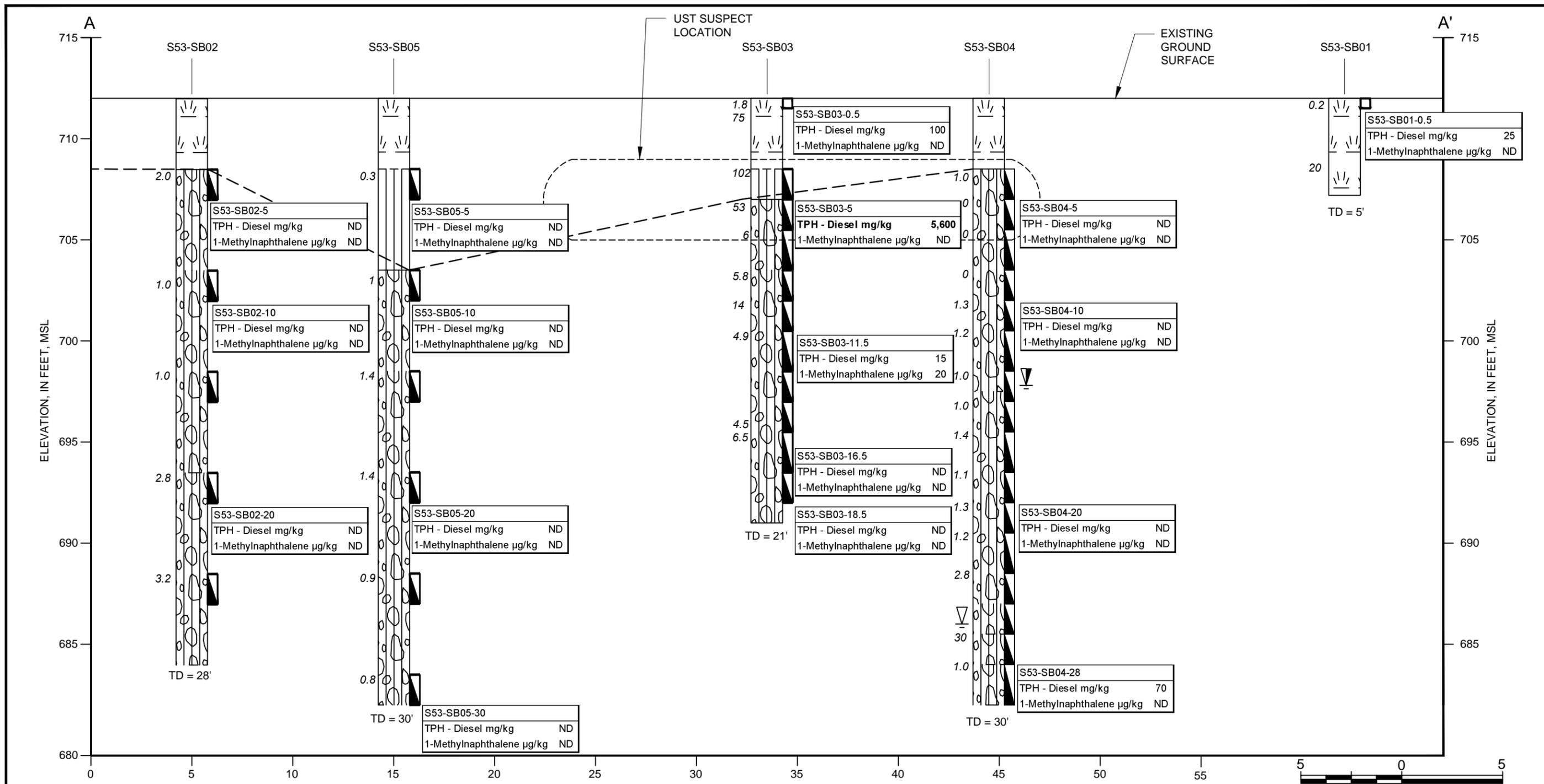
Preliminary Site Assessment Report - Site 53
 NAVWPNSTA Seal Beach Detachment Fallbrook, California



FIGURE

2

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LEGEND

S53-SB06 APPROXIMATE LOCATION OF BORING, SHOWING BORING ID, TOTAL DEPTH IN FEET, AND GRAPHIC LOG (SEE NOTE 1).
 TD = 30'

3.0 SAMPLE INTERVAL SHOWING PID READING (PPMV) ON LEFT (ITALICIZED NUMBER)

▽ WATER LEVEL AT TIME OF DRILLING

▽ WATER LEVEL AFTER DRILLING

--- GEOLOGIC CONTACT

SAMPLE ID
 S53-SB01-0.5
 TPH - Diesel mg/kg 25

ANALYTE CONCENTRATION UNITS
 ↑ CONCENTRATION

NOTES:

mg/kg - Milligrams per kilogram
 µg/kg - Micrograms per kilogram
 ND - Not detected above laboratory reporting limits
 PAH - Polycyclic aromatic hydrocarbon
 PPMV - Parts per million volume
 TPH-d - Total petroleum hydrocarbon as diesel
 TPH-k - Total petroleum hydrocarbon as kerosene
 VOCs - Volatile organic compounds

- See boring logs (Appendix C) for description of graphic symbols.
 - All soil samples were analyzed for TPH-d, TPH-k, PAHs, and VOCs. Only analytes that exceeded screening levels at least once are presented. For a complete data set, see Appendix D.
- BOLD** result indicates the reported concentration exceeded a screening level (see Table 4).
- See Figure 2 for aerial cross section location.

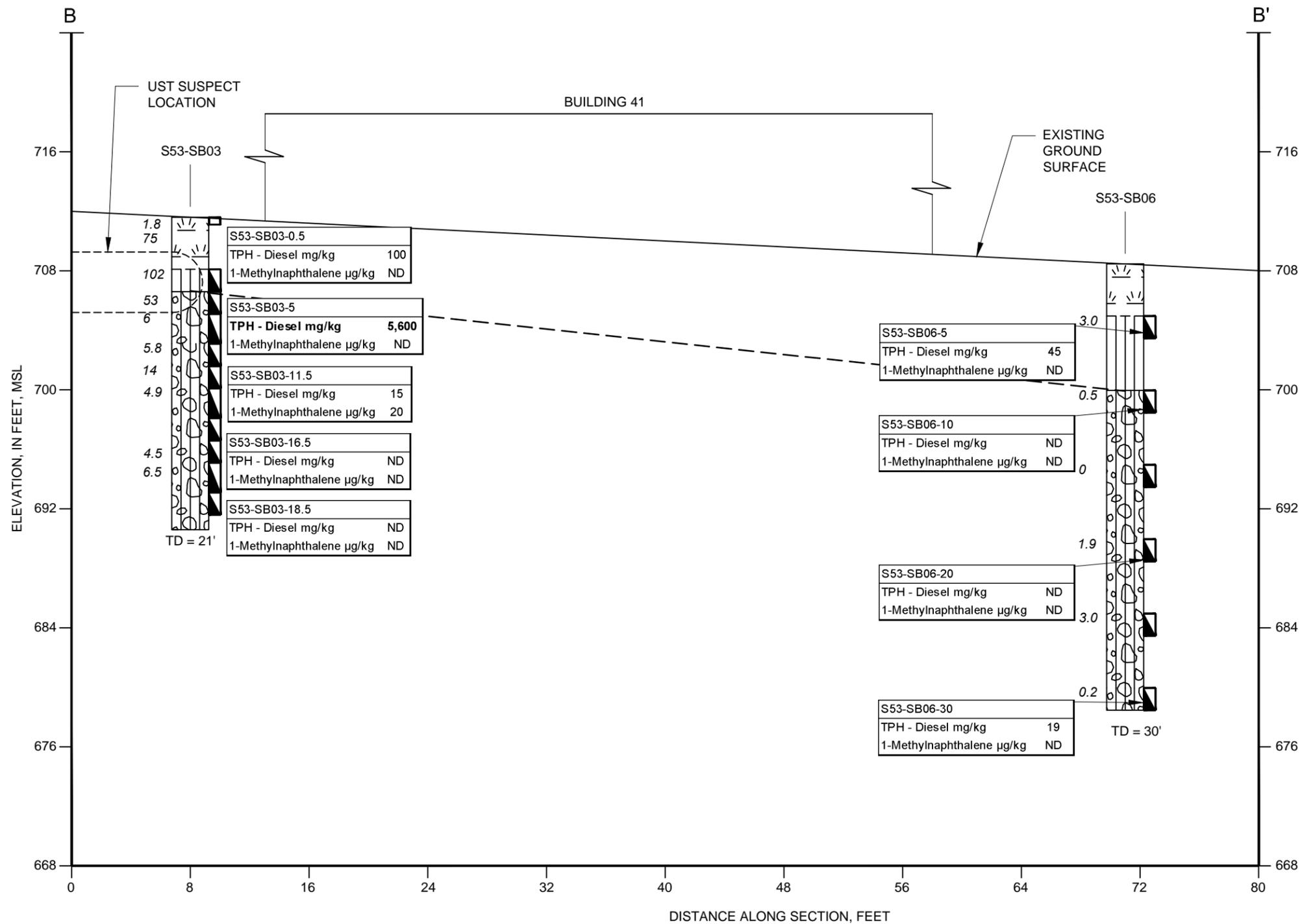
HORIZONTAL AND VERTICAL SCALE, IN FEET

Cross Section A-A'

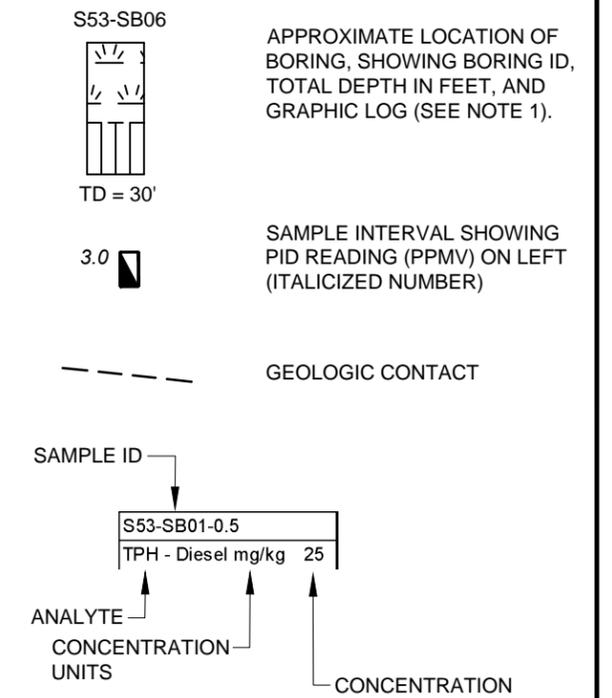
Preliminary Site Assessment Report - Site 53
 NAVWPNSTA Seal Beach Detachment Fallbrook, California

FIGURE
3

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LEGEND



NOTES:

- mg/kg - Milligrams per kilogram
 - µg/kg - Micrograms per kilogram
 - ND - Not detected above laboratory reporting limits
 - PAH - Polycyclic aromatic hydrocarbon
 - PPMV - Parts per million volume
 - TPH-d - Total petroleum hydrocarbon as diesel
 - TPH-k - Total petroleum hydrocarbon as kerosene
 - VOCs - Volatile organic compounds
- See boring logs (Appendix C) for description of graphic symbols.
 - All soil samples were analyzed for TPH-d, TPH-k, PAHs, and VOCs. Only analytes that exceeded screening levels at least once are presented. For a complete data set, see Appendix D.

Bold result indicates the reported concentration exceeded a screening level (see Table 4).

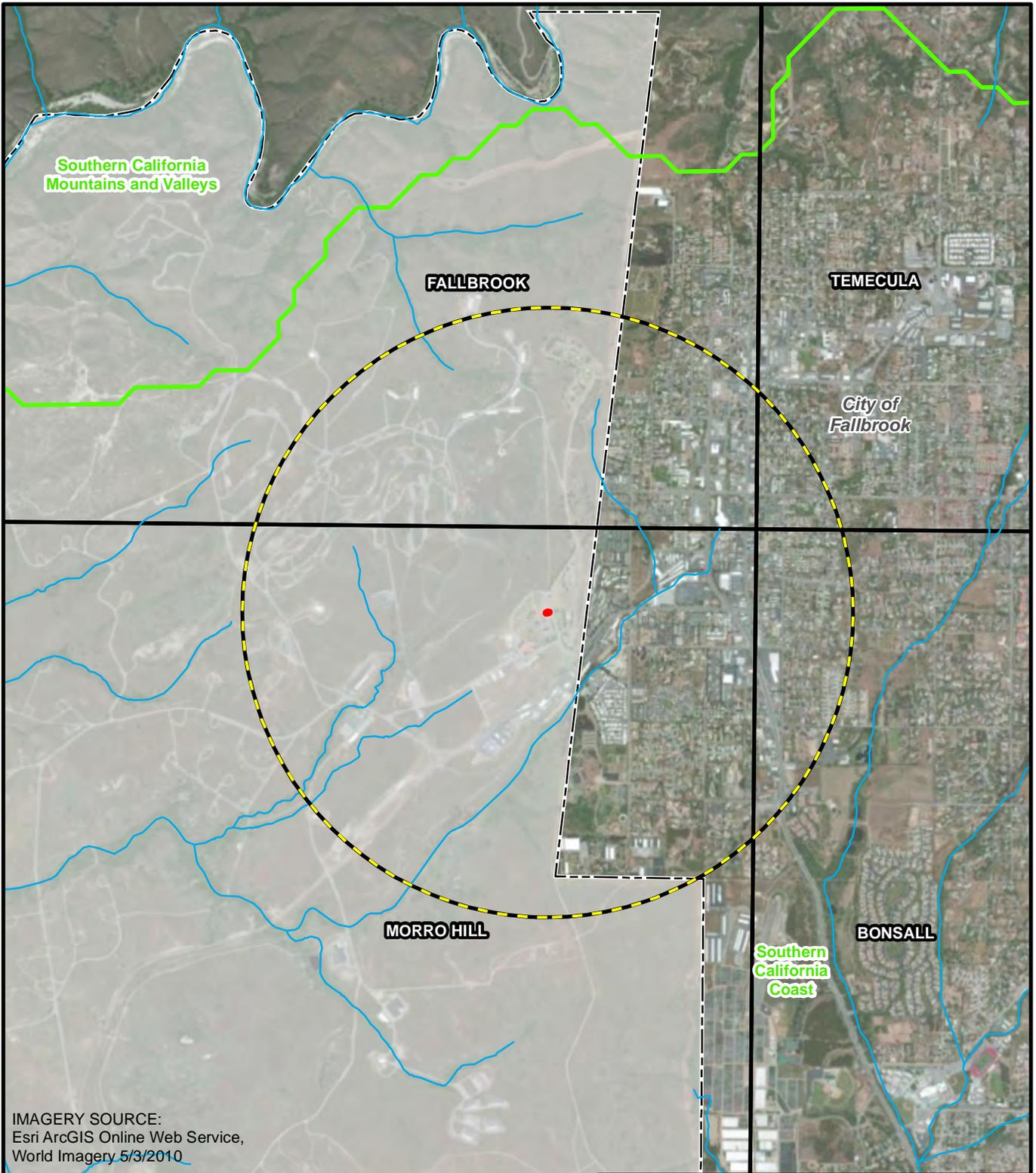
See Figure 2 for aerial cross section location.



Cross Section B-B'		
Preliminary Site Assessment Report - Site 53 NAVWPNSTA Seal Beach Detachment Fallbrook, California		
		FIGURE 4

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Date: 6/24/2015 User: Imoussa Path: \\kadc3-ssfs2.kleinfeider.com\drawings_clients\Navy_CLEAN\FALLBROOK\CTO_071\MXD\SITE53_PSA\071_3357.mxd

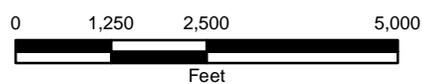


IMAGERY SOURCE:
Esri ArcGIS Online Web Service,
World Imagery 5/3/2010

LEGEND

-  WATERCOURSE
-  1 MILE BUFFER
-  ECOLOGICAL SUBREGION
-  USGS QUADRANGLE (1:24,000)
-  SITE BOUNDARY
-  FACILITY BOUNDARY

NOTES:
PSA = Preliminary Site Assessment
NAWPNSTA = Naval Weapons
Station



Site 53 Biological Setting

Preliminary Site Assessment Report - Site 53
NAWPNSTA Seal Beach Detachment Fallbrook, California



FIGURE

5

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Appendix A Site Photographs

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Photograph 1



Photograph 2



Photograph 3



Photograph 4



Photograph 5



Photograph 6



Photograph 7



Photograph 8



Photograph 9



Photograph 10



Photograph 11



Photograph 12



Photograph 13



Photograph 14



Photograph 15



Photograph 16



LEGEND

- PHOTOGRAPH LOCATION
- ➔ PHOTOGRAPH DIRECTION
- SOIL BORING
- APPROXIMATE LOCATION OF FORMER DIESEL UST

NOTES:
 UST = Underground Storage Tank
 NAVWPNSTA = Naval Weapons Station

IMAGERY SOURCE:
 Esri ArcGIS Online Web Service,
 World Imagery 5/3/2010

**Site Photographs
 Location Reference**

Preliminary Site Assessment Report - Site 53
 NAVWPNSTA Seal Beach Detachment Fallbrook, California



FIGURE

A.1

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Appendix B
Environmental Data Resources Report
(Provided on CD)

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Appendix C

Preliminary Site Assessment Boring Logs

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SAMPLE/SAMPLER TYPE GRAPHICS

-  JAR SAMPLE
-  STANDARD PENETRATION SPLIT SPOON SAMPLER (2 in. (50.8 mm.) outer diameter and 1-3/8 in. (34.9 mm.) inner diameter)

WELL MATERIAL GRAPHICS

WELL BACKFILL MATERIAL GRAPHICS

GROUND WATER GRAPHICS

-  WATER LEVEL (level where first observed)
-  WATER LEVEL (level after exploration completion)
-  WATER LEVEL (additional levels after exploration)
-  OBSERVED SEEPAGE

NOTES

- The report and graphics key are an integral part of these logs. All data and interpretations in this log are subject to the explanations and limitations stated in the report.
- Lines separating strata on the logs represent approximate boundaries only. Actual transitions may be gradual or differ from those shown.
- No warranty is provided as to the continuity of soil or rock conditions between individual sample locations.
- Logs represent general soil or rock conditions observed at the point of exploration on the date indicated.
- In general, Unified Soil Classification System designations presented on the logs were based on visual classification in the field and were modified where appropriate based on gradation and index property testing.
- Fine grained soils that plot within the hatched area on the Plasticity Chart, and coarse grained soils with between 5% and 12% passing the No. 200 sieve require dual USCS symbols, i.e., GW-GM, GP-GM, GW-GC, GP-GC, GC-GM, SW-SM, SP-SM, SW-SC, SP-SC, SC-SM.

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2487)

GRAVELS (More than half of coarse fraction is larger than the #200 sieve)	CLEAN GRAVEL WITH <5% FINES	Cu ≥ 4 and 1 ≤ Cc ≤ 3		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
		Cu < 4 and/or 1 > Cc > 3		GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
	GRAVELS WITH 5% TO 12% FINES	Cu ≥ 4 and 1 ≤ Cc ≤ 3		GW-GM	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE FINES
				GW-GC	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE CLAY FINES
		Cu < 4 and/or 1 > Cc > 3		GP-GM	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE FINES
				GP-GC	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE CLAY FINES
	GRAVELS WITH > 12% FINES			GM	SILTY GRAVELS, GRAVEL-SILT-SAND MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
				GC-GM	CLAYEY GRAVELS, GRAVEL-SAND-CLAY-SILT MIXTURES
	COARSE GRAINED SOILS (More than half of material is smaller than the #4 sieve)	CLEAN SANDS WITH <5% FINES	Cu ≥ 6 and 1 ≤ Cc ≤ 3		SW
Cu < 6 and/or 1 > Cc > 3				SP	POORLY GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE OR NO FINES
SANDS WITH 5% TO 12% FINES		Cu ≥ 6 and 1 ≤ Cc ≤ 3		SW-SM	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE FINES
				SW-SC	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE CLAY FINES
		Cu < 6 and/or 1 > Cc > 3		SP-SM	POORLY GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE FINES
				SP-SC	POORLY GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE CLAY FINES
SANDS WITH > 12% FINES				SM	SILTY SANDS, SAND-GRAVEL-SILT MIXTURES
				SC	CLAYEY SANDS, SAND-GRAVEL-CLAY MIXTURES
				SC-SM	CLAYEY SANDS, SAND-SILT-CLAY MIXTURES
FINE GRAINED SOILS (More than half of material is smaller than the #200 sieve)		SILTS AND CLAYS (Liquid Limit less than 50)			ML
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				CL-ML	INORGANIC CLAYS-SILTS OF LOW PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
	SILTS AND CLAYS (Liquid Limit greater than 50)			OL	ORGANIC SILTS & ORGANIC SILTY CLAYS OF LOW PLASTICITY
				MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILT
				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
		OH	ORGANIC CLAYS & ORGANIC SILTS OF MEDIUM-TO-HIGH PLASTICITY		



GRAPHICS KEY

Naval Weapons Station Seal Beach Detachment Fallbrook
Fallbrook, CA

PLATE

Date Started: 01/23/2015 **Date Completed:** 01/23/2015 **Location:** S53-SB01
Total Depth: 5 ft **Surface Conditions:** Top Soil
Northing: 2080083.282 **Drilling Company:** BC2
Easting: 6252477.28 **Drilling Method:** with Hand Auger to 4.8'
Surface Elevation: Not measured **Logged By:** Jake Lippman
Reviewed By: Carlos Lau

Depth (feet)	Sample Number	Sample Type	Recovery (%)	PID (ppm)	USCS	Description	Remarks
0.5			100	0.2		TOP SOIL Sandy SILT (ML): fine-grained, reddish brown, dry, medium dense, non-plastic	<p>Samples collected at: 0 - 0.5 ft., 7:45 (MS/MSD)</p> <p>No Groundwater Encountered</p> <p>The boring was terminated because of practical hand auger refusal at approximately 4.8 ft. below ground surface due to existing utilities. The exploration was backfilled with cement/bentonite grout on January 23, 2015</p>
5				20			
10							
15							
20							
25							
30							



LOG OF BORING NO. S53-SB01

Naval Weapons Station Seal Beach Detachment Fallbrook
Fallbrook, CA

PLATE

Date Started: 01/21/2015 Date Completed: 01/21/2015 Location: S53-SB02
 Total Depth: 28 ft Surface Conditions: Top Soil
 Northing: 2080100.819 Drilling Company: BC2
 Easting: 6252531.295 Drilling Method: with Hand Auger to 5' bgs then Hollow Stem Auger
 Surface Elevation: Not measured Logged By: Jake Lippman
 Reviewed By: Carlos Lau

Depth (feet)	Sample Number	Sample Type	Recovery (%)	PID (ppm)	USCS	Description	Remarks
0 - 5						TOP SOIL Sandy SILT (ML): reddish brown, fine-grained, dry, medium dense, non-plastic	Samples collected at: 3.5 - 5 ft., 13:35 8.5 - 10 ft., 13:40 18.5 - 20 ft., 14:00
5 - 10	5		25	2.0		DECOMPOSED GRANITE Silty GRAVEL (GM): brown, fine to coarse grained gravel, slightly moist, very dense	Plastic Bag (clean): 1ppm No Groundwater encountered
10 - 15	10		75	1.0		grey, dry	
15 - 20			50	1.0			
20 - 25	20		25	2.8			
25 - 30			50	3.2			The boring was terminated because of practical auger refusal at approximately 28 ft. below ground surface. The exploration was backfilled with cement/bentonite grout on January 21, 2015



LOG OF BORING NO. S53-SB02
 Naval Weaons Station Seal Beach Detachment Fallbrook
 Fallbrook, CA

PLATE
3

PLOTTED: 04/22/2015 02:56 PM BY: JCO

Date Started:	<u>01/22/2015</u>	Date Completed:	<u>01/22/2015</u>	Location:	<u>S53-SB03</u>
Total Depth:	<u>21 ft</u>	Surface Conditions:	<u>Top Soil</u>	Drilling Company:	<u>BC2</u>
Northing:	<u>2080093.825</u>	Drilling Method:	<u>with Hand Auger to 5' bgs then Hollow Stem Auger</u>		
Easting:	<u>6252503.91</u>	Logged By:	<u>Jake Lippman</u>		
Surface Elevation:	<u>Not measured</u>	Reviewed By:	<u>Carlos Lau</u>		

Depth (feet)	Sample Number	Sample Type	Recovery (%)	PID (ppm)	USCS	Description	Remarks
0.5			100	1.8		TOP SOIL	Samples collected at: 3.5 - 5 ft., 13:55 10 - 11.5 ft., 14:20 15 - 16.5 ft., 14:30 16.5 - 18.5 ft., 14:45
			75	75		Sandy SILT (ML): fine-grained, reddish brown, dry, medium dense, non-plastic	
5			75	102		Sandy SILT (ML): fine grained, brown to grey, dry, medium dense, staining, non-plastic, petroleum odor	
5			50	53		DECOMPOSED GRANITE	No Groundwater Encountered
			50	6		Silty GRAVEL (GM): fine to coarse grained gravel, black, very dense, staining	
			25	5.8			
10	11.5		75	14			
			56	4.9			
			NR				
15	16.5		75	4.5			
	18.5		100	6.5			
			NR				
20							
							The boring was terminated because of practical auger refusal at approximately 21 ft. below ground surface. The exploration was backfilled with cement/bentonite grout on January 22, 2015
25							
30							



LOG OF BORING NO. S53-SB03
 Naval Weapons Station Seal Beach Detachment Fallbrook
 Fallbrook, CA

PLATE

4

TASK ORDER NO.: CTO-071

GINT FILE: U:\jco\projects\cto Fallbrook\cto Fall Brook.gpj
 GINT TEMPLATE: PROJECTWISE:KLF_STANDARD_GINT_LIBRARY_2014.GLB [CLIENT_NAVY CLEAN]

Date Started: 01/22/2015 Date Completed: 01/22/2015 Location: S53-SB04
 Total Depth: 30 ft Surface Conditions: Top Soil
 Northing: 2080086.694 Drilling Company: BC2
 Easting: 6252486.794 Drilling Method: with Hand Auger to 5' bgs then Hollow Stem Auger
 Surface Elevation: Not measured Logged By: Jake Lippman
 Reviewed By: Carlos Lau

Depth (feet)	Sample Number	Sample Type	Recovery (%)	PID (ppm)	USCS	Description	Remarks
						TOP SOIL Sandy SILT (ML): fine-grained, reddish brown, dry, medium dense, non-plastic	Samples collected at: 3.5 - 5 ft., 10:20 8.5 - 10 ft., 10:29 18.5 - 20 ft., 11:00 26.5 - 28 ft., 11:30
5	5		25	1.0		DECOMPOSED GRANITE Silty GRAVEL (GM): fine to coarse grained gravel, brown, dry, very dense	Plastic Bag (clean): 1ppm
			25	0			
			25	0			
10	10		50	0			
			25	1.3			
			25	1.2			
			25	1.0			
15			25	1.0		brown to grey	1/23/2015 ▼ Ground water was observed with installed piezometer at approximately 14.2 ft. below ground surface 1 day after completion of drilling on January 23, 2015.
			50	1.4			
20	20		75	1.1			
			50	1.3			
			25	1.2			
			50	2.8			
25			50			saturated	
			50				1/22/2015 ▼
28	28		50	30		dry	Ground water was observed at approximately 26 ft. below ground surface during drilling.
			75	1.0		saturated	
30							The boring was terminated at approximately 30 ft. below ground surface. The exploration was backfilled with cement/bentonite grout on January 22, 2015



LOG OF BORING NO. S53-SB04
 Naval Weapons Station Seal Beach Detachment Fallbrook
 Fallbrook, CA

PLATE

5

TASK ORDER NO.: CTO-071

PLOTTED: 04/22/2015 02:56 PM BY: JCo

Date Started: 01/22/2015 Date Completed: 01/22/2015 Location: S53-SB05
 Total Depth: 30 ft Surface Conditions: Top Soil
 Northing: 2080095.939 Drilling Company: BC2
 Easting: 6252515.046 Drilling Method: with Hand Auger to 5' bgs then Hollow Stem Auger
 Surface Elevation: Not measured Logged By: Jake Lippman
 Reviewed By: Carlos Lau

Depth (feet)	Sample Number	Sample Type	Recovery (%)	PID (ppm)	USCS	Description	Remarks
						TOP SOIL Sandy SILT (ML): fine-grained, reddish brown, dry, medium dense, non-plastic	Samples collected at: 3.5 - 5 ft., 07:55 8.5 - 10 ft., 08:05 18.5 - 20 ft., 08:20 28.5 - 30 ft., 08:50
5	5		50	0.3		Sandy SILT (ML): reddish brown, dry, hard	Plastic Bag (clean): 1ppm No Groundwater Encountered
10	10		75	1		DECOMPOSED GRANITE Silty GRAVEL (GM): fine to coarse grained gravel, brown, very dense	
15			50	1.4		grey	
20	20		25	1.4			
25			25	0.9			
30	30		50	0.8			
							The boring was terminated at approximately 30 ft. below ground surface. The exploration was backfilled with cement/bentonite grout on January 22, 2015

GINT FILE: U:\jco\projects\cto Fallbrook\cto Fall Brook.gpj
 GINT TEMPLATE: PROJECTWISE:KLF_STANDARD_GINT_LIBRARY_2014.GLB [CLIENT_NAVY CLEAN]



LOG OF BORING NO. S53-SB05

Naval Weaons Station Seal Beach Detachment Fallbrook
 Fallbrook, CA

PLATE

6

TASK ORDER NO.: CTO-071

Date Started: 01/21/2015 **Date Completed:** 01/21/2015 **Location:** S53-SB06
Total Depth: 30 ft **Surface Conditions:** Top Soil
Northing: 2080025.953 **Drilling Company:** BC2
Easting: 6252532.399 **Drilling Method:** with Hand Auger to 5' bgs then Hollow Stem Auger
Surface Elevation: Not measured **Logged By:** Jake Lippman
Reviewed By: Carlos Lau

Depth (feet)	Sample Number	Sample Type	Recovery (%)	PID (ppm)	USCS	Description	Remarks
						TOP SOIL Sandy SILT (ML): fine-grained, reddish brown, dry, medium dense, non-plastic	Samples collected at: 3.5 - 5 ft., 10:00 8.5 - 10 ft., 10:15 18.5 - 20 ft., 10:40 28.5 - 30 ft., 11:10
5	5		50	3.0		Sandy SILT (ML): reddish brown, dry, hard, non-plastic	Plastic Bag (clean): 1ppm No Groundwater Encountered
10	10		50	0.5		DECOMPOSED GRANITE Silty GRAVEL (GM): fine to coarse grained gravel, brown, dry, very dense	
15			50	0			
20	20		50	1.9			
25			25	3.0			
30	30		50	0.2	grey		The boring was terminated at approximately 30 ft. below ground surface. The exploration was backfilled with cement/bentonite grout on January 21, 2015



LOG OF BORING NO. S53-SB06

Naval Weapons Station Seal Beach Detachment Fallbrook
Fallbrook, CA

PLATE

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Appendix D
Site 53 Preliminary Site Assessment Dataset

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TABLE D-1
Soil Sample Results
PSA Site 53, NAVWPNSTA SEAL Beach Detachment Fallbrook, CA

Location ID Sample ID Depth (feet) Date SDG	S53-SB01 S53-SB01-0.5 0.5 01/23/2015 15A137			S53-SB02 S53-SB02-5 5 01/21/2015 15A135			S53-SB02 S53-SB02-10 10 01/21/2015 15A135			S53-SB02 S53-SB02-20 20 01/21/2015 15A135			S53-SB03 S53-SB03-0.5 0.5 01/23/2015 15A137			S53-SB03 S53-SB03-5 5 01/22/2015 15A136			S53-SB03 S53-SB03-11.5 11.5 01/22/2015 15A136			S53-SB03 S53-SB03-16.5 16.5 01/22/2015 15A136			S53-SB03 S53-SB03-18.5 18.5 01/22/2015 15A136			S53-SB04 S53-SB04-5 5 01/22/2015 15A136								
Chemical	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason			
Total Petroleum Hydrocarbons by USEPA Method 8015B in mg/kg																																				
TPH - Kerosene	< 11	U		< 11	U		< 10	U		< 10	U		< 11	U		< 110	U		< 10	U		< 10	U		< 11	U		< 11	U		< 11	U				
TPH - Diesel	25			< 5.6	U		< 5.2	U		< 5.2	U		20			5600			15			< 5.2	U		< 5.3	U		< 5.5	U		< 5.5	U				
Volatile Organic Compounds by USEPA Method 8260B in µg/kg																																				
1,1,1,2-Tetrachloroethane	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U		< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U		< 0.92	U		< 0.92	U	
1,1,1-Trichloroethane	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U		< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U		< 0.92	U		< 0.92	U	
1,1,2,2-Tetrachloroethane	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U	19	< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U		< 0.92	U		< 0.92	U	
1,1,2-Trichloroethane	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U		< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U		< 0.92	U		< 0.92	U	
1,1-Dichloroethane	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U		< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U		< 0.92	U		< 0.92	U	
1,1-Dichloroethylene	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U		< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U		< 0.92	U		< 0.92	U	
1,1-Dichloropropene	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U		< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U		< 0.92	U		< 0.92	U	
1,2,3-Trichlorobenzene	< 1.8	U		< 2.1	U		< 2.4	U		< 2.2	U		< 1.8	U		< 1.8	U	19	< 1.8	U		< 1.9	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.8	U	
1,2,3-Trichloropropane	< 1.8	U		< 2.1	U		< 2.4	U		< 2.2	U		< 1.8	U		< 1.8	U	19	< 1.8	U		< 1.9	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.8	U	
1,2,4-Trichlorobenzene	< 1.8	U		< 2.1	U		< 2.4	U		< 2.2	U		< 1.8	U		< 1.8	U	19	< 1.8	U		< 1.9	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.8	U	
1,2,4-Trimethylbenzene	< 1.8	U		< 2.1	U		< 2.4	U		< 2.2	U		< 1.8	U		54	J	13;19	< 1.8	U		< 1.9	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.8	U	
1,2-Dibromo-3-chloropropane	< 1.8	U		< 2.1	U		< 2.4	U		< 2.2	U		< 1.8	U		< 1.8	U	19	< 1.8	U		< 1.9	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.8	U	
1,2-Dibromoethane	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U		< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U		< 0.92	U		< 0.92	U	
1,2-Dichlorobenzene	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U	19	< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U		< 0.92	U		< 0.92	U	
1,2-Dichloroethane	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U		< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U		< 0.92	U		< 0.92	U	
1,2-Dichloropropane	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U		< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U		< 0.92	U		< 0.92	U	
1,3,5-Trimethylbenzene	< 1.8	U		< 2.1	U		< 2.4	U		< 2.2	U		< 1.8	U		< 1.8	U	19	< 1.8	U		< 1.9	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.8	U	
1,3-Dichlorobenzene	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U	19	< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U		< 0.92	U		< 0.92	U	
1,3-Dichloropropane	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U		< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U		< 0.92	U		< 0.92	U	
1,4-Dichlorobenzene	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U	19	< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U		< 0.92	U		< 0.92	U	
2,2-Dichloropropane	< 1.8	U		< 2.1	U		< 2.4	U		< 2.2	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.9	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.8	U	
2-Butanone	3.6	J		2.6	J		< 5.9	U		< 5.5	U		8.6	J		7.8	J	13	< 4.4	U		< 4.6	U		< 4.6	U		< 4.6	U		< 4.6	U		< 4.6	U	
2-Chlorotoluene	< 1.8	U		< 2.1	U		< 2.4	U		< 2.2	U		< 1.8	U		< 1.8	U	19	< 1.8	U		< 1.9	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.8	U	
2-Hexanone	< 4.6	U		< 5.2	U		< 5.9	U		< 5.5	U		< 4.5	U		< 4.4	U		< 4.4	U		< 4.6	U		< 4.6	U		< 4.6	U		< 4.6	U		< 4.6	U	
4-Chlorotoluene	< 1.8	U		< 2.1	U		< 2.4	U		< 2.2	U		< 1.8	U		< 1.8	U	19	< 1.8	U		< 1.9	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.8	U	
4-Isopropyltoluene	< 1.8	U		< 2.1	U		< 2.4	U		< 2.2	U		< 1.8	U		97	J	13;19	< 1.8	U		< 1.9	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.8	U	
4-Methyl-2-pentanone	< 4.6	U		< 5.2	U		< 5.9	U		< 5.5	U		< 4.5	U		< 4.4	U		< 4.4	U		< 4.6	U		< 4.6	U		< 4.6	U		< 4.6	U		< 4.6	U	
Acetone	43			69			< 12	U	06	< 12	U	06	130			36	J	13	12			< 8.6	U	18	< 6.2	U	18	< 8.9	U	18	< 8.9	U	18			
Benzene	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U		< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U		< 0.92	U		< 0.92	U	
Bromobenzene	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U	19	< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U		< 0.92	U		< 0.92	U	
Bromochloromethane	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U		< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U		< 0.92	U		< 0.92	U	
Bromodichloromethane	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U		< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U		< 0.92	U		< 0.92	U	
Bromoform	< 1.8	U		< 2.1	U		< 2.4	U		< 2.2	U		< 1.8	U		< 1.8	U	19	< 1.8	U		< 1.9	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.8	U	
Bromomethane	< 1.8	U		< 2.1	U		< 2.4	U		< 2.2	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.9	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.8	U	
Carbon disulfide	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U		< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U		< 0.92	U		< 0.92	U	09
Carbon tetrachloride	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U		< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U		< 0.92	U		< 0.92	U	
Chlorobenzene	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U		< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U		< 0.92	U		< 0.92	U	
Chloroethane	< 1.8	U		< 2.1	U		< 2.4	U		< 2.2	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.9	U		<											

TABLE D-1
Soil Sample Results
PSA Site 53, NAVWPNSTA SEAL Beach Detachment Fallbrook, CA

Location ID Sample ID Depth (feet) Date SDG	S53-SB01 S53-SB01-0.5 0.5 01/23/2015 15A137			S53-SB02 S53-SB02-5 5 01/21/2015 15A135			S53-SB02 S53-SB02-10 10 01/21/2015 15A135			S53-SB02 S53-SB02-20 20 01/21/2015 15A135			S53-SB03 S53-SB03-0.5 0.5 01/23/2015 15A137			S53-SB03 S53-SB03-5 5 01/22/2015 15A136			S53-SB03 S53-SB03-11.5 11.5 01/22/2015 15A136			S53-SB03 S53-SB03-16.5 16.5 01/22/2015 15A136			S53-SB03 S53-SB03-18.5 18.5 01/22/2015 15A136			S53-SB04 S53-SB04-5 5 01/22/2015 15A136		
Chemical	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason
Naphthalene	< 1.8	U		< 2.1	U		< 2.4	U		< 2.2	U		< 1.8	U		12	J	13;19	< 1.8	U		< 1.9	U		< 1.8	U		< 1.8	U	
n-Butylbenzene	< 1.8	U		< 2.1	U		< 2.4	U		< 2.2	U		< 1.8	U		120	J	13;19	< 1.8	U		< 1.9	U		< 1.8	U		< 1.8	U	
o-Xylene	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		14	J	13	< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U	
Propylbenzene	< 1.8	U		< 2.1	U		< 2.4	U		< 2.2	U		< 1.8	U		15	J	13;19	< 1.8	U		< 1.9	U		< 1.8	U		< 1.8	U	
sec-Butylbenzene	< 1.8	U		< 2.1	U		< 2.4	U		< 2.2	U		< 1.8	U		56	J	13;19	< 1.8	U		< 1.9	U		< 1.8	U		< 1.8	U	
Styrene	< 1.8	U		< 2.1	U		< 2.4	U		< 2.2	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.9	U		< 1.8	U		< 1.8	U	
tert-Butyl alcohol	< 9.2	U		< 10	U		< 12	U		< 11	U		< 9.1	U		< 8.9	U		< 8.8	U		< 9.3	U		< 9.2	U		< 9.2	U	
tert-Butylbenzene	< 1.8	U		< 2.1	U		< 2.4	U		< 2.2	U		< 1.8	U		1.3	J	13;19	< 1.8	U		< 1.9	U		< 1.8	U		< 1.8	U	
Tetrachloroethylene	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U		< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U	
Toluene	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U		< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U	
trans-1,2-Dichloroethylene	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U		< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U	
trans-1,3-Dichloropropene	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U		< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U	
Trichloroethylene	< 0.92	U		< 1.0	U		< 1.2	U		< 1.1	U		< 0.91	U		< 0.89	U		< 0.88	U		< 0.93	U		< 0.92	U		< 0.92	U	
Trichlorofluoromethane	< 1.8	U		< 2.1	U		< 2.4	U		< 2.2	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.9	U		< 1.8	U		< 1.8	U	
Vinyl chloride	< 1.8	U		< 2.1	U		< 2.4	U		< 2.2	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.9	U		< 1.8	U		< 1.8	U	
Polynuclear Aromatic Hydrocarbons by USEPA Method 8270C Selected Ion Monitoring in µg/kg																														
1-Methylnaphthalene	< 2.8	U		< 2.8	U		< 2.6	U		< 2.6	U		< 2.8	U		8000			20			< 2.6	U		< 2.7	U		< 2.7	U	
2-Methylnaphthalene	< 2.8	U		< 2.8	U		< 2.6	U		< 2.6	U		< 2.8	U		140			1.7	J		< 2.6	U		< 2.7	U		< 2.7	U	
Acenaphthene	< 2.8	U		< 2.8	U		< 2.6	U		< 2.6	U		< 2.8	U		600			3.0	J		< 2.6	U		< 2.7	U		< 2.7	U	
Acenaphthylene	< 2.8	U		< 2.8	U		< 2.6	U		< 2.6	U		< 2.8	U		230			< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U	
Anthracene	< 2.8	U		< 2.8	U		< 2.6	U		< 2.6	U		< 2.8	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U	
Benzo[a]anthracene	< 2.8	U		< 2.8	U		< 2.6	U		< 2.6	U		< 2.8	U		20			< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U	
Benzo[a]pyrene	< 2.8	U		< 2.8	U		< 2.6	U		< 2.6	U		< 2.8	U		8.7	J		< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U	
Benzo[b]fluoranthene	< 2.8	U		< 2.8	U		< 2.6	U		< 2.6	U		3.1	J		9.6	J		< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U	
Benzo[g,h,i]perylene	2.0	J		< 2.8	U		< 2.6	U		< 2.6	U		< 2.8	U		7.9	J		< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U	
Benzo[k]fluoranthene	< 2.8	U		< 2.8	U		< 2.6	U		< 2.6	U		< 2.8	U		4.9	J		< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U	
Chrysene	< 2.8	U		< 2.8	U		< 2.6	U		< 2.6	U		< 2.8	U		17			< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U	
Dibenz[a,h]anthracene	< 2.8	U		< 2.8	U		< 2.6	U		< 2.6	U		< 2.8	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U	
Fluoranthene	2.0	J		< 2.8	U		< 2.6	U		< 2.6	U		3.4	J		71			< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U	
Fluorene	< 2.8	U		< 2.8	U		< 2.6	U		< 2.6	U		< 2.8	U		1600			12			< 2.6	U		< 2.7	U		< 2.7	U	
Indeno[1,2,3-c,d]pyrene	< 2.8	U		< 2.8	U		< 2.6	U		< 2.6	U		< 2.8	U		5.5	J		< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U	
Naphthalene	< 2.8	U		< 2.8	U		< 2.6	U		< 2.6	U		< 2.8	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U	
Phenanthrene	< 2.8	U		< 2.8	U		< 2.6	U		< 2.6	U		2.0	J		2300			19			< 2.6	U		< 2.7	U		< 2.7	U	
Pyrene	1.9	J		< 2.8	U		< 2.6	U		< 2.6	U		3.2	J		61			< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U	

TABLE D-1
Soil Sample Results
PSA Site 53, NAVWPNSTA SEAL Beach Detachment Fallbrook, CA

Location ID Sample ID Depth (feet) Date SDG	S53-SB04 S53-SB04-10 10 01/22/2015 15A136			S53-SB04 S53-SB04-20 20 01/22/2015 15A136			S53-SB04 S53-SB04-28 28 01/22/2015 15A136			S53-SB05 S53-SB05-5 5 01/22/2015 15A136			S53-SB05 S53-SB05-10 10 01/22/2015 15A136			S53-SB05 S53-SB05-20 20 01/22/2015 15A136			S53-SB05 S53-SB05-30 30 01/22/2015 15A136			S53-SB06 S53-SB06-5 5 01/21/2015 15A135			S53-SB06 S53-SB06-10 10 01/21/2015 15A135			S53-SB06 S53-SB06-20 20 01/21/2015 15A135			S53-SB06 S53-SB06-30 30 01/21/2015 15A135					
Chemical	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason
Total Petroleum Hydrocarbons t																																				
TPH - Kerosene	< 10	U		< 10	U		< 10	U		< 11	U		< 11	U		< 10	U		< 10	U		< 11	U		< 10	U		< 10	U		< 10	U		< 10	U	
TPH - Diesel	< 5.2	U		< 5.2	U		70			< 5.4	U		< 5.3	U		< 5.2	U		< 5.2	U		45			< 5.2	U		< 5.2	U		< 5.2	U		19		
Volatile Organic Compounds by																																				
1,1,1,2-Tetrachloroethane	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U		< 1.4	U	
1,1,1-Trichloroethane	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U		< 1.4	U	
1,1,2,2-Tetrachloroethane	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U		< 1.4	U	
1,1,2-Trichloroethane	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U		< 1.4	U	
1,1-Dichloroethane	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U		< 1.4	U	
1,1-Dichloroethylene	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U		< 1.4	U	
1,1-Dichloropropene	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U		< 1.4	U	
1,2,3-Trichlorobenzene	< 1.9	U		< 1.8	U		< 2.0	U		< 1.6	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.6	U		< 2.3	U		< 2.0	U		< 2.8	U		< 2.8	U	
1,2,3-Trichloropropane	< 1.9	U		< 1.8	U		< 2.0	U		< 1.6	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.6	U		< 2.3	U		< 2.0	U		< 2.8	U		< 2.8	U	
1,2,4-Trichlorobenzene	< 1.9	U		< 1.8	U		< 2.0	U		< 1.6	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.6	U		< 2.3	U		< 2.0	U		< 2.8	U		< 2.8	U	
1,2,4-Trimethylbenzene	< 1.9	U		< 1.8	U		< 2.0	U		< 1.6	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.6	U		< 2.3	U		< 2.0	U		< 2.8	U		< 2.8	U	
1,2-Dibromo-3-chloropropane	< 1.9	U		< 1.8	U		< 2.0	U		< 1.6	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.6	U		< 2.3	U		< 2.0	U		< 2.8	U		< 2.8	U	
1,2-Dibromoethane	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U		< 1.4	U	
1,2-Dichlorobenzene	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U		< 1.4	U	
1,2-Dichloroethane	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U		< 1.4	U	
1,2-Dichloropropane	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U		< 1.4	U	
1,3,5-Trimethylbenzene	< 1.9	U		< 1.8	U		< 2.0	U		< 1.6	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.6	U		< 2.3	U		< 2.0	U		< 2.8	U		< 2.8	U	
1,3-Dichlorobenzene	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U		< 1.4	U	
1,3-Dichloropropane	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U		< 1.4	U	
1,4-Dichlorobenzene	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U		< 1.4	U	
2,2-Dichloropropane	< 1.9	U		< 1.8	U		< 2.0	U		< 1.6	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.6	U		< 2.3	U		< 2.0	U		< 2.8	U		< 2.8	U	
2-Butanone	< 4.7	U		< 4.4	U		< 4.9	U		< 4.1	U		< 4.6	U		< 4.5	U		< 4.5	U		3.2	J		< 5.8	U		< 5.1	U		< 7.1	U		< 7.1	U	
2-Chlorotoluene	< 1.9	U		< 1.8	U		< 2.0	U		< 1.6	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.6	U		< 2.3	U		< 2.0	U		< 2.8	U		< 2.8	U	
2-Hexanone	< 4.7	U		< 4.4	U		< 4.9	U		< 4.1	U		< 4.6	U		< 4.5	U		< 4.5	U		< 4.1	U		< 5.8	U		< 5.1	U		< 7.1	U		< 7.1	U	
4-Chlorotoluene	< 1.9	U		< 1.8	U		< 2.0	U		< 1.6	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.6	U		< 2.3	U		< 2.0	U		< 2.8	U		< 2.8	U	
4-Isopropyltoluene	< 1.9	U		< 1.8	U		< 2.0	U		< 1.6	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.6	U		< 2.3	U		< 2.0	U		< 2.8	U		< 2.8	U	
4-Methyl-2-pentanone	< 4.7	U		< 4.4	U		< 4.9	U		< 4.1	U		< 4.6	U		< 4.5	U		< 4.5	U		< 4.1	U		< 5.8	U		< 5.1	U		< 7.1	U		< 7.1	U	
Acetone	< 8.9	U	18	< 6.9	U	18	< 8.4	U	18	< 18	U	18	< 13	U	18	< 4.8	U	18	< 6.0	U	18	< 34	U	06	< 10	U	06	< 7.2	U	06	< 11	U	06			
Benzene	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U		< 1.4	U	
Bromobenzene	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U		< 1.4	U	
Bromochloromethane	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U		< 1.4	U	
Bromodichloromethane	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U		< 1.4	U	
Bromoform	< 1.9	U		< 1.8	U		< 2.0	U		< 1.6	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.6	U		< 2.3	U		< 2.0	U		< 2.8	U		< 2.8	U	
Bromomethane	< 1.9	U		< 1.8	U		< 2.0	U		< 1.6	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.6	U		< 2.3	U		< 2.0	U		< 2.8	U		< 2.8	U	
Carbon disulfide	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		1.4	J		< 1.2	U		< 1.0	U		< 1.4	U		< 1.4	U	
Carbon tetrachloride	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U		< 1.4	U	
Chlorobenzene	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U		< 1.4	U	
Chloroethane	< 1.9	U		< 1.8	U		< 2.0	U		< 1.6	U		< 1.8	U		< 1.8	U																			

TABLE D-1
Soil Sample Results
PSA Site 53, NAVWPNSTA SEAL Beach Detachment Fallbrook, CA

Location ID Sample ID Depth (feet) Date SDG	S53-SB04 S53-SB04-10 10 01/22/2015 15A136			S53-SB04 S53-SB04-20 20 01/22/2015 15A136			S53-SB04 S53-SB04-28 28 01/22/2015 15A136			S53-SB05 S53-SB05-5 5 01/22/2015 15A136			S53-SB05 S53-SB05-10 10 01/22/2015 15A136			S53-SB05 S53-SB05-20 20 01/22/2015 15A136			S53-SB05 S53-SB05-30 30 01/22/2015 15A136			S53-SB06 S53-SB06-5 5 01/21/2015 15A135			S53-SB06 S53-SB06-10 10 01/21/2015 15A135			S53-SB06 S53-SB06-20 20 01/21/2015 15A135			S53-SB06 S53-SB06-30 30 01/21/2015 15A135		
Chemical	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason	Result	Q	Reason
Naphthalene	< 1.9	U		< 1.8	U		< 2.0	U		< 1.6	U		< 1.8	U		< 1.8	U		< 1.6	U		< 2.3	U		< 2.0	U		< 2.8	U				
n-Butylbenzene	< 1.9	U		< 1.8	U		< 2.0	U		< 1.6	U		< 1.8	U		< 1.8	U		< 1.6	U		< 2.3	U		< 2.0	U		< 2.8	U				
o-Xylene	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U	
Propylbenzene	< 1.9	U		< 1.8	U		< 2.0	U		< 1.6	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.6	U		< 2.3	U		< 2.0	U		< 2.8	U	
sec-Butylbenzene	< 1.9	U		< 1.8	U		< 2.0	U		< 1.6	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.6	U		< 2.3	U		< 2.0	U		< 2.8	U	
Styrene	< 1.9	U		< 1.8	U		< 2.0	U		< 1.6	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.6	U		< 2.3	U		< 2.0	U		< 2.8	U	
tert-Butyl alcohol	< 9.5	U		< 8.9	U		< 9.8	U		< 8.1	U		< 9.1	U		< 8.9	U		< 9.0	U		< 8.2	U		< 12	U		< 10	U		< 14	U	
tert-Butylbenzene	< 1.9	U		< 1.8	U		< 2.0	U		< 1.6	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.6	U		< 2.3	U		< 2.0	U		< 2.8	U	
Tetrachloroethylene	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U	
Toluene	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U	
trans-1,2-Dichloroethylene	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U	
trans-1,3-Dichloropropene	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U	
Trichloroethylene	< 0.95	U		< 0.89	U		< 0.98	U		< 0.81	U		< 0.91	U		< 0.89	U		< 0.90	U		< 0.82	U		< 1.2	U		< 1.0	U		< 1.4	U	
Trichlorofluoromethane	< 1.9	U		< 1.8	U		< 2.0	U		< 1.6	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.6	U		< 2.3	U		< 2.0	U		< 2.8	U	
Vinyl chloride	< 1.9	U		< 1.8	U		< 2.0	U		< 1.6	U		< 1.8	U		< 1.8	U		< 1.8	U		< 1.6	U		< 2.3	U		< 2.0	U		< 2.8	U	
Polynuclear Aromatic Hydrocart																																	
1-Methylnaphthalene	< 2.6	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.5	U	
2-Methylnaphthalene	< 2.6	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.5	U	
Acenaphthene	< 2.6	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.5	U	
Acenaphthylene	< 2.6	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.5	U	
Anthracene	< 2.6	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.5	U	
Benzo[a]anthracene	< 2.6	U		< 2.6	U		4.8	J		< 2.7	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.5	U	
Benzo[a]pyrene	< 2.6	U		< 2.6	U		1.9	J		< 2.7	U		< 2.7	U		< 2.6	U		< 2.6	U		1.5	J		< 2.6	U		< 2.6	U		< 2.5	U	
Benzo[b]fluoranthene	< 2.6	U		< 2.6	U		3.0	J		< 2.7	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.5	U	
Benzo[g,h,i]perylene	< 2.6	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.5	U	
Benzo[k]fluoranthene	< 2.6	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.5	U	
Chrysene	< 2.6	U		< 2.6	U		3.5	J		< 2.7	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.5	U	
Dibenz[a,h]anthracene	< 2.6	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.5	U	
Fluoranthene	< 2.6	U		< 2.6	U		7.2	J		< 2.7	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.5	U	
Fluorene	< 2.6	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.5	U	
Indeno[1,2,3-c,d]pyrene	< 2.6	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.5	U	
Naphthalene	< 2.6	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.6	U		< 2.6	U		< 2.5	U	
Phenanthrene	< 2.6	U		< 2.6	U		< 2.6	U		< 2.7	U		< 2.7	U		< 2.6	U		< 2.6	U		2.3	J		< 2.6	U		< 2.6	U		< 2.5	U	
Pyrene	< 2.6	U		< 2.6	U		7.8	J		< 2.7	U		< 2.7	U		< 2.6	U		< 2.6	U		1.8	J		< 2.6	U		< 2.6	U		< 2.5	U	

Notes:

Data Validation Qualifiers

- J - an estimated value after validation review
- R - data is not usable; rejected after validation review
- U - concentration not reported above the laboratory limit of detection value listed (i.e. < 11)
- UJ - concentration not reported above the laboratory limit of detection value listed; an estimated value after validation review

Qualification Reason Codes:

- 06 - Chemical found in the field blank sample
- 07 - Chemical found in the laboratory method blank sample
- 09 - Matrix spike/Matrix spike duplicate percent recovery outlier
- 13 - Surrogate percent recovery outlier
- 18 - Chemical found in the trip blank sample
- 19 - Internal standards percent recovery and/or retention time outlier
- 22 - Other result more technically acceptable

ID = identification number

Q = data validation qualifier

SDG = sample delivery group (lab report number)

mg/kg = milligram per kilogram

µg/kg = micrograms per kilogram

TABLE D-2

IDW Sample Results

PSA Site 53, NAVWPNSTA Seal Beach Detachment Fallbrook, CA

Location ID Sample ID Units Date SDG		IDW S53-IDW-AQ-012315 mg/L 01/23/2015 15A137A	IDW S53-IDW-AQ-012315 µg/L 01/23/2015 15A137A	IDW S53-IDW-SO-012315 mg/kg 01/23/2015 15A137A	IDW S53-IDW-SO-012315 µg/kg 01/23/2015 15A137A
Method	Chemical	Result Q	Result Q	Result Q	Result Q
SW6020A	Antimony	NA	0.585 J	0.175 J	NA
SW6020A	Arsenic	NA	1.10	1.54	NA
SW6020A	Barium	NA	92.2	187	NA
SW6020A	Beryllium	NA	0.0722 J	0.128 J	NA
SW6020A	Cadmium	NA	0.218 J	0.238 J	NA
SW6020A	Chromium	NA	15.9	23.0	NA
SW6020A	Cobalt	NA	2.42	8.71	NA
SW6020A	Copper	NA	37.7	25.2	NA
SW6020A	Lead	NA	4.34	6.29	NA
SW6020A	Molybdenum	NA	6.15	0.556	NA
SW6020A	Nickel	NA	8.42	6.71	NA
SW6020A	Selenium	NA	1.01	0.136 J	NA
SW6020A	Silver	NA	< 0.200 U	0.0856 J	NA
SW6020A	Thallium	NA	< 0.200 U	0.226 J	NA
SW6020A	Vanadium	NA	9.33	85.2	NA
SW6020A	Zinc	NA	188	47.4	NA
SW7470A	Mercury	NA	< 0.1 U	0.0154 J	NA
SW8015B	TPH as kerosene	3.5	NA	< 11 U	NA
SW8015B	TPH-Diesel Range Organics	2.1	NA	440	NA
SW8015B	TPH-gasoline range organics	< 0.10 U	NA	0.27 J	NA
SW8260B	1,1,1,2-Tetrachloroethane	NA	< 2.0 U	NA	< 0.81 U
SW8260B	1,1,1-Trichloroethane	NA	< 2.0 U	NA	< 0.81 U
SW8260B	1,1,2,2-Tetrachloroethane	NA	< 2.0 U	NA	< 0.81 U
SW8260B	1,1,2-Trichloroethane	NA	< 2.0 U	NA	< 0.81 U
SW8260B	1,1-Dichloroethane	NA	< 2.0 U	NA	< 0.81 U
SW8260B	1,1-Dichloroethylene	NA	< 2.0 U	NA	< 0.81 U
SW8260B	1,1-Dichloropropene	NA	< 2.0 U	NA	< 0.81 U
SW8260B	1,2,3-Trichlorobenzene	NA	< 3.0 U	NA	< 1.6 U
SW8260B	1,2,3-Trichloropropane	NA	< 5.0 U	NA	< 1.6 U
SW8260B	1,2,4-Trichlorobenzene	NA	< 3.0 U	NA	< 1.6 U
SW8260B	1,2,4-Trimethylbenzene	NA	< 2.0 U	NA	< 1.6 U
SW8260B	1,2-Dibromo-3-chloropropane	NA	< 5.0 U	NA	< 1.6 U
SW8260B	1,2-Dibromoethane	NA	< 2.0 U	NA	< 0.81 U
SW8260B	1,2-Dichlorobenzene	NA	< 2.0 U	NA	< 0.81 U
SW8260B	1,2-Dichloroethane	NA	< 2.0 U	NA	< 0.81 U
SW8260B	1,2-Dichloropropane	NA	< 2.0 U	NA	< 0.81 U
SW8260B	1,3,5-Trimethylbenzene	NA	< 2.0 U	NA	< 1.6 U
SW8260B	1,3-Dichlorobenzene	NA	< 2.0 U	NA	< 0.81 U
SW8260B	1,3-Dichloropropane	NA	< 2.0 U	NA	< 0.81 U
SW8260B	1,4-Dichlorobenzene	NA	< 2.0 U	NA	< 0.81 U
SW8260B	2,2-Dichloropropane	NA	< 3.0 U	NA	< 1.6 U
SW8260B	2-Butanone	NA	< 50 U	NA	3.0 J
SW8260B	2-Chlorotoluene	NA	< 2.0 U	NA	< 1.6 U
SW8260B	2-Hexanone	NA	< 50 U	NA	< 4.1 U
SW8260B	4-Chlorotoluene	NA	< 2.0 U	NA	< 1.6 U
SW8260B	4-Isopropyltoluene	NA	< 2.0 U	NA	2.6 J
SW8260B	4-Methyl-2-pentanone	NA	< 50 U	NA	< 4.1 U
SW8260B	Acetone	NA	71 J	NA	32
SW8260B	Benzene	NA	< 2.0 U	NA	< 0.81 U
SW8260B	Bromobenzene	NA	< 2.0 U	NA	< 0.81 U
SW8260B	Bromochloromethane	NA	< 2.0 U	NA	< 0.81 U
SW8260B	Bromodichloromethane	NA	< 2.0 U	NA	< 0.81 U
SW8260B	Bromoform	NA	< 3.0 U	NA	< 1.6 U
SW8260B	Bromomethane	NA	< 3.0 U	NA	< 1.6 U
SW8260B	Carbon disulfide	NA	< 5.0 U	NA	1.2 J
SW8260B	Carbon tetrachloride	NA	< 2.0 U	NA	< 0.81 U
SW8260B	Chlorobenzene	NA	< 2.0 U	NA	< 0.81 U

TABLE D-2

IDW Sample Results

PSA Site 53, NAVWPNSTA Seal Beach Detachment Fallbrook, CA

Location ID Sample ID Units Date SDG		IDW S53-IDW-AQ-012315 mg/L 01/23/2015 15A137A	IDW S53-IDW-AQ-012315 µg/L 01/23/2015 15A137A	IDW S53-IDW-SO-012315 mg/kg 01/23/2015 15A137A	IDW S53-IDW-SO-012315 µg/kg 01/23/2015 15A137A
Method	Chemical	Result Q	Result Q	Result Q	Result Q
SW8260B	Chloroethane	NA	< 3.0 U	NA	< 1.6 U
SW8260B	Chloroform	NA	< 2.0 U	NA	< 0.81 U
SW8260B	Chloromethane	NA	< 3.0 U	NA	< 1.6 U
SW8260B	cis-1,2-Dichloroethylene	NA	< 2.0 U	NA	< 0.81 U
SW8260B	cis-1,3-Dichloropropene	NA	< 2.0 U	NA	< 0.81 U
SW8260B	Dibromochloromethane	NA	< 2.0 U	NA	< 0.81 U
SW8260B	Dibromomethane	NA	< 2.0 U	NA	< 0.81 U
SW8260B	Dichlorodifluoromethane	NA	< 3.0 U	NA	< 1.6 U
SW8260B	Ethylbenzene	NA	< 2.0 U	NA	< 0.81 U
SW8260B	Hexachlorobutadiene	NA	< 3.0 U	NA	< 1.6 U
SW8260B	Isopropylbenzene	NA	< 2.0 U	NA	< 1.6 U
SW8260B	m/p-Xylene	NA	< 4.0 U	NA	< 1.6 U
SW8260B	Methyl tert-butyl ether	NA	< 2.0 U	NA	< 0.81 U
SW8260B	Methylene chloride	NA	< 10 U	NA	< 4.1 U
SW8260B	Naphthalene	NA	< 10 U	NA	3.9 J
SW8260B	n-Butylbenzene	NA	< 3.0 U	NA	3.7 J
SW8260B	o-Xylene	NA	< 2.0 U	NA	< 0.81 U
SW8260B	Propylbenzene	NA	< 2.0 U	NA	< 1.6 U
SW8260B	sec-Butylbenzene	NA	< 2.0 U	NA	1.8 J
SW8260B	Styrene	NA	< 5.0 U	NA	< 1.6 U
SW8260B	tert-Butyl alcohol	NA	< 50 U	NA	< 8.1 U
SW8260B	tert-Butylbenzene	NA	< 2.0 U	NA	< 1.6 U
SW8260B	Tetrachloroethylene	NA	< 2.0 U	NA	< 0.81 U
SW8260B	Toluene	NA	< 2.0 U	NA	< 0.81 U
SW8260B	trans-1,2-Dichloroethylene	NA	< 2.0 U	NA	< 0.81 U
SW8260B	trans-1,3-Dichloropropene	NA	< 2.0 U	NA	< 0.81 U
SW8260B	Trichloroethylene	NA	< 2.0 U	NA	< 0.81 U
SW8260B	Trichlorofluoromethane	NA	< 3.0 U	NA	< 1.6 U
SW8260B	Vinyl chloride	NA	< 2.0 U	NA	< 1.6 U
SW8270C_SIM	1-Methylnaphthalene	NA	< 0.10 U	NA	140
SW8270C_SIM	2-Methylnaphthalene	NA	< 0.10 U	NA	17
SW8270C_SIM	Acenaphthene	NA	< 0.10 U	NA	40
SW8270C_SIM	Acenaphthylene	NA	< 0.10 U	NA	20
SW8270C_SIM	Anthracene	NA	< 0.10 U	NA	9.2 J
SW8270C_SIM	Benzo[a]anthracene	NA	< 0.10 U	NA	< 2.7 U
SW8270C_SIM	Benzo[a]pyrene	NA	< 0.10 U	NA	2.0 J
SW8270C_SIM	Benzo[b]fluoranthene	NA	< 0.10 U	NA	3.9 J
SW8270C_SIM	Benzo[g,h,i]perylene	NA	< 0.10 U	NA	1.9 J
SW8270C_SIM	Benzo[k]fluoranthene	NA	< 0.10 U	NA	< 2.7 U
SW8270C_SIM	Chrysene	NA	< 0.10 U	NA	2.8 J
SW8270C_SIM	Dibenz[a,h]anthracene	NA	< 0.10 U	NA	< 2.7 U
SW8270C_SIM	Fluoranthene	NA	< 0.10 U	NA	8.8 J
SW8270C_SIM	Fluorene	NA	< 0.10 U	NA	110
SW8270C_SIM	Indeno[1,2,3-c,d]pyrene	NA	< 0.10 U	NA	< 2.7 U
SW8270C_SIM	Naphthalene	NA	0.068 J	NA	7.9 J
SW8270C_SIM	Phenanthrene	NA	< 0.10 U	NA	85
SW8270C_SIM	Pyrene	NA	< 0.10 U	NA	8.7 J

Notes:

J - indicates the result is less than the laboratory's Limit of Quantitation (LOQ) but greater than the Limit of Detection (LOD)

U - concentration not reported above the laboratory's LOD value listed (i.e. < 0.2)

NA = not analyzed or reported

SDG = sample delivery group (lab report number)

mg/L = milligram per liter

µg/L = microgram per liter

mg/kg = milligram per kilogram

µg/kg = microgram per kilogram

TABLE D-3

Field Quality Control Sample Results

PSA Site 53, NAVWPNSTA Seal Beach Detachment Fallbrook, CA

Location ID Sample ID Date SDG	FQC EB-012115 01/21/2015 15A135		FQC EB-012215 01/22/2015 15A136		FQC EB-012315 01/23/2015 15A137		FQC SB-012215 01/22/2015 15A136		FQC TB-012215 01/22/2015 15A136	
Chemical	Result Q	Reason								
Total Petroleum Hydrocarbons by USEPA Method 8015B in mg/L										
TPH - Kerosene	< 0.21	U	< 0.20	U	< 0.19	U	< 0.21	U	NA	
TPH - Diesel	< 0.10	U	< 0.10	U	< 0.095	U	< 0.10	U	NA	
Volatile Organic Compounds by USEPA Method 8260B in µg/L										
1,1,1,2-Tetrachloroethane	< 0.20	U								
1,1,1-Trichloroethane	< 0.20	U								
1,1,2,2-Tetrachloroethane	< 0.20	U								
1,1,2-Trichloroethane	< 0.20	U								
1,1-Dichloroethane	< 0.20	U								
1,1-Dichloroethylene	< 0.20	U								
1,1-Dichloropropene	< 0.20	U								
1,2,3-Trichlorobenzene	< 0.30	U								
1,2,3-Trichloropropane	< 0.50	U								
1,2,4-Trichlorobenzene	< 0.30	U								
1,2,4-Trimethylbenzene	< 0.20	U								
1,2-Dibromo-3-chloropropane	< 0.50	U								
1,2-Dibromoethane	< 0.20	U								
1,2-Dichlorobenzene	< 0.20	U								
1,2-Dichloroethane	< 0.20	U								
1,2-Dichloropropane	< 0.20	U								
1,3,5-Trimethylbenzene	< 0.20	U								
1,3-Dichlorobenzene	< 0.20	U								
1,3-Dichloropropane	< 0.20	U								
1,4-Dichlorobenzene	< 0.20	U								
2,2-Dichloropropane	< 0.30	U								
2-Butanone	< 5.0	R 05								
2-Chlorotoluene	< 0.20	U								
2-Hexanone	< 5.0	U								
4-Chlorotoluene	< 0.20	U								

TABLE D-3

Field Quality Control Sample Results

PSA Site 53, NAVWPNSTA Seal Beach Detachment Fallbrook, CA

Location ID Sample ID Date SDG	FQC EB-012115 01/21/2015 15A135		FQC EB-012215 01/22/2015 15A136		FQC EB-012315 01/23/2015 15A137		FQC SB-012215 01/22/2015 15A136		FQC TB-012215 01/22/2015 15A136	
	Result	Reason								
4-Isopropyltoluene	< 0.20	U								
4-Methyl-2-pentanone	< 5.0	U								
Acetone	6.1	J	< 3.8	UJ	< 5.0	R	< 4.0	UJ	3.1	J
Benzene	< 0.20	U								
Bromobenzene	< 0.20	U								
Bromochloromethane	< 0.20	U								
Bromodichloromethane	< 0.20	U								
Bromoform	< 0.30	U								
Bromomethane	< 0.30	U								
Carbon disulfide	< 0.50	U								
Carbon tetrachloride	< 0.20	U								
Chlorobenzene	< 0.20	U								
Chloroethane	< 0.30	U								
Chloroform	0.12	J	0.12	J	0.12	J	0.11	J	< 0.20	U
Chloromethane	< 0.30	U	0.18	J						
cis-1,2-Dichloroethylene	< 0.20	U								
cis-1,3-Dichloropropene	< 0.20	U								
Dibromochloromethane	< 0.20	U								
Dibromomethane	< 0.20	U								
Dichlorodifluoromethane	< 0.30	U								
Ethylbenzene	< 0.20	U								
Hexachlorobutadiene	< 0.30	U								
Isopropylbenzene	< 0.20	U								
m/p-Xylene	< 0.40	U								
Methyl tert-butyl ether	< 0.20	U								
Methylene chloride	< 1.0	U								
Naphthalene	< 1.0	U								
n-Butylbenzene	< 0.30	U								
o-Xylene	< 0.20	U								

TABLE D-3

Field Quality Control Sample Results

PSA Site 53, NAVWPNSTA Seal Beach Detachment Fallbrook, CA

Location ID Sample ID Date SDG	FQC EB-012115 01/21/2015 15A135		FQC EB-012215 01/22/2015 15A136		FQC EB-012315 01/23/2015 15A137		FQC SB-012215 01/22/2015 15A136		FQC TB-012215 01/22/2015 15A136			
	Chemical	Result Q	Reason	Result Q	Reason							
Propylbenzene	< 0.20	U		< 0.20	U		< 0.20	U		< 0.20	U	
sec-Butylbenzene	< 0.20	U		< 0.20	U		< 0.20	U		< 0.20	U	
Styrene	< 0.50	U		< 0.50	U		< 0.50	U		< 0.50	U	
tert-Butyl alcohol	< 5.0	R	05	< 5.0	R	05	< 5.0	R	05	< 5.0	R	05
tert-Butylbenzene	< 0.20	U		< 0.20	U		< 0.20	U		< 0.20	U	
Tetrachloroethylene	< 0.20	U		< 0.20	U		< 0.20	U		< 0.20	U	
Toluene	< 0.20	U		< 0.20	U		< 0.20	U		< 0.20	U	
trans-1,2-Dichloroethylene	< 0.20	U		< 0.20	U		< 0.20	U		< 0.20	U	
trans-1,3-Dichloropropene	< 0.20	U		< 0.20	U		< 0.20	U		< 0.20	U	
Trichloroethylene	< 0.20	U		< 0.20	U		< 0.20	U		< 0.20	U	
Trichlorofluoromethane	< 0.30	U		< 0.30	U		< 0.30	U		< 0.30	U	
Vinyl chloride	< 0.20	U		< 0.20	U		< 0.20	U		< 0.20	U	
Polynuclear Aromatic Hydrocarbons by USEPA Method 8270C Selected Ion Monitoring in µg/L												
1-Methylnaphthalene	< 0.10	U		< 0.12	U		< 0.11	U		< 0.10	U	NA
2-Methylnaphthalene	< 0.10	U		< 0.12	U		< 0.11	U		< 0.10	U	NA
Acenaphthene	< 0.10	U		< 0.12	U		< 0.11	U		< 0.10	U	NA
Acenaphthylene	< 0.10	U		< 0.12	U		< 0.11	U		< 0.10	U	NA
Anthracene	< 0.10	U		< 0.12	U		< 0.11	U		< 0.10	U	NA
Benzo[a]anthracene	< 0.10	U		< 0.12	U		< 0.11	U		< 0.10	U	NA
Benzo[a]pyrene	< 0.10	U		< 0.12	U		< 0.11	U		< 0.10	U	NA
Benzo[b]fluoranthene	< 0.10	U		< 0.12	U		< 0.11	U		< 0.10	U	NA
Benzo[g,h,i]perylene	< 0.10	U		< 0.12	U		< 0.11	U		< 0.10	U	NA
Benzo[k]fluoranthene	< 0.10	U		< 0.12	U		< 0.11	U		< 0.10	U	NA
Chrysene	< 0.10	U		< 0.12	U		< 0.11	U		< 0.10	U	NA
Dibenz[a,h]anthracene	< 0.10	U		< 0.12	U		< 0.11	U		< 0.10	U	NA
Fluoranthene	< 0.10	U		< 0.12	U		< 0.11	U		< 0.10	U	NA
Fluorene	< 0.10	U		< 0.12	U		< 0.11	U		< 0.10	U	NA
Indeno[1,2,3-c,d]pyrene	< 0.10	U		< 0.12	U		< 0.11	U		< 0.10	U	NA
Naphthalene	< 0.10	U		< 0.12	U		< 0.11	U		< 0.10	U	NA

TABLE D-3

Field Quality Control Sample Results

PSA Site 53, NAVWPNSTA Seal Beach Detachment Fallbrook, CA

Location ID Sample ID Date SDG	FQC EB-012115 01/21/2015 15A135			FQC EB-012215 01/22/2015 15A136			FQC EB-012315 01/23/2015 15A137			FQC SB-012215 01/22/2015 15A136			FQC TB-012215 01/22/2015 15A136		
Chemical	Result	Q	Reason												
Phenanthrene	< 0.10	U		< 0.12	U		< 0.11	U		< 0.10	U		NA		
Pyrene	< 0.10	U		< 0.12	U		< 0.11	U		< 0.10	U		NA		

Notes:

Data Validation Qualifiers

J - an estimated value after validation review

R - data is not usable; rejected after validation review

U - concentration not reported above the laboratory limit of detection value listed (i.e. < 0.21)

Qualification Reason Codes:

05 - Initial or continuing calibration outlier

18 - Chemical found in trip blank sample

ID = identification number

NA = not analyzed

Q = data validation qualifier

SDG = sample delivery group (lab report number)

mg/L = milligram per liter

µg/L = microgram per liter

Appendix E
Laboratory Reports

(Provided on CD)

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Appendix F Data Quality Reports

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MEC^x
12269 East Vassar Drive, Aurora, CO 80014
Phone (720) 535-5502 Fax (720) 535-7555

March 11, 2015

Renee Cohen
Email: RCohen@kleinfelder.com

Dear Renee:

Enclosed please find Revision 0 of the data validation report for CTO 0071 Naval Weapons Station Seal Beach Detachment Site 53 Fallbrook, California as follows:

Analysis	SDG		
	15A135	15A136	15A137
TPH	X	X	X
Volatiles	X	X	X
Semivolatiles	X	X	X

The specific sample identifications are listed in the Sample Identification Tables. The data packages were reviewed according to the data validation procedures referenced in the introduction of the report. Text revisions only were made to all method reference sections.

Sincerely,

Elizabeth Wessling
Quality Assurance Manager

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CTO 0071
Naval Weapons Station Seal Beach Detachment
Site 53
Fallbrook, California

Data Validation Report

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014

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Acronyms and Abbreviations

%D	percent difference
%R	percent recovery
µg/L	microgram per liter
mg/L	milligram per liter
mg/kg	milligram per kilogram
µg/kg	microgram per kilogram
4,4'-DDD	4,4'-dichlorodiphenyldichloroethane
4,4'-DDE	4,4'-dichlorodiphenyldichloroethylene
4,4'-DDT	4,4'-dichlorodiphenyltrichloroethane
BFB	bromofluorobenzene
BNA	base/neutral/acid compounds
CCB	continuing calibration blank
CCC	calibration check compound
CCV	continuing calibration verification
CLP	Contract Laboratory Program
COC	chain of custody record
CTO	contract task order
DCB	decachlorobiphenyl
DFTPP	decafluorotriphenylphosphine
DOD	Department Of Defense
DVP	data validation procedure
EPA	Environmental Protection Agency, United States
GC	gas chromatography
GC/MS	gas chromatography/mass spectrometry
ICB	initial calibration blank
ICP	inductively coupled plasma
ICS	interference check sample
ICV	initial calibration verification
IS	internal standards
LCS	laboratory control sample
MDL	method detection limit
MS	matrix spike
MSD	matrix spike duplicate
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
QC	Quality Control
QA	quality assurance
r ²	coefficient of determination
RF	response factor
RL	reporting limit
RPD	relative percent difference
RRF	relative response factor
RT	retention time
SDG	sample delivery group
SOW	statement of work
SPCC	system performance check compound
SVOC	semivolatile organic compound

TIC tentatively identified compound
TOC total organic carbon
TPH total petroleum hydrocarbons
VOC volatile organic compound

Data Qualifier Reference Table

Validation Qualifier	Validation Qualifier Definition
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.

Reason Code Reference Table

Reason Code	Reason Code Definition
01	Preparation/Analysis Holding Time
02	Sample Receipt Temperature/Sample Preservation
03	Sample Custody Protocol
04	Missing Deliverables
05	Initial Continuing Calibration
06	Field Blank Sample
07	Laboratory Blank Sample
08	Matrix Spike (MS)/ Matrix Spike Duplicate (MSD) or Matrix Duplicate (MD) Percent Recovery
09	MS/MSD or MD Relative Percent Difference (RPD)
10	Laboratory Control Sample/Laboratory Control Sample Duplicate Percent Recovery
11	Inductively Coupled Plasma (ICP) Interference Check
12	Percent Difference Between Columns
13	Surrogate Percent Recovery
14	Field Duplicate RPD
15	Furnace Quality Control
16	ICP Serial Dilution
17	Chemical Recoveries
18	Trip Blank Samples
19	Internal Standards
20	Linear Calibration Range Exceeded
21	Potential False Positive Results
22	Other Results More Technically Acceptable
23	Other

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DATA VALIDATION REPORT

CTO 0071
Naval Weapons Station Seal Beach Detachment
Site 53
Fallbrook, California

SAMPLE DELIVERY GROUP: 15A135

Prepared by

MECX
12269 East Vassar Drive
Aurora, CO 80014

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I. INTRODUCTION

Task Order Title: CTO 0071
 Contract: 1405.001H.03
 Sample Delivery Group: 15A135
 Project Manager: Carlos Lau
 Matrix: Water
 Quality Control (QC) Level: Full/Standard
 Number of Samples: 8
 Number of Reanalyses/Dilutions: 0
 Laboratory: APPL

Table 1. Sample Identification

<i>Sample Identification</i>	<i>Laboratory Identification</i>	<i>Collection Date</i>	<i>Matrix</i>	<i>Validation Level</i>	<i>Analysis Method</i>
S53-SB06-5	A135-01	01/21/2015	Soil	Standard	8015B, 8260B, 8270C
S53-SB06-10	A135-02	01/21/2015	Soil	Standard	8015B, 8260B, 8270C
S53-SB06-20	A135-03	01/21/2015	Soil	Standard	8015B, 8260B, 8270C
S53-SB06-30	A135-04	01/21/2015	Soil	Standard	8015B, 8260B, 8270C
S53-SB02-5	A135-05	01/21/2015	Soil	Standard	8015B, 8260B, 8270C
S53-SB02-10	A135-06	01/21/2015	Soil	Full	8015B, 8260B, 8270C
S53-SB02-20	A135-07	01/21/2015	Soil	Standard	8015B, 8260B, 8270C
EB-012115	A135-08	01/21/2015	Water	Standard	8015B, 8260B, 8270C

II. Sample Management

Anomalies regarding sample management were not observed, with minor exceptions listed below. The samples in this sample delivery group (SDG) were received at the laboratory within the temperature limits of <6°C and >0°C. According to the case narrative for this SDG, the samples were received intact, on ice and properly preserved, as applicable. The chains-of-custody (COCs) were signed and dated by field and laboratory personnel. The IDs on the sample labels did not exactly match the COCs for four samples: S53-SB06-5, S53-SB06-10, S53-SB06-20, and S53-SB06-30. The labels had ".0" on the end of the IDs. The samples were logged per the COC. One correction to the COC was made by overwriting the original entry and was not initialed or dated. Custody seals were intact.

III. Method Analyses

1. EPA METHOD 8015B—Total Petroleum Hydrocarbons (Extractable)

Reviewed By: L. Calvin

Date Reviewed: February 27, 2015

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *NAVFAC Pacific SOP II-A, Data Validation Procedure* (February 2007), *US Department of Defense (DoD) Quality System Manual (QSM) for Environmental Laboratories, Version 4.2* (October 2010), *Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan) Preliminary Site Assessment for Site 53 Naval Weapons Station Seal Beach Detachment, Fallbrook, California* (2014), and *EPA SW-846 Method 8015B*.

As no NAVFAC SOP or DoD QSM control limits are specified for this method, SAP control limits were utilized.

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted within seven days of collection and the soil samples were extracted within 14 days of collection. The samples were analyzed within 40 days of extraction.
- Calibration: Calibration criteria were met. Initial calibration %RSDs and ICV and bracketing CCV %Ds were within the method control limit of $\leq 20\%$.
- Blanks: The method blanks had no diesel or kerosene range detects.
- Laboratory Control Samples: Recoveries for diesel were within the SAP control limits of 60-150% for soils and 60-130% for waters. RPDs were within the control limit of $\leq 30\%$.
- Surrogate Recovery: Recoveries were within the laboratory control limits of 60-130% for soils and waters.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were not performed on a sample from this SDG. MEC^x evaluated method accuracy and precision based on LCS/LCSD results.
- Field QC Samples: MEC^x evaluated field QC samples, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. MEC^x used the remaining detects to evaluate the associated site samples. Findings associated with field QC samples are summarized below.
 - Field Blanks and Equipment Blanks: Sample SB-012215 (SDG 13A136) was identified as the source water blank and sample EB-012115 was the equipment blank associated with the site samples in this SDG. The source water blank and equipment blank had no diesel or kerosene range detects.

- Field Duplicates: This SDG had no identified field duplicate samples.
- Compound Identification: MEC^x verified compound identification for the Full validation sample and QC samples. Compound identification is not applicable for Standard validation samples. The laboratory analyzed for kerosene range C₈-C₁₈ and diesel range C₁₀-C₂₄ by Method 8015B. Though the ranges overlap, none of the samples with detects had both ranges reported; therefore, reported detects were not biased high by the overlap.
- Compound Quantification and Reported Detection Limits: MEC^x verified calculations and the sample results reported on the sample result summary against the raw data for the Full validation sample and QC samples. No transcription errors or calculation errors were noted. Sample result verification is not applicable for Standard validation samples. None of the samples required dilution. Detects reported below the LOQ were qualified as estimated (J). Nondetects are valid to the LOD.

2. EPA METHOD 8270C SIM—Polycyclic Aromatic Hydrocarbons (PAHs)

Reviewed By: L. Calvin

Date Reviewed: February 27, 2015

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *NAVFAC Pacific SOP II-A, Data Validation Procedure* (February 2007), *US Department of Defense (DoD) Quality System Manual (QSM) for Environmental Laboratories, Version 4.2* (October 2010), *Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan) Preliminary Site Assessment for Site 53 Naval Weapons Station Seal Beach Detachment, Fallbrook, California* (2014), and *EPA SW-846 Method 8270C*.

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted within seven days of collection and the soil samples were extracted within 14 days of collection. The samples were analyzed within 40 days of extraction.
- GC/MS Tuning: The DFTPP tunes met the method abundance criteria. The samples were analyzed within 12 hours of the DFTPP injection time.
- Calibration: Calibration criteria were met. Initial calibration average RRFs were ≥ 0.05 and %RSDs $\leq 15\%$ or r^2 values ≥ 0.990 . The ICV and CCV RRFs were ≥ 0.05 . ICV and CCV %Ds or % drift were $\leq 20\%$.
- Blanks: Target compounds were not detected in the method blanks.
- Laboratory Control Samples: Recoveries were within the control limits listed in the DoD QSM, and RPDs were within the control limit of $\leq 30\%$.
- Surrogate Recovery: Recoveries were within the control limits listed in the DoD QSM.

- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were not performed on a sample from this SDG. MEC^X evaluated method accuracy and precision based on LCS/LCSD results.
- Field QC Samples: MEC^X evaluated field QC samples, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. MEC^X used the remaining detects to evaluate the associated site samples. Findings associated with field QC samples are summarized below
 - Field Blanks and Equipment Blanks: Sample SB-012215 (SDG 13A136) was identified as the source water blank and sample EB-012115 was the equipment blank associated with the site samples in this SDG. The source water blank and equipment blank had no target compound detects.
 - Field Duplicates: This SDG had no identified field duplicate samples.
- Internal Standards Performance: The internal standard area counts and retention times were within the control limits established by the midpoint of the initial calibration standards: -50%/+100% for internal standard areas and ± 30 seconds for retention times.
- Compound Identification: MEC^X verified compound identification for the Full validation samples and QC samples. Compound identification is not applicable for Standard validation samples. The laboratory analyzed for 18 PAH compounds by Method 8270C SIM. No problems with target compound identification were observed in the review of the sample chromatograms, retention times, and spectra.
- Compound Quantification and Reported Detection Limits: MEC^X verified calculations and the sample results reported on the sample result summary against the raw data for the Full validation sample and QC samples. No transcription errors or calculation errors were noted. Sample result verification is not applicable for Standard validation samples. None of the samples in this SDG required dilution. Detects reported below the LOQ were qualified as estimated (J). Nondetects are valid to the LOD.
- System Performance: Review of the raw data indicated no problems with system performance.

3. EPA METHOD 8260B—Volatile Organic Compounds (VOCs)

Reviewed By: L. Calvin

Date Reviewed: February 27, 2015

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *NAVFAC Pacific SOP II-A, Data Validation Procedure* (February 2007), *US Department of Defense (DoD) Quality System Manual (QSM) for Environmental Laboratories, Version 4.2*

(October 2010), *Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan) Preliminary Site Assessment for Site 53 Naval Weapons Station Seal Beach Detachment, Fallbrook, California* (2014), and *EPA SW-846 Method 8260B*.

- **Holding Times:** Analytical holding times were met. The preserved water sample and soil samples were analyzed within 14 days of collection.
- **GC/MS Tuning:** The BFB tunes met the method abundance criteria. The samples were analyzed within 12 hours of the BFB injection time.
- **Calibration:** Most calibration criteria were met for applicable target compounds. Initial calibration average RRFs and ICV and CCV RRFs were ≥ 0.05 , with exceptions listed in the table below. The detect for acetone was qualified as estimated (J), and results for 2-butanone and tert butyl alcohol, both nondetects, were rejected (R) in the affected sample. The qualified results were assigned reason code 05. Initial calibration %RSDs were $\leq 15\%$ or r values ≥ 0.995 , and ICV and CCV %Ds or % drift affecting sample data were $\leq 20\%$.

Analyte	ICAL avg. RRF	ICV RRF	CCV RRF	Affected Sample(s)
2-butanone	0.040	0.041	0.036	EB-012115
acetone	0.024	0.024	0.024	
tert butyl alcohol	0.008	0.009	0.008	

- **Blanks:** Methylene chloride was detected below the LOQ at 2.5 $\mu\text{g}/\text{Kg}$ in the method blank associated with all soil samples; therefore, methylene chloride results detected below the LOD in the samples were qualified as nondetected (U) at the LOD, and assigned reason code 07. The method blanks had no other target compound detects above the control limits of one-half the LOQ or one-tenth the amount of any sample detect, and no common laboratory contaminants detected above the LOQ.
- **Laboratory Control Samples:** Recoveries were within the control limits listed in the DoD QSM, and RPDs were within the control limit of $\leq 30\%$.
- **Surrogate Recovery:** Recoveries were within the control limits listed in the DoD QSM.
- **Matrix Spike/Matrix Spike Duplicate:** MS/MSD analyses were not performed on a sample from this SDG. MEC^X evaluated method accuracy and precision based on LCS/LCSD results.
- **Field QC Samples:** MEC^X evaluated field QC samples, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. MEC^X used the remaining detects to evaluate the associated site samples. Findings associated with field QC samples are summarized below
 - **Trip Blanks:** This SDG had no associated trip blank.

- Field Blanks and Equipment Blanks: Sample SB-012215 (SDG 13A136) was identified as the source water blank and sample EB-012115 was the equipment blank associated with the site samples in this SDG. Both the source water blank and the equipment blank had detects below the LOQ for chloroform at 0.11 µg/L and 0.12 µg/L, respectively, and the equipment blank had a reportable detect for acetone at 6.1 µg/L. The equipment blank concentration for acetone was insufficient to qualify the result for acetone in sample S53-SB02-5. Remaining detects for acetone, all above the LOD, were qualified as nondetected (U) at the level of contamination. The qualified results were assigned reason code 06. None of the site samples had detects for chloroform. The field QC samples had no other detects above the DL.
- Field Duplicates: This SDG had no identified field duplicate samples.
- Internal Standards Performance: The internal standard area counts and retention times were within the control limits established by the midpoint of the initial calibration: -50%/+100% for internal standard areas and ±30 seconds for retention times.
- Compound Identification: MEC^X verified compound identification for the Full validation sample and QC samples. Compound identification is not applicable for Standard validation samples. The laboratory analyzed for volatile target compounds by EPA Method 8260B. No problems with target compound identification were observed in the review of the sample chromatograms, retention times, and spectra.
- Compound Quantification and Reported Detection Limits: MEC^X verified calculations and the sample results reported on the sample result summary against the raw data for the Full validation sample and QC samples. No transcription errors or calculation errors were noted. Sample result verification is not applicable for Standard validation samples. Detects reported below the LOQ were qualified as estimated (J). Nondetects are valid to the LOD.
- Tentatively Identified Compounds: TICs were not reported by the laboratory for this SDG.
- System Performance: Review of the raw data indicated no problems with system performance.

Validated Sample Result Forms: 15A135

Analysis Method SW8015B

Sample Name EB-012115

Result Type: TRG

Analysis Date: 2015/01/29

Analysis Time: 19:27:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	0.10	0.52	0.052	0.10	mg/L	U	U	
KEROSENE	TPH-KERO	0.21	1.0	0.10	0.21	mg/L	U	U	

Sample Name S53-SB02-10

Result Type: TRG

Analysis Date: 2015/01/30

Analysis Time: 09:24:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	5.2	10	2.6	5.2	mg/kg	U	U	
KEROSENE	TPH-KERO	10	21	5.2	10	mg/kg	U	U	

Sample Name S53-SB02-20

Result Type: TRG

Analysis Date: 2015/01/30

Analysis Time: 09:41:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	5.2	10	2.6	5.2	mg/kg	U	U	
KEROSENE	TPH-KERO	10	21	5.2	10	mg/kg	U	U	

Sample Name S53-SB02-5

Result Type: TRG

Analysis Date: 2015/01/30

Analysis Time: 07:58:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	5.6	11	2.8	5.6	mg/kg	U	U	
KEROSENE	TPH-KERO	11	22	5.6	11	mg/kg	U	U	

Sample Name S53-SB06-10

Result Type: TRG

Analysis Date: 2015/01/30

Analysis Time: 07:07:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	5.2	10	2.6	5.2	mg/kg	U	U	
KEROSENE	TPH-KERO	10	21	5.2	10	mg/kg	U	U	

Sample Name S53-SB06-20

Result Type: TRG

Analysis Date: 2015/01/30

Analysis Time: 07:24:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	5.2	10	2.6	5.2	mg/kg	U	U	
KEROSENE	TPH-KERO	10	21	5.2	10	mg/kg	U	U	

Analysis Method SW8015B

Sample Name S53-SB06-30 **Result Type:** TRG

Analysis Date: 2015/01/30 **Analysis Time:** 07:41:00 **Validators Initials:** LC **Validation Date:** 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	19	10	2.5	5.1	mg/kg			
KEROSENE	TPH-KERO	10	20	5.1	10	mg/kg	U	U	

Sample Name S53-SB06-5 **Result Type:** TRG

Analysis Date: 2015/01/30 **Analysis Time:** 08:15:00 **Validators Initials:** LC **Validation Date:** 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	45	11	2.7	5.5	mg/kg			
KEROSENE	TPH-KERO	11	22	5.5	11	mg/kg	U	U	

Analysis Method SW8260B

Sample Name EB-012115

Result Type: TRG

Analysis Date: 2015/01/28

Analysis Time: 20:02:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1,1-TRICHLOROETHANE	71-55-6	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.20	1.0	0.11	0.20	ug/L	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1-DICHLOROETHANE	75-34-3	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1-DICHLOROETHENE	75-35-4	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1-DICHLOROPROPENE	563-58-6	0.20	1.0	0.10	0.20	ug/L	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	0.30	1.0	0.15	0.30	ug/L	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	0.50	2.0	0.25	0.50	ug/L	U	U	
1,2,4-TRICHLOROBENZENE	120-82-1	0.30	1.0	0.15	0.30	ug/L	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	0.20	1.0	0.11	0.20	ug/L	U	U	
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	0.50	2.0	0.25	0.50	ug/L	U	U	
1,2-DIBROMOETHANE	106-93-4	0.20	1.0	0.10	0.20	ug/L	U	U	
1,2-DICHLOROBENZENE	95-50-1	0.20	1.0	0.10	0.20	ug/L	U	U	
1,2-DICHLOROETHANE	107-06-2	0.20	1.0	0.10	0.20	ug/L	U	U	
1,2-DICHLOROPROPANE	78-87-5	0.20	1.0	0.10	0.20	ug/L	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	0.20	1.0	0.13	0.20	ug/L	U	U	
1,3-DICHLOROBENZENE	541-73-1	0.20	1.0	0.11	0.20	ug/L	U	U	
1,3-DICHLOROPROPANE	142-28-9	0.20	1.0	0.10	0.20	ug/L	U	U	
1,4-DICHLOROBENZENE	106-46-7	0.20	1.0	0.10	0.20	ug/L	U	U	
2,2-DICHLOROPROPANE	594-20-7	0.30	1.0	0.16	0.30	ug/L	U	U	
2-BUTANONE (MEK)	78-93-3	5.0	10	2.0	5.0	ug/L	U	R	05
2-CHLOROTOLUENE	95-49-8	0.20	1.0	0.12	0.20	ug/L	U	U	
2-HEXANONE	591-78-6	5.0	10	2.3	5.0	ug/L	U	U	
4-CHLOROTOLUENE	106-43-4	0.20	1.0	0.11	0.20	ug/L	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	5.0	10	2.1	5.0	ug/L	U	U	
ACETONE	67-64-1	6.1	10	2.6	5.0	ug/L	J	J	05
BENZENE	71-43-2	0.20	1.0	0.10	0.20	ug/L	U	U	
BROMOBENZENE	108-86-1	0.20	1.0	0.10	0.20	ug/L	U	U	
BROMOCHLOROMETHANE	74-97-5	0.20	1.0	0.11	0.20	ug/L	U	U	
BROMODICHLOROMETHANE	75-27-4	0.20	1.0	0.10	0.20	ug/L	U	U	
BROMOFORM	75-25-2	0.30	1.0	0.15	0.30	ug/L	U	U	
BROMOMETHANE	74-83-9	0.30	1.0	0.16	0.30	ug/L	U	U	
CARBON DISULFIDE	75-15-0	0.50	1.0	0.25	0.50	ug/L	U	U	
CARBON TETRACHLORIDE	56-23-5	0.20	1.0	0.10	0.20	ug/L	U	U	
CHLOROBENZENE	108-90-7	0.20	1.0	0.10	0.20	ug/L	U	U	
CHLOROETHANE	75-00-3	0.30	1.0	0.27	0.30	ug/L	U	U	
CHLOROFORM	67-66-3	0.12	1.0	0.10	0.20	ug/L	J	J	
CHLOROMETHANE	74-87-3	0.30	1.0	0.15	0.30	ug/L	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	0.20	1.0	0.10	0.20	ug/L	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.20	1.0	0.10	0.20	ug/L	U	U	
DIBROMOCHLOROMETHANE	124-48-1	0.20	1.0	0.10	0.20	ug/L	U	U	
DIBROMOMETHANE	74-95-3	0.20	1.0	0.10	0.20	ug/L	U	U	
DICHLORODIFLUOROMETHANE	75-71-8	0.30	1.0	0.15	0.30	ug/L	U	U	

Analysis Method *SW8260B*

ETHYLBENZENE	100-41-4	0.20	1.0	0.10	0.20	ug/L	U	U
HEXACHLOROBUTADIENE	87-68-3	0.30	1.0	0.22	0.30	ug/L	U	U
ISOPROPYL BENZENE	98-82-8	0.20	1.0	0.10	0.20	ug/L	U	U
M,P-XYLENES	MP-XYL	0.40	2.0	0.21	0.40	ug/L	U	U
METHYLENE CHLORIDE	75-09-2	1.0	2.0	0.50	1.0	ug/L	U	U
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.20	1.0	0.13	0.20	ug/L	U	U
NAPHTHALENE	91-20-3	1.0	2.0	0.50	1.0	ug/L	U	U
N-BUTYLBENZENE	104-51-8	0.30	1.0	0.17	0.30	ug/L	U	U
N-PROPYLBENZENE	103-65-1	0.20	1.0	0.13	0.20	ug/L	U	U
O-XYLENE	95-47-6	0.20	1.0	0.10	0.20	ug/L	U	U
P-ISOPROPYLTOLUENE	99-87-6	0.20	1.0	0.14	0.20	ug/L	U	U
SEC-BUTYLBENZENE	135-98-8	0.20	1.0	0.13	0.20	ug/L	U	U
STYRENE	100-42-5	0.50	1.0	0.25	0.50	ug/L	U	U
TERT BUTYL ALCOHOL	75-65-0	5.0	10	2.5	5.0	ug/L	U	R 05
TERT-BUTYLBENZENE	98-06-6	0.20	1.0	0.13	0.20	ug/L	U	U
TETRACHLOROETHENE	127-18-4	0.20	1.0	0.15	0.20	ug/L	U	U
TOLUENE	108-88-3	0.20	1.0	0.10	0.20	ug/L	U	U
TRANS-1,2- DICHLOROETHENE	156-60-5	0.20	1.0	0.10	0.20	ug/L	U	U
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.20	1.0	0.11	0.20	ug/L	U	U
TRICHLOROETHENE	79-01-6	0.20	1.0	0.10	0.20	ug/L	U	U
TRICHLOROFLUOROMETHAN E	75-69-4	0.30	1.0	0.15	0.30	ug/L	U	U
VINYL CHLORIDE	75-01-4	0.20	1.0	0.12	0.20	ug/L	U	U

Analysis Method SW8260B

Sample Name S53-SB02-10

Result Type: TRG

Analysis Date: 2015/02/03

Analysis Time: 19:19:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	1.2	5.9	0.59	1.2	ug/kg	U	U	
1,1,1-TRICHLOROETHANE	71-55-6	1.2	5.9	0.59	1.2	ug/kg	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	1.2	5.9	0.59	1.2	ug/kg	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	1.2	5.9	0.59	1.2	ug/kg	U	U	
1,1-DICHLOROETHANE	75-34-3	1.2	5.9	0.59	1.2	ug/kg	U	U	
1,1-DICHLOROETHENE	75-35-4	1.2	5.9	0.59	1.2	ug/kg	U	U	
1,1-DICHLOROPROPENE	563-58-6	1.2	5.9	0.59	1.2	ug/kg	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	2.4	5.9	1.2	2.4	ug/kg	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	2.4	5.9	1.2	2.4	ug/kg	U	U	
1,2,4-TRICHLOROBENZENE	120-82-1	2.4	5.9	1.2	2.4	ug/kg	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	2.4	5.9	0.65	2.4	ug/kg	U	U	
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	2.4	5.9	1.2	2.4	ug/kg	U	U	
1,2-DIBROMOETHANE	106-93-4	1.2	5.9	0.59	1.2	ug/kg	U	U	
1,2-DICHLOROBENZENE	95-50-1	1.2	5.9	0.59	1.2	ug/kg	U	U	
1,2-DICHLOROETHANE	107-06-2	1.2	5.9	0.59	1.2	ug/kg	U	U	
1,2-DICHLOROPROPANE	78-87-5	1.2	5.9	0.59	1.2	ug/kg	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	2.4	5.9	0.70	2.4	ug/kg	U	U	
1,3-DICHLOROBENZENE	541-73-1	1.2	5.9	0.62	1.2	ug/kg	U	U	
1,3-DICHLOROPROPANE	142-28-9	1.2	5.9	0.59	1.2	ug/kg	U	U	
1,4-DICHLOROBENZENE	106-46-7	1.2	5.9	0.59	1.2	ug/kg	U	U	
2,2-DICHLOROPROPANE	594-20-7	2.4	5.9	1.2	2.4	ug/kg	U	U	
2-BUTANONE (MEK)	78-93-3	5.9	12	3.0	5.9	ug/kg	U	U	
2-CHLOROTOLUENE	95-49-8	2.4	5.9	0.97	2.4	ug/kg	U	U	
2-HEXANONE	591-78-6	5.9	12	3.4	5.9	ug/kg	U	U	
4-CHLOROTOLUENE	106-43-4	2.4	5.9	0.79	2.4	ug/kg	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	5.9	12	3.3	5.9	ug/kg	U	U	
ACETONE	67-64-1	12	12	3.7	5.9	ug/kg		U	06
BENZENE	71-43-2	1.2	5.9	0.59	1.2	ug/kg	U	U	
BROMOBENZENE	108-86-1	1.2	5.9	0.59	1.2	ug/kg	U	U	
BROMOCHLOROMETHANE	74-97-5	1.2	5.9	0.59	1.2	ug/kg	U	U	
BROMODICHLOROMETHANE	75-27-4	1.2	5.9	0.59	1.2	ug/kg	U	U	
BROMOFORM	75-25-2	2.4	5.9	1.2	2.4	ug/kg	U	U	
BROMOMETHANE	74-83-9	2.4	12	2.1	2.4	ug/kg	U	U	
CARBON DISULFIDE	75-15-0	1.2	5.9	0.59	1.2	ug/kg	U	U	
CARBON TETRACHLORIDE	56-23-5	1.2	5.9	0.64	1.2	ug/kg	U	U	
CHLOROBENZENE	108-90-7	1.2	5.9	0.59	1.2	ug/kg	U	U	
CHLOROETHANE	75-00-3	2.4	5.9	1.5	2.4	ug/kg	U	U	
CHLOROFORM	67-66-3	1.2	5.9	0.59	1.2	ug/kg	U	U	
CHLOROMETHANE	74-87-3	2.4	5.9	1.2	2.4	ug/kg	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	1.2	5.9	0.59	1.2	ug/kg	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	1.2	5.9	0.59	1.2	ug/kg	U	U	
DIBROMOCHLOROMETHANE	124-48-1	1.2	5.9	0.59	1.2	ug/kg	U	U	
DIBROMOMETHANE	74-95-3	1.2	5.9	0.59	1.2	ug/kg	U	U	
DICHLORODIFLUOROMETHANE	75-71-8	2.4	5.9	1.4	2.4	ug/kg	U	U	

Analysis Method *SW8260B*

ETHYLBENZENE	100-41-4	1.2	5.9	0.59	1.2	ug/kg	U	U
HEXACHLOROBUTADIENE	87-68-3	2.4	5.9	1.2	2.4	ug/kg	U	U
ISOPROPYL BENZENE	98-82-8	2.4	5.9	0.76	2.4	ug/kg	U	U
M,P-XYLENES	MP-XYL	2.4	12	1.2	2.4	ug/kg	U	U
METHYLENE CHLORIDE	75-09-2	3.2	12	1.2	5.9	ug/kg	J	U 07
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	1.2	5.9	0.59	1.2	ug/kg	U	U
NAPHTHALENE	91-20-3	2.4	12	1.2	2.4	ug/kg	U	U
N-BUTYLBENZENE	104-51-8	2.4	5.9	0.83	2.4	ug/kg	U	U
N-PROPYLBENZENE	103-65-1	2.4	5.9	0.77	2.4	ug/kg	U	U
O-XYLENE	95-47-6	1.2	5.9	0.59	1.2	ug/kg	U	U
P-ISOPROPYLTOLUENE	99-87-6	2.4	5.9	0.74	2.4	ug/kg	U	U
SEC-BUTYLBENZENE	135-98-8	2.4	5.9	0.79	2.4	ug/kg	U	U
STYRENE	100-42-5	2.4	5.9	1.2	2.4	ug/kg	U	U
TERT BUTYL ALCOHOL	75-65-0	12	24	11	12	ug/kg	U	U
TERT-BUTYLBENZENE	98-06-6	2.4	5.9	0.74	2.4	ug/kg	U	U
TETRACHLOROETHENE	127-18-4	1.2	5.9	0.59	1.2	ug/kg	U	U
TOLUENE	108-88-3	1.2	5.9	0.59	1.2	ug/kg	U	U
TRANS-1,2- DICHLOROETHENE	156-60-5	1.2	5.9	0.59	1.2	ug/kg	U	U
TRANS-1,3- DICHLOROPROPENE	10061-02-6	1.2	5.9	0.59	1.2	ug/kg	U	U
TRICHLOROETHENE	79-01-6	1.2	5.9	0.59	1.2	ug/kg	U	U
TRICHLOROFLUOROMETHAN E	75-69-4	2.4	5.9	1.3	2.4	ug/kg	U	U
VINYL CHLORIDE	75-01-4	2.4	5.9	1.7	2.4	ug/kg	U	U

Analysis Method SW8260B

Sample Name S53-SB02-20

Result Type: TRG

Analysis Date: 2015/02/03

Analysis Time: 19:57:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	1.1	5.5	0.55	1.1	ug/kg	U	U	
1,1,1-TRICHLOROETHANE	71-55-6	1.1	5.5	0.55	1.1	ug/kg	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	1.1	5.5	0.55	1.1	ug/kg	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	1.1	5.5	0.55	1.1	ug/kg	U	U	
1,1-DICHLOROETHANE	75-34-3	1.1	5.5	0.55	1.1	ug/kg	U	U	
1,1-DICHLOROETHENE	75-35-4	1.1	5.5	0.55	1.1	ug/kg	U	U	
1,1-DICHLOROPROPENE	563-58-6	1.1	5.5	0.55	1.1	ug/kg	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	2.2	5.5	1.1	2.2	ug/kg	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	2.2	5.5	1.1	2.2	ug/kg	U	U	
1,2,4-TRICHLOROBENZENE	120-82-1	2.2	5.5	1.1	2.2	ug/kg	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	2.2	5.5	0.61	2.2	ug/kg	U	U	
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	2.2	5.5	1.1	2.2	ug/kg	U	U	
1,2-DIBROMOETHANE	106-93-4	1.1	5.5	0.55	1.1	ug/kg	U	U	
1,2-DICHLOROBENZENE	95-50-1	1.1	5.5	0.55	1.1	ug/kg	U	U	
1,2-DICHLOROETHANE	107-06-2	1.1	5.5	0.55	1.1	ug/kg	U	U	
1,2-DICHLOROPROPANE	78-87-5	1.1	5.5	0.55	1.1	ug/kg	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	2.2	5.5	0.65	2.2	ug/kg	U	U	
1,3-DICHLOROBENZENE	541-73-1	1.1	5.5	0.58	1.1	ug/kg	U	U	
1,3-DICHLOROPROPANE	142-28-9	1.1	5.5	0.55	1.1	ug/kg	U	U	
1,4-DICHLOROBENZENE	106-46-7	1.1	5.5	0.55	1.1	ug/kg	U	U	
2,2-DICHLOROPROPANE	594-20-7	2.2	5.5	1.1	2.2	ug/kg	U	U	
2-BUTANONE (MEK)	78-93-3	5.5	11	2.8	5.5	ug/kg	U	U	
2-CHLOROTOLUENE	95-49-8	2.2	5.5	0.91	2.2	ug/kg	U	U	
2-HEXANONE	591-78-6	5.5	11	3.2	5.5	ug/kg	U	U	
4-CHLOROTOLUENE	106-43-4	2.2	5.5	0.74	2.2	ug/kg	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	5.5	11	3.1	5.5	ug/kg	U	U	
ACETONE	67-64-1	12	11	3.4	5.5	ug/kg		U	06
BENZENE	71-43-2	1.1	5.5	0.55	1.1	ug/kg	U	U	
BROMOBENZENE	108-86-1	1.1	5.5	0.55	1.1	ug/kg	U	U	
BROMOCHLOROMETHANE	74-97-5	1.1	5.5	0.55	1.1	ug/kg	U	U	
BROMODICHLOROMETHANE	75-27-4	1.1	5.5	0.55	1.1	ug/kg	U	U	
BROMOFORM	75-25-2	2.2	5.5	1.1	2.2	ug/kg	U	U	
BROMOMETHANE	74-83-9	2.2	11	2.0	2.2	ug/kg	U	U	
CARBON DISULFIDE	75-15-0	1.1	5.5	0.55	1.1	ug/kg	U	U	
CARBON TETRACHLORIDE	56-23-5	1.1	5.5	0.60	1.1	ug/kg	U	U	
CHLOROBENZENE	108-90-7	1.1	5.5	0.55	1.1	ug/kg	U	U	
CHLOROETHANE	75-00-3	2.2	5.5	1.4	2.2	ug/kg	U	U	
CHLOROFORM	67-66-3	1.1	5.5	0.55	1.1	ug/kg	U	U	
CHLOROMETHANE	74-87-3	2.2	5.5	1.1	2.2	ug/kg	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	1.1	5.5	0.55	1.1	ug/kg	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	1.1	5.5	0.55	1.1	ug/kg	U	U	
DIBROMOCHLOROMETHANE	124-48-1	1.1	5.5	0.55	1.1	ug/kg	U	U	
DIBROMOMETHANE	74-95-3	1.1	5.5	0.55	1.1	ug/kg	U	U	
DICHLORODIFLUOROMETHANE	75-71-8	2.2	5.5	1.3	2.2	ug/kg	U	U	

Analysis Method *SW8260B*

ETHYLBENZENE	100-41-4	1.1	5.5	0.55	1.1	ug/kg	U	U
HEXACHLOROBUTADIENE	87-68-3	2.2	5.5	1.1	2.2	ug/kg	U	U
ISOPROPYL BENZENE	98-82-8	2.2	5.5	0.71	2.2	ug/kg	U	U
M,P-XYLENES	MP-XYL	2.2	11	1.1	2.2	ug/kg	U	U
METHYLENE CHLORIDE	75-09-2	1.7	11	1.1	5.5	ug/kg	J	U 07
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	1.1	5.5	0.55	1.1	ug/kg	U	U
NAPHTHALENE	91-20-3	2.2	11	1.1	2.2	ug/kg	U	U
N-BUTYLBENZENE	104-51-8	2.2	5.5	0.78	2.2	ug/kg	U	U
N-PROPYLBENZENE	103-65-1	2.2	5.5	0.72	2.2	ug/kg	U	U
O-XYLENE	95-47-6	1.1	5.5	0.55	1.1	ug/kg	U	U
P-ISOPROPYLTOLUENE	99-87-6	2.2	5.5	0.69	2.2	ug/kg	U	U
SEC-BUTYLBENZENE	135-98-8	2.2	5.5	0.74	2.2	ug/kg	U	U
STYRENE	100-42-5	2.2	5.5	1.1	2.2	ug/kg	U	U
TERT BUTYL ALCOHOL	75-65-0	11	22	10	11	ug/kg	U	U
TERT-BUTYLBENZENE	98-06-6	2.2	5.5	0.69	2.2	ug/kg	U	U
TETRACHLOROETHENE	127-18-4	1.1	5.5	0.55	1.1	ug/kg	U	U
TOLUENE	108-88-3	1.1	5.5	0.55	1.1	ug/kg	U	U
TRANS-1,2- DICHLOROETHENE	156-60-5	1.1	5.5	0.55	1.1	ug/kg	U	U
TRANS-1,3- DICHLOROPROPENE	10061-02-6	1.1	5.5	0.55	1.1	ug/kg	U	U
TRICHLOROETHENE	79-01-6	1.1	5.5	0.55	1.1	ug/kg	U	U
TRICHLOROFLUOROMETHAN E	75-69-4	2.2	5.5	1.2	2.2	ug/kg	U	U
VINYL CHLORIDE	75-01-4	2.2	5.5	1.6	2.2	ug/kg	U	U

Analysis Method SW8260B

Sample Name S53-SB02-5

Result Type: TRG

Analysis Date: 2015/02/03

Analysis Time: 18:46:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	1.0	5.2	0.52	1.0	ug/kg	U	U	
1,1,1-TRICHLOROETHANE	71-55-6	1.0	5.2	0.52	1.0	ug/kg	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	1.0	5.2	0.52	1.0	ug/kg	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	1.0	5.2	0.52	1.0	ug/kg	U	U	
1,1-DICHLOROETHANE	75-34-3	1.0	5.2	0.52	1.0	ug/kg	U	U	
1,1-DICHLOROETHENE	75-35-4	1.0	5.2	0.52	1.0	ug/kg	U	U	
1,1-DICHLOROPROPENE	563-58-6	1.0	5.2	0.52	1.0	ug/kg	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	2.1	5.2	1.0	2.1	ug/kg	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	2.1	5.2	1.0	2.1	ug/kg	U	U	
1,2,4-TRICHLOROBENZENE	120-82-1	2.1	5.2	1.0	2.1	ug/kg	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	2.1	5.2	0.58	2.1	ug/kg	U	U	
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	2.1	5.2	1.0	2.1	ug/kg	U	U	
1,2-DIBROMOETHANE	106-93-4	1.0	5.2	0.52	1.0	ug/kg	U	U	
1,2-DICHLOROBENZENE	95-50-1	1.0	5.2	0.52	1.0	ug/kg	U	U	
1,2-DICHLOROETHANE	107-06-2	1.0	5.2	0.52	1.0	ug/kg	U	U	
1,2-DICHLOROPROPANE	78-87-5	1.0	5.2	0.52	1.0	ug/kg	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	2.1	5.2	0.62	2.1	ug/kg	U	U	
1,3-DICHLOROBENZENE	541-73-1	1.0	5.2	0.54	1.0	ug/kg	U	U	
1,3-DICHLOROPROPANE	142-28-9	1.0	5.2	0.52	1.0	ug/kg	U	U	
1,4-DICHLOROBENZENE	106-46-7	1.0	5.2	0.52	1.0	ug/kg	U	U	
2,2-DICHLOROPROPANE	594-20-7	2.1	5.2	1.0	2.1	ug/kg	U	U	
2-BUTANONE (MEK)	78-93-3	2.6	10	2.6	5.2	ug/kg	J	J	
2-CHLOROTOLUENE	95-49-8	2.1	5.2	0.86	2.1	ug/kg	U	U	
2-HEXANONE	591-78-6	5.2	10	3.0	5.2	ug/kg	U	U	
4-CHLOROTOLUENE	106-43-4	2.1	5.2	0.70	2.1	ug/kg	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	5.2	10	2.9	5.2	ug/kg	U	U	
ACETONE	67-64-1	69	10	3.2	5.2	ug/kg			
BENZENE	71-43-2	1.0	5.2	0.52	1.0	ug/kg	U	U	
BROMOBENZENE	108-86-1	1.0	5.2	0.52	1.0	ug/kg	U	U	
BROMOCHLOROMETHANE	74-97-5	1.0	5.2	0.52	1.0	ug/kg	U	U	
BROMODICHLOROMETHANE	75-27-4	1.0	5.2	0.52	1.0	ug/kg	U	U	
BROMOFORM	75-25-2	2.1	5.2	1.0	2.1	ug/kg	U	U	
BROMOMETHANE	74-83-9	2.1	10	1.9	2.1	ug/kg	U	U	
CARBON DISULFIDE	75-15-0	1.0	5.2	0.52	1.0	ug/kg	U	U	
CARBON TETRACHLORIDE	56-23-5	1.0	5.2	0.57	1.0	ug/kg	U	U	
CHLOROBENZENE	108-90-7	1.0	5.2	0.52	1.0	ug/kg	U	U	
CHLOROETHANE	75-00-3	2.1	5.2	1.4	2.1	ug/kg	U	U	
CHLOROFORM	67-66-3	1.0	5.2	0.52	1.0	ug/kg	U	U	
CHLOROMETHANE	74-87-3	2.1	5.2	1.0	2.1	ug/kg	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	1.0	5.2	0.52	1.0	ug/kg	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	1.0	5.2	0.52	1.0	ug/kg	U	U	
DIBROMOCHLOROMETHANE	124-48-1	1.0	5.2	0.52	1.0	ug/kg	U	U	
DIBROMOMETHANE	74-95-3	1.0	5.2	0.52	1.0	ug/kg	U	U	
DICHLORODIFLUOROMETHANE	75-71-8	2.1	5.2	1.3	2.1	ug/kg	U	U	

Analysis Method *SW8260B*

ETHYLBENZENE	100-41-4	1.0	5.2	0.52	1.0	ug/kg	U	U
HEXACHLOROBUTADIENE	87-68-3	2.1	5.2	1.0	2.1	ug/kg	U	U
ISOPROPYL BENZENE	98-82-8	2.1	5.2	0.67	2.1	ug/kg	U	U
M,P-XYLENES	MP-XYL	2.1	10	1.0	2.1	ug/kg	U	U
METHYLENE CHLORIDE	75-09-2	1.7	10	1.0	5.2	ug/kg	J	U 07
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	1.0	5.2	0.52	1.0	ug/kg	U	U
NAPHTHALENE	91-20-3	2.1	10	1.0	2.1	ug/kg	U	U
N-BUTYLBENZENE	104-51-8	2.1	5.2	0.73	2.1	ug/kg	U	U
N-PROPYLBENZENE	103-65-1	2.1	5.2	0.68	2.1	ug/kg	U	U
O-XYLENE	95-47-6	1.0	5.2	0.52	1.0	ug/kg	U	U
P-ISOPROPYLTOLUENE	99-87-6	2.1	5.2	0.65	2.1	ug/kg	U	U
SEC-BUTYLBENZENE	135-98-8	2.1	5.2	0.70	2.1	ug/kg	U	U
STYRENE	100-42-5	2.1	5.2	1.0	2.1	ug/kg	U	U
TERT BUTYL ALCOHOL	75-65-0	10	21	9.6	10	ug/kg	U	U
TERT-BUTYLBENZENE	98-06-6	2.1	5.2	0.65	2.1	ug/kg	U	U
TETRACHLOROETHENE	127-18-4	1.0	5.2	0.52	1.0	ug/kg	U	U
TOLUENE	108-88-3	1.0	5.2	0.52	1.0	ug/kg	U	U
TRANS-1,2- DICHLOROETHENE	156-60-5	1.0	5.2	0.52	1.0	ug/kg	U	U
TRANS-1,3- DICHLOROPROPENE	10061-02-6	1.0	5.2	0.52	1.0	ug/kg	U	U
TRICHLOROETHENE	79-01-6	1.0	5.2	0.52	1.0	ug/kg	U	U
TRICHLOROFLUOROMETHAN E	75-69-4	2.1	5.2	1.2	2.1	ug/kg	U	U
VINYL CHLORIDE	75-01-4	2.1	5.2	1.5	2.1	ug/kg	U	U

Analysis Method SW8260B

Sample Name S53-SB06-10

Result Type: TRG

Analysis Date: 2015/02/03

Analysis Time: 16:59:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	1.2	5.8	0.58	1.2	ug/kg	U	U	
1,1,1-TRICHLOROETHANE	71-55-6	1.2	5.8	0.58	1.2	ug/kg	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	1.2	5.8	0.58	1.2	ug/kg	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	1.2	5.8	0.58	1.2	ug/kg	U	U	
1,1-DICHLOROETHANE	75-34-3	1.2	5.8	0.58	1.2	ug/kg	U	U	
1,1-DICHLOROETHENE	75-35-4	1.2	5.8	0.58	1.2	ug/kg	U	U	
1,1-DICHLOROPROPENE	563-58-6	1.2	5.8	0.58	1.2	ug/kg	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	2.3	5.8	1.2	2.3	ug/kg	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	2.3	5.8	1.2	2.3	ug/kg	U	U	
1,2,4-TRICHLOROBENZENE	120-82-1	2.3	5.8	1.2	2.3	ug/kg	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	2.3	5.8	0.64	2.3	ug/kg	U	U	
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	2.3	5.8	1.2	2.3	ug/kg	U	U	
1,2-DIBROMOETHANE	106-93-4	1.2	5.8	0.58	1.2	ug/kg	U	U	
1,2-DICHLOROBENZENE	95-50-1	1.2	5.8	0.58	1.2	ug/kg	U	U	
1,2-DICHLOROETHANE	107-06-2	1.2	5.8	0.58	1.2	ug/kg	U	U	
1,2-DICHLOROPROPANE	78-87-5	1.2	5.8	0.58	1.2	ug/kg	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	2.3	5.8	0.69	2.3	ug/kg	U	U	
1,3-DICHLOROBENZENE	541-73-1	1.2	5.8	0.60	1.2	ug/kg	U	U	
1,3-DICHLOROPROPANE	142-28-9	1.2	5.8	0.58	1.2	ug/kg	U	U	
1,4-DICHLOROBENZENE	106-46-7	1.2	5.8	0.58	1.2	ug/kg	U	U	
2,2-DICHLOROPROPANE	594-20-7	2.3	5.8	1.2	2.3	ug/kg	U	U	
2-BUTANONE (MEK)	78-93-3	5.8	12	2.9	5.8	ug/kg	U	U	
2-CHLOROTOLUENE	95-49-8	2.3	5.8	0.95	2.3	ug/kg	U	U	
2-HEXANONE	591-78-6	5.8	12	3.4	5.8	ug/kg	U	U	
4-CHLOROTOLUENE	106-43-4	2.3	5.8	0.78	2.3	ug/kg	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	5.8	12	3.3	5.8	ug/kg	U	U	
ACETONE	67-64-1	10	12	3.6	5.8	ug/kg	J	U	06
BENZENE	71-43-2	1.2	5.8	0.58	1.2	ug/kg	U	U	
BROMOBENZENE	108-86-1	1.2	5.8	0.58	1.2	ug/kg	U	U	
BROMOCHLOROMETHANE	74-97-5	1.2	5.8	0.58	1.2	ug/kg	U	U	
BROMODICHLOROMETHANE	75-27-4	1.2	5.8	0.58	1.2	ug/kg	U	U	
BROMOFORM	75-25-2	2.3	5.8	1.2	2.3	ug/kg	U	U	
BROMOMETHANE	74-83-9	2.3	12	2.1	2.3	ug/kg	U	U	
CARBON DISULFIDE	75-15-0	1.2	5.8	0.58	1.2	ug/kg	U	U	
CARBON TETRACHLORIDE	56-23-5	1.2	5.8	0.63	1.2	ug/kg	U	U	
CHLOROBENZENE	108-90-7	1.2	5.8	0.58	1.2	ug/kg	U	U	
CHLOROETHANE	75-00-3	2.3	5.8	1.5	2.3	ug/kg	U	U	
CHLOROFORM	67-66-3	1.2	5.8	0.58	1.2	ug/kg	U	U	
CHLOROMETHANE	74-87-3	2.3	5.8	1.2	2.3	ug/kg	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	1.2	5.8	0.58	1.2	ug/kg	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	1.2	5.8	0.58	1.2	ug/kg	U	U	
DIBROMOCHLOROMETHANE	124-48-1	1.2	5.8	0.58	1.2	ug/kg	U	U	
DIBROMOMETHANE	74-95-3	1.2	5.8	0.58	1.2	ug/kg	U	U	
DICHLORODIFLUOROMETHANE	75-71-8	2.3	5.8	1.4	2.3	ug/kg	U	U	

Analysis Method *SW8260B*

ETHYLBENZENE	100-41-4	1.2	5.8	0.58	1.2	ug/kg	U	U
HEXACHLOROBUTADIENE	87-68-3	2.3	5.8	1.2	2.3	ug/kg	U	U
ISOPROPYL BENZENE	98-82-8	2.3	5.8	0.74	2.3	ug/kg	U	U
M,P-XYLENES	MP-XYL	2.3	12	1.2	2.3	ug/kg	U	U
METHYLENE CHLORIDE	75-09-2	3.2	12	1.2	5.8	ug/kg	J	U 07
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	1.2	5.8	0.58	1.2	ug/kg	U	U
NAPHTHALENE	91-20-3	2.3	12	1.2	2.3	ug/kg	U	U
N-BUTYLBENZENE	104-51-8	2.3	5.8	0.81	2.3	ug/kg	U	U
N-PROPYLBENZENE	103-65-1	2.3	5.8	0.76	2.3	ug/kg	U	U
O-XYLENE	95-47-6	1.2	5.8	0.58	1.2	ug/kg	U	U
P-ISOPROPYLTOLUENE	99-87-6	2.3	5.8	0.72	2.3	ug/kg	U	U
SEC-BUTYLBENZENE	135-98-8	2.3	5.8	0.78	2.3	ug/kg	U	U
STYRENE	100-42-5	2.3	5.8	1.2	2.3	ug/kg	U	U
TERT BUTYL ALCOHOL	75-65-0	12	23	11	12	ug/kg	U	U
TERT-BUTYLBENZENE	98-06-6	2.3	5.8	0.72	2.3	ug/kg	U	U
TETRACHLOROETHENE	127-18-4	1.2	5.8	0.58	1.2	ug/kg	U	U
TOLUENE	108-88-3	1.2	5.8	0.58	1.2	ug/kg	U	U
TRANS-1,2- DICHLOROETHENE	156-60-5	1.2	5.8	0.58	1.2	ug/kg	U	U
TRANS-1,3- DICHLOROPROPENE	10061-02-6	1.2	5.8	0.58	1.2	ug/kg	U	U
TRICHLOROETHENE	79-01-6	1.2	5.8	0.58	1.2	ug/kg	U	U
TRICHLOROFLUOROMETHAN E	75-69-4	2.3	5.8	1.3	2.3	ug/kg	U	U
VINYL CHLORIDE	75-01-4	2.3	5.8	1.6	2.3	ug/kg	U	U

Analysis Method SW8260B

Sample Name S53-SB06-20

Result Type: TRG

Analysis Date: 2015/02/03

Analysis Time: 17:34:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	1.0	5.1	0.51	1.0	ug/kg	U	U	
1,1,1-TRICHLOROETHANE	71-55-6	1.0	5.1	0.51	1.0	ug/kg	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	1.0	5.1	0.51	1.0	ug/kg	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	1.0	5.1	0.51	1.0	ug/kg	U	U	
1,1-DICHLOROETHANE	75-34-3	1.0	5.1	0.51	1.0	ug/kg	U	U	
1,1-DICHLOROETHENE	75-35-4	1.0	5.1	0.51	1.0	ug/kg	U	U	
1,1-DICHLOROPROPENE	563-58-6	1.0	5.1	0.51	1.0	ug/kg	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	2.0	5.1	1.0	2.0	ug/kg	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	2.0	5.1	1.0	2.0	ug/kg	U	U	
1,2,4-TRICHLOROBENZENE	120-82-1	2.0	5.1	1.0	2.0	ug/kg	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	2.0	5.1	0.56	2.0	ug/kg	U	U	
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	2.0	5.1	1.0	2.0	ug/kg	U	U	
1,2-DIBROMOETHANE	106-93-4	1.0	5.1	0.51	1.0	ug/kg	U	U	
1,2-DICHLOROBENZENE	95-50-1	1.0	5.1	0.51	1.0	ug/kg	U	U	
1,2-DICHLOROETHANE	107-06-2	1.0	5.1	0.51	1.0	ug/kg	U	U	
1,2-DICHLOROPROPANE	78-87-5	1.0	5.1	0.51	1.0	ug/kg	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	2.0	5.1	0.60	2.0	ug/kg	U	U	
1,3-DICHLOROBENZENE	541-73-1	1.0	5.1	0.53	1.0	ug/kg	U	U	
1,3-DICHLOROPROPANE	142-28-9	1.0	5.1	0.51	1.0	ug/kg	U	U	
1,4-DICHLOROBENZENE	106-46-7	1.0	5.1	0.51	1.0	ug/kg	U	U	
2,2-DICHLOROPROPANE	594-20-7	2.0	5.1	1.0	2.0	ug/kg	U	U	
2-BUTANONE (MEK)	78-93-3	5.1	10	2.5	5.1	ug/kg	U	U	
2-CHLOROTOLUENE	95-49-8	2.0	5.1	0.83	2.0	ug/kg	U	U	
2-HEXANONE	591-78-6	5.1	10	2.9	5.1	ug/kg	U	U	
4-CHLOROTOLUENE	106-43-4	2.0	5.1	0.68	2.0	ug/kg	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	5.1	10	2.8	5.1	ug/kg	U	U	
ACETONE	67-64-1	7.2	10	3.1	5.1	ug/kg	J	U	06
BENZENE	71-43-2	1.0	5.1	0.51	1.0	ug/kg	U	U	
BROMOBENZENE	108-86-1	1.0	5.1	0.51	1.0	ug/kg	U	U	
BROMOCHLOROMETHANE	74-97-5	1.0	5.1	0.51	1.0	ug/kg	U	U	
BROMODICHLOROMETHANE	75-27-4	1.0	5.1	0.51	1.0	ug/kg	U	U	
BROMOFORM	75-25-2	2.0	5.1	1.0	2.0	ug/kg	U	U	
BROMOMETHANE	74-83-9	2.0	10	1.8	2.0	ug/kg	U	U	
CARBON DISULFIDE	75-15-0	1.0	5.1	0.51	1.0	ug/kg	U	U	
CARBON TETRACHLORIDE	56-23-5	1.0	5.1	0.55	1.0	ug/kg	U	U	
CHLOROBENZENE	108-90-7	1.0	5.1	0.51	1.0	ug/kg	U	U	
CHLOROETHANE	75-00-3	2.0	5.1	1.3	2.0	ug/kg	U	U	
CHLOROFORM	67-66-3	1.0	5.1	0.51	1.0	ug/kg	U	U	
CHLOROMETHANE	74-87-3	2.0	5.1	1.0	2.0	ug/kg	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	1.0	5.1	0.51	1.0	ug/kg	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	1.0	5.1	0.51	1.0	ug/kg	U	U	
DIBROMOCHLOROMETHANE	124-48-1	1.0	5.1	0.51	1.0	ug/kg	U	U	
DIBROMOMETHANE	74-95-3	1.0	5.1	0.51	1.0	ug/kg	U	U	
DICHLORODIFLUOROMETHANE	75-71-8	2.0	5.1	1.2	2.0	ug/kg	U	U	

Analysis Method *SW8260B*

ETHYLBENZENE	100-41-4	1.0	5.1	0.51	1.0	ug/kg	U	U
HEXACHLOROBUTADIENE	87-68-3	2.0	5.1	1.0	2.0	ug/kg	U	U
ISOPROPYL BENZENE	98-82-8	2.0	5.1	0.65	2.0	ug/kg	U	U
M,P-XYLENES	MP-XYL	2.0	10	1.0	2.0	ug/kg	U	U
METHYLENE CHLORIDE	75-09-2	1.7	10	1.0	5.1	ug/kg	J	U 07
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	1.0	5.1	0.51	1.0	ug/kg	U	U
NAPHTHALENE	91-20-3	2.0	10	1.0	2.0	ug/kg	U	U
N-BUTYLBENZENE	104-51-8	2.0	5.1	0.71	2.0	ug/kg	U	U
N-PROPYLBENZENE	103-65-1	2.0	5.1	0.66	2.0	ug/kg	U	U
O-XYLENE	95-47-6	1.0	5.1	0.51	1.0	ug/kg	U	U
P-ISOPROPYLTOLUENE	99-87-6	2.0	5.1	0.63	2.0	ug/kg	U	U
SEC-BUTYLBENZENE	135-98-8	2.0	5.1	0.68	2.0	ug/kg	U	U
STYRENE	100-42-5	2.0	5.1	1.0	2.0	ug/kg	U	U
TERT BUTYL ALCOHOL	75-65-0	10	20	9.3	10	ug/kg	U	U
TERT-BUTYLBENZENE	98-06-6	2.0	5.1	0.63	2.0	ug/kg	U	U
TETRACHLOROETHENE	127-18-4	1.0	5.1	0.51	1.0	ug/kg	U	U
TOLUENE	108-88-3	1.0	5.1	0.51	1.0	ug/kg	U	U
TRANS-1,2- DICHLOROETHENE	156-60-5	1.0	5.1	0.51	1.0	ug/kg	U	U
TRANS-1,3- DICHLOROPROPENE	10061-02-6	1.0	5.1	0.51	1.0	ug/kg	U	U
TRICHLOROETHENE	79-01-6	1.0	5.1	0.51	1.0	ug/kg	U	U
TRICHLOROFLUOROMETHAN E	75-69-4	2.0	5.1	1.1	2.0	ug/kg	U	U
VINYL CHLORIDE	75-01-4	2.0	5.1	1.4	2.0	ug/kg	U	U

Analysis Method SW8260B

Sample Name S53-SB06-30

Result Type: TRG

Analysis Date: 2015/02/03

Analysis Time: 18:08:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	1.4	7.1	0.71	1.4	ug/kg	U	U	
1,1,1-TRICHLOROETHANE	71-55-6	1.4	7.1	0.71	1.4	ug/kg	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	1.4	7.1	0.71	1.4	ug/kg	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	1.4	7.1	0.71	1.4	ug/kg	U	U	
1,1-DICHLOROETHANE	75-34-3	1.4	7.1	0.71	1.4	ug/kg	U	U	
1,1-DICHLOROETHENE	75-35-4	1.4	7.1	0.71	1.4	ug/kg	U	U	
1,1-DICHLOROPROPENE	563-58-6	1.4	7.1	0.71	1.4	ug/kg	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	2.8	7.1	1.4	2.8	ug/kg	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	2.8	7.1	1.4	2.8	ug/kg	U	U	
1,2,4-TRICHLOROBENZENE	120-82-1	2.8	7.1	1.4	2.8	ug/kg	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	2.8	7.1	0.78	2.8	ug/kg	U	U	
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	2.8	7.1	1.4	2.8	ug/kg	U	U	
1,2-DIBROMOETHANE	106-93-4	1.4	7.1	0.71	1.4	ug/kg	U	U	
1,2-DICHLOROBENZENE	95-50-1	1.4	7.1	0.71	1.4	ug/kg	U	U	
1,2-DICHLOROETHANE	107-06-2	1.4	7.1	0.71	1.4	ug/kg	U	U	
1,2-DICHLOROPROPANE	78-87-5	1.4	7.1	0.71	1.4	ug/kg	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	2.8	7.1	0.84	2.8	ug/kg	U	U	
1,3-DICHLOROBENZENE	541-73-1	1.4	7.1	0.74	1.4	ug/kg	U	U	
1,3-DICHLOROPROPANE	142-28-9	1.4	7.1	0.71	1.4	ug/kg	U	U	
1,4-DICHLOROBENZENE	106-46-7	1.4	7.1	0.71	1.4	ug/kg	U	U	
2,2-DICHLOROPROPANE	594-20-7	2.8	7.1	1.4	2.8	ug/kg	U	U	
2-BUTANONE (MEK)	78-93-3	7.1	14	3.6	7.1	ug/kg	U	U	
2-CHLOROTOLUENE	95-49-8	2.8	7.1	1.2	2.8	ug/kg	U	U	
2-HEXANONE	591-78-6	7.1	14	4.1	7.1	ug/kg	U	U	
4-CHLOROTOLUENE	106-43-4	2.8	7.1	0.95	2.8	ug/kg	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	7.1	14	4.0	7.1	ug/kg	U	U	
ACETONE	67-64-1	11	14	4.4	7.1	ug/kg	J	U	06
BENZENE	71-43-2	1.4	7.1	0.71	1.4	ug/kg	U	U	
BROMOBENZENE	108-86-1	1.4	7.1	0.71	1.4	ug/kg	U	U	
BROMOCHLOROMETHANE	74-97-5	1.4	7.1	0.71	1.4	ug/kg	U	U	
BROMODICHLOROMETHANE	75-27-4	1.4	7.1	0.71	1.4	ug/kg	U	U	
BROMOFORM	75-25-2	2.8	7.1	1.4	2.8	ug/kg	U	U	
BROMOMETHANE	74-83-9	2.8	14	2.6	2.8	ug/kg	U	U	
CARBON DISULFIDE	75-15-0	1.4	7.1	0.71	1.4	ug/kg	U	U	
CARBON TETRACHLORIDE	56-23-5	1.4	7.1	0.77	1.4	ug/kg	U	U	
CHLOROBENZENE	108-90-7	1.4	7.1	0.71	1.4	ug/kg	U	U	
CHLOROETHANE	75-00-3	2.8	7.1	1.9	2.8	ug/kg	U	U	
CHLOROFORM	67-66-3	1.4	7.1	0.71	1.4	ug/kg	U	U	
CHLOROMETHANE	74-87-3	2.8	7.1	1.4	2.8	ug/kg	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	1.4	7.1	0.71	1.4	ug/kg	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	1.4	7.1	0.71	1.4	ug/kg	U	U	
DIBROMOCHLOROMETHANE	124-48-1	1.4	7.1	0.71	1.4	ug/kg	U	U	
DIBROMOMETHANE	74-95-3	1.4	7.1	0.71	1.4	ug/kg	U	U	
DICHLORODIFLUOROMETHANE	75-71-8	2.8	7.1	1.7	2.8	ug/kg	U	U	

Analysis Method *SW8260B*

ETHYLBENZENE	100-41-4	1.4	7.1	0.71	1.4	ug/kg	U	U
HEXACHLOROBUTADIENE	87-68-3	2.8	7.1	1.4	2.8	ug/kg	U	U
ISOPROPYL BENZENE	98-82-8	2.8	7.1	0.91	2.8	ug/kg	U	U
M,P-XYLENES	MP-XYL	2.8	14	1.4	2.8	ug/kg	U	U
METHYLENE CHLORIDE	75-09-2	2.8	14	1.4	7.1	ug/kg	J	U 07
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	1.4	7.1	0.71	1.4	ug/kg	U	U
NAPHTHALENE	91-20-3	2.8	14	1.4	2.8	ug/kg	U	U
N-BUTYLBENZENE	104-51-8	2.8	7.1	1.0	2.8	ug/kg	U	U
N-PROPYLBENZENE	103-65-1	2.8	7.1	0.93	2.8	ug/kg	U	U
O-XYLENE	95-47-6	1.4	7.1	0.71	1.4	ug/kg	U	U
P-ISOPROPYLTOLUENE	99-87-6	2.8	7.1	0.88	2.8	ug/kg	U	U
SEC-BUTYLBENZENE	135-98-8	2.8	7.1	0.95	2.8	ug/kg	U	U
STYRENE	100-42-5	2.8	7.1	1.4	2.8	ug/kg	U	U
TERT BUTYL ALCOHOL	75-65-0	14	28	13	14	ug/kg	U	U
TERT-BUTYLBENZENE	98-06-6	2.8	7.1	0.88	2.8	ug/kg	U	U
TETRACHLOROETHENE	127-18-4	1.4	7.1	0.71	1.4	ug/kg	U	U
TOLUENE	108-88-3	1.4	7.1	0.71	1.4	ug/kg	U	U
TRANS-1,2- DICHLOROETHENE	156-60-5	1.4	7.1	0.71	1.4	ug/kg	U	U
TRANS-1,3- DICHLOROPROPENE	10061-02-6	1.4	7.1	0.71	1.4	ug/kg	U	U
TRICHLOROETHENE	79-01-6	1.4	7.1	0.71	1.4	ug/kg	U	U
TRICHLOROFLUOROMETHAN E	75-69-4	2.8	7.1	1.6	2.8	ug/kg	U	U
VINYL CHLORIDE	75-01-4	2.8	7.1	2.0	2.8	ug/kg	U	U

Analysis Method SW8260B

Sample Name S53-SB06-5

Result Type: TRG

Analysis Date: 2015/02/03

Analysis Time: 16:27:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.82	4.1	0.41	0.82	ug/kg	U	U	
1,1,1-TRICHLOROETHANE	71-55-6	0.82	4.1	0.41	0.82	ug/kg	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.82	4.1	0.41	0.82	ug/kg	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	0.82	4.1	0.41	0.82	ug/kg	U	U	
1,1-DICHLOROETHANE	75-34-3	0.82	4.1	0.41	0.82	ug/kg	U	U	
1,1-DICHLOROETHENE	75-35-4	0.82	4.1	0.41	0.82	ug/kg	U	U	
1,1-DICHLOROPROPENE	563-58-6	0.82	4.1	0.41	0.82	ug/kg	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	1.6	4.1	0.82	1.6	ug/kg	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	1.6	4.1	0.82	1.6	ug/kg	U	U	
1,2,4-TRICHLOROBENZENE	120-82-1	1.6	4.1	0.82	1.6	ug/kg	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	1.6	4.1	0.45	1.6	ug/kg	U	U	
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	1.6	4.1	0.82	1.6	ug/kg	U	U	
1,2-DIBROMOETHANE	106-93-4	0.82	4.1	0.41	0.82	ug/kg	U	U	
1,2-DICHLOROBENZENE	95-50-1	0.82	4.1	0.41	0.82	ug/kg	U	U	
1,2-DICHLOROETHANE	107-06-2	0.82	4.1	0.41	0.82	ug/kg	U	U	
1,2-DICHLOROPROPANE	78-87-5	0.82	4.1	0.41	0.82	ug/kg	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	1.6	4.1	0.49	1.6	ug/kg	U	U	
1,3-DICHLOROBENZENE	541-73-1	0.82	4.1	0.43	0.82	ug/kg	U	U	
1,3-DICHLOROPROPANE	142-28-9	0.82	4.1	0.41	0.82	ug/kg	U	U	
1,4-DICHLOROBENZENE	106-46-7	0.82	4.1	0.41	0.82	ug/kg	U	U	
2,2-DICHLOROPROPANE	594-20-7	1.6	4.1	0.82	1.6	ug/kg	U	U	
2-BUTANONE (MEK)	78-93-3	3.2	8.2	2.1	4.1	ug/kg	J	J	
2-CHLOROTOLUENE	95-49-8	1.6	4.1	0.67	1.6	ug/kg	U	U	
2-HEXANONE	591-78-6	4.1	8.2	2.4	4.1	ug/kg	U	U	
4-CHLOROTOLUENE	106-43-4	1.6	4.1	0.55	1.6	ug/kg	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	4.1	8.2	2.3	4.1	ug/kg	U	U	
ACETONE	67-64-1	34	8.2	2.5	4.1	ug/kg		U	06
BENZENE	71-43-2	0.82	4.1	0.41	0.82	ug/kg	U	U	
BROMOBENZENE	108-86-1	0.82	4.1	0.41	0.82	ug/kg	U	U	
BROMOCHLOROMETHANE	74-97-5	0.82	4.1	0.41	0.82	ug/kg	U	U	
BROMODICHLOROMETHANE	75-27-4	0.82	4.1	0.41	0.82	ug/kg	U	U	
BROMOFORM	75-25-2	1.6	4.1	0.82	1.6	ug/kg	U	U	
BROMOMETHANE	74-83-9	1.6	8.2	1.5	1.6	ug/kg	U	U	
CARBON DISULFIDE	75-15-0	1.4	4.1	0.41	0.82	ug/kg	J	J	
CARBON TETRACHLORIDE	56-23-5	0.82	4.1	0.44	0.82	ug/kg	U	U	
CHLOROBENZENE	108-90-7	0.82	4.1	0.41	0.82	ug/kg	U	U	
CHLOROETHANE	75-00-3	1.6	4.1	1.1	1.6	ug/kg	U	U	
CHLOROFORM	67-66-3	0.82	4.1	0.41	0.82	ug/kg	U	U	
CHLOROMETHANE	74-87-3	1.6	4.1	0.82	1.6	ug/kg	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	0.82	4.1	0.41	0.82	ug/kg	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.82	4.1	0.41	0.82	ug/kg	U	U	
DIBROMOCHLOROMETHANE	124-48-1	0.82	4.1	0.41	0.82	ug/kg	U	U	
DIBROMOMETHANE	74-95-3	0.82	4.1	0.41	0.82	ug/kg	U	U	
DICHLORODIFLUOROMETHANE	75-71-8	1.6	4.1	0.99	1.6	ug/kg	U	U	

Analysis Method *SW8260B*

ETHYLBENZENE	100-41-4	0.82	4.1	0.41	0.82	ug/kg	U	U
HEXACHLOROBUTADIENE	87-68-3	1.6	4.1	0.82	1.6	ug/kg	U	U
ISOPROPYL BENZENE	98-82-8	1.6	4.1	0.53	1.6	ug/kg	U	U
M,P-XYLENES	MP-XYL	1.6	8.2	0.82	1.6	ug/kg	U	U
METHYLENE CHLORIDE	75-09-2	1.3	8.2	0.82	4.1	ug/kg	J	U 07
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.82	4.1	0.41	0.82	ug/kg	U	U
NAPHTHALENE	91-20-3	1.6	8.2	0.82	1.6	ug/kg	U	U
N-BUTYLBENZENE	104-51-8	1.6	4.1	0.58	1.6	ug/kg	U	U
N-PROPYLBENZENE	103-65-1	1.6	4.1	0.53	1.6	ug/kg	U	U
O-XYLENE	95-47-6	0.82	4.1	0.41	0.82	ug/kg	U	U
P-ISOPROPYLTOLUENE	99-87-6	1.6	4.1	0.51	1.6	ug/kg	U	U
SEC-BUTYLBENZENE	135-98-8	1.6	4.1	0.55	1.6	ug/kg	U	U
STYRENE	100-42-5	1.6	4.1	0.82	1.6	ug/kg	U	U
TERT BUTYL ALCOHOL	75-65-0	8.2	16	7.6	8.2	ug/kg	U	U
TERT-BUTYLBENZENE	98-06-6	1.6	4.1	0.51	1.6	ug/kg	U	U
TETRACHLOROETHENE	127-18-4	0.82	4.1	0.41	0.82	ug/kg	U	U
TOLUENE	108-88-3	0.82	4.1	0.41	0.82	ug/kg	U	U
TRANS-1,2- DICHLOROETHENE	156-60-5	0.82	4.1	0.41	0.82	ug/kg	U	U
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.82	4.1	0.41	0.82	ug/kg	U	U
TRICHLOROETHENE	79-01-6	0.82	4.1	0.41	0.82	ug/kg	U	U
TRICHLOROFLUOROMETHAN E	75-69-4	1.6	4.1	0.90	1.6	ug/kg	U	U
VINYL CHLORIDE	75-01-4	1.6	4.1	1.2	1.6	ug/kg	U	U

Analysis Method SW8270C

Sample Name EB-012115

Result Type: TRG

Analysis Date: 2015/01/30

Analysis Time: 16:38:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	0.10	0.52	0.052	0.10	ug/L	U	U	
2-METHYLNAPHTHALENE	91-57-6	0.10	0.52	0.052	0.10	ug/L	U	U	
ACENAPHTHENE	83-32-9	0.10	0.52	0.052	0.10	ug/L	U	U	
ACENAPHTHYLENE	208-96-8	0.10	0.52	0.052	0.10	ug/L	U	U	
ANTHRACENE	120-12-7	0.10	0.52	0.052	0.10	ug/L	U	U	
BENZO(A)ANTHRACENE	56-55-3	0.10	0.52	0.094	0.10	ug/L	U	U	
BENZO(A)PYRENE	50-32-8	0.10	0.52	0.052	0.10	ug/L	U	U	
BENZO(B)FLUORANTHENE	205-99-2	0.10	0.52	0.052	0.10	ug/L	U	U	
BENZO(G,H,I)PERYLENE	191-24-2	0.10	0.52	0.052	0.10	ug/L	U	U	
BENZO(K)FLUORANTHENE	207-08-9	0.10	0.52	0.052	0.10	ug/L	U	U	
CHRYSENE	218-01-9	0.10	0.52	0.063	0.10	ug/L	U	U	
DIBENZO(A,H)ANTHRACENE	53-70-3	0.10	0.52	0.052	0.10	ug/L	U	U	
FLUORANTHENE	206-44-0	0.10	0.52	0.052	0.10	ug/L	U	U	
FLUORENE	86-73-7	0.10	0.52	0.052	0.10	ug/L	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	0.10	0.52	0.052	0.10	ug/L	U	U	
NAPHTHALENE	91-20-3	0.10	0.52	0.052	0.10	ug/L	U	U	
PHENANTHRENE	85-01-8	0.10	0.52	0.052	0.10	ug/L	U	U	
PYRENE	129-00-0	0.10	0.52	0.052	0.10	ug/L	U	U	

Sample Name S53-SB02-10

Result Type: TRG

Analysis Date: 2015/02/02

Analysis Time: 22:03:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	2.6	10	1.3	2.6	ug/kg	U	U	
2-METHYLNAPHTHALENE	91-57-6	2.6	10	1.3	2.6	ug/kg	U	U	
ACENAPHTHENE	83-32-9	2.6	10	1.3	2.6	ug/kg	U	U	
ACENAPHTHYLENE	208-96-8	2.6	10	1.3	2.6	ug/kg	U	U	
ANTHRACENE	120-12-7	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(A)ANTHRACENE	56-55-3	2.6	10	2.5	2.6	ug/kg	U	U	
BENZO(A)PYRENE	50-32-8	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(B)FLUORANTHENE	205-99-2	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(G,H,I)PERYLENE	191-24-2	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(K)FLUORANTHENE	207-08-9	2.6	10	1.3	2.6	ug/kg	U	U	
CHRYSENE	218-01-9	2.6	10	2.3	2.6	ug/kg	U	U	
DIBENZO(A,H)ANTHRACENE	53-70-3	2.6	10	1.3	2.6	ug/kg	U	U	
FLUORANTHENE	206-44-0	2.6	10	1.3	2.6	ug/kg	U	U	
FLUORENE	86-73-7	2.6	10	1.3	2.6	ug/kg	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	2.6	10	1.3	2.6	ug/kg	U	U	
NAPHTHALENE	91-20-3	2.6	10	1.3	2.6	ug/kg	U	U	
PHENANTHRENE	85-01-8	2.6	10	1.3	2.6	ug/kg	U	U	
PYRENE	129-00-0	2.6	10	1.3	2.6	ug/kg	U	U	

Analysis Method SW8270C

Sample Name S53-SB02-20

Result Type: TRG

Analysis Date: 2015/02/03

Analysis Time: 15:43:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	2.6	10	1.3	2.6	ug/kg	U	U	
2-METHYLNAPHTHALENE	91-57-6	2.6	10	1.3	2.6	ug/kg	U	U	
ACENAPHTHENE	83-32-9	2.6	10	1.3	2.6	ug/kg	U	U	
ACENAPHTHYLENE	208-96-8	2.6	10	1.3	2.6	ug/kg	U	U	
ANTHRACENE	120-12-7	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(A)ANTHRACENE	56-55-3	2.6	10	2.5	2.6	ug/kg	U	U	
BENZO(A)PYRENE	50-32-8	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(B)FLUORANTHENE	205-99-2	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(G,H,I)PERYLENE	191-24-2	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(K)FLUORANTHENE	207-08-9	2.6	10	1.3	2.6	ug/kg	U	U	
CHRYSENE	218-01-9	2.6	10	2.3	2.6	ug/kg	U	U	
DIBENZO(A,H)ANTHRACENE	53-70-3	2.6	10	1.3	2.6	ug/kg	U	U	
FLUORANTHENE	206-44-0	2.6	10	1.3	2.6	ug/kg	U	U	
FLUORENE	86-73-7	2.6	10	1.3	2.6	ug/kg	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	2.6	10	1.3	2.6	ug/kg	U	U	
NAPHTHALENE	91-20-3	2.6	10	1.3	2.6	ug/kg	U	U	
PHENANTHRENE	85-01-8	2.6	10	1.3	2.6	ug/kg	U	U	
PYRENE	129-00-0	2.6	10	1.3	2.6	ug/kg	U	U	

Sample Name S53-SB02-5

Result Type: TRG

Analysis Date: 2015/02/02

Analysis Time: 21:43:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	2.8	11	1.4	2.8	ug/kg	U	U	
2-METHYLNAPHTHALENE	91-57-6	2.8	11	1.4	2.8	ug/kg	U	U	
ACENAPHTHENE	83-32-9	2.8	11	1.4	2.8	ug/kg	U	U	
ACENAPHTHYLENE	208-96-8	2.8	11	1.4	2.8	ug/kg	U	U	
ANTHRACENE	120-12-7	2.8	11	1.4	2.8	ug/kg	U	U	
BENZO(A)ANTHRACENE	56-55-3	2.8	11	2.7	2.8	ug/kg	U	U	
BENZO(A)PYRENE	50-32-8	2.8	11	1.4	2.8	ug/kg	U	U	
BENZO(B)FLUORANTHENE	205-99-2	2.8	11	1.4	2.8	ug/kg	U	U	
BENZO(G,H,I)PERYLENE	191-24-2	2.8	11	1.4	2.8	ug/kg	U	U	
BENZO(K)FLUORANTHENE	207-08-9	2.8	11	1.4	2.8	ug/kg	U	U	
CHRYSENE	218-01-9	2.8	11	2.5	2.8	ug/kg	U	U	
DIBENZO(A,H)ANTHRACENE	53-70-3	2.8	11	1.4	2.8	ug/kg	U	U	
FLUORANTHENE	206-44-0	2.8	11	1.4	2.8	ug/kg	U	U	
FLUORENE	86-73-7	2.8	11	1.4	2.8	ug/kg	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	2.8	11	1.4	2.8	ug/kg	U	U	
NAPHTHALENE	91-20-3	2.8	11	1.4	2.8	ug/kg	U	U	
PHENANTHRENE	85-01-8	2.8	11	1.4	2.8	ug/kg	U	U	
PYRENE	129-00-0	2.8	11	1.4	2.8	ug/kg	U	U	

Analysis Method SW8270C

Sample Name		Result Type: TRG							
S53-SB06-10		Analysis Date: 2015/02/02		Analysis Time: 20:45:00		Validators Initials: LC		Validation Date: 03/10/2015	
Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	2.6	10	1.3	2.6	ug/kg	U	U	
2-METHYLNAPHTHALENE	91-57-6	2.6	10	1.3	2.6	ug/kg	U	U	
ACENAPHTHENE	83-32-9	2.6	10	1.3	2.6	ug/kg	U	U	
ACENAPHTHYLENE	208-96-8	2.6	10	1.3	2.6	ug/kg	U	U	
ANTHRACENE	120-12-7	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(A)ANTHRACENE	56-55-3	2.6	10	2.5	2.6	ug/kg	U	U	
BENZO(A)PYRENE	50-32-8	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(B)FLUORANTHENE	205-99-2	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(G,H,I)PERYLENE	191-24-2	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(K)FLUORANTHENE	207-08-9	2.6	10	1.3	2.6	ug/kg	U	U	
CHRYSENE	218-01-9	2.6	10	2.3	2.6	ug/kg	U	U	
DIBENZO(A,H)ANTHRACENE	53-70-3	2.6	10	1.3	2.6	ug/kg	U	U	
FLUORANTHENE	206-44-0	2.6	10	1.3	2.6	ug/kg	U	U	
FLUORENE	86-73-7	2.6	10	1.3	2.6	ug/kg	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	2.6	10	1.3	2.6	ug/kg	U	U	
NAPHTHALENE	91-20-3	2.6	10	1.3	2.6	ug/kg	U	U	
PHENANTHRENE	85-01-8	2.6	10	1.3	2.6	ug/kg	U	U	
PYRENE	129-00-0	2.6	10	1.3	2.6	ug/kg	U	U	

Sample Name		Result Type: TRG							
S53-SB06-20		Analysis Date: 2015/02/02		Analysis Time: 21:05:00		Validators Initials: LC		Validation Date: 03/10/2015	
Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	2.6	10	1.3	2.6	ug/kg	U	U	
2-METHYLNAPHTHALENE	91-57-6	2.6	10	1.3	2.6	ug/kg	U	U	
ACENAPHTHENE	83-32-9	2.6	10	1.3	2.6	ug/kg	U	U	
ACENAPHTHYLENE	208-96-8	2.6	10	1.3	2.6	ug/kg	U	U	
ANTHRACENE	120-12-7	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(A)ANTHRACENE	56-55-3	2.6	10	2.5	2.6	ug/kg	U	U	
BENZO(A)PYRENE	50-32-8	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(B)FLUORANTHENE	205-99-2	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(G,H,I)PERYLENE	191-24-2	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(K)FLUORANTHENE	207-08-9	2.6	10	1.3	2.6	ug/kg	U	U	
CHRYSENE	218-01-9	2.6	10	2.3	2.6	ug/kg	U	U	
DIBENZO(A,H)ANTHRACENE	53-70-3	2.6	10	1.3	2.6	ug/kg	U	U	
FLUORANTHENE	206-44-0	2.6	10	1.3	2.6	ug/kg	U	U	
FLUORENE	86-73-7	2.6	10	1.3	2.6	ug/kg	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	2.6	10	1.3	2.6	ug/kg	U	U	
NAPHTHALENE	91-20-3	2.6	10	1.3	2.6	ug/kg	U	U	
PHENANTHRENE	85-01-8	2.6	10	1.3	2.6	ug/kg	U	U	
PYRENE	129-00-0	2.6	10	1.3	2.6	ug/kg	U	U	

Analysis Method SW8270C

Sample Name S53-SB06-30

Result Type: TRG

Analysis Date: 2015/02/02

Analysis Time: 21:24:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	2.5	10	1.3	2.5	ug/kg	U	U	
2-METHYLNAPHTHALENE	91-57-6	2.5	10	1.3	2.5	ug/kg	U	U	
ACENAPHTHENE	83-32-9	2.5	10	1.3	2.5	ug/kg	U	U	
ACENAPHTHYLENE	208-96-8	2.5	10	1.3	2.5	ug/kg	U	U	
ANTHRACENE	120-12-7	2.5	10	1.3	2.5	ug/kg	U	U	
BENZO(A)ANTHRACENE	56-55-3	2.5	10	2.5	2.5	ug/kg	U	U	
BENZO(A)PYRENE	50-32-8	2.5	10	1.3	2.5	ug/kg	U	U	
BENZO(B)FLUORANTHENE	205-99-2	2.5	10	1.3	2.5	ug/kg	U	U	
BENZO(G,H,I)PERYLENE	191-24-2	2.5	10	1.3	2.5	ug/kg	U	U	
BENZO(K)FLUORANTHENE	207-08-9	2.5	10	1.3	2.5	ug/kg	U	U	
CHRYSENE	218-01-9	2.5	10	2.2	2.5	ug/kg	U	U	
DIBENZO(A,H)ANTHRACENE	53-70-3	2.5	10	1.3	2.5	ug/kg	U	U	
FLUORANTHENE	206-44-0	2.5	10	1.3	2.5	ug/kg	U	U	
FLUORENE	86-73-7	2.5	10	1.3	2.5	ug/kg	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	2.5	10	1.3	2.5	ug/kg	U	U	
NAPHTHALENE	91-20-3	2.5	10	1.3	2.5	ug/kg	U	U	
PHENANTHRENE	85-01-8	2.5	10	1.3	2.5	ug/kg	U	U	
PYRENE	129-00-0	2.5	10	1.3	2.5	ug/kg	U	U	

Sample Name S53-SB06-5

Result Type: TRG

Analysis Date: 2015/02/02

Analysis Time: 20:26:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	2.7	11	1.4	2.7	ug/kg	U	U	
2-METHYLNAPHTHALENE	91-57-6	2.7	11	1.4	2.7	ug/kg	U	U	
ACENAPHTHENE	83-32-9	2.7	11	1.4	2.7	ug/kg	U	U	
ACENAPHTHYLENE	208-96-8	2.7	11	1.4	2.7	ug/kg	U	U	
ANTHRACENE	120-12-7	2.7	11	1.4	2.7	ug/kg	U	U	
BENZO(A)ANTHRACENE	56-55-3	2.7	11	2.7	2.7	ug/kg	U	U	
BENZO(A)PYRENE	50-32-8	1.5	11	1.4	2.7	ug/kg	J	J	
BENZO(B)FLUORANTHENE	205-99-2	2.7	11	1.4	2.7	ug/kg	U	U	
BENZO(G,H,I)PERYLENE	191-24-2	2.7	11	1.4	2.7	ug/kg	U	U	
BENZO(K)FLUORANTHENE	207-08-9	2.7	11	1.4	2.7	ug/kg	U	U	
CHRYSENE	218-01-9	2.7	11	2.4	2.7	ug/kg	U	U	
DIBENZO(A,H)ANTHRACENE	53-70-3	2.7	11	1.4	2.7	ug/kg	U	U	
FLUORANTHENE	206-44-0	2.7	11	1.4	2.7	ug/kg	U	U	
FLUORENE	86-73-7	2.7	11	1.4	2.7	ug/kg	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	2.7	11	1.4	2.7	ug/kg	U	U	
NAPHTHALENE	91-20-3	2.7	11	1.4	2.7	ug/kg	U	U	
PHENANTHRENE	85-01-8	2.3	11	1.4	2.7	ug/kg	J	J	
PYRENE	129-00-0	1.8	11	1.4	2.7	ug/kg	J	J	



TFH-Extractable Analysis Checklist

Project Name: Kleinfelder CTD 0071 site 53

Laboratory Name: EMAX

Batch Numbers: A014W, A0175

Sample Delivery Group: 15A135

Date Reviewed: 2-27-2015

Reviewed By(print or type name): L.S. Calvin

Reviewed By Signature [Signature]

Analysis Method: 8015B

Yes No N/A

Holding Times

Were samples extracted within holding time? [X] [] []
Were samples analyzed within holding time? [X] [] []

Initial Calibration

Did the initial calibration consist of at least five standards? [X] [] []
Are the RSDs for all target analytes <=20% or r >=0.99? [X] [] []
Was manual integration "M" performed? [] [X] []
If the answer is "Yes", check for supporting documents.
Was the manual integration necessary? [] [] [X]
If the answer is "No", contact the laboratory inquiring about the reason behind the manual

Initial Calibration Verification(ICV)

Is the mid level (2nd source) recovery within 80-120%? [X] [] []

Continuing Calibration Verification (CCV)

Was CCV conducted every 12 hours? [X] [] []
Was the %Drift or %D <=20% from the initial calibration? [X] [] []

Sample Analysis

	Yes	No	N/A
Was the RRT of an identified component within the method retention time window?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Were samples with levels higher than the calibration range diluted and reanalyzed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Sample Quality Control

<u>Method Blanks</u> : Were target analytes $\leq 1/2$ LOQ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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<u>LCS</u> : Were the percent recoveries within the control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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<u>MS/MSD</u> : Were the percent recoveries within the control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Were the RPDs within the control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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<u>System Monitoring Compounds (Surrogates)</u> : Are surrogate recoveries within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Comments:

BB-012115/ND



Semivolatile Organic Analysis Checklist

Project Name: Kleinfelder ATO 0071 Site 53
 Laboratory Name: EMAX
 Batch Numbers: A036W, A0415
 Sample Delivery Group: 15A135
 Date Reviewed: 2.27.2015
 Reviewed By (print or type name): L.S. Calvin
 Reviewed By Signature: [Signature]
 Analysis Method: 8270C / PAA3

Holding Times

	Yes	No	N/A
Were samples extracted within holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples analyzed within holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Tuning

	Yes	No	N/A
Samples analyzed w/in 12 hours of DFTPP tune?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was mass assignment based on m/z 198?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<u>m/z</u>	<u>Acceptance Criteria</u>	Yes	No	N/A
51	30.0-60.0%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
68	<2% of mass 69	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
70	<2% of mass 69	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
127	40-60%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
197	<1%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
198	100% Base Peak	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
199	5.0-9.0%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
275	10-30%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
365	>1%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
441	present but <mass 443	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
442	>40%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
443	17-23% of mass 442	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Initial Calibration

	Yes	No	N/A
Was ICAL at least five standards and a blank?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did SPCC meet the minimum mean RF?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	RF	Yes	No	N/A	
NITC {	N-nitroso-di-n-propylamine	0.05	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Hexachlorocyclopentadiene	0.05	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	2,4-Dinitrophenol	0.05	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	4-Nitrophenol	0.05	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

mc

RSDs $\leq 30\%$ for each individual CCC?

Base/Neutral Fraction:

Acenaphthene
1,4-Dichlorobenzene
Hexachlorobutadiene
Diphenylamine
Di-n-octylphthalate
Fluoranthene
Benzo(a)pyrene

} NTCs

Yes	No	N/A
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Acid Fraction:

4-Chloro-3-methylphenol
2,4-Dichlorophenol
2-Nitrophenol
Phenol
Pentachlorophenol
2,4,6-Trichlorophenol

} NTCs

Yes	No	N/A
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

RSDs for remaining analytes $< 15\%$ or $r \geq 0.995$?

Yes	No	N/A
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Was manual integration "M" performed?

Yes	No	N/A
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If "Yes", check for supporting documents

Was the manual integration necessary?

Yes	No	N/A
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If "No", contact the laboratory and inquire about the reason for the manual integration.

Initial Calibration Verification(ICV)

Is the mid level (2nd source) %R within 80-120%?

Yes	No	N/A
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Continuing Calibration Verification (CCV)

Was CCV conducted every 12 hours?

Yes	No	N/A
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Did SPCC meet the RF values?

N-nitroso-di-n-propylamine } RF 0.05
Hexachlorocyclopentadiene } RF 0.05
2,4-Dinitrophenol } NTCs RF 0.05
4-Nitrophenol } RF 0.05

Yes	No	N/A
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Were the CCC %Ds $\leq 20\%$?

Base/Neutral Fraction:

Acenaphthene
1,4-Dichlorobenzene
Hexachlorobutadiene
Diphenylamine
Di-n-octylphthalate
Fluoranthene
Benzo(a)pyrene

} NTCs

Yes	No	N/A
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Acid Fraction:

- 4-Chloro-3-methylphenol
- 2,4-Dichlorophenol
- 2-Nitrophenol
- Phenol
- Pentachlorophenol
- 2,4,6-Trichlorophenol

} NTCs

Yes	No	N/A
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Were the remaining %Ds $\leq 20\%$ from the ICAL?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------

Sample Analysis

RRTs within ± 0.06 RRT units of the standard?

Yes	No	N/A
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Sample ion abundance w/in 30% for major ions (>10% of the base ion) in standard spectra?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Were the IS areas within -50% to +¹⁰⁰200%?

ABC

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Sample Quality Control

Method Blanks: Were target analytes $< 1/2$ LOQ?

Yes	No	N/A
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

LCS: Were the %Rs for LCS within the limits?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------

Were RPDs within the limits?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------

MS/MSD: Were the %Rs within the limits?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Were the RPDs within the limit?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Surrogates: Are the %Rs within QSM limits?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Comments:

ETS 012115 HD



Volatile Organic Analysis Checklist

Project Name: Kleinfelder CTO 0071 Sites 53
Laboratory Name: EMAX
Batch Numbers: 47A19, 502B
Sample Delivery Group: 15A135
Date Reviewed: 2.27.2015
Reviewed By (print or type name): L.S. Calvin
Reviewed By Signature: LS Calvin
Analysis Method: 4210B

Holding Times

	Yes	No	N/A
Were samples preserved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples analyzed within holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Tuning

	Yes	No	N/A
Was the BFB tune performed at the beginning of each 12-hour period during which samples were analyzed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Was mass assignment based on m/z 95?

m/z	Acceptance Criteria	Yes	No	N/A
50	15.0-40.0%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
75	30.0-66.0%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
95	100% Base Peak	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
96	5.0-9.0%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
173	<2.0 of m/z 174	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
174	>50%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
175	5.0-9.0% of mass 174	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
176	95.0-101.0% of m/z 174	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
177	5.0-9.0% of m/z 176	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The relative ion abundance of m/z 95/96, m/z 174/176, and 176/177 are of critical importance.

The relative ion abundance of m/z 50 and 75 are of lower importance.

Initial Calibration

Yes No N/A

Did the initial calibration consist of at least five standards?

Did the System Performance Check Compounds (SPCC) meet the minimum mean response factor(RF)?

	RF	Yes	No	N/A
Chloromethane	0.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1,1-Dichloroethane	0.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bromoform	0.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chlorobenzene	0.3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1,1,2,2-Tetrachloroethane	0.3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Did the RSD meet the criteria $\leq 30\%$ for each individual Calibration Check Compound(CCC)?

1,1-Dichloroethene	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chloroform	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1,2-Dichloropropane	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Toluene	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ethylbenzene	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vinyl Chloride	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Are the RSDs for the remaining applicable target analytes $\leq 15\%$ or $r \geq 0.995$?

Was manual integration "M" performed?

If the answer is "Yes", check for supporting documents.

Was the manual integration necessary?

If the answer is "No", contact the laboratory inquiring about the reason behind the manual

Initial Calibration Verification (ICV)

Is the mid level (2nd source) within 80-120?

Continuing Calibration Verification (CCV)

Was CCV conducted every 12 hours?

	RF	Yes	No	N/A
Chloromethane	0.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1,1-Dichloroethane	0.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bromoform	0.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chlorobenzene	0.3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1,1,2,2-Tetrachloroethane	0.3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No	N/A
Did the CCC meet the minimum requirements (%D \leq 20%)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1,1-Dichloroethene	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chloroform	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1,2-Dichloropropane	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Toluene	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ethylbenzene	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vinyl Chloride	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was the %Drift or %D \leq 20% from the initial calibration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Sample Analysis

Was the RRT of an identified component within + 0.06 RRT units of the RRT of the standard component?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did the abundance of ions in the sample spectra agree within 30% of the major ions (>10% of the	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were the internal standard areas within the QC limits from -50% to +100%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Sample Quality Control

<u>Method Blanks</u> : Were target analytes \leq 1/2 LOQ? <i>see comments</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>LCS</u> : Were the percent recoveries for LCS within the limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>MS/MSD</u> : Were the percent recoveries within limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Were the RPD within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>System Monitoring Compounds (Surrogates)</u> : Are surrogate recoveries within QSM Limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

BTB-012115 acetone 10.1 μ g/L chloroform 0.12 μ g/L
 STB-012215 chloroform 0.11 μ g/L
 soil MB methylene chloride 2.5 μ g/kg
 water ICA2 RRFs and CCV RRFs $<$ 0.05: acetone
 2 butanone
 tert butyl alcohol



DATA VALIDATION REPORT

CTO 0071
Naval Weapons Station Seal Beach Detachment
Site 53
Fallbrook, California

SAMPLE DELIVERY GROUP: 15A136

Prepared by

MECX
12269 East Vassar Drive
Aurora, CO 80014

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I. INTRODUCTION

Task Order Title: CTO 0071
 Contract: 1405.001H.03
 Sample Delivery Group: 15A136
 Project Manager: Carlos Lau
 Matrix: Soil and Water QC
 Quality Control (QC) Level: Full/Standard
 Number of Samples: 15
 Number of Reanalyses/Dilutions: 0
 Laboratory: APPL

Table 1. Sample Identification

Sample Identification	Laboratory Identification	Collection Date	Matrix	Validation Level	Analysis Method
S53-SB05-5	A136-01	01/22/2015	Soil	Standard	8015B, 8260B, 8270C
S53-SB05-10	A136-02	01/22/2015	Soil	Standard	8015B, 8260B, 8270C
S53-SB05-20	A136-03	01/22/2015	Soil	Standard	8015B, 8260B, 8270C
S53-SB05-30	A136-04	01/22/2015	Soil	Standard	8015B, 8260B, 8270C
S53-SB04-5	A136-05	01/22/2015	Soil	Standard	8015B, 8260B, 8270C
S53-SB04-10	A136-06	01/22/2015	Soil	Full	8015B, 8260B, 8270C
S53-SB04-20	A136-07	01/22/2015	Soil	Standard	8015B, 8260B, 8270C
S53-SB04-28	A136-08	01/22/2015	Soil	Standard	8015B, 8260B, 8270C
S53-SB03-5	A136-12	01/22/2015	Soil	Standard	8015B, 8260B, 8270C
S53-SB03-11.5	A136-13	01/22/2015	Soil	Standard	8015B, 8260B, 8270C
S53-SB03-16.5	A136-14	01/22/2015	Soil	Standard	8015B, 8260B, 8270C
S53-SB03-18.5	A136-15	01/22/2015	Soil	Standard	8015B, 8260B, 8270C
EB-012215	A136-09	01/22/2015	Water	Standard	8015B, 8260B, 8270C
SB-012215	A136-10	01/22/2015	Water	Standard	8015B, 8260B, 8270C
TB-012215	A136-11	01/22/2015	Water	Standard	8260B

II. Sample Management

Anomalies regarding sample management were not observed, other than those mentioned below. The samples in this sample delivery group (SDG) were received at the laboratory within the temperature limits of $<6^{\circ}\text{C}$ and $>0^{\circ}\text{C}$. According to the case narrative for this SDG, the samples were received intact, on ice and properly preserved, as applicable; however, the laboratory's sample receipt form noted that a portion of the containers for samples S53-SB04-5 and S53-SB05-30 were received lying flat in the cooler with soil on the sides of the vials. Those containers were not used, as clean vials were available for analysis. The chains-of-custody (COCs) were signed and dated by field and laboratory personnel. Some corrections to the COC were made by overwriting the original entry and some corrections were not initialed or dated, or were initialed but not dated. Custody seals were intact.

III. Method Analyses

1. EPA METHOD 8015B—Total Petroleum Hydrocarbons (Extractable)

Reviewed By: L. Calvin

Date Reviewed: March 2, 2015

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *NAVFAC Pacific SOP II-A, Data Validation Procedure* (February 2007), *US Department of Defense (DoD) Quality System Manual (QSM) for Environmental Laboratories, Version 4.2* (October 2010), *Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan) Preliminary Site Assessment for Site 53 Naval Weapons Station Seal Beach Detachment, Fallbrook, California* (2014), and *EPA SW-846 Method 8015B*.

As no NAVFAC SOP or DoD QSM control limits are specified for this method, SAP control limits were utilized.

- Holding Times: Extraction and analytical holding times were met. The water samples were extracted within seven days of collection and the soil samples were extracted within 14 days of collection. The samples were analyzed within 40 days of extraction.
- Calibration: Calibration criteria were met. Initial calibration %RSDs and ICV and bracketing CCV %Ds were within the method control limit of $\leq 20\%$.
- Blanks: The method blanks had no diesel or kerosene range detects.
- Laboratory Control Samples: Recoveries for diesel were within the SAP control limits of 60-150% for soils and 60-130% for waters. RPDs were within the control limit of $\leq 30\%$.
- Surrogate Recovery: Surrogates were considered diluted out in sample S53-SB03-5. All other recoveries were within the laboratory control limits of 60-130% for soils and waters.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on sample S53-SB04-5 from this SDG. Recoveries for diesel were within the SAP control limits of 60-150% and the RPD was within the control limit of $\leq 30\%$.
- Field QC Samples: MEC^X evaluated field QC samples, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. MEC^X used the remaining detects to evaluate the associated site samples. Findings associated with field QC samples are summarized below.
 - Field Blanks and Equipment Blanks: Sample SB-012215 was identified as the source water blank and sample EB-012215 was the equipment blank associated with the site

samples in this SDG. The source water blank and equipment blank had no diesel or kerosene range detects.

- Field Duplicates: This SDG had no identified field duplicate samples.
- Compound Identification: MEC^X verified compound identification for the Full validation sample and QC samples. Compound identification is not applicable for Standard validation samples. The laboratory analyzed for kerosene range C₈-C₁₈ and diesel range C₁₀-C₂₄ by Method 8015B. Though the ranges overlap, none of the samples with detects had both ranges reported; therefore, reported detects were not biased high by the overlap.
- Compound Quantification and Reported Detection Limits: MEC^X verified calculations and the sample results reported on the sample result summary against the raw data for the Full validation sample and QC samples. No transcription errors or calculation errors were noted. Sample result verification is not applicable for Standard validation samples. Detects reported below the LOQ were qualified as estimated (J). Nondetects are valid to the LOD.

Sample S53-SB03-5 was analyzed and reported at a 10x dilution to report the diesel range within the linear range of the calibration. The case narrative for this SDG noted that sample S53-SB03-5 and undiluted samples S53-SB04-28 and S53-SB03-11.5 displayed a more distinct “diesel-like fuel pattern” in the diesel range.

2. EPA METHOD 8270C SIM—Polycyclic Aromatic Hydrocarbons (PAHs)

Reviewed By: L. Calvin

Date Reviewed: March 2, 2015

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *NAVFAC Pacific SOP II-A, Data Validation Procedure* (February 2007), *US Department of Defense (DoD) Quality System Manual (QSM) for Environmental Laboratories, Version 4.2* (October 2010), *Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan) Preliminary Site Assessment for Site 53 Naval Weapons Station Seal Beach Detachment, Fallbrook, California* (2014), and *EPA SW-846 Method 8270C*.

- Holding Times: Extraction and analytical holding times were met. The water samples were extracted within seven days of collection and the soil samples were extracted within 14 days of collection. The samples were analyzed within 40 days of extraction.
- GC/MS Tuning: The DFTPP tunes met the method abundance criteria. The samples were analyzed within 12 hours of the DFTPP injection time.
- Calibration: Calibration criteria were met. Initial calibration average RRFs were ≥ 0.05 and %RSDs $\leq 15\%$ or r^2 values ≥ 0.990 . The ICV and CCV RRFs were ≥ 0.05 . ICV and CCV %Ds or % drift were $\leq 20\%$.

- Blanks: Target compounds were not detected in the method blanks.
- Laboratory Control Samples: Recoveries were within the control limits listed in the DoD QSM, and RPDs were within the control limit of $\leq 30\%$.
- Surrogate Recovery: Recoveries were within the control limits listed in the DoD QSM.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on sample S53-SB04-5 from this SDG. Recoveries were within the control limits listed in the DoD QSM, and RPDs were within the control limit of $\leq 30\%$.
- Field QC Samples: MEC^X evaluated field QC samples, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. MEC^X used the remaining detects to evaluate the associated site samples. Findings associated with field QC samples are summarized below
 - Field Blanks and Equipment Blanks: Sample SB-012215 was identified as the source water blank and sample EB-012215 was the equipment blank associated with the site samples in this SDG. The source water blank and equipment blank had no target compound detects.
 - Field Duplicates: This SDG had no identified field duplicate samples.
- Internal Standards Performance: The internal standard area counts and retention times were within the control limits established by the midpoint of the initial calibration standards: $-50\%/+100\%$ for internal standard areas and ± 30 seconds for retention times.
- Compound Identification: MEC^X verified compound identification for the Full validation sample and QC samples. Compound identification is not applicable for Standard validation samples. The laboratory analyzed for 18 PAH compounds by Method 8270C SIM. No problems with target compound identification were observed in the review of the sample chromatograms, retention times, and spectra.
- Compound Quantification and Reported Detection Limits: MEC^X verified calculations and the sample results reported on the sample result summary against the raw data for Full validation sample and QC samples. No transcription errors or calculation errors were noted. Sample result verification is not applicable for Standard validation samples. Detects reported below the LOQ were qualified as estimated (J). Nondetects are valid to the LOD.

Sample S53-SB03-11.5 was reanalyzed to rule out suspected carryover detects present in the initial analysis. The reanalysis confirmed the original results, indicating no evidence of carryover. Based on surrogate recoveries reported concentrations, results of the reanalysis indicated a somewhat more efficient extraction. As the laboratory reported both the initial analysis and reanalysis, the initial analysis was rejected (R) and assigned reason code 22.

Sample S53-SB03-5 was reanalyzed at a 5x dilution in order to report 1-methylnaphthalene within the linear range of the calibration. The laboratory reported both analyses; therefore, 1-methylnaphthalene was rejected (R) in the initial undiluted analysis and retained in the reanalysis. Remaining results in the reanalysis were rejected (R) in favor of the initial results. All qualified results were assigned reason code 22.

- System Performance: Review of the raw data indicated no problems with system performance.

3. EPA METHOD 8260B—Volatile Organic Compounds (VOCs)

Reviewed By: L. Calvin

Date Reviewed: March 2, 2015

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *NAVFAC Pacific SOP II-A, Data Validation Procedure* (February 2007), *US Department of Defense (DoD) Quality System Manual (QSM) for Environmental Laboratories, Version 4.2* (October 2010), *Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan) Preliminary Site Assessment for Site 53 Naval Weapons Station Seal Beach Detachment, Fallbrook, California* (2014), and *EPA SW-846 Method 8260B*.

- Holding Times: Analytical holding times were met. The preserved water samples and the soil samples were analyzed within 14 days of collection.
- GC/MS Tuning: The BFB tunes met the method abundance criteria. The samples were analyzed within 12 hours of the BFB injection time.
- Calibration: Most calibration criteria were met for applicable target compounds. Initial calibration average RRFs and ICV and CCV RRFs were ≥ 0.05 , with exceptions listed in the table below. The detect for acetone in sample TB-122215 was qualified as estimated (J), and results for 2-butanone and tert butyl alcohol, both nondetects, were rejected (R) in the affected samples. As acetone was originally detected in samples EB-012215 and SB-012215, the results subsequently qualified as nondetected for trip blank contamination were qualified as estimated nondetects (UJ) rather than rejected. The qualified results were assigned reason code 05. Initial calibration %RSDs were $\leq 15\%$ or r values ≥ 0.995 , and ICV and CCV %Ds or % drift affecting sample data were $\leq 20\%$.

Analyte	ICAL avg. RRF	ICV RRF	CCV RRF	Affected Sample(s)
2-butanone	0.040	0.041	0.036	EB-012215
acetone	0.024	0.024	0.022	SB-012215
tert butyl alcohol	0.008	0.009	0.010	TB-012215

- Blanks: Methylene chloride was detected below the LOQ at 2.2 $\mu\text{g}/\text{Kg}$ in the method blank associated with soil samples S53-SB05-5 and S53-SB05-10; therefore, methylene chloride results detected below the LOD in both samples were qualified as nondetected (U) at the LOD, and assigned reason code 07. The method blanks had no other target

compound detects above the control limits of one-half the LOQ or one-tenth the amount of any sample detect, and no common laboratory contaminants detected above the LOQ.

- Laboratory Control Samples: Recoveries were within the control limits listed in the DoD QSM, and RPDs were within the control limit of $\leq 30\%$.
- Surrogate Recovery: Surrogates BFB (limits 85-120%) and toluene-d8 (85-115) were recovered above the control limits at 211% and 117%, respectively, in sample S53-SB03-5. The sample was reanalyzed with similar recoveries, indicating a matrix effect on the surrogates. Both analyses were reported; therefore, the reanalysis was rejected (R) in favor of the initial results and assigned reason code 22. Detects in the retained analysis were qualified as estimated (J) and assigned reason code 13. Remaining recoveries were within the control limits listed in the DoD QSM.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on sample S53-SB04-5 from this SDG. The laboratory determined that the original MS/MSD had been spiked incorrectly; therefore, the parent sample and the MS/MSD were reanalyzed. Both parent sample analyses were reported by the laboratory; therefore, the initial analysis was rejected (R) in favor of the reanalysis results and assigned reason code 22.

Tert butyl alcohol was recovered above the control limits of 60-140% in the MS and MSD at 150% and 142%; however, tert butyl alcohol was not detected in the parent sample, and required no qualification. Several target compounds were recovered marginally above the control limits in the MS only, and the RPD for carbon disulfide exceeded the control limit at 38%. The nondetected result for carbon disulfide was qualified as estimated (UJ) and assigned reason code 09. Qualifications were not assigned for recovery outliers present in only one of the MS/MSD pair. Remaining recoveries were within the control limits listed in the DoD QSM, and remaining RPDs were within the control limit of $\leq 30\%$.

- Field QC Samples: MEC^X evaluated field QC samples, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. MEC^X used the remaining detects to evaluate the associated site samples. Findings associated with field QC samples are summarized below
 - Trip Blanks: Sample TB-012215 was the trip blank associated with the samples in this SDG. The trip blank had detects below the LOQ for acetone at 3.1 $\mu\text{g/L}$, chloromethane at 0.18 $\mu\text{g/L}$, toluene at 0.11 $\mu\text{g/L}$, and trichlorofluoromethane at 0.34 $\mu\text{g/L}$. The trip blank concentration of acetone was not sufficient to qualify sample S53-SB03-5. Remaining retained detects for acetone were qualified as nondetected (U) at the LOD if detected below the LOD, or at the level of contamination if detected above. The qualified results were assigned reason code 18. None of the other trip blank contaminants were detected in the samples.
 - Field Blanks and Equipment Blanks: Sample SB-012215 was identified as the source water blank and sample EB-012215 was the equipment blank associated with the site samples in this SDG. Both the source water blank and the equipment

blank had detects below the LOQ for chloroform at 0.11 µg/L and 0.12 µg/L, respectively; however, none of the site samples had detects for chloroform. The field QC samples had no other reportable detects above the DL.

- Field Duplicates: This SDG had no identified field duplicate samples.
- Internal Standards Performance: Internal standard 1,2-dichlorobenzene-d4 was recovered below the control limits at 22% in sample S53-SB03-5. The sample was reanalyzed with similar results, indicating a matrix effect on the internal standard. Both analyses were reported; therefore, the reanalysis was rejected (R) in favor of the initial results and assigned reason code 22.

Results for the 22 target compounds associated with the internal standard outlier were qualified as estimated (J) for detects, or rejected (R) for nondetects in the retained analysis. The qualified results were assigned reason code 19. The remaining internal standard area counts and retention times were within the control limits established by the midpoint of the initial calibration: -50%/+100% for internal standard areas and ±30 seconds for retention times.

- Compound Identification: MEC^X verified compound identification for the Full validation sample and QC samples. Compound identification is not applicable for Standard validation samples. The laboratory analyzed for volatile target compounds by EPA Method 8260B. No problems with target compound identification were observed in the review of the sample chromatograms, retention times, and spectra.
- Compound Quantification and Reported Detection Limits: MEC^X verified calculations and the sample results reported on the sample result summary against the raw data for the Full validation sample and QC samples. No transcription errors or calculation errors were noted. Sample result verification is not applicable for Standard validation samples. Detects reported below the LOQ were qualified as estimated (J). Nondetects are valid to the LOD.

Sample S53-SB03-11.5 was reanalyzed due to suspected carryover detects present in the initial analysis. The reanalysis showed no evidence of carryover, and was therefore retained. As the laboratory reported both the initial analysis and reanalysis, the initial analysis was rejected (R) and assigned reason code 22.

- Tentatively Identified Compounds: TICs were not reported by the laboratory for this SDG.
- System Performance: Review of the raw data indicated no problems with system performance.

Validated Sample Result Forms: 15A136

Analysis Method SW8015B

Sample Name EB-012215

Result Type: TRG

Analysis Date: 2015/01/29

Analysis Time: 19:44:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	0.10	0.51	0.051	0.10	mg/L	U	U	
KEROSENE	TPH-KERO	0.20	1.0	0.10	0.20	mg/L	U	U	

Sample Name S53-SB03-11.5

Result Type: TRG

Analysis Date: 2015/01/30

Analysis Time: 03:08:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	15	10	2.6	5.2	mg/kg			
KEROSENE	TPH-KERO	10	21	5.2	10	mg/kg	U	U	

Sample Name S53-SB03-16.5

Result Type: TRG

Analysis Date: 2015/01/30

Analysis Time: 03:25:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	5.2	10	2.6	5.2	mg/kg	U	U	
KEROSENE	TPH-KERO	10	21	5.2	10	mg/kg	U	U	

Sample Name S53-SB03-18.5

Result Type: TRG

Analysis Date: 2015/01/30

Analysis Time: 03:42:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	5.3	11	2.7	5.3	mg/kg	U	U	
KEROSENE	TPH-KERO	11	21	5.3	11	mg/kg	U	U	

Sample Name S53-SB03-5

Result Type: TRG

Analysis Date: 2015/01/30

Analysis Time: 14:32:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	5600	110	27	54	mg/kg			
KEROSENE	TPH-KERO	110	220	54	110	mg/kg	U	U	

Sample Name S53-SB04-10

Result Type: TRG

Analysis Date: 2015/01/30

Analysis Time: 01:59:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	5.2	10	2.6	5.2	mg/kg	U	U	
KEROSENE	TPH-KERO	10	21	5.2	10	mg/kg	U	U	

Analysis Method *SW8015B*

Sample Name S53-SB04-20		Result Type: TRG							
Analysis Date: 2015/01/30		Analysis Time: 02:17:00		Validators Initials: LC			Validation Date: 03/10/2015		
Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	5.2	10	2.6	5.2	mg/kg	U	U	
KEROSENE	TPH-KERO	10	21	5.2	10	mg/kg	U	U	

Sample Name S53-SB04-28		Result Type: TRG							
Analysis Date: 2015/01/30		Analysis Time: 02:34:00		Validators Initials: LC			Validation Date: 03/10/2015		
Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	70	10	2.6	5.2	mg/kg			
KEROSENE	TPH-KERO	10	21	5.2	10	mg/kg	U	U	

Sample Name S53-SB04-5		Result Type: TRG							
Analysis Date: 2015/01/30		Analysis Time: 00:17:00		Validators Initials: LC			Validation Date: 03/10/2015		
Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	5.5	11	2.7	5.5	mg/kg	U	U	
KEROSENE	TPH-KERO	11	22	5.5	11	mg/kg	U	U	

Sample Name S53-SB05-10		Result Type: TRG							
Analysis Date: 2015/01/29		Analysis Time: 23:26:00		Validators Initials: LC			Validation Date: 03/10/2015		
Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	5.3	11	2.7	5.3	mg/kg	U	U	
KEROSENE	TPH-KERO	11	21	5.3	11	mg/kg	U	U	

Sample Name S53-SB05-20		Result Type: TRG							
Analysis Date: 2015/01/29		Analysis Time: 23:43:00		Validators Initials: LC			Validation Date: 03/10/2015		
Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	5.2	10	2.6	5.2	mg/kg	U	U	
KEROSENE	TPH-KERO	10	21	5.2	10	mg/kg	U	U	

Sample Name S53-SB05-30		Result Type: TRG							
Analysis Date: 2015/01/30		Analysis Time: 00:00:00		Validators Initials: LC			Validation Date: 03/10/2015		
Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	5.2	10	2.6	5.2	mg/kg	U	U	
KEROSENE	TPH-KERO	10	21	5.2	10	mg/kg	U	U	

Sample Name S53-SB05-5		Result Type: TRG							
Analysis Date: 2015/01/29		Analysis Time: 23:09:00		Validators Initials: LC			Validation Date: 03/10/2015		
Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	5.4	11	2.7	5.4	mg/kg	U	U	
KEROSENE	TPH-KERO	11	22	5.4	11	mg/kg	U	U	

Analysis Method *SW8015B*

Sample Name SB-012215

Result Type: TRG

Analysis Date: 2015/01/29

Analysis Time: 20:01:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	0.10	0.52	0.052	0.10	mg/L	U	U	
KEROSENE	TPH-KERO	0.21	1.0	0.10	0.21	mg/L	U	U	

Analysis Method SW8260B

Sample Name EB-012215

Result Type: TRG

Analysis Date: 2015/01/29

Analysis Time: 20:23:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1,1-TRICHLOROETHANE	71-55-6	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.20	1.0	0.11	0.20	ug/L	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1-DICHLOROETHANE	75-34-3	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1-DICHLOROETHENE	75-35-4	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1-DICHLOROPROPENE	563-58-6	0.20	1.0	0.10	0.20	ug/L	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	0.30	1.0	0.15	0.30	ug/L	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	0.50	2.0	0.25	0.50	ug/L	U	U	
1,2,4-TRICHLOROBENZENE	120-82-1	0.30	1.0	0.15	0.30	ug/L	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	0.20	1.0	0.11	0.20	ug/L	U	U	
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	0.50	2.0	0.25	0.50	ug/L	U	U	
1,2-DIBROMOETHANE	106-93-4	0.20	1.0	0.10	0.20	ug/L	U	U	
1,2-DICHLOROBENZENE	95-50-1	0.20	1.0	0.10	0.20	ug/L	U	U	
1,2-DICHLOROETHANE	107-06-2	0.20	1.0	0.10	0.20	ug/L	U	U	
1,2-DICHLOROPROPANE	78-87-5	0.20	1.0	0.10	0.20	ug/L	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	0.20	1.0	0.13	0.20	ug/L	U	U	
1,3-DICHLOROBENZENE	541-73-1	0.20	1.0	0.11	0.20	ug/L	U	U	
1,3-DICHLOROPROPANE	142-28-9	0.20	1.0	0.10	0.20	ug/L	U	U	
1,4-DICHLOROBENZENE	106-46-7	0.20	1.0	0.10	0.20	ug/L	U	U	
2,2-DICHLOROPROPANE	594-20-7	0.30	1.0	0.16	0.30	ug/L	U	U	
2-BUTANONE (MEK)	78-93-3	5.0	10	2.0	5.0	ug/L	U	R	05
2-CHLOROTOLUENE	95-49-8	0.20	1.0	0.12	0.20	ug/L	U	U	
2-HEXANONE	591-78-6	5.0	10	2.3	5.0	ug/L	U	U	
4-CHLOROTOLUENE	106-43-4	0.20	1.0	0.11	0.20	ug/L	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	5.0	10	2.1	5.0	ug/L	U	U	
ACETONE	67-64-1	3.8	10	2.6	5.0	ug/L	J	UJ	05; 18
BENZENE	71-43-2	0.20	1.0	0.10	0.20	ug/L	U	U	
BROMOBENZENE	108-86-1	0.20	1.0	0.10	0.20	ug/L	U	U	
BROMOCHLOROMETHANE	74-97-5	0.20	1.0	0.11	0.20	ug/L	U	U	
BROMODICHLOROMETHANE	75-27-4	0.20	1.0	0.10	0.20	ug/L	U	U	
BROMOFORM	75-25-2	0.30	1.0	0.15	0.30	ug/L	U	U	
BROMOMETHANE	74-83-9	0.30	1.0	0.16	0.30	ug/L	U	U	
CARBON DISULFIDE	75-15-0	0.50	1.0	0.25	0.50	ug/L	U	U	
CARBON TETRACHLORIDE	56-23-5	0.20	1.0	0.10	0.20	ug/L	U	U	
CHLOROBENZENE	108-90-7	0.20	1.0	0.10	0.20	ug/L	U	U	
CHLOROETHANE	75-00-3	0.30	1.0	0.27	0.30	ug/L	U	U	
CHLOROFORM	67-66-3	0.12	1.0	0.10	0.20	ug/L	J	J	
CHLOROMETHANE	74-87-3	0.30	1.0	0.15	0.30	ug/L	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	0.20	1.0	0.10	0.20	ug/L	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.20	1.0	0.10	0.20	ug/L	U	U	
DIBROMOCHLOROMETHANE	124-48-1	0.20	1.0	0.10	0.20	ug/L	U	U	
DIBROMOMETHANE	74-95-3	0.20	1.0	0.10	0.20	ug/L	U	U	
DICHLORODIFLUOROMETHANE	75-71-8	0.30	1.0	0.15	0.30	ug/L	U	U	

Analysis Method *SW8260B*

ETHYLBENZENE	100-41-4	0.20	1.0	0.10	0.20	ug/L	U	U
HEXACHLOROBUTADIENE	87-68-3	0.30	1.0	0.22	0.30	ug/L	U	U
ISOPROPYL BENZENE	98-82-8	0.20	1.0	0.10	0.20	ug/L	U	U
M,P-XYLENES	MP-XYL	0.40	2.0	0.21	0.40	ug/L	U	U
METHYLENE CHLORIDE	75-09-2	1.0	2.0	0.50	1.0	ug/L	U	U
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.20	1.0	0.13	0.20	ug/L	U	U
NAPHTHALENE	91-20-3	1.0	2.0	0.50	1.0	ug/L	U	U
N-BUTYLBENZENE	104-51-8	0.30	1.0	0.17	0.30	ug/L	U	U
N-PROPYLBENZENE	103-65-1	0.20	1.0	0.13	0.20	ug/L	U	U
O-XYLENE	95-47-6	0.20	1.0	0.10	0.20	ug/L	U	U
P-ISOPROPYLTOLUENE	99-87-6	0.20	1.0	0.14	0.20	ug/L	U	U
SEC-BUTYLBENZENE	135-98-8	0.20	1.0	0.13	0.20	ug/L	U	U
STYRENE	100-42-5	0.50	1.0	0.25	0.50	ug/L	U	U
TERT BUTYL ALCOHOL	75-65-0	5.0	10	2.5	5.0	ug/L	U	R 05
TERT-BUTYLBENZENE	98-06-6	0.20	1.0	0.13	0.20	ug/L	U	U
TETRACHLOROETHENE	127-18-4	0.20	1.0	0.15	0.20	ug/L	U	U
TOLUENE	108-88-3	0.20	1.0	0.10	0.20	ug/L	U	U
TRANS-1,2- DICHLOROETHENE	156-60-5	0.20	1.0	0.10	0.20	ug/L	U	U
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.20	1.0	0.11	0.20	ug/L	U	U
TRICHLOROETHENE	79-01-6	0.20	1.0	0.10	0.20	ug/L	U	U
TRICHLOROFLUOROMETHAN E	75-69-4	0.30	1.0	0.15	0.30	ug/L	U	U
VINYL CHLORIDE	75-01-4	0.20	1.0	0.12	0.20	ug/L	U	U

Analysis Method SW8260B

Sample Name S53-SB03-11.5

Result Type: TRG

Analysis Date: 2015/02/05

Analysis Time: 11:24:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.88	4.4	0.44	0.88	ug/kg	U	U	
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.86	4.3	0.43	0.86	ug/kg	U	R	22
1,1,1-TRICHLOROETHANE	71-55-6	0.88	4.4	0.44	0.88	ug/kg	U	U	
1,1,1-TRICHLOROETHANE	71-55-6	0.86	4.3	0.43	0.86	ug/kg	U	R	22
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.88	4.4	0.44	0.88	ug/kg	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.86	4.3	0.43	0.86	ug/kg	U	R	22
1,1,2-TRICHLOROETHANE	79-00-5	0.86	4.3	0.43	0.86	ug/kg	U	R	22
1,1,2-TRICHLOROETHANE	79-00-5	0.88	4.4	0.44	0.88	ug/kg	U	U	
1,1-DICHLOROETHANE	75-34-3	0.88	4.4	0.44	0.88	ug/kg	U	U	
1,1-DICHLOROETHANE	75-34-3	0.86	4.3	0.43	0.86	ug/kg	U	R	22
1,1-DICHLOROETHENE	75-35-4	0.86	4.3	0.43	0.86	ug/kg	U	R	22
1,1-DICHLOROETHENE	75-35-4	0.88	4.4	0.44	0.88	ug/kg	U	U	
1,1-DICHLOROPROPENE	563-58-6	0.86	4.3	0.43	0.86	ug/kg	U	R	22
1,1-DICHLOROPROPENE	563-58-6	0.88	4.4	0.44	0.88	ug/kg	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	1.8	4.4	0.88	1.8	ug/kg	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	1.7	4.3	0.86	1.7	ug/kg	U	R	22
1,2,3-TRICHLOROPROPANE	96-18-4	1.8	4.4	0.88	1.8	ug/kg	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	1.7	4.3	0.86	1.7	ug/kg	U	R	22
1,2,4-TRICHLOROBENZENE	120-82-1	1.7	4.3	0.86	1.7	ug/kg	U	R	22
1,2,4-TRICHLOROBENZENE	120-82-1	1.8	4.4	0.88	1.8	ug/kg	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	1.8	4.4	0.48	1.8	ug/kg	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	1.7	4.3	0.47	1.7	ug/kg	U	R	22
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	1.7	4.3	0.86	1.7	ug/kg	U	R	22
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	1.8	4.4	0.88	1.8	ug/kg	U	U	
1,2-DIBROMOETHANE	106-93-4	0.88	4.4	0.44	0.88	ug/kg	U	U	
1,2-DIBROMOETHANE	106-93-4	0.86	4.3	0.43	0.86	ug/kg	U	R	22
1,2-DICHLOROBENZENE	95-50-1	0.88	4.4	0.44	0.88	ug/kg	U	U	
1,2-DICHLOROBENZENE	95-50-1	0.86	4.3	0.43	0.86	ug/kg	U	R	22
1,2-DICHLOROETHANE	107-06-2	0.86	4.3	0.43	0.86	ug/kg	U	R	22
1,2-DICHLOROETHANE	107-06-2	0.88	4.4	0.44	0.88	ug/kg	U	U	
1,2-DICHLOROPROPANE	78-87-5	0.86	4.3	0.43	0.86	ug/kg	U	R	22
1,2-DICHLOROPROPANE	78-87-5	0.88	4.4	0.44	0.88	ug/kg	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	1.7	4.3	0.51	1.7	ug/kg	U	R	22
1,3,5-TRIMETHYLBENZENE	108-67-8	1.8	4.4	0.52	1.8	ug/kg	U	U	
1,3-DICHLOROBENZENE	541-73-1	0.86	4.3	0.45	0.86	ug/kg	U	R	22
1,3-DICHLOROBENZENE	541-73-1	0.88	4.4	0.46	0.88	ug/kg	U	U	
1,3-DICHLOROPROPANE	142-28-9	0.86	4.3	0.43	0.86	ug/kg	U	R	22
1,3-DICHLOROPROPANE	142-28-9	0.88	4.4	0.44	0.88	ug/kg	U	U	
1,4-DICHLOROBENZENE	106-46-7	0.86	4.3	0.43	0.86	ug/kg	U	R	22
1,4-DICHLOROBENZENE	106-46-7	0.88	4.4	0.44	0.88	ug/kg	U	U	
2,2-DICHLOROPROPANE	594-20-7	1.8	4.4	0.88	1.8	ug/kg	U	U	
2,2-DICHLOROPROPANE	594-20-7	1.7	4.3	0.86	1.7	ug/kg	U	R	22
2-BUTANONE (MEK)	78-93-3	4.4	8.8	2.2	4.4	ug/kg	U	U	

Analysis Method *SW8260B*

2-BUTANONE (MEK)	78-93-3	2.6	8.6	2.2	4.3	ug/kg	J	R	22
2-CHLOROTOLUENE	95-49-8	1.8	4.4	0.72	1.8	ug/kg	U	U	
2-CHLOROTOLUENE	95-49-8	1.7	4.3	0.71	1.7	ug/kg	U	R	22
2-HEXANONE	591-78-6	4.4	8.8	2.6	4.4	ug/kg	U	U	
2-HEXANONE	591-78-6	4.3	8.6	2.5	4.3	ug/kg	U	R	22
4-CHLOROTOLUENE	106-43-4	1.8	4.4	0.59	1.8	ug/kg	U	U	
4-CHLOROTOLUENE	106-43-4	1.7	4.3	0.58	1.7	ug/kg	U	R	22
4-METHYL-2-PENTANONE (MIBK)	108-10-1	4.4	8.8	2.5	4.4	ug/kg	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	4.3	8.6	2.4	4.3	ug/kg	U	R	22
ACETONE	67-64-1	12	8.8	2.7	4.4	ug/kg		R	22
ACETONE	67-64-1	16	8.6	2.7	4.3	ug/kg		R	22
BENZENE	71-43-2	0.88	4.4	0.44	0.88	ug/kg	U	U	
BENZENE	71-43-2	0.86	4.3	0.43	0.86	ug/kg	U	R	22
BROMOBENZENE	108-86-1	0.88	4.4	0.44	0.88	ug/kg	U	U	
BROMOBENZENE	108-86-1	0.86	4.3	0.43	0.86	ug/kg	U	R	22
BROMOCHLOROMETHANE	74-97-5	0.86	4.3	0.43	0.86	ug/kg	U	R	22
BROMOCHLOROMETHANE	74-97-5	0.88	4.4	0.44	0.88	ug/kg	U	U	
BROMODICHLOROMETHANE	75-27-4	0.86	4.3	0.43	0.86	ug/kg	U	R	22
BROMODICHLOROMETHANE	75-27-4	0.88	4.4	0.44	0.88	ug/kg	U	U	
BROMOFORM	75-25-2	1.8	4.4	0.88	1.8	ug/kg	U	U	
BROMOFORM	75-25-2	1.7	4.3	0.86	1.7	ug/kg	U	R	22
BROMOMETHANE	74-83-9	1.8	8.8	1.6	1.8	ug/kg	U	U	
BROMOMETHANE	74-83-9	1.7	8.6	1.5	1.7	ug/kg	U	R	22
CARBON DISULFIDE	75-15-0	0.86	4.3	0.43	0.86	ug/kg	U	R	22
CARBON DISULFIDE	75-15-0	0.88	4.4	0.44	0.88	ug/kg	U	U	
CARBON TETRACHLORIDE	56-23-5	0.86	4.3	0.46	0.86	ug/kg	U	R	22
CARBON TETRACHLORIDE	56-23-5	0.88	4.4	0.48	0.88	ug/kg	U	U	
CHLOROBENZENE	108-90-7	0.86	4.3	0.43	0.86	ug/kg	U	R	22
CHLOROBENZENE	108-90-7	0.88	4.4	0.44	0.88	ug/kg	U	U	
CHLOROETHANE	75-00-3	1.7	4.3	1.1	1.7	ug/kg	U	R	22
CHLOROETHANE	75-00-3	1.8	4.4	1.1	1.8	ug/kg	U	U	
CHLOROFORM	67-66-3	0.88	4.4	0.44	0.88	ug/kg	U	U	
CHLOROFORM	67-66-3	0.86	4.3	0.43	0.86	ug/kg	U	R	22
CHLOROMETHANE	74-87-3	1.8	4.4	0.88	1.8	ug/kg	U	U	
CHLOROMETHANE	74-87-3	1.7	4.3	0.86	1.7	ug/kg	U	R	22
CIS-1,2-DICHLOROETHENE	156-59-2	0.88	4.4	0.44	0.88	ug/kg	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	0.86	4.3	0.43	0.86	ug/kg	U	R	22
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.88	4.4	0.44	0.88	ug/kg	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.86	4.3	0.43	0.86	ug/kg	U	R	22
DIBROMOCHLOROMETHANE	124-48-1	0.88	4.4	0.44	0.88	ug/kg	U	U	
DIBROMOCHLOROMETHANE	124-48-1	0.86	4.3	0.43	0.86	ug/kg	U	R	22
DIBROMOMETHANE	74-95-3	0.86	4.3	0.43	0.86	ug/kg	U	R	22
DIBROMOMETHANE	74-95-3	0.88	4.4	0.44	0.88	ug/kg	U	U	
DICHLORODIFLUOROMETHA NE	75-71-8	1.7	4.3	1.0	1.7	ug/kg	U	R	22
DICHLORODIFLUOROMETHA NE	75-71-8	1.8	4.4	1.1	1.8	ug/kg	U	U	
ETHYLBENZENE	100-41-4	0.86	4.3	0.43	0.86	ug/kg	U	R	22
ETHYLBENZENE	100-41-4	0.88	4.4	0.44	0.88	ug/kg	U	U	
HEXACHLOROBUTADIENE	87-68-3	1.7	4.3	0.86	1.7	ug/kg	U	R	22
HEXACHLOROBUTADIENE	87-68-3	1.8	4.4	0.88	1.8	ug/kg	U	U	
ISOPROPYL BENZENE	98-82-8	1.7	4.3	0.55	1.7	ug/kg	U	R	22

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ISOPROPYL BENZENE	98-82-8	1.8	4.4	0.56	1.8	ug/kg	U	U	
M,P-XYLENES	MP-XYL	1.7	8.6	0.86	1.7	ug/kg	U	R	22
M,P-XYLENES	MP-XYL	1.8	8.8	0.88	1.8	ug/kg	U	U	
METHYLENE CHLORIDE	75-09-2	4.3	8.6	0.86	4.3	ug/kg	U	R	22
METHYLENE CHLORIDE	75-09-2	4.4	8.8	0.88	4.4	ug/kg	U	U	
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.86	4.3	0.43	0.86	ug/kg	U	R	22
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.88	4.4	0.44	0.88	ug/kg	U	U	
NAPHTHALENE	91-20-3	1.8	8.8	0.88	1.8	ug/kg	U	U	
NAPHTHALENE	91-20-3	1.7	8.6	0.86	1.7	ug/kg	U	R	22
N-BUTYLBENZENE	104-51-8	1.8	4.4	0.62	1.8	ug/kg	U	U	
N-BUTYLBENZENE	104-51-8	1.7	4.3	0.60	1.7	ug/kg	U	R	22
N-PROPYLBENZENE	103-65-1	1.8	4.4	0.57	1.8	ug/kg	U	U	
N-PROPYLBENZENE	103-65-1	1.7	4.3	0.56	1.7	ug/kg	U	R	22
O-XYLENE	95-47-6	0.88	4.4	0.44	0.88	ug/kg	U	U	
O-XYLENE	95-47-6	0.86	4.3	0.43	0.86	ug/kg	U	R	22
P-ISOPROPYLTOLUENE	99-87-6	1.8	4.4	0.55	1.8	ug/kg	U	U	
P-ISOPROPYLTOLUENE	99-87-6	1.7	4.3	0.53	1.7	ug/kg	U	R	22
SEC-BUTYLBENZENE	135-98-8	1.7	4.3	0.58	1.7	ug/kg	U	R	22
SEC-BUTYLBENZENE	135-98-8	1.8	4.4	0.59	1.8	ug/kg	U	U	
STYRENE	100-42-5	1.7	4.3	0.86	1.7	ug/kg	U	R	22
STYRENE	100-42-5	1.8	4.4	0.88	1.8	ug/kg	U	U	
TERT BUTYL ALCOHOL	75-65-0	8.8	18	8.1	8.8	ug/kg	U	U	
TERT BUTYL ALCOHOL	75-65-0	8.6	17	7.9	8.6	ug/kg	U	R	22
TERT-BUTYLBENZENE	98-06-6	1.7	4.3	0.53	1.7	ug/kg	U	R	22
TERT-BUTYLBENZENE	98-06-6	1.8	4.4	0.55	1.8	ug/kg	U	U	
TETRACHLOROETHENE	127-18-4	0.86	4.3	0.43	0.86	ug/kg	U	R	22
TETRACHLOROETHENE	127-18-4	0.88	4.4	0.44	0.88	ug/kg	U	U	
TOLUENE	108-88-3	0.86	4.3	0.43	0.86	ug/kg	U	R	22
TOLUENE	108-88-3	0.88	4.4	0.44	0.88	ug/kg	U	U	
TRANS-1,2- DICHLOROETHENE	156-60-5	0.86	4.3	0.43	0.86	ug/kg	U	R	22
TRANS-1,2- DICHLOROETHENE	156-60-5	0.88	4.4	0.44	0.88	ug/kg	U	U	
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.86	4.3	0.43	0.86	ug/kg	U	R	22
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.88	4.4	0.44	0.88	ug/kg	U	U	
TRICHLOROETHENE	79-01-6	0.86	4.3	0.43	0.86	ug/kg	U	R	22
TRICHLOROETHENE	79-01-6	0.88	4.4	0.44	0.88	ug/kg	U	U	
TRICHLOROFLUOROMETHAN E	75-69-4	1.8	4.4	0.97	1.8	ug/kg	U	U	
TRICHLOROFLUOROMETHAN E	75-69-4	1.7	4.3	0.95	1.7	ug/kg	U	R	22
VINYL CHLORIDE	75-01-4	1.8	4.4	1.2	1.8	ug/kg	U	U	
VINYL CHLORIDE	75-01-4	1.7	4.3	1.2	1.7	ug/kg	U	R	22

Analysis Method SW8260B

Sample Name S53-SB03-16.5

Result Type: TRG

Analysis Date: 2015/02/04

Analysis Time: 16:55:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.93	4.6	0.46	0.93	ug/kg	U	U	
1,1,1-TRICHLOROETHANE	71-55-6	0.93	4.6	0.46	0.93	ug/kg	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.93	4.6	0.46	0.93	ug/kg	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	0.93	4.6	0.46	0.93	ug/kg	U	U	
1,1-DICHLOROETHANE	75-34-3	0.93	4.6	0.46	0.93	ug/kg	U	U	
1,1-DICHLOROETHENE	75-35-4	0.93	4.6	0.46	0.93	ug/kg	U	U	
1,1-DICHLOROPROPENE	563-58-6	0.93	4.6	0.46	0.93	ug/kg	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	1.9	4.6	0.93	1.9	ug/kg	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	1.9	4.6	0.93	1.9	ug/kg	U	U	
1,2,4-TRICHLOROBENZENE	120-82-1	1.9	4.6	0.93	1.9	ug/kg	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	1.9	4.6	0.51	1.9	ug/kg	U	U	
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	1.9	4.6	0.93	1.9	ug/kg	U	U	
1,2-DIBROMOETHANE	106-93-4	0.93	4.6	0.46	0.93	ug/kg	U	U	
1,2-DICHLOROBENZENE	95-50-1	0.93	4.6	0.46	0.93	ug/kg	U	U	
1,2-DICHLOROETHANE	107-06-2	0.93	4.6	0.46	0.93	ug/kg	U	U	
1,2-DICHLOROPROPANE	78-87-5	0.93	4.6	0.46	0.93	ug/kg	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	1.9	4.6	0.55	1.9	ug/kg	U	U	
1,3-DICHLOROBENZENE	541-73-1	0.93	4.6	0.48	0.93	ug/kg	U	U	
1,3-DICHLOROPROPANE	142-28-9	0.93	4.6	0.46	0.93	ug/kg	U	U	
1,4-DICHLOROBENZENE	106-46-7	0.93	4.6	0.46	0.93	ug/kg	U	U	
2,2-DICHLOROPROPANE	594-20-7	1.9	4.6	0.93	1.9	ug/kg	U	U	
2-BUTANONE (MEK)	78-93-3	4.6	9.3	2.3	4.6	ug/kg	U	U	
2-CHLOROTOLUENE	95-49-8	1.9	4.6	0.76	1.9	ug/kg	U	U	
2-HEXANONE	591-78-6	4.6	9.3	2.7	4.6	ug/kg	U	U	
4-CHLOROTOLUENE	106-43-4	1.9	4.6	0.62	1.9	ug/kg	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	4.6	9.3	2.6	4.6	ug/kg	U	U	
ACETONE	67-64-1	8.6	9.3	2.9	4.6	ug/kg	J	U	18
BENZENE	71-43-2	0.93	4.6	0.46	0.93	ug/kg	U	U	
BROMOBENZENE	108-86-1	0.93	4.6	0.46	0.93	ug/kg	U	U	
BROMOCHLOROMETHANE	74-97-5	0.93	4.6	0.46	0.93	ug/kg	U	U	
BROMODICHLOROMETHANE	75-27-4	0.93	4.6	0.46	0.93	ug/kg	U	U	
BROMOFORM	75-25-2	1.9	4.6	0.93	1.9	ug/kg	U	U	
BROMOMETHANE	74-83-9	1.9	9.3	1.7	1.9	ug/kg	U	U	
CARBON DISULFIDE	75-15-0	0.93	4.6	0.46	0.93	ug/kg	U	U	
CARBON TETRACHLORIDE	56-23-5	0.93	4.6	0.50	0.93	ug/kg	U	U	
CHLOROBENZENE	108-90-7	0.93	4.6	0.46	0.93	ug/kg	U	U	
CHLOROETHANE	75-00-3	1.9	4.6	1.2	1.9	ug/kg	U	U	
CHLOROFORM	67-66-3	0.93	4.6	0.46	0.93	ug/kg	U	U	
CHLOROMETHANE	74-87-3	1.9	4.6	0.93	1.9	ug/kg	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	0.93	4.6	0.46	0.93	ug/kg	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.93	4.6	0.46	0.93	ug/kg	U	U	
DIBROMOCHLOROMETHANE	124-48-1	0.93	4.6	0.46	0.93	ug/kg	U	U	
DIBROMOMETHANE	74-95-3	0.93	4.6	0.46	0.93	ug/kg	U	U	
DICHLORODIFLUOROMETHANE	75-71-8	1.9	4.6	1.1	1.9	ug/kg	U	U	

Analysis Method *SW8260B*

ETHYLBENZENE	100-41-4	0.93	4.6	0.46	0.93	ug/kg	U	U
HEXACHLOROBUTADIENE	87-68-3	1.9	4.6	0.93	1.9	ug/kg	U	U
ISOPROPYL BENZENE	98-82-8	1.9	4.6	0.59	1.9	ug/kg	U	U
M,P-XYLENES	MP-XYL	1.9	9.3	0.93	1.9	ug/kg	U	U
METHYLENE CHLORIDE	75-09-2	4.6	9.3	0.93	4.6	ug/kg	U	U
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.93	4.6	0.46	0.93	ug/kg	U	U
NAPHTHALENE	91-20-3	1.9	9.3	0.93	1.9	ug/kg	U	U
N-BUTYLBENZENE	104-51-8	1.9	4.6	0.65	1.9	ug/kg	U	U
N-PROPYLBENZENE	103-65-1	1.9	4.6	0.60	1.9	ug/kg	U	U
O-XYLENE	95-47-6	0.93	4.6	0.46	0.93	ug/kg	U	U
P-ISOPROPYLTOLUENE	99-87-6	1.9	4.6	0.57	1.9	ug/kg	U	U
SEC-BUTYLBENZENE	135-98-8	1.9	4.6	0.62	1.9	ug/kg	U	U
STYRENE	100-42-5	1.9	4.6	0.93	1.9	ug/kg	U	U
TERT BUTYL ALCOHOL	75-65-0	9.3	19	8.5	9.3	ug/kg	U	U
TERT-BUTYLBENZENE	98-06-6	1.9	4.6	0.57	1.9	ug/kg	U	U
TETRACHLOROETHENE	127-18-4	0.93	4.6	0.46	0.93	ug/kg	U	U
TOLUENE	108-88-3	0.93	4.6	0.46	0.93	ug/kg	U	U
TRANS-1,2- DICHLOROETHENE	156-60-5	0.93	4.6	0.46	0.93	ug/kg	U	U
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.93	4.6	0.46	0.93	ug/kg	U	U
TRICHLOROETHENE	79-01-6	0.93	4.6	0.46	0.93	ug/kg	U	U
TRICHLOROFLUOROMETHAN E	75-69-4	1.9	4.6	1.0	1.9	ug/kg	U	U
VINYL CHLORIDE	75-01-4	1.9	4.6	1.3	1.9	ug/kg	U	U

Analysis Method SW8260B

Sample Name S53-SB03-18.5

Result Type: TRG

Analysis Date: 2015/02/04

Analysis Time: 17:28:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,1,1-TRICHLOROETHANE	71-55-6	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,1-DICHLOROETHANE	75-34-3	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,1-DICHLOROETHENE	75-35-4	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,1-DICHLOROPROPENE	563-58-6	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	1.8	4.6	0.92	1.8	ug/kg	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	1.8	4.6	0.92	1.8	ug/kg	U	U	
1,2,4-TRICHLOROBENZENE	120-82-1	1.8	4.6	0.92	1.8	ug/kg	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	1.8	4.6	0.51	1.8	ug/kg	U	U	
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	1.8	4.6	0.92	1.8	ug/kg	U	U	
1,2-DIBROMOETHANE	106-93-4	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,2-DICHLOROBENZENE	95-50-1	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,2-DICHLOROETHANE	107-06-2	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,2-DICHLOROPROPANE	78-87-5	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	1.8	4.6	0.54	1.8	ug/kg	U	U	
1,3-DICHLOROBENZENE	541-73-1	0.92	4.6	0.48	0.92	ug/kg	U	U	
1,3-DICHLOROPROPANE	142-28-9	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,4-DICHLOROBENZENE	106-46-7	0.92	4.6	0.46	0.92	ug/kg	U	U	
2,2-DICHLOROPROPANE	594-20-7	1.8	4.6	0.92	1.8	ug/kg	U	U	
2-BUTANONE (MEK)	78-93-3	4.6	9.2	2.3	4.6	ug/kg	U	U	
2-CHLOROTOLUENE	95-49-8	1.8	4.6	0.75	1.8	ug/kg	U	U	
2-HEXANONE	591-78-6	4.6	9.2	2.7	4.6	ug/kg	U	U	
4-CHLOROTOLUENE	106-43-4	1.8	4.6	0.62	1.8	ug/kg	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	4.6	9.2	2.6	4.6	ug/kg	U	U	
ACETONE	67-64-1	6.2	9.2	2.8	4.6	ug/kg	J	U	18
BENZENE	71-43-2	0.92	4.6	0.46	0.92	ug/kg	U	U	
BROMOBENZENE	108-86-1	0.92	4.6	0.46	0.92	ug/kg	U	U	
BROMOCHLOROMETHANE	74-97-5	0.92	4.6	0.46	0.92	ug/kg	U	U	
BROMODICHLOROMETHANE	75-27-4	0.92	4.6	0.46	0.92	ug/kg	U	U	
BROMOFORM	75-25-2	1.8	4.6	0.92	1.8	ug/kg	U	U	
BROMOMETHANE	74-83-9	1.8	9.2	1.7	1.8	ug/kg	U	U	
CARBON DISULFIDE	75-15-0	0.92	4.6	0.46	0.92	ug/kg	U	U	
CARBON TETRACHLORIDE	56-23-5	0.92	4.6	0.50	0.92	ug/kg	U	U	
CHLOROBENZENE	108-90-7	0.92	4.6	0.46	0.92	ug/kg	U	U	
CHLOROETHANE	75-00-3	1.8	4.6	1.2	1.8	ug/kg	U	U	
CHLOROFORM	67-66-3	0.92	4.6	0.46	0.92	ug/kg	U	U	
CHLOROMETHANE	74-87-3	1.8	4.6	0.92	1.8	ug/kg	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	0.92	4.6	0.46	0.92	ug/kg	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.92	4.6	0.46	0.92	ug/kg	U	U	
DIBROMOCHLOROMETHANE	124-48-1	0.92	4.6	0.46	0.92	ug/kg	U	U	
DIBROMOMETHANE	74-95-3	0.92	4.6	0.46	0.92	ug/kg	U	U	
DICHLORODIFLUOROMETHANE	75-71-8	1.8	4.6	1.1	1.8	ug/kg	U	U	

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ETHYLBENZENE	100-41-4	0.92	4.6	0.46	0.92	ug/kg	U	U
HEXACHLOROBUTADIENE	87-68-3	1.8	4.6	0.92	1.8	ug/kg	U	U
ISOPROPYL BENZENE	98-82-8	1.8	4.6	0.59	1.8	ug/kg	U	U
M,P-XYLENES	MP-XYL	1.8	9.2	0.92	1.8	ug/kg	U	U
METHYLENE CHLORIDE	75-09-2	4.6	9.2	0.92	4.6	ug/kg	U	U
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.92	4.6	0.46	0.92	ug/kg	U	U
NAPHTHALENE	91-20-3	1.8	9.2	0.92	1.8	ug/kg	U	U
N-BUTYLBENZENE	104-51-8	1.8	4.6	0.64	1.8	ug/kg	U	U
N-PROPYLBENZENE	103-65-1	1.8	4.6	0.60	1.8	ug/kg	U	U
O-XYLENE	95-47-6	0.92	4.6	0.46	0.92	ug/kg	U	U
P-ISOPROPYLTOLUENE	99-87-6	1.8	4.6	0.57	1.8	ug/kg	U	U
SEC-BUTYLBENZENE	135-98-8	1.8	4.6	0.62	1.8	ug/kg	U	U
STYRENE	100-42-5	1.8	4.6	0.92	1.8	ug/kg	U	U
TERT BUTYL ALCOHOL	75-65-0	9.2	18	8.5	9.2	ug/kg	U	U
TERT-BUTYLBENZENE	98-06-6	1.8	4.6	0.57	1.8	ug/kg	U	U
TETRACHLOROETHENE	127-18-4	0.92	4.6	0.46	0.92	ug/kg	U	U
TOLUENE	108-88-3	0.92	4.6	0.46	0.92	ug/kg	U	U
TRANS-1,2- DICHLOROETHENE	156-60-5	0.92	4.6	0.46	0.92	ug/kg	U	U
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.92	4.6	0.46	0.92	ug/kg	U	U
TRICHLOROETHENE	79-01-6	0.92	4.6	0.46	0.92	ug/kg	U	U
TRICHLOROFLUOROMETHAN E	75-69-4	1.8	4.6	1.0	1.8	ug/kg	U	U
VINYL CHLORIDE	75-01-4	1.8	4.6	1.3	1.8	ug/kg	U	U

Analysis Method SW8260B

Sample Name S53-SB03-5

Result Type: TRG

Analysis Date: 2015/02/04

Analysis Time: 15:47:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.89	4.4	0.44	0.89	ug/kg	U	U	
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.93	4.7	0.47	0.93	ug/kg	U	R	22
1,1,1-TRICHLOROETHANE	71-55-6	0.93	4.7	0.47	0.93	ug/kg	U	R	22
1,1,1-TRICHLOROETHANE	71-55-6	0.89	4.4	0.44	0.89	ug/kg	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.89	4.4	0.44	0.89	ug/kg	U	UJ	19
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.93	4.7	0.47	0.93	ug/kg	U	R	22
1,1,2-TRICHLOROETHANE	79-00-5	0.89	4.4	0.44	0.89	ug/kg	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	0.93	4.7	0.47	0.93	ug/kg	U	R	22
1,1-DICHLOROETHANE	75-34-3	0.89	4.4	0.44	0.89	ug/kg	U	U	
1,1-DICHLOROETHANE	75-34-3	0.93	4.7	0.47	0.93	ug/kg	U	R	22
1,1-DICHLOROETHENE	75-35-4	0.93	4.7	0.47	0.93	ug/kg	U	R	22
1,1-DICHLOROETHENE	75-35-4	0.89	4.4	0.44	0.89	ug/kg	U	U	
1,1-DICHLOROPROPENE	563-58-6	0.93	4.7	0.47	0.93	ug/kg	U	R	22
1,1-DICHLOROPROPENE	563-58-6	0.89	4.4	0.44	0.89	ug/kg	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	1.9	4.7	0.93	1.9	ug/kg	U	R	22
1,2,3-TRICHLOROBENZENE	87-61-6	1.8	4.4	0.89	1.8	ug/kg	U	UJ	19
1,2,3-TRICHLOROPROPANE	96-18-4	1.8	4.4	0.89	1.8	ug/kg	U	UJ	19
1,2,3-TRICHLOROPROPANE	96-18-4	1.9	4.7	0.93	1.9	ug/kg	U	R	22
1,2,4-TRICHLOROBENZENE	120-82-1	1.9	4.7	0.93	1.9	ug/kg	U	R	22
1,2,4-TRICHLOROBENZENE	120-82-1	1.8	4.4	0.89	1.8	ug/kg	U	UJ	19
1,2,4-TRIMETHYLBENZENE	95-63-6	60	4.7	0.51	1.9	ug/kg		R	22
1,2,4-TRIMETHYLBENZENE	95-63-6	54	4.4	0.49	1.8	ug/kg		J	13; 19
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	1.8	4.4	0.89	1.8	ug/kg	U	UJ	19
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	1.9	4.7	0.93	1.9	ug/kg	U	R	22
1,2-DIBROMOETHANE	106-93-4	0.89	4.4	0.44	0.89	ug/kg	U	U	
1,2-DIBROMOETHANE	106-93-4	0.93	4.7	0.47	0.93	ug/kg	U	R	22
1,2-DICHLOROBENZENE	95-50-1	0.89	4.4	0.44	0.89	ug/kg	U	UJ	19
1,2-DICHLOROBENZENE	95-50-1	0.93	4.7	0.47	0.93	ug/kg	U	R	22
1,2-DICHLOROETHANE	107-06-2	0.89	4.4	0.44	0.89	ug/kg	U	U	
1,2-DICHLOROETHANE	107-06-2	0.93	4.7	0.47	0.93	ug/kg	U	R	22
1,2-DICHLOROPROPANE	78-87-5	0.89	4.4	0.44	0.89	ug/kg	U	U	
1,2-DICHLOROPROPANE	78-87-5	0.93	4.7	0.47	0.93	ug/kg	U	R	22
1,3,5-TRIMETHYLBENZENE	108-67-8	1.8	4.4	0.52	1.8	ug/kg	U	UJ	19
1,3,5-TRIMETHYLBENZENE	108-67-8	1.9	4.7	0.55	1.9	ug/kg	U	R	22
1,3-DICHLOROBENZENE	541-73-1	0.89	4.4	0.46	0.89	ug/kg	U	UJ	19
1,3-DICHLOROBENZENE	541-73-1	0.93	4.7	0.49	0.93	ug/kg	U	R	22
1,3-DICHLOROPROPANE	142-28-9	0.93	4.7	0.47	0.93	ug/kg	U	R	22
1,3-DICHLOROPROPANE	142-28-9	0.89	4.4	0.44	0.89	ug/kg	U	U	
1,4-DICHLOROBENZENE	106-46-7	0.89	4.4	0.44	0.89	ug/kg	U	UJ	19
1,4-DICHLOROBENZENE	106-46-7	0.93	4.7	0.47	0.93	ug/kg	U	R	22
2,2-DICHLOROPROPANE	594-20-7	1.8	4.4	0.89	1.8	ug/kg	U	U	
2,2-DICHLOROPROPANE	594-20-7	1.9	4.7	0.93	1.9	ug/kg	U	R	22
2-BUTANONE (MEK)	78-93-3	7.8	8.9	2.2	4.4	ug/kg	J	J	13

Analysis Method *SW8260B*

2-BUTANONE (MEK)	78-93-3	7.4	9.3	2.3	4.7	ug/kg	J	R	22
2-CHLOROTOLUENE	95-49-8	1.8	4.4	0.73	1.8	ug/kg	U	UJ	19
2-CHLOROTOLUENE	95-49-8	1.9	4.7	0.76	1.9	ug/kg	U	R	22
2-HEXANONE	591-78-6	4.4	8.9	2.6	4.4	ug/kg	U	U	
2-HEXANONE	591-78-6	4.7	9.3	2.7	4.7	ug/kg	U	R	22
4-CHLOROTOLUENE	106-43-4	1.8	4.4	0.60	1.8	ug/kg	U	UJ	19
4-CHLOROTOLUENE	106-43-4	1.9	4.7	0.62	1.9	ug/kg	U	R	22
4-METHYL-2-PENTANONE (MIBK)	108-10-1	4.7	9.3	2.6	4.7	ug/kg	U	R	22
4-METHYL-2-PENTANONE (MIBK)	108-10-1	4.4	8.9	2.5	4.4	ug/kg	U	U	
ACETONE	67-64-1	36	8.9	2.8	4.4	ug/kg		J	13
ACETONE	67-64-1	36	9.3	2.9	4.7	ug/kg		R	22
BENZENE	71-43-2	0.89	4.4	0.44	0.89	ug/kg	U	U	
BENZENE	71-43-2	0.93	4.7	0.47	0.93	ug/kg	U	R	22
BROMOBENZENE	108-86-1	0.93	4.7	0.47	0.93	ug/kg	U	R	22
BROMOBENZENE	108-86-1	0.89	4.4	0.44	0.89	ug/kg	U	UJ	19
BROMOCHLOROMETHANE	74-97-5	0.93	4.7	0.47	0.93	ug/kg	U	R	22
BROMOCHLOROMETHANE	74-97-5	0.89	4.4	0.44	0.89	ug/kg	U	U	
BROMODICHLOROMETHANE	75-27-4	0.89	4.4	0.44	0.89	ug/kg	U	U	
BROMODICHLOROMETHANE	75-27-4	0.93	4.7	0.47	0.93	ug/kg	U	R	22
BROMOFORM	75-25-2	1.9	4.7	0.93	1.9	ug/kg	U	R	22
BROMOFORM	75-25-2	1.8	4.4	0.89	1.8	ug/kg	U	UJ	19
BROMOMETHANE	74-83-9	1.8	8.9	1.6	1.8	ug/kg	U	U	
BROMOMETHANE	74-83-9	1.9	9.3	1.7	1.9	ug/kg	U	R	22
CARBON DISULFIDE	75-15-0	0.93	4.7	0.47	0.93	ug/kg	U	R	22
CARBON DISULFIDE	75-15-0	0.89	4.4	0.44	0.89	ug/kg	U	U	
CARBON TETRACHLORIDE	56-23-5	0.93	4.7	0.50	0.93	ug/kg	U	R	22
CARBON TETRACHLORIDE	56-23-5	0.89	4.4	0.48	0.89	ug/kg	U	U	
CHLOROBENZENE	108-90-7	0.93	4.7	0.47	0.93	ug/kg	U	R	22
CHLOROBENZENE	108-90-7	0.89	4.4	0.44	0.89	ug/kg	U	U	
CHLOROETHANE	75-00-3	1.8	4.4	1.2	1.8	ug/kg	U	U	
CHLOROETHANE	75-00-3	1.9	4.7	1.2	1.9	ug/kg	U	R	22
CHLOROFORM	67-66-3	0.93	4.7	0.47	0.93	ug/kg	U	R	22
CHLOROFORM	67-66-3	0.89	4.4	0.44	0.89	ug/kg	U	U	
CHLOROMETHANE	74-87-3	1.9	4.7	0.93	1.9	ug/kg	U	R	22
CHLOROMETHANE	74-87-3	1.8	4.4	0.89	1.8	ug/kg	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	0.93	4.7	0.47	0.93	ug/kg	U	R	22
CIS-1,2-DICHLOROETHENE	156-59-2	0.89	4.4	0.44	0.89	ug/kg	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.93	4.7	0.47	0.93	ug/kg	U	R	22
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.89	4.4	0.44	0.89	ug/kg	U	U	
DIBROMOCHLOROMETHANE	124-48-1	0.93	4.7	0.47	0.93	ug/kg	U	R	22
DIBROMOCHLOROMETHANE	124-48-1	0.89	4.4	0.44	0.89	ug/kg	U	U	
DIBROMOMETHANE	74-95-3	0.93	4.7	0.47	0.93	ug/kg	U	R	22
DIBROMOMETHANE	74-95-3	0.89	4.4	0.44	0.89	ug/kg	U	U	
DICHLORODIFLUOROMETHA NE	75-71-8	1.9	4.7	1.1	1.9	ug/kg	U	R	22
DICHLORODIFLUOROMETHA NE	75-71-8	1.8	4.4	1.1	1.8	ug/kg	U	U	
ETHYLBENZENE	100-41-4	0.89	4.4	0.44	0.89	ug/kg	U	U	
ETHYLBENZENE	100-41-4	0.93	4.7	0.47	0.93	ug/kg	U	R	22
HEXACHLOROBUTADIENE	87-68-3	1.8	4.4	0.89	1.8	ug/kg	U	UJ	19
HEXACHLOROBUTADIENE	87-68-3	1.9	4.7	0.93	1.9	ug/kg	U	R	22
ISOPROPYL BENZENE	98-82-8	3.2	4.4	0.57	1.8	ug/kg	J	J	13; 19

Analysis Method *SW8260B*

ISOPROPYL BENZENE	98-82-8	3.9	4.7	0.60	1.9	ug/kg	J	R	22
M,P-XYLENES	MP-XYL	1.8	8.9	0.89	1.8	ug/kg	U	U	
M,P-XYLENES	MP-XYL	1.9	9.3	0.93	1.9	ug/kg	U	R	22
METHYLENE CHLORIDE	75-09-2	4.7	9.3	0.93	4.7	ug/kg	U	R	22
METHYLENE CHLORIDE	75-09-2	4.4	8.9	0.89	4.4	ug/kg	U	U	
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.89	4.4	0.44	0.89	ug/kg	U	U	
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.93	4.7	0.47	0.93	ug/kg	U	R	22
NAPHTHALENE	91-20-3	12	8.9	0.89	1.8	ug/kg		J	13; 19
NAPHTHALENE	91-20-3	12	9.3	0.93	1.9	ug/kg		R	22
N-BUTYLBENZENE	104-51-8	120	4.4	0.62	1.8	ug/kg		J	13; 19
N-BUTYLBENZENE	104-51-8	140	4.7	0.65	1.9	ug/kg		R	22
N-PROPYLBENZENE	103-65-1	18	4.7	0.61	1.9	ug/kg		R	22
N-PROPYLBENZENE	103-65-1	15	4.4	0.58	1.8	ug/kg		J	13; 19
O-XYLENE	95-47-6	14	4.4	0.44	0.89	ug/kg		J	13
O-XYLENE	95-47-6	17	4.7	0.47	0.93	ug/kg		R	22
P-ISOPROPYLTOLUENE	99-87-6	97	4.4	0.55	1.8	ug/kg		J	13; 19
P-ISOPROPYLTOLUENE	99-87-6	110	4.7	0.58	1.9	ug/kg		R	22
SEC-BUTYLBENZENE	135-98-8	62	4.7	0.62	1.9	ug/kg		R	22
SEC-BUTYLBENZENE	135-98-8	56	4.4	0.60	1.8	ug/kg		J	13; 19
STYRENE	100-42-5	1.8	4.4	0.89	1.8	ug/kg	U	U	
STYRENE	100-42-5	1.9	4.7	0.93	1.9	ug/kg	U	R	22
TERT BUTYL ALCOHOL	75-65-0	9.3	19	8.6	9.3	ug/kg	U	R	22
TERT BUTYL ALCOHOL	75-65-0	8.9	18	8.2	8.9	ug/kg	U	U	
TERT-BUTYLBENZENE	98-06-6	1.3	4.4	0.55	1.8	ug/kg	J	J	13; 19
TERT-BUTYLBENZENE	98-06-6	2.0	4.7	0.58	1.9	ug/kg	J	R	22
TETRACHLOROETHENE	127-18-4	0.89	4.4	0.44	0.89	ug/kg	U	U	
TETRACHLOROETHENE	127-18-4	0.93	4.7	0.47	0.93	ug/kg	U	R	22
TOLUENE	108-88-3	0.93	4.7	0.47	0.93	ug/kg	U	R	22
TOLUENE	108-88-3	0.89	4.4	0.44	0.89	ug/kg	U	U	
TRANS-1,2- DICHLOROETHENE	156-60-5	0.93	4.7	0.47	0.93	ug/kg	U	R	22
TRANS-1,2- DICHLOROETHENE	156-60-5	0.89	4.4	0.44	0.89	ug/kg	U	U	
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.89	4.4	0.44	0.89	ug/kg	U	U	
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.93	4.7	0.47	0.93	ug/kg	U	R	22
TRICHLOROETHENE	79-01-6	0.89	4.4	0.44	0.89	ug/kg	U	U	
TRICHLOROETHENE	79-01-6	0.93	4.7	0.47	0.93	ug/kg	U	R	22
TRICHLOROFLUOROMETHAN E	75-69-4	1.9	4.7	1.0	1.9	ug/kg	U	R	22
TRICHLOROFLUOROMETHAN E	75-69-4	1.8	4.4	0.98	1.8	ug/kg	U	U	
VINYL CHLORIDE	75-01-4	1.9	4.7	1.3	1.9	ug/kg	U	R	22
VINYL CHLORIDE	75-01-4	1.8	4.4	1.2	1.8	ug/kg	U	U	

Analysis Method SW8260B

Sample Name S53-SB04-10

Result Type: TRG

Analysis Date: 2015/02/04

Analysis Time: 14:02:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.95	4.7	0.47	0.95	ug/kg	U	U	
1,1,1-TRICHLOROETHANE	71-55-6	0.95	4.7	0.47	0.95	ug/kg	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.95	4.7	0.47	0.95	ug/kg	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	0.95	4.7	0.47	0.95	ug/kg	U	U	
1,1-DICHLOROETHANE	75-34-3	0.95	4.7	0.47	0.95	ug/kg	U	U	
1,1-DICHLOROETHENE	75-35-4	0.95	4.7	0.47	0.95	ug/kg	U	U	
1,1-DICHLOROPROPENE	563-58-6	0.95	4.7	0.47	0.95	ug/kg	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	1.9	4.7	0.95	1.9	ug/kg	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	1.9	4.7	0.95	1.9	ug/kg	U	U	
1,2,4-TRICHLOROBENZENE	120-82-1	1.9	4.7	0.95	1.9	ug/kg	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	1.9	4.7	0.52	1.9	ug/kg	U	U	
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	1.9	4.7	0.95	1.9	ug/kg	U	U	
1,2-DIBROMOETHANE	106-93-4	0.95	4.7	0.47	0.95	ug/kg	U	U	
1,2-DICHLOROBENZENE	95-50-1	0.95	4.7	0.47	0.95	ug/kg	U	U	
1,2-DICHLOROETHANE	107-06-2	0.95	4.7	0.47	0.95	ug/kg	U	U	
1,2-DICHLOROPROPANE	78-87-5	0.95	4.7	0.47	0.95	ug/kg	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	1.9	4.7	0.56	1.9	ug/kg	U	U	
1,3-DICHLOROBENZENE	541-73-1	0.95	4.7	0.49	0.95	ug/kg	U	U	
1,3-DICHLOROPROPANE	142-28-9	0.95	4.7	0.47	0.95	ug/kg	U	U	
1,4-DICHLOROBENZENE	106-46-7	0.95	4.7	0.47	0.95	ug/kg	U	U	
2,2-DICHLOROPROPANE	594-20-7	1.9	4.7	0.95	1.9	ug/kg	U	U	
2-BUTANONE (MEK)	78-93-3	4.7	9.5	2.4	4.7	ug/kg	U	U	
2-CHLOROTOLUENE	95-49-8	1.9	4.7	0.78	1.9	ug/kg	U	U	
2-HEXANONE	591-78-6	4.7	9.5	2.7	4.7	ug/kg	U	U	
4-CHLOROTOLUENE	106-43-4	1.9	4.7	0.63	1.9	ug/kg	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	4.7	9.5	2.6	4.7	ug/kg	U	U	
ACETONE	67-64-1	8.9	9.5	2.9	4.7	ug/kg	J	U	18
BENZENE	71-43-2	0.95	4.7	0.47	0.95	ug/kg	U	U	
BROMOBENZENE	108-86-1	0.95	4.7	0.47	0.95	ug/kg	U	U	
BROMOCHLOROMETHANE	74-97-5	0.95	4.7	0.47	0.95	ug/kg	U	U	
BROMODICHLOROMETHANE	75-27-4	0.95	4.7	0.47	0.95	ug/kg	U	U	
BROMOFORM	75-25-2	1.9	4.7	0.95	1.9	ug/kg	U	U	
BROMOMETHANE	74-83-9	1.9	9.5	1.7	1.9	ug/kg	U	U	
CARBON DISULFIDE	75-15-0	0.95	4.7	0.47	0.95	ug/kg	U	U	
CARBON TETRACHLORIDE	56-23-5	0.95	4.7	0.51	0.95	ug/kg	U	U	
CHLOROBENZENE	108-90-7	0.95	4.7	0.47	0.95	ug/kg	U	U	
CHLOROETHANE	75-00-3	1.9	4.7	1.2	1.9	ug/kg	U	U	
CHLOROFORM	67-66-3	0.95	4.7	0.47	0.95	ug/kg	U	U	
CHLOROMETHANE	74-87-3	1.9	4.7	0.95	1.9	ug/kg	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	0.95	4.7	0.47	0.95	ug/kg	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.95	4.7	0.47	0.95	ug/kg	U	U	
DIBROMOCHLOROMETHANE	124-48-1	0.95	4.7	0.47	0.95	ug/kg	U	U	
DIBROMOMETHANE	74-95-3	0.95	4.7	0.47	0.95	ug/kg	U	U	
DICHLORODIFLUOROMETHANE	75-71-8	1.9	4.7	1.1	1.9	ug/kg	U	U	

Analysis Method *SW8260B*

ETHYLBENZENE	100-41-4	0.95	4.7	0.47	0.95	ug/kg	U	U
HEXACHLOROBUTADIENE	87-68-3	1.9	4.7	0.95	1.9	ug/kg	U	U
ISOPROPYL BENZENE	98-82-8	1.9	4.7	0.61	1.9	ug/kg	U	U
M,P-XYLENES	MP-XYL	1.9	9.5	0.95	1.9	ug/kg	U	U
METHYLENE CHLORIDE	75-09-2	4.7	9.5	0.95	4.7	ug/kg	U	U
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.95	4.7	0.47	0.95	ug/kg	U	U
NAPHTHALENE	91-20-3	1.9	9.5	0.95	1.9	ug/kg	U	U
N-BUTYLBENZENE	104-51-8	1.9	4.7	0.66	1.9	ug/kg	U	U
N-PROPYLBENZENE	103-65-1	1.9	4.7	0.61	1.9	ug/kg	U	U
O-XYLENE	95-47-6	0.95	4.7	0.47	0.95	ug/kg	U	U
P-ISOPROPYLTOLUENE	99-87-6	1.9	4.7	0.59	1.9	ug/kg	U	U
SEC-BUTYLBENZENE	135-98-8	1.9	4.7	0.63	1.9	ug/kg	U	U
STYRENE	100-42-5	1.9	4.7	0.95	1.9	ug/kg	U	U
TERT BUTYL ALCOHOL	75-65-0	9.5	19	8.7	9.5	ug/kg	U	U
TERT-BUTYLBENZENE	98-06-6	1.9	4.7	0.59	1.9	ug/kg	U	U
TETRACHLOROETHENE	127-18-4	0.95	4.7	0.47	0.95	ug/kg	U	U
TOLUENE	108-88-3	0.95	4.7	0.47	0.95	ug/kg	U	U
TRANS-1,2- DICHLOROETHENE	156-60-5	0.95	4.7	0.47	0.95	ug/kg	U	U
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.95	4.7	0.47	0.95	ug/kg	U	U
TRICHLOROETHENE	79-01-6	0.95	4.7	0.47	0.95	ug/kg	U	U
TRICHLOROFLUOROMETHAN E	75-69-4	1.9	4.7	1.0	1.9	ug/kg	U	U
VINYL CHLORIDE	75-01-4	1.9	4.7	1.3	1.9	ug/kg	U	U

Analysis Method SW8260B

Sample Name S53-SB04-20

Result Type: TRG

Analysis Date: 2015/02/04

Analysis Time: 14:39:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.89	4.4	0.44	0.89	ug/kg	U	U	
1,1,1-TRICHLOROETHANE	71-55-6	0.89	4.4	0.44	0.89	ug/kg	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.89	4.4	0.44	0.89	ug/kg	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	0.89	4.4	0.44	0.89	ug/kg	U	U	
1,1-DICHLOROETHANE	75-34-3	0.89	4.4	0.44	0.89	ug/kg	U	U	
1,1-DICHLOROETHENE	75-35-4	0.89	4.4	0.44	0.89	ug/kg	U	U	
1,1-DICHLOROPROPENE	563-58-6	0.89	4.4	0.44	0.89	ug/kg	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	1.8	4.4	0.89	1.8	ug/kg	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	1.8	4.4	0.89	1.8	ug/kg	U	U	
1,2,4-TRICHLOROBENZENE	120-82-1	1.8	4.4	0.89	1.8	ug/kg	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	1.8	4.4	0.49	1.8	ug/kg	U	U	
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	1.8	4.4	0.89	1.8	ug/kg	U	U	
1,2-DIBROMOETHANE	106-93-4	0.89	4.4	0.44	0.89	ug/kg	U	U	
1,2-DICHLOROBENZENE	95-50-1	0.89	4.4	0.44	0.89	ug/kg	U	U	
1,2-DICHLOROETHANE	107-06-2	0.89	4.4	0.44	0.89	ug/kg	U	U	
1,2-DICHLOROPROPANE	78-87-5	0.89	4.4	0.44	0.89	ug/kg	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	1.8	4.4	0.52	1.8	ug/kg	U	U	
1,3-DICHLOROBENZENE	541-73-1	0.89	4.4	0.46	0.89	ug/kg	U	U	
1,3-DICHLOROPROPANE	142-28-9	0.89	4.4	0.44	0.89	ug/kg	U	U	
1,4-DICHLOROBENZENE	106-46-7	0.89	4.4	0.44	0.89	ug/kg	U	U	
2,2-DICHLOROPROPANE	594-20-7	1.8	4.4	0.89	1.8	ug/kg	U	U	
2-BUTANONE (MEK)	78-93-3	4.4	8.9	2.2	4.4	ug/kg	U	U	
2-CHLOROTOLUENE	95-49-8	1.8	4.4	0.73	1.8	ug/kg	U	U	
2-HEXANONE	591-78-6	4.4	8.9	2.6	4.4	ug/kg	U	U	
4-CHLOROTOLUENE	106-43-4	1.8	4.4	0.60	1.8	ug/kg	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	4.4	8.9	2.5	4.4	ug/kg	U	U	
ACETONE	67-64-1	6.9	8.9	2.8	4.4	ug/kg	J	U	18
BENZENE	71-43-2	0.89	4.4	0.44	0.89	ug/kg	U	U	
BROMOBENZENE	108-86-1	0.89	4.4	0.44	0.89	ug/kg	U	U	
BROMOCHLOROMETHANE	74-97-5	0.89	4.4	0.44	0.89	ug/kg	U	U	
BROMODICHLOROMETHANE	75-27-4	0.89	4.4	0.44	0.89	ug/kg	U	U	
BROMOFORM	75-25-2	1.8	4.4	0.89	1.8	ug/kg	U	U	
BROMOMETHANE	74-83-9	1.8	8.9	1.6	1.8	ug/kg	U	U	
CARBON DISULFIDE	75-15-0	0.89	4.4	0.44	0.89	ug/kg	U	U	
CARBON TETRACHLORIDE	56-23-5	0.89	4.4	0.48	0.89	ug/kg	U	U	
CHLOROBENZENE	108-90-7	0.89	4.4	0.44	0.89	ug/kg	U	U	
CHLOROETHANE	75-00-3	1.8	4.4	1.2	1.8	ug/kg	U	U	
CHLOROFORM	67-66-3	0.89	4.4	0.44	0.89	ug/kg	U	U	
CHLOROMETHANE	74-87-3	1.8	4.4	0.89	1.8	ug/kg	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	0.89	4.4	0.44	0.89	ug/kg	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.89	4.4	0.44	0.89	ug/kg	U	U	
DIBROMOCHLOROMETHANE	124-48-1	0.89	4.4	0.44	0.89	ug/kg	U	U	
DIBROMOMETHANE	74-95-3	0.89	4.4	0.44	0.89	ug/kg	U	U	
DICHLORODIFLUOROMETHANE	75-71-8	1.8	4.4	1.1	1.8	ug/kg	U	U	

Analysis Method *SW8260B*

ETHYLBENZENE	100-41-4	0.89	4.4	0.44	0.89	ug/kg	U	U
HEXACHLOROBUTADIENE	87-68-3	1.8	4.4	0.89	1.8	ug/kg	U	U
ISOPROPYL BENZENE	98-82-8	1.8	4.4	0.57	1.8	ug/kg	U	U
M,P-XYLENES	MP-XYL	1.8	8.9	0.89	1.8	ug/kg	U	U
METHYLENE CHLORIDE	75-09-2	4.4	8.9	0.89	4.4	ug/kg	U	U
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.89	4.4	0.44	0.89	ug/kg	U	U
NAPHTHALENE	91-20-3	1.8	8.9	0.89	1.8	ug/kg	U	U
N-BUTYLBENZENE	104-51-8	1.8	4.4	0.62	1.8	ug/kg	U	U
N-PROPYLBENZENE	103-65-1	1.8	4.4	0.58	1.8	ug/kg	U	U
O-XYLENE	95-47-6	0.89	4.4	0.44	0.89	ug/kg	U	U
P-ISOPROPYLTOLUENE	99-87-6	1.8	4.4	0.55	1.8	ug/kg	U	U
SEC-BUTYLBENZENE	135-98-8	1.8	4.4	0.60	1.8	ug/kg	U	U
STYRENE	100-42-5	1.8	4.4	0.89	1.8	ug/kg	U	U
TERT BUTYL ALCOHOL	75-65-0	8.9	18	8.2	8.9	ug/kg	U	U
TERT-BUTYLBENZENE	98-06-6	1.8	4.4	0.55	1.8	ug/kg	U	U
TETRACHLOROETHENE	127-18-4	0.89	4.4	0.44	0.89	ug/kg	U	U
TOLUENE	108-88-3	0.89	4.4	0.44	0.89	ug/kg	U	U
TRANS-1,2- DICHLOROETHENE	156-60-5	0.89	4.4	0.44	0.89	ug/kg	U	U
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.89	4.4	0.44	0.89	ug/kg	U	U
TRICHLOROETHENE	79-01-6	0.89	4.4	0.44	0.89	ug/kg	U	U
TRICHLOROFLUOROMETHAN E	75-69-4	1.8	4.4	0.98	1.8	ug/kg	U	U
VINYL CHLORIDE	75-01-4	1.8	4.4	1.2	1.8	ug/kg	U	U

Analysis Method SW8260B

Sample Name S53-SB04-28

Result Type: TRG

Analysis Date: 2015/02/04

Analysis Time: 15:14:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.98	4.9	0.49	0.98	ug/kg	U	U	
1,1,1-TRICHLOROETHANE	71-55-6	0.98	4.9	0.49	0.98	ug/kg	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.98	4.9	0.49	0.98	ug/kg	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	0.98	4.9	0.49	0.98	ug/kg	U	U	
1,1-DICHLOROETHANE	75-34-3	0.98	4.9	0.49	0.98	ug/kg	U	U	
1,1-DICHLOROETHENE	75-35-4	0.98	4.9	0.49	0.98	ug/kg	U	U	
1,1-DICHLOROPROPENE	563-58-6	0.98	4.9	0.49	0.98	ug/kg	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	2.0	4.9	0.98	2.0	ug/kg	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	2.0	4.9	0.98	2.0	ug/kg	U	U	
1,2,4-TRICHLOROBENZENE	120-82-1	2.0	4.9	0.98	2.0	ug/kg	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	2.0	4.9	0.54	2.0	ug/kg	U	U	
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	2.0	4.9	0.98	2.0	ug/kg	U	U	
1,2-DIBROMOETHANE	106-93-4	0.98	4.9	0.49	0.98	ug/kg	U	U	
1,2-DICHLOROBENZENE	95-50-1	0.98	4.9	0.49	0.98	ug/kg	U	U	
1,2-DICHLOROETHANE	107-06-2	0.98	4.9	0.49	0.98	ug/kg	U	U	
1,2-DICHLOROPROPANE	78-87-5	0.98	4.9	0.49	0.98	ug/kg	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	2.0	4.9	0.58	2.0	ug/kg	U	U	
1,3-DICHLOROBENZENE	541-73-1	0.98	4.9	0.51	0.98	ug/kg	U	U	
1,3-DICHLOROPROPANE	142-28-9	0.98	4.9	0.49	0.98	ug/kg	U	U	
1,4-DICHLOROBENZENE	106-46-7	0.98	4.9	0.49	0.98	ug/kg	U	U	
2,2-DICHLOROPROPANE	594-20-7	2.0	4.9	0.98	2.0	ug/kg	U	U	
2-BUTANONE (MEK)	78-93-3	4.9	9.8	2.5	4.9	ug/kg	U	U	
2-CHLOROTOLUENE	95-49-8	2.0	4.9	0.81	2.0	ug/kg	U	U	
2-HEXANONE	591-78-6	4.9	9.8	2.9	4.9	ug/kg	U	U	
4-CHLOROTOLUENE	106-43-4	2.0	4.9	0.66	2.0	ug/kg	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	4.9	9.8	2.8	4.9	ug/kg	U	U	
ACETONE	67-64-1	8.4	9.8	3.0	4.9	ug/kg	J	U	18
BENZENE	71-43-2	0.98	4.9	0.49	0.98	ug/kg	U	U	
BROMOBENZENE	108-86-1	0.98	4.9	0.49	0.98	ug/kg	U	U	
BROMOCHLOROMETHANE	74-97-5	0.98	4.9	0.49	0.98	ug/kg	U	U	
BROMODICHLOROMETHANE	75-27-4	0.98	4.9	0.49	0.98	ug/kg	U	U	
BROMOFORM	75-25-2	2.0	4.9	0.98	2.0	ug/kg	U	U	
BROMOMETHANE	74-83-9	2.0	9.8	1.8	2.0	ug/kg	U	U	
CARBON DISULFIDE	75-15-0	0.98	4.9	0.49	0.98	ug/kg	U	U	
CARBON TETRACHLORIDE	56-23-5	0.98	4.9	0.53	0.98	ug/kg	U	U	
CHLOROBENZENE	108-90-7	0.98	4.9	0.49	0.98	ug/kg	U	U	
CHLOROETHANE	75-00-3	2.0	4.9	1.3	2.0	ug/kg	U	U	
CHLOROFORM	67-66-3	0.98	4.9	0.49	0.98	ug/kg	U	U	
CHLOROMETHANE	74-87-3	2.0	4.9	0.98	2.0	ug/kg	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	0.98	4.9	0.49	0.98	ug/kg	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.98	4.9	0.49	0.98	ug/kg	U	U	
DIBROMOCHLOROMETHANE	124-48-1	0.98	4.9	0.49	0.98	ug/kg	U	U	
DIBROMOMETHANE	74-95-3	0.98	4.9	0.49	0.98	ug/kg	U	U	
DICHLORODIFLUOROMETHANE	75-71-8	2.0	4.9	1.2	2.0	ug/kg	U	U	

Analysis Method *SW8260B*

ETHYLBENZENE	100-41-4	0.98	4.9	0.49	0.98	ug/kg	U	U
HEXACHLOROBUTADIENE	87-68-3	2.0	4.9	0.98	2.0	ug/kg	U	U
ISOPROPYL BENZENE	98-82-8	2.0	4.9	0.63	2.0	ug/kg	U	U
M,P-XYLENES	MP-XYL	2.0	9.8	0.98	2.0	ug/kg	U	U
METHYLENE CHLORIDE	75-09-2	4.9	9.8	0.98	4.9	ug/kg	U	U
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.98	4.9	0.49	0.98	ug/kg	U	U
NAPHTHALENE	91-20-3	2.0	9.8	0.98	2.0	ug/kg	U	U
N-BUTYLBENZENE	104-51-8	2.0	4.9	0.69	2.0	ug/kg	U	U
N-PROPYLBENZENE	103-65-1	2.0	4.9	0.64	2.0	ug/kg	U	U
O-XYLENE	95-47-6	0.98	4.9	0.49	0.98	ug/kg	U	U
P-ISOPROPYLTOLUENE	99-87-6	2.0	4.9	0.61	2.0	ug/kg	U	U
SEC-BUTYLBENZENE	135-98-8	2.0	4.9	0.66	2.0	ug/kg	U	U
STYRENE	100-42-5	2.0	4.9	0.98	2.0	ug/kg	U	U
TERT BUTYL ALCOHOL	75-65-0	9.8	20	9.0	9.8	ug/kg	U	U
TERT-BUTYLBENZENE	98-06-6	2.0	4.9	0.61	2.0	ug/kg	U	U
TETRACHLOROETHENE	127-18-4	0.98	4.9	0.49	0.98	ug/kg	U	U
TOLUENE	108-88-3	0.98	4.9	0.49	0.98	ug/kg	U	U
TRANS-1,2- DICHLOROETHENE	156-60-5	0.98	4.9	0.49	0.98	ug/kg	U	U
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.98	4.9	0.49	0.98	ug/kg	U	U
TRICHLOROETHENE	79-01-6	0.98	4.9	0.49	0.98	ug/kg	U	U
TRICHLOROFLUOROMETHAN E	75-69-4	2.0	4.9	1.1	2.0	ug/kg	U	U
VINYL CHLORIDE	75-01-4	2.0	4.9	1.4	2.0	ug/kg	U	U

Analysis Method SW8260B

Sample Name S53-SB04-5

Result Type: TRG

Analysis Date: 2015/02/04

Analysis Time: 11:10:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.94	4.7	0.47	0.94	ug/kg	U	R	22
1,1,1-TRICHLOROETHANE	71-55-6	0.94	4.7	0.47	0.94	ug/kg	U	R	22
1,1,1-TRICHLOROETHANE	71-55-6	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.94	4.7	0.47	0.94	ug/kg	U	R	22
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	0.94	4.7	0.47	0.94	ug/kg	U	R	22
1,1,2-TRICHLOROETHANE	79-00-5	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,1-DICHLOROETHANE	75-34-3	0.94	4.7	0.47	0.94	ug/kg	U	R	22
1,1-DICHLOROETHANE	75-34-3	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,1-DICHLOROETHENE	75-35-4	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,1-DICHLOROETHENE	75-35-4	0.94	4.7	0.47	0.94	ug/kg	U	R	22
1,1-DICHLOROPROPENE	563-58-6	0.94	4.7	0.47	0.94	ug/kg	U	R	22
1,1-DICHLOROPROPENE	563-58-6	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	1.8	4.6	0.92	1.8	ug/kg	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	1.9	4.7	0.94	1.9	ug/kg	U	R	22
1,2,3-TRICHLOROPROPANE	96-18-4	1.8	4.6	0.92	1.8	ug/kg	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	1.9	4.7	0.94	1.9	ug/kg	U	R	22
1,2,4-TRICHLOROBENZENE	120-82-1	1.9	4.7	0.94	1.9	ug/kg	U	R	22
1,2,4-TRICHLOROBENZENE	120-82-1	1.8	4.6	0.92	1.8	ug/kg	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	1.9	4.7	0.52	1.9	ug/kg	U	R	22
1,2,4-TRIMETHYLBENZENE	95-63-6	1.8	4.6	0.51	1.8	ug/kg	U	U	
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	1.9	4.7	0.94	1.9	ug/kg	U	R	22
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	1.8	4.6	0.92	1.8	ug/kg	U	U	
1,2-DIBROMOETHANE	106-93-4	0.94	4.7	0.47	0.94	ug/kg	U	R	22
1,2-DIBROMOETHANE	106-93-4	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,2-DICHLOROBENZENE	95-50-1	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,2-DICHLOROBENZENE	95-50-1	0.94	4.7	0.47	0.94	ug/kg	U	R	22
1,2-DICHLOROETHANE	107-06-2	0.94	4.7	0.47	0.94	ug/kg	U	R	22
1,2-DICHLOROETHANE	107-06-2	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,2-DICHLOROPROPANE	78-87-5	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,2-DICHLOROPROPANE	78-87-5	0.94	4.7	0.47	0.94	ug/kg	U	R	22
1,3,5-TRIMETHYLBENZENE	108-67-8	1.8	4.6	0.54	1.8	ug/kg	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	1.9	4.7	0.56	1.9	ug/kg	U	R	22
1,3-DICHLOROBENZENE	541-73-1	0.92	4.6	0.48	0.92	ug/kg	U	U	
1,3-DICHLOROBENZENE	541-73-1	0.94	4.7	0.49	0.94	ug/kg	U	R	22
1,3-DICHLOROPROPANE	142-28-9	0.94	4.7	0.47	0.94	ug/kg	U	R	22
1,3-DICHLOROPROPANE	142-28-9	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,4-DICHLOROBENZENE	106-46-7	0.94	4.7	0.47	0.94	ug/kg	U	R	22
1,4-DICHLOROBENZENE	106-46-7	0.92	4.6	0.46	0.92	ug/kg	U	U	
2,2-DICHLOROPROPANE	594-20-7	1.9	4.7	0.94	1.9	ug/kg	U	R	22
2,2-DICHLOROPROPANE	594-20-7	1.8	4.6	0.92	1.8	ug/kg	U	U	
2-BUTANONE (MEK)	78-93-3	4.7	9.4	2.4	4.7	ug/kg	U	R	22

Analysis Method *SW8260B*

2-BUTANONE (MEK)	78-93-3	4.6	9.2	2.3	4.6	ug/kg	U	U	
2-CHLOROTOLUENE	95-49-8	1.8	4.6	0.76	1.8	ug/kg	U	U	
2-CHLOROTOLUENE	95-49-8	1.9	4.7	0.77	1.9	ug/kg	U	R	22
2-HEXANONE	591-78-6	4.6	9.2	2.7	4.6	ug/kg	U	U	
2-HEXANONE	591-78-6	4.7	9.4	2.7	4.7	ug/kg	U	R	22
4-CHLOROTOLUENE	106-43-4	1.8	4.6	0.62	1.8	ug/kg	U	U	
4-CHLOROTOLUENE	106-43-4	1.9	4.7	0.63	1.9	ug/kg	U	R	22
4-METHYL-2-PENTANONE (MIBK)	108-10-1	4.6	9.2	2.6	4.6	ug/kg	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	4.7	9.4	2.6	4.7	ug/kg	U	R	22
ACETONE	67-64-1	17	9.4	2.9	4.7	ug/kg		R	22
ACETONE	67-64-1	8.9	9.2	2.9	4.6	ug/kg	J	U	18
BENZENE	71-43-2	0.94	4.7	0.47	0.94	ug/kg	U	R	22
BENZENE	71-43-2	0.92	4.6	0.46	0.92	ug/kg	U	U	
BROMOBENZENE	108-86-1	0.94	4.7	0.47	0.94	ug/kg	U	R	22
BROMOBENZENE	108-86-1	0.92	4.6	0.46	0.92	ug/kg	U	U	
BROMOCHLOROMETHANE	74-97-5	0.94	4.7	0.47	0.94	ug/kg	U	R	22
BROMOCHLOROMETHANE	74-97-5	0.92	4.6	0.46	0.92	ug/kg	U	U	
BROMODICHLOROMETHANE	75-27-4	0.94	4.7	0.47	0.94	ug/kg	U	R	22
BROMODICHLOROMETHANE	75-27-4	0.92	4.6	0.46	0.92	ug/kg	U	U	
BROMOFORM	75-25-2	1.9	4.7	0.94	1.9	ug/kg	U	R	22
BROMOFORM	75-25-2	1.8	4.6	0.92	1.8	ug/kg	U	U	
BROMOMETHANE	74-83-9	1.9	9.4	1.7	1.9	ug/kg	U	R	22
BROMOMETHANE	74-83-9	1.8	9.2	1.7	1.8	ug/kg	U	U	
CARBON DISULFIDE	75-15-0	0.94	4.7	0.47	0.94	ug/kg	U	R	22
CARBON DISULFIDE	75-15-0	0.92	4.6	0.46	0.92	ug/kg	U	UJ	09
CARBON TETRACHLORIDE	56-23-5	0.92	4.6	0.50	0.92	ug/kg	U	U	
CARBON TETRACHLORIDE	56-23-5	0.94	4.7	0.51	0.94	ug/kg	U	R	22
CHLOROBENZENE	108-90-7	0.94	4.7	0.47	0.94	ug/kg	U	R	22
CHLOROBENZENE	108-90-7	0.92	4.6	0.46	0.92	ug/kg	U	U	
CHLOROETHANE	75-00-3	1.9	4.7	1.2	1.9	ug/kg	U	R	22
CHLOROETHANE	75-00-3	1.8	4.6	1.2	1.8	ug/kg	U	U	
CHLOROFORM	67-66-3	0.94	4.7	0.47	0.94	ug/kg	U	R	22
CHLOROFORM	67-66-3	0.92	4.6	0.46	0.92	ug/kg	U	U	
CHLOROMETHANE	74-87-3	1.9	4.7	0.94	1.9	ug/kg	U	R	22
CHLOROMETHANE	74-87-3	1.8	4.6	0.92	1.8	ug/kg	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	0.94	4.7	0.47	0.94	ug/kg	U	R	22
CIS-1,2-DICHLOROETHENE	156-59-2	0.92	4.6	0.46	0.92	ug/kg	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.92	4.6	0.46	0.92	ug/kg	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.94	4.7	0.47	0.94	ug/kg	U	R	22
DIBROMOCHLOROMETHANE	124-48-1	0.94	4.7	0.47	0.94	ug/kg	U	R	22
DIBROMOCHLOROMETHANE	124-48-1	0.92	4.6	0.46	0.92	ug/kg	U	U	
DIBROMOMETHANE	74-95-3	0.94	4.7	0.47	0.94	ug/kg	U	R	22
DIBROMOMETHANE	74-95-3	0.92	4.6	0.46	0.92	ug/kg	U	U	
DICHLORODIFLUOROMETHANE	75-71-8	1.9	4.7	1.1	1.9	ug/kg	U	R	22
DICHLORODIFLUOROMETHANE	75-71-8	1.8	4.6	1.1	1.8	ug/kg	U	U	
ETHYLBENZENE	100-41-4	0.92	4.6	0.46	0.92	ug/kg	U	U	
ETHYLBENZENE	100-41-4	0.94	4.7	0.47	0.94	ug/kg	U	R	22
HEXACHLOROBUTADIENE	87-68-3	1.8	4.6	0.92	1.8	ug/kg	U	U	
HEXACHLOROBUTADIENE	87-68-3	1.9	4.7	0.94	1.9	ug/kg	U	R	22
ISOPROPYL BENZENE	98-82-8	1.8	4.6	0.59	1.8	ug/kg	U	U	

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ISOPROPYL BENZENE	98-82-8	1.9	4.7	0.60	1.9	ug/kg	U	R	22
M,P-XYLENES	MP-XYL	1.9	9.4	0.94	1.9	ug/kg	U	R	22
M,P-XYLENES	MP-XYL	1.8	9.2	0.92	1.8	ug/kg	U	U	
METHYLENE CHLORIDE	75-09-2	3.2	9.4	0.94	4.7	ug/kg	J	R	22
METHYLENE CHLORIDE	75-09-2	4.6	9.2	0.92	4.6	ug/kg	U	U	
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.94	4.7	0.47	0.94	ug/kg	U	R	22
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.92	4.6	0.46	0.92	ug/kg	U	U	
NAPHTHALENE	91-20-3	1.9	9.4	0.94	1.9	ug/kg	U	R	22
NAPHTHALENE	91-20-3	1.8	9.2	0.92	1.8	ug/kg	U	U	
N-BUTYLBENZENE	104-51-8	1.9	4.7	0.66	1.9	ug/kg	U	R	22
N-BUTYLBENZENE	104-51-8	1.8	4.6	0.65	1.8	ug/kg	U	U	
N-PROPYLBENZENE	103-65-1	1.9	4.7	0.61	1.9	ug/kg	U	R	22
N-PROPYLBENZENE	103-65-1	1.8	4.6	0.60	1.8	ug/kg	U	U	
O-XYLENE	95-47-6	0.92	4.6	0.46	0.92	ug/kg	U	U	
O-XYLENE	95-47-6	0.94	4.7	0.47	0.94	ug/kg	U	R	22
P-ISOPROPYLTOLUENE	99-87-6	1.9	4.7	0.59	1.9	ug/kg	U	R	22
P-ISOPROPYLTOLUENE	99-87-6	1.8	4.6	0.57	1.8	ug/kg	U	U	
SEC-BUTYLBENZENE	135-98-8	1.8	4.6	0.62	1.8	ug/kg	U	U	
SEC-BUTYLBENZENE	135-98-8	1.9	4.7	0.63	1.9	ug/kg	U	R	22
STYRENE	100-42-5	1.8	4.6	0.92	1.8	ug/kg	U	U	
STYRENE	100-42-5	1.9	4.7	0.94	1.9	ug/kg	U	R	22
TERT BUTYL ALCOHOL	75-65-0	9.2	18	8.5	9.2	ug/kg	U	U	
TERT BUTYL ALCOHOL	75-65-0	9.4	19	8.7	9.4	ug/kg	U	R	22
TERT-BUTYLBENZENE	98-06-6	1.9	4.7	0.59	1.9	ug/kg	U	R	22
TERT-BUTYLBENZENE	98-06-6	1.8	4.6	0.57	1.8	ug/kg	U	U	
TETRACHLOROETHENE	127-18-4	0.92	4.6	0.46	0.92	ug/kg	U	U	
TETRACHLOROETHENE	127-18-4	0.94	4.7	0.47	0.94	ug/kg	U	R	22
TOLUENE	108-88-3	0.92	4.6	0.46	0.92	ug/kg	U	U	
TOLUENE	108-88-3	0.94	4.7	0.47	0.94	ug/kg	U	R	22
TRANS-1,2- DICHLOROETHENE	156-60-5	0.94	4.7	0.47	0.94	ug/kg	U	R	22
TRANS-1,2- DICHLOROETHENE	156-60-5	0.92	4.6	0.46	0.92	ug/kg	U	U	
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.92	4.6	0.46	0.92	ug/kg	U	U	
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.94	4.7	0.47	0.94	ug/kg	U	R	22
TRICHLOROETHENE	79-01-6	0.92	4.6	0.46	0.92	ug/kg	U	U	
TRICHLOROETHENE	79-01-6	0.94	4.7	0.47	0.94	ug/kg	U	R	22
TRICHLOROFLUOROMETHAN E	75-69-4	1.9	4.7	1.0	1.9	ug/kg	U	R	22
TRICHLOROFLUOROMETHAN E	75-69-4	1.8	4.6	1.0	1.8	ug/kg	U	U	
VINYL CHLORIDE	75-01-4	1.8	4.6	1.3	1.8	ug/kg	U	U	
VINYL CHLORIDE	75-01-4	1.9	4.7	1.3	1.9	ug/kg	U	R	22

Analysis Method SW8260B

Sample Name S53-SB05-10

Result Type: TRG

Analysis Date: 2015/02/03

Analysis Time: 23:38:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.91	4.6	0.46	0.91	ug/kg	U	U	
1,1,1-TRICHLOROETHANE	71-55-6	0.91	4.6	0.46	0.91	ug/kg	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.91	4.6	0.46	0.91	ug/kg	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	0.91	4.6	0.46	0.91	ug/kg	U	U	
1,1-DICHLOROETHANE	75-34-3	0.91	4.6	0.46	0.91	ug/kg	U	U	
1,1-DICHLOROETHENE	75-35-4	0.91	4.6	0.46	0.91	ug/kg	U	U	
1,1-DICHLOROPROPENE	563-58-6	0.91	4.6	0.46	0.91	ug/kg	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	1.8	4.6	0.91	1.8	ug/kg	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	1.8	4.6	0.91	1.8	ug/kg	U	U	
1,2,4-TRICHLOROBENZENE	120-82-1	1.8	4.6	0.91	1.8	ug/kg	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	1.8	4.6	0.50	1.8	ug/kg	U	U	
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	1.8	4.6	0.91	1.8	ug/kg	U	U	
1,2-DIBROMOETHANE	106-93-4	0.91	4.6	0.46	0.91	ug/kg	U	U	
1,2-DICHLOROBENZENE	95-50-1	0.91	4.6	0.46	0.91	ug/kg	U	U	
1,2-DICHLOROETHANE	107-06-2	0.91	4.6	0.46	0.91	ug/kg	U	U	
1,2-DICHLOROPROPANE	78-87-5	0.91	4.6	0.46	0.91	ug/kg	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	1.8	4.6	0.54	1.8	ug/kg	U	U	
1,3-DICHLOROBENZENE	541-73-1	0.91	4.6	0.47	0.91	ug/kg	U	U	
1,3-DICHLOROPROPANE	142-28-9	0.91	4.6	0.46	0.91	ug/kg	U	U	
1,4-DICHLOROBENZENE	106-46-7	0.91	4.6	0.46	0.91	ug/kg	U	U	
2,2-DICHLOROPROPANE	594-20-7	1.8	4.6	0.91	1.8	ug/kg	U	U	
2-BUTANONE (MEK)	78-93-3	4.6	9.1	2.3	4.6	ug/kg	U	U	
2-CHLOROTOLUENE	95-49-8	1.8	4.6	0.75	1.8	ug/kg	U	U	
2-HEXANONE	591-78-6	4.6	9.1	2.6	4.6	ug/kg	U	U	
4-CHLOROTOLUENE	106-43-4	1.8	4.6	0.61	1.8	ug/kg	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	4.6	9.1	2.6	4.6	ug/kg	U	U	
ACETONE	67-64-1	13	9.1	2.8	4.6	ug/kg		U	18
BENZENE	71-43-2	0.91	4.6	0.46	0.91	ug/kg	U	U	
BROMOBENZENE	108-86-1	0.91	4.6	0.46	0.91	ug/kg	U	U	
BROMOCHLOROMETHANE	74-97-5	0.91	4.6	0.46	0.91	ug/kg	U	U	
BROMODICHLOROMETHANE	75-27-4	0.91	4.6	0.46	0.91	ug/kg	U	U	
BROMOFORM	75-25-2	1.8	4.6	0.91	1.8	ug/kg	U	U	
BROMOMETHANE	74-83-9	1.8	9.1	1.6	1.8	ug/kg	U	U	
CARBON DISULFIDE	75-15-0	0.91	4.6	0.46	0.91	ug/kg	U	U	
CARBON TETRACHLORIDE	56-23-5	0.91	4.6	0.49	0.91	ug/kg	U	U	
CHLOROBENZENE	108-90-7	0.91	4.6	0.46	0.91	ug/kg	U	U	
CHLOROETHANE	75-00-3	1.8	4.6	1.2	1.8	ug/kg	U	U	
CHLOROFORM	67-66-3	0.91	4.6	0.46	0.91	ug/kg	U	U	
CHLOROMETHANE	74-87-3	1.8	4.6	0.91	1.8	ug/kg	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	0.91	4.6	0.46	0.91	ug/kg	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.91	4.6	0.46	0.91	ug/kg	U	U	
DIBROMOCHLOROMETHANE	124-48-1	0.91	4.6	0.46	0.91	ug/kg	U	U	
DIBROMOMETHANE	74-95-3	0.91	4.6	0.46	0.91	ug/kg	U	U	
DICHLORODIFLUOROMETHANE	75-71-8	1.8	4.6	1.1	1.8	ug/kg	U	U	

Analysis Method *SW8260B*

ETHYLBENZENE	100-41-4	0.91	4.6	0.46	0.91	ug/kg	U	U
HEXACHLOROBUTADIENE	87-68-3	1.8	4.6	0.91	1.8	ug/kg	U	U
ISOPROPYL BENZENE	98-82-8	1.8	4.6	0.58	1.8	ug/kg	U	U
M,P-XYLENES	MP-XYL	1.8	9.1	0.91	1.8	ug/kg	U	U
METHYLENE CHLORIDE	75-09-2	1.3	9.1	0.91	4.6	ug/kg	J	U 07
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.91	4.6	0.46	0.91	ug/kg	U	U
NAPHTHALENE	91-20-3	1.8	9.1	0.91	1.8	ug/kg	U	U
N-BUTYLBENZENE	104-51-8	1.8	4.6	0.64	1.8	ug/kg	U	U
N-PROPYLBENZENE	103-65-1	1.8	4.6	0.59	1.8	ug/kg	U	U
O-XYLENE	95-47-6	0.91	4.6	0.46	0.91	ug/kg	U	U
P-ISOPROPYLTOLUENE	99-87-6	1.8	4.6	0.57	1.8	ug/kg	U	U
SEC-BUTYLBENZENE	135-98-8	1.8	4.6	0.61	1.8	ug/kg	U	U
STYRENE	100-42-5	1.8	4.6	0.91	1.8	ug/kg	U	U
TERT BUTYL ALCOHOL	75-65-0	9.1	18	8.4	9.1	ug/kg	U	U
TERT-BUTYLBENZENE	98-06-6	1.8	4.6	0.57	1.8	ug/kg	U	U
TETRACHLOROETHENE	127-18-4	0.91	4.6	0.46	0.91	ug/kg	U	U
TOLUENE	108-88-3	0.91	4.6	0.46	0.91	ug/kg	U	U
TRANS-1,2- DICHLOROETHENE	156-60-5	0.91	4.6	0.46	0.91	ug/kg	U	U
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.91	4.6	0.46	0.91	ug/kg	U	U
TRICHLOROETHENE	79-01-6	0.91	4.6	0.46	0.91	ug/kg	U	U
TRICHLOROFLUOROMETHAN E	75-69-4	1.8	4.6	1.0	1.8	ug/kg	U	U
VINYL CHLORIDE	75-01-4	1.8	4.6	1.3	1.8	ug/kg	U	U

Analysis Method SW8260B

Sample Name S53-SB05-20

Result Type: TRG

Analysis Date: 2015/02/04

Analysis Time: 09:18:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.89	4.5	0.45	0.89	ug/kg	U	U	
1,1,1-TRICHLOROETHANE	71-55-6	0.89	4.5	0.45	0.89	ug/kg	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.89	4.5	0.45	0.89	ug/kg	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	0.89	4.5	0.45	0.89	ug/kg	U	U	
1,1-DICHLOROETHANE	75-34-3	0.89	4.5	0.45	0.89	ug/kg	U	U	
1,1-DICHLOROETHENE	75-35-4	0.89	4.5	0.45	0.89	ug/kg	U	U	
1,1-DICHLOROPROPENE	563-58-6	0.89	4.5	0.45	0.89	ug/kg	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	1.8	4.5	0.89	1.8	ug/kg	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	1.8	4.5	0.89	1.8	ug/kg	U	U	
1,2,4-TRICHLOROBENZENE	120-82-1	1.8	4.5	0.89	1.8	ug/kg	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	1.8	4.5	0.49	1.8	ug/kg	U	U	
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	1.8	4.5	0.89	1.8	ug/kg	U	U	
1,2-DIBROMOETHANE	106-93-4	0.89	4.5	0.45	0.89	ug/kg	U	U	
1,2-DICHLOROBENZENE	95-50-1	0.89	4.5	0.45	0.89	ug/kg	U	U	
1,2-DICHLOROETHANE	107-06-2	0.89	4.5	0.45	0.89	ug/kg	U	U	
1,2-DICHLOROPROPANE	78-87-5	0.89	4.5	0.45	0.89	ug/kg	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	1.8	4.5	0.53	1.8	ug/kg	U	U	
1,3-DICHLOROBENZENE	541-73-1	0.89	4.5	0.46	0.89	ug/kg	U	U	
1,3-DICHLOROPROPANE	142-28-9	0.89	4.5	0.45	0.89	ug/kg	U	U	
1,4-DICHLOROBENZENE	106-46-7	0.89	4.5	0.45	0.89	ug/kg	U	U	
2,2-DICHLOROPROPANE	594-20-7	1.8	4.5	0.89	1.8	ug/kg	U	U	
2-BUTANONE (MEK)	78-93-3	4.5	8.9	2.2	4.5	ug/kg	U	U	
2-CHLOROTOLUENE	95-49-8	1.8	4.5	0.73	1.8	ug/kg	U	U	
2-HEXANONE	591-78-6	4.5	8.9	2.6	4.5	ug/kg	U	U	
4-CHLOROTOLUENE	106-43-4	1.8	4.5	0.60	1.8	ug/kg	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	4.5	8.9	2.5	4.5	ug/kg	U	U	
ACETONE	67-64-1	4.8	8.9	2.8	4.5	ug/kg	J	U	18
BENZENE	71-43-2	0.89	4.5	0.45	0.89	ug/kg	U	U	
BROMOBENZENE	108-86-1	0.89	4.5	0.45	0.89	ug/kg	U	U	
BROMOCHLOROMETHANE	74-97-5	0.89	4.5	0.45	0.89	ug/kg	U	U	
BROMODICHLOROMETHANE	75-27-4	0.89	4.5	0.45	0.89	ug/kg	U	U	
BROMOFORM	75-25-2	1.8	4.5	0.89	1.8	ug/kg	U	U	
BROMOMETHANE	74-83-9	1.8	8.9	1.6	1.8	ug/kg	U	U	
CARBON DISULFIDE	75-15-0	0.89	4.5	0.45	0.89	ug/kg	U	U	
CARBON TETRACHLORIDE	56-23-5	0.89	4.5	0.48	0.89	ug/kg	U	U	
CHLOROBENZENE	108-90-7	0.89	4.5	0.45	0.89	ug/kg	U	U	
CHLOROETHANE	75-00-3	1.8	4.5	1.2	1.8	ug/kg	U	U	
CHLOROFORM	67-66-3	0.89	4.5	0.45	0.89	ug/kg	U	U	
CHLOROMETHANE	74-87-3	1.8	4.5	0.89	1.8	ug/kg	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	0.89	4.5	0.45	0.89	ug/kg	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.89	4.5	0.45	0.89	ug/kg	U	U	
DIBROMOCHLOROMETHANE	124-48-1	0.89	4.5	0.45	0.89	ug/kg	U	U	
DIBROMOMETHANE	74-95-3	0.89	4.5	0.45	0.89	ug/kg	U	U	
DICHLORODIFLUOROMETHANE	75-71-8	1.8	4.5	1.1	1.8	ug/kg	U	U	

Analysis Method *SW8260B*

ETHYLBENZENE	100-41-4	0.89	4.5	0.45	0.89	ug/kg	U	U
HEXACHLOROBUTADIENE	87-68-3	1.8	4.5	0.89	1.8	ug/kg	U	U
ISOPROPYL BENZENE	98-82-8	1.8	4.5	0.57	1.8	ug/kg	U	U
M,P-XYLENES	MP-XYL	1.8	8.9	0.89	1.8	ug/kg	U	U
METHYLENE CHLORIDE	75-09-2	4.5	8.9	0.89	4.5	ug/kg	U	U
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.89	4.5	0.45	0.89	ug/kg	U	U
NAPHTHALENE	91-20-3	1.8	8.9	0.89	1.8	ug/kg	U	U
N-BUTYLBENZENE	104-51-8	1.8	4.5	0.62	1.8	ug/kg	U	U
N-PROPYLBENZENE	103-65-1	1.8	4.5	0.58	1.8	ug/kg	U	U
O-XYLENE	95-47-6	0.89	4.5	0.45	0.89	ug/kg	U	U
P-ISOPROPYLTOLUENE	99-87-6	1.8	4.5	0.55	1.8	ug/kg	U	U
SEC-BUTYLBENZENE	135-98-8	1.8	4.5	0.60	1.8	ug/kg	U	U
STYRENE	100-42-5	1.8	4.5	0.89	1.8	ug/kg	U	U
TERT BUTYL ALCOHOL	75-65-0	8.9	18	8.2	8.9	ug/kg	U	U
TERT-BUTYLBENZENE	98-06-6	1.8	4.5	0.55	1.8	ug/kg	U	U
TETRACHLOROETHENE	127-18-4	0.89	4.5	0.45	0.89	ug/kg	U	U
TOLUENE	108-88-3	0.89	4.5	0.45	0.89	ug/kg	U	U
TRANS-1,2- DICHLOROETHENE	156-60-5	0.89	4.5	0.45	0.89	ug/kg	U	U
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.89	4.5	0.45	0.89	ug/kg	U	U
TRICHLOROETHENE	79-01-6	0.89	4.5	0.45	0.89	ug/kg	U	U
TRICHLOROFLUOROMETHAN E	75-69-4	1.8	4.5	0.98	1.8	ug/kg	U	U
VINYL CHLORIDE	75-01-4	1.8	4.5	1.2	1.8	ug/kg	U	U

Analysis Method SW8260B

Sample Name S53-SB05-30

Result Type: TRG

Analysis Date: 2015/02/04

Analysis Time: 13:28:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.90	4.5	0.45	0.90	ug/kg	U	U	
1,1,1-TRICHLOROETHANE	71-55-6	0.90	4.5	0.45	0.90	ug/kg	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.90	4.5	0.45	0.90	ug/kg	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	0.90	4.5	0.45	0.90	ug/kg	U	U	
1,1-DICHLOROETHANE	75-34-3	0.90	4.5	0.45	0.90	ug/kg	U	U	
1,1-DICHLOROETHENE	75-35-4	0.90	4.5	0.45	0.90	ug/kg	U	U	
1,1-DICHLOROPROPENE	563-58-6	0.90	4.5	0.45	0.90	ug/kg	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	1.8	4.5	0.90	1.8	ug/kg	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	1.8	4.5	0.90	1.8	ug/kg	U	U	
1,2,4-TRICHLOROBENZENE	120-82-1	1.8	4.5	0.90	1.8	ug/kg	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	1.8	4.5	0.49	1.8	ug/kg	U	U	
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	1.8	4.5	0.90	1.8	ug/kg	U	U	
1,2-DIBROMOETHANE	106-93-4	0.90	4.5	0.45	0.90	ug/kg	U	U	
1,2-DICHLOROBENZENE	95-50-1	0.90	4.5	0.45	0.90	ug/kg	U	U	
1,2-DICHLOROETHANE	107-06-2	0.90	4.5	0.45	0.90	ug/kg	U	U	
1,2-DICHLOROPROPANE	78-87-5	0.90	4.5	0.45	0.90	ug/kg	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	1.8	4.5	0.53	1.8	ug/kg	U	U	
1,3-DICHLOROBENZENE	541-73-1	0.90	4.5	0.47	0.90	ug/kg	U	U	
1,3-DICHLOROPROPANE	142-28-9	0.90	4.5	0.45	0.90	ug/kg	U	U	
1,4-DICHLOROBENZENE	106-46-7	0.90	4.5	0.45	0.90	ug/kg	U	U	
2,2-DICHLOROPROPANE	594-20-7	1.8	4.5	0.90	1.8	ug/kg	U	U	
2-BUTANONE (MEK)	78-93-3	4.5	9.0	2.2	4.5	ug/kg	U	U	
2-CHLOROTOLUENE	95-49-8	1.8	4.5	0.74	1.8	ug/kg	U	U	
2-HEXANONE	591-78-6	4.5	9.0	2.6	4.5	ug/kg	U	U	
4-CHLOROTOLUENE	106-43-4	1.8	4.5	0.60	1.8	ug/kg	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	4.5	9.0	2.5	4.5	ug/kg	U	U	
ACETONE	67-64-1	6.0	9.0	2.8	4.5	ug/kg	J	U	18
BENZENE	71-43-2	0.90	4.5	0.45	0.90	ug/kg	U	U	
BROMOBENZENE	108-86-1	0.90	4.5	0.45	0.90	ug/kg	U	U	
BROMOCHLOROMETHANE	74-97-5	0.90	4.5	0.45	0.90	ug/kg	U	U	
BROMODICHLOROMETHANE	75-27-4	0.90	4.5	0.45	0.90	ug/kg	U	U	
BROMOFORM	75-25-2	1.8	4.5	0.90	1.8	ug/kg	U	U	
BROMOMETHANE	74-83-9	1.8	9.0	1.6	1.8	ug/kg	U	U	
CARBON DISULFIDE	75-15-0	0.90	4.5	0.45	0.90	ug/kg	U	U	
CARBON TETRACHLORIDE	56-23-5	0.90	4.5	0.49	0.90	ug/kg	U	U	
CHLOROBENZENE	108-90-7	0.90	4.5	0.45	0.90	ug/kg	U	U	
CHLOROETHANE	75-00-3	1.8	4.5	1.2	1.8	ug/kg	U	U	
CHLOROFORM	67-66-3	0.90	4.5	0.45	0.90	ug/kg	U	U	
CHLOROMETHANE	74-87-3	1.8	4.5	0.90	1.8	ug/kg	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	0.90	4.5	0.45	0.90	ug/kg	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.90	4.5	0.45	0.90	ug/kg	U	U	
DIBROMOCHLOROMETHANE	124-48-1	0.90	4.5	0.45	0.90	ug/kg	U	U	
DIBROMOMETHANE	74-95-3	0.90	4.5	0.45	0.90	ug/kg	U	U	
DICHLORODIFLUOROMETHANE	75-71-8	1.8	4.5	1.1	1.8	ug/kg	U	U	

Analysis Method *SW8260B*

ETHYLBENZENE	100-41-4	0.90	4.5	0.45	0.90	ug/kg	U	U
HEXACHLOROBUTADIENE	87-68-3	1.8	4.5	0.90	1.8	ug/kg	U	U
ISOPROPYL BENZENE	98-82-8	1.8	4.5	0.58	1.8	ug/kg	U	U
M,P-XYLENES	MP-XYL	1.8	9.0	0.90	1.8	ug/kg	U	U
METHYLENE CHLORIDE	75-09-2	4.5	9.0	0.90	4.5	ug/kg	U	U
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.90	4.5	0.45	0.90	ug/kg	U	U
NAPHTHALENE	91-20-3	1.8	9.0	0.90	1.8	ug/kg	U	U
N-BUTYLBENZENE	104-51-8	1.8	4.5	0.63	1.8	ug/kg	U	U
N-PROPYLBENZENE	103-65-1	1.8	4.5	0.58	1.8	ug/kg	U	U
O-XYLENE	95-47-6	0.90	4.5	0.45	0.90	ug/kg	U	U
P-ISOPROPYLTOLUENE	99-87-6	1.8	4.5	0.56	1.8	ug/kg	U	U
SEC-BUTYLBENZENE	135-98-8	1.8	4.5	0.60	1.8	ug/kg	U	U
STYRENE	100-42-5	1.8	4.5	0.90	1.8	ug/kg	U	U
TERT BUTYL ALCOHOL	75-65-0	9.0	18	8.3	9.0	ug/kg	U	U
TERT-BUTYLBENZENE	98-06-6	1.8	4.5	0.56	1.8	ug/kg	U	U
TETRACHLOROETHENE	127-18-4	0.90	4.5	0.45	0.90	ug/kg	U	U
TOLUENE	108-88-3	0.90	4.5	0.45	0.90	ug/kg	U	U
TRANS-1,2- DICHLOROETHENE	156-60-5	0.90	4.5	0.45	0.90	ug/kg	U	U
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.90	4.5	0.45	0.90	ug/kg	U	U
TRICHLOROETHENE	79-01-6	0.90	4.5	0.45	0.90	ug/kg	U	U
TRICHLOROFLUOROMETHAN E	75-69-4	1.8	4.5	0.99	1.8	ug/kg	U	U
VINYL CHLORIDE	75-01-4	1.8	4.5	1.3	1.8	ug/kg	U	U

Analysis Method SW8260B

Sample Name S53-SB05-5

Result Type: TRG

Analysis Date: 2015/02/03

Analysis Time: 23:03:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.81	4.1	0.41	0.81	ug/kg	U	U	
1,1,1-TRICHLOROETHANE	71-55-6	0.81	4.1	0.41	0.81	ug/kg	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.81	4.1	0.41	0.81	ug/kg	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	0.81	4.1	0.41	0.81	ug/kg	U	U	
1,1-DICHLOROETHANE	75-34-3	0.81	4.1	0.41	0.81	ug/kg	U	U	
1,1-DICHLOROETHENE	75-35-4	0.81	4.1	0.41	0.81	ug/kg	U	U	
1,1-DICHLOROPROPENE	563-58-6	0.81	4.1	0.41	0.81	ug/kg	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	1.6	4.1	0.81	1.6	ug/kg	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	1.6	4.1	0.81	1.6	ug/kg	U	U	
1,2,4-TRICHLOROBENZENE	120-82-1	1.6	4.1	0.81	1.6	ug/kg	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	1.6	4.1	0.45	1.6	ug/kg	U	U	
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	1.6	4.1	0.81	1.6	ug/kg	U	U	
1,2-DIBROMOETHANE	106-93-4	0.81	4.1	0.41	0.81	ug/kg	U	U	
1,2-DICHLOROBENZENE	95-50-1	0.81	4.1	0.41	0.81	ug/kg	U	U	
1,2-DICHLOROETHANE	107-06-2	0.81	4.1	0.41	0.81	ug/kg	U	U	
1,2-DICHLOROPROPANE	78-87-5	0.81	4.1	0.41	0.81	ug/kg	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	1.6	4.1	0.48	1.6	ug/kg	U	U	
1,3-DICHLOROBENZENE	541-73-1	0.81	4.1	0.42	0.81	ug/kg	U	U	
1,3-DICHLOROPROPANE	142-28-9	0.81	4.1	0.41	0.81	ug/kg	U	U	
1,4-DICHLOROBENZENE	106-46-7	0.81	4.1	0.41	0.81	ug/kg	U	U	
2,2-DICHLOROPROPANE	594-20-7	1.6	4.1	0.81	1.6	ug/kg	U	U	
2-BUTANONE (MEK)	78-93-3	4.1	8.1	2.0	4.1	ug/kg	U	U	
2-CHLOROTOLUENE	95-49-8	1.6	4.1	0.67	1.6	ug/kg	U	U	
2-HEXANONE	591-78-6	4.1	8.1	2.4	4.1	ug/kg	U	U	
4-CHLOROTOLUENE	106-43-4	1.6	4.1	0.54	1.6	ug/kg	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	4.1	8.1	2.3	4.1	ug/kg	U	U	
ACETONE	67-64-1	18	8.1	2.5	4.1	ug/kg		U	18
BENZENE	71-43-2	0.81	4.1	0.41	0.81	ug/kg	U	U	
BROMOBENZENE	108-86-1	0.81	4.1	0.41	0.81	ug/kg	U	U	
BROMOCHLOROMETHANE	74-97-5	0.81	4.1	0.41	0.81	ug/kg	U	U	
BROMODICHLOROMETHANE	75-27-4	0.81	4.1	0.41	0.81	ug/kg	U	U	
BROMOFORM	75-25-2	1.6	4.1	0.81	1.6	ug/kg	U	U	
BROMOMETHANE	74-83-9	1.6	8.1	1.5	1.6	ug/kg	U	U	
CARBON DISULFIDE	75-15-0	0.81	4.1	0.41	0.81	ug/kg	U	U	
CARBON TETRACHLORIDE	56-23-5	0.81	4.1	0.44	0.81	ug/kg	U	U	
CHLOROBENZENE	108-90-7	0.81	4.1	0.41	0.81	ug/kg	U	U	
CHLOROETHANE	75-00-3	1.6	4.1	1.1	1.6	ug/kg	U	U	
CHLOROFORM	67-66-3	0.81	4.1	0.41	0.81	ug/kg	U	U	
CHLOROMETHANE	74-87-3	1.6	4.1	0.81	1.6	ug/kg	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	0.81	4.1	0.41	0.81	ug/kg	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.81	4.1	0.41	0.81	ug/kg	U	U	
DIBROMOCHLOROMETHANE	124-48-1	0.81	4.1	0.41	0.81	ug/kg	U	U	
DIBROMOMETHANE	74-95-3	0.81	4.1	0.41	0.81	ug/kg	U	U	
DICHLORODIFLUOROMETHANE	75-71-8	1.6	4.1	0.97	1.6	ug/kg	U	U	

Analysis Method *SW8260B*

ETHYLBENZENE	100-41-4	0.81	4.1	0.41	0.81	ug/kg	U	U
HEXACHLOROBUTADIENE	87-68-3	1.6	4.1	0.81	1.6	ug/kg	U	U
ISOPROPYL BENZENE	98-82-8	1.6	4.1	0.52	1.6	ug/kg	U	U
M,P-XYLENES	MP-XYL	1.6	8.1	0.81	1.6	ug/kg	U	U
METHYLENE CHLORIDE	75-09-2	1.2	8.1	0.81	4.1	ug/kg	J	U 07
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.81	4.1	0.41	0.81	ug/kg	U	U
NAPHTHALENE	91-20-3	1.6	8.1	0.81	1.6	ug/kg	U	U
N-BUTYLBENZENE	104-51-8	1.6	4.1	0.57	1.6	ug/kg	U	U
N-PROPYLBENZENE	103-65-1	1.6	4.1	0.53	1.6	ug/kg	U	U
O-XYLENE	95-47-6	0.81	4.1	0.41	0.81	ug/kg	U	U
P-ISOPROPYLTOLUENE	99-87-6	1.6	4.1	0.50	1.6	ug/kg	U	U
SEC-BUTYLBENZENE	135-98-8	1.6	4.1	0.54	1.6	ug/kg	U	U
STYRENE	100-42-5	1.6	4.1	0.81	1.6	ug/kg	U	U
TERT BUTYL ALCOHOL	75-65-0	8.1	16	7.5	8.1	ug/kg	U	U
TERT-BUTYLBENZENE	98-06-6	1.6	4.1	0.50	1.6	ug/kg	U	U
TETRACHLOROETHENE	127-18-4	0.81	4.1	0.41	0.81	ug/kg	U	U
TOLUENE	108-88-3	0.81	4.1	0.41	0.81	ug/kg	U	U
TRANS-1,2- DICHLOROETHENE	156-60-5	0.81	4.1	0.41	0.81	ug/kg	U	U
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.81	4.1	0.41	0.81	ug/kg	U	U
TRICHLOROETHENE	79-01-6	0.81	4.1	0.41	0.81	ug/kg	U	U
TRICHLOROFLUOROMETHAN E	75-69-4	1.6	4.1	0.89	1.6	ug/kg	U	U
VINYL CHLORIDE	75-01-4	1.6	4.1	1.1	1.6	ug/kg	U	U

Analysis Method SW8260B

Sample Name SB-012215

Result Type: TRG

Analysis Date: 2015/01/29

Analysis Time: 20:55:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1,1-TRICHLOROETHANE	71-55-6	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.20	1.0	0.11	0.20	ug/L	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1-DICHLOROETHANE	75-34-3	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1-DICHLOROETHENE	75-35-4	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1-DICHLOROPROPENE	563-58-6	0.20	1.0	0.10	0.20	ug/L	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	0.30	1.0	0.15	0.30	ug/L	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	0.50	2.0	0.25	0.50	ug/L	U	U	
1,2,4-TRICHLOROBENZENE	120-82-1	0.30	1.0	0.15	0.30	ug/L	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	0.20	1.0	0.11	0.20	ug/L	U	U	
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	0.50	2.0	0.25	0.50	ug/L	U	U	
1,2-DIBROMOETHANE	106-93-4	0.20	1.0	0.10	0.20	ug/L	U	U	
1,2-DICHLOROBENZENE	95-50-1	0.20	1.0	0.10	0.20	ug/L	U	U	
1,2-DICHLOROETHANE	107-06-2	0.20	1.0	0.10	0.20	ug/L	U	U	
1,2-DICHLOROPROPANE	78-87-5	0.20	1.0	0.10	0.20	ug/L	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	0.20	1.0	0.13	0.20	ug/L	U	U	
1,3-DICHLOROBENZENE	541-73-1	0.20	1.0	0.11	0.20	ug/L	U	U	
1,3-DICHLOROPROPANE	142-28-9	0.20	1.0	0.10	0.20	ug/L	U	U	
1,4-DICHLOROBENZENE	106-46-7	0.20	1.0	0.10	0.20	ug/L	U	U	
2,2-DICHLOROPROPANE	594-20-7	0.30	1.0	0.16	0.30	ug/L	U	U	
2-BUTANONE (MEK)	78-93-3	5.0	10	2.0	5.0	ug/L	U	R	05
2-CHLOROTOLUENE	95-49-8	0.20	1.0	0.12	0.20	ug/L	U	U	
2-HEXANONE	591-78-6	5.0	10	2.3	5.0	ug/L	U	U	
4-CHLOROTOLUENE	106-43-4	0.20	1.0	0.11	0.20	ug/L	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	5.0	10	2.1	5.0	ug/L	U	U	
ACETONE	67-64-1	4.0	10	2.6	5.0	ug/L	J	UJ	05; 18
BENZENE	71-43-2	0.20	1.0	0.10	0.20	ug/L	U	U	
BROMOBENZENE	108-86-1	0.20	1.0	0.10	0.20	ug/L	U	U	
BROMOCHLOROMETHANE	74-97-5	0.20	1.0	0.11	0.20	ug/L	U	U	
BROMODICHLOROMETHANE	75-27-4	0.20	1.0	0.10	0.20	ug/L	U	U	
BROMOFORM	75-25-2	0.30	1.0	0.15	0.30	ug/L	U	U	
BROMOMETHANE	74-83-9	0.30	1.0	0.16	0.30	ug/L	U	U	
CARBON DISULFIDE	75-15-0	0.50	1.0	0.25	0.50	ug/L	U	U	
CARBON TETRACHLORIDE	56-23-5	0.20	1.0	0.10	0.20	ug/L	U	U	
CHLOROBENZENE	108-90-7	0.20	1.0	0.10	0.20	ug/L	U	U	
CHLOROETHANE	75-00-3	0.30	1.0	0.27	0.30	ug/L	U	U	
CHLOROFORM	67-66-3	0.11	1.0	0.10	0.20	ug/L	J	J	
CHLOROMETHANE	74-87-3	0.30	1.0	0.15	0.30	ug/L	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	0.20	1.0	0.10	0.20	ug/L	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.20	1.0	0.10	0.20	ug/L	U	U	
DIBROMOCHLOROMETHANE	124-48-1	0.20	1.0	0.10	0.20	ug/L	U	U	
DIBROMOMETHANE	74-95-3	0.20	1.0	0.10	0.20	ug/L	U	U	
DICHLORODIFLUOROMETHANE	75-71-8	0.30	1.0	0.15	0.30	ug/L	U	U	

Analysis Method *SW8260B*

ETHYLBENZENE	100-41-4	0.20	1.0	0.10	0.20	ug/L	U	U
HEXACHLOROBUTADIENE	87-68-3	0.30	1.0	0.22	0.30	ug/L	U	U
ISOPROPYL BENZENE	98-82-8	0.20	1.0	0.10	0.20	ug/L	U	U
M,P-XYLENES	MP-XYL	0.40	2.0	0.21	0.40	ug/L	U	U
METHYLENE CHLORIDE	75-09-2	1.0	2.0	0.50	1.0	ug/L	U	U
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.20	1.0	0.13	0.20	ug/L	U	U
NAPHTHALENE	91-20-3	1.0	2.0	0.50	1.0	ug/L	U	U
N-BUTYLBENZENE	104-51-8	0.30	1.0	0.17	0.30	ug/L	U	U
N-PROPYLBENZENE	103-65-1	0.20	1.0	0.13	0.20	ug/L	U	U
O-XYLENE	95-47-6	0.20	1.0	0.10	0.20	ug/L	U	U
P-ISOPROPYLTOLUENE	99-87-6	0.20	1.0	0.14	0.20	ug/L	U	U
SEC-BUTYLBENZENE	135-98-8	0.20	1.0	0.13	0.20	ug/L	U	U
STYRENE	100-42-5	0.50	1.0	0.25	0.50	ug/L	U	U
TERT BUTYL ALCOHOL	75-65-0	5.0	10	2.5	5.0	ug/L	U	R 05
TERT-BUTYLBENZENE	98-06-6	0.20	1.0	0.13	0.20	ug/L	U	U
TETRACHLOROETHENE	127-18-4	0.20	1.0	0.15	0.20	ug/L	U	U
TOLUENE	108-88-3	0.20	1.0	0.10	0.20	ug/L	U	U
TRANS-1,2- DICHLOROETHENE	156-60-5	0.20	1.0	0.10	0.20	ug/L	U	U
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.20	1.0	0.11	0.20	ug/L	U	U
TRICHLOROETHENE	79-01-6	0.20	1.0	0.10	0.20	ug/L	U	U
TRICHLOROFLUOROMETHAN E	75-69-4	0.30	1.0	0.15	0.30	ug/L	U	U
VINYL CHLORIDE	75-01-4	0.20	1.0	0.12	0.20	ug/L	U	U

Analysis Method SW8260B

Sample Name TB-012215

Result Type: TRG

Analysis Date: 2015/01/29

Analysis Time: 21:26:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1,1-TRICHLOROETHANE	71-55-6	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.20	1.0	0.11	0.20	ug/L	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1-DICHLOROETHANE	75-34-3	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1-DICHLOROETHENE	75-35-4	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1-DICHLOROPROPENE	563-58-6	0.20	1.0	0.10	0.20	ug/L	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	0.30	1.0	0.15	0.30	ug/L	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	0.50	2.0	0.25	0.50	ug/L	U	U	
1,2,4-TRICHLOROBENZENE	120-82-1	0.30	1.0	0.15	0.30	ug/L	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	0.20	1.0	0.11	0.20	ug/L	U	U	
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	0.50	2.0	0.25	0.50	ug/L	U	U	
1,2-DIBROMOETHANE	106-93-4	0.20	1.0	0.10	0.20	ug/L	U	U	
1,2-DICHLOROBENZENE	95-50-1	0.20	1.0	0.10	0.20	ug/L	U	U	
1,2-DICHLOROETHANE	107-06-2	0.20	1.0	0.10	0.20	ug/L	U	U	
1,2-DICHLOROPROPANE	78-87-5	0.20	1.0	0.10	0.20	ug/L	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	0.20	1.0	0.13	0.20	ug/L	U	U	
1,3-DICHLOROBENZENE	541-73-1	0.20	1.0	0.11	0.20	ug/L	U	U	
1,3-DICHLOROPROPANE	142-28-9	0.20	1.0	0.10	0.20	ug/L	U	U	
1,4-DICHLOROBENZENE	106-46-7	0.20	1.0	0.10	0.20	ug/L	U	U	
2,2-DICHLOROPROPANE	594-20-7	0.30	1.0	0.16	0.30	ug/L	U	U	
2-BUTANONE (MEK)	78-93-3	5.0	10	2.0	5.0	ug/L	U	R	05
2-CHLOROTOLUENE	95-49-8	0.20	1.0	0.12	0.20	ug/L	U	U	
2-HEXANONE	591-78-6	5.0	10	2.3	5.0	ug/L	U	U	
4-CHLOROTOLUENE	106-43-4	0.20	1.0	0.11	0.20	ug/L	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	5.0	10	2.1	5.0	ug/L	U	U	
ACETONE	67-64-1	3.1	10	2.6	5.0	ug/L	J	J	05
BENZENE	71-43-2	0.20	1.0	0.10	0.20	ug/L	U	U	
BROMOBENZENE	108-86-1	0.20	1.0	0.10	0.20	ug/L	U	U	
BROMOCHLOROMETHANE	74-97-5	0.20	1.0	0.11	0.20	ug/L	U	U	
BROMODICHLOROMETHANE	75-27-4	0.20	1.0	0.10	0.20	ug/L	U	U	
BROMOFORM	75-25-2	0.30	1.0	0.15	0.30	ug/L	U	U	
BROMOMETHANE	74-83-9	0.30	1.0	0.16	0.30	ug/L	U	U	
CARBON DISULFIDE	75-15-0	0.50	1.0	0.25	0.50	ug/L	U	U	
CARBON TETRACHLORIDE	56-23-5	0.20	1.0	0.10	0.20	ug/L	U	U	
CHLOROBENZENE	108-90-7	0.20	1.0	0.10	0.20	ug/L	U	U	
CHLOROETHANE	75-00-3	0.30	1.0	0.27	0.30	ug/L	U	U	
CHLOROFORM	67-66-3	0.20	1.0	0.10	0.20	ug/L	U	U	
CHLOROMETHANE	74-87-3	0.18	1.0	0.15	0.30	ug/L	J	J	
CIS-1,2-DICHLOROETHENE	156-59-2	0.20	1.0	0.10	0.20	ug/L	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.20	1.0	0.10	0.20	ug/L	U	U	
DIBROMOCHLOROMETHANE	124-48-1	0.20	1.0	0.10	0.20	ug/L	U	U	
DIBROMOMETHANE	74-95-3	0.20	1.0	0.10	0.20	ug/L	U	U	
DICHLORODIFLUOROMETHANE	75-71-8	0.30	1.0	0.15	0.30	ug/L	U	U	

Analysis Method *SW8260B*

ETHYLBENZENE	100-41-4	0.20	1.0	0.10	0.20	ug/L	U	U
HEXACHLOROBUTADIENE	87-68-3	0.30	1.0	0.22	0.30	ug/L	U	U
ISOPROPYL BENZENE	98-82-8	0.20	1.0	0.10	0.20	ug/L	U	U
M,P-XYLENES	MP-XYL	0.40	2.0	0.21	0.40	ug/L	U	U
METHYLENE CHLORIDE	75-09-2	1.0	2.0	0.50	1.0	ug/L	U	U
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.20	1.0	0.13	0.20	ug/L	U	U
NAPHTHALENE	91-20-3	1.0	2.0	0.50	1.0	ug/L	U	U
N-BUTYLBENZENE	104-51-8	0.30	1.0	0.17	0.30	ug/L	U	U
N-PROPYLBENZENE	103-65-1	0.20	1.0	0.13	0.20	ug/L	U	U
O-XYLENE	95-47-6	0.20	1.0	0.10	0.20	ug/L	U	U
P-ISOPROPYLTOLUENE	99-87-6	0.20	1.0	0.14	0.20	ug/L	U	U
SEC-BUTYLBENZENE	135-98-8	0.20	1.0	0.13	0.20	ug/L	U	U
STYRENE	100-42-5	0.50	1.0	0.25	0.50	ug/L	U	U
TERT BUTYL ALCOHOL	75-65-0	5.0	10	2.5	5.0	ug/L	U	R 05
TERT-BUTYLBENZENE	98-06-6	0.20	1.0	0.13	0.20	ug/L	U	U
TETRACHLOROETHENE	127-18-4	0.20	1.0	0.15	0.20	ug/L	U	U
TOLUENE	108-88-3	0.11	1.0	0.10	0.20	ug/L	J	J
TRANS-1,2- DICHLOROETHENE	156-60-5	0.20	1.0	0.10	0.20	ug/L	U	U
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.20	1.0	0.11	0.20	ug/L	U	U
TRICHLOROETHENE	79-01-6	0.20	1.0	0.10	0.20	ug/L	U	U
TRICHLOROFLUOROMETHAN E	75-69-4	0.34	1.0	0.15	0.30	ug/L	J	J
VINYL CHLORIDE	75-01-4	0.20	1.0	0.12	0.20	ug/L	U	U

Analysis Method SW8270C

Sample Name EB-012215

Result Type: TRG

Analysis Date: 2015/01/30

Analysis Time: 16:58:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	0.12	0.59	0.059	0.12	ug/L	U	U	
2-METHYLNAPHTHALENE	91-57-6	0.12	0.59	0.059	0.12	ug/L	U	U	
ACENAPHTHENE	83-32-9	0.12	0.59	0.059	0.12	ug/L	U	U	
ACENAPHTHYLENE	208-96-8	0.12	0.59	0.059	0.12	ug/L	U	U	
ANTHRACENE	120-12-7	0.12	0.59	0.059	0.12	ug/L	U	U	
BENZO(A)ANTHRACENE	56-55-3	0.12	0.59	0.11	0.12	ug/L	U	U	
BENZO(A)PYRENE	50-32-8	0.12	0.59	0.059	0.12	ug/L	U	U	
BENZO(B)FLUORANTHENE	205-99-2	0.12	0.59	0.059	0.12	ug/L	U	U	
BENZO(G,H,I)PERYLENE	191-24-2	0.12	0.59	0.059	0.12	ug/L	U	U	
BENZO(K)FLUORANTHENE	207-08-9	0.12	0.59	0.059	0.12	ug/L	U	U	
CHRYSENE	218-01-9	0.12	0.59	0.071	0.12	ug/L	U	U	
DIBENZO(A,H)ANTHRACENE	53-70-3	0.12	0.59	0.059	0.12	ug/L	U	U	
FLUORANTHENE	206-44-0	0.12	0.59	0.059	0.12	ug/L	U	U	
FLUORENE	86-73-7	0.12	0.59	0.059	0.12	ug/L	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	0.12	0.59	0.059	0.12	ug/L	U	U	
NAPHTHALENE	91-20-3	0.12	0.59	0.059	0.12	ug/L	U	U	
PHENANTHRENE	85-01-8	0.12	0.59	0.059	0.12	ug/L	U	U	
PYRENE	129-00-0	0.12	0.59	0.059	0.12	ug/L	U	U	

Analysis Method SW8270C

Sample Name S53-SB03-11.5

Result Type: TRG

Analysis Date: 2015/01/29

Analysis Time: 22:30:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	17	10	1.3	2.6	ug/kg		R	22
1-METHYLNAPHTHALENE	90-12-0	20	10	1.3	2.6	ug/kg			
2-METHYLNAPHTHALENE	91-57-6	1.4	10	1.3	2.6	ug/kg	J	R	22
2-METHYLNAPHTHALENE	91-57-6	1.7	10	1.3	2.6	ug/kg	J	J	
ACENAPHTHENE	83-32-9	3.0	10	1.3	2.6	ug/kg	J	J	
ACENAPHTHENE	83-32-9	2.5	10	1.3	2.6	ug/kg	J	R	22
ACENAPHTHYLENE	208-96-8	2.6	10	1.3	2.6	ug/kg	U	U	
ACENAPHTHYLENE	208-96-8	2.6	10	1.3	2.6	ug/kg	U	R	22
ANTHRACENE	120-12-7	2.6	10	1.3	2.6	ug/kg	U	R	22
ANTHRACENE	120-12-7	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(A)ANTHRACENE	56-55-3	2.6	10	2.5	2.6	ug/kg	U	R	22
BENZO(A)ANTHRACENE	56-55-3	2.6	10	2.5	2.6	ug/kg	U	U	
BENZO(A)PYRENE	50-32-8	2.6	10	1.3	2.6	ug/kg	U	R	22
BENZO(A)PYRENE	50-32-8	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(B)FLUORANTHENE	205-99-2	2.6	10	1.3	2.6	ug/kg	U	R	22
BENZO(B)FLUORANTHENE	205-99-2	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(G,H,I)PERYLENE	191-24-2	2.6	10	1.3	2.6	ug/kg	U	R	22
BENZO(G,H,I)PERYLENE	191-24-2	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(K)FLUORANTHENE	207-08-9	2.6	10	1.3	2.6	ug/kg	U	R	22
BENZO(K)FLUORANTHENE	207-08-9	2.6	10	1.3	2.6	ug/kg	U	U	
CHRYSENE	218-01-9	2.6	10	2.3	2.6	ug/kg	U	U	
CHRYSENE	218-01-9	2.6	10	2.3	2.6	ug/kg	U	R	22
DIBENZO(A,H)ANTHRACENE	53-70-3	2.6	10	1.3	2.6	ug/kg	U	U	
DIBENZO(A,H)ANTHRACENE	53-70-3	2.6	10	1.3	2.6	ug/kg	U	R	22
FLUORANTHENE	206-44-0	2.6	10	1.3	2.6	ug/kg	U	R	22
FLUORANTHENE	206-44-0	2.6	10	1.3	2.6	ug/kg	U	U	
FLUORENE	86-73-7	10	10	1.3	2.6	ug/kg	J	R	22
FLUORENE	86-73-7	12	10	1.3	2.6	ug/kg			
INDENO(1,2,3-CD)PYRENE	193-39-5	2.6	10	1.3	2.6	ug/kg	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	2.6	10	1.3	2.6	ug/kg	U	R	22
NAPHTHALENE	91-20-3	2.6	10	1.3	2.6	ug/kg	U	U	
NAPHTHALENE	91-20-3	2.6	10	1.3	2.6	ug/kg	U	R	22
PHENANTHRENE	85-01-8	19	10	1.3	2.6	ug/kg			
PHENANTHRENE	85-01-8	16	10	1.3	2.6	ug/kg		R	22
PYRENE	129-00-0	2.6	10	1.3	2.6	ug/kg	U	U	
PYRENE	129-00-0	2.6	10	1.3	2.6	ug/kg	U	R	22

Analysis Method SW8270C

Sample Name		Result Type: TRG							
S53-SB03-16.5		Analysis Date: 2015/01/29		Analysis Time: 22:50:00		Validators Initials: LC		Validation Date: 03/10/2015	
Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	2.6	10	1.3	2.6	ug/kg	U	U	
2-METHYLNAPHTHALENE	91-57-6	2.6	10	1.3	2.6	ug/kg	U	U	
ACENAPHTHENE	83-32-9	2.6	10	1.3	2.6	ug/kg	U	U	
ACENAPHTHYLENE	208-96-8	2.6	10	1.3	2.6	ug/kg	U	U	
ANTHRACENE	120-12-7	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(A)ANTHRACENE	56-55-3	2.6	10	2.5	2.6	ug/kg	U	U	
BENZO(A)PYRENE	50-32-8	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(B)FLUORANTHENE	205-99-2	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(G,H,I)PERYLENE	191-24-2	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(K)FLUORANTHENE	207-08-9	2.6	10	1.3	2.6	ug/kg	U	U	
CHRYSENE	218-01-9	2.6	10	2.3	2.6	ug/kg	U	U	
DIBENZO(A,H)ANTHRACENE	53-70-3	2.6	10	1.3	2.6	ug/kg	U	U	
FLUORANTHENE	206-44-0	2.6	10	1.3	2.6	ug/kg	U	U	
FLUORENE	86-73-7	2.6	10	1.3	2.6	ug/kg	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	2.6	10	1.3	2.6	ug/kg	U	U	
NAPHTHALENE	91-20-3	2.6	10	1.3	2.6	ug/kg	U	U	
PHENANTHRENE	85-01-8	2.6	10	1.3	2.6	ug/kg	U	U	
PYRENE	129-00-0	2.6	10	1.3	2.6	ug/kg	U	U	

Sample Name		Result Type: TRG							
S53-SB03-18.5		Analysis Date: 2015/01/29		Analysis Time: 23:10:00		Validators Initials: LC		Validation Date: 03/10/2015	
Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	2.7	11	1.3	2.7	ug/kg	U	U	
2-METHYLNAPHTHALENE	91-57-6	2.7	11	1.3	2.7	ug/kg	U	U	
ACENAPHTHENE	83-32-9	2.7	11	1.3	2.7	ug/kg	U	U	
ACENAPHTHYLENE	208-96-8	2.7	11	1.3	2.7	ug/kg	U	U	
ANTHRACENE	120-12-7	2.7	11	1.3	2.7	ug/kg	U	U	
BENZO(A)ANTHRACENE	56-55-3	2.7	11	2.6	2.7	ug/kg	U	U	
BENZO(A)PYRENE	50-32-8	2.7	11	1.3	2.7	ug/kg	U	U	
BENZO(B)FLUORANTHENE	205-99-2	2.7	11	1.3	2.7	ug/kg	U	U	
BENZO(G,H,I)PERYLENE	191-24-2	2.7	11	1.3	2.7	ug/kg	U	U	
BENZO(K)FLUORANTHENE	207-08-9	2.7	11	1.3	2.7	ug/kg	U	U	
CHRYSENE	218-01-9	2.7	11	2.4	2.7	ug/kg	U	U	
DIBENZO(A,H)ANTHRACENE	53-70-3	2.7	11	1.3	2.7	ug/kg	U	U	
FLUORANTHENE	206-44-0	2.7	11	1.3	2.7	ug/kg	U	U	
FLUORENE	86-73-7	2.7	11	1.3	2.7	ug/kg	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	2.7	11	1.3	2.7	ug/kg	U	U	
NAPHTHALENE	91-20-3	2.7	11	1.3	2.7	ug/kg	U	U	
PHENANTHRENE	85-01-8	2.7	11	1.3	2.7	ug/kg	U	U	
PYRENE	129-00-0	2.7	11	1.3	2.7	ug/kg	U	U	

Analysis Method SW8270C

Sample Name S53-SB03-5

Result Type: TRG

Analysis Date: 2015/01/29

Analysis Time: 22:11:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	6200	11	1.4	2.7	ug/kg	E	R	22
1-METHYLNAPHTHALENE	90-12-0	8000	54	6.8	14	ug/kg			
2-METHYLNAPHTHALENE	91-57-6	140	54	6.8	14	ug/kg		R	22
2-METHYLNAPHTHALENE	91-57-6	140	11	1.4	2.7	ug/kg			
ACENAPHTHENE	83-32-9	600	11	1.4	2.7	ug/kg			
ACENAPHTHENE	83-32-9	590	54	6.8	14	ug/kg		R	22
ACENAPHTHYLENE	208-96-8	230	11	1.4	2.7	ug/kg			
ACENAPHTHYLENE	208-96-8	220	54	6.8	14	ug/kg		R	22
ANTHRACENE	120-12-7	2.7	11	1.4	2.7	ug/kg	U	U	
ANTHRACENE	120-12-7	14	54	6.8	14	ug/kg	U	R	22
BENZO(A)ANTHRACENE	56-55-3	20	11	2.7	2.7	ug/kg			
BENZO(A)ANTHRACENE	56-55-3	23	54	13	14	ug/kg	J	R	22
BENZO(A)PYRENE	50-32-8	8.7	11	1.4	2.7	ug/kg	J	J	
BENZO(A)PYRENE	50-32-8	10	54	6.8	14	ug/kg	J	R	22
BENZO(B)FLUORANTHENE	205-99-2	9.6	11	1.4	2.7	ug/kg	J	J	
BENZO(B)FLUORANTHENE	205-99-2	14	54	6.8	14	ug/kg	U	R	22
BENZO(G,H,I)PERYLENE	191-24-2	7.9	54	6.8	14	ug/kg	J	R	22
BENZO(G,H,I)PERYLENE	191-24-2	7.9	11	1.4	2.7	ug/kg	J	J	
BENZO(K)FLUORANTHENE	207-08-9	4.9	11	1.4	2.7	ug/kg	J	J	
BENZO(K)FLUORANTHENE	207-08-9	14	54	6.8	14	ug/kg	U	R	22
CHRYSENE	218-01-9	17	11	2.4	2.7	ug/kg			
CHRYSENE	218-01-9	22	54	12	14	ug/kg	J	R	22
DIBENZO(A,H)ANTHRACENE	53-70-3	14	54	6.8	14	ug/kg	U	R	22
DIBENZO(A,H)ANTHRACENE	53-70-3	2.7	11	1.4	2.7	ug/kg	U	U	
FLUORANTHENE	206-44-0	71	11	1.4	2.7	ug/kg			
FLUORANTHENE	206-44-0	35	54	6.8	14	ug/kg	J	R	22
FLUORENE	86-73-7	2100	54	6.8	14	ug/kg		R	22
FLUORENE	86-73-7	1600	11	1.4	2.7	ug/kg			
INDENO(1,2,3-CD)PYRENE	193-39-5	14	54	6.8	14	ug/kg	U	R	22
INDENO(1,2,3-CD)PYRENE	193-39-5	5.5	11	1.4	2.7	ug/kg	J	J	
NAPHTHALENE	91-20-3	14	54	6.8	14	ug/kg	U	R	22
NAPHTHALENE	91-20-3	2.7	11	1.4	2.7	ug/kg	U	U	
PHENANTHRENE	85-01-8	2300	11	1.4	2.7	ug/kg			
PHENANTHRENE	85-01-8	2800	54	6.8	14	ug/kg		R	22
PYRENE	129-00-0	61	11	1.4	2.7	ug/kg			
PYRENE	129-00-0	67	54	6.8	14	ug/kg		R	22

Analysis Method SW8270C

Sample Name S53-SB04-10

Result Type: TRG

Analysis Date: 2015/01/29

Analysis Time: 21:12:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	2.6	10	1.3	2.6	ug/kg	U	U	
2-METHYLNAPHTHALENE	91-57-6	2.6	10	1.3	2.6	ug/kg	U	U	
ACENAPHTHENE	83-32-9	2.6	10	1.3	2.6	ug/kg	U	U	
ACENAPHTHYLENE	208-96-8	2.6	10	1.3	2.6	ug/kg	U	U	
ANTHRACENE	120-12-7	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(A)ANTHRACENE	56-55-3	2.6	10	2.5	2.6	ug/kg	U	U	
BENZO(A)PYRENE	50-32-8	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(B)FLUORANTHENE	205-99-2	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(G,H,I)PERYLENE	191-24-2	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(K)FLUORANTHENE	207-08-9	2.6	10	1.3	2.6	ug/kg	U	U	
CHRYSENE	218-01-9	2.6	10	2.3	2.6	ug/kg	U	U	
DIBENZO(A,H)ANTHRACENE	53-70-3	2.6	10	1.3	2.6	ug/kg	U	U	
FLUORANTHENE	206-44-0	2.6	10	1.3	2.6	ug/kg	U	U	
FLUORENE	86-73-7	2.6	10	1.3	2.6	ug/kg	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	2.6	10	1.3	2.6	ug/kg	U	U	
NAPHTHALENE	91-20-3	2.6	10	1.3	2.6	ug/kg	U	U	
PHENANTHRENE	85-01-8	2.6	10	1.3	2.6	ug/kg	U	U	
PYRENE	129-00-0	2.6	10	1.3	2.6	ug/kg	U	U	

Sample Name S53-SB04-20

Result Type: TRG

Analysis Date: 2015/01/29

Analysis Time: 21:32:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	2.6	10	1.3	2.6	ug/kg	U	U	
2-METHYLNAPHTHALENE	91-57-6	2.6	10	1.3	2.6	ug/kg	U	U	
ACENAPHTHENE	83-32-9	2.6	10	1.3	2.6	ug/kg	U	U	
ACENAPHTHYLENE	208-96-8	2.6	10	1.3	2.6	ug/kg	U	U	
ANTHRACENE	120-12-7	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(A)ANTHRACENE	56-55-3	2.6	10	2.5	2.6	ug/kg	U	U	
BENZO(A)PYRENE	50-32-8	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(B)FLUORANTHENE	205-99-2	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(G,H,I)PERYLENE	191-24-2	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(K)FLUORANTHENE	207-08-9	2.6	10	1.3	2.6	ug/kg	U	U	
CHRYSENE	218-01-9	2.6	10	2.3	2.6	ug/kg	U	U	
DIBENZO(A,H)ANTHRACENE	53-70-3	2.6	10	1.3	2.6	ug/kg	U	U	
FLUORANTHENE	206-44-0	2.6	10	1.3	2.6	ug/kg	U	U	
FLUORENE	86-73-7	2.6	10	1.3	2.6	ug/kg	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	2.6	10	1.3	2.6	ug/kg	U	U	
NAPHTHALENE	91-20-3	2.6	10	1.3	2.6	ug/kg	U	U	
PHENANTHRENE	85-01-8	2.6	10	1.3	2.6	ug/kg	U	U	
PYRENE	129-00-0	2.6	10	1.3	2.6	ug/kg	U	U	

Analysis Method SW8270C

Sample Name S53-SB04-28

Result Type: TRG

Analysis Date: 2015/01/29

Analysis Time: 21:51:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	2.6	10	1.3	2.6	ug/kg	U	U	
2-METHYLNAPHTHALENE	91-57-6	2.6	10	1.3	2.6	ug/kg	U	U	
ACENAPHTHENE	83-32-9	2.6	10	1.3	2.6	ug/kg	U	U	
ACENAPHTHYLENE	208-96-8	2.6	10	1.3	2.6	ug/kg	U	U	
ANTHRACENE	120-12-7	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(A)ANTHRACENE	56-55-3	4.8	10	2.5	2.6	ug/kg	J	J	
BENZO(A)PYRENE	50-32-8	1.9	10	1.3	2.6	ug/kg	J	J	
BENZO(B)FLUORANTHENE	205-99-2	3.0	10	1.3	2.6	ug/kg	J	J	
BENZO(G,H,I)PERYLENE	191-24-2	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(K)FLUORANTHENE	207-08-9	2.6	10	1.3	2.6	ug/kg	U	U	
CHRYSENE	218-01-9	3.5	10	2.3	2.6	ug/kg	J	J	
DIBENZO(A,H)ANTHRACENE	53-70-3	2.6	10	1.3	2.6	ug/kg	U	U	
FLUORANTHENE	206-44-0	7.2	10	1.3	2.6	ug/kg	J	J	
FLUORENE	86-73-7	2.6	10	1.3	2.6	ug/kg	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	2.6	10	1.3	2.6	ug/kg	U	U	
NAPHTHALENE	91-20-3	2.6	10	1.3	2.6	ug/kg	U	U	
PHENANTHRENE	85-01-8	2.6	10	1.3	2.6	ug/kg	U	U	
PYRENE	129-00-0	7.8	10	1.3	2.6	ug/kg	J	J	

Sample Name S53-SB04-5

Result Type: TRG

Analysis Date: 2015/01/29

Analysis Time: 20:53:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	2.7	11	1.4	2.7	ug/kg	U	U	
2-METHYLNAPHTHALENE	91-57-6	2.7	11	1.4	2.7	ug/kg	U	U	
ACENAPHTHENE	83-32-9	2.7	11	1.4	2.7	ug/kg	U	U	
ACENAPHTHYLENE	208-96-8	2.7	11	1.4	2.7	ug/kg	U	U	
ANTHRACENE	120-12-7	2.7	11	1.4	2.7	ug/kg	U	U	
BENZO(A)ANTHRACENE	56-55-3	2.7	11	2.7	2.7	ug/kg	U	U	
BENZO(A)PYRENE	50-32-8	2.7	11	1.4	2.7	ug/kg	U	U	
BENZO(B)FLUORANTHENE	205-99-2	2.7	11	1.4	2.7	ug/kg	U	U	
BENZO(G,H,I)PERYLENE	191-24-2	2.7	11	1.4	2.7	ug/kg	U	U	
BENZO(K)FLUORANTHENE	207-08-9	2.7	11	1.4	2.7	ug/kg	U	U	
CHRYSENE	218-01-9	2.7	11	2.4	2.7	ug/kg	U	U	
DIBENZO(A,H)ANTHRACENE	53-70-3	2.7	11	1.4	2.7	ug/kg	U	U	
FLUORANTHENE	206-44-0	2.7	11	1.4	2.7	ug/kg	U	U	
FLUORENE	86-73-7	2.7	11	1.4	2.7	ug/kg	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	2.7	11	1.4	2.7	ug/kg	U	U	
NAPHTHALENE	91-20-3	2.7	11	1.4	2.7	ug/kg	U	U	
PHENANTHRENE	85-01-8	2.7	11	1.4	2.7	ug/kg	U	U	
PYRENE	129-00-0	2.7	11	1.4	2.7	ug/kg	U	U	

Analysis Method SW8270C

Sample Name S53-SB05-10

Result Type: TRG

Analysis Date: 2015/01/29

Analysis Time: 19:54:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	2.7	11	1.3	2.7	ug/kg	U	U	
2-METHYLNAPHTHALENE	91-57-6	2.7	11	1.3	2.7	ug/kg	U	U	
ACENAPHTHENE	83-32-9	2.7	11	1.3	2.7	ug/kg	U	U	
ACENAPHTHYLENE	208-96-8	2.7	11	1.3	2.7	ug/kg	U	U	
ANTHRACENE	120-12-7	2.7	11	1.3	2.7	ug/kg	U	U	
BENZO(A)ANTHRACENE	56-55-3	2.7	11	2.6	2.7	ug/kg	U	U	
BENZO(A)PYRENE	50-32-8	2.7	11	1.3	2.7	ug/kg	U	U	
BENZO(B)FLUORANTHENE	205-99-2	2.7	11	1.3	2.7	ug/kg	U	U	
BENZO(G,H,I)PERYLENE	191-24-2	2.7	11	1.3	2.7	ug/kg	U	U	
BENZO(K)FLUORANTHENE	207-08-9	2.7	11	1.3	2.7	ug/kg	U	U	
CHRYSENE	218-01-9	2.7	11	2.3	2.7	ug/kg	U	U	
DIBENZO(A,H)ANTHRACENE	53-70-3	2.7	11	1.3	2.7	ug/kg	U	U	
FLUORANTHENE	206-44-0	2.7	11	1.3	2.7	ug/kg	U	U	
FLUORENE	86-73-7	2.7	11	1.3	2.7	ug/kg	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	2.7	11	1.3	2.7	ug/kg	U	U	
NAPHTHALENE	91-20-3	2.7	11	1.3	2.7	ug/kg	U	U	
PHENANTHRENE	85-01-8	2.7	11	1.3	2.7	ug/kg	U	U	
PYRENE	129-00-0	2.7	11	1.3	2.7	ug/kg	U	U	

Sample Name S53-SB05-20

Result Type: TRG

Analysis Date: 2015/01/29

Analysis Time: 20:14:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	2.6	10	1.3	2.6	ug/kg	U	U	
2-METHYLNAPHTHALENE	91-57-6	2.6	10	1.3	2.6	ug/kg	U	U	
ACENAPHTHENE	83-32-9	2.6	10	1.3	2.6	ug/kg	U	U	
ACENAPHTHYLENE	208-96-8	2.6	10	1.3	2.6	ug/kg	U	U	
ANTHRACENE	120-12-7	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(A)ANTHRACENE	56-55-3	2.6	10	2.5	2.6	ug/kg	U	U	
BENZO(A)PYRENE	50-32-8	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(B)FLUORANTHENE	205-99-2	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(G,H,I)PERYLENE	191-24-2	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(K)FLUORANTHENE	207-08-9	2.6	10	1.3	2.6	ug/kg	U	U	
CHRYSENE	218-01-9	2.6	10	2.3	2.6	ug/kg	U	U	
DIBENZO(A,H)ANTHRACENE	53-70-3	2.6	10	1.3	2.6	ug/kg	U	U	
FLUORANTHENE	206-44-0	2.6	10	1.3	2.6	ug/kg	U	U	
FLUORENE	86-73-7	2.6	10	1.3	2.6	ug/kg	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	2.6	10	1.3	2.6	ug/kg	U	U	
NAPHTHALENE	91-20-3	2.6	10	1.3	2.6	ug/kg	U	U	
PHENANTHRENE	85-01-8	2.6	10	1.3	2.6	ug/kg	U	U	
PYRENE	129-00-0	2.6	10	1.3	2.6	ug/kg	U	U	

Analysis Method SW8270C

Sample Name S53-SB05-30

Result Type: TRG

Analysis Date: 2015/01/29

Analysis Time: 20:33:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	2.6	10	1.3	2.6	ug/kg	U	U	
2-METHYLNAPHTHALENE	91-57-6	2.6	10	1.3	2.6	ug/kg	U	U	
ACENAPHTHENE	83-32-9	2.6	10	1.3	2.6	ug/kg	U	U	
ACENAPHTHYLENE	208-96-8	2.6	10	1.3	2.6	ug/kg	U	U	
ANTHRACENE	120-12-7	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(A)ANTHRACENE	56-55-3	2.6	10	2.5	2.6	ug/kg	U	U	
BENZO(A)PYRENE	50-32-8	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(B)FLUORANTHENE	205-99-2	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(G,H,I)PERYLENE	191-24-2	2.6	10	1.3	2.6	ug/kg	U	U	
BENZO(K)FLUORANTHENE	207-08-9	2.6	10	1.3	2.6	ug/kg	U	U	
CHRYSENE	218-01-9	2.6	10	2.3	2.6	ug/kg	U	U	
DIBENZO(A,H)ANTHRACENE	53-70-3	2.6	10	1.3	2.6	ug/kg	U	U	
FLUORANTHENE	206-44-0	2.6	10	1.3	2.6	ug/kg	U	U	
FLUORENE	86-73-7	2.6	10	1.3	2.6	ug/kg	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	2.6	10	1.3	2.6	ug/kg	U	U	
NAPHTHALENE	91-20-3	2.6	10	1.3	2.6	ug/kg	U	U	
PHENANTHRENE	85-01-8	2.6	10	1.3	2.6	ug/kg	U	U	
PYRENE	129-00-0	2.6	10	1.3	2.6	ug/kg	U	U	

Sample Name S53-SB05-5

Result Type: TRG

Analysis Date: 2015/01/29

Analysis Time: 19:35:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	2.7	11	1.4	2.7	ug/kg	U	U	
2-METHYLNAPHTHALENE	91-57-6	2.7	11	1.4	2.7	ug/kg	U	U	
ACENAPHTHENE	83-32-9	2.7	11	1.4	2.7	ug/kg	U	U	
ACENAPHTHYLENE	208-96-8	2.7	11	1.4	2.7	ug/kg	U	U	
ANTHRACENE	120-12-7	2.7	11	1.4	2.7	ug/kg	U	U	
BENZO(A)ANTHRACENE	56-55-3	2.7	11	2.7	2.7	ug/kg	U	U	
BENZO(A)PYRENE	50-32-8	2.7	11	1.4	2.7	ug/kg	U	U	
BENZO(B)FLUORANTHENE	205-99-2	2.7	11	1.4	2.7	ug/kg	U	U	
BENZO(G,H,I)PERYLENE	191-24-2	2.7	11	1.4	2.7	ug/kg	U	U	
BENZO(K)FLUORANTHENE	207-08-9	2.7	11	1.4	2.7	ug/kg	U	U	
CHRYSENE	218-01-9	2.7	11	2.4	2.7	ug/kg	U	U	
DIBENZO(A,H)ANTHRACENE	53-70-3	2.7	11	1.4	2.7	ug/kg	U	U	
FLUORANTHENE	206-44-0	2.7	11	1.4	2.7	ug/kg	U	U	
FLUORENE	86-73-7	2.7	11	1.4	2.7	ug/kg	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	2.7	11	1.4	2.7	ug/kg	U	U	
NAPHTHALENE	91-20-3	2.7	11	1.4	2.7	ug/kg	U	U	
PHENANTHRENE	85-01-8	2.7	11	1.4	2.7	ug/kg	U	U	
PYRENE	129-00-0	2.7	11	1.4	2.7	ug/kg	U	U	

Analysis Method SW8270C

Sample Name SB-012215

Result Type: TRG

Analysis Date: 2015/01/30

Analysis Time: 17:17:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	0.10	0.52	0.052	0.10	ug/L	U	U	
2-METHYLNAPHTHALENE	91-57-6	0.10	0.52	0.052	0.10	ug/L	U	U	
ACENAPHTHENE	83-32-9	0.10	0.52	0.052	0.10	ug/L	U	U	
ACENAPHTHYLENE	208-96-8	0.10	0.52	0.052	0.10	ug/L	U	U	
ANTHRACENE	120-12-7	0.10	0.52	0.052	0.10	ug/L	U	U	
BENZO(A)ANTHRACENE	56-55-3	0.10	0.52	0.093	0.10	ug/L	U	U	
BENZO(A)PYRENE	50-32-8	0.10	0.52	0.052	0.10	ug/L	U	U	
BENZO(B)FLUORANTHENE	205-99-2	0.10	0.52	0.052	0.10	ug/L	U	U	
BENZO(G,H,I)PERYLENE	191-24-2	0.10	0.52	0.052	0.10	ug/L	U	U	
BENZO(K)FLUORANTHENE	207-08-9	0.10	0.52	0.052	0.10	ug/L	U	U	
CHRYSENE	218-01-9	0.10	0.52	0.062	0.10	ug/L	U	U	
DIBENZO(A,H)ANTHRACENE	53-70-3	0.10	0.52	0.052	0.10	ug/L	U	U	
FLUORANTHENE	206-44-0	0.10	0.52	0.052	0.10	ug/L	U	U	
FLUORENE	86-73-7	0.10	0.52	0.052	0.10	ug/L	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	0.10	0.52	0.052	0.10	ug/L	U	U	
NAPHTHALENE	91-20-3	0.10	0.52	0.052	0.10	ug/L	U	U	
PHENANTHRENE	85-01-8	0.10	0.52	0.052	0.10	ug/L	U	U	
PYRENE	129-00-0	0.10	0.52	0.052	0.10	ug/L	U	U	

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TFH-Extractable Analysis Checklist

Project Name: Kleinfelder--CTO 0071 Site 53

Laboratory Name: EMAX

Batch Numbers: A014W, A014S

Sample Delivery Group: 15A134

Date Reviewed: 03.07.2015

Reviewed By(print or
type name): L. S. Calvin

Reviewed By Signature

L. S. Calvin

Analysis Method: 8015B

Yes No N/A

Holding Times

Were samples extracted within holding time?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Were samples analyzed within holding time?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Initial Calibration

Did the initial calibration consist of at least five standards?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Are the RSDs for all target analytes $\leq 20\%$ or $r \geq 0.99$?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Was manual integration "M" performed?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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If the answer is "Yes", check for supporting documents.

Was the manual integration necessary?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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If the answer is "No", contact the laboratory inquiring about the reason behind the manual

Initial Calibration Verification(ICV)

Is the mid level (2nd source) recovery within 80-120%?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Continuing Calibration Verification (CCV)

Was CCV conducted every 12 hours?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Was the %Drift or %D $\leq 20\%$ from the initial calibration?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Sample Analysis

	Yes	No	N/A
Was the RRT of an identified component within the method retention time window?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Were samples with levels higher than the calibration range diluted and reanalyzed? *wbc*

553-SB03-5 10x for diesel

Sample Quality Control

Method Blanks: Were target analytes $\leq 1/2$ LOQ?

LCS: Were the percent recoveries within the control limits?

MS/MSD: Were the percent recoveries within the control limits? *(diesel)*

Were the RPDs within the control limits?

System Monitoring Compounds (Surrogates): Are surrogate recoveries within control limits?

Comments:

SB-012215 ND
SB-012215 ND

553-SB03-5
04-28
03-11.5 } diesel fuel pattern



Semivolatile Organic Analysis Checklist

Project Name: Kleinfelder CTO0071 Site 53
 Laboratory Name: EMAX
 Batch Numbers: A0310W, A0375
 Sample Delivery Group: 15A1310
 Date Reviewed: 3-2-2015
 Reviewed By(print or type name): L. S. Calvin
 Reviewed By Signature: [Signature]
 Analysis Method: 8270C (PAHs)

Holding Times

	Yes	No	N/A
Were samples extracted within holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples analyzed within holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Tuning

	Yes	No	N/A
Samples analyzed w/in 12 hours of DFTPP tune?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was mass assignment based on m/z 198?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

m/z	Acceptance Criteria	Yes	No	N/A
51	30.0-60.0%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
68	<2% of mass 69	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
70	<2% of mass 69	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
127	40-60%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
197	<1%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
198	100% Base Peak	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
199	5.0-9.0%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
275	10-30%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
365	>1%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
441	present but <mass 443	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
442	>40%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
443	17-23% of mass 442	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Initial Calibration

	Yes	No	N/A
Was ICAL at least five standards and a blank?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did SPCC meet the minimum mean RF?			

	RF	Yes	No	N/A
N-nitroso-di-n-propylamine	0.05	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Hexachlorocyclopentadiene	0.05	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2,4-Dinitrophenol	0.05	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4-Nitrophenol	0.05	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

RSDs \leq 30% for each individual CCC?

Base/Neutral Fraction:

Acenaphthene
 1,4-Dichlorobenzene
 Hexachlorobutadiene
 Diphenylamine
 Di-n-octylphthalate
 Fluoranthene
 Benzo(a)pyrene

Yes	No	N/A
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Acid Fraction:

4-Chloro-3-methylphenol
 2,4-Dichlorophenol
 2-Nitrophenol
 Phenol
 Pentachlorophenol
 2,4,6-Trichlorophenol

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

RSDs for remaining analytes $<$ 15% or $r \geq 0.995$?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Was manual integration "M" performed?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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If "Yes", check for supporting documents

Was the manual integration necessary?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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If "No", contact the laboratory and inquire about the reason for the manual integration.

Initial Calibration Verification(ICV)

Is the mid level (2nd source) %R within 80-120%?

Yes	No	N/A
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Continuing Calibration Verification (CCV)

Was CCV conducted every 12 hours?

Yes	No	N/A
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Did SPCC meet the RF values?

RF
 N-nitroso-di-n-propylamine 0.05
 Hexachlorocyclopentadiene 0.05
 2,4-Dinitrophenol 0.05
 4-Nitrophenol 0.05

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Were the CCC %Ds \leq 20%?

Base/Neutral Fraction:

Acenaphthene
 1,4-Dichlorobenzene
 Hexachlorobutadiene
 Diphenylamine
 Di-n-octylphthalate
 Fluoranthene
 Benzo(a)pyrene

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Acid Fraction:	Yes	No	N/A
4-Chloro-3-methylphenol	<input type="checkbox"/>	<input type="checkbox"/>	X
2,4-Dichlorophenol	<input type="checkbox"/>	<input type="checkbox"/>	X
2-Nitrophenol	<input type="checkbox"/>	<input type="checkbox"/>	X
Phenol	<input type="checkbox"/>	<input type="checkbox"/>	X
Pentachlorophenol	<input type="checkbox"/>	<input type="checkbox"/>	X
2,4,6-Trichlorophenol	<input type="checkbox"/>	<input type="checkbox"/>	X
Were the remaining %Ds $\leq 20\%$ from the ICAL?	X	<input type="checkbox"/>	<input type="checkbox"/>

Sample Analysis

	Yes	No	N/A
RRTs within ± 0.06 RRT units of the standard?	X	<input type="checkbox"/>	<input type="checkbox"/>
Sample ion abundance w/in 30% for major ions (>10% of the base ion) in standard spectra?	X	<input type="checkbox"/>	<input type="checkbox"/>
Were the IS areas within -50% to +100%?	X	<input type="checkbox"/>	<input type="checkbox"/>

Sample Quality Control

	Yes	No	N/A
<u>Method Blanks</u> : Were target analytes $< 1/2$ LOQ?	X	<input type="checkbox"/>	<input type="checkbox"/>
<u>LCS</u> : Were the %Rs for LCS within the limits?	X	<input type="checkbox"/>	<input type="checkbox"/>
Were RPDs within the limits?	X	<input type="checkbox"/>	<input type="checkbox"/>
<u>MS/MSD</u> : Were the %Rs within the limits?	X	<input type="checkbox"/>	<input type="checkbox"/>
Were the RPDs within the limit?	X	<input type="checkbox"/>	<input type="checkbox"/>
<u>Surrogates</u> : Are the %Rs within QSM limits?	X	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

~~BB~~ - 012215 } ND
~~SB~~ - 012215 }

553-B03-11.5 reanalyzed to rule out carryover.
 - RB retained, initial analysis rejected
 553-B03-5 5X for 1-methylnaphthalene only



Volatile Organic Analysis Checklist

Project Name: Kleinfelder CTO 0071 Site 53
Laboratory Name: EMAX
Batch Numbers: 47A20, 502B03
Sample Delivery Group: 15A136
Date Reviewed: 3.2.2015
Reviewed By (print or type name): L.S. Calvin
Reviewed By Signature: [Signature]
Analysis Method: 4210B

Holding Times

	Yes	No	N/A
Were samples preserved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples analyzed within holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Tuning

	Yes	No	N/A
Was the BFB tune performed at the beginning of each 12-hour period during which samples were analyzed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Was mass assignment based on m/z 95?

<u>m/z</u>	<u>Acceptance Criteria</u>	Yes	No	N/A
50	15.0-40.0%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
75	30.0-66.0%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
95	100% Base Peak	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
96	5.0-9.0%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
173	<2.0 of m/z 174	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
174	>50%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
175	5.0-9.0% of mass 174	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
176	95.0-101.0% of m/z 174	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
177	5.0-9.0% of m/z 176	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The relative ion abundance of m/z 95/96, m/z 174/176, and 176/177 are of critical importance.

The relative ion abundance of m/z 50 and 75 are of lower importance.

Initial Calibration

Yes No N/A

Did the initial calibration consist of at least five standards?

Did the System Performance Check Compounds (SPCC) meet the minimum mean response factor(RF)?

	RF	Yes	No	N/A
Chloromethane	0.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1,1-Dichloroethane	0.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bromoform	0.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chlorobenzene	0.3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1,1,2,2-Tetrachloroethane	0.3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Did the RSD meet the criteria $\leq 30\%$ for each individual Calibration Check Compound(CCC)?

1,1-Dichloroethene	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chloroform	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1,2-Dichloropropane	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Toluene	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ethylbenzene	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vinyl Chloride	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Are the RSDs for the remaining applicable target analytes $\leq 15\%$ or $r \geq 0.995$?

Was manual integration "M" performed?

If the answer is "Yes", check for supporting documents.

Was the manual integration necessary?

If the answer is "No", contact the laboratory inquiring about the reason behind the manual

Initial Calibration Verification (ICV)

Is the mid level (2nd source) within 80-120?

Continuing Calibration Verification (CCV)

Was CCV conducted every 12 hours?

	RF	Yes	No	N/A
Chloromethane	0.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1,1-Dichloroethane	0.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bromoform	0.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chlorobenzene	0.3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1,1,2,2-Tetrachloroethane	0.3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No	N/A
Did the CCC meet the minimum requirements (%D \leq 20%)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1,1-Dichloroethene	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chloroform	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1,2-Dichloropropane	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Toluene	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ethylbenzene	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vinyl Chloride	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was the %Drift or %D \leq 20% from the initial calibration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Sample Analysis

Was the RRT of an identified component within \pm 0.06 RRT units of the RRT of the standard component?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did the abundance of ions in the sample spectra agree within 30% of the major ions (>10% of the	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Sample Quality Control

Were the internal standard areas within the QC limits from -50% to +100%? <i>53-SB03-5 / D4-1,2-DIB 22% 22 assoc. YCS rejected</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<u>Method Blanks</u> : Were target analytes \leq 1/2 LOQ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>LCS</u> : Were the percent recoveries for LCS within the limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>MS/MSD</u> : Were the percent recoveries within limits? <i>(those affecting parent)</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were the RPD within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>System Monitoring Compounds (Surrogates)</u> : Are surrogate recoveries within QSM Limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

53-SB03-5 (BFB 211% - detects estimated
tol-ds 117%

Comments:

water (CA) & CCV RRFs and RRFs < 0.05 { acetone
2 heptanone
tert butyl alcohol

MB - methylene chloride / SB05-5, 05-10

BTB / chloroform - ND in samples

SB

* TB acetone 3.1 ng/L

toluene
chloroform
trichloro & fluoromethane } ND in samples

53-SB03-11.5 reanalyzed for carryover - initial rejected



DATA VALIDATION REPORT

CTO 0071
Naval Weapons Station Seal Beach Detachment
Site 53
Fallbrook, California

SAMPLE DELIVERY GROUP: 15A137

Prepared by

MECX
12269 East Vassar Drive
Aurora, CO 80014

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I. INTRODUCTION

Task Order Title: CTO 0071
Contract: 1405.001H.03
Sample Delivery Group: 15A137
Project Manager: Carlos Lau
Matrix: Water
Quality Control (QC) Level: Standard
Number of Samples: 3
Number of Reanalyses/Dilutions: 0
Laboratory: APPL

Table 1. Sample Identification

<i>Sample Identification</i>	<i>Laboratory Identification</i>	<i>Collection Date</i>	<i>Matrix</i>	<i>Validation Level</i>	<i>Analysis Method</i>
S53-SB01-0.5	A137-01	01/23/2015	Soil	Standard	8015B, 8260B, 8270C
S53-SB03-0.5	A137-02	01/23/2015	Soil	Standard	8015B, 8260B, 8270C
EB-012315	A137-03	01/23/2015	Water	Standard	8015B, 8260B, 8270C

II. Sample Management

Anomalies regarding sample management were not observed, other than one mentioned below. The samples in this sample delivery group (SDG) were received at the laboratory within the temperature limits of $<6^{\circ}\text{C}$ and $>0^{\circ}\text{C}$. According to the case narrative for this SDG, the samples were received intact, on ice and properly preserved, as applicable; however, the laboratory's sample receipt form noted that a portion of the containers for samples S53-SB01-0.5, S53-SB03-0.5, and S53-IDW-SO-012315 were received lying flat in the cooler. The chain-of-custody (COC) was signed and dated by field and laboratory personnel. Custody seals were intact.

III. Method Analyses

1. EPA METHOD 8015B—Total Petroleum Hydrocarbons (Extractable)

Reviewed By: L. Calvin

Date Reviewed: March 3, 2015

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *NAVFAC Pacific SOP II-A, Data Validation Procedure* (February 2007), *US Department of Defense (DoD) Quality System Manual (QSM) for Environmental Laboratories, Version 4.2* (October 2010), *Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan) Preliminary Site Assessment for Site 53 Naval Weapons Station Seal Beach Detachment, Fallbrook, California* (2014), and *EPA SW-846 Method 8015B*.

As no NAVFAC SOP or DoD QSM control limits are specified for this method, SAP control limits were utilized.

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted within seven days of collection and the soil samples were extracted within 14 days of collection. The samples were analyzed within 40 days of extraction.
- Calibration: Calibration criteria were met. Initial calibration %RSDs and ICV and bracketing CCV %Ds were within the method control limit of $\leq 20\%$.
- Blanks: The method blanks had no diesel or kerosene range detects.
- Laboratory Control Samples: Recoveries for diesel were within the SAP control limits of 60-150% for soils and 60-130% for waters. RPDs were within the control limit of $\leq 30\%$.
- Surrogate Recovery: Recoveries were within the laboratory control limits of 60-130% for soils and waters.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on sample S53-SB01-0.5 from this SDG. Recoveries for diesel were within the SAP control limits of 60-150% and the RPD was within the control limit of $\leq 30\%$.
- Field QC Samples: MEC^X evaluated field QC samples, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. MEC^X used the remaining detects to evaluate the associated site samples. Findings associated with field QC samples are summarized below.
 - Field Blanks and Equipment Blanks: Sample SB-012215 (15A136) was identified as the source water blank and sample EB-012315 was the equipment blank associated with the

site samples in this SDG. The source water blank and equipment blank had no diesel or kerosene range detects.

- Field Duplicates: This SDG had no identified field duplicate samples.
- Compound Identification: Compound identification is not applicable for Standard validation samples. The laboratory analyzed for kerosene range C₈-C₁₈ and diesel range C₁₀-C₂₄ by Method 8015B. Though the ranges overlap, none of the samples with detects had both ranges reported; therefore, reported detects were not biased high by the overlap. The case narrative for this SDG noted sample S53-SB01-0.5 displayed a heavier fuel pattern.
- Compound Quantification and Reported Detection Limits: Sample result verification is not applicable for Standard validation samples. None of the samples required dilution. Detects reported below the LOQ were qualified as estimated (J). Nondetects are valid to the LOD.

2. EPA METHOD 8270C SIM—Polycyclic Aromatic Hydrocarbons (PAHs)

Reviewed By: L. Calvin

Date Reviewed: March 3, 2015

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *NAVFAC Pacific SOP II-A, Data Validation Procedure* (February 2007), *US Department of Defense (DoD) Quality System Manual (QSM) for Environmental Laboratories, Version 4.2* (October 2010), *Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan) Preliminary Site Assessment for Site 53 Naval Weapons Station Seal Beach Detachment, Fallbrook, California* (2014), and *EPA SW-846 Method 8270C*.

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted within seven days of collection and the soil samples were extracted within 14 days of collection. The samples were analyzed within 40 days of extraction.
- GC/MS Tuning: The DFTPP tunes met the method abundance criteria. The samples were analyzed within 12 hours of the DFTPP injection time.
- Calibration: Calibration criteria were met. Initial calibration average RRFs were ≥ 0.05 and %RSDs $\leq 15\%$ or r^2 values ≥ 0.990 . The ICV and CCV RRFs were ≥ 0.05 . ICV and CCV %Ds or % drift were $\leq 20\%$.
- Blanks: Target compounds were not detected in the method blanks.
- Laboratory Control Samples: Recoveries were within the control limits listed in the DoD QSM, and RPDs were within the control limit of $\leq 30\%$.

- **Surrogate Recovery:** The initial analysis of sample S53-SB01-0.5 had a recovery of 2-fluorobiphenyl marginally below the control limits of 45-105% at 44%. The sample was reanalyzed with recoveries within control limits. Both sample analyses were reported by the laboratory; therefore, the initial analysis was rejected (R) in favor of the reanalysis results and assigned reason code 22. Remaining recoveries were within the control limits listed in the DoD QSM.
- **Matrix Spike/Matrix Spike Duplicate:** MS/MSD analyses were performed on sample S53-SB01-0.5 from this SDG. Recoveries were within the control limits listed in the DoD QSM, and RPDs were within the control limit of $\leq 30\%$.

The reviewer noted the laboratory did not reanalyze the MS and MSD with the reanalysis of the parent sample (see Surrogate Recovery section); however, as results of both parent sample analyses were comparable, and all analyses were performed on the same instrument, the MS/MSD results were considered valid.

- **Field QC Samples:** MEC^X evaluated field QC samples, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. MEC^X used the remaining detects to evaluate the associated site samples. Findings associated with field QC samples are summarized below
 - **Field Blanks and Equipment Blanks:** Sample SB-012215 (SDG 15A136) was identified as the source water blank and sample EB-012315 was the equipment blank associated with the site samples in this SDG. The source water blank and equipment blank had no target compound detects.
 - **Field Duplicates:** This SDG had no identified field duplicate samples.
- **Internal Standards Performance:** Internal standard area counts and retention times were within the control limits established by the midpoint of the initial calibration: -50%/+100% for internal standard areas and ± 30 seconds for retention times.
- **Compound Identification:** Compound identification is not applicable for Standard validation samples. The laboratory analyzed for 18 PAH compounds by Method 8270C SIM.
- **Compound Quantification and Reported Detection Limits:** Sample result verification is not applicable for Standard validation samples. None of the samples required dilution. Detects reported below the LOQ were qualified as estimated (J). Nondetects are valid to the LOD.
- **System Performance:** Evaluation of system performance is not applicable for Standard validation samples.

3. EPA METHOD 8260B—Volatile Organic Compounds (VOCs)

Reviewed By: L. Calvin

Date Reviewed: March 2, 2015

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *NAVFAC Pacific SOP II-A, Data Validation Procedure* (February 2007), *US Department of Defense (DoD) Quality System Manual (QSM) for Environmental Laboratories, Version 4.2* (October 2010), *Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan) Preliminary Site Assessment for Site 53 Naval Weapons Station Seal Beach Detachment, Fallbrook, California* (2014), and *EPA SW-846 Method 8260B*.

- **Holding Times:** Analytical holding times were met. The preserved water sample and the soil samples were analyzed within 14 days of collection.
- **GC/MS Tuning:** The BFB tunes met the method abundance criteria. The samples were analyzed within 12 hours of the BFB injection time.
- **Calibration:** Most calibration criteria were met for applicable target compounds. Initial calibration average RRFs and ICV and CCV RRFs were ≥ 0.05 , with exceptions listed in the table below. The results for acetone, 2-butanone, and tert butyl alcohol, all nondetects, were rejected (R) in the affected sample. The qualified results were assigned reason code 05. Initial calibration %RSDs were $\leq 15\%$ or r values ≥ 0.995 , and ICV and CCV %Ds or % drift affecting sample data were $\leq 20\%$.

Analyte	ICAL avg. RRF	ICV RRF	CCV RRF	Affected Sample(s)
2-butanone	0.040	0.041	0.036	EB-012315
acetone	0.024	0.024	0.022	
tert butyl alcohol	0.008	0.009	0.010	

- **Blanks:** The method blanks had no target compound detects above the control limits of one-half the LOQ or one-tenth the amount of any sample detect, and no common laboratory contaminants detected above the LOQ.
- **Laboratory Control Samples:** Recoveries were within the control limits listed in the DoD QSM, and RPDs were within the control limit of $\leq 30\%$.
- **Surrogate Recovery:** Recoveries were within the control limits listed in the DoD QSM.
- **Matrix Spike/Matrix Spike Duplicate:** MS/MSD analyses were performed on sample S53-SB01-0.5 from this SDG. The initial analyses of the parent sample and MS/MSD had several recovery outliers; therefore, the parent sample and the MS/MSD were reanalyzed. The reanalyses had all recoveries within the control limits listed in the DoD QSM, and RPDs within the control limit of $\leq 30\%$. Both parent sample analyses were reported by the laboratory; therefore, the initial analysis was rejected (R) in favor of the reanalysis results and assigned reason code 22.

- Field QC Samples: MEC^X evaluated field QC samples, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. MEC^X used the remaining detects to evaluate the associated site samples. Findings associated with field QC samples are summarized below
 - Trip Blanks: This SDG had no associated trip blank.
 - Field Blanks and Equipment Blanks: Sample SB-012215 (SDG 15A136) was identified as the source water blank and sample EB-012315 was the equipment blank associated with the site samples in this SDG. Both the source water blank and the equipment blank had detects below the LOQ for chloroform at 0.11 µg/L and 0.12 µg/L, respectively; however, none of the site samples had detects for chloroform. The field QC samples had no other reportable detects above the DL.
 - Field Duplicates: This SDG had no identified field duplicate samples.
- Internal Standards Performance: Internal standard area counts and retention times were within the control limits established by the midpoint of the initial calibration: -50%/+100% for internal standard areas and ±30 seconds for retention times.
- Compound Identification: Compound identification is not applicable for Standard validation samples. The laboratory analyzed for volatile target compounds by EPA Method 8260B.
- Compound Quantification and Reported Detection Limits: Sample result verification is not applicable for Standard validation samples. Detects reported below the LOQ were qualified as estimated (J). Nondetects are valid to the LOD.

Sample EB-012315 was reanalyzed due to suspected carryover from a previous analysis with a foamy matrix. The original analysis showed low level detects for 2-butanone, acetone and trichloroethene that were not present in the reanalysis. Therefore the reanalysis was retained. As the laboratory reported both the initial analysis and reanalysis, the initial analysis of EB-012315 was rejected (R) and assigned reason code 22.

- Tentatively Identified Compounds: TICs were not reported by the laboratory for this SDG.
- System Performance: Evaluation of system performance is not applicable for Standard validation samples.

Validated Sample Result Forms: 15A137

Analysis Method SW8015B

Sample Name EB-012315

Result Type: TRG

Analysis Date: 2015/01/29

Analysis Time: 20:18:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	0.095	0.48	0.048	0.095	mg/L	U	U	
KEROSENE	TPH-KERO	0.19	0.95	0.095	0.19	mg/L	U	U	

Sample Name S53-SB01-0.5

Result Type: TRG

Analysis Date: 2015/01/30

Analysis Time: 03:59:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	25	11	2.8	5.5	mg/kg			
KEROSENE	TPH-KERO	11	22	5.5	11	mg/kg	U	U	

Sample Name S53-SB03-0.5

Result Type: TRG

Analysis Date: 2015/01/30

Analysis Time: 05:42:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
DIESEL	68334-30-5	20	11	2.8	5.6	mg/kg			
KEROSENE	TPH-KERO	11	22	5.6	11	mg/kg	U	U	

Analysis Method SW8260B

Sample Name EB-012315

Result Type: TRG

Analysis Date: 2015/01/28

Analysis Time: 18:13:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.20	1.0	0.10	0.20	ug/L	U	R	22
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1,1-TRICHLOROETHANE	71-55-6	0.20	1.0	0.10	0.20	ug/L	U	R	22
1,1,1-TRICHLOROETHANE	71-55-6	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.20	1.0	0.11	0.20	ug/L	U	R	22
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.20	1.0	0.11	0.20	ug/L	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	0.20	1.0	0.10	0.20	ug/L	U	R	22
1,1-DICHLOROETHANE	75-34-3	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1-DICHLOROETHANE	75-34-3	0.20	1.0	0.10	0.20	ug/L	U	R	22
1,1-DICHLOROETHENE	75-35-4	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1-DICHLOROETHENE	75-35-4	0.20	1.0	0.10	0.20	ug/L	U	R	22
1,1-DICHLOROPROPENE	563-58-6	0.20	1.0	0.10	0.20	ug/L	U	U	
1,1-DICHLOROPROPENE	563-58-6	0.20	1.0	0.10	0.20	ug/L	U	R	22
1,2,3-TRICHLOROBENZENE	87-61-6	0.30	1.0	0.15	0.30	ug/L	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	0.30	1.0	0.15	0.30	ug/L	U	R	22
1,2,3-TRICHLOROPROPANE	96-18-4	0.50	2.0	0.25	0.50	ug/L	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	0.50	2.0	0.25	0.50	ug/L	U	R	22
1,2,4-TRICHLOROBENZENE	120-82-1	0.30	1.0	0.15	0.30	ug/L	U	U	
1,2,4-TRICHLOROBENZENE	120-82-1	0.30	1.0	0.15	0.30	ug/L	U	R	22
1,2,4-TRIMETHYLBENZENE	95-63-6	0.20	1.0	0.11	0.20	ug/L	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	0.20	1.0	0.11	0.20	ug/L	U	R	22
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	0.50	2.0	0.25	0.50	ug/L	U	R	22
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	0.50	2.0	0.25	0.50	ug/L	U	U	
1,2-DIBROMOETHANE	106-93-4	0.20	1.0	0.10	0.20	ug/L	U	R	22
1,2-DIBROMOETHANE	106-93-4	0.20	1.0	0.10	0.20	ug/L	U	U	
1,2-DICHLOROBENZENE	95-50-1	0.20	1.0	0.10	0.20	ug/L	U	R	22
1,2-DICHLOROBENZENE	95-50-1	0.20	1.0	0.10	0.20	ug/L	U	U	
1,2-DICHLOROETHANE	107-06-2	0.20	1.0	0.10	0.20	ug/L	U	R	22
1,2-DICHLOROETHANE	107-06-2	0.20	1.0	0.10	0.20	ug/L	U	U	
1,2-DICHLOROPROPANE	78-87-5	0.20	1.0	0.10	0.20	ug/L	U	R	22
1,2-DICHLOROPROPANE	78-87-5	0.20	1.0	0.10	0.20	ug/L	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	0.20	1.0	0.13	0.20	ug/L	U	R	22
1,3,5-TRIMETHYLBENZENE	108-67-8	0.20	1.0	0.13	0.20	ug/L	U	U	
1,3-DICHLOROBENZENE	541-73-1	0.20	1.0	0.11	0.20	ug/L	U	R	22
1,3-DICHLOROBENZENE	541-73-1	0.20	1.0	0.11	0.20	ug/L	U	U	
1,3-DICHLOROPROPANE	142-28-9	0.20	1.0	0.10	0.20	ug/L	U	R	22
1,3-DICHLOROPROPANE	142-28-9	0.20	1.0	0.10	0.20	ug/L	U	U	
1,4-DICHLOROBENZENE	106-46-7	0.20	1.0	0.10	0.20	ug/L	U	U	
1,4-DICHLOROBENZENE	106-46-7	0.20	1.0	0.10	0.20	ug/L	U	R	22
2,2-DICHLOROPROPANE	594-20-7	0.30	1.0	0.16	0.30	ug/L	U	U	
2,2-DICHLOROPROPANE	594-20-7	0.30	1.0	0.16	0.30	ug/L	U	R	22
2-BUTANONE (MEK)	78-93-3	3.0	10	2.0	5.0	ug/L	J	R	22

Analysis Method *SW8260B*

2-BUTANONE (MEK)	78-93-3	5.0	10	2.0	5.0	ug/L	U	R	05
2-CHLOROTOLUENE	95-49-8	0.20	1.0	0.12	0.20	ug/L	U	R	22
2-CHLOROTOLUENE	95-49-8	0.20	1.0	0.12	0.20	ug/L	U	U	
2-HEXANONE	591-78-6	5.0	10	2.3	5.0	ug/L	U	R	22
2-HEXANONE	591-78-6	5.0	10	2.3	5.0	ug/L	U	U	
4-CHLOROTOLUENE	106-43-4	0.20	1.0	0.11	0.20	ug/L	U	U	
4-CHLOROTOLUENE	106-43-4	0.20	1.0	0.11	0.20	ug/L	U	R	22
4-METHYL-2-PENTANONE (MIBK)	108-10-1	5.0	10	2.1	5.0	ug/L	U	R	22
4-METHYL-2-PENTANONE (MIBK)	108-10-1	5.0	10	2.1	5.0	ug/L	U	U	
ACETONE	67-64-1	5.0	10	2.6	5.0	ug/L	U	R	05
ACETONE	67-64-1	22	10	2.6	5.0	ug/L		R	22
BENZENE	71-43-2	0.20	1.0	0.10	0.20	ug/L	U	U	
BENZENE	71-43-2	0.20	1.0	0.10	0.20	ug/L	U	R	22
BROMOBENZENE	108-86-1	0.20	1.0	0.10	0.20	ug/L	U	U	
BROMOBENZENE	108-86-1	0.20	1.0	0.10	0.20	ug/L	U	R	22
BROMOCHLOROMETHANE	74-97-5	0.20	1.0	0.11	0.20	ug/L	U	R	22
BROMOCHLOROMETHANE	74-97-5	0.20	1.0	0.11	0.20	ug/L	U	U	
BROMODICHLOROMETHANE	75-27-4	0.20	1.0	0.10	0.20	ug/L	U	U	
BROMODICHLOROMETHANE	75-27-4	0.20	1.0	0.10	0.20	ug/L	U	R	22
BROMOFORM	75-25-2	0.30	1.0	0.15	0.30	ug/L	U	U	
BROMOFORM	75-25-2	0.30	1.0	0.15	0.30	ug/L	U	R	22
BROMOMETHANE	74-83-9	0.30	1.0	0.16	0.30	ug/L	U	U	
BROMOMETHANE	74-83-9	0.30	1.0	0.16	0.30	ug/L	U	R	22
CARBON DISULFIDE	75-15-0	0.50	1.0	0.25	0.50	ug/L	U	R	22
CARBON DISULFIDE	75-15-0	0.50	1.0	0.25	0.50	ug/L	U	U	
CARBON TETRACHLORIDE	56-23-5	0.20	1.0	0.10	0.20	ug/L	U	U	
CARBON TETRACHLORIDE	56-23-5	0.20	1.0	0.10	0.20	ug/L	U	R	22
CHLOROBENZENE	108-90-7	0.20	1.0	0.10	0.20	ug/L	U	U	
CHLOROBENZENE	108-90-7	0.20	1.0	0.10	0.20	ug/L	U	R	22
CHLOROETHANE	75-00-3	0.30	1.0	0.27	0.30	ug/L	U	R	22
CHLOROETHANE	75-00-3	0.30	1.0	0.27	0.30	ug/L	U	U	
CHLOROFORM	67-66-3	0.11	1.0	0.10	0.20	ug/L	J	R	22
CHLOROFORM	67-66-3	0.12	1.0	0.10	0.20	ug/L	J	J	
CHLOROMETHANE	74-87-3	0.30	1.0	0.15	0.30	ug/L	U	R	22
CHLOROMETHANE	74-87-3	0.30	1.0	0.15	0.30	ug/L	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	0.20	1.0	0.10	0.20	ug/L	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	0.20	1.0	0.10	0.20	ug/L	U	R	22
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.20	1.0	0.10	0.20	ug/L	U	R	22
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.20	1.0	0.10	0.20	ug/L	U	U	
DIBROMOCHLOROMETHANE	124-48-1	0.20	1.0	0.10	0.20	ug/L	U	U	
DIBROMOCHLOROMETHANE	124-48-1	0.20	1.0	0.10	0.20	ug/L	U	R	22
DIBROMOMETHANE	74-95-3	0.20	1.0	0.10	0.20	ug/L	U	U	
DIBROMOMETHANE	74-95-3	0.20	1.0	0.10	0.20	ug/L	U	R	22
DICHLORODIFLUOROMETHA NE	75-71-8	0.30	1.0	0.15	0.30	ug/L	U	R	22
DICHLORODIFLUOROMETHA NE	75-71-8	0.30	1.0	0.15	0.30	ug/L	U	U	
ETHYLBENZENE	100-41-4	0.20	1.0	0.10	0.20	ug/L	U	R	22
ETHYLBENZENE	100-41-4	0.20	1.0	0.10	0.20	ug/L	U	U	
HEXACHLOROBUTADIENE	87-68-3	0.30	1.0	0.22	0.30	ug/L	U	R	22
HEXACHLOROBUTADIENE	87-68-3	0.30	1.0	0.22	0.30	ug/L	U	U	
ISOPROPYL BENZENE	98-82-8	0.20	1.0	0.10	0.20	ug/L	U	R	22

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ISOPROPYL BENZENE	98-82-8	0.20	1.0	0.10	0.20	ug/L	U	U	
M,P-XYLENES	MP-XYL	0.40	2.0	0.21	0.40	ug/L	U	U	
M,P-XYLENES	MP-XYL	0.40	2.0	0.21	0.40	ug/L	U	R	22
METHYLENE CHLORIDE	75-09-2	1.0	2.0	0.50	1.0	ug/L	U	U	
METHYLENE CHLORIDE	75-09-2	1.0	2.0	0.50	1.0	ug/L	U	R	22
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.20	1.0	0.13	0.20	ug/L	U	R	22
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.20	1.0	0.13	0.20	ug/L	U	U	
NAPHTHALENE	91-20-3	1.0	2.0	0.50	1.0	ug/L	U	U	
NAPHTHALENE	91-20-3	1.0	2.0	0.50	1.0	ug/L	U	R	22
N-BUTYLBENZENE	104-51-8	0.30	1.0	0.17	0.30	ug/L	U	U	
N-BUTYLBENZENE	104-51-8	0.30	1.0	0.17	0.30	ug/L	U	R	22
N-PROPYLBENZENE	103-65-1	0.20	1.0	0.13	0.20	ug/L	U	U	
N-PROPYLBENZENE	103-65-1	0.20	1.0	0.13	0.20	ug/L	U	R	22
O-XYLENE	95-47-6	0.20	1.0	0.10	0.20	ug/L	U	R	22
O-XYLENE	95-47-6	0.20	1.0	0.10	0.20	ug/L	U	U	
P-ISOPROPYLTOLUENE	99-87-6	0.20	1.0	0.14	0.20	ug/L	U	U	
P-ISOPROPYLTOLUENE	99-87-6	0.20	1.0	0.14	0.20	ug/L	U	R	22
SEC-BUTYLBENZENE	135-98-8	0.20	1.0	0.13	0.20	ug/L	U	U	
SEC-BUTYLBENZENE	135-98-8	0.20	1.0	0.13	0.20	ug/L	U	R	22
STYRENE	100-42-5	0.50	1.0	0.25	0.50	ug/L	U	R	22
STYRENE	100-42-5	0.50	1.0	0.25	0.50	ug/L	U	U	
TERT BUTYL ALCOHOL	75-65-0	5.0	10	2.5	5.0	ug/L	U	R	22
TERT BUTYL ALCOHOL	75-65-0	5.0	10	2.5	5.0	ug/L	U	R	05
TERT-BUTYLBENZENE	98-06-6	0.20	1.0	0.13	0.20	ug/L	U	R	22
TERT-BUTYLBENZENE	98-06-6	0.20	1.0	0.13	0.20	ug/L	U	U	
TETRACHLOROETHENE	127-18-4	0.20	1.0	0.15	0.20	ug/L	U	U	
TETRACHLOROETHENE	127-18-4	0.20	1.0	0.15	0.20	ug/L	U	R	22
TOLUENE	108-88-3	0.20	1.0	0.10	0.20	ug/L	U	U	
TOLUENE	108-88-3	0.20	1.0	0.10	0.20	ug/L	U	R	22
TRANS-1,2- DICHLOROETHENE	156-60-5	0.20	1.0	0.10	0.20	ug/L	U	U	
TRANS-1,2- DICHLOROETHENE	156-60-5	0.20	1.0	0.10	0.20	ug/L	U	R	22
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.20	1.0	0.11	0.20	ug/L	U	R	22
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.20	1.0	0.11	0.20	ug/L	U	U	
TRICHLOROETHENE	79-01-6	0.10	1.0	0.10	0.20	ug/L	J	R	22
TRICHLOROETHENE	79-01-6	0.20	1.0	0.10	0.20	ug/L	U	U	
TRICHLOROFLUOROMETHAN E	75-69-4	0.30	1.0	0.15	0.30	ug/L	U	R	22
TRICHLOROFLUOROMETHAN E	75-69-4	0.30	1.0	0.15	0.30	ug/L	U	U	
VINYL CHLORIDE	75-01-4	0.20	1.0	0.12	0.20	ug/L	U	R	22
VINYL CHLORIDE	75-01-4	0.20	1.0	0.12	0.20	ug/L	U	U	

Analysis Method SW8260B

Sample Name S53-SB01-0.5

Result Type: TRG

Analysis Date: 2015/02/05

Analysis Time: 13:07:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.91	4.5	0.45	0.91	ug/kg	U	R	22
1,1,1-TRICHLOROETHANE	71-55-6	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,1,1-TRICHLOROETHANE	71-55-6	0.91	4.5	0.45	0.91	ug/kg	U	R	22
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.91	4.5	0.45	0.91	ug/kg	U	R	22
1,1,2-TRICHLOROETHANE	79-00-5	0.91	4.5	0.45	0.91	ug/kg	U	R	22
1,1,2-TRICHLOROETHANE	79-00-5	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,1-DICHLOROETHANE	75-34-3	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,1-DICHLOROETHANE	75-34-3	0.91	4.5	0.45	0.91	ug/kg	U	R	22
1,1-DICHLOROETHENE	75-35-4	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,1-DICHLOROETHENE	75-35-4	0.91	4.5	0.45	0.91	ug/kg	U	R	22
1,1-DICHLOROPROPENE	563-58-6	0.91	4.5	0.45	0.91	ug/kg	U	R	22
1,1-DICHLOROPROPENE	563-58-6	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	1.8	4.6	0.92	1.8	ug/kg	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	1.8	4.5	0.91	1.8	ug/kg	U	R	22
1,2,3-TRICHLOROPROPANE	96-18-4	1.8	4.6	0.92	1.8	ug/kg	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	1.8	4.5	0.91	1.8	ug/kg	U	R	22
1,2,4-TRICHLOROBENZENE	120-82-1	1.8	4.5	0.91	1.8	ug/kg	U	R	22
1,2,4-TRICHLOROBENZENE	120-82-1	1.8	4.6	0.92	1.8	ug/kg	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	1.8	4.5	0.50	1.8	ug/kg	U	R	22
1,2,4-TRIMETHYLBENZENE	95-63-6	1.8	4.6	0.50	1.8	ug/kg	U	U	
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	1.8	4.6	0.92	1.8	ug/kg	U	U	
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	1.8	4.5	0.91	1.8	ug/kg	U	R	22
1,2-DIBROMOETHANE	106-93-4	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,2-DIBROMOETHANE	106-93-4	0.91	4.5	0.45	0.91	ug/kg	U	R	22
1,2-DICHLOROBENZENE	95-50-1	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,2-DICHLOROBENZENE	95-50-1	0.91	4.5	0.45	0.91	ug/kg	U	R	22
1,2-DICHLOROETHANE	107-06-2	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,2-DICHLOROETHANE	107-06-2	0.91	4.5	0.45	0.91	ug/kg	U	R	22
1,2-DICHLOROPROPANE	78-87-5	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,2-DICHLOROPROPANE	78-87-5	0.91	4.5	0.45	0.91	ug/kg	U	R	22
1,3,5-TRIMETHYLBENZENE	108-67-8	1.8	4.6	0.54	1.8	ug/kg	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	1.8	4.5	0.53	1.8	ug/kg	U	R	22
1,3-DICHLOROBENZENE	541-73-1	0.91	4.5	0.47	0.91	ug/kg	U	R	22
1,3-DICHLOROBENZENE	541-73-1	0.92	4.6	0.48	0.92	ug/kg	U	U	
1,3-DICHLOROPROPANE	142-28-9	0.91	4.5	0.45	0.91	ug/kg	U	R	22
1,3-DICHLOROPROPANE	142-28-9	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,4-DICHLOROBENZENE	106-46-7	0.92	4.6	0.46	0.92	ug/kg	U	U	
1,4-DICHLOROBENZENE	106-46-7	0.91	4.5	0.45	0.91	ug/kg	U	R	22
2,2-DICHLOROPROPANE	594-20-7	1.8	4.5	0.91	1.8	ug/kg	U	R	22
2,2-DICHLOROPROPANE	594-20-7	1.8	4.6	0.92	1.8	ug/kg	U	U	
2-BUTANONE (MEK)	78-93-3	4.6	9.1	2.3	4.5	ug/kg	J	R	22

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2-BUTANONE (MEK)	78-93-3	3.6	9.2	2.3	4.6	ug/kg	J	J	
2-CHLOROTOLUENE	95-49-8	1.8	4.5	0.74	1.8	ug/kg	U	R	22
2-CHLOROTOLUENE	95-49-8	1.8	4.6	0.75	1.8	ug/kg	U	U	
2-HEXANONE	591-78-6	4.6	9.2	2.7	4.6	ug/kg	U	U	
2-HEXANONE	591-78-6	4.5	9.1	2.6	4.5	ug/kg	U	R	22
4-CHLOROTOLUENE	106-43-4	1.8	4.5	0.61	1.8	ug/kg	U	R	22
4-CHLOROTOLUENE	106-43-4	1.8	4.6	0.61	1.8	ug/kg	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	4.6	9.2	2.6	4.6	ug/kg	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	4.5	9.1	2.5	4.5	ug/kg	U	R	22
ACETONE	67-64-1	55	9.1	2.8	4.5	ug/kg		R	22
ACETONE	67-64-1	43	9.2	2.8	4.6	ug/kg			
BENZENE	71-43-2	0.91	4.5	0.45	0.91	ug/kg	U	R	22
BENZENE	71-43-2	0.92	4.6	0.46	0.92	ug/kg	U	U	
BROMOBENZENE	108-86-1	0.91	4.5	0.45	0.91	ug/kg	U	R	22
BROMOBENZENE	108-86-1	0.92	4.6	0.46	0.92	ug/kg	U	U	
BROMOCHLOROMETHANE	74-97-5	0.92	4.6	0.46	0.92	ug/kg	U	U	
BROMOCHLOROMETHANE	74-97-5	0.91	4.5	0.45	0.91	ug/kg	U	R	22
BROMODICHLOROMETHANE	75-27-4	0.91	4.5	0.45	0.91	ug/kg	U	R	22
BROMODICHLOROMETHANE	75-27-4	0.92	4.6	0.46	0.92	ug/kg	U	U	
BROMOFORM	75-25-2	1.8	4.6	0.92	1.8	ug/kg	U	U	
BROMOFORM	75-25-2	1.8	4.5	0.91	1.8	ug/kg	U	R	22
BROMOMETHANE	74-83-9	1.8	9.1	1.6	1.8	ug/kg	U	R	22
BROMOMETHANE	74-83-9	1.8	9.2	1.7	1.8	ug/kg	U	U	
CARBON DISULFIDE	75-15-0	0.91	4.5	0.45	0.91	ug/kg	U	R	22
CARBON DISULFIDE	75-15-0	0.92	4.6	0.46	0.92	ug/kg	U	U	
CARBON TETRACHLORIDE	56-23-5	0.92	4.6	0.50	0.92	ug/kg	U	U	
CARBON TETRACHLORIDE	56-23-5	0.91	4.5	0.49	0.91	ug/kg	U	R	22
CHLOROBENZENE	108-90-7	0.91	4.5	0.45	0.91	ug/kg	U	R	22
CHLOROBENZENE	108-90-7	0.92	4.6	0.46	0.92	ug/kg	U	U	
CHLOROETHANE	75-00-3	1.8	4.6	1.2	1.8	ug/kg	U	U	
CHLOROETHANE	75-00-3	1.8	4.5	1.2	1.8	ug/kg	U	R	22
CHLOROFORM	67-66-3	0.92	4.6	0.46	0.92	ug/kg	U	U	
CHLOROFORM	67-66-3	0.91	4.5	0.45	0.91	ug/kg	U	R	22
CHLOROMETHANE	74-87-3	1.8	4.5	0.91	1.8	ug/kg	U	R	22
CHLOROMETHANE	74-87-3	1.8	4.6	0.92	1.8	ug/kg	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	0.92	4.6	0.46	0.92	ug/kg	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	0.91	4.5	0.45	0.91	ug/kg	U	R	22
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.92	4.6	0.46	0.92	ug/kg	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.91	4.5	0.45	0.91	ug/kg	U	R	22
DIBROMOCHLOROMETHANE	124-48-1	0.92	4.6	0.46	0.92	ug/kg	U	U	
DIBROMOCHLOROMETHANE	124-48-1	0.91	4.5	0.45	0.91	ug/kg	U	R	22
DIBROMOMETHANE	74-95-3	0.91	4.5	0.45	0.91	ug/kg	U	R	22
DIBROMOMETHANE	74-95-3	0.92	4.6	0.46	0.92	ug/kg	U	U	
DICHLORODIFLUOROMETHANE	75-71-8	1.8	4.5	1.1	1.8	ug/kg	U	R	22
DICHLORODIFLUOROMETHANE	75-71-8	1.8	4.6	1.1	1.8	ug/kg	U	U	
ETHYLBENZENE	100-41-4	0.91	4.5	0.45	0.91	ug/kg	U	R	22
ETHYLBENZENE	100-41-4	0.92	4.6	0.46	0.92	ug/kg	U	U	
HEXACHLOROBUTADIENE	87-68-3	1.8	4.5	0.91	1.8	ug/kg	U	R	22
HEXACHLOROBUTADIENE	87-68-3	1.8	4.6	0.92	1.8	ug/kg	U	U	
ISOPROPYL BENZENE	98-82-8	1.8	4.5	0.58	1.8	ug/kg	U	R	22

Analysis Method *SW8260B*

ISOPROPYL BENZENE	98-82-8	1.8	4.6	0.59	1.8	ug/kg	U	U	
M,P-XYLENES	MP-XYL	1.8	9.2	0.92	1.8	ug/kg	U	U	
M,P-XYLENES	MP-XYL	1.8	9.1	0.91	1.8	ug/kg	U	R	22
METHYLENE CHLORIDE	75-09-2	4.6	9.2	0.92	4.6	ug/kg	U	U	
METHYLENE CHLORIDE	75-09-2	4.5	9.1	0.91	4.5	ug/kg	U	R	22
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.92	4.6	0.46	0.92	ug/kg	U	U	
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.91	4.5	0.45	0.91	ug/kg	U	R	22
NAPHTHALENE	91-20-3	1.8	9.2	0.92	1.8	ug/kg	U	U	
NAPHTHALENE	91-20-3	1.8	9.1	0.91	1.8	ug/kg	U	R	22
N-BUTYLBENZENE	104-51-8	1.8	4.6	0.64	1.8	ug/kg	U	U	
N-BUTYLBENZENE	104-51-8	1.8	4.5	0.63	1.8	ug/kg	U	R	22
N-PROPYLBENZENE	103-65-1	1.8	4.6	0.60	1.8	ug/kg	U	U	
N-PROPYLBENZENE	103-65-1	1.8	4.5	0.59	1.8	ug/kg	U	R	22
O-XYLENE	95-47-6	0.92	4.6	0.46	0.92	ug/kg	U	U	
O-XYLENE	95-47-6	0.91	4.5	0.45	0.91	ug/kg	U	R	22
P-ISOPROPYLTOLUENE	99-87-6	1.8	4.6	0.57	1.8	ug/kg	U	U	
P-ISOPROPYLTOLUENE	99-87-6	1.8	4.5	0.56	1.8	ug/kg	U	R	22
SEC-BUTYLBENZENE	135-98-8	1.8	4.6	0.61	1.8	ug/kg	U	U	
SEC-BUTYLBENZENE	135-98-8	1.8	4.5	0.61	1.8	ug/kg	U	R	22
STYRENE	100-42-5	1.8	4.6	0.92	1.8	ug/kg	U	U	
STYRENE	100-42-5	1.8	4.5	0.91	1.8	ug/kg	U	R	22
TERT BUTYL ALCOHOL	75-65-0	9.1	18	8.3	9.1	ug/kg	U	R	22
TERT BUTYL ALCOHOL	75-65-0	9.2	18	8.4	9.2	ug/kg	U	U	
TERT-BUTYLBENZENE	98-06-6	1.8	4.6	0.57	1.8	ug/kg	U	U	
TERT-BUTYLBENZENE	98-06-6	1.8	4.5	0.56	1.8	ug/kg	U	R	22
TETRACHLOROETHENE	127-18-4	0.92	4.6	0.46	0.92	ug/kg	U	U	
TETRACHLOROETHENE	127-18-4	0.91	4.5	0.45	0.91	ug/kg	U	R	22
TOLUENE	108-88-3	0.91	4.5	0.45	0.91	ug/kg	U	R	22
TOLUENE	108-88-3	0.92	4.6	0.46	0.92	ug/kg	U	U	
TRANS-1,2- DICHLOROETHENE	156-60-5	0.91	4.5	0.45	0.91	ug/kg	U	R	22
TRANS-1,2- DICHLOROETHENE	156-60-5	0.92	4.6	0.46	0.92	ug/kg	U	U	
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.92	4.6	0.46	0.92	ug/kg	U	U	
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.91	4.5	0.45	0.91	ug/kg	U	R	22
TRICHLOROETHENE	79-01-6	0.92	4.6	0.46	0.92	ug/kg	U	U	
TRICHLOROETHENE	79-01-6	0.91	4.5	0.45	0.91	ug/kg	U	R	22
TRICHLOROFLUOROMETHAN E	75-69-4	1.8	4.6	1.0	1.8	ug/kg	U	U	
TRICHLOROFLUOROMETHAN E	75-69-4	1.8	4.5	1.0	1.8	ug/kg	U	R	22
VINYL CHLORIDE	75-01-4	1.8	4.5	1.3	1.8	ug/kg	U	R	22
VINYL CHLORIDE	75-01-4	1.8	4.6	1.3	1.8	ug/kg	U	U	

Analysis Method SW8260B

Sample Name S53-SB03-0.5

Result Type: TRG

Analysis Date: 2015/02/04

Analysis Time: 18:04:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.91	4.5	0.45	0.91	ug/kg	U	U	
1,1,1-TRICHLOROETHANE	71-55-6	0.91	4.5	0.45	0.91	ug/kg	U	U	
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.91	4.5	0.45	0.91	ug/kg	U	U	
1,1,2-TRICHLOROETHANE	79-00-5	0.91	4.5	0.45	0.91	ug/kg	U	U	
1,1-DICHLOROETHANE	75-34-3	0.91	4.5	0.45	0.91	ug/kg	U	U	
1,1-DICHLOROETHENE	75-35-4	0.91	4.5	0.45	0.91	ug/kg	U	U	
1,1-DICHLOROPROPENE	563-58-6	0.91	4.5	0.45	0.91	ug/kg	U	U	
1,2,3-TRICHLOROBENZENE	87-61-6	1.8	4.5	0.91	1.8	ug/kg	U	U	
1,2,3-TRICHLOROPROPANE	96-18-4	1.8	4.5	0.91	1.8	ug/kg	U	U	
1,2,4-TRICHLOROBENZENE	120-82-1	1.8	4.5	0.91	1.8	ug/kg	U	U	
1,2,4-TRIMETHYLBENZENE	95-63-6	1.8	4.5	0.50	1.8	ug/kg	U	U	
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	1.8	4.5	0.91	1.8	ug/kg	U	U	
1,2-DIBROMOETHANE	106-93-4	0.91	4.5	0.45	0.91	ug/kg	U	U	
1,2-DICHLOROBENZENE	95-50-1	0.91	4.5	0.45	0.91	ug/kg	U	U	
1,2-DICHLOROETHANE	107-06-2	0.91	4.5	0.45	0.91	ug/kg	U	U	
1,2-DICHLOROPROPANE	78-87-5	0.91	4.5	0.45	0.91	ug/kg	U	U	
1,3,5-TRIMETHYLBENZENE	108-67-8	1.8	4.5	0.53	1.8	ug/kg	U	U	
1,3-DICHLOROBENZENE	541-73-1	0.91	4.5	0.47	0.91	ug/kg	U	U	
1,3-DICHLOROPROPANE	142-28-9	0.91	4.5	0.45	0.91	ug/kg	U	U	
1,4-DICHLOROBENZENE	106-46-7	0.91	4.5	0.45	0.91	ug/kg	U	U	
2,2-DICHLOROPROPANE	594-20-7	1.8	4.5	0.91	1.8	ug/kg	U	U	
2-BUTANONE (MEK)	78-93-3	8.6	9.1	2.3	4.5	ug/kg	J	J	
2-CHLOROTOLUENE	95-49-8	1.8	4.5	0.74	1.8	ug/kg	U	U	
2-HEXANONE	591-78-6	4.5	9.1	2.6	4.5	ug/kg	U	U	
4-CHLOROTOLUENE	106-43-4	1.8	4.5	0.61	1.8	ug/kg	U	U	
4-METHYL-2-PENTANONE (MIBK)	108-10-1	4.5	9.1	2.5	4.5	ug/kg	U	U	
ACETONE	67-64-1	130	9.1	2.8	4.5	ug/kg			
BENZENE	71-43-2	0.91	4.5	0.45	0.91	ug/kg	U	U	
BROMOBENZENE	108-86-1	0.91	4.5	0.45	0.91	ug/kg	U	U	
BROMOCHLOROMETHANE	74-97-5	0.91	4.5	0.45	0.91	ug/kg	U	U	
BROMODICHLOROMETHANE	75-27-4	0.91	4.5	0.45	0.91	ug/kg	U	U	
BROMOFORM	75-25-2	1.8	4.5	0.91	1.8	ug/kg	U	U	
BROMOMETHANE	74-83-9	1.8	9.1	1.6	1.8	ug/kg	U	U	
CARBON DISULFIDE	75-15-0	0.91	4.5	0.45	0.91	ug/kg	U	U	
CARBON TETRACHLORIDE	56-23-5	0.91	4.5	0.49	0.91	ug/kg	U	U	
CHLOROBENZENE	108-90-7	0.91	4.5	0.45	0.91	ug/kg	U	U	
CHLOROETHANE	75-00-3	1.8	4.5	1.2	1.8	ug/kg	U	U	
CHLOROFORM	67-66-3	0.91	4.5	0.45	0.91	ug/kg	U	U	
CHLOROMETHANE	74-87-3	1.8	4.5	0.91	1.8	ug/kg	U	U	
CIS-1,2-DICHLOROETHENE	156-59-2	0.91	4.5	0.45	0.91	ug/kg	U	U	
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.91	4.5	0.45	0.91	ug/kg	U	U	
DIBROMOCHLOROMETHANE	124-48-1	0.91	4.5	0.45	0.91	ug/kg	U	U	
DIBROMOMETHANE	74-95-3	0.91	4.5	0.45	0.91	ug/kg	U	U	
DICHLORODIFLUOROMETHANE	75-71-8	1.8	4.5	1.1	1.8	ug/kg	U	U	

Analysis Method *SW8260B*

ETHYLBENZENE	100-41-4	0.91	4.5	0.45	0.91	ug/kg	U	U
HEXACHLOROBUTADIENE	87-68-3	1.8	4.5	0.91	1.8	ug/kg	U	U
ISOPROPYL BENZENE	98-82-8	1.8	4.5	0.58	1.8	ug/kg	U	U
M,P-XYLENES	MP-XYL	1.8	9.1	0.91	1.8	ug/kg	U	U
METHYLENE CHLORIDE	75-09-2	4.5	9.1	0.91	4.5	ug/kg	U	U
METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	0.91	4.5	0.45	0.91	ug/kg	U	U
NAPHTHALENE	91-20-3	1.8	9.1	0.91	1.8	ug/kg	U	U
N-BUTYLBENZENE	104-51-8	1.8	4.5	0.63	1.8	ug/kg	U	U
N-PROPYLBENZENE	103-65-1	1.8	4.5	0.59	1.8	ug/kg	U	U
O-XYLENE	95-47-6	0.91	4.5	0.45	0.91	ug/kg	U	U
P-ISOPROPYLTOLUENE	99-87-6	1.8	4.5	0.56	1.8	ug/kg	U	U
SEC-BUTYLBENZENE	135-98-8	1.8	4.5	0.61	1.8	ug/kg	U	U
STYRENE	100-42-5	1.8	4.5	0.91	1.8	ug/kg	U	U
TERT BUTYL ALCOHOL	75-65-0	9.1	18	8.3	9.1	ug/kg	U	U
TERT-BUTYLBENZENE	98-06-6	1.8	4.5	0.56	1.8	ug/kg	U	U
TETRACHLOROETHENE	127-18-4	0.91	4.5	0.45	0.91	ug/kg	U	U
TOLUENE	108-88-3	0.91	4.5	0.45	0.91	ug/kg	U	U
TRANS-1,2- DICHLOROETHENE	156-60-5	0.91	4.5	0.45	0.91	ug/kg	U	U
TRANS-1,3- DICHLOROPROPENE	10061-02-6	0.91	4.5	0.45	0.91	ug/kg	U	U
TRICHLOROETHENE	79-01-6	0.91	4.5	0.45	0.91	ug/kg	U	U
TRICHLOROFLUOROMETHAN E	75-69-4	1.8	4.5	1.0	1.8	ug/kg	U	U
VINYL CHLORIDE	75-01-4	1.8	4.5	1.3	1.8	ug/kg	U	U

Analysis Method SW8270C

Sample Name EB-012315

Result Type: TRG

Analysis Date: 2015/01/30

Analysis Time: 17:37:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	0.11	0.55	0.055	0.11	ug/L	U	U	
2-METHYLNAPHTHALENE	91-57-6	0.11	0.55	0.055	0.11	ug/L	U	U	
ACENAPHTHENE	83-32-9	0.11	0.55	0.055	0.11	ug/L	U	U	
ACENAPHTHYLENE	208-96-8	0.11	0.55	0.055	0.11	ug/L	U	U	
ANTHRACENE	120-12-7	0.11	0.55	0.055	0.11	ug/L	U	U	
BENZO(A)ANTHRACENE	56-55-3	0.11	0.55	0.099	0.11	ug/L	U	U	
BENZO(A)PYRENE	50-32-8	0.11	0.55	0.055	0.11	ug/L	U	U	
BENZO(B)FLUORANTHENE	205-99-2	0.11	0.55	0.055	0.11	ug/L	U	U	
BENZO(G,H,I)PERYLENE	191-24-2	0.11	0.55	0.055	0.11	ug/L	U	U	
BENZO(K)FLUORANTHENE	207-08-9	0.11	0.55	0.055	0.11	ug/L	U	U	
CHRYSENE	218-01-9	0.11	0.55	0.066	0.11	ug/L	U	U	
DIBENZO(A,H)ANTHRACENE	53-70-3	0.11	0.55	0.055	0.11	ug/L	U	U	
FLUORANTHENE	206-44-0	0.11	0.55	0.055	0.11	ug/L	U	U	
FLUORENE	86-73-7	0.11	0.55	0.055	0.11	ug/L	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	0.11	0.55	0.055	0.11	ug/L	U	U	
NAPHTHALENE	91-20-3	0.11	0.55	0.055	0.11	ug/L	U	U	
PHENANTHRENE	85-01-8	0.11	0.55	0.055	0.11	ug/L	U	U	
PYRENE	129-00-0	0.11	0.55	0.055	0.11	ug/L	U	U	

Analysis Method SW8270C

Sample Name S53-SB01-0.5

Result Type: TRG

Analysis Date: 2015/01/30

Analysis Time: 19:34:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	1.8	11	1.4	2.8	ug/kg	J	R	22
1-METHYLNAPHTHALENE	90-12-0	2.8	11	1.4	2.8	ug/kg	U	U	
2-METHYLNAPHTHALENE	91-57-6	2.8	11	1.4	2.8	ug/kg	U	U	
2-METHYLNAPHTHALENE	91-57-6	2.8	11	1.4	2.8	ug/kg	U	R	22
ACENAPHTHENE	83-32-9	2.8	11	1.4	2.8	ug/kg	U	R	22
ACENAPHTHENE	83-32-9	2.8	11	1.4	2.8	ug/kg	U	U	
ACENAPHTHYLENE	208-96-8	2.8	11	1.4	2.8	ug/kg	U	R	22
ACENAPHTHYLENE	208-96-8	2.8	11	1.4	2.8	ug/kg	U	U	
ANTHRACENE	120-12-7	2.8	11	1.4	2.8	ug/kg	U	R	22
ANTHRACENE	120-12-7	2.8	11	1.4	2.8	ug/kg	U	U	
BENZO(A)ANTHRACENE	56-55-3	2.8	11	2.7	2.8	ug/kg	U	R	22
BENZO(A)ANTHRACENE	56-55-3	2.8	11	2.7	2.8	ug/kg	U	U	
BENZO(A)PYRENE	50-32-8	2.8	11	1.4	2.8	ug/kg	U	U	
BENZO(A)PYRENE	50-32-8	2.8	11	1.4	2.8	ug/kg	U	R	22
BENZO(B)FLUORANTHENE	205-99-2	2.8	11	1.4	2.8	ug/kg	U	R	22
BENZO(B)FLUORANTHENE	205-99-2	2.8	11	1.4	2.8	ug/kg	U	U	
BENZO(G,H,I)PERYLENE	191-24-2	2.8	11	1.4	2.8	ug/kg	U	R	22
BENZO(G,H,I)PERYLENE	191-24-2	2.0	11	1.4	2.8	ug/kg	J	J	
BENZO(K)FLUORANTHENE	207-08-9	2.8	11	1.4	2.8	ug/kg	U	U	
BENZO(K)FLUORANTHENE	207-08-9	2.8	11	1.4	2.8	ug/kg	U	R	22
CHRYSENE	218-01-9	2.8	11	2.4	2.8	ug/kg	U	U	
CHRYSENE	218-01-9	2.8	11	2.4	2.8	ug/kg	U	R	22
DIBENZO(A,H)ANTHRACENE	53-70-3	2.8	11	1.4	2.8	ug/kg	U	R	22
DIBENZO(A,H)ANTHRACENE	53-70-3	2.8	11	1.4	2.8	ug/kg	U	U	
FLUORANTHENE	206-44-0	2.0	11	1.4	2.8	ug/kg	J	J	
FLUORANTHENE	206-44-0	1.8	11	1.4	2.8	ug/kg	J	R	22
FLUORENE	86-73-7	2.8	11	1.4	2.8	ug/kg	U	R	22
FLUORENE	86-73-7	2.8	11	1.4	2.8	ug/kg	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	2.8	11	1.4	2.8	ug/kg	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	2.8	11	1.4	2.8	ug/kg	U	R	22
NAPHTHALENE	91-20-3	2.8	11	1.4	2.8	ug/kg	U	R	22
NAPHTHALENE	91-20-3	2.8	11	1.4	2.8	ug/kg	U	U	
PHENANTHRENE	85-01-8	2.8	11	1.4	2.8	ug/kg	U	U	
PHENANTHRENE	85-01-8	1.9	11	1.4	2.8	ug/kg	J	R	22
PYRENE	129-00-0	1.9	11	1.4	2.8	ug/kg	J	J	
PYRENE	129-00-0	1.7	11	1.4	2.8	ug/kg	J	R	22

Analysis Method SW8270C

Sample Name S53-SB03-0.5

Result Type: TRG

Analysis Date: 2015/01/30

Analysis Time: 19:54:00

Validators Initials: LC

Validation Date: 03/10/2015

Analyte	CAS No	Result Value	LOQ	DL	LOD	Result Units	Lab Qualifier	Validation Qualifier	Approval Code
1-METHYLNAPHTHALENE	90-12-0	2.8	11	1.4	2.8	ug/kg	U	U	
2-METHYLNAPHTHALENE	91-57-6	2.8	11	1.4	2.8	ug/kg	U	U	
ACENAPHTHENE	83-32-9	2.8	11	1.4	2.8	ug/kg	U	U	
ACENAPHTHYLENE	208-96-8	2.8	11	1.4	2.8	ug/kg	U	U	
ANTHRACENE	120-12-7	2.8	11	1.4	2.8	ug/kg	U	U	
BENZO(A)ANTHRACENE	56-55-3	2.8	11	2.7	2.8	ug/kg	U	U	
BENZO(A)PYRENE	50-32-8	2.8	11	1.4	2.8	ug/kg	U	U	
BENZO(B)FLUORANTHENE	205-99-2	3.1	11	1.4	2.8	ug/kg	J	J	
BENZO(G,H,I)PERYLENE	191-24-2	2.8	11	1.4	2.8	ug/kg	U	U	
BENZO(K)FLUORANTHENE	207-08-9	2.8	11	1.4	2.8	ug/kg	U	U	
CHRYSENE	218-01-9	2.8	11	2.5	2.8	ug/kg	U	U	
DIBENZO(A,H)ANTHRACENE	53-70-3	2.8	11	1.4	2.8	ug/kg	U	U	
FLUORANTHENE	206-44-0	3.4	11	1.4	2.8	ug/kg	J	J	
FLUORENE	86-73-7	2.8	11	1.4	2.8	ug/kg	U	U	
INDENO(1,2,3-CD)PYRENE	193-39-5	2.8	11	1.4	2.8	ug/kg	U	U	
NAPHTHALENE	91-20-3	2.8	11	1.4	2.8	ug/kg	U	U	
PHENANTHRENE	85-01-8	2.0	11	1.4	2.8	ug/kg	J	J	
PYRENE	129-00-0	3.2	11	1.4	2.8	ug/kg	J	J	



TFH-Extractable Analysis Checklist

Project Name: Kleinfelder-CTO 0071 Site 53

Laboratory Name: EMAX

Batch Numbers: A014W, A0175

Sample Delivery Group: 15A 137

Date Reviewed: 3.3.2015

Reviewed By(print or type name): L. S. Calvin

Reviewed By Signature LS Calvin

Analysis Method: 8015B

Yes No N/A

Holding Times

Were samples extracted within holding time?

Were samples analyzed within holding time?

Initial Calibration

Did the initial calibration consist of at least five standards?

Are the RSDs for all target analytes $\leq 20\%$ or $r \geq 0.99$?

Was manual integration "M" performed?

If the answer is "Yes", check for supporting documents.

Was the manual integration necessary?

If the answer is "No", contact the laboratory inquiring about the reason behind the manual

Initial Calibration Verification(ICV)

Is the mid level (2nd source) recovery within 80-120%?

Continuing Calibration Verification (CCV)

Was CCV conducted every 12 hours?

Was the %Drift or %D $\leq 20\%$ from the initial calibration?

Sample Analysis

	Yes	No	N/A
Was the RRT of an identified component within the method retention time window?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Were samples with levels higher than the calibration range diluted and reanalyzed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Sample Quality Control

<u>Method Blanks</u> : Were target analytes $\leq 1/2$ LOQ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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<u>LCS</u> : Were the percent recoveries within the control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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<u>MS/MSD</u> : Were the percent recoveries within the control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Were the RPDs within the control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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<u>System Monitoring Compounds (Surrogates)</u> : Are surrogate recoveries within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Comments:

EB-012315 ND



Semivolatile Organic Analysis Checklist

Project Name: Kleinfelder CTO0071 Site 53
 Laboratory Name: EMAX
 Batch Numbers: 47A19, 47A20
 Sample Delivery Group: 15A137
 Date Reviewed: 03.03.2015
 Reviewed By (print or type name): L. S. Calvin
 Reviewed By Signature: *L. S. Calvin*
 Analysis Method: 8270C (PAHs)

Holding Times

	Yes	No	N/A
Were samples extracted within holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples analyzed within holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Tuning

	Yes	No	N/A
Samples analyzed w/in 12 hours of DFTPP tune?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was mass assignment based on m/z 198?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<u>m/z</u>	<u>Acceptance Criteria</u>	Yes	No	N/A
51	30.0-60.0%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
68	<2% of mass 69	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
70	<2% of mass 69	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
127	40-60%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
197	<1%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
198	100% Base Peak	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
199	5.0-9.0%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
275	10-30%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
365	>1%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
441	present but <mass 443	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
442	>40%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
443	17-23% of mass 442	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Initial Calibration

	Yes	No	N/A
Was ICAL at least five standards and a blank?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did SPCC meet the minimum mean RF?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	<u>RF</u>	Yes	No	N/A
N-nitroso-di-n-propylamine	0.05	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Hexachlorocyclopentadiene	0.05	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2,4-Dinitrophenol	0.05	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4-Nitrophenol	0.05	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

RSDs $\leq 30\%$ for each individual CCC?

Base/Neutral Fraction:

Acenaphthene
 1,4-Dichlorobenzene
 Hexachlorobutadiene
 Diphenylamine
 Di-n-octylphthalate
 Fluoranthene
 Benzo(a)pyrene

Yes	No	N/A
X		
		X
		X
		X
		X
X		
X		

Acid Fraction:

4-Chloro-3-methylphenol
 2,4-Dichlorophenol
 2-Nitrophenol
 Phenol
 Pentachlorophenol
 2,4,6-Trichlorophenol

		X
		X
		X
		X
		X
		X

RSDs for remaining analytes $< 15\%$ or $r \geq 0.995$?

X		
---	--	--

Was manual integration "M" performed?

X		
---	--	--

If "Yes", check for supporting documents

Was the manual integration necessary?

X		
---	--	--

If "No", contact the laboratory and inquire about the reason for the manual integration.

Initial Calibration Verification (ICV)

Is the mid level (2nd source) %R within 80-120%?

Yes	No	N/A
X		

Continuing Calibration Verification (CCV)

Was CCV conducted every 12 hours?

Yes	No	N/A
X		

Did SPCC meet the RF values?

RF
 N-nitroso-di-n-propylamine 0.05
 Hexachlorocyclopentadiene 0.05
 2,4-Dinitrophenol 0.05
 4-Nitrophenol 0.05

		X
		X
		X
		X

Were the CCC %Ds $\leq 20\%$?

Base/Neutral Fraction:

Acenaphthene
 1,4-Dichlorobenzene
 Hexachlorobutadiene
 Diphenylamine
 Di-n-octylphthalate
 Fluoranthene
 Benzo(a)pyrene

X		
		X
		X
		X
		X
X		
X		

Acid Fraction:

4-Chloro-3-methylphenol
2,4-Dichlorophenol
2-Nitrophenol
Phenol
Pentachlorophenol
2,4,6-Trichlorophenol

Yes	No	N/A
<input type="checkbox"/>	<input type="checkbox"/>	X
<input type="checkbox"/>	<input type="checkbox"/>	X
<input type="checkbox"/>	<input type="checkbox"/>	X
<input type="checkbox"/>	<input type="checkbox"/>	X
<input type="checkbox"/>	<input type="checkbox"/>	X
<input type="checkbox"/>	<input type="checkbox"/>	X
X	<input type="checkbox"/>	<input type="checkbox"/>

Were the remaining %Ds $\leq 20\%$ from the ICAL?

Sample Analysis

RRTs within ± 0.06 RRT units of the standard?

Yes	No	N/A
X	<input type="checkbox"/>	<input type="checkbox"/>

Sample ion abundance w/in 30% for major ions (>10% of the base ion) in standard spectra?

X	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------

Were the IS areas within -50% to +100%?

X	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------

Sample Quality Control

Method Blanks: Were target analytes $< 1/2$ LOQ?

Yes	No	N/A
X	<input type="checkbox"/>	<input type="checkbox"/>

LCS: Were the %Rs for LCS within the limits?

X	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------

Were RPDs within the limits?

X	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------

MS/MSD: Were the %Rs within the limits?

X	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------

Were the RPDs within the limit?

X	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------

Surrogates: Are the %Rs within QSM limits?

X	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------

Comments:

ETS - 012315 ND

553-5B01-0.5 reanalyzed for \downarrow surr - RB ok
initial analysis rejected.

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