DATA REPORT FOR PHASE 2 ENVIRONMENTAL SITE ASSESSMENT

Kimberly-Clark Worldwide Site Upland Area, Everett, Washington

Prepared for: Kimberly-Clark Worldwide, Inc.

Project No. 110207-004-01 • March 15, 2013

Aspect CONSULTING

earth + water

DATA REPORT FOR PHASE 2 ENVIRONMENTAL SITE ASSESSMENT

Kimberly-Clark Worldwide Site Upland Area, Everett, Washington

Prepared for: Kimberly-Clark Worldwide, Inc.

Project No. 110207-004-01 • March 15, 2013

Aspect Consulting, LLC

State of Washington
Hydrogeologist
272
Licensed Geologist
Steve J. Germiat

3/15/13

Carla E Brock

Carla Brock, LG
Sr. Project Geologist
cbrock@aspectconsulting.com

Steve Germiat, LHG
Sr. Associate Hydrogeologist
sgermiat@aspectconsulting.com

V:\110207 KC Everett Mill\Deliverables\Data Report\Final\Data Report for Phase 2 ESA-final.docx

Table of Contents

List of Tables

List of Figures

Appendices

Acronyms

Aspect	Aspect Consulting, LLC
AST	above-ground storage tank
BETX	benzene, ethylbenzene, toluene and xylenes
CLARC	Cleanup Level and Risk Calculation
CLP	Contract Laboratory Program
COC	constituent of concern
cPAH	carcinogenic polycyclic aromatic hydrocarbon
Ecology	Washington State Department of Ecology
EDB	ethylene dibromide
EDC	1,2-dichloroethane
EPA	U.S. Environmental Protection Agency
EPH	extractable petroleum hydrocarbons
ESA	Environmental Site Assessment
HREC	historical recognized environmental conditions
ICP-MS	inductively coupled plasma mass spectrometry
K-C	Kimberly-Clark
LPH	liquid phase hydrocarbon
mg/kg	milligrams/kilograms
mg/L	milligrams per liter
µg/L	micrograms per liter
MBTE	methyl tertiary-butyl ether
MHHW	Mean Higher High Water
MTCA	Model Toxics Control Act
NTR	National Toxics Rule
NTU	nephelometric turbidity unit
Order	Agreed Order No. DE 9476
ORP	oxidation-reduction potential
QAPP	Quality Assurance Project Plan

PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PID	photoionization detector
PCE	perchloroethylene
ppmv	parts per million by volume
REC	recognized environmental conditions
RI/FS	Remedial Investigation/Feasibility Study
SAP	Sampling Analysis Plan
Site	K-C Worldwide Site
SVOC	semivolatile organic carbon
TCE	trichloroethylene
TCLP	toxicity characteristic leaching procedure
TDS	total dissolved solids
TE	tidal efficiency
TEQ	toxic equivalent quantity/concentration
TSS	total suspended soils
TPH	total petroleum hydrocarbons
µS/cm	microsiemens per centimeter
UST	underground storage tank
VI	vapor intrusion
VOC	volatile organic compound
WAC	Washington Administrative Code

1 Introduction

This Data Report presents the methods and findings of the Phase 2 Environmental Site Assessment (ESA) completed for the Upland Area portion of the Kimberly-Clark (K-C) Worldwide Site (Site). The Site is located at 2600 Federal Avenue in Everett, Washington (Figure 1-1), and included a pulp and paper mill operating from 1931 through April 2012. The Site and the Upland Area of the Site are defined in Section IV of the Agreed Order No. DE 9476 (Order) between K-C and the Washington State Department of Ecology (Ecology), which was executed on December 20, 2012, after completion of the Phase 2 ESA.

The Phase 2 ESA addresses the Upland Area of the Site, with a western boundary at mean higher high water (MHHW). The Phase 2 ESA does not include the East Waterway (Port Gardner Bay); however, one objective of the Phase 2 ESA is to evaluate whether the Upland Area currently represents a source of contamination to the East Waterway.

The Phase 2 ESA scope focused on addressing recognized environmental conditions (RECs) and historical RECs (HRECs) identified in the Phase I ESA for the Upland Area (AECOM, 2011), as well as other areas with existing environmental data and/or historical operations that warranted assessment to evaluate the presence or absence of contamination. Figure 1-2 depicts the RECs and HRECs identified in AECOM (2011), as well as Upland Area environmental explorations completed prior to the start of this Phase 2 ESA. The independent Phase 2 ESA evaluated those areas of the Site most likely to contain contaminants, and assesses the quality of fill soil in areas away from the core historical operations.

The Phase 2 ESA was conducted in three rounds of environmental investigation. In February 2012, Aspect initially conducted Round 1 of the Phase 2 ESA to evaluate environmental conditions in three areas of the Upland Area as requested by K-C: the Former Oil House and Former Fuel Above-Ground Storage Tanks (ASTs), the former Log Pond Area, and the shoreline adjacent to the former Naval Reserve Parcel. Prior to conducting Round 2, a Work Plan for the Phase 2 ESA was subsequently prepared, hereafter termed the Work Plan (Aspect, 2012a). The objectives of the Work Plan were to:

- Synthesize the prior environmental investigation and cleanup information for the Upland Area;
- Summarize the results of the Round 1 investigation;
- Identify data gaps in the prior environmental investigation/cleanup information and other historical information; and
- Define an environmental assessment scope of work to address the identified data gaps.

K-C submitted a draft Work Plan to Ecology for review and comment, and Ecology provided expedited review and written comments on the draft Work Plan (Ecology, 2012). Many but not all of the comments were incorporated and a final Work Plan was prepared (Aspect, 2012a). The assessment scope of work included in the Work Plan constituted Round 2 of the Phase 2 ESA. The Work Plan acknowledged that, following completion of the assessment scope of work it defined, an additional round of data collection may be warranted to further define the contaminant nature and extent in the Upland Area.

Based on findings from Round 2, a Work Plan Addendum (Aspect, 2012b) was prepared, which outlined the rationale and scope of work for an additional round (Round 3) of assessment, as anticipated in the Work Plan.

K-C conducted the Phase 2 ESA as an independent remedial action prior to execution of the Order. However, the Work Plan and Addendum were prepared in general accordance with Model Toxics Control Act (MTCA), and the Phase 2 ESA is intended to meet the requirements for substantial equivalence under WAC 173-340-515 involving independent remedial actions. The Phase 2 ESA will support, not foreclose, selection of a cleanup action consistent with MTCA requirements.

Information gathered during the Phase 2 ESA will help in development of the remedial investigation/feasibility study (RI/FS) Work Plan for the Upland Area, in accordance with WAC 173-340-350, under the Order. The RI/FS will be conducted to define and document the nature and extent of contamination, and define and evaluate cleanup alternatives for identified contamination, within the Upland Area, in accordance with MTCA.

1.1 Report Organization

The Work Plan for the Phase 2 ESA (Aspect, 2012a) and the Addendum to that Work Plan (Aspect, 2012b) included information regarding property history, environmental setting, and previous remedial actions that will not be repeated in this report.

Following this introductory section, the remaining sections of this Data Report are organized as follows:

- **Section 2—Screening Levels** presents the numerical screening levels used to evaluate Upland Area soil and groundwater contaminant nature and extent in this Phase 2 ESA.
- **Section 3—Assessment Methods and Findings** presents the Phase 2 ESA data collection methods and results. The results are organized by the areas defined in the Work Plan.
- **Section 4—Hydrogeologic Data Collection** summarizes groundwater elevation data collection and interpreted groundwater flow directions for the Upland Area.
- **Section 5—References** lists documents cited in this Data Report.

In addition, Appendix A provides the boring logs for the explorations conducted during Rounds 1, 2, and 3 of the Phase 2 ESA, and Appendix B provides the data validation reports for the Phase 2 ESA.

2 Screening Levels for Environmental Assessment

This section describes the numerical screening levels against which Upland Area soil and groundwater data are compared for identifying constituents of potential concern during the Phase 2 ESA. The screening levels applied in this assessment do not necessarily represent cleanup levels for the property under MTCA. Soil and groundwater screening levels may change for the RI/FS, which will be described as part of the RI/FS Work Plan. Additional information may be collected in the RI/FS process to support selection of cleanup levels and/or remediation levels for the Upland Area, in accordance with MTCA. This will be done as part of the subsequent RI/FS for the Upland Area.

2.1 Groundwater Screening Levels

Upland Area groundwater is not considered a practicable source of potable water, in accordance with MTCA (WAC 173-340-720(2)), for the reasons presented in Section 3.2.1 of the Work Plan (Aspect, 2012a). Therefore, discharge to marine water, not drinking water, is proposed as the highest beneficial use for Upland Area groundwater.

Groundwater screening levels applied in this Phase 2 ESA are the most stringent criterion based on protection of the adjacent marine water body (East Waterway) and vapor intrusion (VI) to future structures (indoor air) on the property. Sections 2.1.1 and 2.1.2 describe the screening criteria for marine protection and VI protection, respectively, that are incorporated into the groundwater screening level derivation. For arsenic, the 5 µg/L MTCA Method A groundwater cleanup level, based on background, is included in the groundwater screening criteria. In addition, because there are no marine surface water criteria for total petroleum hydrocarbon (TPH) mixtures, MTCA Method A Groundwater cleanup levels for TPH mixtures are applied as groundwater screening levels based on surface water, which is consistent with WAC 173-340-730(3)(b)(iii)(C). Note that the individual constituents comprising TPH mixtures (volatile organic compounds [VOCs], polycyclic aromatic hydrocarbons [PAHs], etc.) are also analyzed for, and have their own marine-based and VI-based groundwater screening levels.

Table 2-1 presents the groundwater screening criteria incorporated into the groundwater screening level derivation, and the resulting most stringent groundwater screening levels applied for the Phase 2 ESA.

2.1.1 Protection of Marine Water Quality

For protection of marine water quality, the screening levels used are the most stringent of the following aquatic life criteria (marine chronic) and human health criteria for consumption of aquatic organisms under state and federal laws:

- MTCA standard Method B surface water cleanup levels based on human consumption of fish (human health only);
- Washington State Water Quality Standards (WAC 173-201A-240);
- Federal National Recommended Water Quality Criteria pursuant to Section 304(a) of the Clean Water Act; and

- The Federal National Toxics Rule (NTR; 40 CFR 131.36).

2.1.2 Protection from Vapor Intrusion (VI)

Volatilization of contaminants in shallow groundwater can potentially create vapor intrusion into future structures (indoor air) or outdoor ambient air within the Upland Area. For the purposes of this environmental assessment, conservative (“Tier 1”) groundwater VI screening levels were obtained from Appendix B to Ecology’s draft guidance for evaluating soil gas intrusion (Ecology, 2009). However, values for trichloroethylene (TCE) and tetrachloroethylene (PCE) have been updated based on updated air cleanup levels provided in Ecology (2012b and 2012c, respectively). Air concentrations protective of indoor air are more stringent than those for outdoor air, therefore Ecology’s guidance includes groundwater screening levels based on indoor air only. If needed, measured soil gas data can also be used to assess the groundwater-to-air pathway, in accordance with Ecology (2009).

2.2 Soil Screening Levels

Because future land use in the Upland Area is not currently determined, the environmental assessment soil data are evaluated relative to soil screening levels for both unrestricted and industrial land uses. The unrestricted soil screening levels are the most stringent of MTCA Method B soil cleanup levels and Method A unrestricted soil cleanup levels. The industrial soil screening levels are the most stringent of MTCA Method C soil cleanup levels and Method A unrestricted soil cleanup levels. The soil criteria were downloaded from Ecology’s online Cleanup Level and Risk Calculation database (CLARC; https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx) as of August 2012.

Table 2-2 presents the soil screening criteria incorporated into the soil screening level derivation, and the resulting soil screening levels applied for the Phase 2 ESA.

3 Assessment Methods and Findings

This section summarizes the assessment methods and results from the Phase 2 ESA. The field sampling and analysis methods employed during Rounds 2 and 3 were consistent with those described in the Sampling and Analysis Plan (SAP) and Quality Assurance Project Plan (QAPP) included as Appendices A and B, respectively, of the Work Plan for the Phase 2 ESA (Aspect, 2012a).

Pyron Environmental, under subcontract to Aspect, completed independent Level III data quality validation of the analytical data generated during the Phase 2 ESA, following procedures specified in U.S. Environmental Protection Agency (EPA) Contract Laboratory Program (CLP) functional guidelines. Based on the validation, the data were of acceptable quality for their intended purposes. Data qualifiers after the validation are included in the data tables referenced in this section. Appendix B provides the data validation reports.

As discussed in the Work Plan, the following RECs and HRECs will be addressed during mill demolition, as structures are removed, so were not investigated during the Phase 2 ESA:

- Potential TPH contamination within and beneath the Heavy Duty Shop Sump (REC 3); however, an area of reported oily water discharge just north of the sump was investigated during the assessment;
- Potential TPH contamination beneath the Rail Dumper Hydraulic System building (REC 4), which appears to be constructed on top of the Pulp Mill dock;
- Potential Bunker C oil TPH contamination beneath the Screen/Bleach Unit 2 of the Pulp Mill (HREC 3); and
- Potential polychlorinated biphenyl (PCB) contamination associated with Electrical Transformers 5 and 6 within Screen/Bleach Unit 2 (HREC 4).

The following sections describe, area by area, the methods and findings from the Phase 2 ESA. Deviations from the Work Plan and Addendum, where they occurred, are also described specific to the areas.

3.1 REC 1: ExxonMobil ADC Site

Assessment of REC 1 was conducted during Round 3 of the Phase 2 ESA, following review of the findings from ExxonMobil and ADC’s 2011 to 2012 independent cleanup of liquid phase hydrocarbons (LPH) seeping through the asphalt pavement on K-C’s Upland Area property just south of the Distribution Warehouse (Everett Avenue easement). The ExxonMobil/ADC independent cleanup work was done in advance of the City of Everett replacing a sewer line in that area (on K-C property). The report of the independent action (AMEC, 2012) states that the source of the LPH appeared to be in part coming from property owned by BNSF (location of former monitoring wells MW-27 and MW-29 on BNSF property). As a result, the cleanup activities started on BNSF property and proceeded north onto K-C property. The cleanup work was completed between December 2011 and April 2012.

According to AMEC (2012), the northern lateral extent of excavation, and the depth of excavation (3 to 5 feet), on K-C's property was limited in order to protect existing utilities. The northern limit of excavation maintained a 12-foot separation from the south edge of K-C's Distribution Warehouse based on City of Everett requirements to maintain vehicle access in that location. Approximately 725 tons of soil and debris were reportedly removed from K-C property for off-site disposal. In addition, nearly 1.5 million gallons of petroleum-impacted groundwater was removed from BNSF property and discharged to City of Everett's wastewater treatment plant, under a discharge authorization (DA) from the City. According to AMEC (2012), the amount of LPH present at the surface lessened as the excavation proceeded to the west; therefore, the excavation was terminated at a line approximately 30 feet west of the intersection of the BNSF property line with Everett Avenue. No soil samples were collected on K-C's property, and observations of the excavation conditions on K-C's property are not reported.

3.1.1 Round 3 Data Collection

The following data collection was conducted during Round 3 to define the nature and extent of soil and groundwater petroleum impacts associated with the former Associated Oil and Standard Oil (now Chevron) fuel storage facilities beneath K-C's Distribution Warehouse and west (downgradient) of it:

- Advanced and sampled soil from nine soil borings, each of which was also completed as a monitoring well (REC1-MW-1 through -9). Each boring was completed to investigate conditions associated with historical Associated Oil or Standard Oil fuel facilities, as follows:
    - REC1-MW-1 and REC1-MW-2 were completed at former Standard Oil facilities located beneath K-C's Distribution Warehouse.
    - REC1-MW-3 and REC1-MW-4 were completed at former Associated Oil facilities located beneath and on the west edge of K-C's Distribution Warehouse.
    - REC1-MW-5 was completed on the downgradient (west) edge of K-C's Distribution Warehouse adjacent to K-C's southern property boundary.
    - REC1-MW-6 and REC1-MW-7 were completed inside the south edge of the Distribution Warehouse, to assess whether LPH known to exist on K-C's property south of the warehouse extends beneath the warehouse.
    - REC1-MW-8 was completed at the fence line adjacent to former Standard Oil fuel storage tanks on the property boundary.
    - REC1-MW-9 was completed proximate to the shoreline, generally downgradient of the former Standard Oil fuel storage tanks on the property boundary.
- Soil samples from each boring were analyzed for gasoline-range TPH, diesel-/oil-range TPH, VOCs, and PAHs; and

- Groundwater samples collected from each well were analyzed for gasoline-range TPH, diesel-/oil-range TPH, VOCs, low-level PAHs, and total suspended solids (TSS). The groundwater sample from REC1-MW-9 was also analyzed for the full suite of semivolatile organic compounds (SVOCs), dissolved sulfide, and ammonia, which is consistent with the other shoreline wells.

3.1.2 Assessment Findings

Soil Quality Data

The Round 3 data provide information pertaining to the nature and extent of petroleum impacts associated with the former fuel storage facilities beneath and west of K-C's Distribution Warehouse. Table 3-1A presents the soil quality data for this area, and Figure 3-1A depicts the soil TPH data for this area. On Figure 3-1A, explorations with detected Total TPH soil concentrations[1] exceeding the respective soil screening levels[2] are shown in brown; explorations with concentrations less than the screening level are shown in green. The data collected at each of the nine locations are described below.

- **REC1-MW-1** was completed inside on the east side of K-C's Distribution Warehouse, within the footprint of former Standard Oil fuel tanks. A void space was observed beneath the warehouse floor to a depth of about 6 inches below floor grade. Groundwater was encountered at a depth of approximately 5 feet below floor grade during drilling. Field screening evidence in the form of elevated photoionization detector (PID) readings was noted at depths ranging from 5 to 14 feet below floor grade with the highest reading of 77 parts per million by volume (ppmv) detected in saturated soil between 11 to 12 feet below floor grade. The 11- to 12-foot soil sample contained 10,100 mg/kg Total TPH (Table 3-1A). Soil samples collected at depths of 5- 6 and 13-14 feet below floor grade did not contain detectable concentrations of TPH, indicating a relatively thin zone of impacted soil. No exceedances of PAHs or VOCs were detected in the soil samples collected from this boring. This boring was completed as a monitoring well screened from 4 to 14 feet below floor grade.

- **REC1-MW-2** was also completed inside near the center of K-C's Distribution Warehouse, at an accessible location adjacent to former Standard Oil fuel tanks. A void space of 6 inches was observed beneath the warehouse floor, and groundwater was encountered at a depth of approximately 6.5 feet below floor grade. No field screening evidence of petroleum contamination was noted during drilling to a depth of 15 feet. Consistent with that, TPH and VOCs were not detected in the soil sample collected at the water table (6 to 7 feet below floor grade) from this boring (Table 3-1A). This boring was completed as a monitoring well screened from 4 to 14 feet below floor grade.

- **REC1-MW-3** was drilled inside near the north wall of the Distribution Warehouse, within the footprint of former Associated Oil facilities. A 2-inch void

---

[1] On the tables and figures, "Total TPH" refers to sum of detected diesel- and oil-range TPH concentrations because they represent a single petroleum product type, in accordance with MTCA. Summed concentrations include ½ the detection limit concentration for non-detected values.

[2] Based on groundwater protection, thus same soil screening level for unrestricted or industrial land use.

space was observed beneath the warehouse floor, and groundwater was encountered at a depth of approximately 6 feet below floor grade. Field screening during drilling identified elevated PID readings in soil below the water table at depths ranging from 7 to 25 feet below floor grade with the highest readings (greater than 1,000 ppmv) observed between 12 and 13 feet below floor grade. Consistent with the PID readings, the 12- to 13-foot soil sample contained 2,720 mg/kg Total TPH, as well as 4,000 mg/kg gasoline-range TPH (Table 3-1A). TPH was not detected in either the 5.5- to 6.5- or 24- to 25-foot soil samples. No exceedances of PAHs or VOCs were detected in any of the three soil samples collected from this boring. This boring was completed as a monitoring well screened from 5 to 15 feet below floor grade.

- **REC1-MW-4** was completed on the west side of K-C’s Distribution Warehouse, downgradient of the former Associated Oil facilities. Groundwater was encountered at a depth of approximately 7 feet below ground surface (bgs). No PID readings were observed in soil above the water table, and low PID readings (less than 20 ppmv) were observed below the water table at depths ranging from 8 to 15 feet bgs. No exceedances of TPH, PAHs, or VOCs were detected in the soil samples collected at depths of 6.5 to 7.5, 11 to 12, or 13 to 14 feet bgs in this boring (3-1A). This boring was completed as a monitoring well screened from 5 to 15 feet bgs.

- **REC1-MW-5** was drilled on the west edge of K-C’s Distribution Warehouse, adjacent to the southern property boundary. Groundwater was encountered at a depth of approximately 7 feet bgs. PID readings ranging between 2 and 169 ppmv were observed in soil at and below the water table, at depths ranging from 7 to 25 feet bgs. The highest PID readings (greater than 50 ppmv) were observed in soil at depths between 7 and 15 feet bgs. A petroleum-like odor was also noted in soil below the water table, at depths ranging from about 7 to 11 feet bgs. Consistent with the field observations, Total TPH concentrations of 5,800 and 7,330 mg/kg were detected in saturated soil samples collected from depths of 6.5 to 7.5 and 12 to 13 feet bgs, respectively. A concentration of 130 mg/kg gasoline-range TPH was also detected in the soil sample collected at 12 to 13 feet bgs. No PAH or VOCs exceedances were detected in either of those samples, and the sample collected at 22 to 23 feet bgs did not contain detectable concentrations of TPH, PAHs, or VOCs (Table 3-1A). This boring was completed as a monitoring well screened from 5 to 15 feet bgs.

- **REC1-MW-6** was completed inside the south edge of K-C’s Distribution Warehouse. A void space was observed from just beneath the concrete floor of the warehouse down to a depth of 7 feet below floor grade at this location. Groundwater was encountered just beneath the void space, at a depth of approximately 8 feet below the warehouse floor. Minor sporadic PID readings (less than 5 ppmv) were observed during field screening of soil from depths ranging from 12 to 18 feet. No TPH, PAH, or VOC exceedances were detected in the soil samples collected at depths of 7.5 to 8.5 feet (at the water table) or 17 to 18 feet. However, the 12.5- to 13.5-foot sample contained concentrations of 3,500 mg/kg Total TPH and 0.206 mg/kg total carcinogenic PAHs[3] (cPAHs), which both exceed respective unrestricted soil screening levels; the total cPAH concentration is less than its industrial soil screening level (Table 2-2). No VOCs were detected in the 12.5- to 13.5-foot soil sample. This boring was completed as a monitoring well screened from 8 to 18 feet below floor grade. No separate-phase petroleum was observed during drilling of or in the completed monitoring well REC1-MW-6. This information corroborates AMEC's (2012) interpretation that the source of LPH within the Everett Avenue easement (K-C property south edge of the Distribution Warehouse) is located south of K-C's property, rather than on the former Standard Oil or Associated Oil facilities to the north.

- **REC1-MW-7** was also completed inside the Distribution Warehouse, near its southwestern corner. A void space was observed in this boring from beneath the warehouse floor to a depth of 5 feet below floor grade, and groundwater was encountered at a depth of 8 feet beneath floor grade. Field screening indicated minor sporadic PID readings (less than 10 ppmv) in saturated soil at depths ranging from 13 to 17.5 feet bgs; however, no TPH or VOCs exceedances were detected in the soil samples collected at depths of 7 to 8, 13 to 14, or 16.5 to 17.5 feet beneath the warehouse floor. The total cPAH concentration (0.155 mg/kg) detected in the 7- to 8-foot soil sample marginally exceeded the 0.14 mg/kg unrestricted soil screening level. No detectable concentrations of PAHs were detected in the 13- to 14-foot or 16.5- to 17.5-foot soil samples. This boring was completed as a monitoring well screened from 7 to 17 feet bgs. No separate-phase petroleum was observed during drilling of, or in the completed monitoring well REC1-MW-7, further corroborating that the former Standard Oil and Associated Oil facilities beneath the warehouse are not a source of LPH within the Everett Avenue easement.

- **REC1-MW-8** was drilled adjacent to former Standard Oil fuel storage tanks on the property boundary, at the fence line which prevented drilling within the former tank footprint as had been proposed in the Work Plan Addendum. Groundwater was encountered at a depth of approximately 8 feet bgs. Inconsistent low-level PID readings (less than 5 ppmv) were observed during drilling at this location, and black soil staining was observed at a depth of 12 to 13 feet bgs. No exceedances of TPH, PAHs, or VOCs were detected in the soil sample at the water table at a depth of 7 to 8 feet bgs. The sample of stained soil collected at 12 to 13 feet bgs contained a Total TPH concentration of 2,300 mg/kg as well as a total cPAH concentration of 0.16 mg/kg, both slightly greater than their respective unrestricted soil screening levels (Table 3-1A). The deeper soil sample (15 to 16 feet bgs) did not contain detectable concentrations of TPH, PAHs, or VOCs. This boring was completed as a monitoring well screened from 3 to 13 feet bgs.

- **REC1-MW-9** was also completed proximate to the fence at the south property boundary and proximate to the East Waterway shoreline. Groundwater was encountered at a depth of approximately 6.5 feet bgs. No PID readings or other

---

[3] Total cPAHs, calculated as toxic equivalent concentration of benzo(a)pyrene, in accordance with MTCA (WAC 173-340-708[8]).

field screening evidence of petroleum contamination was observed during drilling. Consistent with those observations, no exceedances of TPH, PAHs, or VOCs were detected in the soil sample collected at the water table (6 to 7 feet bgs). This boring was completed as a monitoring well screened from 4 to 14 feet bgs.

Groundwater Quality Data

The groundwater data did not identify concentrations of TPH, PAHs or VOCs greater than the screening levels in any of the nine new wells (3-1B). Groundwater from monitoring wells REC1-MW-3, REC1-MW-4, and REC1-MW-5 contained detectable concentrations of gasoline-range TPH and/or diesel-range TPH less than their respective screening levels. SVOCs were not detected in the groundwater sample collected from shoreline well REC1-MW-9; however, ammonia was detected at a concentration of 0.249 mg /L, which exceeds the 0.035 mg/L screening level (Table 2-1), which is consistent with most other shoreline wells in the Upland Area (described in subsequent sections). Dissolved sulfide was not detected in the groundwater sample from REC1-MW-9.

3.2 REC 2: Former Oil House and Fuel ASTs

The results of the PEG (1998) investigation indicated that Bunker C oil-contaminated soil occurs within the area of the former Associated Oil fuel storage tanks immediately north of the Distribution Warehouse. Further delineation of the extent of contaminated soil, including sampling beneath the footprint of the shipping warehouse, was warranted.

3.2.1 Round 1 Data Collection

The Round 1 data collection for this area included the following activities (exploration locations shown on Figure 3-1A):

- Advanced 15 direct-push soil borings (DP-1 through DP-15) for the purposes of field screening for presence/absence of VOCs and collecting soil samples for chemical analysis. Borings DP-1 through DP-10 were completed within and surrounding for the former fuel ASTs. Borings DP-11 through DP-15 were completed along the inferred trace of the subsurface fuel conveyance pipeline between the storage tanks and the dock;
- Analyzed two soil samples from each boring for gasoline-range TPH with benzene, toluene, ethylbenzene, and xylenes (BTEX) and diesel- and oil-range TPH, based on field screening information. The two soil samples with highest diesel- and/or oil-range TPH concentrations, and the two samples of soil less than those with highest TPH concentrations, were also analyzed for PAHs. The soil sample with the highest PID reading during field screening was also analyzed for the gasoline oxygenate additives ethylene dibromide (EDB), 1,2-dichloroethane (EDC), and methyl tertiary-butyl ether (MTBE), as well as total lead, in accordance with MTCA;
- Completed four of the borings as groundwater monitoring wells. Monitoring wells MW-1 and MW-2 were installed at locations DP-15 and DP-14, respectively, along the off-loading dock-slip shoreline to assess REC 2 groundwater as a potential source of contaminants to the East Waterway. Monitoring wells MW-3 and 4 were installed at locations DP-7 and DP-9,

respectively, on the downgradient edge of the former AST farm to assess groundwater quality adjacent to the former fuel storage locations; and

- Collected a groundwater sample from each of the four monitoring wells during an outgoing tide. The four groundwater samples were analyzed for gasoline-range TPH with BTEX, diesel- and oil-range TPH, low-level PAHs, dissolved lead, total dissolved solids (TDS), and total suspended solids (TSS). Groundwater samples from wells MW-3 and MW-4 were also analyzed for gasoline oxygenate additives EDB, EDC, and MTBE, in accordance with MTCA. Groundwater field parameters (temperature, pH, electrical conductance, dissolved oxygen, and oxidation-reduction potential [ORP]) were measured in the field during sampling.

3.2.2 Round 2 Data Collection

The Round 2 data collection for this area included (Figure 3-1A):

- Advanced and sampled soil from 12 additional soil borings (REC2-B-1 through REC2-B-12) in and around the inferred area of Bunker C oil-contaminated soil as determined from Round 1 data collection[4]. Five borings (REC2-B-1, -2, -3, -6, -10) were advanced within the north end of the Distribution Warehouse, through the building floor. Based on field screening information, the soil samples were analyzed for diesel-/oil-range TPH and PAHs; and
- Collected groundwater samples from monitoring wells MW-1 through MW-4 for analysis of gasoline-range TPH, VOCs, diesel-/oil-range TPH, low-level PAHs, and TSS. In addition, the groundwater sample from well MW-4 was analyzed for total and dissolved lead, in replicate, to verify the result from the February 2012 sampling (Aspect, 2012a). The groundwater samples from shoreline wells MW-1 and MW-2 were also analyzed for SVOCs, dissolved priority pollutant metals, dissolved sulfide, and ammonia. The groundwater sample from well MW-2 was one of ten Round 2 groundwater samples also analyzed for total priority pollutant metals (unfiltered sample) to assess influence of sample turbidity on metals results.

3.2.3 Round 3 Data Collection

The Round 3 data collection for this area included conducting the dry season groundwater monitoring and sampling event at the four monitoring wells, repeating the Round 2 sampling and analysis.

3.2.4 Assessment Findings

Soil Quality Data

Eight of the borings had elevated oil-range TPH (presumed Bunker C oil) soil concentrations greater than the 2,000 mg/kg soil screening level, which is a conservative MTCA-default value based on preventing accumulation of petroleum free product. In the other 20 borings, Bunker C oil detections were less than the screening level, including those borings positioned within the footprint of the former Bunker C oil storage tank and along the subsurface fuel pipeline. Table 3-2A presents the soil quality data for this area,

---

[4] Round 2 boring/monitoring well REC2-MW-5 was installed for REC 2 but subsequently included within the Diesel AST Area (refer to Section 5.18).

and Figure 3-1A depicts the soil TPH data for this area (combined REC 1 and REC 2 data). On Figure 3-1A, explorations with detected Bunker C oil soil concentrations exceeding the 2,000 mg/kg soil screening level[5] are shown in brown; explorations with concentrations less than the screening level are shown in green.

Detected Bunker C oil soil concentrations exceed 20,000 mg/kg, which are at or greater than residual saturation for Bunker C oil, in three locations. No separate-phase product accumulation was observed on the water table in any of the Phase 2 ESA borings in this area, but contamination is present beneath the water table (maximum observed depth of 10 to 12 feet[6]). Bunker C oil has a density very close to that of water (specific gravity of 0.95 to 1.03; NOAA, 2006; CITGO, 2006); therefore, the oil may float or sink through saturated soil, depending on the degree of weathering, soil characteristics, and other factors. In any event, the vertical extent of Bunker C oil exceedance in soil is vertically bound at each of the borings (Table 3-2A; Figure 3-2A).

Total cPAH concentrations were detected above the 0.14 mg/kg unrestricted soil screening level in soil samples with greater than 2,000 mg/kg TPH (Table 3-2A). Note that the 0.14 mg/kg total cPAH unrestricted soil screening level is less than urban background soil concentrations measured in Seattle residential neighborhoods (90th percentile of 0.39 mg/kg total cPAH; Ecology, 2011).

Low gasoline-range TPH and BTEX concentrations were detected in select soil samples from the 15 borings within the REC 2 area. The maximum gasoline-range TPH and BTEX concentrations were detected in the 4- to 5-foot sample from DP-3 (where the highest Bunker C oil was also detected) as: 46 mg/kg gasoline-range TPH (greater than the 30 mg/kg screening level), 0.055 mg/kg benzene, 0.52 mg/kg ethylbenzene, 0.1 mg/kg toluene, and 1.5 mg/kg total xylenes. In that sample, gasoline oxygenates were not detected and total lead was detected at only 2.4 mg/kg. Gasoline-range TPH was also detected less than the 30 mg/kg soil screening level detected in samples of saturated soil from borings DP-5 (21 mg/kg), MW-3 (7 mg/kg), and MW-4 (4.9 mg/kg); total BTEX concentrations in the three samples were less than 1 mg/kg.

Groundwater Quality Data

The analytical results for TPH, naphthalene (a mobile PAH commonly associated with Bunker C oil) and total cPAH data for REC 2 groundwater are displayed on Figure 3-1B; the full data are included in Table 3-2B. Data from the UST No. 68 area monitoring wells downgradient of REC 2, and the REC 1 area monitoring wells located south of REC 2 are also displayed on Figure 3-1B.

The Phase 2 ESA groundwater data from REC 2 monitoring wells MW-1 through MW-4 indicate concentrations of TPH less than screening levels, with the exception of well MW-3, located on the downgradient edge of a former fuel tank (Figure 3-1B). At MW-3, Total TPH (consisting predominantly of diesel-range TPH) was detected above the 500 µg/L screening level during the Round 2 and Round 3 sampling events (625 µg/L

---

[5] Based on groundwater protection (free product accumulation), thus same soil screening level for unrestricted or industrial land use.

[6] Boring REC2-B-12 had 39,000 mg/kg in the 8- to 9-foot sample. The boring had hard drilling below about 11 or 12 feet and hit refusal at about 14 feet; therefore, the drill rig moved over a few feet to re-drill deeper. TPH was non-detect in the 17- to 18-foot sample from that boring (Table 3-2A

and 995 µg/L, respectively). Gasoline-range TPH was also detected at MW-3 in each of the three sampling events but at concentrations less than the 1,000 µg/L screening level[7]. Just north of MW-3, groundwater TPH concentrations were less than screening levels at well UST68-MW3 that was installed for the Round 3 investigation.

Downgradient of MW-3, TPH was not detected in groundwater at wells UST68-MW-4, UST68-MW-5, or shoreline wells MW-1 and MW-2 during the three sampling events, indicating dissolved phase TPH from REC 2 are not reaching the East Waterway (Figure 3-1B).

Detected naphthalene concentrations were less than the screening level in all REC 2 groundwater samples (Table 3-2B).

One low-level cPAH exceedance was detected in the Round 2 groundwater sample collected at well MW-4. The reported value of 0.020 µg/L total cPAHs is marginally greater than the highly conservative 0.018 µg/L screening level (confirmed in a field duplicate sample). Total cPAH concentrations were less than the screening level in groundwater samples collected from well MW-4 during the other two sampling rounds. cPAHs were not detected in monitoring wells MW-1 through MW-3 during any of the sampling rounds (Table 3-2B).

Dissolved and/or total lead was detected in groundwater from well MW-4 at concentrations greater than the 8.1 µg/L screening level during each of the three sampling rounds. For Rounds 2 and 3 groundwater samples from MW-4, where dissolved and total lead were analyzed, total (unfiltered) concentrations were approximately 2 to 6 times greater than corresponding dissolved (unfiltered) concentrations, indicating some of the lead is associated with sample turbidity (Table 3-2B). The elevated dissolved-phase lead may be attributed to alkaline (pH > 10) groundwater present at well MW-4, which is attributable to its location immediately downgradient of the former caustic storage tank. Near-neutral groundwater pH (pH 6.9) was measured at well UST68-MW-6, located approximately 80 feet downgradient of MW-4, indicating that the elevated groundwater pH neutralizes within a relatively short flow distance downgradient from the former caustic tank (MW-4). Likewise, slightly alkaline groundwater pH (7.6 to 8.4) and lead concentrations less than the screening level were measured in downgradient shoreline wells MW-1 and MW-2 (Table 3-2B).

Besides TPH, cPAHs, and lead, groundwater screening level exceedances for the REC 2 Area monitoring wells included copper, nickel, and ammonia at shoreline wells MW-1 and MW-2 (Table 3-2B). Arsenic, copper, nickel, and ammonia concentrations greater than the stringent screening levels were commonly detected in Upland Area groundwater (described in subsequent sections). Groundwater within the Upland Area fill is geochemically reducing (low dissolved oxygen) which is typical of nearshore organic-rich fill (e.g., dredge fill with wood) in urbanized Puget Sound shorelines. These geochemical conditions can result in generation of ammonia and dissolution/mobilization into groundwater of low-level metals within the fill materials. Because these constituents are not suspected of being associated with sources in the REC 2 area, and because wells

---

[7] In accordance with MTCA (WAC 173-340-900 Table 720-1), a 1,000 µg/L gasoline-range TPH groundwater screening level is applied because benzene is not detected in REC 2 groundwater.

MW-1 and MW-2 are located adjacent to the shoreline, these results are discussed with the other shoreline well groundwater data in Section 3.6.

3.2.5 Opportunistic Interim Action Recommended

Aspect recommends planning for an opportunistic interim action removal of TPH-contaminated soil in the REC 2 area, to be conducted in coordination with mill demolition activities, and in accordance with the Interim Action Plan (Exhibit C to forthcoming Agreed Order). The collective explorations define the lateral and vertical extent of TPH soil contamination sufficiently to initiate a soil cleanup action for the REC 2 area. Given the long-term storage of oil in this area and the multiple configurations of storage tanks and pipelines, multiple separate releases of oil are probable, which is suggested by the data. For example, shallow contamination at REC2-B-4 may be a surficial release not contiguous with deeper contamination in borings to the southeast. Removal of TPH-contaminated soil is warranted in this area and soil excavation will reveal the extent of contamination most accurately, such that additional time and money would be better spent removing contaminated soil, rather than in further investigation.

Excavation would be conducted at each exploration location where TPH concentrations (sum of diesel- and oil-ranges) greater than 2,000 mg/kg have been detected, and extend laterally and vertically. Excavation will continue until soil containing TPH concentrations greater than respective unrestricted soil screening levels are removed to the extent practicable, as confirmed by excavation soil verification sampling and analysis. If warranted, additional analysis can be conducted to generate risk-based, TPH soil cleanup levels for REC 2 in accordance with MTCA. The Distribution Warehouse is currently not planned for demolition; therefore, the interim action soil removal would not extend beneath the warehouse. This would be revisited if K-C decides to demolish the warehouse.

As described in PEG (1998), a portion of the subsurface Bunker C oil pipeline between the unloading dock south of the Old Machine Shop to the former Bunker C oil AST remains in place (its west end is currently visible at the unloading dock). Soil and groundwater sampling along the pipeline (borings DP-10 through -13, MW-1, and MW-2) indicated no contamination (Figure 3-1A). However, removal of the remaining pipeline is recommended, along with removal of associated contaminated soil if present, as part of the opportunistic interim action. Aspect also recommends removal of the remaining subsurface portions of the fuel pipeline that extended north from the Associated Oil fuel storage tanks to the Boiler House area; the Bunker C oil-contaminated soil encountered at the Screen/Bleach Unit 2 (HREC 3) was likely associated with this pipeline.

3.3 REC 3: Heavy Duty Shop Sump

AECOM (2011) defined REC 3 based on visible petroleum staining in and around the sump within the Heavy Duty Shop, and on the shop’s western exterior wall below the sump pumps former discharge. No prior investigation of the environmental conditions associated with the sump itself has been conducted; however, the soil cleanup conducted north of the Heavy Duty Shop, as a result of oily water discharge from the sump. The location of the soil removal was not well documented, and verification data from the cleanup were not reported; therefore, investigation of soil and groundwater quality data was warranted to assess residual TPH concentrations.

3.3.1 Round 2 Data Collection

The Round 2 data collection for this area included the following (Figure 3-3):

- Advanced and sampled soil from one soil boring (REC3-MW-1) in the inferred area of the 1991 soil cleanup. Analyzed the soil sample collected at the water table for diesel-/oil-range TPH, VOCs, PAHs, total lead, and PCBs; and
- Completed the boring as a monitoring well, and collected a groundwater sample from it for analysis of diesel-/oil-range TPH, low-level PAHs, and TSS. Because it is a shoreline well, the REC3-MW-1 groundwater sample was also analyzed for the full suites of VOCs and SVOCs, priority pollutant metals, ammonia, and dissolved sulfide.

3.3.2 Round 3 Data Collection

The Round 3 data collection for this area included the following:

- Conducted the dry season groundwater monitoring and sampling event at well REC3-MW-1, repeating the Round 2 sampling and analysis.

3.3.3 Assessment Findings

No field screening evidence of petroleum was noted during drilling of REC3-MW-1, and the soil sample contained no detectable concentrations of TPH, VOCs, PAHs, or PCBs (Table 3-3A). The groundwater samples had no detectable TPH, VOCs, or dissolved sulfide during either sampling event, with the exception of ammonia as summarized below. With one exception, SVOCs were not detected during either sampling event; diethyl phthalate was detected at less than the screening level during the Round 3 sampling event (Table 3-3B). Dissolved metals were detected in the groundwater samples collected from REC3-MW-1 during both sampling events; only dissolved nickel was detected during Round 3 at a concentration that exceeded a screening level (Table 3-3B). Ammonia was detected at an estimated concentration less than the screening level during the Round 3 sampling event, and was not detected at the 0.05 µg/L reporting limit during Round 2 (Table 3-3B).

3.4 REC 5: Dutch Ovens

AECOM (2011) defined REC 5 based on concentrations of arsenic and cadmium in soil removed to allow construction of a foundation for equipment within the No. 7, 8, & 9 Old Boiler House. The work conducted for the Phase 2 ESA included an evaluation of groundwater quality downgradient of the No. 7, 8, & 9 Old Boiler House and subsequent soil sampling and analysis to assess potential source concentrations of metals in soil that were previously undocumented.

3.4.1 Round 2 Data Collection

The Round 2 data collection for this area included the following:

- Advanced and sampled soil at the water table from one soil boring (REC5-MW-1; Figure 3-4) on the west (downgradient) side of the Old Boiler House. The soil sample was analyzed for priority pollutant metals, and, because waste solvents were reportedly disposed of in the adjacent hog fuel pile, VOCs; and

- Completed the boring as a monitoring well and collected a groundwater sample from it for analysis of total and dissolved priority pollutant metals, VOCs, and TSS.

3.4.2 Round 3 Data Collection

The Round 3 data collection for this area included the following:

- Advanced six hand-augered soil borings (REC5-HA-1 through REC5-HA-6; Figure 3-4) through the floor of the Old Boiler House to a 3-foot depth. Collected and analyzed two soil samples from each boring (0- to 1-foot and 2- to 3-foot depths below soil grade) for priority pollutant metals; and

- Repeated the Round 2 groundwater sampling and analyses at well REC5-MW-1.

3.4.3 Assessment Findings

Soil Quality Data

The soil sample collected at the water table from boring REC5-MW-1 contained metals at concentrations less than respective screening levels for unrestricted use, and no detectable VOCs (Table 3-4A). The 12 soil samples collected in the six upgradient locations also contained metals concentrations less than unrestricted soil screening levels (Table 3-4A).

The collective soil data, including concentrations detected by CRETE (2011), do not identify a source of metals in soil at or upgradient of well REC5-MW-1 that explains the elevated metals in groundwater at that location. Possible explanations for the elevated groundwater metals concentrations at REC5-MW-1 include: (1) an undocumented local source of metals in soil, (2) groundwater geochemistry is mobilizing low-concentration metals in the fill soil, and/or (3) analytical interferences that are not correctable via the EPA Method 1640 reductive precipitation pre-treatment.

Groundwater Quality Data

The Rounds 2 and 3 groundwater samples from well REC5-MW-1 contained no detectable VOCs, but contained concentrations of select metals (both dissolved and total) greater than respective screening levels (Figure 3-4).

The greater dissolved or total concentrations in the Round 2 sample are: 218 µg/L arsenic, 226 µg/L copper, 234 µg/L lead, 0.57 µg/L mercury, 14.8 µg/L nickel, and 274 µg/L zinc (Figure 3-4). The detected metals concentrations, particularly arsenic, copper, and lead, are well above those detected elsewhere on the Site. The shoreline well UST70-MW-2, located generally downgradient, has lower groundwater metals concentrations in Rounds 2 and 3 sampling, as described in Section 3.9.

Groundwater at well REC5-MW-1 is reducing (ORP = -114 to -325 millivolts [mv] in two rounds), mildly alkaline (pH = 8.5 to 8.9), and slightly brackish (specific conductance = 384 to 1,150 µS/cm). The groundwater is also warm (approximately 23°C) because of its proximity to the former hog fuel pile, which had considerable biological (microbial) activity. Wells within the footprint of the former hog fuel area, in the USTs

No. 70 and 71 areas, have warmer groundwater, as previously documented in Landau (1991) and discussed in Sections 3.9 and 3.10.

REC5-MW-1 is not a shoreline well, and its groundwater samples were not brackish based on field specific conductance; therefore, sample pre-treatment was not conducted for their metals analyses. Although the validation of the Round 2 (first sample) metals analytical data did not reveal specific analytical quality control (QC) issues, the inductively coupled plasma mass spectrometry (ICP-MS) analysis (all metals except mercury) can be subject to interferences from chemicals other than salinity, including sulfate. Therefore, as a confirmatory step, the Round 2 groundwater sample from REC5-MW-1was re-analyzed for dissolved and total metals[8] including application of the reductive precipitation pre-treatment (EPA Method 1640) to reduce potential salinity interferences for trace metals, in accordance with the QAPP (Appendix B to Aspect, 2012a). The re-analysis results were comparable to the original sample results, indicating the elevated metals concentrations are not due to salinity interferences in the analysis.

The Round 3 groundwater sampling data confirmed groundwater exceedances of dissolved and total copper, arsenic, lead, and total mercury at REC5-MW-1 (Figure 3-4). In general, the concentrations of metals detected during Round 3 are considerably lower than those detected in Round 2, with the exception of arsenic whose concentrations are comparable for the two sampling events. Nickel and zinc exceedances detected during Round 2 were not confirmed in Round 3 sample (Table 3-4B).

3.5 REC 6 (Latex Spill) and Former USTs No. 29 and 67

A release of xylene to soil and groundwater was identified during the 1989 removal of USTs No. 29 and 67 located immediately west of the Paper Machine Building. Adjacent to that location, a release of latex product occurred in 2008. Data collected during the Round 2 assessment indicates that the latex spill area (REC 6) overlaps with the adjacent xylene release area (USTs No.29 and 67; HREC 1); therefore, these areas are discussed together in this section. Additionally, former leaded gasoline UST No. 69 is located generally west (downgradient) of former USTs No. 29 and 67 (Figure 3-5). Therefore, those downgradient data were included to assess the extent of contamination associated with UST No. 29 and REC 6. The UST No. 69 data are further discussed in Section 3.8.

The Phase 2 ESA work was conducted to evaluate whether the latex release has leached contaminants to groundwater at concentrations of concern, to assess residual xylene concentrations in soil and groundwater within the former USTs excavation, and to evaluate groundwater quality downgradient of them.

3.5.1 Round 2 Data Collection

REC 6/USTs No. 29 and 67

The Round 2 data collection for the combined REC 6/USTs No. 29 and 67 area included the following (Figure 3-5):

---

[8] Metals were analyzed by ICP, which is subject to interferences; mercury analysis (not ICP) was not re-run.

- Completed two soil borings/monitoring wells within the former USTs No. 29 and 67 excavation footprint: REC6-MW-1 within the footprint of former UST No. 29 and at the west (downgradient) end of the inferred latex release location, and UST29-MW-1 within the footprint of UST No. 67 and immediately downgradient of UST No. 29. The borings were positioned to avoid the numerous subsurface utilities in the immediate area. Both borings encountered the pea gravel backfill of the former excavation;
- Based on field screening information, analyzed soil samples collected beneath the pea gravel backfill from each of the borings: the REC6-MW-1 sample for gasoline-range TPH and VOCs (including 1,4-dioxane and vinyl acetate[9]), and the UST29-MW-1 sample for gasoline-range TPH, VOCs, and (to assess the presence of residual kerosene) diesel-/oil-range TPH and PAHs;
- Collected a groundwater sample from wells REC6-MW-1 and UST29-MW-1 for analysis of gasoline-range TPH, VOCs, and TSS, adding analysis for formaldehyde in the REC6-MW-1 sample; and analysis for diesel-/oil-range TPH and low-level PAHs in the UST29-MW-1 sample; and
- Installed monitoring well REC6-MW-2 along the shoreline downgradient (west) of REC 6 and USTs No. 29 and 67, and analyzed the groundwater sample from the well for gasoline-range TPH, VOCs, formaldehyde, and TSS. In addition, because REC6-MW-2 is a shoreline well, the groundwater sample was also analyzed for dissolved priority pollutant metals, SVOCs, ammonia, and dissolved sulfide.

3.5.2 Round 3 Data Collection

The Round 3 data collection included the following:

- Conducted the dry season groundwater monitoring event for wells REC6-MW-1, UST29-MW-1, repeating the Round 2 sampling and analysis and adding analysis for diesel-/oil-range TPH for the REC6-MW-1 groundwater sample.

3.5.3 Assessment Findings

Xylene Release (former UST No. 29)

The Phase 2 ESA data confirm that high concentrations of xylene remain in soil and groundwater within the former UST No. 29 excavation footprint (REC6-MW-1) as follows:

- The REC6-MW-1 soil sample contained 9,700 mg/kg gasoline-range TPH, 2,250 mg/kg total xylenes, 630 mg/kg ethylbenzene; the sample contained lower concentrations (less than screening levels) of other VOCs. Benzene was not detected in the soil sample or its field duplicate sample (Table 3-5A).
- The REC6-MW-1 groundwater sample contained 24,000 µg/L and 9,800 µg/L gasoline-range TPH during Round 2 and Round 3, respectively; and 8,500 µg/L and 3,770 µg/L total xylenes, respectively; and lower concentrations (less than screening levels) of other VOCs. Benzene was not detected (Table 3-5B).

---

[9] 1,4-dioxane and vinyl acetate are trace constituents in the latex product released.

Figure 3-5 depicts the soil and groundwater concentrations exceeding respective screening levels (exceedances of unrestricted soil screening levels) for the REC 6/USTs No. 29 and 67 area.

The magnitude of the xylene-related contamination decreases just downgradient of the former UST No. 29 footprint, at well UST29-MW-1 as follows:

- The UST29-MW-1 soil sample contained gasoline-range TPH and Total TPH (150 mg/kg and 2,600 mg/kg, respectively) greater than soil screening levels based on groundwater protection, but VOCs less than soil screening levels (e.g., 0.2 mg/kg total xylenes and 0.056 mg/kg ethylbenzene). The detected total cPAH concentration in soil (17 mg/kg)[10] exceeds soil screening levels for unrestricted use (0.14 mg/kg) and industrial use (2 mg/kg) (Table 3-5A). For total cPAHs, the unrestricted soil screening level is based on direct contact, and the industrial soil screening level is based on groundwater protection.
- The UST29-MW-1 groundwater samples contained gasoline-range TPH and xylenes concentrations less than screening levels, and no detectable Total TPH. The total cPAH toxic equivalent quotient/concentrations (TEQ) in groundwater (0.026 μg/L for Round 2; 0.017 μg/L for Round 3) were approximately equal to the conservative 0.018 μg/L screening level based on marine protection (Table 3-5B). The empirical groundwater data indicate that the residual concentrations of gasoline-range TPH and Total TPH in soil at the UST29-MW-1 location are protective of groundwater quality in accordance with MTCA (WAC 173-340-747(9)). The total cPAH soil concentration at UST29-MW-1 exceeds a conservative soil screening level based on groundwater protection, but there is very limited leaching of cPAHs to groundwater, consistent with their low mobility, particularly in organic-rich matrices that occur in the Upland Area.

Further downgradient, the soil and groundwater samples collected from UST69-MW-1 contained no detectable gasoline-range TPH or VOCs, as confirmed in field duplicate samples (Tables 3-5A and 3-5B). Likewise, gasoline-range TPH and VOCs were not detected in the groundwater sample from downgradient shoreline well REC6-MW-2 (Table 3-5B). REC6-MW-2 is outside the map view of Figure 3-5, but is shown on Figure 3-6.

The Phase 2 ESA data indicate that well UST29-MW-1 delineates the downgradient extent of groundwater exceedances associated with the historical xylene release from former UST No. 29. Comparing the Phase 2 ESA data against data collected by Landau (1994a) indicates that the downgradient extent of groundwater contamination is reduced relative to the 1994 conditions.

Latex Release

Latex product was observed in the REC6-MW-1 and UST29-MW-1 borings, at the bottom of the pea gravel excavation backfill. The latex was not observed in soil beneath the pea gravel, indicating it has migrated from the release location laterally within the

---

[10] Note that the PAH analysis for UST29-MW-1 was run on a sample of soil from a depth of 8- to 9-feet, not the 7- to 8-foot depth that the other analyses were conducted, because of sample volume limitations in the soil core recovered.

permeable backfill, which extends essentially to the western edge of the Paper Machine building (Figure 3-5).

In the Round 2 groundwater sample collected from well REC6-MW-1, downgradient of the inferred latex release location and where residual latex is present, formaldehyde was reported at an estimated concentration of 29 µg/L, which is less than the reporting limit and well less than the 1,600 µg/L groundwater screening level. Formaldehyde was not detected and was not reported below the 100 µg/L reporting limit during the Round 3 sampling. The VOCs 1,4-dioxane and vinyl acetate were not detected in the soil or groundwater samples from REC6-MW-1. Formaldehyde, 1,4-dioxane, and vinyl acetate were not detected in the groundwater sample from downgradient shoreline well REC6-MW-2 (Table 3-5B).

The latex released is a component of household paper towels and contains only trace concentrations of formaldehyde, vinyl acetate, and 1,4-dioxane. The Phase 2 ESA groundwater data indicate that leaching of the residual latex poses negligible risk to groundwater quality. The latex release, however, is collocated with the xylene release from former UST No. 29.

3.5.4 Opportunistic Interim Action Recommended

Aspect recommends planning for an opportunistic interim action removal of xylene-contaminated soil in the UST No. 29 area, to be conducted in coordination with mill demolition activities, and in accordance with the Interim Action Plan (Exhibit C to Agreed Order No. DE 9476). It is probable that the xylene contamination extends beneath the former secondary containment structure that is immediately north of the area, and Paper Machine building that is immediately east. The data indicate that residual latex product in the ground is not leaching contaminants to groundwater at concentrations of concern; however, the interim action should also remove residual latex product accumulations to the extent practicable, in accordance with MTCA. It is expected that the latex product remains in the ground beneath the southwest corner of the former Paper Machine Building, including the building loading dock; therefore, it is recommended that the opportunistic cleanup be conducted after demolition and removal of the surrounding structures including floor slabs/foundations.

3.6 REC 7: East Waterway Shoreline

Although the Phase 2 ESA has been conducted specifically for the Upland Area, the scope of work included an evaluation of groundwater quality along the East Waterway shoreline to assess whether the Upland Area represents a source of contaminants to the East Waterway via groundwater discharge. A total of 15 shoreline monitoring wells were installed and sampled as part of the Phase 2 ESA investigation. Several of the monitoring wells were installed to address groundwater quality downgradient of specific areas of concern (described in other sections), whereas those labeled with the REC7- prefix were installed to provide additional spatial coverage of the shoreline irrespective of upgradient operational areas. Table 3-6 provides the groundwater quality data for the 15 shoreline wells, and Figure 3-6 depicts exceedances of groundwater screening levels for those wells.

3.6.1 Round 1 Data Collection

The Round 1 data collection for the upland shoreline area included the following:

- Collected and analyzed groundwater from monitoring wells MW-5 and MW-6, which were installed proximate to the East Waterway shoreline to evaluate groundwater quality downgradient of the former Naval Reserve Parcel and former Log Pond Fill area, respectively (Sections 3.11 and 3.12, respectively).

3.6.2 Rounds 2 and 3 Data Collection

The Rounds 2 and 3 data collection for this area included the following (Figure 3-6):

- Installed four monitoring wells (REC7-MW-1, REC7-MW-2, REC7-MW-3, and REC7-MW-4) where gaps existed between monitoring wells installed along the shoreline to evaluate groundwater quality downgradient of specific operational areas.
- Collected groundwater samples from the 15 shoreline monitoring wells for laboratory analysis of priority pollutant metals[11], VOCs, SVOCs (which includes phthalates, phenols, benzoic acid, benzyl alcohol, and PAHs), ammonia, and dissolved sulfide, in addition to area-specific analytes for select shoreline wells.

Assessment Findings

The results of the Phase 2 ESA identified concentrations of arsenic, copper, nickel and/or zinc greater than the screening levels in 12 of the 15 monitoring wells sampled along the upland shoreline during one or more of the groundwater sampling rounds (Figure 3-6; Table 3-6). Additionally, ammonia was detected above the conservative 0.035 mg/L screening level in 12 of the 15 wells (Figure 3-6). The highest ammonia concentrations were detected at well MW-6 (15 to 16 mg/L), located on the downgradient edge of the Log Pond Fill, and NRP-MW-3 (11 to 15 mg/L), located downgradient of the former UST area on the Naval Reserve Parcel. Figure 3-6 depicts the groundwater exceedances in the shoreline wells.

VOCs were not detected in the groundwater samples collected from the 15 shoreline wells. Where analyzed for in the shoreline groundwater samples, TPH was not detected; this includes well UST70-MW-2 located just downgradient of the UST No. 70 area where a diesel release is documented (Section 3.9), and wells MW-5, NRP-MW-2, and NRP-MW-3 just downgradient of the Naval Reserve Parcel former UST area where residual petroleum hydrocarbons are present (Section 3.11). The only SVOC detections in the shoreline groundwater samples were low-level PAH concentrations less than screening levels. Dissolved sulfide concentrations in the groundwater samples were at or less than 3 mg/L, with the exception of the 21.5 mg/L detection at well REC6-MW-2 during Round 2 of the Phase 2 ESA. This concentration of dissolved sulfide was anomalously high enough to suggest that the sample was not field filtered (i.e., it is a total sulfide concentration); the results of the Round 3 sampling at well REC6-MW-2 detected dissolved sulfide at a concentration of 0.906 mg/L, indicating that the Round 2 results were likely representative of total sulfide and not dissolved sulfide. Sulfide minerals are common components in the geochemically reducing fill conditions; therefore, suspended

---

[11] Because of a field oversight, the Round 3 groundwater sample from well REC1-MW-9 was not analyzed for priority pollutant metals.

solids in groundwater samples are likely high in sulfide and digesting the groundwater sample during chemical analysis will release sulfide from the suspended particulate phase, which is not considered representative of the dissolved phase concentration in groundwater.

3.7 Former USTs No. 68 and 68R

Former UST No. 68 was a 250-gallon unleaded gasoline tank removed in 1991 and was not replaced at that time. At the time the Work Plan was prepared (Aspect, 2012a), the location of the replacement 500-gallon unleaded gasoline UST No. 68R was inferred to be northeast of UST No. 68 (where monitoring well UST68-MW-1 is located; Figure 3-7). Subsequently obtained information correctly showed UST No. 68R to be east of the South Office Building, as depicted on Figure 3-7. UST No. 68R was removed in 1999.

The Phase 2 ESA work was completed to evaluate current soil conditions in the locations of former USTs No. 68 and 68R, and groundwater quality downgradient of them.

3.7.1 Round 2 Data Collection

The Round 2 data collection for this area included the following (Figure 3-7):

- Completed one new soil boring/monitoring well (UST68-MW-2) within the footprint of the former UST No. 68 excavation on the north side of the South Office Building, and a downgradient boring/monitoring well UST68-MW-5;
- Completed one new soil boring/monitoring well (UST68-MW-1) within the previously inferred (incorrect) footprint of the former UST No. 68R northeast of the South Office Building, and a downgradient boring/monitoring well UST68-MW-4;
- Based on field screening information, analyzed one soil sample from each of the four borings for gasoline-range TPH and VOCs; and
- Collected a groundwater sample from the four monitoring wells for analysis of gasoline-range TPH, VOCs including low-level EDB, and TSS. Shoreline monitoring wells MW-1 and MW-2, installed for characterization of REC 2, provide additional groundwater quality data downgradient of UST No. 68 (Figure 10).

During drilling of the planned downgradient well UST68-MW-3, as per the Work Plan, the drill rig penetrated a pressurized fire water line. The pressurized water damaged the pavement and created a hole at the rupture location, preventing completion of drilling there. The UST68-MW-3 well was therefore not completed pending review of results from the surrounding wells. The well was not completed because groundwater TPH impacts were not identified in any of the other wells in the area.

3.7.2 Round 3 Data Collection

The Round 3 data collection for this area included as follows (Figure 3-7):

- Installed a new monitoring well UST68-MW-6 just downgradient of the correct location of former UST 68R (Figure 3-7). Multiple attempts to drill within the former UST location encountered refusal on apparent concrete a few feet below grade; therefore, the well was moved approximately 15 feet downgradient. Based on field screening information, analyzed one soil sample from the boring for gasoline-range TPH and VOCs;

- Collected a groundwater sample from new well UST68-MW-6 for gasoline-range TPH, VOCs, and TSS; and
- Conducted the dry-season groundwater sampling and analysis event for UST68-MW-1, UST68-MW -2, UST68-MW -4, and UST68-MW -5, repeating the Round 2 sampling and analyses.

3.7.3 Assessment Findings

Within the former UST No. 68 excavation location (gravel backfill observed) at boring UST68-MW-2, a moderate petroleum odor and sheen, and detection on the PID, was observed in the 10- to 12-foot depth interval; however, gasoline-range TPH was detected at only 4.9 mg/kg, well below the unrestricted soil screening level, in the soil sample from that depth interval. VOCs, including BTEX, were not detected in the soil sample (Table 3-7A).

The concentrations of gasoline-range TPH in soil and groundwater at the location of former UST 68 (UST68-MW-2), and generally downgradient of it (UST68-MW-5, MW-1 and MW-2) are less than the screening levels. The Phase 2 ESA data indicate that residual gasoline-related groundwater contamination observed in 1991 (Landau, 1991) has attenuated to less than screening levels.

Gasoline-range TPH and VOCs were not detected in soil and groundwater samples collected from UST68-MW-1; however, the monitoring well is not in the location of former UST No. 68R, as explained above.

No exceedances were detected in soil or groundwater samples collected from well UST68-MW-6, located immediately downgradient of former UST No. 68R, or wells further downgradient of it (UST68-MW-4 and MW-2). Gasoline-range TPH and selected VOCs (isopropylbenzene, n-propylbenzene, and sec-butylbenzene) were detected below respective screening levels, and BTEX was not detected, in the soil and/or groundwater samples collected from UST68-MW-6 (Table 3-7A and Table 3-7B).

Diesel-range TPH exceedances were detected in groundwater at well MW-3 located roughly 50 feet southeast of former UST 68R (Figure 3-7); however, the detected TPH is associated with the former Associated Oil fuel ASTs (REC 2) located upgradient, as discussed in Section 3.2.

3.8 Former UST No. 69

UST No. 69 was a 260-gallon leaded gasoline tank removed in 1989 (Figure 3-5). The scope of work for the Phase 2 ESA was conducted to evaluate groundwater quality downgradient of former UST No. 69.

3.8.1 Round 2 Data Collection

The Round 2 data collection for this area included in the following (Figure 3-5):

- Completed a new soil boring/monitoring well (UST69-MW-1) on the west (downgradient) side of former UST No. 69. From the boring, collected a soil sample from the water table depth interval for analysis of gasoline-range TPH, VOCs, and total lead; and
- Collected a groundwater sample from the well for analysis of gasoline-range TPH, VOCs including low-level EDB, total and dissolved lead, and TSS.

3.8.2 Round 3 Data Collection

The Round 3 data collection for this area included as follows:

- Repeated the Round 2 groundwater sampling and analyses for well UST69-MW-1.

3.8.3 Assessment Findings

No field screening evidence of petroleum was observed during drilling of UST69-MW-1, and the soil and groundwater data collected from UST69-MW-1 are consistent with that observation. Gasoline-range TPH and VOCs were not detected in the soil sample or the groundwater samples collected from UST69-MW-1. Lead was detected in the soil sample at 2.9 mg/kg, well below the 250 mg/kg unrestricted soil screening level, and total lead and dissolved lead were not detected in the two groundwater samples (soil data in Table 3-8A; groundwater data in Table 3-8B).

3.9 Former USTs No. 70 and 70R

Former UST No. 70 was a 1,000-gallon diesel storage tank removed in 1989 (Figure 3-9A). Former UST No. 70R was a 2,000-gallon diesel UST installed in the same location in 1989; it was a double-walled tank with cathodic protection and electronic overflow sensor, and was subsequently removed in 1995. Landau (1991) documented diesel contamination in the area of the former USTs, which warranted assessment to document current conditions.

3.9.1 Round 2 Data Collection

The Round 2 data collection for this area included the following (Figure 3-9A):

- Advanced and sampled soil from four soil borings (UST70-B-1 through UST70-B -4) within the area of former USTs No. 70 and 70R as located from Landau (1991) in addition to one boring/monitoring well (UST70-MW-2) along the shoreline due west of the former USTs location. Based on field screening information, analyzed soil samples from each of the five borings for diesel-/oil-range TPH, PAHs, and, because the former USTs were within the hog fuel area where waste solvents were reportedly disposed of, VOCs;
- Based on the field screening during drilling of the four borings, completed monitoring well UST70-MW-1 immediately downgradient of the location with the greatest apparent TPH soil concentrations. Also completed the shoreline boring UST70-MW-2 as a monitoring well; and
- Analyzed a groundwater sample from new wells UST70-MW-1 and UST-70-MW-2 for diesel-/oil-range TPH, VOCs, low-level PAHs, and TSS. The

groundwater sample from shoreline well UST70-MW-2 was also analyzed for priority pollutant metals, SVOCs, ammonia, and dissolved sulfide.

3.9.2 Round 3 Data Collection

The Round 3 data collection for this area included the following:

- Repeated the Round 2 groundwater sampling and analyses for wells UST70-MW-1 and UST70-MW-2.

3.9.3 Assessment Findings

A Total TPH concentration (12,300 mg/kg) was detected in the 3- to 4-foot soil sample from boring UST70-B-1 (Table 3-9A), which, based on observed pea gravel in the upper few feet, is within the former UST location. Field screening information indicates diesel contamination extending between depths of about 3 and 12 feet in the boring. TPH was not detected in the 13.5- to 14.5-foot soil sample from UST70-B-1. To the south of UST70-B-1,TPH was detected in the 9- to 10-foot sample from boring UST70-B-2 at a concentration (570 mg/kg) less than the unrestricted soil screening level. TPH was not detected in soil samples from UST70-B-3 and UST70-B-4. Detected soil concentrations of PAHs and VOC were less than unrestricted soil screening levels in the four borings (Table 3-9A). Figure 3-9A depicts the Total TPH soil data, with exceedances highlighted, for the USTs No. 70 and 70R area. Note that the soil sample depths are relative to former grade prior to removal of hog fuel that occurred subsequent to the Round 2 data collection.

Petroleum-related concentrations in groundwater samples from the two wells were less than respective screening levels. Total TPH was detected at 179 µg/L in the groundwater sample collected from well UST70-MW-1 (next to area of greatest soil TPH concentration) during the Round 2 sampling event; this concentration is less than the 500 µg/L groundwater screening level, and was not detected during the Round 3 sampling event. Total TPH was not detected in groundwater at downgradient shoreline well UST70-MW-2 during either sampling event (Figure 3-9B). PAH and VOC concentrations in both wells were less than screening levels (Table 3-9B). Despite the elevated soil TPH concentrations at UST70-B-1, only limited TPH leachability is indicated by the immediately downgradient groundwater data from well UST70-MW-1. Figure 3-9B depicts the TPH, naphthalene, and total cPAH groundwater data for this area.

The groundwater metals and ammonia exceedances detected at shoreline well UST70-MW-2 (arsenic, nickel, zinc) are consistent with groundwater exceedances observed elsewhere in the Upland Area, and may be attributable to the reducing groundwater conditions in the fill. Concentrations of arsenic, nickel and zinc were detected greater than the screening level during either the Round 2 or Round 3 sampling event, but were detected at less than the screening level during the previous/subsequent sampling event, indicating a high degree of variability (Table 3-9B). Figure 3-6 depicts the ammonia and metals groundwater exceedances detected at well UST70-MW-2 and the other shoreline wells.

3.9.4 *Opportunistic Interim Action Recommended*

Aspect recommends planning for an opportunistic interim action removal of diesel-contaminated soil in the USTs No. 70 and 70R area, to be conducted in coordination with mill demolition activities, and in accordance with the Interim Action Plan (Exhibit C to Agreed Order No. DE 9476). The available data indicate that the soil contamination extent should be relatively localized around the location of the former UST. Soil excavation will reveal the extent of contamination most accurately, such that additional time and money would be better spent removing contaminated soil, rather than further investigation. Excavation would start at the UST70-B-1 location, and extend laterally and vertically until soils containing TPH concentrations greater than 2,000 mg/kg are removed to the extent practicable, as confirmed by excavation soil verification sampling and analysis.

3.10 Former USTs No. 71, 72, and 73

Former USTs No. 71, 72, and 73 were reportedly railroad cars used as Bunker C oil USTs (approximately 12,000-gallon capacity each), which were removed in 1989. Landau (1991) documented Bunker C oil contamination in the area of the former USTs which warranted assessment to document current conditions.

3.10.1 *Round 2 Data Collection*

The Round 2 data collection for this area included the following (Figure 3-10A):

- Advanced and sampled soil from four soil borings (UST71-B-1 through UST71-B-4) within the area of former USTs No. 71, 72, and 73 as located from maps in Landau (1991). Based on field screening information, analyzed soil samples from each of the four borings for diesel-/oil-range TPH and PAHs, and, because the former USTs were within the hog fuel area where waste solvents were reportedly disposed of, VOCs;
- Based on the field screening during drilling of the four borings, completed monitoring well UST71-MW-1 immediately downgradient of the area with the greatest apparent TPH soil concentrations; and
- Analyzed a groundwater sample from well UST71-MW-1 for analysis of diesel-/oil-range TPH, VOCs, low-level PAHs, and TSS.

3.10.2 *Round 3 Data Collection*

The Round 3 data collection for this area included the following:

- Repeated the Round 2 groundwater sampling and analyses for well UST71-MW-1; and
- While not completed specifically for assessment of the former USTs No. 71, 72, and 73 area, installed additional borings (Boiler-B-3, -B-3A, and -B-3B) and monitoring well Boiler-MW-1 east of the former USTs No. 71, 72, and 73, which helped define the extent of Bunker C oil contamination. These explorations, part of the Boiler/Baghouse Area (Section 3.16), are shown on Figure 3-10A.

3.10.3 Assessment Findings

During drilling of the Round 2 borings, Bunker C oil soil contamination was evident to apparent depths greater than 20 feet—well below the water table—within the area of the former USTs, which is consistent with the former tanks (railroad cars) extending to substantial depths below grade. Note that the drilling and soil sample depths are relative to the former grade prior to removal of hog fuel that occurred subsequent to the Round 2 data collection.

Bunker C oil-saturated soil adjacent to the former tanks is reflected by detected Total TPH soil concentrations greater than 30,000 mg/kg detected in borings UST71-B-2 (38,000 mg/kg in the 13- to 14-foot sample), UST71-B-3 (36,000 mg/kg in 18- to 19-foot sample), and UST-B-4 (32,000 mg/kg in 12.5- to 13.5-foot sample). TPH was not detected in boring UST71-B-1, located on the north side of the former tanks.

To the east, between the former USTs and the former Boiler House where fuel was burned, Bunker C oil-saturated soil was encountered at a depth of 12 to 13 feet in boring Boiler-MW-1 (24,000 mg/kg), and in shallow soil at hand-augered Boiler-B-3 (108,000 mg/kg). These findings may reflect conditions adjacent to a fuel conveyance pipeline between the former USTs and Boiler House. The north-south lateral extents of soil TPH exceedances in this area are generally delineated by Round 3 borings Boiler-B-3A and Boiler-B-3B (Figure 3-10A).

While soil sample recovery was poor when drilling in this area, the vertical extent of TPH was delineated by non-detect TPH in deeper soil samples from borings UST71-B-3, UST71-B-4, and Boiler-MW-1 (Figure 3-10A).

Soil cPAH concentrations exceeding unrestricted and industrial soil screening levels occur in association with elevated Total TPH concentrations. VOC concentrations in the soil samples were less than screening levels (Table 3-10A).

The groundwater samples collected from well UST71-MW-1, located immediately downgradient of the Bunker C oil-saturated soil, contained Total TPH concentrations (1,180 to 1,580 µg/L) and total cPAH concentrations (0.44 to 0.85 µg/L) greater than respective groundwater screening levels, during both groundwater sampling events. Detected VOC concentrations were less than their respective screening levels (Table 3-10B). Figure 3-10B depicts the Total TPH, naphthalene, and total cPAH groundwater data, with exceedances highlighted, for this area. The downgradient extent of groundwater contamination is limited, with downgradient wells UST70-MW-1 and shoreline wells UST70-MW-2 and REC3-MW-1 showing no petroleum-related concentrations greater than groundwater screening levels, as discussed in sections above (see Tables 3-9B and 3-3B, respectively).

3.10.4 Opportunistic Interim Action Recommended

Aspect recommends planning for an opportunistic interim action removal of Bunker C oil-contaminated soil in the former USTs No. 71, 72, 73 area, to be conducted in coordination with mill demolition activities, and in accordance with the Interim Action Plan (Exhibit C to the Order). The available data indicate that the soil contamination exists at the former USTs and the Boiler House area to the east, and time and money would be better spent removing contaminated soil, rather than in further investigation.

Excavation would start within the area of known soil contamination (UST71-B-2, UST71-B -3, and UST71-B-4 locations), and extend laterally and vertically until soils containing TPH concentrations greater than 2,000 mg/kg are removed to the extent practicable, as confirmed by excavation soil verification sampling and analysis. If full removal of TPH-containing soils to 2,000 mg/kg is impracticable, more refined soil analyses (extractable petroleum hydrocarbons [EPH] analysis) could be collected during cleanup for calculation of risk-based, soil TPH cleanup levels coupled with assessment of empirical groundwater quality data, in accordance with MTCA.

3.11 HREC 2: Naval Reserve Parcel

The Naval Reserve Parcel includes two distinct areas of contamination where the Navy reportedly completed cleanup in 1997 to 1998: an area of petroleum contamination associated with former USTs near the shoreline, and an area of metals contamination in shallow soil at a former Firing Range farther inland. Based on the lack of information regarding cleanup of these two reported contaminated areas, the nature and extent of contamination within the former Naval Reserve Parcel was considered a data gap and was investigated as part of the Phase 2 ESA.

In February 2012 (Round 1), Aspect installed a soil boring (DP-16), and completed it as monitoring well MW-5, along the shoreline west of the former Naval Reserve Parcel (Figure 3-11A). A soil sample and groundwater sample were collected from the exploration. The well was located prior to receiving the Navy’s cleanup report with maps (Foster Wheeler, 1998), and may not be strictly downgradient of the reported petroleum-contaminated areas within the former Naval Reserve Parcel.

The only constituent detected at concentrations greater than unrestricted soil screening levels in the MW-5 soil sample was total cPAHs (0.25 mg/kg; Table 3-11A). The only constituents exceeding marine-based water quality screening levels in the groundwater sample from shoreline well MW-5 were ammonia and dissolved arsenic and copper (Table 3-11B; Figure 3-6).

3.11.1 Former USTs Area

Following preparation of the Work Plan (Aspect, 2012a) and based on review of the Foster Wheeler (1998) report, the locations for two of the Round 2 soil borings in the former USTs Area (NRP-B-2 and NRP-B-7) were adjusted southward to provide better coverage of the area south of the former excavation. The excavation extent was inferred from the unscaled maps in Foster Wheeler (1998).

Round 2 Data Collection

The Round 2 data collection for this area included the following (Figure 3-11A):

- Advanced and sampled soil from nine soil borings (NRP-B-1 through NRP-B -5, NRP-B-7, NRP-B-8, NRP-MW-2, and NRP-MW-3). Boring NRP-B-6 encountered 4 feet of gravel (probable excavation backfill) and then encountered refusal; the same conditions were encountered in another attempt a few feet away and no samples were collected at that location. Based on field screening information, analyzed soil samples from each boring for gasoline-, diesel-/oil-range TPH, VOCs, PAHs, and priority pollutant metals;

- Based on the field screening during drilling of borings NRP-B-1 through NRP-B -8, completed monitoring well NRP-MW-1 at the location with the greatest apparent TPH soil concentrations;
- Completed two monitoring wells along the shoreline: NRP-MW-2 downgradient (west) of the former USTs and NRP-MW-3 near where soil mercury was reported at 14 mg/kg (less than screening level) in Foster Wheeler (1998); and
- Collected a groundwater sample from the three new monitoring wells plus previously installed well MW-5 for analysis of gasoline- and diesel-/oil-range TPH, VOCs, low-level PAHs, dissolved priority pollutant metals, and TSS. Groundwater samples from the shoreline wells MW-5, NRP-MW-2, and NRP-MW-3 were also analyzed for SVOCs, ammonia, and dissolved sulfide.

Round 3 Data Collection

The Round 3 data collection for this area included the following (Figure 3-11A):

- Advancing and sampling soil from six borings, NRP-B-17 through NRP-B-22. Borings NRP-B-17 through NRP-B-21 were advanced to better define the extents of soil TPH exceedances at Round 2 borings NRP-B-2 and NRP-B-7, while NRP-B-22 was advanced in the approximate center of the inferred USTs excavation area (Figure 3-11A). Based on field screening information, analyzed soil samples from each boring for gasoline- and diesel-/oil-range TPH, VOCs, and PAHs; and
- Conducted the dry-season groundwater sampling and analysis event for wells MW-5, NRP-MW-1, NRP-MW-2, and NRP-MW-3, repeating the Round 2 sampling and analyses as outlined in the Work Plan (Aspect, 2012a).

Assessment Findings

Soil Quality Data

The Phase 2 ESA soil data confirmed soil TPH exceedances within and to the south of the former UST excavation. No TPH exceedances were detected north of the former USTs. Figure 3-11A depicts the TPH soil data, with exceedances highlighted, for the former USTs Area of the Naval Reserve Parcel.

Within the apparent footprint of the former USTs excavation, boring NRP-B-22 contained gasoline-range TPH (230 mg/kg) and Total TPH (21,500 mg/kg) at concentrations greater than the respective screening levels in the soil sample collected from a depth of 11 to 12 feet; shallower and deeper soil samples (7 to 8 feet and 15.5 to 16.5 feet, respectively) did not contain detectable TPH (Figure 3-11A). The detected concentrations of TPH in soil at boring NRP-B-22 are less than the diesel-range TPH concentration detected at the base of the cleanup excavation (42,000 mg/kg at 12 feet) during the 1997 UST removal and soil cleanup (Foster Wheeler, 1998). A review of the chromatogram for the 11- to 12-foot sample collected from boring NRP-B-22 indicates that the Total TPH consists of Diesel #2 fuel, consistent with the former UST at that location.

To the north of the former UST area, no soil metals exceedances were detected in the soil sample from NRP-B-1, located in the area of prior reported soil mercury detection adjacent to the former flammable materials storage shed. In fact, mercury was not detected in the NRP-B-1 soil sample.

To the south of the former USTs excavation is a broader extent of soil TPH exceedances identified by soil samples collected from borings NRP-B-2, NRP-B-7, and NRP-B-17 through NRP-B-21 (Figure 3-11A). Exceedances of gasoline-range TPH and/or Total TPH were detected at depths ranging from 7 to 11.5 feet (near water table) at each of the borings with the exception of boring NRP-B-18. Excluding one sample from boring NRP-B-17, no exceedances of PAHs or VOCs were detected in these borings.

A review of the chromatograms for soil samples collected from borings completed south of the former USTs excavation indicates the presence of the following hydrocarbon types:

- At boring NRP-B-7, a creosote-like product, not a fuel, which is consistent with the high PAH concentrations;
- Weathered gasoline and lube oil at NRP-B-2; and
- Borings NRP-B-17, NRP-B-18, NRP-B-19, NRP-B-20, and NRP-B-21 show a similar combination of TPH compounds, suggesting a naphthalene-type product, jet fuel or kerosene, and motor oil.

The lateral extent of soil TPH exceedances in this area has not been delineated.

Groundwater was encountered during drilling at depths ranging from 5 to 11 feet, which generally corresponds to the vertical location of soil TPH exceeding screening levels. The soil hydrocarbon contamination appears to be limited vertically to soil at or just below the water table and does not extend deeper than approximately 15 feet bgs.

Despite the soil TPH exceedances in the water table smear zone, groundwater exceedances have not been detected in downgradient wells, as outlined below.

Groundwater Quality Data

Despite the elevated soil TPH concentrations detected within the former USTs area, TPH-related (TPH, VOCs, PAHs) exceedances have not been detected in the four downgradient monitoring wells (MW-5, NRP-MW-1, MW -2, and MW-3) during the Phase 2 ESA (Table 3-11B). In fact, the only TPH detection is gasoline-range hydrocarbons at the analytical reporting limit (100 µg/L) during Round 2 sampling in well NRP-MW-1, located within a few feet downgradient of boring NRP-B-2, where 4,440 mg/kg gasoline-range TPH was detected in soil; gasoline-range TPH was not detected in the Round 3 groundwater sample. The detected low groundwater hydrocarbon concentrations are consistent with groundwater data reported in Foster Wheeler (1998), and indicates the fuel is heavily weathered after decades in the ground. Figure 3-11B depicts the TPH, naphthalene, and total cPAH data for groundwater samples in this area.

As observed throughout the Upland Area, concentrations of arsenic and copper in groundwater exceed screening levels in one or more groundwater samples. Through the three rounds of groundwater monitoring, dissolved copper concentrations (7.1, 5.2, and 15.9 µg/L) detected at shoreline well MW-5 exceeded the 3.1 µg/L screening level. The Round 3 groundwater sample from this well also contained a dissolved arsenic concentration (6.7 µg/L) exceeding its 5 µg/L screening level; the Round 1 and Round 2 concentrations (4.7 and 3.9 µg/L) were less than the screening level. Copper concentrations detected in one sample each from wells NRP-MW-3 (3.6 µg/L dissolved) and NRP-MW-4 (9.2 µg/L total) also exceeded the screening level.

SVOC and VOC concentrations did not exceeded groundwater screening levels. The ammonia concentrations detected in the four wells exceeded the screening level, and showed considerable spatial variability (0.38 mg/L at NRP-MW-2 to 15.7 mg/L in NRP-MW-3 located 50 feet away). Dissolved sulfide concentrations ranged from 0.24 mg/L at NRP-MW-3 to 3.0 mg/L at MW-5 (Table 3-11B). Groundwater exceedances for these wells are shown on Figure 3-6, along with the other shoreline wells.

3.11.2 Former Firing Range Area

The soil sampling and analysis proposed in the Work Plan (Aspect, 2012a) provided spatial coverage of the former Firing Range area, since at the time there was no information available regarding removal of shallow metals-contaminated soil in that area. Because the Foster Wheeler (1998) report provides no specific information regarding location of the soil removal completed, no changes were made to the sampling program defined in the Work Plan.

Round 2 Data Collection

The Round 2 data collection for this area included the following (Figure 3-11C):

- Advanced and sampled soil from depths of 0 to 1 and 3 to 4 feet in eight soil borings (NRP-B-9 through NRP-B-16) for analysis of priority pollutant metals; and
- Completed monitoring wells NRP-MW-4 and NRP-MW-5 along the downgradient (western) edge of the inferred metals-contaminated area, and analyzed groundwater samples from them for dissolved and total priority pollutant metals and TSS.

Round 3 Data Collection

The Round 3 data collection for this area included the following:

- Repeated the Round 2 groundwater sampling and analyses for wells NRP-MW-4 and NRP-MW-5.

Assessment Findings

Two of 16 shallow soil samples had low-level arsenic exceedances (35 and 22 mg/kg in 0- to 1-foot samples from NRP-B-10 and NRP-B -15, respectively). No other metals concentrations exceeded soil screening levels (Table 3-11A). Figure 3-11C depicts the detected soil exceedances for this area. No field screening evidence of petroleum was observed during drilling in this area; therefore, petroleum-related analyses were not conducted for the soil samples, in accordance with the Work Plan.

One of the two wells, NRP-MW-4, had a detected exceedance for total copper (9.2 µg/L) during the Round 2 sampling event; the dissolved copper concentration (1.09 µg/L) was less than the 3.1 µg/L screening level for that same event, suggesting turbidity bias to the total copper result. No other metals concentrations exceeded groundwater screening levels in either well during either sampling event (Table 3-11B).

3.11.3 Opportunistic Interim Action Recommended

Aspect recommends planning for an opportunistic interim action removal of TPH-contaminated soil in the former USTs excavation area, to be conducted in coordination with mill demolition activities, and in accordance with the Interim Action Plan (Exhibit C to the Order). The available data indicate that the soil contamination exists at the former USTs and the Boiler House area to the east, and time and money would be better spent removing contaminated soil, rather than in further investigation. Excavation would start within the area of known soil contamination (NRP-B-22 location), and extend laterally and vertically until soils containing TPH concentrations greater than 2,000 mg/kg are removed to the extent practicable, as confirmed by excavation soil verification sampling and analysis. If full removal of TPH-containing soils to 2,000 mg/kg within the former USTs excavation area is impracticable, more refined soil analyses (EPH analysis) could be collected during cleanup for calculation of risk-based, soil TPH cleanup levels coupled with assessment of empirical groundwater quality data, in accordance with MTCA. Interim action removal of soils south of the excavation area is not recommended at this time, pending more detailed contaminant delineation and assessment as part of the RI/FS.

3.12 Log Pond Fill Area

The mill’s wood chip storage area was historically a log pond that, by the late 1970s, was filled to create upland used for materials storage. The composition and source of the fill material is uncertain (AECOM, 2011). Soil and groundwater quality data were collected to assess the chemical quality of the fill underlying the wood chips, and of groundwater along the shoreline downgradient of the fill to assess the Log Pond area as a potential source of contaminants to the East Waterway.

3.12.1 Round 1 Data Collection

The Round 1 data collection for this area included the following activities (exploration locations shown on Figure 3-12):

- Advanced six soil borings (MW-6 and DP-18 through DP-22) for the purposes of field screening for the presence or absence of VOCs and collecting soil samples for chemical analysis;
- From each boring, collected one sample of fill soil for laboratory analysis of total metals[12] (arsenic, cadmium, total chromium, copper, lead, mercury, nickel, selenium, silver, and zinc); gasoline-, diesel-, and oil-range TPH; PCBs; and the full suite of SVOCs;
- Completed the boring nearest the downgradient edge of the fill, proximate to the East Waterway shoreline, as a groundwater monitoring well (MW-6); and
- Collected a groundwater sample from shoreline well MW-6 during an outgoing tide, and analyzed the sample for gasoline-range TPH with BTEX, diesel- and oil-range TPH, SVOCs (including low-level PAHs), dissolved metals (arsenic, cadmium, total chromium, copper, lead, mercury, nickel, selenium, silver, and zinc), TDS, and TSS. Groundwater field parameters were also measured in the field.

---

[12] Metals that have a marine water quality standard under state or federal laws.

3.12.2 Round 2 Data Collection

The Round 2 data collection for this area included the following:

- Sampled groundwater from shoreline well MW-6 for analysis of gasoline-range TPH, diesel-/oil-range TPH, VOCs, low-level PAHs, total and dissolved priority pollutant metals, SVOCs, ammonia, dissolved sulfide, and TSS.

3.12.3 Round 3 Data Collection

The Round 3 data collection for this area included the following:

- Conducted the dry-season groundwater sampling and analysis event for well MW-6, repeating the Round 2 sampling and analyses as outlined in the Work Plan (Aspect, 2012a).

3.12.4 Assessment Findings

Detected concentrations of gasoline-range TPH, diesel-/oil-range TPH, BTEX, metals, SVOCs, and PCBs in the six Round 1 samples of Log Pond Fill soil were less than unrestricted soil screening levels (Table 3-12A).

Low-level arsenic and copper exceedances (up to 7.8 and 5.3 µg/L respectively) were detected in groundwater samples collected during each of the three rounds of sampling at well MW-6. Additionally, nickel was detected at a concentration (10.5 µg/L) exceeding the screening level in the Round 3 groundwater sample collected from well MW-6. The metals concentrations are attributable to the reducing groundwater conditions in the fill. The Rounds 2 and 3 groundwater samples from well MW-6 did not contain detectable TPH, VOCs, SVOCs including PAHs, or dissolved sulfide. The ammonia concentrations detected at well MW-6 (15.5 and 15.6 mg/L) are the greatest detected at the Upland Area shoreline wells, with the exception of the Round 3 data collected from well NRP-MW-03 (15.7 mg/L) (Table 3-12B). Figure 3-12 depicts the groundwater exceedances for well MW-6, and Figure 3-6 displays the groundwater exceedances for it and the other shoreline wells.

3.13 Acid Plant

Potential acidic releases from the Acid Plant can leach metals from equipment and piping, and/or potentially leach naturally occurring metals from soils. The assessment evaluated groundwater pH and metals within the Acid Plant as an indicator of potential acidic releases.

3.13.1 Round 2 Data Collection

The Round 2 data collection for this area included the following (Figure 3-13):

- Advanced boring AP-MW-1 at an accessible location on the edge of the Acid Plant tank farm, sampled soil from the boring at depths of 1 to 2 feet bgs and just below the water table, and analyzed the soil samples for priority pollutant metals and soil pH; and
- Collected a groundwater sample from the well for analysis of total and dissolved priority pollutant metals and TSS. Groundwater pH is a field parameter measured for each groundwater sample collected.

3.13.2 Round 3 Data Collection

The Round 3 data collection included the following:

- Conducted the dry season-groundwater sampling and analysis event at well AP-MW-1, repeating the Round 2 sampling and analysis.

3.13.3 Assessment Findings

The soil and groundwater sampling from AP-MW-1 provides no indication for acidic release. Soil pH and groundwater pH were both near neutral (soil pH of 7.4 to 7.5; groundwater pH of 7.2 in both rounds). Metals concentrations detected in the soil and groundwater samples were less than respective screening levels, except groundwater dissolved copper, which was detected during the Round 3 sampling event at a concentration of 7.1 μg/L (was less than the 1 μg/L reporting limit in Round 2 sample). The soil and groundwater quality data for this area are presented in Tables 3-13A and 3-13B, respectively.

There was no field screening evidence of petroleum contamination during drilling of AP-MW-1; therefore, the soil and groundwater samples were not analyzed for petroleum-related compounds, in accordance with the Work Plan (Aspect, 2012a).

3.14 Central Maintenance Shop

A variety of hazardous materials may have historically been used in the Central Maintenance Shop/Old Auto Shop; therefore, assessment of soil and groundwater quality at the existing shop was conducted as part of the assessment.

3.14.1 Round 2 Data Collection

The Round 2 data collection for this area included (Figure 3-14):

- Cored through the concrete floor of the shop and advanced by hand auger three soil borings to depths of 3 feet (CMS-B-1 through CMS-B-3). From each boring, collected soil samples from depths of 0 to 1 and 2 to 3 feet for analysis of gasoline-range TPH, diesel-/oil-range TPH, VOCs, PAHs, priority pollutant metals, and PCBs; and
- Completed monitoring well CMS-MW-1 immediately downgradient (west) of the shop, and analyzed the groundwater sample from the well for gasoline-range TPH, diesel-/oil-range TPH, low-level PAHs, VOCs, total and dissolved priority pollutant metals, and TSS.

3.14.2 Round 3 Data Collection

The Round 3 data collection included the following:

- Conducted the dry-season groundwater sampling and analysis event for well CMS-MW-1, repeating the Round 2 sampling and analyses.

3.14.3 Assessment Findings

Detected concentrations of TPH, VOCs, PAHs, and metals were less than unrestricted soil screening levels in each of the six soil samples. Total PCB concentrations greater than the 1 mg/kg unrestricted soil screening level, and less than the 10 mg/kg industrial soil screening level, were detected in soil samples from two of three borings (Table 3-14A; Figure 3-14):

- 2.15 mg/kg in 0- to 1-foot sample from CMS-B-2. The 2- to 3-foot sample had a concentration (0.85 mg/kg) less than the unrestricted soil screening level; and
- 2.55 mg/kg and 2.15 mg/kg in 0- to 1-foot and 2- to 3-foot samples, respectively, from CMS-B-3.

For this assessment, total PCBs were calculated using one half the reporting limit for non-detected Aroclors, as the MTCA default. Only Aroclors 1254 and 1260 were detected in the samples. If site-wide data demonstrate the absence of certain Aroclors, the total PCB summation can be adjusted to include only detected Aroclors.

The groundwater samples collected during both sampling rounds from well CMS-MW-1 contained concentrations of Total TPH, naphthalene , and total cPAH (TEQ) greater than respective screening levels (Table 3-14B). Review of the TPH chromatogram, in combination with the high naphthalene to petroleum ratio, suggests a creosote-like source, not a fuel source. Figure 3-14 depicts the soil and groundwater exceedances for this area.

3.15 Old Machine Shop

As with the Central Maintenance Shop, a variety of hazardous materials may have historically been used in the Old Machine Shop; therefore, assessment of soil and groundwater quality at the existing shop was conducted as part of the assessment.

3.15.1 Round 2 Data Collection

The Round 2 data collection for this area included the following (Figure 3-15):

- Cored through the concrete floor of the shop and advanced by hand auger three soil borings to depths of 3 feet (OMS-B-1 through OMS-B-3). From each boring, collected soil samples from depths of 0 to 1 and 2 to 3 feet for analysis of gasoline-range TPH, diesel-/oil-range TPH, VOCs, PAHs, priority pollutant metals, and PCBs; and
- Completed monitoring well OMS-MW-1 downgradient (south) of the shop and analyzed the groundwater sample from the well for gasoline-range TPH, diesel-/oil-range TPH, low-level PAHs, VOCs, dissolved priority pollutant metals, SVOCs, ammonia, dissolved sulfide, TSS.

3.15.2 Round 3 Data Collection

The Round 3 data collection included the following:

- Conducted the dry-season groundwater sampling and analysis event for well OMS-MW-1, repeating the Round 2 sampling and analyses.

3.15.3 Assessment Findings

Detected concentrations of TPH and VOCs in each of the six soil samples were less than unrestricted soil screening levels. Detected concentrations of total cPAHs (0.462 mg/kg) and lead (378 mg/kg) in the 2- to 3-foot soil sample from OMS-B-3 were greater than their respective unrestricted soil screening levels but less than industrial soil screening levels. Total PCB concentrations greater than the 1 mg/kg unrestricted soil screening level were detected in both soil samples from boring OMS-B-3 (1.4 and 2.2 mg/kg); both were less than the 10 mg/kg industrial soil screening level. Only Aroclor 1254 was detected in the samples (Table 3-15A). Figure 3-15 depicts the soil exceedances for this area.

The groundwater samples from well OMS-MW-1 did not contain detected concentrations of TPH, PAHs, VOCs, metals, SVOCs or ammonia greater than their respective groundwater screening levels during the groundwater sampling rounds; ammonia and dissolved nickel were detected at concentrations greater than the screening levels in the groundwater samples collected during Round 3 (Table 3-15B). Well MW-1, installed to characterize REC 2, is also positioned downgradient of the east end of the Old Machine Shop, and had dissolved copper and nickel concentrations exceeding respective screening levels in the Round 3 groundwater samples. Figure 3-15 depicts the groundwater exceedances for this area, including surrounding wells.

3.16 Boiler/Baghouse Area

Biomass including wood chips and hog fuel, and reportedly other materials including scrap rubber and solvents, were historically burned in the boilers; therefore, the assessment included soil sampling and analysis for dioxins/furans, metals, SVOCs, and VOCs.

3.16.1 Round 2 Data Collection

The Round 2 data collection for this area included the following (Figure 3-16):

- Advanced and sampled soil from five hand-augered soil borings (Boiler-B-1 through Boiler-B -5) positioned around the collective perimeter of the existing Boiler No. 10, Boiler No. 14, and No. 7, 8, & 9 Old Boiler, Fly Ash Clarifier, and Baghouse structures. From each boring, collected one soil sample from a depth of 1 to 2 feet for analysis of VOCs, SVOCs, priority pollutant metals, and dioxins/furans. Also analyzed the Boiler-B-3 sample for diesel-/oil-range TPH based on the presence of petroleum in the sample.

3.16.2 Round 3 Data Collection

The Round 3 data collection for this area included the following (Figure 3-16):

- Sampled soil at depths between 0 and 3 feet from hand-augered borings Boiler-HA-2A, Boiler-HA-2B, and Boiler-HA-2C located on three sides of Round 2 boring Boiler-B-2, where 1,870 mg/kg lead had been detected in shallow soil. Analyzed one to two soil samples collected from each boring for analysis of lead, arsenic, diesel-/oil-range TPH, and PAHs;
- Sampled soil from borings Boiler-B-3A, Boiler-B-3B, and Boiler-MW-1 located in accessible locations proximate to Round 2 boring Boiler-B-3 where 108,000 mg/kg Total TPH and 342 mg/kg lead had been detected in shallow soil. Analyzed the soil samples for diesel-/oil-range TPH, PAHs, and priority pollutant metals; and
- To assess groundwater quality just downgradient of the elevated Bunker C oil soil concentrations (at Boiler-B-3), completed Boiler-MW-1 as a monitoring well and

collected a groundwater sample from the well for analysis of diesel-/oil-range TPH, low-level PAHs, dissolved priority pollutant metals, and TSS.

3.16.3 Assessment Findings

Exceedances of unrestricted soil screening levels were not detected in soil samples Boiler-B-4 and Boiler-B-5 on the north end of the area. Detected constituent concentrations exceeded unrestricted soil screening levels in Round 2 soil samples from the Boiler-B-1, Boiler B-2, and Boiler-B-3 locations on the south side of the area (Table 3-16A). Each of the three locations is described below.

Boiler-B-1 Location

At Boiler-B-1, near the southeast corner of the area, the detected 33.6 mg/kg soil arsenic concentration exceeds the 20 mg/kg unrestricted (and industrial) soil screening level.

Boiler-B-2 Location

In the 1- to 2-foot soil sample collected from Round 2 boring Boiler-B-2, at the east edge of the Baghouse, the detected soil lead concentration of 1,870 mg/kg exceeded the 1,000 mg/kg industrial screening level (and 250 mg/kg unrestricted screening level). In the 0-to-1-foot soil samples subsequently collected approximately 20 to 30 feet around boring Boiler-B-2, soil lead concentrations were greater than the industrial soil screening level to the south-southwest (1,590 mg/kg at Boiler-HA-2B), between the unrestricted and industrial soil screening levels to the east (328 mg/kg at Boiler-HA-2C), and less than the unrestricted soil screening level to the north (22 mg/kg) at Boiler-HA-2A). The results indicate that the lateral extent of surficial lead soil contamination has not been bound to the south and east. The 2- to 3-foot soil samples from Boiler-HA-2A and Boiler-HA-2C contained lead (35 and 74 mg/kg, respectively) less than the unrestricted screening level, indicating the elevated lead is vertically bounded to surficial soil (Figure 3-16). Refusal was met at a depth of 1 foot at boring Boiler-HA-2B; therefore, a deeper soil sample could not be collected and the vertical extent of lead in shallow soil has not been defined. In chemical analyses conducted to designate the lead-contaminated soil at the Boiler-B-2/Boiler-HA-2B/Boiler-HA-2C area for off-site disposal as part of the interim action, the toxicity characteristic leaching procedure (TCLP) metals concentrations indicate the soil designates as solid waste once excavated (Table 3-16A).

The detected total cPAH concentrations in the shallowest soil samples from borings Boiler-B-2, Boiler-HA-2B, and Boiler-HA-2C (0.28 to 0.50 mg/kg) were greater than the 0.14 mg/kg unrestricted screening level but less than the 2 mg/kg industrial screening level; the detected surface soil concentration at Boiler-HA-2A (0.088 mg/kg) was less than the unrestricted screening level. The detected total cPAH concentrations in the 2-to-3-foot soil samples from Boiler-HA-2A and Boiler-HA-2C were less than the unrestricted screening level (Table 3-16A). The vertical extent of cPAHs in soil at boring Boiler-HA-2B was not defined because soil could not be sampled below a depth of 1 foot (refusal).

The detected dioxins/furans concentration, expressed as Total 2,3,7,8-TCDD (TEQ) (hereafter termed TCDD [TEQ]), in the 1- to 2-foot soil sample from Boiler-B-2 was 2.7×10^{-5} mg/kg (27 ng/kg), which is greater than the 1.1×10^{-5} mg/kg (11 ng/kg) unrestricted soil screening level and less than the 1.5×10^{-3} mg/kg (1,500 ng/kg) industrial soil screening level. Although greater than the unrestricted soil screening level, the detected concentration is less than urban background TCDD (TEQ) soil concentrations measured in residential neighborhoods within Bellingham, Washington (up to 3.5 x 10^{-5} mg/kg; Ecology and Environment, 2002) and Seattle, Washington (90th percentile concentration of 4.6 x 10^{-5} mg/kg; Ecology, 2011).

Boiler-B-3 Location

At hand-augered boring Boiler-B-3, near the southwest corner of the area, Bunker C oil-saturated soil (108,000 mg/kg Total TPH; 32 mg/kg total cPAH) was encountered to the 2-foot depth of exploration. In addition, the detected lead concentration (342 mg/kg) was greater than the unrestricted soil screening level but less than the industrial screening level. The detected TCDD (TEQ) concentration was 1.76 x 10^{-5} mg/kg (18 ng/kg), which is greater than the 1.1 x 10^{-5} mg/kg (11 ng/kg) unrestricted soil screening level, but less than the 1.5 x 10^{-3} mg/kg (1,500 ng/kg) industrial screening level and less than urban background concentrations as described above for sample Boiler-B-2.

TPH and metals were detected in the Round 3 borings, as detailed below:

- Bunker C Oil:
    - At Boiler-MW-1 (30 feet northwest of Boiler-B-3), Total TPH was detected at a concentration of 24,000 mg/kg in the 12- to 13-foot soil sample (low or non-detect TPH in 10- to 11-foot and 16- to 17-foot samples). TPH was detected at less than the 2,000 mg/kg screening level at borings Boiler-B3A and -B-3B located north and south, respectively, of boring Boiler-B-3. The apparently localized TPH at Boiler-B-3 and Boiler-MW-1 may be associated with a pipeline from the former Bunker C oil USTs No. 71, 72, and 73 (just to the west) to the Boiler House.
    - The groundwater sample from well Boiler-MW-1 had no detectable dissolved-phase TPH and only a marginal cPAH exceedance (0.021 µg/L total cPAH [TEQ]), even though the well is screened across the depth interval in which 24,000 mg/kg soil TPH was detected. Negligible naphthalene was detected in the groundwater sample (0.12 µg/L; Table 3-16B). The groundwater data suggest limited mobility of the residual Bunker C oil in this area.
- Metals:
    - Soil concentrations of arsenic, cadmium, and/or lead were greater than industrial screening levels in shallow soil samples (1 to 2 feet) collected from borings Boiler-B-3A and -3B (Figure 3-16); therefore, the lateral extent of surficial metals soil contamination is not bound in this area. However, metals concentrations detected in the deeper soil samples (4 to 5 feet) collected at these locations were less than industrial and unrestricted soil screening levels, indicating that the vertical extent is bound.
    - The only detected metal exceeding screening levels in the groundwater sample from well Boiler-MW-1 was dissolved copper at 17.2 µg/L (greater than the screening level of 3.1 µg/L). The groundwater data indicate that the elevated concentrations of arsenic, cadmium, and lead in

the adjacent surficial soil are not leaching to groundwater at concentrations of concern.

- In chemical analyses conducted to designate the metals-contaminated soil at the Boiler-B-3/Boiler B-3B area for off-site disposal as part of the interim action, the non-detectable TCLP metals concentrations indicate the soil designates as solid waste once excavated (Table 3-16A).

3.16.4 Opportunistic Interim Action Recommended

Aspect recommends planning for an opportunistic interim action removal of metals-contaminated soil in the area of Boiler-B-3, in accordance with the Interim Action Plan (Exhibit C to Agreed Order No. DE 9476).

3.17 Hazardous Waste Cage

The hazardous waste cage is a 90-day hazardous waste accumulation area used to store wastes prior to off-site disposal; it is not a Treatment, Storage, Disposal Facility permitted under RCRA.

3.17.1 Round 2 Data Collection

The Round 2 data collection for this area included the following (Figure 3-17):

- Sampled soil from borings on three sides of the hazardous waste cage: HW-B-1, HW-B-2, and HW-MW-1. The east side is a below-grade concrete containment structure and not currently accessible for drilling. Analyzed the soil samples for VOCs, SVOCs, priority pollutant metals, and PCBs; and
- Completed immediately downgradient well HW-MW-1 and analyzed the groundwater sample from the well for VOCs, low-level PAHs, dissolved and total priority pollutant metals, and TSS.

3.17.2 Round 3 Data Collection

The Round 3 data collection for this area included the following (Figure 3-17):

- Sampled soil at depths of 0 to 1 feet, 3 to 4 feet, and 6 to 7 feet from borings HW-B-3 and HW-B-4 located west of HW-MW-1, within the former chip pile area, and analyzing the samples for lead and arsenic; and
- Conducted the dry-season groundwater sampling and analysis event for well HW-MW-1, repeating the Round 2 sampling and analyses and adding gasoline-range and diesel-/oil-range TPH analyses; however, because the water level recovers exceedingly slowly in the well, total (unfiltered) priority pollutant metals analysis was omitted from the Round 3 sampling event.

3.17.3 Assessment Findings

Lead was detected in the 3- to 4-foot soil sample from HW-MW-1 at a concentration (303 mg/kg) greater than the unrestricted soil screening level and less than the industrial screening level. The detected lead concentrations in the shallower and deeper soil samples from the boring were less than the unrestricted screening level (198 mg/kg and 115 mg/kg, respectively). Lead was detected at less than the unrestricted screening level in each of the soil samples collected from adjacent borings HW-B-3 and HW-B-4 (up to

53.6 mg/kg), laterally bounding the extent of lead exceedance detected at boring HW-MW-1 (Figure 3-17). Arsenic was detected at concentrations (20.6 mg/kg and 26 mg/kg) marginally exceeding the 20 mg/kg screening level in the soil samples collected from borings HW-MW-1 and HW-B-3 at a depth of 0 to 1 foot; the 3- to 4-foot soil samples from both borings were less than the screening level (Table 3-17A).

The detected total cPAH concentration in the 3- to 4-foot sample from HW-B-2 (0.162 mg/kg) marginally exceeded the 0.14 mg/kg unrestricted soil screening level, but was well below the industrial screening level of 2 mg/kg. No detected concentrations of SVOCs other than cPAHs, or VOCs, or PCB exceeded unrestricted screening levels in soil samples collected from borings HW-MW-1, HW-B-1, HW-B-2, or HW-B-3 (Table 3-17A).

The groundwater samples collected from well HW-MW-1 contained dissolved concentrations of arsenic (Round 2 at 14.9 µg/L and Round 3 at 25.9 µg/l), copper (Round 2 only at 8.3 µg/L), and nickel (Round 2 only at 30 µg/L) greater than respective groundwater screening levels. Dissolved copper and nickel concentrations were less than screening levels in the Round 3 samples. Note that the well is completed in silt and is slow to produce groundwater (samples collected over 2 days). Exceedances for VOCs, or PAHs were not detected in either of the groundwater samples; and TPH was not detected in the Round 3 sample (Table 3-17B).

3.18 Diesel AST Area

Diesel, used as an emergency fuel for the boilers from 1996 until mill closure, was stored in a 250,000-gallon AST located within a secondary containment structure immediately northeast of the Distribution Warehouse. West of the Diesel AST is the Diesel Pump House (Figure 3-18A).

3.18.1 Round 2 Data Collection

The Round 2 data collection for this area included the following (Figure 3-18A):

- Installed and sampled soil from a monitoring well boring (REC2-MW-5[13]) located downgradient of the existing 250,000-gallon diesel AST immediately north of the Distribution Warehouse. Based on field screening information, analyzed the soil samples for diesel-/oil-range TPH and PAHs; and
- Collected a groundwater sample from monitoring well REC2-MW-5 for analysis of gasoline-range TPH, diesel-/oil-range TPH, VOCs, low-level PAHs, and TSS.

3.18.2 Round 3 Data Collection

The Round 3 data collection for this area included in the following (Figure 3-18A):

- Drilled soil borings DA-B-1 on the downgradient (west) side of the Diesel AST, and DA-MW-1 on the downgradient (west) side of the Diesel Pump House. Collecting three soil samples from each boring (at depths of 1 to 2 feet, 5 to 6 feet, and 7 to 8 feet) for analysis of diesel-/oil-range TPH and PAHs; and

---

[13] Originally installed for characterization of REC 2(Section 3.2), but subsequently included as part of this area.

- Completed a monitoring well at DA-MW-1 and sampled groundwater from wells DA-MW-1 and REC2-MW-5 for diesel-/oil-range TPH, low-level PAHs, VOCs, and TSS.

3.18.3 Assessment Findings

West of the Diesel AST, Total TPH was detected at 5,030 mg/kg (predominantly oil-range TPH) in the upper 2 feet of soil at REC2-MW-5. The underlying 2.5- to 3.5-foot and 7- to 8-foot (at water table) soil samples had no detectable TPH (Figure 3-18A). The surficial detection of oil at this location does not appear related to the Diesel AST. Groundwater samples collected during Rounds 2 and 3 at well REC2-MW-5 contained detectable diesel-range TPH (up to 97 μg/L), which is less than the screening level, and VOCs and cPAHs were not detected.

Field screening during the advancement of Round 3 borings DA-B-1 and DA-MW-1 did not indicate signs of petroleum contamination. Consistent with these observations, TPH was not detected above 75 mg/kg in any of the soil samples collected from these borings (Table 3-18A). TPH was not detected in the groundwater sample collected from well DA-MW-1. Total cPAHs were detected in the groundwater sample at 0.019 μg/L, marginally exceeding the 0.018 μg/L screening level, but were less than the screening level in the field duplicate sample (Table 3-18B; Figure 3-18B).

The data indicate no release from the Diesel AST and pump system, which operated starting in the 1990s. While boring/well REC5-MW-5 is located near the Diesel AST, the oil-range TPH detected in shallow soil there is likely not associated with the recent diesel fuel operations.

3.19 Hydraulic Barker Building

The Hydraulic Barker Building was located on the east side of the Log Pond Fill (Figure 3-19) from before 1947 until sometime after 1992. High-pressure water was used to remove bark from logs at the building.

3.19.1 Round 3 Data Collection

The Round 3 data collection for this area included the following (Figure 3-19):

- Drilled and sampled soil borings HB-B-1, HB-B-2, HB-B-3, and HB-MW-1 within the footprint of the Hydraulic Barker Building. Soil samples were collected at three depth intervals from each boring to a maximum depth of 7 feet and analyzed for diesel-/oil-range TPH, VOCs, SVOCs, and priority pollutant metals. The shallowest soil samples were also analyzed for PCBs; and
- Completed HB-MW-1 as a monitoring well, and analyzed the groundwater sample collected from it for diesel-/oil-range TPH, low-level PAHs, SVOCs, VOCs, dissolved priority pollutant metals, and TSS.

3.19.2 Assessment Findings

Total TPH, consisting predominantly of oil-range TPH, was detected at a concentration of 3,390 mg/kg in soil collected from a depth of 1 to 1.5 feet at boring HB-B-2. The 5- to 6-foot sample from the boring contained a Total TPH concentration of 2,000 mg/kg (equal to the screening level), and the 6- to 7-foot sample contained no detectable TPH

(Table 3-19A). TPH was detected at concentrations less than the screening level in samples collected at HB-MW-1 (up to 1,440 mg/kg), and was not detected in soil samples collected at borings HB-B-1 and HB-B-3. Benzene was detected at 0.036 mg/kg, marginally exceeding the 0.03 mg/kg screening level, in the soil sample collected from boring HB-B-1 at 6- to 7-feet (Figure 3-19); no other VOCs were detected in the sample and no VOCs were detected in the other 11 soil samples collected from the area. A total cPAH concentration (0.83 mg/kg) exceeds the unrestricted screening level but is less than the industrial screening level; this total cPAH concentration was detected in the 3- to 3.5-foot soil sample collected from boring HB-MW-1, where TPH was detected at less than screening levels. Shallower and deeper soil samples from boring HB-MW-1 contained total cPAH concentrations that were less than the unrestricted screening level. Metals concentrations detected in the 12 soil samples were less than respective unrestricted screening levels (Table 3-19A).

The groundwater sample collected from well HB-MW-1 contained no detectable TPH, SVOCs (including PAHs), or VOCs, and dissolved metals concentrations were less than respective screening levels (Table 3-19B).

3.20 General Fill Soil Quality

Because of the uncertain composition and source of the fill upon which the mill facility was constructed, and the mill’s long-term industrial operations, a general assessment of the fill soil quality outside of other operational areas was conducted.

3.20.1 Round 2 Data Collection

The Round 2 data collection for this area included the following (Figure 3-20A):

- Advanced and sampled soil from 15 soil borings (GF-B-1 through GF-B-15A) in accessible locations spread across the Upland Area. Boring GF-B-15A was a replacement boring, located a few feet from GF-B-15 which had poor soil recovery that limited soil sample collection. Twelve of the General Fill borings (GF-B-1, -2, -3, -4, -5, -6, -7, -10, -11, -13, -14, and -15A) were drilled using a hollow-stem auger to collect geotechnical information (blow counts) in addition to the environmental sampling; and
- From each boring, collected soil samples generally at depths of 1 to 2.5 feet and 7.5 to 9.0 feet below grade, subject to soil recovery. Where inadequate soil volume was recovered to conduct the required analyses, a second sample was collected immediately beneath the target depth interval for the additional analyses. Each soil sample was analyzed for gasoline-range TPH, diesel-/oil-range TPH, VOCs, SVOCs, priority pollutant metals, PCBs, and total organic carbon. In addition, the 1- to 2.5-foot soil sample from each boring was analyzed for dioxins/furans. At borings GF-B-1 and GF-B-2 in the northernmost portion of the Upland Area, at least 10 feet of wood waste with no soil was present below depths of about 5 to 6 feet; therefore, the intended deeper soil sample (7.5 to 9 feet) was not collected from these borings.

3.20.2 Round 3 Data Collection

The Round 3 data collected for this area included the following (Figure 3-20A):

- Drilled three soil borings (GF9-B-1, GF9-B-2, and, GF9-MW-1) to the north, east, and west of Round 2 boring GF-B-9, where elevated diesel-range TPH had been detected. Collected soil samples from each boring at depths of 4 to 5 feet below grade, at the water table depth observed during drilling, and 3 to 4 feet below the water table, and analyzed them for diesel-/oil-range TPH and PAHs;
- Completed boring GF9-MW-1 as a monitoring well downgradient of boring GF-B-9, and collected a groundwater sample from it for analysis of diesel-/oil-range TPH, low-level PAHs, and TSS; and
- Drilled three soil borings (GF11-B-1, GF11-B-2, and, GF11-B-3) to the west, north, and east of Round 2 boring GF-B-11, where elevated lead had been detected. Collected soil samples for lead analysis from each boring at depths of 0 to 1 foot, 2 to 3 feet, and 5 to 6 feet below grade. A soil sample was also collected at a depth of 7 to 8 feet from boring GF11-B-2.

3.20.3 Assessment Findings

The soil quality data for the General Fill borings are tabulated in Table 3-20A, and the detected soil concentrations exceeding unrestricted soil screening levels are shown on Figure 3-20A.

Detected concentrations of gasoline-range TPH, VOCs other than methylene chloride, SVOCs other than cPAHs, metals other than lead, and PCBs were less than soil screening levels for unrestricted use. Soil concentrations of diesel-/oil-range TPH, total cPAHs, lead, methylene chloride, and dioxins/furans exceeded screening levels in one or more General Fill soil samples, as described below.

Diesel- or oil-range TPH exceedances (with PAH exceedances) were detected in soil at two of the General Fill boring locations:

- **GF-B-9:** 6,520 mg/kg diesel-range TPH was detected in the 7.5- to 9-foot soil sample (saturated soil), but not in the sample collected above the water table. TPH was detected in saturated soil at each of the three surrounding Round 3 borings, but only exceeded the screening level at boring GF-B-2 (5,600 mg/kg), located east (upgradient) of GF-B-9. TPH was not detected in soil samples collected above the water table in the three Round 3 borings. The data suggest a TPH source east (upgradient) of boring GF-B-2. Total cPAH concentrations exceeded the unrestricted screening level in the samples of saturated soil from each of the Round 3 borings, consistent with the TPH detections. The 3.5 mg/kg total cPAH concentration detected in saturated soil at GF9-MW-1 also exceeded the industrial screening level; the relatively higher concentrations of non-carcinogenic PAHs (e.g., naphthalene, anthracene, fluorene, fluoranthene, phenathrene, pyrene) in this sample suggest a creosote-like source for the PAHs.
- **GF-B-14:** 7,800 mg/kg oil-range TPH, and associated total cPAH (1.43 mg/kg TEQ), were detected in the 1- to 2.5-foot soil sample. TPH was not detected in the 7.5- to 9-foot sample from the boring. The oil-range TPH in shallow soil at this location is on the edge of similar contamination associated with REC 2 (Section 3.2), and is likely associated with the former petroleum storage in that area.

Lower concentrations of diesel-/oil-range TPH, up to about 1,000 mg/kg and well below the unrestricted soil screening level, were detected in one or more soil samples from several General Fill borings (GF-B-4, GF-B-5, GF-B-6, GF-B-7, and GF-B-15A). Exceedances for gasoline-range TPH were not detected in the General Fill soil samples.

In addition to the GF-B-14 sample, total cPAH concentrations greater than the unrestricted soil screening level were detected at General Fill borings GF-B-3 (1.6 mg/kg and 0.34 mg/kg in 7.5- to 9- and 11- to 12.5-foot soil samples, respectively) and GF-B15A (0.28 mg/kg in 25- to 26.6-foot sample). Detected total cPAH concentrations did not exceed the 2 mg/kg industrial soil screening level.

Lead was detected at a concentration (659 mg/kg) greater than the unrestricted soil screening level, but less than the industrial screening level in the 1- to 2.5-foot sample from boring GF-B-11. The deeper 7.5- to 9-foot sample from the boring contained only 15 mg/kg lead. The soil samples collected at the surrounding Round 3 borings GF11-B-1, GF11-B-2 and GF11-B-3 contained lead concentrations ranging from 7.09 mg/kg to 44.6 mg/kg, all of which are less than the unrestricted screening level. The Round 3 data generally bound the lateral extent of the shallow soil lead exceedance at the GF-11 location. In chemical analyses conducted to designate the lead-contaminated soil for off-site disposal as part of the interim action, the detected TCLP lead concentration (40 mg/L) indicates the soil designates as characteristic hazardous waste once excavated (Table 3-20A).

Methylene chloride was detected in the 7.5- to 9-foot sample from GF-B-12 at a concentration of 0.5 mg/kg, equal to the analytical reporting limit. Methylene chloride is a solvent used in analytical laboratories and is recognized by the EPA as a common laboratory contaminant (EPA, 2008). The 0.02 mg/kg unrestricted (and industrial) soil screening level applied in this assessment is the MTCA Method A soil cleanup level, which is based on leaching to protect groundwater used for drinking water. Groundwater in the fill is not a practicable drinking water source, and the most stringent groundwater screening level for methylene chloride applied in this assessment is 94 µg/L, based on vapor intrusion (Table 3-20B), approximately 18 times higher than the 5 µg/L drinking water criterion. Methylene chloride has not been detected in Upland Area groundwater. The lone detection of methylene chloride in soil at GF-B-12 is greater than the soil screening level applied in this assessment, but methylene chloride is not a constituent of concern (COC) for the Upland Area based on the collective data to date.

Dioxins/furans (TCDD [TEQ]) were detected at a concentration greater than the 1.1×10^{-5} mg/kg unrestricted soil screening level in one of the 15 General Fill borings: 1.48×10^{-5} mg/kg at GF-B-5. The detected dioxins/furans concentrations in the General Fill borings, including the GF-B-5 exceedance, are representative of urban background soil concentrations in Seattle and Bellingham, Washington, as described in Section 3.16.

In addition to the Upland Area soil dioxin/furan concentrations being comparable to urban soils in Seattle and Bellingham, Washington, the relative distribution of dioxin and furan congener groups in the soils from different urban areas are also similar. The octa-chlorinated dioxin congener group (OCDD) comprises the majority of the total dioxin and furan concentrations in the Upland Area soil samples (from Boiler/Baghouse area and General Fill), representing nearly 80% of the total on average, which is consistent with the Seattle and Bellingham, Washington, datasets. Figure 3-20B illustrates the average relative congener group distributions for the Upland Area soils as well as urban background soils in Seattle and Bellingham, Washington.

3.20.4 Opportunistic Interim Action Recommended

Aspect recommends planning for an opportunistic interim action removal of TPH-contaminated soil at the GF-B-14 location (interpreted as a continuation of similar contamination at REC 2), as well as removal of shallow lead-contaminated soil at the GF-11 location, in accordance with the Interim Action Plan (Exhibit C to Agreed Order No. DE 9476). Upon excavation, the lead-contaminated soil at the GF-11 location will designate as characteristic hazardous waste which will require treatment to meet land disposal universal treatment standards prior to land disposal. It is recommended that a sample of the soil be provided to Chemical Waste Management for stabilization testing and, if acceptable, that the soil be transported under manifest to their Subtitle C landfill facility in Arlington, Oregon, for treatment and land disposal.

3.21 Groundwater Quality along Upgradient Edge of Property

Metals concentrations in groundwater along the upgradient (eastern) edge of the Upland Area were measured to assess background groundwater quality in the fill. The wells are also available for assessing background concentrations of other analytes if useful for comparison, based on data collected.

3.21.1 Round 2 Data Collection

The Round 2 data collection for this area included the following:

- Installed and collected groundwater samples from monitoring wells UG-MW-1 and UG-MW-2 along the upgradient (east) edge of the Upland Area (shown on Figure 3-21), for analyses of dissolved priority pollutant metals and TSS. The groundwater sample from well UG-MW-1 was also analyzed for total priority pollutant metals.

There was no field screening evidence of petroleum contamination during drilling of the two monitoring wells; therefore, no analyses for petroleum-related constituents were conducted in accordance with the Work Plan.

3.21.2 Round 3 Data Collection

The Round 3 data collection for this area included the following:

- Conducted the dry-season groundwater sampling and analysis event for wells UG-MW-1 and UG-MW-2, repeating the Round 2 sampling and analyses.

3.21.3 Assessment Findings

Detected dissolved and total metals concentrations in the upgradient wells were less than respective groundwater screening levels. Arsenic, chromium, nickel and zinc were detected in the samples at maximum concentrations of 1.07 µg/L, 1.05 µg/L, 5.04 µg/L, and 5.03 µg/L, respectively (Table 3-21). Other metals were not detected during either sampling round.

3.22 Identification of Constituents of Concern for Upland Area

Figure 3-21 depicts the collective environmental explorations completed for the Phase 2 ESA, with the currently planned areas for opportunistic cleanup as described in the preceding sections. Tables 3-22A and 3-22B provide statistical summaries of the soil and groundwater analytical results, respectively, from the Phase 2 ESA, including the frequencies of detection and screening-level exceedance for each constituent. The statistical summaries provide a concise overview of the collective Phase 2 ESA data, and, in combination with the preceding narrative in Section 3, help identify constituents of concern (COCs) for the Upland Area soil and groundwater.

Based on approximately120 soil analyses for metals, low-level metals are detected ubiquitously across the Upland Area, while arsenic, cadmium, and lead are detected at concentrations exceeding unrestricted soil screening levels (4%, 2%, and 5% of analyses, respectively). The other priority pollutant metals analyzed for (antimony, beryllium, chromium, copper, mercury, nickel, selenium, silver, thallium, and zinc) were not detected at concentrations greater than their respective unrestricted soil screening levels in any of the nearly 120 samples. Because the unrestricted and industrial soil screening levels for arsenic and cadmium are based on groundwater protection, and are therefore identical, the same industrial soil exceedance frequencies apply for those metals. For lead, two of the 149 soil samples (1%) from the Boiler/Baghouse area exceeded the industrial soil screening level.

In Upland Area groundwater, detected concentrations of dissolved arsenic, copper, lead, and nickel exceed respective groundwater screening levels in more than one groundwater sample; one dissolved zinc exceedance was also detected. In unfiltered groundwater samples, exceedances for detected total concentrations of these same metals plus mercury were detected in more than one groundwater sample. The arsenic, copper, and nickel exceedances are widespread across the Upland Area, while the lead exceedances are limited to wells REC2-MW-4 and REC5-MW-1 and the mercury exceedances are limited to well REC5-MW-1. The higher detection and exceedance frequencies in total (unfiltered) metals analyses compared to dissolved (filtered) metals analyses indicates some turbidity bias to the groundwater metals data. Based on the collective soil and groundwater data, arsenic, cadmium, copper, lead, mercury, nickel, and zinc are COCs for the Upland Area.

After metals, the most frequently detected constituent(s) in soil are PAHs. For example, the non-carcinogenic PAH pyrene was detected in 65% of soil samples analyzed and cPAHs were detected in 60% of soil samples analyzed. Naphthalene was also detected in 38% of the PAH analyses, and it was the only non-carcinogenic PAH to exceed unrestricted soil screening levels (3% of samples analyzed[14]). Total cPAHs exceed the unrestricted and industrial soil screening levels at frequencies of 20% and 6%, respectively. Likewise, in groundwater samples, naphthalene was the only non-carcinogenic PAH compound to exceed screening levels (3% of samples analyzed), and

---

[14] Naphthalene unrestricted and industrial soil screening levels are the same—based on groundwater protection—so exceedance frequency is same for the industrial screening level.

Total cPAHs exceeded its conservative screening level in 14% of the samples analyzed. cPAHs and naphthalene are COCs.

Concentrations of SVOCs other than PAHs (e.g., phenols, phthalates) in soil and groundwater were detected infrequently and, when detected, were less than screening levels; therefore, SVOCs other than PAHs are not COCs.

TPH in soil, including diesel- and oil-ranges (summed as Total TPH in this ESA) and gasoline-range TPH, exceeded respective soil screening levels in 14% and 9% of the numerous soil samples analyzed. Likewise, in groundwater, Total TPH exceeded its screening level in 12% of samples analyzed, while gasoline-range TPH exceeded its groundwater screening level in 3% of samples analyzed. Although there are gasoline-range TPH exceedances, they occur within the xylene release area (former UST No. 29) and in association with elevated concentrations of heavier-range TPH in other areas (e.g., Naval Reserve Parcel), suggesting the detected gasoline-range TPH represents the lighter end of a heavier hydrocarbon product. Based on the collective Phase 2 ESA data, gasoline is not a COC in the Upland Area. However, TPH is a primary COC for the Upland Area.

With the exception of benzene, ethylbenzene, and xylene, VOCs have either not been detected or have been detected at concentrations less than screening levels. At the former UST No. 29 xylene release area, xylene exceedances were detected in soil and groundwater, and an ethylbenzene exceedance was detected in soil. Two out of 183 soil samples contained concentrations of benzene marginally greater than the 0.03 mg/kg screening level based on protection of groundwater; however, no benzene exceedances were detected in the 77 groundwater samples analyzed; therefore, benzene is not considered a COC for the Upland Area.

Total PCB concentrations in soil were greater than unrestricted soil screening levels but less than industrial soil screening levels in discrete former operational areas (e.g., Old Machine Shop and Central Maintenance Shop); therefore, PCBs are a COC for a future unrestricted land use.

Dioxins/furan concentrations detected in selected soil samples are greater than unrestricted soil screening levels, but are less than industrial soil screening levels; however, the detected concentrations and congener composition of the dioxins/furans are consistent with those detected ubiquitously in urban areas of western Washington. Therefore, dioxins/furans are not considered COCs for the Upland Area.

Ammonia (as nitrogen) was detected in 77% of the groundwater samples collected and exceeded the conservative screening level at a frequency of 70%; therefore, ammonia is a COC for Upland Area groundwater.

4 Hydrogeologic Data Collection and Results

4.1 Hydrogeologic Conditions

A wedge of fill, generally thickening from east to west, comprises the shallow subsurface soils across the Upland Area. Beginning in the late 1800s, the fill was placed on the East Waterway tidal flats to create new upland. Within the west-center portion of the Upland Area, a former log pond was filled in stages between the mid-1950s and early 1980s to create upland for wood chip and hog fuel storage. The fill has variable composition, predominantly including sand and silty sand with shell fragments (probable dredge fill), and localized occurrences of gravel, debris, and wood chips/sawdust.

A shallow unconfined (water table) water-bearing zone occurs within the fill, overlying the underlying siltier native tidal flat deposits. The water table within the fill is relatively shallow, generally ranging in depth from 1 to 4 feet below grade in the Upland Area’s eastern areas to 6 to 12 feet below grade in its western areas. Consequently, groundwater generally flows toward the west across the Upland Area, with discharge to the East Waterway; however, depending on the alignment of the shoreline, groundwater flow directions locally may range from northwesterly to southwesterly. For example, in the south end of the Site, groundwater locally flows to the southwest toward the off-loading dock slip. Groundwater in the fill is also hydraulically connected to the East Waterway. Based on tidal monitoring data discussed below, tidally-induced water table fluctuations near the East Waterway range between about 2 and 7 feet depending on the location.

4.1.1 Water Levels

The following sections describe the water level monitoring conducted using the newly installed 49 monitoring wells, and the tidal study performed using select wells, as part of the Phase 2 ESA data collection.

Water Level Measurements

Five sets of concurrent depth-to-groundwater measurements have been collected from variable numbers of monitoring wells during the Phase 2 ESA. Monitoring wells were installed during each round of investigation; therefore, the September 2012 water level dataset is the most complete. All monitoring wells were professionally surveyed to a common datum (NAVD88 vertical datum) by David Evans and Associates. Table 4-1 presents the monitoring well top of casing elevations and five sets of manual water level measurements.

Round 1 Water Level Measurements

A “low” tide set of groundwater measurements was collected in the existing six monitoring wells on February 17, 2012, just before a low tide of elevation approximately -2 feet. This dataset was not used to produce a groundwater elevation contour map because of the limited number of monitoring wells measured; however, the data are presented for comparison purposes in Table 4-1.

Round 2 Water Level Measurements

A "low" tide set of groundwater measurements was collected on July 3, 2012, shortly after a lower low tide elevation of approximately -5 feet. A "high" tide set of measurements was collected on July 6, 2012, shortly after a higher high tide elevation of approximately 10 feet. Interpreted groundwater elevation contours from these datasets are presented on Figures 4-1 and 4-2, respectively.

Round 3 Water Level Measurements

A "low" tide set of groundwater measurements was collected on September 14, 2012, shortly after a lower low tide elevation of approximately -1 feet. A "high" tide set of measurements was collected on September 13, 2012, shortly before a higher high tide elevation of approximately 8 feet. Groundwater elevation contours derived from these two datasets are presented on Figures 4-5 and 4-6, respectively.

Tidal Study

As part of the Round 2 data collection, a 72-hour tidal study was conducted over a period of large tidal fluctuations (maximum of approximately 15.4 feet) to evaluate effects of tidal fluctuations on nearshore groundwater levels, and thus flow directions, throughout the tidal cycle. The tidal study was conducted between July 3 through 6, 2012, and involved the collection of continuous water level measurements throughout a 72-hour period at 12 upland monitoring wells: shoreline wells REC7-MW-1, REC7-MW-2, MW-6, UST70-MW2, REC7-MW-3, and REC7-MW-4 where tidal fluctuations are greatest; and inland wells NRP-MW-4, UST69-MW-1, AP-MW-1, REC5-MW-1, UST68-MW-1, and UST-68-MW-5 where tidal fluctuations are muted. The manual water level measurements confirm only minor water level fluctuations in wells within the eastern portion of the Upland Area (Table 4-2)[15].

Each of the wells was equipped with a downhole pressure transducer/data logger to allow automated collection of water level data at 5-minute intervals. A data logger was also installed at a standpipe placed in the East Waterway to directly record tidal fluctuations (Tidal Station TM-1). A barometric pressure data logger was also installed on site to allow the water level data to be corrected for changes in atmospheric pressure throughout the study, if needed. Manual depth-to-water measurements were collected at each monitoring well during the installation and the retrieval of the pressure transducer/data loggers. These data were used to convert the transducer readings to groundwater elevations.

The tidal data were analyzed using the method of Serfes (1991) to derive a 72- hour tidally-averaged groundwater elevation for each monitoring location. The tidally-averaged groundwater elevations were then used to assess the net (tidally-averaged) groundwater flow direction and hydraulic gradients. Figure 4-3 presents the tidal-

---

[15] In July 2012, Well HW-MW-1 showed a large fluctuation between the low-tide and high-tide manual measurements (Table 4-1); however, the change is attributable to the effects of prior groundwater sampling and is not representative of normal conditions. The HW-MW-1 well is screened in low-permeability silt; it was sampled on July 2 and 3, 2012, to collect a suitable sample volume, and the sampling drew down the water level essentially to the well bottom. As such, the July 3, 2012, low-tide groundwater elevation is biased low since the well was still recovering from prior groundwater sampling.

averaged groundwater elevation contours and interpreted flow directions from that dataset.

4.1.2 Groundwater Flow Directions

Groundwater flow directions across the tidal cycle are depicted on the water table elevation contour maps developed for low-tide, high-tide, and tidal-averaged conditions (Figures 4-1, 4-2, 4-3, 4-5, and 4-6). Because changes in groundwater levels lag behind the tidal changes, the water table elevation contours represent "snapshots" of times when groundwater levels, not the tide, were, on average, at minimum, maximum, or average levels, respectively. Flow directions in the eastern portion of the Upland Area remain relatively constant throughout the tidal cycle, whereas short-term flow direction reversals occur in the nearshore area in response to high tides.

Low Tide Groundwater Flow Directions

At low tide (Figures 4-1 and 4-5), groundwater flows generally west towards the East Waterway, perpendicular to the long dimension of the property. Hydraulic gradients within the eastern half of the property are relatively less (0.03 to 0.009 ft/ft), and relatively greater within 200 feet of the shoreline (0.06 to 0.1 ft/ft). Two subtle east-west-trending groundwater divides are present at low tide: (1) in the central portion of the property near the former wood chip storage area and (2) in the southern portion of the property near the former Acid Plant and the Boiler/Baghouse area. At extreme low tides, groundwater elevations within 50 feet of the shoreline remain 8 to 12 feet above the tide.

High Tide Groundwater Flow Directions

At high tide (Figures 4-2 and 4-6), the tide level in the East Waterway rises more rapidly than does the water table within the Upland Area, temporarily causing flow from the East Waterway into the nearshore portion of the fill (saline intrusion). Upgradient groundwater in the eastern portion of the Upland Area remains westward during high tide. A “trough” of stagnant groundwater is present along the shoreline for several hours surrounding tidal lows. This trough is approximately 50-feet wide in the northern portion of the property near wells REC7-MW-1, NRP-MW-3, MW-5, and NRP-MW-2, and becomes wider in the southern portion of the property near wells MW-6, UST70-MW-1, UST70-MW-2, REC3-MW-1, UST68-MW-2, and UST68-MW-5. The subtle groundwater divides present at low tide are also present at high tide.

Tidal-Averaged Net Groundwater Flow Directions

Figure 4-4 provides the water table elevation contour map based on mean groundwater elevations calculated using data from the 72-hour tidal monitoring period (July 3 through 6, 2012). While nearshore groundwater flow directions reverse diurnally with the tide, contouring of the mean groundwater elevations from a synchronous time period provides a picture of the net groundwater flow condition. In other words, although tidal fluctuations cause short-term reversals in hydraulic gradients and thus groundwater flow directions (Figures 4-2 and 4-6), the interpreted net (tidally-averaged) groundwater flow directions within the Upland Area are as depicted on Figure 4-3, demonstrating the expected net discharge to the East Waterway. The tidal-averaged groundwater flow direction and gradients are appropriate for evaluating groundwater velocity vectors (magnitude and direction).

To prepare Figure 4-3, the tidally-averaged groundwater elevations were calculated from the tidal monitoring station and 12 wells instrumented during the tidal study and, for the remaining 22 wells, were calculated by averaging their respective low-tide and high-tide manual water level measurements. On Figure 4-3, the groundwater elevation data from the instrumented wells are displayed in blue, and data from the manual measurements are display in gray. The interpreted groundwater elevation contours relied heavily on the instrumented well data.

The map of tidally-averaged groundwater conditions confirms the general flow patterns seen at high and low tide, but without the inland flow component observed at high tide. The northern and southern groundwater divides present at high and low tide are also present in the tidally-averaged groundwater elevation data, and the hydraulic gradients in the eastern portion of the Site are consistent with the high- and low-tide snapshots. Tidally-averaged groundwater elevations within 50 feet of the shoreline remain approximately 1.5 to 4 feet above the tide.

Based on the three rounds of water level data collected, water levels in the fill within about 400 feet of the East Waterway fluctuate more in response to tidal fluctuations than seasonal fluctuations. On the east (upgradient) edge of the property, groundwater levels as measured in well UG-MW-1 dropped less than 0.1 foot between July and September 2012, while well UG-MW-2 and other nearby monitoring wells dropped approximately 0.5 feet.

4.1.3 Tidal Lag and Tidal Efficiencies at Monitored Wells

During the tidal study, wells that exhibited a significant tidal response include AP-MW-1, REC7-MW-1, REC7-MW-2, REC7-MW-3, REC7-MW-4, UST68-MW-5, and UST70-MW-2. Wells MW-6, REC5-MW-1, UST68-MW-1, and UST69-MW-1 did not exhibit a significant tidal response. Well NRP-MW-4 exhibited a significant response, but the response does not appear to coincide with the tidal frequency observed at the East Waterway. Figure 4-4 presents the groundwater elevation data, and corresponding tide elevation, for the wells monitored during the tidal study.

The time difference between the tidal elevation peak and corresponding groundwater elevation peak is referred to as the lag time at a well. The ratio of the groundwater elevation change to corresponding tidal elevation change is referred to as the tidal efficiency (TE) at a well. Table 4-2 lists the TE and tidal lag time for the six wells (REC7-MW-1, REC7-MW-2, REC7-MW-3, REC7-MW-4, UST68-MW-5, and UST70-MW-2) that exhibited a definitive tidal response, and each well’s approximate distance to the nearest aquifer/tide interface (all within 100 feet of the East Waterway). The TEs and lag times presented in Table 4-2 represent the arithmetic average of water level responses measured during one major falling tide, one major rising tide, one minor falling tide, and one minor rising tide. TEs for individual wells range from 0.06 to 0.43. Tidal lag times for individual wells range from 0.6 to 2.5 hours.

As expected, TE generally decreases and lag time generally increases with increasing distance from the East Waterway; however, there is variability among the shoreline wells which is likely attributable, in part, to inaccuracies in estimated distance from a well to the tidal interface. Variations in bulk aquifer permeability and the integrity of shoreline structures (bulkheads) also influence the fill groundwater hydraulic communication with the tide.

5 References

AECOM, 2011, Phase I Environmental Site Assessment, Everett Pulp and Paper Mill, Everett Washington, April 2011.

AMEC, 2012, Excavation Report, ExxonMobil/ADC Property, Ecology Site ID 2728, Everett, Washington, June 29, 2012.

Anchor Environmental, 2008, Review of Scientific Literature and Recommended Surface Water Screening Level for Formaldehyde – GP Mill Site RI/FS, December 10, 2008.

Aspect, 2012a, Work Plan for Independent Phase 2 Environmental Site Assessment, Kimberly-Clark Mill Uplands, Everett, Washington, May 21, 2012.

Aspect, 2012b, Addendum to Work Plan for Independent Phase 2 Environmental Site Assessment, Kimberly-Clark Worldwide Site Upland Area, Everett, Washington, September 7, 2012.

CITGO, 2006, No. 6 Fuel Oil Material Safety Data Sheet, February 16, 2006.

CRETE Consulting, 2011, Soil Characterization – Sand Filter 1 Foundation Excavation, January 14, 2011.

Ecology and Environment, 2002, The Oeser Company Superfund Site Remedial Investigation Report, Bellingham, Washington, TDD: 01-03-0015, June 2002.

Foster Wheeler, 1998, Independent Remedial Action Closure Report, Old Naval Reserve Center, Everett, Washington, December 16, 1998.

Landau Associates, 1991, Soil and Groundwater Investigation, Former Underground Petroleum Storage Tanks, Everett Pulp and Paper Mill, Everett, Washington, April 18, 1991.

Landau Associates, 1994a, Former Tank No. 29 Compliance Monitoring Investigation, Scott Paper Company, Everett, Washington, August 16, 1994.

National Oceanographic and Atmospheric Administration (NOAA), 2006, No. 6 Fuel Oil (Bunker C) Spills, November 2006.

Pacific Environmental Group, Inc. (PEG), 1998, Environmental Investigation Report, Former Bulk Fuel Facilities, 2600 Federal Avenue, Everett, Washington, April 14, 1998.

U.S. Environmental Protection Agency (EPA), 2008, USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Method Data Review, USEPA-540-R-08-01, June 2008.

Washington State Department of Ecology (Ecology), 2009, Draft Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action, Ecology Publication No. 09-09-047, October 2009.

Washington State Department of Ecology (Ecology), 2011, Urban Seattle Area Soil Dioxin and PAH Concentrations, Initial Summary Report, Publication No. 11-09-049, September 2011.

Washington State Department of Ecology (Ecology), 2012a, Kimberly-Clark Pulp and Paper Mill – Draft Work Plan for Environmental Assessment. Letter to Steve Germiat, Aspect, from Andy Kallus, Ecology, April 27, 2012.

Washington State Department of Ecology (Ecology), Ecology, 2012b, Trichloroethylene Toxicity Information and MTCA Cleanup Levels (TCE), CAS #79-01-6, CLARC Guidance September 2012.

Washington State Department of Ecology (Ecology), Ecology, 2012c, Tetrachloroethylene Toxicity Information and MTCA Cleanup Levels (Perc, PCE, Perchloroethylene), CAS #127-18-4, CLARC Guidance September 2012.

Limitations

Work for this project was performed for the Kimberly-Clark Worldwide, Inc. (Client), and this report was prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. This report does not represent a legal opinion. No other warranty, expressed or implied, is made.

All reports prepared by Aspect Consulting for the Client apply only to the services described in the Agreement(s) with the Client. Any use or reuse by any party other than the Client is at the sole risk of that party, and without liability to Aspect Consulting. Aspect Consulting’s original files/reports shall govern in the event of any dispute regarding the content of electronic documents furnished to others.

Table 2-1 - Groundwater Screening Levels for Phase 2 ESA

K-C Worldwide Site Upland Area 110207

	APPLICABLE GROUNDWATER CRITERIA									
	Marine Surface Water Criteria									
ANALYTE (BY GROUP)	Surface Water ARAR - Aquatic Life - Marine Ch. 173-201A WAC *(ma-wac)*	Surface Water ARAR - Aquatic Life - Marine - Clean Water Act §304 *(ma-cwa)*	Surface Water ARAR - Aquatic Life - Marine - National Toxics Rule, 40 CFR 131 *(ma-ntr)*	Surface Water ARAR - Human Health – Marine – Clean Water Act §304 *(hh-cwa)*	Surface Water ARAR - Human Health – Marine – National Toxics Rule, 40 CFR 131 *(hh-ntr)*	Surface Water, Method B, Most-Restrictive, Standard Formula[a,b] *(sw-b)*	**Tier 1 Vapor Intrusion Groundwater Screening Level for Unrestricted + Method A for TPH[c]** *(vi-b)*	**State Background Groundwater Concentration**	**Most Stringent Groundwater Screening Level[d]**	
Total Petroleum Hydrocarbons (TPH)										
Gasoline Range Hydrocarbonse in µg/L							800		**800**	*(vi-b)*
Diesel Range Hydrocarbons in µg/L							500		**500**	*(vi-b)*
Oil Range Hydrocarbons in µg/L							500		**500**	*(vi-b)*
Total TPHf in µg/L							500		**500**	*(vi-b)*
Total or Dissolved Metals										
Antimony µg/L				640	4,300	1,000			**640**	*(hh-cwa)*
Arsenicg in µg/L	36	36	36	0.14	0.14	0.098		5	**5**	*0*
Beryllium µg/L						270			**270**	*(sw-b)*
Cadmium in µg/L	9.3	8.8	9.3			41			**8.8**	*(ma-cwa)*
Chromium (III) in µg/L						240,000			**240,000**	*(sw-b)*
Chromium (VI) in µg/L	50	50	50			490			**50**	*(ma-wac)*
Chromium (Total) in µg/L										
Copper in µg/L	3.1	3.1				2,900			**3.1**	*(ma-wac)*
Lead in µg/L	8.1	8.1	8.1						**8.1**	*(ma-wac)*
Mercury in µg/L		0.94			0.15		0.89		**0.15**	*(hh-ntr)*
Nickel in µg/L	8.2	8.2	8.2	4,600	4,600	1,100			**8.2**	*(ma-wac)*
Selenium in µg/L	71	71	71	4,200		2,700	*		**71**	*(ma-wac)*
Silver in µg/L	1.9	1.9	1.9			26,000			**1.9**	*(ma-wac)*
Thallium µg/L				0.47	6.3				**0.47**	*(hh-cwa)*
Zinc in µg/L	81	81	81	26,000		17,000			**81**	*(ma-wac)*
Conventional Chemistry Parameters										
Ammonia in mg/L	0.035								**0.035**	*(ma-wac)*
Formaldehydeh in µg/L									**1,600**	*footnote h*
Sulfide in µg/L										
Volatile Organic Compounds (VOCs)										
1,1,1,2-Tetrachloroethane in µg/L							7.4		**7.4**	*(vi-b)*
1,1,1-Trichloroethane in µg/L						930,000	11,000		**11,000**	*(vi-b)*
1,1,2 - Trichlorotrifluoroethane in µg/L							1,100		**1,100**	*(vi-b)*
1,1,2,2-Tetrachloroethane in µg/L				4	11	6.5	6.2		**4**	*(hh-cwa)*
1,1,2-Trichloroethane in µg/L				16	42	25	7.9		**7.9**	*(vi-b)*
1,1-Dichloroethane in µg/L							2,300		**2,300**	*(vi-b)*
1,1-Dichloroethene in µg/L				7,100	3.2	23,000	130		**3.2**	*(hh-ntr)*
1,1-Dichloropropene in µg/L										
1,2,3-Trichlorobenzene in µg/L										
1,2,3-Trichloropropane in µg/L										
1,2,4-Trichlorobenzene in µg/L				70		2	3,900		**2**	*(sw-b)*
1,2,4-Trimethylbenzene in µg/L							24		**24**	*(vi-b)*
1,2-Dibromo-3-chloropropane in µg/L										
1,2-Dibromoethane (EDB) in µg/L							0.74		**0.74**	*(vi-b)*

Table 2-1 - Groundwater Screening Levels for Phase 2 ESA

K-C Worldwide Site Upland Area 110207

	APPLICABLE GROUNDWATER CRITERIA									
	Marine Surface Water Criteria									
ANALYTE (BY GROUP)	Surface Water ARAR - Aquatic Life - Marine Ch. 173-201A WAC	Surface Water ARAR - Aquatic Life - Marine - Clean Water Act §304	Surface Water ARAR - Aquatic Life - Marine - National Toxics Rule, 40 CFR 131	Surface Water ARAR - Human Health – Marine – Clean Water Act §304	Surface Water ARAR - Human Health – Marine – National Toxics Rule, 40 CFR 131	Surface Water, Method B, Most-Restrictive, Standard Formula[a,b]	Tier 1 Vapor Intrusion Groundwater Screening Level for Unrestricted + Method A for TPH[c]	State Background Groundwater Concentration	Most Stringent Groundwater	
1,2-Dichlorobenzene in µg/L				1,300	17,000	4,200	1,800		**1,300**	*(hh-cwa)*
1,2-Dichloroethane (EDC) in µg/L				37	99	59	4.2		**4.2**	*(vi-b)*
1,2-Dichloropropane in µg/L				15			28		**15**	*(hh-cwa)*
1,3,5-Trimethylbenzene in µg/L							25		**25**	*(vi-b)*
1,3-Dichlorobenzene in µg/L				960	2,600				**960**	*(hh-cwa)*
1,3-Dichloropropane in µg/L										
1,4-Dichloro-2-Butene in µg/L										
1,4-Dichlorobenzene in µg/L				190	2,600		7,900		**190**	*(hh-cwa)*
2,2-Dichloropropane in µg/L										
2-Butanone in µg/L							350,000		**350,000**	*(vi-b)*
2-Chloroethyl Vinyl Ether in µg/L										
2-Chlorotoluene in µg/L										
2-Hexanone in µg/L										
4-Chlorotoluene in µg/L										
4-Methyl-2-pentanone in µg/L							11,000		**11,000**	*(vi-b)*
Acetone in µg/L										
Acrolein in µg/L				290	780		2.9		**2.9**	*(vi-b)*
Acrylonitrile in µg/L				0.25	0.66	0.4	16		**0.25**	*(hh-cwa)*
Benzene in µg/L				51	71	23	2.4		**2.4**	*(vi-b)*
bis(2-chloroisopropyl)ether µg/L				65,000	170,000				**65,000**	*(hh-cwa)*
Bromobenzene in µg/L										
Bromochloromethane in µg/L										
Bromodichloromethane in µg/L				17	22	28	0.09		**0.09**	*(vi-b)*
Bromoethane in µg/L										
Bromoform in µg/L				140	360	220	200		**140**	*(hh-cwa)*
Bromomethane in µg/L				1,500	4,000	970	13		**13**	*(vi-b)*
Carbon disulfide in µg/L							400		**400**	*(vi-b)*
Carbon tetrachloride in µg/L				1.6	4.4	4.9	0.22		**0.22**	*(vi-b)*
Chlorobenzene in µg/L				1,600	21,000	5,000	100		**100**	*(vi-b)*
Chloroethane in µg/L							12		**12**	*(vi-b)*
Chloroform in µg/L				470	470	6,900	1.2		**1.2**	*(vi-b)*
Chloromethane in µg/L							5.2		**5.2**	*(vi-b)*
cis-1,2-Dichloroethene (DCE) in µg/L							160		**160**	*(vi-b)*
cis-1,3-Dichloropropene in µg/L										
Dibromochloromethane in µg/L				13	34	21	0.22		**0.22**	*(vi-b)*
Dibromomethane in µg/L										
Dichlorodifluoromethane in µg/L							9.9		**9.9**	*(vi-b)*
Ethylbenzene in µg/L				2,100	29,000	6,900	2,800		**2,100**	*(hh-cwa)*
Hexachlorobutadiene in µg/L				18	50	30	0.81		**0.81**	*(vi-b)*
Isopropylbenzene in µg/L							720		**720**	*(vi-b)*
m,p-Xylenes in µg/L							310		**310**	*(vi-b)*
o-Xylene in µg/L							440		**440**	*(vi-b)*

Table 2-1 - Groundwater Screening Levels for Phase 2 ESA

K-C Worldwide Site Upland Area 110207

	APPLICABLE GROUNDWATER CRITERIA									
	Marine Surface Water Criteria									
ANALYTE (BY GROUP)	Surface Water ARAR - Aquatic Life - Marine - Ch. 173-201A WAC	Surface Water ARAR - Aquatic Life - Marine - Clean Water Act §304	Surface Water ARAR - Aquatic Life - Marine - National Toxics Rule, 40 CFR 131	Surface Water ARAR - Human Health – Marine – Clean Water Act §304	Surface Water ARAR - Human Health – Marine – National Toxics Rule, 40 CFR 131	Surface Water, Method B, Most-Restrictive, Standard Formula^{a,b}	**Tier 1 Vapor Intrusion Groundwater Screening Level for Unrestricted + Method A for TPH^{c}**	**State Background Groundwater Concentration**	**Most Stringent Groundwater**	
Xylenes (total) in µg/L							310		**310**	*(vi-b)*
Methylene chloride in µg/L				590	1,600	960	94		**94**	*(vi-b)*
Methyl-Tert-Butyl Ether µg/L							610		**610**	*(vi-b)*
Methyliodide in µg/L										
n-Butylbenzene in µg/L										
n-Propylbenzene in µg/L										
p-Isopropyltoluene in µg/L										
Pyridine in µg/L										
sec-Butylbenzene in µg/L										
Styrene in µg/L							78		**78**	*(vi-b)*
tert-Butylbenzene in µg/L										
Tetrachloroethene (PCE) in µg/L				3.3	8.9	0.39	23		**0.39**	*(sw-b)*
Toluene in µg/L				15,000	200,000	19,000	15,000		**15,000**	*(hh-cwa)*
trans-1,2-Dichloroethene in µg/L				10,000		33,000	130		**130**	*(vi-b)*
trans-1,3-Dichloropropene in µg/L										
Trichloroethene (TCE) in µg/L				30	81	6.7	1.6		**1.6**	*(vi-b)*
Trichlorofluoromethane in µg/L							120		**120**	*(vi-b)*
Vinyl acetate in µg/L							7,800		**7,800**	*(vi-b)*
Vinyl chloride in µg/L				2.4	530	3.7	0.35		**0.35**	*(vi-b)*
Polycyclic Aromatic Hydrocarbons (PAHs)										
Acenaphthene in µg/L				990		640			**640**	*(sw-b)*
Acenaphthylene in µg/L										
Anthracene in µg/L				40,000	110,000	26,000			**26,000**	*(sw-b)*
Benzo(g,h,i)perylene in µg/L										
Fluoranthene in µg/L				140	370	90			**90**	*(sw-b)*
Fluorene in µg/L				5,300	14,000	3,500			**3,500**	*(sw-b)*
Phenanthrene in µg/L										
Pyrene in µg/L				4,000	11,000	2,600			**2,600**	*(sw-b)*
1-Methylnaphthalene in µg/L										
2-Methylnaphthalene in µg/L										
Naphthalene in µg/L						4,900	170		**170**	*(vi-b)*
Total Naphthalenes in µg/L										
Benz(a)anthracene in µg/L				0.018	0.031	0.3			**0.018**	*(hh-cwa)*
Benzo(a)pyrene in µg/L				0.018	0.031	0.03			**0.018**	*(hh-cwa)*
Benzo(b)fluoranthene in µg/L				0.018	0.031	0.3			**0.018**	*(hh-cwa)*
Benzo(k)fluoranthene in µg/L				0.018	0.031	3			**0.018**	*(hh-cwa)*
Chrysene in µg/L				0.018	0.031	30			**0.018**	*(hh-cwa)*
Dibenzo(a,h)anthracene in µg/L				0.018	0.031	0.03			**0.018**	*(hh-cwa)*
Indeno(1,2,3-cd)pyrene in µg/L				0.018	0.031	0.3			**0.018**	*(hh-cwa)*
Total cPAHs TEQ in µg/L				0.018	0.031	0.03			**0.018**	*(hh-cwa)*

Table 2-1 - Groundwater Screening Levels for Phase 2 ESA

K-C Worldwide Site Upland Area 110207

	APPLICABLE GROUNDWATER CRITERIA									
	Marine Surface Water Criteria									
ANALYTE (BY GROUP)	Surface Water ARAR - Aquatic Life - Marine Ch. 173-201A WAC	Surface Water ARAR - Aquatic Life - Marine - Clean Water Act §304	Surface Water ARAR - Aquatic Life - Marine - National Toxics Rule, 40 CFR 131	Surface Water ARAR - Human Health – Marine – Clean Water Act §304	Surface Water ARAR - Human Health – Marine – National Toxics Rule, 40 CFR 131	Surface Water, Method B, Most-Restrictive, Standard Formula[a,b]	**Tier 1 Vapor Intrusion Groundwater Screening Level for Unrestricted + Method A for TPH[c]**	**State Background Groundwater Concentration**	**Most Stringent Groundwater**	
Other Semi Volatile Organics (SVOCs)										
1,2,4-Trichlorobenzene in µg/L				70		2	3,900		**2**	*(sw-b)*
1,2-Dichlorobenzene in µg/L				1,300	17,000	4,200	1,800		**1,300**	*(hh-cwa)*
1,3-Dichlorobenzene in µg/L				960	2,600				**960**	*(hh-cwa)*
1,4-Dichlorobenzene in µg/L				190	2,600		7,900		**190**	*(hh-cwa)*
2,3,4,6-Tetrachlorophenol µg/L										
2,4,5-Trichlorophenol in µg/L				3,600					**3,600**	*(hh-cwa)*
2,4,6-Trichlorophenol in µg/L				2.4	6.5	3.9			**2.4**	*(hh-cwa)*
2,4-Dichlorophenol in µg/L				290	790	190			**190**	*(sw-b)*
2,4-Dimethylphenol in µg/L				850		550			**550**	*(sw-b)*
2,6-Dichlorophenol µg/L										
2,4-Dinitrophenol in µg/L				5,300	14,000	3,500			**3,500**	*(sw-b)*
2-Chloronaphthalene in µg/L				1,600		1,000			**1,000**	*(sw-b)*
2-Chlorophenol in µg/L						97			**97**	*(sw-b)*
2-Methylphenol in µg/L										
2-Nitroaniline in µg/L										
2-Nitrophenol in µg/L										
3,3'-Dichlorobenzidine in µg/L				0.028	0.077	0.046			**0.028**	*(hh-cwa)*
3-Nitroaniline in µg/L										
4,6-Dinitro-2-methylphenol in µg/L										
4-Bromophenyl phenyl ether in µg/L										
4-Chloro-3-methylphenol in µg/L										
4-Chloroaniline in µg/L										
4-Chlorophenyl phenyl ether in µg/L										
4-Methylphenol in µg/L										
4-Nitroaniline in µg/L										
4-Nitrophenol in µg/L										
Aniline µg/L										
Azobenzene µg/L										
Benzoic acid in µg/L										
Benzyl alcohol in µg/L										
Benzyl butyl phthalate in µg/L				1,900		8.2			**8.2**	*(sw-b)*
Bis(2-chloro-1-methylethyl) ether in µg/L						37			**37**	*(sw-b)*
Bis(2-chloroethoxy)methane in µg/L										
Bis(2-chloroethyl) ether in µg/L				0.53	1.4	0.85	26		**0.53**	*(hh-cwa)*
Bis(2-ethylhexyl) phthalate in µg/L				2.2	5.9	3.6			**2.2**	*(hh-cwa)*
Carbazole in µg/L										
Dibenzofuran in µg/L										
Diethyl phthalate in µg/L				44,000	120,000	28,000			**28,000**	*(sw-b)*
Dimethyl phthalate in µg/L				1,100,000	2,900,000				**1,100,000**	*(hh-cwa)*
Di-n-butyl phthalate in µg/L				4,500	12,000	2,900			**2,900**	*(sw-b)*
Di-n-octyl phthalate in µg/L										

Table 2-1 - Groundwater Screening Levels for Phase 2 ESA

K-C Worldwide Site Upland Area 110207

ANALYTE (BY GROUP)	APPLICABLE GROUNDWATER CRITERIA									
	Marine Surface Water Criteria						**Tier 1 Vapor Intrusion Groundwater Screening Level for Unrestricted + Method A for TPH**[c]	**State Background Groundwater Concentration**	**Most Stringent Groundwater**	
	Surface Water ARAR - Aquatic Life - Marine - Ch. 173-201A WAC	Surface Water ARAR - Aquatic Life - Marine - Clean Water Act §304	Surface Water ARAR - Aquatic Life - Marine - National Toxics Rule, 40 CFR 131	Surface Water ARAR - Human Health – Marine – Clean Water Act §304	Surface Water ARAR - Human Health – Marine – National Toxics Rule, 40 CFR 131	Surface Water, Method B, Most-Restrictive, Standard Formula[a,b]				
Hexachlorobenzene in µg/L				0.00029	0.00077	0.00047			**0.00029**	*(hh-cwa)*
Hexachlorobutadiene in µg/L				18	50	30	0.81		**0.81**	*(vi-b)*
Hexachlorocyclopentadiene in µg/L				1,100	17,000	3,600			**1,100**	*(hh-cwa)*
Hexachloroethane in µg/L				3.3	8.9	5.3	8.6		**3.3**	*(hh-cwa)*
Isophorone in µg/L				960	600	1,600			**600**	*(hh-ntr)*
m,p-Cresol in µg/L										
Nitrobenzene in µg/L				690	1,900	1,800	690		**690**	*(hh-cwa)*
N-Nitroso-di-n-propylamine in µg/L				0.51		0.82			**0.51**	*(hh-cwa)*
N-Nitrosodiethanolamine µg/L										
N-Nitrosodimethylamine µg/L				3	8.1	4.9			**3**	*(hh-cwa)*
N-Nitrosodiphenylamine in µg/L				6	16	9.7			**6**	*(hh-cwa)*
Pentachlorophenol in µg/L	7.9	7.9	7.9	3	8.2	1.5			**1.5**	*(sw-b)*
Phenol in µg/L				1,700,000	4,600,000	560,000			**560,000**	*(sw-b)*
Retene µg/L										
trans-1,4-Dichloro-2-butene µg/L										
2,4-Dinitrotoluene in µg/L				3.4	9.1	1,400			**3.4**	*(hh-cwa)*
2,6-Dinitrotoluene in µg/L										

Notes:

a) Values from Ecology's CLARC Database; except as noted.

b) Method B values are most restrictive of carcinogenic or non-carcinogenic values presented in Ecology's CLARC database.

c) Vapor intrusion screening levels from Table B-1 (Appendix B) of Ecology's Guidance for Evaluation of Soil Vapor Intrusion (Ecology, 2009). Method A values for TPH mixtures assume potable groundwater use, but are used in absence of other criteria.

d) Most stringent of values protective of marine surface water and vapor intrusion, not less than background.

e) For gasoline-range TPH, the displayed Method A value assumes benzene is present; the value is 100 mg/kg if benzene is not present and sum of BTEX

f) Total TPH = sum of diesel- and oil-range hydrocarbon concentrations, in accordance with MTCA.

g) For arsenic, the Method A groundwater cleanup level, based on state-wide background, is retained as the screening level (WAC 173-340-900 Table 720-1).

h) For formaldehyde, screening level is based on protection of aquatic life (Anchor Environmental, 2008).

i) Analytical practical quantitation limits (PQLs) are not considered in this tabulation of screening levels, but may be a factor in defining cleanup levels.

Table 2-2 - Soil Screening Levels for Phase 2 ESA

K-C Worldwide Site Upland Area 110207

	Unrestricted Land Use			*Industrial Land Use*		
ANALYTE (BY GROUP)	Soil, Method A, Unrestricted Land Use, Table Value (mg/kg)	Soil, Method B, Standard Formula Value (mg/kg)	**Most Restrictive Unrestricted Soil Screening Level (mg/kg)**	Soil, Method A, Industrial Land Use, Table Value (mg/kg)	Soil, Method C, Most Restrictive Standard Formula Value (mg/kg)	**Most Restrictive Industrial Soil Screening Level (mg/kg)**
Total Petroleum Hydrocarbons (TPH)						
Gasoline Range Hydrocarbons[c]	30		**30**	30		**30**
Diesel Range Hydrocarbons	2,000		**2,000**	2,000		**2,000**
Oil Range Hydrocarbons	2,000		**2,000**	2,000		**2,000**
Total TPH[d]	2,000		**2,000**	2,000		**2,000**
Total or Dissolved Metals						
Antimony						
Arsenic[e]	20	0.67	**20**	20	88	**20**
Beryllium						
Cadmium	2		**2**	2		**2**
Chromium (III)	2,000		**2,000**	2,000		**2,000**
Chromium (VI)	19		**19**	19		**19**
Chromium (Total)						
Copper						
Lead	250		**250**	1,000		**1,000**
Mercury	2		**2**	2		**2**
Nickel						
Selenium						
Silver						
Thallium						
Zinc						
Volatile Organic Compounds (VOCs)						
1,1,1,2-Tetrachloroethane		38	**38**		5,000	**5,000**
1,1,1-Trichloroethane	2		**2**	2		**2**
1,1,2 - Trichlorotrifluoroethane						
1,1,2,2-Tetrachloroethane		5	**5**		660	**660**
1,1,2-Trichloroethane		18	**18**		2,300	**2,300**
1,1-Dichloroethane						
1,1-Dichloroethene						
1,1-Dichloropropene						
1,2,3-Trichlorobenzene						
1,2,3-Trichloropropane		0.033	**0.033**		4.4	**4.4**
1,2,4-Trichlorobenzene		35	**35**		4,500	**4,500**
1,2,4-Trimethylbenzene						
1,2-Dibromo-3-chloropropane		1.3	**1.3**		160	**160**
1,2-Dibromoethane (EDB)	0.005	0.5	**0.005**	0.005	66	**0.005**
1,2-Dichlorobenzene						
1,2-Dichloroethane (EDC)		11	**11**		1,400	**1,400**
1,2-Dichloropropane						
1,3,5-Trimethylbenzene						
1,3-Dichlorobenzene						
1,3-Dichloropropane						
1,4-Dichloro-2-Butene						
1,4-Dichlorobenzene						
2,2-Dichloropropane						
2-Butanone						
2-Chloroethyl Vinyl Ether						
2-Chlorotoluene						
2-Hexanone						
4-Chlorotoluene						
4-Methyl-2-pentanone						
Acetone						
Acrolein						

Table 2-2 - Soil Screening Levels for Phase 2 ESA

K-C Worldwide Site Upland Area 110207

	Unrestricted Land Use			*Industrial Land Use*		
ANALYTE (BY GROUP)	Soil, Method A, Unrestricted Land Use, Table Value (mg/kg)	Soil, Method B, Standard Formula Value (mg/kg)	**Most Restrictive Unrestricted Soil Screening Level (mg/kg)**	Soil, Method A, Industrial Land Use, Table Value (mg/kg)	Soil, Method C, Most Restrictive Standard Formula Value (mg/kg)	**Most Restrictive Industrial Soil Screening Level (mg/kg)**
Acrylonitrile		1.9	**1.9**		240	**240**
Benzene	0.03	18	**0.03**	0.03	2,400	**0.03**
bis(2-chloroisopropyl)ether						
Bromobenzene						
Bromochloromethane						
Bromodichloromethane		16	**16**		2,100	**2,100**
Bromoethane						
Bromoform		130	**130**		17,000	**17,000**
Bromomethane						
Carbon disulfide						
Carbon tetrachloride		14	**14**		1,900	**1,900**
Chlorobenzene						
Chloroethane						
Chloroform						
Chloromethane						
cis-1,2-Dichloroethene (DCE)						
cis-1,3-Dichloropropene						
Dibromochloromethane		12	**12**		1,600	**1,600**
Dibromomethane						
Dichlorodifluoromethane						
Ethylbenzene	6		**6**	6		**6**
Hexachlorobutadiene		13	**13**		1,700	**1,700**
Isopropylbenzene						
m,p-Xylenes		16,000	**16,000**		700,000	**700,000**
o-Xylene		16,000	**16,000**		700,000	**700,000**
Xylenes (total)	9		**9**	9		**9**
Methylene chloride	0.02	130	**0.02**	0.02	18,000	**0.02**
Methyl-Tert-Butyl Ether	0.1		**0.1**	0.1		**0.1**
Methyliodide						
n-Butylbenzene						
n-Propylbenzene						
p-Isopropyltoluene						
Pyridine						
sec-Butylbenzene						
Styrene						
tert-Butylbenzene						
Tetrachloroethene (PCE)	0.05	1.9	**0.05**	0.05	240	**0.05**
Toluene	7		**7**	7		**7**
trans-1,2-Dichloroethene						
trans-1,3-Dichloropropene						
Trichloroethene (TCE)	0.03	11	**0.03**	0.03	1500	**0.03**
Trichlorofluoromethane						
Vinyl acetate						
Vinyl chloride		0.67	**0.67**		88	**88**
Naphthalene	5		**5**	5		**5**

Table 2-2 - Soil Screening Levels for Phase 2 ESA

K-C Worldwide Site Upland Area 110207

	Unrestricted Land Use			*Industrial Land Use*		
ANALYTE (BY GROUP)	Soil, Method A, Unrestricted Land Use, Table Value (mg/kg)	Soil, Method B, Standard Formula Value (mg/kg)	**Most Restrictive Unrestricted Soil Screening Level (mg/kg)**	Soil, Method A, Industrial Land Use, Table Value (mg/kg)	Soil, Method C, Most Restrictive Standard Formula Value (mg/kg)	**Most Restrictive Industrial Soil Screening Level (mg/kg)**
Polycyclic Aromatic Hydrocarbons (PAHs)						
Acenaphthene						
Acenaphthylene						
Anthracene						
Benzo(g,h,i)perylene						
Fluoranthene						
Fluorene						
Phenanthrene						
Pyrene						
1-Methylnaphthalene		35	**35**		4,500	**4,500**
2-Methylnaphthalene						
Naphthalene	5		**5**	5		**5**
Total Naphthalenes						
Benz(a)anthracene		1.4	**1.4**		180	**180**
Benzo(a)pyrene[f]	0.1	0.14	**0.14**	2	18	**2**
Benzo(b)fluoranthene		1.4	**1.4**		180	**180**
Benzo(k)fluoranthene		14	**14**		1,800	**1,800**
Chrysene		140	**140**		18,000	**18,000**
Dibenzo(a,h)anthracene		0.14	**0.14**		18	**18**
Indeno(1,2,3-cd)pyrene		1.4	**1.4**		180	**180**
Total cPAHs TEQ	0.1	0.14	**0.14**	2	18	**2**
Other Semi Volatile Organics (SVOCs)						
1,2,4-Trichlorobenzene		35	**35**		4,500	**4,500**
1,2-Dichlorobenzene						
1,3-Dichlorobenzene						
1,4-Dichlorobenzene						
2,3,4,6-Tetrachlorophenol						
2,4,5-Trichlorophenol						
2,4,6-Trichlorophenol		91	**91**		12,000	**12,000**
2,4-Dichlorophenol						
2,4-Dimethylphenol						
2,6-Dichlorophenol						
2,4-Dinitrophenol						
2-Chloronaphthalene						
2-Chlorophenol						
2-Methylphenol						
2-Nitroaniline						
2-Nitrophenol						
3,3'-Dichlorobenzidine		2.2	**2.2**		290	**290**
3-Nitroaniline						
4,6-Dinitro-2-methylphenol						
4-Bromophenyl phenyl ether						
4-Chloro-3-methylphenol						
4-Chloroaniline		5	**5**		660	**660**
4-Chlorophenyl phenyl ether						
4-Methylphenol						
4-Nitroaniline						
4-Nitrophenol						
Aniline		180	**180**		23,000	**23,000**
Azobenzene		9.1	**9.1**		1,200	**1,200**
Benzoic acid						
Benzyl alcohol						
Benzyl butyl phthalate		530	**530**		69,000	**69,000**
Bis(2-chloro-1-methylethyl) ether		14	**14**		1,900	**1,900**

Table 2-2 - Soil Screening Levels for Phase 2 ESA

K-C Worldwide Site Upland Area 110207

	Unrestricted Land Use			*Industrial Land Use*		
ANALYTE (BY GROUP)	Soil, Method A, Unrestricted Land Use, Table Value (mg/kg)	Soil, Method B, Standard Formula Value (mg/kg)	**Most Restrictive Unrestricted Soil Screening Level (mg/kg)**	Soil, Method A, Industrial Land Use, Table Value (mg/kg)	Soil, Method C, Most Restrictive Standard Formula Value (mg/kg)	**Most Restrictive Industrial Soil Screening Level (mg/kg)**
Bis(2-chloroethoxy)methane						
Bis(2-chloroethyl) ether		0.91	**0.91**		120	**120**
Bis(2-ethylhexyl) phthalate		71	**71**		9,400	**9,400**
Carbazole						
Dibenzofuran						
Diethyl phthalate						
Dimethyl phthalate						
Di-n-butyl phthalate						
Di-n-octyl phthalate						
Hexachlorobenzene		0.63	**0.63**		82	**82**
Hexachlorobutadiene		13	**13**		1,700	**1,700**
Hexachlorocyclopentadiene						
Hexachloroethane		71	**71**		9,400	**9,400**
Isophorone		1100	**1100**		140,000	**140,000**
m,p-Cresol						
Nitrobenzene						
N-Nitroso-di-n-propylamine		0.14	**0.14**		19	**19**
N-Nitrosodiethanolamine		0.36	**0.36**		47	**47**
N-Nitrosodimethylamine		0.02	**0.02**		2.6	**2.6**
N-Nitrosodiphenylamine		200	**200**		27,000	**27,000**
Pentachlorophenol		2.5	**2.5**		330	**330**
Phenol						
Retene						
trans-1,4-Dichloro-2-butene						
2,4-Dinitrotoluene						
2,6-Dinitrotoluene						
Polychlorinated Biphenyls (PCBs)						
Aroclor 1016		14	**14**		1,900	**1,900**
Aroclor 1221						
Aroclor 1232						
Aroclor 1242						
Aroclor 1248						
Aroclor 1254		0.5	**0.5**		66	**66**
Aroclor 1260		0.5	**0.5**		66	**66**
Aroclor 1262						
Aroclor 1268						
Total PCBs	1	0.5	**0.5**	10	66	**10**

Table 2-2 - Soil Screening Levels for Phase 2 ESA

K-C Worldwide Site Upland Area 110207

	Unrestricted Land Use			*Industrial Land Use*		
ANALYTE (BY GROUP)	Soil, Method A, Unrestricted Land Use, Table Value (mg/kg)	Soil, Method B, Standard Formula Value (mg/kg)	**Most Restrictive Unrestricted Soil Screening Level (mg/kg)**	Soil, Method A, Industrial Land Use, Table Value (mg/kg)	Soil, Method C, Most Restrictive Standard Formula Value (mg/kg)	**Most Restrictive Industrial Soil Screening Level (mg/kg)**
Dioxins/Furans						
2,3,7,8-TCDD		1.1E-05	**1.1E-05**		1.5E-03	**1.5E-03**
1,2,3,7,8-PeCDD						
1,2,3,4,7,8-HxCDD						
1,2,3,6,7,8-HxCDD						
1,2,3,7,8,9-HxCDD		1.6E-04	**1.6E-04**		2.1E-02	**2.1E-02**
1,2,3,4,6,7,8-HpCDD						
OCDD						
2,3,7,8-TCDF						
1,2,3,7,8-PeCDF						
2,3,4,7,8-PeCDF						
1,2,3,4,7,8-HxCDF						
1,2,3,6,7,8-HxCDF						
1,2,3,7,8,9-HxCDF						
2,3,4,6,7,8-HxCDF						
1,2,3,4,6,7,8-HpCDF						
1,2,3,4,7,8,9-HpCDF						
OCDF						
Total 2,3,7,8 TCDD (TEQ)		1.1E-05	**1.1E-05**		1.5E-03	**1.5E-03**

Notes:

a) Values from Ecology's CLARC Database; except as noted.

b) Method B and C values are most restrictive of carcinogenic or non-carcinogenic values presented in Ecology's CLARC database.

c) For gasoline-range TPH, the displayed Method A value assumes benzene is present; the value is 100 mg/kg if benzene is not present and sum of BTEX concentrations is less than 1% of the TPH concentration. This is an area-specific determination.

d) Total TPH = sum of diesel- and oil-range hydrocarbon concentrations, in accordance with MTCA.

e) For arsenic, the Method B cleanup level is below background concentrations, thus the Method A unrestricted soil cleanup level, based on background, is retained as the unrestricted screening level.

f) For benzo(a)pyrene, the Method A unrestricted soil cleanup level is the Method B cleanup level rounded to one significant digit. Therefore, the Method B value is retained as the unrestricted screening level.

g) Analytical practical quantitation limits (PQLs) are not considered in this tabulation of screening levels, but may be a factor in defining cleanup levels.

Table 3-1A - Soil Quality Data for REC 1 - ExxonMobil/ADC Site

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	REC1-MW-1 9/4/12 (5-6 ft)	REC1-MW-1 9/4/12 (11-12 ft)	REC1-MW-1 FD 9/4/12 (11-12 ft)	REC1-MW-1 9/4/12 (13-14 ft)	REC1-MW-2 9/4/12 (6-7 ft)	REC1-MW-3 9/4/12 (5.5-6.5 ft)	REC1-MW-3 9/4/12 (12-13 ft)	REC1-MW-3 FD 9/4/12 (12-13 ft)
Total Petroleum Hydrocarbons (TPH)										
Gasoline Range Hydrocarbons in mg/kg	100	100	2 U	59		2 U	2 U	2 U	4,000	
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	50 U	10,000		50 U	50 U	50 U	2,600	2,800
Oil Range Hydrocarbons in mg/kg	2,000	2,000	250 U	250 U		250 U	250 U	250 U	250 U	250 U
Total TPH in mg/kg	2,000	2,000	ND	10,100		ND	ND	ND	2,720	2,920
Polycyclic Aromatic Hydrocarbons (PAHs)										
Acenaphthene in mg/kg	4,800	210,000	0.01 U	0.17 J	0.048 J	0.01 U	0.01 U	0.01 U	0.82	
Acenaphthylene in mg/kg			0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Anthracene in mg/kg	24,000	1,100,000	0.01 U	0.01 UJ	0.01 U	0.01 U	0.01 U	0.01 U	0.013	
Benzo(g,h,i)perylene in mg/kg			0.011	0.01 UJ	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Fluoranthene in mg/kg	3,200	140,000	0.017	0.020 J	0.01 U	0.01 U	0.011	0.01 U	0.01 U	
Fluorene in mg/kg	3,200	140,000	0.01 U	0.35 J	0.079 J	0.01 U	0.01 U	0.01 U	0.26	
Phenanthrene in mg/kg			0.011	0.76 J	0.28 J	0.01 U	0.01	0.011	0.19	
Pyrene in mg/kg	2,400	110,000	0.021	0.087 J	0.018 J	0.01 U	0.015	0.01 U	0.01 U	
Naphthalene in mg/kg	5	5	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Benz(a)anthracene in mg/kg	1.4	180	0.011	0.01 UJ	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Benzo(a)pyrene in mg/kg	0.14	2	0.012	0.01 UJ	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Benzo(b)fluoranthene in mg/kg	1.4	180	0.016	0.01 UJ	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Benzo(k)fluoranthene in mg/kg	14	1,800	0.01 U	0.01 UJ	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Chrysene in mg/kg	140	18,000	0.014	0.01 UJ	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Dibenzo(a,h)anthracene in mg/kg	0.14	18	0.01 U	0.01 UJ	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	180	0.011	0.01 UJ	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Total cPAHs TEQ in mg/kg	0.14	2	0.0169	ND	ND	ND	ND	ND	ND	
Volatile Organic Compounds (VOCs)										
1,1,1,2-Tetrachloroethane in mg/kg	38	5,000	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
1,1,1-Trichloroethane in mg/kg	2	2	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
1,1,2,2-Tetrachloroethane in mg/kg	5	660	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
1,1,2-Trichloroethane in mg/kg	18	2,300	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
1,1-Dichloroethane in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
1,1-Dichloroethene in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
1,1-Dichloropropene in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
1,2,3-Trichlorobenzene in mg/kg			0.25 U	0.25 U		0.25 U	0.25 U	0.25 U	0.25 U	
1,2,3-Trichloropropane in mg/kg	0.033	4.4	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
1,2,4-Trichlorobenzene in mg/kg	35	4,500	0.25 U	0.25 U		0.25 U	0.25 U	0.25 U	0.25 U	
1,2,4-Trimethylbenzene in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
1,2-Dibromo-3-chloropropane in mg/kg	1.3	160	0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
1,2-Dichlorobenzene in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
1,2-Dichloroethane (EDC) in mg/kg	11	1,400	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
1,2-Dichloropropane in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
1,3,5-Trimethylbenzene in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
1,3-Dichlorobenzene in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
1,3-Dichloropropane in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
1,4-Dichlorobenzene in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
2,2-Dichloropropane in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
2-Butanone in mg/kg			0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	
2-Chlorotoluene in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
2-Hexanone in mg/kg			0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	
4-Chlorotoluene in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
4-Methyl-2-pentanone in mg/kg			0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	
Acetone in mg/kg			0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	
Benzene in mg/kg	0.03	0.03	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	
Bromobenzene in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
Bromodichloromethane in mg/kg	16	2,100	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
Bromoform in mg/kg	130	17,000	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
Bromomethane in mg/kg			0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	
Carbon tetrachloride in mg/kg	14	1,900	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
Chlorobenzene in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
Chloroethane in mg/kg			0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	
Chloroform in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
Chloromethane in mg/kg			0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	
cis-1,2-Dichloroethene (DCE) in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
cis-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
Dibromochloromethane in mg/kg	12	1,600	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
Dibromomethane in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
Dichlorodifluoromethane in mg/kg			0.5 U	0.5 U			0.5 U	0.5 U	0.5 U	
Ethylbenzene in mg/kg	6	6	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
Hexachlorobutadiene in mg/kg	13	1,700	0.25 U	0.25 U		0.25 U	0.25 U	0.25 U	0.25 U	
Isopropylbenzene in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.32	
Methylene chloride in mg/kg	0.02	0.02	0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
n-Propylbenzene in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	1.1	
p-Isopropyltoluene in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.72	
sec-Butylbenzene in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	1.9	
Styrene in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
tert-Butylbenzene in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
Tetrachloroethene (PCE) in mg/kg	0.05	0.05	0.025 U	0.025 U		0.025 U	0.025 U	0.025 U	0.025 U	
Toluene in mg/kg	7	7	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
trans-1,2-Dichloroethene in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
trans-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
Trichloroethene (TCE) in mg/kg	0.03	0.03	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	
Trichlorofluoromethane in mg/kg			0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	
Vinyl chloride in mg/kg	0.67	88	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
m,p-Xylenes in mg/kg	16,000	700,000	0.1 U	0.1 U		0.1 U	0.1 U	0.1 U	0.1 U	
o-Xylene in mg/kg	16,000	700,000	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	
Xylenes (total) in mg/kg	9	9	ND	ND		ND	ND	ND	ND	

Notes:
Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.
Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.
J - Analyte was positively identified. The reported result is an estimate.
ND - Non detect or not detected.
U - Analyte was not detected at or above the reported result.
UJ - Analyte was not detected at or above the reported estimate.

Table 3-1A - Soil Quality Data for REC 1 - ExxonMobil/ADC Site

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	REC1-MW-3 9/4/12 (24-25 ft)	REC1-MW-4 9/7/12 (6.5-7.5 ft)	REC1-MW-4 9/7/12 (11-12 ft)	REC1-MW-4 9/7/12 (13-14 ft)	REC1-MW-5 9/10/12 (6.5-7.5 ft)	REC1-MW-5 9/10/12 (12-13 ft)	REC1-MW-5 9/10/12 (22-23 ft)	REC1-MW-6 9/10/12 (7.5-8.5 ft)
Total Petroleum Hydrocarbons (TPH)										
Gasoline Range Hydrocarbons in mg/kg	100	100	2 U	2 U	2 U	4.8	2 UJ	130	2 U	2 U
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	50 U	50 U	50 U	50 U	3,800	6,600	50 U	50 U
Oil Range Hydrocarbons in mg/kg	2,000	2,000	250 U	250 U	250 U	250 U	2,000	730	250 U	250 U
Total TPH in mg/kg	2,000	2,000	ND	ND	ND	ND	5,800	7,330	ND	ND
Polycyclic Aromatic Hydrocarbons (PAHs)										
Acenaphthene in mg/kg	4,800	210,000	0.01 U	0.01 U	0.01 U	0.033	0.01 U	1.7	0.01 U	0.01 U
Acenaphthylene in mg/kg			0.01 U	0.01 U	0.01 U	0.011	0.01 U	0.01 U	0.01 U	0.01 U
Anthracene in mg/kg	24,000	1,100,000	0.01 U	0.01 U	0.01 U	0.036	0.01 UJ	0.01 UJ	0.01 U	0.01 U
Benzo(g,h,i)perylene in mg/kg			0.01 U	0.01 U	0.01 U	0.026	0.070 J	0.015	0.01 U	0.032
Fluoranthene in mg/kg	3,200	140,000	0.01 U	0.01 U	0.01 U	0.14	0.015 J	0.24 J	0.01 U	0.055
Fluorene in mg/kg	3,200	140,000	0.01 U	0.01 U	0.01 U	0.052	0.01 U	6.3	0.01 U	0.01 U
Phenanthrene in mg/kg			0.01 U	0.01 U	0.01 U	0.14	0.01 UJ	2.7	0.01 U	0.037
Pyrene in mg/kg	2,400	110,000	0.01 U	0.01 U	0.01 U	0.13 J	0.056 J	0.52 J	0.01 U	0.069
Naphthalene in mg/kg	5	5	0.01 U	0.01 U	0.01 U	0.054	0.01 U	0.01 U	0.01 U	0.01 U
Benz(a)anthracene in mg/kg	1.4	180	0.01 U	0.01 U	0.01 U	0.023	0.01 UJ	0.065 J	0.01 U	0.03
Benzo(a)pyrene in mg/kg	0.14	2	0.01 U	0.01 U	0.01 U	0.016	0.01 UJ	0.025	0.01 U	0.04
Benzo(b)fluoranthene in mg/kg	1.4	180	0.01 U	0.01 U	0.01 U	0.018	0.01 UJ	0.029	0.01 U	0.048
Benzo(k)fluoranthene in mg/kg	14	1,800	0.01 U	0.01 U	0.01 U	0.01 U	0.01 UJ	0.01 U	0.01 U	0.012
Chrysene in mg/kg	140	18,000	0.01 U	0.01 U	0.01 U	0.025	0.01 UJ	0.18 J	0.01 U	0.042
Dibenzo(a,h)anthracene in mg/kg	0.14	18	0.01 U	0.01 U	0.01 U	0.01 U	0.01 UJ	0.01 U	0.01 U	0.01 U
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	180	0.01 U	0.01 U	0.01 U	0.026	0.043 J	0.02	0.01 U	0.034
Total cPAHs TEQ in mg/kg	0.14	2	ND	ND	ND	0.024	0.0114 J	0.0392	ND	0.0533
Volatile Organic Compounds (VOCs)										
1,1,1,2-Tetrachloroethane in mg/kg	38	5,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
1,1,1-Trichloroethane in mg/kg	2	2	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
1,1,2,2-Tetrachloroethane in mg/kg	5	660	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
1,1,2-Trichloroethane in mg/kg	18	2,300	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
1,1-Dichloroethane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
1,1-Dichloroethene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
1,1-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
1,2,3-Trichlorobenzene in mg/kg			0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U
1,2,3-Trichloropropane in mg/kg	0.033	4.4	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
1,2,4-Trichlorobenzene in mg/kg	35	4,500	0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U
1,2,4-Trimethylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
1,2-Dibromo-3-chloropropane in mg/kg	1.3	160	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
1,2-Dichlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
1,2-Dichloroethane (EDC) in mg/kg	11	1,400	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
1,2-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
1,3,5-Trimethylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
1,3-Dichlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
1,3-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
1,4-Dichlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
2,2-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
2-Butanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
2-Chlorotoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
2-Hexanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
4-Chlorotoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
4-Methyl-2-pentanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
Acetone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
Benzene in mg/kg	0.03	0.03	0.03 U	0.03 U	0.03 U	0.03 U	0.03 UJ	0.03 U	0.03 U	0.03 U
Bromobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
Bromodichloromethane in mg/kg	16	2,100	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
Bromoform in mg/kg	130	17,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
Bromomethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
Carbon tetrachloride in mg/kg	14	1,900	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
Chlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
Chloroethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
Chloroform in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
Chloromethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene (DCE) in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
cis-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
Dibromochloromethane in mg/kg	12	1,600	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
Dibromomethane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
Dichlorodifluoromethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
Ethylbenzene in mg/kg	6	6	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
Hexachlorobutadiene in mg/kg	13	1,700	0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U
Isopropylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.13	0.05 U	0.05 U
Methylene chloride in mg/kg	0.02	0.02	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
n-Propylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.26	0.05 U	0.05 U
p-Isopropyltoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
sec-Butylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.18	0.05 U	0.05 U
Styrene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
tert-Butylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
Tetrachloroethene (PCE) in mg/kg	0.05	0.05	0.025 U	0.025 U	0.025 U	0.025 U	0.025 UJ	0.025 U	0.025 U	0.025 U
Toluene in mg/kg	7	7	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
trans-1,2-Dichloroethene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
trans-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
Trichloroethene (TCE) in mg/kg	0.03	0.03	0.03 U	0.03 U	0.03 U	0.03 U	0.03 UJ	0.03 U	0.03 U	0.03 U
Trichlorofluoromethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
Vinyl chloride in mg/kg	0.67	88	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
m,p-Xylenes in mg/kg	16,000	700,000	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U
o-Xylene in mg/kg	16,000	700,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
Xylenes (total) in mg/kg	9	9	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.
Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.
J - Analyte was positively identified. The reported result is an estimate.
ND - Non detect or not detected.
U - Analyte was not detected at or above the reported result.
UJ - Analyte was not detected at or above the reported estimate.

Table 3-1A - Soil Quality Data for REC 1 - ExxonMobil/ADC Site

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	REC1-MW-6 9/10/12 (12.5-13.5 ft)	REC1-MW-6 9/10/12 (17-18 ft)	REC1-MW-7 9/10/12 (7-8 ft)	REC1-MW-7 9/10/12 (13-14 ft)	REC1-MW-7 9/10/12 (16.5-17.5 ft)	REC1-MW-8 9/4/12 (7-8 ft)	REC1-MW-8 9/4/12 (12-13 ft)	REC1-MW-8 9/4/12 (15-16 ft)	REC1-MW-9 9/5/12 (6-7 ft)
Total Petroleum Hydrocarbons (TPH)											
Gasoline Range Hydrocarbons in mg/kg	100	100	10	10 U	2 U	6 U	2 U	2 U	2 U	2 U	2 U
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	1,500	290	50 U	150 U	50 U	87	1,100	50 U	50 U
Oil Range Hydrocarbons in mg/kg	2,000	2,000	2,000	1,250 U	250 U	750 U	250 U	250 U	1,200	250 U	250 U
Total TPH in mg/kg	2,000	2,000	3,500	915	ND	ND	ND	212	2,300	ND	ND
Polycyclic Aromatic Hydrocarbons (PAHs)											
Acenaphthene in mg/kg	4,800	210,000	0.24	0.05 U	0.01 U	0.03 U	0.012	0.01 U	0.069	0.01 U	0.01 U
Acenaphthylene in mg/kg			0.02 U	0.05 U	0.033	0.03 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Anthracene in mg/kg	24,000	1,100,000	0.097	0.05 U	0.01 U	0.03 U	0.01 U	0.01 U	0.04	0.01 U	0.01 U
Benzo(g,h,i)perylene in mg/kg			0.15	0.05 U	0.071	0.03 U	0.01 U	0.022	0.076	0.01 U	0.01 U
Fluoranthene in mg/kg	3,200	140,000	0.31	0.05 U	0.095	0.03 U	0.01 U	0.031	0.24	0.01 U	0.014
Fluorene in mg/kg	3,200	140,000	0.21	0.05 U	0.01 U	0.03 U	0.01 U	0.01 U	0.053	0.01 U	0.01 U
Phenanthrene in mg/kg			0.43	0.05 U	0.059	0.03 U	0.01 U	0.03	0.082	0.01 U	0.015
Pyrene in mg/kg	2,400	110,000	0.52	0.05 U	0.13	0.03 U	0.01 U	0.037	0.41	0.01 U	0.021
Naphthalene in mg/kg	5	5	0.16	0.05 U	0.01 U	0.03 U	0.01 U	0.015	0.073	0.01 U	0.01 U
Benz(a)anthracene in mg/kg	1.4	180	0.16	0.05 U	0.074	0.03 U	0.01 U	0.021	0.1	0.01 U	0.01
Benzo(a)pyrene in mg/kg	0.14	2	0.15	0.05 U	0.12	0.03 U	0.01 U	0.018	0.1	0.01 U	0.01 U
Benzo(b)fluoranthene in mg/kg	1.4	180	0.18	0.05 U	0.12	0.03 U	0.01 U	0.04	0.29	0.01 U	0.011
Benzo(k)fluoranthene in mg/kg	14	1,800	0.044	0.05 U	0.041	0.03 U	0.01 U	0.015	0.082	0.01 U	0.01 U
Chrysene in mg/kg	140	18,000	0.22	0.05 U	0.13	0.03 U	0.01 U	0.066	0.28	0.01 U	0.016
Dibenzo(a,h)anthracene in mg/kg	0.14	18	0.029	0.05 U	0.022	0.03 U	0.01 U	0.01 U	0.021	0.01 U	0.01 U
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	180	0.12	0.05 U	0.079	0.03 U	0.01 U	0.019	0.078	0.01 U	0.01 U
Total cPAHs TEQ in mg/kg	0.14	2	0.206	ND	0.155	ND	ND	0.0287	0.16	ND	0.00876
Volatile Organic Compounds (VOCs)											
1,1,1,2-Tetrachloroethane in mg/kg	38	5,000	0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1,1-Trichloroethane in mg/kg	2	2	0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1,2,2-Tetrachloroethane in mg/kg	5	660	0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1,2-Trichloroethane in mg/kg	18	2,300	0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethane in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethene in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloropropene in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2,3-Trichlorobenzene in mg/kg			0.5 U	1.2 U	0.25 U	0.75 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2,3-Trichloropropane in mg/kg	0.033	4.4	0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2,4-Trichlorobenzene in mg/kg	35	4,500	0.5 U	1.2 U	0.25 U	0.75 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2,4-Trimethylbenzene in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dibromo-3-chloropropane in mg/kg	1.3	160	1 U	2.5 U	0.5 U	1.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005	0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichlorobenzene in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichloroethane (EDC) in mg/kg	11	1,400	0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichloropropane in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,3,5-Trimethylbenzene in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,3-Dichlorobenzene in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,3-Dichloropropane in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,4-Dichlorobenzene in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2,2-Dichloropropane in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2-Butanone in mg/kg			1 U	2.5 U	0.5 U	1.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Chlorotoluene in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2-Hexanone in mg/kg			1 U	2.5 U	0.5 U	1.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
4-Chlorotoluene in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
4-Methyl-2-pentanone in mg/kg			1 U	2.5 U	0.5 U	1.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Acetone in mg/kg			1 U	2.5 U	0.5 U	1.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene in mg/kg	0.03	0.03	0.06 U	0.15 U	0.03 U	0.09 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Bromobenzene in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Bromodichloromethane in mg/kg	16	2,100	0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Bromoform in mg/kg	130	17,000	0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Bromomethane in mg/kg			1 U	2.5 U	0.5 U	1.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride in mg/kg	14	1,900	0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chlorobenzene in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chloroethane in mg/kg			1 U	2.5 U	0.5 U	1.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chloromethane in mg/kg			1 U	2.5 U	0.5 U	1.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene (DCE) in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
cis-1,3-Dichloropropene in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dibromochloromethane in mg/kg	12	1,600	0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dibromomethane in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dichlorodifluoromethane in mg/kg			1 U	2.5 U	0.5 U	1.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene in mg/kg	6	6	0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Hexachlorobutadiene in mg/kg	13	1,700	0.5 U	1.2 U	0.25 U	0.75 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Isopropylbenzene in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Methylene chloride in mg/kg	0.02	0.02	1 U	2.5 U	0.5 U	1.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1	0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
n-Propylbenzene in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
p-Isopropyltoluene in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
sec-Butylbenzene in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Styrene in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
tert-Butylbenzene in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Tetrachloroethene (PCE) in mg/kg	0.05	0.05	0.05 U	0.12 U	0.025 U	0.075 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
Toluene in mg/kg	7	7	0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
trans-1,2-Dichloroethene in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
trans-1,3-Dichloropropene in mg/kg			0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Trichloroethene (TCE) in mg/kg	0.03	0.03	0.06 U	0.15 U	0.03 U	0.09 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Trichlorofluoromethane in mg/kg			1 U	2.5 U	0.5 U	1.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl chloride in mg/kg	0.67	88	0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
m,p-Xylenes in mg/kg	16,000	700,000	0.2 U	0.5 U	0.1 U	0.3 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
o-Xylene in mg/kg	16,000	700,000	0.1 U	0.25 U	0.05 U	0.15 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Xylenes (total) in mg/kg	9	9	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.

Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

ND - Non detect or not detected.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-1B - Groundwater Quality Data for REC 1 - ExxonMobil/ADC Site

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	REC1-MW-01 09/13/12	REC1-MW-02 09/13/12	REC1-MW-03 09/13/12	REC1-MW-03 09/13/12 FD	REC1-MW-04 09/13/12	REC1-MW-05 09/13/12	REC1-MW-06 09/13/12	REC1-MW-07 09/13/12	REC1-MW-08 09/13/12	REC1-MW-09 09/13/12	REC1-MW-09 09/13/12 FD
Total Petroleum Hydrocarbons (TPH)												
Gasoline Range Hydrocarbons in µg/L	1,000	100 U	100 U	390	360	290	100 U	100 U	100 U	100 U	100 U	
Diesel Range Hydrocarbons in µg/L	500	50 U	50 U	300		150	190	50 U	50 U	50 U	50 U	
Oil Range Hydrocarbons in µg/L	500	250 U	250 U	250 U		250 U	250 U	250 U	250 U	250 U	250 U	
Total TPHs in µg/L	500	ND	ND	425		275	315	ND	ND	ND	ND	
Conventional Chemistry Parameters												
Ammonia as Nitrogen in mg/L	0.035										0.249	0.236
Dissolved Sulfide in mg/L											0.050 U	0.050 U
Total Suspended Solids in mg/L		10 U	41	140		28	16	32	29	10 U	10 U	
Polycyclic Aromatic Hydrocarbons (PAHs)												
Acenaphthene in µg/L	640	0.075	0.05 U	0.16		1.2	0.05 U	0.05 U	0.07	0.066	0.05 U	
Acenaphthylene in µg/L		0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	
Anthracene in µg/L	26,000	0.05 U	0.05 U	0.05 U		0.051	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	
Benzo(g,h,i)perylene in µg/L		0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	
Fluoranthene in µg/L	90	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.065	0.05 U	0.05 U	
Fluorene in µg/L	3,500	0.069	0.05 U	0.05 U		0.99	0.05 U	0.05 U	0.058	0.05 U	0.05 U	
Phenanthrene in µg/L		0.17	0.05 U	0.05 U		0.077	0.05 U	0.05 U	0.13	0.05 U	0.05 U	
Pyrene in µg/L	2,600	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	
2-Methylnaphthalene in µg/L											1 U	
Naphthalene in µg/L	170	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	
Benz(a)anthracene in µg/L	0.018	0.01 U	0.01 U	0.01 U		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Benzo(a)pyrene in µg/L	0.018	0.01 U	0.01 U	0.01 U		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Benzo(b)fluoranthene in µg/L	0.018	0.01 U	0.01 U	0.01 U		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Benzo(k)fluoranthene in µg/L	0.018	0.01 U	0.01 U	0.01 U		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Chrysene in µg/L	0.018	0.01 U	0.01 U	0.01 U		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Dibenzo(a,h)anthracene in µg/L	0.018	0.01 U	0.01 U	0.01 U		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Indeno(1,2,3-cd)pyrene in µg/L	0.018	0.01 U	0.01 U	0.01 U		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Total cPAHs TEQ in µg/L	0.018	ND	ND	ND		ND	ND	ND	ND	ND	ND	
Other Semivolatiles												
1,2,4-Trichlorobenzene in µg/L	2										1 U	
1,2-Dichlorobenzene in µg/L	1,300										1 U	
1,3-Dichlorobenzene in µg/L	960										1 U	
1,4-Dichlorobenzene in µg/L	190										1 U	
2,4,5-Trichlorophenol in µg/L	3,600										10 U	
2,4,6-Trichlorophenol in µg/L	2.4										10 U	
2,4-Dichlorophenol in µg/L	190										10 U	
2,4-Dimethylphenol in µg/L	550										10 U	
2,4-Dinitrophenol in µg/L	3,500										30 U	
2-Chloronaphthalene in µg/L	1,000										1 U	
2-Chlorophenol in µg/L	97										10 U	
2-Methylphenol in µg/L											10 U	
2-Nitroaniline in µg/L											3 U	
2-Nitrophenol in µg/L											10 U	
3 & 4 Methylphenol in µg/L											20 U	
3-Nitroaniline in µg/L											3 U	
4,6-Dinitro-2-methylphenol in µg/L											30 U	
4-Bromophenyl phenyl ether in µg/L											1 U	
4-Chloro-3-methylphenol in µg/L											10 U	
4-Chloroaniline in µg/L											3 U	
4-Chlorophenyl phenyl ether in µg/L											1 U	
4-Nitroaniline in µg/L											10 U	
4-Nitrophenol in µg/L											10 U	
Benzoic acid in µg/L											50 U	
Benzyl alcohol in µg/L											10 U	
Benzyl butyl phthalate in µg/L	8.2										1 U	
Bis(2-chloro-1-methylethyl) ether in µg/L	37										10 UJ	
Bis(2-chloroethoxy)methane in µg/L											1 U	
Bis(2-chloroethyl) ether in µg/L	0.53										10 U	
Bis(2-ethylhexyl) phthalate in µg/L	2.2										10 U	
Carbazole in µg/L											1 U	
Dibenzofuran in µg/L											1 U	
Diethyl phthalate in µg/L	28,000										1 U	
Dimethyl phthalate in µg/L	1,100,000										1 U	
Di-n-butyl phthalate in µg/L	2,900										1 U	
Di-n-octyl phthalate in µg/L											1 U	
Hexachlorobenzene in µg/L	0.00029										1 U	
Hexachlorobutadiene in µg/L	0.81										1 U	
Hexachlorocyclopentadiene in µg/L	1,100										3 U	
Hexachloroethane in µg/L	3.3										1 U	
Isophorone in µg/L	600										1 U	
Nitrobenzene in µg/L	690										1 U	
N-Nitroso-di-n-propylamine in µg/L	0.51										10 U	
N-Nitrosodiphenylamine in µg/L	6										1 U	
Pentachlorophenol in µg/L	1.5										10 U	
Phenol in µg/L	560,000										10 U	
2,4-Dinitrotoluene in µg/L	3.4										1 U	
2,6-Dinitrotoluene in µg/L											1 U	
Volatile Organic Compounds (VOC)												
1,1,1,2-Tetrachloroethane in µg/L	7.4	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,1,1-Trichloroethane in µg/L	11,000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,1,2,2-Tetrachloroethane in µg/L	4	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,1,2-Trichloroethane in µg/L	7.9	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,1-Dichloroethane in µg/L	2,300	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,1-Dichloroethene in µg/L	3.2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,1-Dichloropropene in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,2,3-Trichlorobenzene in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,2,3-Trichloropropane in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,2,4-Trichlorobenzene in µg/L	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		
1,2,4-Trimethylbenzene in µg/L	24	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,2-Dibromo-3-chloropropane in µg/L		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
1,2-Dibromoethane (EDB) in µg/L	0.74	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,2-Dichlorobenzene in µg/L	1,300	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		
1,2-Dichloroethane (EDC) in µg/L	4.2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,2-Dichloropropane in µg/L	15	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,3,5-Trimethylbenzene in µg/L	25	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,3-Dichlorobenzene in µg/L	960	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		
1,3-Dichloropropane in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,4-Dichlorobenzene in µg/L	190	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		
2,2-Dichloropropane in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
2-Butanone in µg/L	350,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
2-Chlorotoluene in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
2-Hexanone in µg/L		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
4-Chlorotoluene in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
4-Methyl-2-pentanone in µg/L	11,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Acetone in µg/L		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Benzene in µg/L	2.4	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	
Bromobenzene in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Bromodichloromethane in µg/L	0.09	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Bromoform in µg/L	140	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Bromomethane in µg/L	13	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Carbon tetrachloride in µg/L	0.22	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	

Table 3-1B - Groundwater Quality Data for REC 1 - ExxonMobil/ADC Site

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	REC1-MW-01 09/13/12	REC1-MW-02 09/13/12	REC1-MW-03 09/13/12	REC1-MW-03 09/13/12 FD	REC1-MW-04 09/13/12	REC1-MW-05 09/13/12	REC1-MW-06 09/13/12	REC1-MW-07 09/13/12	REC1-MW-08 09/13/12	REC1-MW-09 09/13/12	REC1-MW-09 09/13/12 FD
Chlorobenzene in µg/L	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Chloroethane in µg/L	12	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Chloroform in µg/L	1.2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Chloromethane in µg/L	5.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
cis-1,2-Dichloroethene (DCE) in µg/L	160	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
cis-1,3-Dichloropropene in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Dibromochloromethane in µg/L	0.22	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Dibromomethane in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Dichlorodifluoromethane in µg/L	9.9	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Ethylbenzene in µg/L	2,100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Hexachlorobutadiene in µg/L	0.81	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Isopropylbenzene in µg/L	720	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Methylene chloride in µg/L	94	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	
Methyl-Tert-Butyl Ether in µg/L	610	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
n-Propylbenzene in µg/L		1 U	1 U	1 U	1 U	1.5	1 U	1 U	1 U	1 U	1 U	
p-Isopropyltoluene in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
sec-Butylbenzene in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Styrene in µg/L	78	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
tert-Butylbenzene in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Tetrachloroethene (PCE) in µg/L	0.39	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Toluene in µg/L	15,000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
trans-1,2-Dichloroethene in µg/L	130	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
trans-1,3-Dichloropropene in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Trichloroethene (TCE) in µg/L	1.6	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Trichlorofluoromethane in µg/L	120	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Vinyl chloride in µg/L	0.35	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
m,p-Xylenes in µg/L	310	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	
o-Xylene in µg/L	440	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Xylenes (total) in µg/L	310	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Naphthalene in µg/L	170				1 U							
Field Parameters												
Dissolved Oxygen in mg/L		1.49	1.08	1.18		0.86	0.58	0.71	1.77	0.7	0.11	
ORP in mVolts		-80.8	-94.8	-106.6		-143.9	-171.9	-184.7	-134.2	-122.8	-349.9	
pH in pH Units		6.65	7.03	7.13		6.73	6.54	7.15	6.72	7.42	9.02	
Specific Conductance in us/cm		283.5	336.2	291.6		550.6	336.9	330.1	487.3	26,879	24,753	
Temperature in deg C		16.5	16.8	17		18.3	19.3	19.1	17.8	17.2	16.2	
Turbidity in NTU		13.9	210	77.9		1.22	6.33	6.72	35.7	1.31	1.67	

Notes

Concentrations in shaded cells indicate value exceeds Groundwater Screening Level.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-2A - Soil Quality Data for REC 2 - Former Oil House and Fuel ASTs

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	DP-1 2/14/12 (2.5-3 ft)	DP-1 2/14/12 (5.5-6 ft)	DP-2 2/14/12 (1.5-2.5 ft)	DP-2 2/14/12 (6-7 ft)	DP-3 2/14/12 (4-5 ft)	DP-3 2/14/12 (6-7 ft)	DP-4 2/14/12 (1-2 ft)	DP-4 2/14/12 (9-10 ft)	DP-5 2/14/12 (7-8 ft)	DP-5 2/14/12 (13-14 ft)	DP-6 2/14/12 (3-4 ft)	DP-6 2/14/12 (7-8 ft)	DP-8 2/14/12 (6-7 ft)	DP-8 2/14/12 (12-13 ft)	DP-10 2/14/12 (3-4 ft)	DP-10 2/14/12 (9-10 ft)	DP-11 2/15/12 (8.5-9.5 ft)	DP-11 2/15/12 (14-15 ft)
Total Petroleum Hydrocarbons (TPH)																				
Gasoline Range Hydrocarbons in mg/kg	100	100	2 U	2 U	2 U	2 U	46	2 U	2 U	2 U	21	2 U	2 U	2 U	2 U	7	2 U	2 U	2 U	2 U
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	7,400	50 U	50 U	50 U	21,000	50 U	50 U	50 U	250	50 U	50 U	50 U	78	50 U	50 U	50 U	50 U	50 U
Oil Range Hydrocarbons in mg/kg	2,000	2,000	9,000	250 U	250 U	250 U	10,000	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
Total TPH in mg/kg	2,000	2,000	16,400	ND	ND	ND	31,000	ND	ND	ND	375	ND	ND	ND	203	ND	ND	ND	ND	ND
Metals																				
Lead in mg/kg	250	1,000					2.37													
Polycyclic Aromatic Hydrocarbons (PAHs)																				
Acenaphthene in mg/kg	4,800	210,000	3.1	0.01 U			7	0.01 U												
Acenaphthylene in mg/kg			2 U	0.01 U			2 U	0.01 U												
Anthracene in mg/kg	24,000	1,100,000	5.2	0.01 U			8.7	0.01 U												
Benzo(g,h,i)perylene in mg/kg			3.2	0.01 U			2.2	0.01 U												
Fluoranthene in mg/kg	3,200	140,000	3.1	0.01 U			2.7	0.01 U												
Fluorene in mg/kg	3,200	140,000	4.3	0.01 U			8.5	0.01 U												
Phenanthrene in mg/kg			13	0.035			32	0.01 U												
Pyrene in mg/kg	2,400	110,000	23	0.02			17	0.01 U												
Naphthalene in mg/kg	5	5	2 U	0.01 U			2 U	0.01 U												
Benz(a)anthracene in mg/kg	1.4	180	8.6	0.012			8.8	0.01 U												
Benzo(a)pyrene in mg/kg	0.14	2	5.7	0.01 U			4.7	0.01 U												
Benzo(b)fluoranthene in mg/kg	1.4	180	2	0.01 U			2 U	0.01 U												
Benzo(k)fluoranthene in mg/kg	14	1,800	2 U	0.01 U			2 U	0.01 U												
Chrysene in mg/kg	140	18,000	17	0.022			14	0.01 U												
Dibenzo(a,h)anthracene in mg/kg	0.14	18	2 U	0.01 U			2 U	0.01 U												
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	180	2 U	0.01 U			2 U	0.01 U												
Total cPAHs TEQ in mg/kg	0.14	2	7.23	0.00842			6.12	ND												
Volatile Organic Compounds (VOC)																				
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005					0.005 U													
1,2-Dichloroethane (EDC) in mg/kg	11	1,400					0.05 U													
Benzene in mg/kg	0.03	0.03	0.02 U	0.02 U	0.02 U	0.02 U	0.055	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Diisopropyl ether (DIPE) in mg/kg							0.05 U													
Ethanol in mg/kg							50 U													
Ethyl t-butyl ether (ETBE) in mg/kg							0.05 U													
Ethylbenzene in mg/kg	6	6	0.02 U	0.02 U	0.02 U	0.02 U	0.52	0.02 U	0.02 U	0.02 U	0.11	0.02 U	0.02 U	0.02 U	0.02 U	0.084	0.02 U	0.02 U	0.02 U	0.02 U
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1					0.05 U													
t-Amyl methyl ether (TAME) in mg/kg							0.05 U													
t-Butyl alcohol (TBA) in mg/kg							2.5 U													
Toluene in mg/kg	7	7	0.02 U	0.02 U	0.02 U	0.02 U	0.1	0.02 U	0.02 U	0.02 U	0.03	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Xylenes (total) in mg/kg	9	9	0.06 U	0.06 U	0.06 U	0.06 U	1.5	0.06 U	0.06 U	0.06 U	0.26	0.06 U	0.06 U	0.06 U	0.06 U	0.072	0.06 U	0.06 U	0.06 U	0.06 U

Notes:

Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.

Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-2A - Soil Quality Data for REC 2 - Former Oil House and Fuel ASTs

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	DP-12 2/15/12 (6.5-7.5 ft)	DP-12 2/15/12 (9-10 ft)	DP-13 2/15/12 (3-4 ft)	DP-13 2/15/12 (12-13 ft)	MW-1 2/15/12 (3-4 ft)	MW-1 2/15/12 (6.5-7.5 ft)	MW-2 2/15/12 (3-4 ft)	MW-2 2/15/12 (9-10 ft)	MW-3 2/15/12 (7.5-8.5 ft)	MW-3 2/15/12 (13-14 ft)	MW-4 2/14/12 (4-5 ft)	MW-4 2/14/12 (7-8 ft)	REC2-B-1 6/28/12 (3.5-4.5 ft)	REC2-B-1 6/28/12 (5.5-6.5 ft)	REC2-B-1 6/28/12 (7.5-8.5 ft)	REC2-B-2 6/28/12 (3-4 ft)	REC2-B-2 6/28/12 (4.5-5.5 ft)	REC2-B-2 6/28/12 (6.5-7.5 ft)
Total Petroleum Hydrocarbons (TPH)																				
Gasoline Range Hydrocarbons in mg/kg	100	100	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	4.9	2 U	2 U						
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	50 U	50 U	67	50 U	120	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Oil Range Hydrocarbons in mg/kg	2,000	2,000	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
Total TPH in mg/kg	2,000	2,000	ND	ND	192	ND	245	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals																				
Lead in mg/kg	250	1,000																		
Polycyclic Aromatic Hydrocarbons (PAHs)																				
Acenaphthene in mg/kg	4,800	210,000													0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Acenaphthylene in mg/kg															0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Anthracene in mg/kg	24,000	1,100,000													0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Benzo(g,h,i)perylene in mg/kg															0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Fluoranthene in mg/kg	3,200	140,000													0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Fluorene in mg/kg	3,200	140,000													0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Phenanthrene in mg/kg															0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Pyrene in mg/kg	2,400	110,000													0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Naphthalene in mg/kg	5	5													0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Benz(a)anthracene in mg/kg	1.4	180													0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Benzo(a)pyrene in mg/kg	0.14	2													0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Benzo(b)fluoranthene in mg/kg	1.4	180													0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Benzo(k)fluoranthene in mg/kg	14	1,800													0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Chrysene in mg/kg	140	18,000													0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Dibenzo(a,h)anthracene in mg/kg	0.14	18													0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	180													0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Total cPAHs TEQ in mg/kg	0.14	2													ND	ND	ND	ND	ND	ND
Volatile Organic Compounds (VOC)																				
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005																		
1,2-Dichloroethane (EDC) in mg/kg	11	1,400																		
Benzene in mg/kg	0.03	0.03	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U						
Diisopropyl ether (DIPE) in mg/kg																				
Ethanol in mg/kg																				
Ethyl t-butyl ether (ETBE) in mg/kg																				
Ethylbenzene in mg/kg	6	6	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.042	0.02 U	0.02 U						
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1																		
t-Amyl methyl ether (TAME) in mg/kg																				
t-Butyl alcohol (TBA) in mg/kg																				
Toluene in mg/kg	7	7	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U						
Xylenes (total) in mg/kg	9	9	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U						

Notes:

Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.

Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-2A - Soil Quality Data for REC 2 - Former Oil House and Fuel ASTs

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	REC2-B-3 6/28/12 (4-5 ft)	REC2-B-3 6/28/12 (5.5-6.5 ft)	REC2-B-3 6/28/12 (7.5-8.5 ft)	REC2-B-4 5/23/12 (1.5-2.5 ft)	REC2-B-4 5/23/12 (4-5 ft)	REC2-B-4 5/23/12 (6.5-7.5 ft)	REC2-B-5 5/24/12 (2-3 ft)	REC2-B-5 5/24/12 (7-8 ft)	REC2-B-6 6/28/12 (4.5-5.5 ft)	REC2-B-6 6/28/12 (6.5-7.5 ft)	REC2-B-6 6/28/12 (8.5-9.5 ft)	REC2-B-7 5/23/12 (4-5 ft)	REC2-B-7 5/23/12 (6.5-7.5 ft)	REC2-B-8 5/23/12 (4-5 ft)	REC2-B-8 5/23/12 (10-11 ft)	REC2-B-9 5/24/12 (2-6 ft)	REC2-B-9 5/24/12 (6-7 ft)	REC2-B-9 5/24/12 (7.5-8.5 ft)
Total Petroleum Hydrocarbons (TPH)																				
Gasoline Range Hydrocarbons in mg/kg	100	100																		
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	50 U	50 U	50 U	2,900	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	2,300	50 U	12,000	1,200	50 U
Oil Range Hydrocarbons in mg/kg	2,000	2,000	250 U	250 U	250 U	5,700	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	3,100	250 U	6,800	1,300	250 U
Total TPH in mg/kg	2,000	2,000	ND	ND	ND	8,600	ND	ND	ND	ND	ND	ND	ND	ND	ND	5,400	ND	18,800	2,500	ND
Metals																				
Lead in mg/kg	250	1,000																		
Polycyclic Aromatic Hydrocarbons (PAHs)																				
Acenaphthene in mg/kg	4,800	210,000	0.01 U	0.01 U	0.01 U	0.5 U	0.01 U	0.01 U	0.1 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.63	0.01	15	0.13	0.01 U
Acenaphthylene in mg/kg			0.01 U	0.01 U	0.01 U	0.5 U	0.01 U	0.01 U	0.33	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.05 U	0.01 U	0.5 U	0.05 U	0.01 U
Anthracene in mg/kg	24,000	1,100,000	0.01 U	0.01 U	0.01 U	0.73	0.01 U	0.01 U	0.1 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.86	0.01 U	10	0.05 U	0.01 U
Benzo(g,h,i)perylene in mg/kg			0.016	0.01 U	0.01 U	0.59	0.01 U	0.01 U	0.45	0.01 U	0.01 U	0.01 U	0.023	0.01 U	0.01 U	0.58	0.01 U	3	0.068	0.01 U
Fluoranthene in mg/kg	3,200	140,000	0.036	0.01 U	0.01 U	0.55	0.01 U	0.01 U	0.1 U	0.01 U	0.01 U	0.01 U	0.049	0.01 U	0.01 U	0.59	0.01 U	4.6	0.19	0.01 U
Fluorene in mg/kg	3,200	140,000	0.01 U	0.01 U	0.01 U	0.73	0.01 U	0.01 U	0.1 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.93	0.01 U	17	0.076	0.01 U
Phenanthrene in mg/kg			0.019	0.01 U	0.01 U	1.1	0.01 U	0.01 U	0.1 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	3.5	0.01 U	61	0.12	0.01 U
Pyrene in mg/kg	2,400	110,000	0.039	0.01 U	0.01 U	2.9	0.01	0.01 U	0.18	0.01 U	0.01 U	0.016	0.1	0.01 U	0.01 U	4	0.01 U	23	0.29	0.01 U
Naphthalene in mg/kg	5	5	0.01 U	0.01 U	0.01 U	0.5 U	0.01 U	0.01 U	0.1 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.05 U	0.01 U	6.8	0.05 U	0.01 U
Benz(a)anthracene in mg/kg	1.4	180	0.02	0.01 U	0.01 U	0.74	0.01 U	0.01 U	0.22	0.01 U	0.01 U	0.012	0.061	0.01 U	0.01 U	2.1	0.01 U	16	0.11	0.01 U
Benzo(a)pyrene in mg/kg	0.14	2	0.02	0.01 U	0.01 U	0.65	0.01 U	0.01 U	0.62	0.01 U	0.01 U	0.01 U	0.044	0.01 U	0.01 U	1.1	0.01 U	7.2	0.075	0.01 U
Benzo(b)fluoranthene in mg/kg	1.4	180	0.026	0.01 U	0.01 U	0.5 U	0.01 U	0.01 U	0.55	0.01 U	0.01 U	0.01	0.049	0.01 U	0.01 U	0.45	0.01 U	3.1	0.078	0.01 U
Benzo(k)fluoranthene in mg/kg	14	1,800	0.01 U	0.01 U	0.01 U	0.5 U	0.01 U	0.01 U	0.16	0.01 U	0.01 U	0.01 U	0.014	0.01 U	0.01 U	0.076	0.01 U	0.43	0.05 U	0.01 U
Chrysene in mg/kg	140	18,000	0.02	0.01 U	0.01 U	1.4	0.01 U	0.01 U	0.41	0.01 U	0.01 U	0.013	0.087	0.01 U	0.01 U	2.5	0.01 U	18	0.18	0.01 U
Dibenzo(a,h)anthracene in mg/kg	0.14	18	0.01 U	0.01 U	0.01 U	0.5 U	0.01 U	0.01 U	0.13	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.05 U	0.01 U	1.3	0.05 U	0.01 U
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	180	0.018	0.01 U	0.01 U	0.5 U	0.01 U	0.01 U	0.42	0.01 U	0.01 U	0.01 U	0.024	0.01 U	0.01 U	0.24	0.01 U	1	0.06	0.01 U
Total cPAHs TEQ in mg/kg	0.14	2	0.0276	ND	ND	0.838	ND	ND	0.772	ND	ND	0.00883	0.0602	ND	ND	1.41	ND	9.56	0.107	ND
Volatile Organic Compounds (VOC)																				
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005																		
1,2-Dichloroethane (EDC) in mg/kg	11	1,400																		
Benzene in mg/kg	0.03	0.03																		
Diisopropyl ether (DIPE) in mg/kg																				
Ethanol in mg/kg																				
Ethyl t-butyl ether (ETBE) in mg/kg																				
Ethylbenzene in mg/kg	6	6																		
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1																		
t-Amyl methyl ether (TAME) in mg/kg																				
t-Butyl alcohol (TBA) in mg/kg																				
Toluene in mg/kg	7	7																		
Xylenes (total) in mg/kg	9	9																		

Notes:

Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.

Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-2A - Soil Quality Data for REC 2 - Former Oil House and Fuel ASTs

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	REC2-B-10 6/28/12 (3.5-4.5 ft)	REC2-B-10 6/28/12 (5.5-6.5 ft)	REC2-B-10 FD 6/28/12 (5.5-6.5 ft)	REC2-B-10 6/28/12 (8.5-9.5 ft)	REC2-B-11 5/24/12 (3-4 ft)	REC2-B-11 5/24/12 (7.5-8.5 ft)	REC2-B-11 5/24/12 (11-12 ft)	REC2-B-12 5/23/12 (5-6 ft)	REC2-B-12 5/23/12 (8-9 ft)	REC2-B-12 5/23/12 (17-18 ft)	REC2-MW-5 5/29/12 (0-2 ft)	REC2-MW-5 5/29/12 (2.5-3.5 ft)	REC2-MW-5 5/29/12 (7-8 ft)
Total Petroleum Hydrocarbons (TPH)															
Gasoline Range Hydrocarbons in mg/kg	100	100													
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	10,000	990 J	540 J	50 U	110	290	50 U	2,500	24,000	50 U	930	50 U	50 U
Oil Range Hydrocarbons in mg/kg	2,000	2,000	19,000	3,100 J	1,800 J	250 U	250 U	250 U	250 U	2,800	15,000	250 U	4,100	250 U	250 U
Total TPH in mg/kg	2,000	2,000	29,000	4,090	2,340	ND	235	415	ND	5,300	39,000	ND	5,030	ND	ND
Metals															
Lead in mg/kg	250	1,000													
Polycyclic Aromatic Hydrocarbons (PAHs)															
Acenaphthene in mg/kg	4,800	210,000	0.5 UJ	0.1 U	0.1 UJ	0.01 U	0.59	0.01 U	0.01 U	0.57	9.6	0.01 U	0.042	0.01 U	0.022
Acenaphthylene in mg/kg			0.5 UJ	0.1 U	0.1 UJ	0.01 U	0.1 U	0.01 U	0.01 U	0.05 U	1 U	0.01 U	0.44	0.01 U	0.01 U
Anthracene in mg/kg	24,000	1,100,000	0.5 UJ	0.1 U	0.1 UJ	0.01 U	0.44	0.01 U	0.01 U	0.67	12	0.01 U	0.39	0.01 U	0.01 U
Benzo(g,h,i)perylene in mg/kg			0.81 J	0.54	0.41 J	0.01 U	0.55	0.01 U	0.01 U	0.32	2.4	0.01 U	1.7 J	0.01 U	0.01 U
Fluoranthene in mg/kg	3,200	140,000	0.5 UJ	0.1 U	0.1 UJ	0.01 U	1.7	0.01 U	0.01 U	0.23	2.8	0.01 U	0.43	0.01 U	0.01 U
Fluorene in mg/kg	3,200	140,000	0.5 UJ	0.1 U	0.1 UJ	0.01 U	0.97	0.013	0.01 U	0.8	13	0.01 U	0.058	0.01 U	0.01 U
Phenanthrene in mg/kg			0.5 UJ	0.1 U	0.1 UJ	0.01 U	3.5	0.01 U	0.01 U	2	43	0.024	0.29	0.01 U	0.01 U
Pyrene in mg/kg	2,400	110,000	3.0 J	0.14	0.27 J	0.01 U	2.4	0.01 U	0.01 U	1.5	18	0.012	1.3	0.01 U	0.01 U
Naphthalene in mg/kg	5	5	0.5 UJ	0.1 U	0.1 U	0.01 U	0.1 U	0.01 U	0.01 U	0.05 U	1 U	0.01 U	0.18	0.01 U	0.01 U
Benz(a)anthracene in mg/kg	1.4	180	0.5 UJ	0.1 U	0.1 UJ	0.01 U	0.86	0.01 U	0.01 U	0.8	9.6	0.01 U	0.29	0.01 U	0.01 U
Benzo(a)pyrene in mg/kg	0.14	2	1.0 J	0.26	0.26 J	0.01 U	0.79	0.01 U	0.01 U	0.41	4.5	0.01 U	1.3	0.01 U	0.01 U
Benzo(b)fluoranthene in mg/kg	1.4	180	0.55 J	0.1 U	0.11 J	0.01 U	0.77	0.01 U	0.01 U	0.17	1.6	0.01 U	1.3	0.01 U	0.01 U
Benzo(k)fluoranthene in mg/kg	14	1,800	0.5 UJ	0.1 U	0.1 UJ	0.01 U	0.23	0.01 U	0.01 U	0.05 U	1 U	0.01 U	0.01 U	0.01 U	0.01 U
Chrysene in mg/kg	140	18,000	1.2 J	0.31	0.21 J	0.01 U	1.3	0.01 U	0.01 U	1.1	13	0.01 U	0.55	0.01 U	0.01 U
Dibenzo(a,h)anthracene in mg/kg	0.14	18	0.5 UJ	0.1 U	0.1 UJ	0.01 U	0.15	0.01 U	0.01 U	0.05 U	1 U	0.01 U	0.32	0.01 U	0.01 U
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	180	0.5 UJ	0.25	0.20 J	0.01 U	0.48	0.01 U	0.01 U	0.13	1 U	0.01 U	1.8 J	0.01 U	0.01 U
Total cPAHs TEQ in mg/kg	0.14	2	1.17 J	0.308	0.308 J	ND	1.05	ND	ND	0.536	5.9	ND	1.68	ND	ND
Volatile Organic Compounds (VOC)															
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005													
1,2-Dichloroethane (EDC) in mg/kg	11	1,400													
Benzene in mg/kg	0.03	0.03													
Diisopropyl ether (DIPE) in mg/kg															
Ethanol in mg/kg															
Ethyl t-butyl ether (ETBE) in mg/kg															
Ethylbenzene in mg/kg	6	6													
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1													
t-Amyl methyl ether (TAME) in mg/kg															
t-Butyl alcohol (TBA) in mg/kg															
Toluene in mg/kg	7	7													
Xylenes (total) in mg/kg	9	9													

Notes:

Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.

Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-2B - Groundwater Quality Data for REC 2 - Former Oil House and Fuel ASTs

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	MW-01 02/17/12	MW-01 06/06/12	MW-01 08/27/12	MW-02 02/17/12	MW-02 06/06/12	MW-02 08/27/12	MW-03 02/17/12	MW-03 06/05/12	MW-03 08/27/12	MW-04 02/17/12	MW-04 06/08/12	MW-04 06/08/12 FD	MW-04 08/27/12	MW-04 08/27/12 FD
Total Petroleum Hydrocarbons (TPH)															
Gasoline Range Hydrocarbons in µg/L	1,000	100 U	100 U	100 U	100 U	100 U	100 U	350	960	390	100 U	100 U	100 U	100 U	100 U
Diesel Range Hydrocarbons in µg/L	500	50 U	50 U	50 U	50 U	50 U	50 U	80	500	870	130	150	89	190	210
Oil Range Hydrocarbons in µg/L	500	250 U	250 UJ	250 U	250 U	250 UJ	250 U	250 U	250 U	250 U	250 U	250 UJ	250 UJ	250 U	250 U
Total TPHs in µg/L	500	ND	ND	ND	ND	ND	ND	205	625	995	255	275	214	315	335
Dissolved Metals															
Dissolved Antimony in µg/L	640		1 U	1.00 U		0.69 J	1.00 U								
Dissolved Arsenic in µg/L	5		0.95	0.68 J		1.35	1.57								
Dissolved Beryllium in µg/L	270		0.02 U	0.0500 U		0.02 U	0.0500 U								
Dissolved Cadmium in µg/L	8.8		0.096	0.228		0.077	0.022 J								
Dissolved Chromium (Total) in µg/L	240,000		0.34	4.32		1.13	0.33 J								
Dissolved Copper in µg/L	3.1		2.56	4.350		1.36	1.020								
Dissolved Lead in µg/L	8.1	5 U	0.097	0.088	1 U	6.42	0.280	1 U			26.8	14.3 J	5.56 J	1.83	5.18
Dissolved Mercury in µg/L	0.15		0.1 U	0.1 U		0.1 U	0.1 U								
Dissolved Nickel in µg/L	8.2		2.65	23.0		12.3	6.80								
Dissolved Selenium in µg/L	71		1 U	1.0 U		1 U	1.0 U								
Dissolved Silver in µg/L	1.9		0.009 J	0.031 J		0.013 J	0.050 U								
Dissolved Thallium in µg/L	0.47		0.02 U	0.050 U		0.02 U	0.050 U								
Dissolved Zinc in µg/L	81		8.84	21.1		2.31	1.07 J								
Total Metals															
Total Antimony in µg/L	640					0.57 J	1.00 U								
Total Arsenic in µg/L	5					1.33	1.44								
Total Beryllium in µg/L	270					0.02 U	0.0222 U								
Total Cadmium in µg/L	8.8					0.035	0.049								
Total Chromium (Total) in µg/L	240,000					0.38	0.76								
Total Copper in µg/L	3.1					0.718	1.800								
Total Lead in µg/L	8.1					0.198	4.490					23.1	24.3	11.7	12.1
Total Mercury in µg/L	0.15					0.1 U	0.1 U								
Total Nickel in µg/L	8.2					13.1	6.70								
Total Selenium in µg/L	71					1 U	1.0 U								
Total Silver in µg/L	1.9					0.02 U	0.005 J								
Total Thallium in µg/L	0.47					0.02 U	0.022 U								
Total Zinc in µg/L	81					1.7	1.24								
Conventional Chemistry Parameters															
Ammonia as Nitrogen in mg/L	0.035		0.05 U	0.050 U		0.118	0.098								
Dissolved Sulfide in mg/L			0.05 U	0.050 U		0.05 U	0.050 U								
Total Dissolved Solids in mg/L		22,632			4,771			297			2,132				
Total Suspended Solids in mg/L		10 U	12	13	20	10 U	10 U	10 U	10 U	10 U	170	10 U	12	10 U	10 U
Polycyclic Aromatic Hydrocarbons (PAHs)															
Acenaphthene in µg/L	640	0.1 U	1 U	0.05 U	0.1 U	0.05 U	0.05 U	1.7	2.7 J	2.2	4.3	1	0.97	6	4.2
Acenaphthylene in µg/L		0.1 U	1 U	0.05 U	0.1 U	0.05 U	0.05 U	0.1 U	0.05 U	0.05 UJ	0.1 U	0.05 U	0.05 U	0.05 U	0.05 UJ
Anthracene in µg/L	26,000	0.1 U	1 U	0.05 U	0.1 U	0.05 U	0.05 U	0.1 U	0.38	0.37 J	0.1 U	0.05 U	0.05 U	0.087	0.065 J
Benzo(g,h,i)perylene in µg/L		0.1 U	1 U	0.05 U	0.1 U	0.05 UJ	0.05 U	0.1 U	0.05 U	0.05 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 UJ
Fluoranthene in µg/L	90	0.1 U	1 U	0.05 U	0.1 U	0.05 UJ	0.05 U	0.1 U	0.47	0.44 J	0.1	0.05 U	0.05 U	0.063	0.05 UJ
Fluorene in µg/L	3,500	0.1 U	1 U	0.05 U	0.1 U	0.05 U	0.05 U	2.1	3.6 J	3.1	2.7	0.35	0.28	3.3 J	2.3 J
Phenanthrene in µg/L		0.1 U	1 U	0.05 U	0.1 U	0.05 U	0.05 U	0.2	0.47	0.33 J	2.1	0.15	0.13	2.4	1.7 J
Pyrene in µg/L	2,600	0.1 U	1 U	0.05 U	0.1 U	0.05 UJ	0.05 U	0.1 U	0.27	0.25	0.18	0.061	0.06	0.062	0.051 J
2-Methylnaphthalene in µg/L			1 U	1 U		1 U	1 U								
Naphthalene in µg/L	170	0.1 U	0.05 U	0.05 U	0.1 U	0.05 U	0.05 U	0.92	0.05 U	0.05 UJ	8	23	19	63 J	41 J
Benz(a)anthracene in µg/L	0.018	0.1 U	1 U	0.01 U	0.1 U	0.01 UJ	0.01 U	0.1 U	0.01 U	0.01 U	0.1 U	0.011	0.011	0.01 U	0.01 UJ
Benzo(a)pyrene in µg/L	0.018	0.1 U	1 U	0.01 U	0.1 U	0.01 UJ	0.01 U	0.1 U	0.01 U	0.01 U	0.1 U	0.017	0.019	0.01 U	0.01 UJ
Benzo(b)fluoranthene in µg/L	0.018	0.1 U	1 U	0.01 U	0.1 U	0.01 UJ	0.01 U	0.1 U	0.01 U	0.01 U	0.1 U	0.01 U	0.01 U	0.01 U	0.01 UJ
Benzo(k)fluoranthene in µg/L	0.018	0.1 U	1 U	0.01 U	0.1 U	0.01 UJ	0.01 U	0.1 U	0.01 U	0.01 U	0.1 U	0.01 U	0.01 U	0.01 U	0.01 UJ
Chrysene in µg/L	0.018	0.1 U	1 U	0.01 U	0.1 U	0.01 UJ	0.01 U	0.1 U	0.01 U	0.01 U	0.1 U	0.032	0.035	0.013	0.012 J
Dibenzo(a,h)anthracene in µg/L	0.018	0.1 U	1 U	0.01 U	0.1 U	0.01 UJ	0.01 U	0.1 U	0.01 U	0.01 U	0.1 U	0.01 U	0.01 U	0.01 U	0.01 UJ
Indeno(1,2,3-cd)pyrene in µg/L	0.018	0.1 U	1 U	0.01 U	0.1 U	0.01 UJ	0.01 U	0.1 U	0.01 U	0.01 U	0.1 U	0.01 U	0.01 U	0.01 U	0.01 UJ
Total cPAHs TEQ in µg/L	0.018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0204	0.0225	0.00763	0.00762 J
Other Semivolatiles															
1,2,4-Trichlorobenzene in µg/L	2		1 U	1 U		1 U	1 U								
1,2-Dichlorobenzene in µg/L	1,300		1 U	1 U		1 U	1 U								
1,3-Dichlorobenzene in µg/L	960		1 U	1 U		1 U	1 U								
1,4-Dichlorobenzene in µg/L	190		1 U	1 U		1 U	1 U								
2,4,5-Trichlorophenol in µg/L	3,600		10 U	10 U		10 U	10 U								
2,4,6-Trichlorophenol in µg/L	2.4		10 U	10 U		10 U	10 U								
2,4-Dichlorophenol in µg/L	190		10 U	10 U		10 U	10 U								
2,4-Dimethylphenol in µg/L	550		10 U	10 U		10 U	10 U								

Table 3-2B - Groundwater Quality Data for REC 2 - Former Oil House and Fuel ASTs

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	MW-01 02/17/12	MW-01 06/06/12	MW-01 08/27/12	MW-02 02/17/12	MW-02 06/06/12	MW-02 08/27/12	MW-03 02/17/12	MW-03 06/05/12	MW-03 08/27/12	MW-04 02/17/12	MW-04 06/08/12	MW-04 06/08/12 FD	MW-04 08/27/12	MW-04 08/27/12 FD
2,4-Dinitrophenol in µg/L	3,500		30 U	30 U		30 U	30 U								
2-Chloronaphthalene in µg/L	1,000		1 U	1 U		1 U	1 U								
2-Chlorophenol in µg/L	97		10 U	10 U		10 U	10 U								
2-Methylphenol in µg/L			10 U	10 U		10 U	10 U								
2-Nitroaniline in µg/L			3 U	3 U		3 U	3 U								
2-Nitrophenol in µg/L			10 U	10 U		10 U	10 U								
3 & 4 Methylphenol in µg/L			20 U	20 U		20 U	20 U								
3-Nitroaniline in µg/L			3 U	3 U		3 U	3 U								
4,6-Dinitro-2-methylphenol in µg/L			30 U	30 U		30 U	30 U								
4-Bromophenyl phenyl ether in µg/L			1 U	1 U		1 U	1 U								
4-Chloro-3-methylphenol in µg/L			10 U	10 U		10 U	10 U								
4-Chloroaniline in µg/L			3 U	3 U		3 U	3 U								
4-Chlorophenyl phenyl ether in µg/L			1 U	1 U		1 U	1 U								
4-Nitroaniline in µg/L			10 U	10 U		10 U	10 U								
4-Nitrophenol in µg/L			10 U	10 U		10 U	10 U								
Benzoic acid in µg/L			50 U	50 U		50 U	50 U								
Benzyl alcohol in µg/L			10 U	10 U		10 U	10 U								
Benzyl butyl phthalate in µg/L	8.2		1 U	1 U		1 U	1 U								
Bis(2-chloro-1-methylethyl) ether in µg/L	37		10 U	10 U		10 U	10 U								
Bis(2-chloroethoxy)methane in µg/L			1 U	1 U		1 U	1 U								
Bis(2-chloroethyl) ether in µg/L	0.53		10 U	10 U		10 U	10 U								
Bis(2-ethylhexyl) phthalate in µg/L	2.2		10 U	10 U		10 U	10 U								
Carbazole in µg/L			1 U	1 U		1 U	1 U								
Dibenzofuran in µg/L			1 U	1 U		1 U	1 U								
Diethyl phthalate in µg/L	28,000		1 U	1 U		1 U	1 U								
Dimethyl phthalate in µg/L	1,100,000		1 U	1 U		1 U	1 U								
Di-n-butyl phthalate in µg/L	2,900		1 U	1 U		1 U	1 U								
Di-n-octyl phthalate in µg/L			1 U	1 U		1 U	1 U								
Hexachlorobenzene in µg/L	0.00029		1 U	1 U		1 U	1 U								
Hexachlorobutadiene in µg/L	0.81		1 U	1 U		1 U	1 U								
Hexachlorocyclopentadiene in µg/L	1,100		3 U	3 U		3 U	3 U								
Hexachloroethane in µg/L	3.3		1 U	1 U		1 U	1 U								
Isophorone in µg/L	600		1 U	1 U		1 U	1 U								
Nitrobenzene in µg/L	690		1 U	1 U		1 U	1 U								
N-Nitroso-di-n-propylamine in µg/L	0.51		10 U	10 U		10 U	10 U								
N-Nitrosodiphenylamine in µg/L	6		1 U	1 U		1 U	1 U								
Pentachlorophenol in µg/L	1.5		10 U	10 U		10 U	10 U								
Phenol in µg/L	560,000		10 U	10 U		10 U	10 U								
2,4-Dinitrotoluene in µg/L	3.4		1 U	1 U		1 U	1 U								
2,6-Dinitrotoluene in µg/L			1 U	1 U		1 U	1 U								
Volatile Organic Compounds (VOC)															
1,1,1,2-Tetrachloroethane in µg/L	7.4		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
1,1,1-Trichloroethane in µg/L	11,000		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane in µg/L	4		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
1,1,2-Trichloroethane in µg/L	7.9		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
1,1-Dichloroethane in µg/L	2,300		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
1,1-Dichloroethene in µg/L	3.2		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
1,1-Dichloropropene in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
1,2,3-Trichloropropane in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene in µg/L	2		1 U			1 U			1 U	1 U		1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene in µg/L	24		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane in µg/L			10 U	10 U		10 U	10 U		10 U	10 U		10 U	10 U	10 U	10 U
1,2-Dibromoethane (EDB) in µg/L	0.74		1 U	1 U		1 U	1 U	0.01 U	1 U	1 U	0.01 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene in µg/L	1,300		1 U			1 U			1 U	1 U		1 U	1 U	1 U	1 U
1,2-Dichloroethane (EDC) in µg/L	4.2		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane in µg/L	15		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene in µg/L	25		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
1,3-Dichlorobenzene in µg/L	960		1 U			1 U			1 U	1 U		1 U	1 U	1 U	1 U
1,3-Dichloropropane in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
1,4-Dichlorobenzene in µg/L	190		1 U			1 U			1 U	1 U		1 U	1 U	1 U	1 U
1,4-Dioxane in µg/L									10 UJ						
2,2-Dichloropropane in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
2-Butanone in µg/L	350,000		10 U	10 U		10 U	10 U		10 U	10 U		10 U	10 U	10 U	10 U
2-Chlorotoluene in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
2-Hexanone in µg/L			10 U	10 U		10 U	10 U		10 U	10 U		10 U	10 U	10 U	10 U

Table 3-2B - Groundwater Quality Data for REC 2 - Former Oil House and Fuel ASTs

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	MW-01 02/17/12	MW-01 06/06/12	MW-01 08/27/12	MW-02 02/17/12	MW-02 06/06/12	MW-02 08/27/12	MW-03 02/17/12	MW-03 06/05/12	MW-03 08/27/12	MW-04 02/17/12	MW-04 06/08/12	MW-04 06/08/12 FD	MW-04 08/27/12	MW-04 08/27/12 FD
4-Chlorotoluene in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
4-Methyl-2-pentanone in µg/L	11,000		10 U	10 U		10 U	10 U		10 U	10 U		10 U	10 U	10 U	10 U
Acetone in µg/L			10 U	10 U		10 U	10 U		10 U	10 U		10 U	10 U	10 U	10 U
Benzene in µg/L	2.4	1 U	0.35 U	0.35 U	1 U	0.35 U	0.35 U	1 U	0.35 U	0.35 U	1 U	0.35 U	0.35 U	0.35 U	0.35 U
Bromobenzene in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
Bromodichloromethane in µg/L	0.09		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
Bromoform in µg/L	140		1 UJ	1 U		1 UJ	1 U		1 UJ	1 U		1 UJ	1 UJ	1 U	1 U
Bromomethane in µg/L	13		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
Carbon tetrachloride in µg/L	0.22		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
Chlorobenzene in µg/L	100		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
Chloroethane in µg/L	12		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
Chloroform in µg/L	1.2		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
Chloromethane in µg/L	5.2		10 U	10 U		10 U	10 U		10 U	10 U		10 U	10 U	10 U	10 U
cis-1,2-Dichloroethene (DCE) in µg/L	160		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
Dibromochloromethane in µg/L	0.22		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
Dibromomethane in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
Dichlorodifluoromethane in µg/L	9.9		1 U	1 U		1 U	1 U		1 UJ	1 U		1 U	1 U	1 U	1 U
Ethylbenzene in µg/L	2,100	1 U	1 U	1 U	1 U	1 U	1 U	1.4	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene in µg/L	0.81		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
Isopropylbenzene in µg/L	720		1 U	1 U		1 U	1 U		7.6	8.9		1 U	1 U	1 U	1 U
Methylene chloride in µg/L	94		5 UJ	5 U		5 UJ	5 U		5 U	5 U		5 U	5 U	5 U	5 U
Methyl-Tert-Butyl Ether in µg/L	610		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
n-Propylbenzene in µg/L			1 U	1 U		1 U	1 U		19	28		1 U	1 U	1 U	1 U
p-Isopropyltoluene in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
sec-Butylbenzene in µg/L			1 U	1 U		1 U	1 U		6.5	6.7		1 U	1 U	1 U	1 U
Styrene in µg/L	78		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
tert-Butylbenzene in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
Tetrachloroethene (PCE) in µg/L	0.39		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
Toluene in µg/L	15,000	1 U	1 U	1 U	1 U	1 U	1 U	6.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene in µg/L	130		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
Trichloroethene (TCE) in µg/L	1.6		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
Trichlorofluoromethane in µg/L	120		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
Vinyl acetate in µg/L	7,800								10 UJ						
Vinyl chloride in µg/L	0.35		0.2 U	0.2 U		0.2 U	0.2 U		0.2 U	0.2 U		0.2 U	0.2 U	0.2 U	0.2 U
m,p-Xylenes in µg/L	310		2 U	2 U		2 U	2 U		2 U	2 U		2 U	2 U	2 U	2 U
o-Xylene in µg/L	440		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U
Xylenes (total) in µg/L	310	3 U	ND	ND	3 U	ND	ND	3.2	ND	ND	3 U	ND	ND	ND	ND
Field Parameters															
Dissolved Oxygen in mg/L		6.31	6.99	5.23	6.6	1.44	1	0.22	0.26	0.76	1.4	0.23		0.77	
ORP in mVolts		118	114.1	136	-102	87.5	13	-070	-69.1	-98.1	-302	-54.8		-290.7	
pH in pH Units		7.43	7.61	7	8.85	8.04	8.19	7.07	6.52	7.1	10.5	10.65		10.39	
Specific Conductance in us/cm		36,646	19,290	43,088	9,109	19,510	22,874	6,263	454	532.9	2,587	3,635		5,543	
Temperature in deg C		8.3	14.57	18.4	10.4	14.67	17.6	10.9	13.75	17.2	10.9	14.83		19.1	
Turbidity in NTU		4.7	2.47	4.43	79.4	2.01	6.3	3.9	1.45	7.04	123	42		42.8	

Notes

Concentrations in shaded cells indicate value exceeds Groundwater Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-3A - Soil Quality Data for REC 3 - Heavy Duty Shop Sump

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	REC3-MW-1 6/5/12 (8.5-9.5 ft)	
Total Petroleum Hydrocarbons (TPH)				
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	50	U
Oil Range Hydrocarbons in mg/kg	2,000	2,000	250	U
Total TPH in mg/kg	2,000	2,000	ND	
Metals				
Lead in mg/kg	250	1,000	14.9	
Polycyclic Aromatic Hydrocarbons (PAHs)				
Acenaphthene in mg/kg	4,800	210,000	0.01	U
Acenaphthylene in mg/kg			0.01	U
Anthracene in mg/kg	24,000	1,100,000	0.01	U
Benzo(g,h,i)perylene in mg/kg			0.01	U
Fluoranthene in mg/kg	3,200	140,000	0.01	U
Fluorene in mg/kg	3,200	140,000	0.01	U
Phenanthrene in mg/kg			0.01	U
Pyrene in mg/kg	2,400	110,000	0.01	U
Naphthalene in mg/kg	5	5	0.01	U
Benz(a)anthracene in mg/kg	1.4	180	0.01	U
Benzo(a)pyrene in mg/kg	0.14	2	0.01	U
Benzo(b)fluoranthene in mg/kg	1.4	180	0.01	U
Benzo(k)fluoranthene in mg/kg	14	1,800	0.01	U
Chrysene in mg/kg	140	18,000	0.01	U
Dibenzo(a,h)anthracene in mg/kg	0.14	18	0.01	U
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	180	0.01	U
Total cPAHs TEQ in mg/kg	0.14	2	ND	
Volatile Organic Compounds (VOC)				
1,1,1,2-Tetrachloroethane in mg/kg	38	5,000	0.05	U
1,1,1-Trichloroethane in mg/kg	2	2	0.05	U
1,1,2,2-Tetrachloroethane in mg/kg	5	660	0.05	U
1,1,2-Trichloroethane in mg/kg	18	2,300	0.05	U
1,1-Dichloroethane in mg/kg			0.05	U
1,1-Dichloroethene in mg/kg			0.05	U
1,1-Dichloropropene in mg/kg			0.05	U
1,2,3-Trichlorobenzene in mg/kg			0.25	U
1,2,3-Trichloropropane in mg/kg	0.033	4.4	0.05	U
1,2,4-Trichlorobenzene in mg/kg	35	4,500	0.25	U
1,2,4-Trimethylbenzene in mg/kg			0.05	U
1,2-Dibromo-3-chloropropane in mg/kg	1.3	160	0.5	U
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005	0.05	U
1,2-Dichlorobenzene in mg/kg			0.05	U
1,2-Dichloroethane (EDC) in mg/kg	11	1,400	0.05	U
1,2-Dichloropropane in mg/kg			0.05	U
1,3,5-Trimethylbenzene in mg/kg			0.05	U
1,3-Dichlorobenzene in mg/kg			0.05	U
1,3-Dichloropropane in mg/kg			0.05	U
1,4-Dichlorobenzene in mg/kg			0.05	U
2,2-Dichloropropane in mg/kg			0.05	U
2-Butanone in mg/kg			0.5	U
2-Chlorotoluene in mg/kg			0.05	U
2-Hexanone in mg/kg			0.5	U
4-Chlorotoluene in mg/kg			0.05	U
4-Methyl-2-pentanone in mg/kg			0.5	U
Acetone in mg/kg			0.5	U
Benzene in mg/kg	0.03	0.03	0.03	U
Bromobenzene in mg/kg			0.05	U
Bromodichloromethane in mg/kg	16	2,100	0.05	U
Bromoform in mg/kg	130	17,000	0.05	U
Bromomethane in mg/kg			0.5	U
Carbon tetrachloride in mg/kg	14	1,900	0.05	U
Chlorobenzene in mg/kg			0.05	U

Table 3-3A - Soil Quality Data for REC 3 - Heavy Duty Shop Sump

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	REC3-MW-1 6/5/12 (8.5-9.5 ft)	
Chloroethane in mg/kg			0.5	U
Chloroform in mg/kg			0.05	U
Chloromethane in mg/kg			0.5	U
cis-1,2-Dichloroethene (DCE) in mg/kg			0.05	U
cis-1,3-Dichloropropene in mg/kg			0.05	U
Dibromochloromethane in mg/kg	12	1,600	0.05	U
Dibromomethane in mg/kg			0.05	U
Dichlorodifluoromethane in mg/kg			0.5	UJ
Ethylbenzene in mg/kg	6	6	0.05	U
Hexachlorobutadiene in mg/kg	13	1,700	0.25	U
Isopropylbenzene in mg/kg			0.05	U
Methylene chloride in mg/kg	0.02	0.02	0.5	U
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1	0.05	U
n-Propylbenzene in mg/kg			0.05	U
p-Isopropyltoluene in mg/kg			0.05	U
sec-Butylbenzene in mg/kg			0.05	U
Styrene in mg/kg			0.05	U
tert-Butylbenzene in mg/kg			0.05	U
Tetrachloroethene (PCE) in mg/kg	0.05	0.05	0.025	U
Toluene in mg/kg	7	7	0.05	U
trans-1,2-Dichloroethene in mg/kg			0.05	U
trans-1,3-Dichloropropene in mg/kg			0.05	U
Trichloroethene (TCE) in mg/kg	0.03	0.03	0.03	U
Trichlorofluoromethane in mg/kg			0.5	U
Vinyl chloride in mg/kg	0.67	88	0.05	U
m,p-Xylenes in mg/kg	16,000	700,000	0.1	U
o-Xylene in mg/kg	16,000	700,000	0.05	U
Xylenes (total) in mg/kg	9	9	ND	
Polychlorinated Biphenyls (PCBs)				
Aroclor 1016 in mg/kg	14	1,900	0.1	U
Aroclor 1221 in mg/kg			0.1	U
Aroclor 1232 in mg/kg			0.1	U
Aroclor 1242 in mg/kg			0.1	U
Aroclor 1248 in mg/kg			0.1	U
Aroclor 1254 in mg/kg	0.5	66	0.1	U
Aroclor 1260 in mg/kg	0.5	66	0.1	U
Total PCBs in mg/kg	1	10	ND	

Notes:

Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.

Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-3B - Groundwater Quality Data for REC 3 - Heavy Duty Shop Sump

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	REC3-MW-01 06/07/12	REC3-MW-01 08/29/12
Total Petroleum Hydrocarbons (TPH)			
Diesel Range Hydrocarbons in µg/L	500	50 U	50 U
Oil Range Hydrocarbons in µg/L	500	250 UJ	250 U
Total TPHs in µg/L	500	ND	ND
Dissolved Metals			
Dissolved Antimony in µg/L	640	1.2	1.00 U
Dissolved Arsenic in µg/L	5	2.22	1.91
Dissolved Beryllium in µg/L	270	0.02 U	0.0500 U
Dissolved Cadmium in µg/L	8.8	0.776	0.286
Dissolved Chromium (Total) in µg/L	240,000	0.09 J	0.20 J
Dissolved Copper in µg/L	3.1	0.568	0.300
Dissolved Lead in µg/L	8.1	0.022	0.050 U
Dissolved Mercury in µg/L	0.15	0.1 U	0.1 U
Dissolved Nickel in µg/L	8.2	4.95	83.3
Dissolved Selenium in µg/L	71	1 U	1.0 U
Dissolved Silver in µg/L	1.9	0.02 U	0.050 U
Dissolved Thallium in µg/L	0.47	0.02 U	0.050 U
Dissolved Zinc in µg/L	81	2.4	2.07
Conventional Chemistry Parameters			
Ammonia as Nitrogen in mg/L	0.035	0.05 U	0.025 J
Dissolved Sulfide in mg/L		0.05 U	0.050 U
Total Suspended Solids in mg/L		17	20
Polycyclic Aromatic Hydrocarbons (PAHs)			
Acenaphthene in µg/L	640	0.05 U	0.05 U
Acenaphthylene in µg/L		0.05 U	0.05 U
Anthracene in µg/L	26,000	0.05 U	0.05 U
Benzo(g,h,i)perylene in µg/L		0.05 UJ	0.05 U
Fluoranthene in µg/L	90	0.05 UJ	0.05 U
Fluorene in µg/L	3,500	0.05 U	0.05 U
Phenanthrene in µg/L		0.05 U	0.05 U
Pyrene in µg/L	2,600	0.05 UJ	0.05 U
2-Methylnaphthalene in µg/L		1 U	1 U
Naphthalene in µg/L	170	0.05 U	0.05 U
Benz(a)anthracene in µg/L	0.018	0.01 UJ	0.01 U
Benzo(a)pyrene in µg/L	0.018	0.01 UJ	0.01 U
Benzo(b)fluoranthene in µg/L	0.018	0.01 UJ	0.01 U
Benzo(k)fluoranthene in µg/L	0.018	0.01 UJ	0.01 U
Chrysene in µg/L	0.018	0.01 UJ	0.01 U
Dibenzo(a,h)anthracene in µg/L	0.018	0.01 UJ	0.01 U
Indeno(1,2,3-cd)pyrene in µg/L	0.018	0.01 UJ	0.01 U
Total cPAHs TEQ in µg/L	0.018	ND	ND
Other Semivolatiles			
1,2,4-Trichlorobenzene in µg/L	2	1 U	1 U
1,2-Dichlorobenzene in µg/L	1,300	1 U	1 U
1,3-Dichlorobenzene in µg/L	960	1 U	1 U
1,4-Dichlorobenzene in µg/L	190	1 U	1 U
2,4,5-Trichlorophenol in µg/L	3,600	10 U	10 U
2,4,6-Trichlorophenol in µg/L	2.4	10 U	10 U
2,4-Dichlorophenol in µg/L	190	10 U	10 U
2,4-Dimethylphenol in µg/L	550	10 U	10 U
2,4-Dinitrophenol in µg/L	3,500	30 U	30 U
2-Chloronaphthalene in µg/L	1,000	1 U	1 U
2-Chlorophenol in µg/L	97	10 U	10 U
2-Methylphenol in µg/L		10 U	10 U
2-Nitroaniline in µg/L		3 U	3 U
2-Nitrophenol in µg/L		10 U	10 U
3 & 4 Methylphenol in µg/L		20 U	20 U
3-Nitroaniline in µg/L		3 U	3 U
4,6-Dinitro-2-methylphenol in µg/L		30 U	30 U
4-Bromophenyl phenyl ether in µg/L		1 U	1 U
4-Chloro-3-methylphenol in µg/L		10 U	10 U
4-Chloroaniline in µg/L		3 U	3 U
4-Chlorophenyl phenyl ether in µg/L		1 U	1 U
4-Nitroaniline in µg/L		10 U	10 U
4-Nitrophenol in µg/L		10 U	10 U
Benzoic acid in µg/L		50 U	50 U
Benzyl alcohol in µg/L		10 U	10 U
Benzyl butyl phthalate in µg/L	8.2	1 U	1 U
Bis(2-chloro-1-methylethyl) ether in µg/L	37	10 U	10 U
Bis(2-chloroethoxy)methane in µg/L		1 U	1 U
Bis(2-chloroethyl) ether in µg/L	0.53	10 U	10 U
Bis(2-ethylhexyl) phthalate in µg/L	2.2	10 U	10 U
Carbazole in µg/L		1 U	1 U
Dibenzofuran in µg/L		1 U	1 U
Diethyl phthalate in µg/L	28,000	1 U	1 U
Dimethyl phthalate in µg/L	1,100,000	1 U	1 U
Di-n-butyl phthalate in µg/L	2,900	1 U	1 U
Di-n-octyl phthalate in µg/L		1 U	1 U
Hexachlorobenzene in µg/L	0.00029	1 U	1 U
Hexachlorobutadiene in µg/L	0.81	1 U	1 U
Hexachlorocyclopentadiene in µg/L	1,100	3 U	3 U
Hexachloroethane in µg/L	3.3	1 U	1 U
Isophorone in µg/L	600	1 U	1 U
Nitrobenzene in µg/L	690	1 U	1 U
N-Nitroso-di-n-propylamine in µg/L	0.51	10 U	10 U
N-Nitrosodiphenylamine in µg/L	6	1 U	1 U
Pentachlorophenol in µg/L	1.5	10 U	10 U
Phenol in µg/L	560,000	10 U	10 U
2,4-Dinitrotoluene in µg/L	3.4	1 U	1 U
2,6-Dinitrotoluene in µg/L		1 U	1 U
Volatile Organic Compounds (VOC)			
1,1,1,2-Tetrachloroethane in µg/L	7.4	1 U	1 U
1,1,1-Trichloroethane in µg/L	11,000	1 U	1 U
1,1,2,2-Tetrachloroethane in µg/L	4	1 U	1 U
1,1,2-Trichloroethane in µg/L	7.9	1 U	1 U
1,1-Dichloroethane in µg/L	2,300	1 U	1 U
1,1-Dichloroethene in µg/L	3.2	1 U	1 U
1,1-Dichloropropene in µg/L		1 U	1 U
1,2,3-Trichlorobenzene in µg/L		1 U	1 U
1,2,3-Trichloropropane in µg/L		1 U	1 U

Table 3-3B - Groundwater Quality Data for REC 3 - Heavy Duty Shop Sump

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	REC3-MW-01 06/07/12	REC3-MW-01 08/29/12
1,2,4-Trichlorobenzene in µg/L	2	1 U	
1,2,4-Trimethylbenzene in µg/L	24	1 U	1 U
1,2-Dibromo-3-chloropropane in µg/L		10 U	10 U
1,2-Dibromoethane (EDB) in µg/L	0.74	1 U	1 U
1,2-Dichlorobenzene in µg/L	1,300	1 U	
1,2-Dichloroethane (EDC) in µg/L	4.2	1 U	1 U
1,2-Dichloropropane in µg/L	15	1 U	1 U
1,3,5-Trimethylbenzene in µg/L	25	1 U	1 U
1,3-Dichlorobenzene in µg/L	960	1 U	
1,3-Dichloropropane in µg/L		1 U	1 U
1,4-Dichlorobenzene in µg/L	190	1 U	
2,2-Dichloropropane in µg/L		1 U	1 U
2-Butanone in µg/L	350,000	10 U	10 U
2-Chlorotoluene in µg/L		1 U	1 U
2-Hexanone in µg/L		10 U	10 U
4-Chlorotoluene in µg/L		1 U	1 U
4-Methyl-2-pentanone in µg/L	11,000	10 U	10 U
Acetone in µg/L		10 U	10 U
Benzene in µg/L	2.4	0.35 U	0.35 U
Bromobenzene in µg/L		1 U	1 U
Bromodichloromethane in µg/L	0.09	1 U	1 U
Bromoform in µg/L	140	1 UJ	1 U
Bromomethane in µg/L	13	1 U	1 U
Carbon tetrachloride in µg/L	0.22	1 U	1 U
Chlorobenzene in µg/L	100	1 U	1 U
Chloroethane in µg/L	12	1 U	1 U
Chloroform in µg/L	1.2	1 U	1 U
Chloromethane in µg/L	5.2	10 U	10 U
cis-1,2-Dichloroethene (DCE) in µg/L	160	1 U	1 U
cis-1,3-Dichloropropene in µg/L		1 U	1 U
Dibromochloromethane in µg/L	0.22	1 U	1 U
Dibromomethane in µg/L		1 U	1 U
Dichlorodifluoromethane in µg/L	9.9	1 U	1 U
Ethylbenzene in µg/L	2,100	1 U	1 U
Hexachlorobutadiene in µg/L	0.81	1 U	1 U
Isopropylbenzene in µg/L	720	1 U	1 U
Methylene chloride in µg/L	94	5 U	5 U
Methyl-Tert-Butyl Ether in µg/L	610	1 U	1 U
n-Propylbenzene in µg/L		1 U	1 U
p-Isopropyltoluene in µg/L		1 U	1 U
sec-Butylbenzene in µg/L		1 U	1 U
Styrene in µg/L	78	1 U	1 U
tert-Butylbenzene in µg/L		1 U	1 U
Tetrachloroethene (PCE) in µg/L	0.39	1 U	1 U
Toluene in µg/L	15,000	1 U	1 U
trans-1,2-Dichloroethene in µg/L	130	1 U	1 U
trans-1,3-Dichloropropene in µg/L		1 U	1 U
Trichloroethene (TCE) in µg/L	1.6	1 U	1 U
Trichlorofluoromethane in µg/L	120	1 U	1 U
Vinyl chloride in µg/L	0.35	0.2 U	0.2 U
m,p-Xylenes in µg/L	310	2 U	2 U
o-Xylene in µg/L	440	1 U	1 U
Xylenes (total) in µg/L	310	ND	ND
Field Parameters			
Dissolved Oxygen in mg/L		0.29	0.26
ORP in mVolts		22.7	35.9
pH in pH Units		7.8	6.87
Specific Conductance in us/cm		17,829	25,071
Temperature in deg C		13.1	16.3
Turbidity in NTU		7.03	43.5

Notes:

Concentrations in shaded cells indicate value exceeds Groundwater Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-4A - Soil Quality Data for REC 5 - Dutch Ovens 1-5

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	REC5-HA-1 9/5/12 (0-1 ft)	REC5-HA-1 FD 9/5/12 (0-1 ft)	REC5-HA-1 9/5/12 (1.75-2 ft)	REC5-HA-2 9/5/12 (0-1 ft)	REC5-HA-2 9/5/12 (2-3 ft)	REC5-HA-3 9/5/12 (0-1 ft)	REC5-HA-3 9/5/12 (2-3 ft)	REC5-HA-4 9/5/12 (0-1 ft)	REC5-HA-4 FD 9/5/12 (0-1 ft)	REC5-HA-4 9/5/12 (2-3 ft)	REC5-HA-5 9/5/12 (0-1 ft)	REC5-HA-5 9/5/12 (2-3 ft)	REC5-MW-1 6/5/12 (6.5-7.5 ft)
Metals															
Antimony in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U	1.4	1 U	1 U	1 U	1 U	1 U	1 U
Arsenic in mg/kg	20	20	2.41	2.54	1.76	5.15	4.79	1.78	7.1	2.23	2.42	2.76	3.94	3.36	18.1
Beryllium in mg/kg			1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium in mg/kg	2	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chromium (Total) in mg/kg	2,000	2,000	9.15	8.85	8.34	13.7	15	10.6	18.2	10.6	11.3	9.18	11.8	13.1	20.5
Copper in mg/kg			9.8	12.6	15.4	22.7	26.6	7.44	30.1	6.89	7.44	9.92	32.9	17.3	28.8
Lead in mg/kg	250	1,000	5.97	8	4.53	57.6	76.5	2.42	11.5	6.9	6.84	7.5	14	7.99	5.28
Mercury in mg/kg	2	2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.13	0.1 U	0.1 U
Nickel in mg/kg			20.5	27.6	22.5	24	68	22.6	42.7	22.7 J	39.6 J	17.1	19.7	19.6	41.1
Selenium in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Silver in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Thallium in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Zinc in mg/kg			48.8	63.7	22.9	45.3	73.2	13	55	14.2	17.8	20.5	29	29.5	37
Volatile Organic Compounds (VOC)															
1,1,1,2-Tetrachloroethane in mg/kg	38	5,000													0.05 U
1,1,1-Trichloroethane in mg/kg	2	2													0.05 U
1,1,2,2-Tetrachloroethane in mg/kg	5	660													0.05 U
1,1,2-Trichloroethane in mg/kg	18	2,300													0.05 U
1,1-Dichloroethane in mg/kg															0.05 U
1,1-Dichloroethene in mg/kg															0.05 U
1,1-Dichloropropene in mg/kg															0.05 U
1,2,3-Trichlorobenzene in mg/kg															0.25 U
1,2,3-Trichloropropane in mg/kg	0.033	4.4													0.05 U
1,2,4-Trichlorobenzene in mg/kg	35	4,500													0.25 U
1,2,4-Trimethylbenzene in mg/kg															0.05 U
1,2-Dibromo-3-chloropropane in mg/kg	1.3	160													0.5 U
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005													0.05 U
1,2-Dichlorobenzene in mg/kg															0.05 U
1,2-Dichloroethane (EDC) in mg/kg	11	1,400													0.05 U
1,2-Dichloropropane in mg/kg															0.05 U
1,3,5-Trimethylbenzene in mg/kg															0.05 U
1,3-Dichlorobenzene in mg/kg															0.05 U
1,3-Dichloropropane in mg/kg															0.05 U
1,4-Dichlorobenzene in mg/kg															0.05 U
2,2-Dichloropropane in mg/kg															0.05 U
2-Butanone in mg/kg															0.5 U
2-Chlorotoluene in mg/kg															0.05 U
2-Hexanone in mg/kg															0.5 U
4-Chlorotoluene in mg/kg															0.05 U
4-Methyl-2-pentanone in mg/kg															0.5 U
Acetone in mg/kg															0.5 U
Benzene in mg/kg	0.03	0.03													0.03 U
Bromobenzene in mg/kg															0.05 U
Bromodichloromethane in mg/kg	16	2,100													0.05 U
Bromoform in mg/kg	130	17,000													0.05 U
Bromomethane in mg/kg															0.5 U
Carbon tetrachloride in mg/kg	14	1,900													0.05 U
Chlorobenzene in mg/kg															0.05 U
Chloroethane in mg/kg															0.5 U
Chloroform in mg/kg															0.05 U
Chloromethane in mg/kg															0.5 U
cis-1,2-Dichloroethene (DCE) in mg/kg															0.05 U
cis-1,3-Dichloropropene in mg/kg															0.05 U
Dibromochloromethane in mg/kg	12	1,600													0.05 U
Dibromomethane in mg/kg															0.05 U
Dichlorodifluoromethane in mg/kg															0.5 UJ
Ethylbenzene in mg/kg	6	6													0.05 U
Hexachlorobutadiene in mg/kg	13	1,700													0.25 U

Table 3-4A - Soil Quality Data for REC 5 - Dutch Ovens 1-5

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	REC5-HA-1 9/5/12 (0-1 ft)	REC5-HA-1 FD 9/5/12 (0-1 ft)	REC5-HA-1 9/5/12 (1.75-2 ft)	REC5-HA-2 9/5/12 (0-1 ft)	REC5-HA-2 9/5/12 (2-3 ft)	REC5-HA-3 9/5/12 (0-1 ft)	REC5-HA-3 9/5/12 (2-3 ft)	REC5-HA-4 9/5/12 (0-1 ft)	REC5-HA-4 FD 9/5/12 (0-1 ft)	REC5-HA-4 9/5/12 (2-3 ft)	REC5-HA-5 9/5/12 (0-1 ft)	REC5-HA-5 9/5/12 (2-3 ft)	REC5-MW-1 6/5/12 (6.5-7.5 ft)
Isopropylbenzene in mg/kg															0.05 U
Methylene chloride in mg/kg	0.02	0.02													0.5 U
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1													0.05 U
n-Propylbenzene in mg/kg															0.05 U
p-Isopropyltoluene in mg/kg															0.05 U
sec-Butylbenzene in mg/kg															0.05 U
Styrene in mg/kg															0.05 U
tert-Butylbenzene in mg/kg															0.05 U
Tetrachloroethene (PCE) in mg/kg	0.05	0.05													0.025 U
Toluene in mg/kg	7	7													0.05 U
trans-1,2-Dichloroethene in mg/kg															0.05 U
trans-1,3-Dichloropropene in mg/kg															0.05 U
Trichloroethene (TCE) in mg/kg	0.03	0.03													0.03 U
Trichlorofluoromethane in mg/kg															0.5 U
Vinyl chloride in mg/kg	0.67	88													0.05 U
m,p-Xylenes in mg/kg	16,000	700,000													0.1 U
o-Xylene in mg/kg	16,000	700,000													0.05 U
Xylenes (total) in mg/kg	9	9													ND
Naphthalene in mg/kg	5	5													0.05 U

Notes:

Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.

Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-4B - Groundwater Quality Data for REC 5 - Dutch Ovens 1-5

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	REC5-MW-01 06/08/12	REC5-MW-01 06/08/12 FD	REC5-MW-01 08/29/12	REC5-MW-01 08/29/12 FD
Dissolved Metals					
Dissolved Antimony in µg/L	640	3.96	8.95	3.65 J	2.3 J
Dissolved Arsenic in µg/L	5	201	235	202	173
Dissolved Beryllium in µg/L	270	1 U	1 U	1 U	1 U
Dissolved Cadmium in µg/L	8.8	1 U	3.87	1 U	1 U
Dissolved Chromium (Total) in µg/L	240,000	52	72.7	19.6	18.5
Dissolved Copper in µg/L	3.1	44.9 J	167 J	12.8 J	4.29 J
Dissolved Lead in µg/L	8.1	37.3 J	174 J	12.2 J	2.08 J
Dissolved Mercury in µg/L	0.15	0.12 J	0.41 J	0.1 U	0.1 U
Dissolved Nickel in µg/L	8.2	3.37	10.8	2.5	2.49
Dissolved Selenium in µg/L	71	1 U	1.11	2.62	2.23
Dissolved Silver in µg/L	1.9	1 U	1 U	1 U	1 U
Dissolved Thallium in µg/L	0.47	1 U	1 U	1 U	1 U
Dissolved Zinc in µg/L	81	42.3 J	203 J	7.73 J	4.49 J
Total Metals					
Total Antimony in µg/L	640	9.02	9.86	5.94	6.02
Total Arsenic in µg/L	5	218	236	213	204
Total Beryllium in µg/L	270	1 U	1 U	1 U	1 U
Total Cadmium in µg/L	8.8	5.22	5.26	1 U	1 U
Total Chromium (Total) in µg/L	240,000	83.8	84.8	26.7	26.3
Total Copper in µg/L	3.1	226	225	62.2	63
Total Lead in µg/L	8.1	234	242	88.7	88.5
Total Mercury in µg/L	0.15	0.57	0.55	0.16	0.17
Total Nickel in µg/L	8.2	14.8	14.7	4.69	4.05
Total Selenium in µg/L	71	1.51	1.68	1.58	1.35
Total Silver in µg/L	1.9	1 U	1 U	1 U	1 U
Total Thallium in µg/L	0.47	1 U	1 U	1 U	1 U
Total Zinc in µg/L	81	274	274	42.6 J	66.8 J
Conventional Chemistry Parameters					
Total Suspended Solids in mg/L		50		23	
Volatile Organic Compounds (VOC)					
1,1,1,2-Tetrachloroethane in µg/L	7.4	1 U		1 U	
1,1,1-Trichloroethane in µg/L	11,000	1 U		1 U	
1,1,2,2-Tetrachloroethane in µg/L	4	1 U		1 U	
1,1,2-Trichloroethane in µg/L	7.9	1 U		1 U	
1,1-Dichloroethane in µg/L	2,300	1 U		1 U	
1,1-Dichloroethene in µg/L	3.2	1 U		1 U	
1,1-Dichloropropene in µg/L		1 U		1 U	
1,2,3-Trichlorobenzene in µg/L		1 U		1 U	
1,2,3-Trichloropropane in µg/L		1 U		1 U	
1,2,4-Trichlorobenzene in µg/L	2	1 U		1 U	
1,2,4-Trimethylbenzene in µg/L	24	1 U		1 U	
1,2-Dibromo-3-chloropropane in µg/L		10 U		10 U	
1,2-Dibromoethane (EDB) in µg/L	0.74	1 U		1 U	
1,2-Dichlorobenzene in µg/L	1,300	1 U		1 U	
1,2-Dichloroethane (EDC) in µg/L	4.2	1 U		1 U	
1,2-Dichloropropane in µg/L	15	1 U		1 U	
1,3,5-Trimethylbenzene in µg/L	25	1 U		1 U	
1,3-Dichlorobenzene in µg/L	960	1 U		1 U	
1,3-Dichloropropane in µg/L		1 U		1 U	
1,4-Dichlorobenzene in µg/L	190	1 U		1 U	
2,2-Dichloropropane in µg/L		1 U		1 U	
2-Butanone in µg/L	350,000	10 U		10 U	
2-Chlorotoluene in µg/L		1 U		1 U	
2-Hexanone in µg/L		10 U		10 U	
4-Chlorotoluene in µg/L		1 U		1 U	
4-Methyl-2-pentanone in µg/L	11,000	10 U		10 U	
Acetone in µg/L		10 U		10 U	
Benzene in µg/L	2.4	0.35 U		0.35 U	
Bromobenzene in µg/L		1 U		1 U	
Bromodichloromethane in µg/L	0.09	1 U		1 U	
Bromoform in µg/L	140	1 UJ		1 U	
Bromomethane in µg/L	13	1 U		1 U	
Carbon tetrachloride in µg/L	0.22	1 U		1 U	
Chlorobenzene in µg/L	100	1 U		1 U	
Chloroethane in µg/L	12	1 U		1 U	
Chloroform in µg/L	1.2	1 U		1 U	
Chloromethane in µg/L	5.2	10 U		10 U	
cis-1,2-Dichloroethene (DCE) in µg/L	160	1 U		1 U	
cis-1,3-Dichloropropene in µg/L		1 U		1 U	
Dibromochloromethane in µg/L	0.22	1 U		1 U	
Dibromomethane in µg/L		1 U		1 U	
Dichlorodifluoromethane in µg/L	9.9	1 U		1 U	
Ethylbenzene in µg/L	2,100	1 U		1 U	
Hexachlorobutadiene in µg/L	0.81	1 U		1 U	
Isopropylbenzene in µg/L	720	1 U		1 U	
Methylene chloride in µg/L	94	5 U		5 U	
Methyl-Tert-Butyl Ether in µg/L	610	1 U		1 U	
n-Propylbenzene in µg/L		1 U		1 U	
p-Isopropyltoluene in µg/L		1 U		1 U	
sec-Butylbenzene in µg/L		1 U		1 U	
Styrene in µg/L	78	1 U		1 U	
tert-Butylbenzene in µg/L		1 U		1 U	
Tetrachloroethene (PCE) in µg/L	0.39	1 U		1 U	
Toluene in µg/L	15,000	1 U		1 U	
trans-1,2-Dichloroethene in µg/L	130	1 U		1 U	
trans-1,3-Dichloropropene in µg/L		1 U		1 U	
Trichloroethene (TCE) in µg/L	1.6	1 U		1 U	
Trichlorofluoromethane in µg/L	120	1 U		1 U	
Vinyl chloride in µg/L	0.35	0.2 U		0.2 U	
m,p-Xylenes in µg/L	310	2 U		2 U	
o-Xylene in µg/L	440	1 U		1 U	
Xylenes (total) in µg/L	310	ND		ND	
Naphthalene in µg/L	170	1 U		1 U	
Field Parameters					
Dissolved Oxygen in mg/L		0.05		0.52	
ORP in mVolts		-113.7		-325.1	
pH in pH Units		8.51		8.93	
Specific Conductance in us/cm		384		1,150	
Temperature in deg C		23.16		22.7	
Turbidity in NTU		97.3		64.1	

Notes:

Concentrations in shaded cells indicate value exceeds Groundwater Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-5A - Soil Quality Data for REC 6 (Latex Spill) + USTs 29, 67

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	UST29-MW-1 6/27/12 (7-8 ft)	UST29-MW-1 FD 6/27/12 (7-8 ft)	UST29-MW-1 6/27/12 (8-9 ft)	UST29-MW-1 FD 6/27/12 (8-9 ft)	UST69-MW-1 5/25/12 (6-7 ft)	UST69-MW-1 FD 5/25/12 (6-7 ft)	REC6-MW-1 6/28/12 (6 ft)	REC6-MW-1 FD 6/27/12 (6 ft)
Total Petroleum Hydrocarbons (TPH)										
Gasoline Range Hydrocarbons in mg/kg	100	100	150				2 U	2 U	9,700	7,900
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	1,700	1,500						
Oil Range Hydrocarbons in mg/kg	2,000	2,000	920	990						
Total TPH in mg/kg	2,000	2,000	2,620	2,490						
Metals										
Lead in mg/kg	250	1,000					2.91	2.1		
Polycyclic Aromatic Hydrocarbons (PAHs)										
Acenaphthene in mg/kg	4,800	210,000			10 U	10 U				
Acenaphthylene in mg/kg					10 U	10 U				
Anthracene in mg/kg	24,000	1,100,000			10 U	12				
Benzo(g,h,i)perylene in mg/kg					10 U	12				
Fluoranthene in mg/kg	3,200	140,000			37 J	58 J				
Fluorene in mg/kg	3,200	140,000			10 U	10 U				
Phenanthrene in mg/kg					25	37				
Pyrene in mg/kg	2,400	110,000			32	49				
Naphthalene in mg/kg	5	5			10 U	10 U				
Benz(a)anthracene in mg/kg	1.4	180			18	30				
Benzo(a)pyrene in mg/kg	0.14	2			12	24				
Benzo(b)fluoranthene in mg/kg	1.4	180			15	30				
Benzo(k)fluoranthene in mg/kg	14	1,800			10 U	12				
Chrysene in mg/kg	140	18,000			20	34				
Dibenzo(a,h)anthracene in mg/kg	0.14	18			10 U	10 U				
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	180			10 U	15				
Total cPAHs TEQ in mg/kg	0.14	2			17.0	33.5				
Volatile Organic Compounds (VOC)										
1,1,1,2-Tetrachloroethane in mg/kg	38	5,000	0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
1,1,1-Trichloroethane in mg/kg	2	2	0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
1,1,2,2-Tetrachloroethane in mg/kg	5	660	0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
1,1,2-Trichloroethane in mg/kg	18	2,300	0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethane in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethene in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloropropene in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
1,2,3-Trichlorobenzene in mg/kg			0.25 U	0.25 U			0.25 U	0.25 U	0.25 U	0.25 U
1,2,3-Trichloropropane in mg/kg	0.033	4.4	0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
1,2,4-Trichlorobenzene in mg/kg	35	4,500	0.25 U	0.25 U			0.25 U	0.25 U	0.25 U	0.25 U
1,2,4-Trimethylbenzene in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	9.3	9.5
1,2-Dibromo-3-chloropropane in mg/kg	1.3	160	0.5 U	0.5 U			0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005	0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichlorobenzene in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	0.4	0.42
1,2-Dichloroethane (EDC) in mg/kg	11	1,400	0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichloropropane in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
1,3,5-Trimethylbenzene in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	5.1	4.6
1,3-Dichlorobenzene in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
1,3-Dichloropropane in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
1,4-Dichlorobenzene in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
1,4-Dioxane in mg/kg									0.5 UJ	0.5 UJ
2,2-Dichloropropane in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
2-Butanone in mg/kg			0.5 U	0.5 U			0.5 U	0.5 U	0.5 U	0.5 U
2-Chlorotoluene in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
2-Hexanone in mg/kg			0.5 U	0.5 U			0.5 U	0.5 U	0.5 U	0.5 U
4-Chlorotoluene in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
4-Methyl-2-pentanone in mg/kg			0.5 U	0.5 U			0.5 U	0.5 U	0.5 U	0.5 U
Acetone in mg/kg			0.5 U	0.5 U			0.5 U	0.5 U	0.5 U	0.5 U
Benzene in mg/kg	0.03	0.03	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U
Bromobenzene in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
Bromodichloromethane in mg/kg	16	2,100	0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
Bromoform in mg/kg	130	17,000	0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
Bromomethane in mg/kg			0.5 U	0.5 U			0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride in mg/kg	14	1,900	0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
Chlorobenzene in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
Chloroethane in mg/kg			0.5 U	0.5 U			0.5 U	0.5 U	0.5 U	0.5 U
Chloroform in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
Chloromethane in mg/kg			0.5 U	0.5 U			0.5 UJ	0.5 UJ	0.5 U	0.5 U
cis-1,2-Dichloroethene (DCE) in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
cis-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
Dibromochloromethane in mg/kg	12	1,600	0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
Dibromomethane in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
Dichlorodifluoromethane in mg/kg			0.5 U	0.5 U			0.5 UJ	0.5 UJ	0.5 U	0.5 U
Ethylbenzene in mg/kg	6	6	0.056	0.05 U			0.05 U	0.05 U	630	660
Hexachlorobutadiene in mg/kg	13	1,700	0.25 U	0.25 U			0.25 U	0.25 U	0.25 U	0.25 U
Isopropylbenzene in mg/kg			1.1	1			0.05 U	0.05 U	9.6	7.9
Methylene chloride in mg/kg	0.02	0.02	0.5 U	0.5 U			0.5 U	0.5 U	0.5 U	0.5 U
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1	0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
n-Propylbenzene in mg/kg			0.83	0.76			0.05 U	0.05 U	7.6	6.9
p-Isopropyltoluene in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	0.33	0.29
sec-Butylbenzene in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	0.27	0.22
Styrene in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
tert-Butylbenzene in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
Tetrachloroethene (PCE) in mg/kg	0.05	0.05	0.025 U	0.025 U			0.025 U	0.025 U	0.025 U	0.025 U
Toluene in mg/kg	7	7	0.05 U	0.05 U			0.05 U	0.05 U	1.6	2.2
trans-1,2-Dichloroethene in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
trans-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
Trichloroethene (TCE) in mg/kg	0.03	0.03	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U
Trichlorofluoromethane in mg/kg			0.5 U	0.5 U			0.5 U	0.5 U	0.5 U	0.5 U
Vinyl acetate in mg/kg									0.5 UJ	0.5 UJ
Vinyl chloride in mg/kg	0.67	88	0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U
m,p-Xylenes in mg/kg	16,000	700,000	0.18	0.12			0.1 U	0.1 U	1,800	2,300
o-Xylene in mg/kg	16,000	700,000	0.05 U	0.05 U			0.05 U	0.05 U	450	500
Xylenes (total) in mg/kg	9	9	0.205	0.145			ND	ND	2,250	2,800
Naphthalene in mg/kg	5	5	0.2	0.19			0.05 U	0.05 U	0.9 J	1.3 J

Notes:

Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.

Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-5B - Groundwater Quality Data for REC 6 (Latex Spill) + USTs 29, 67

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	UST29-MW-01 07/02/12	UST29-MW-01 07/02/12 FD	UST29-MW-01 08/28/12	UST29-MW-01 08/28/12 FD	REC6-MW-01 07/02-06/12	REC6-MW-01 07/02-06/12 FD	REC6-MW-01 08/28/12	REC6-MW-01 08/28/12 FD	REC6-MW-02 06/05/12	REC6-MW-02 08/30/12	REC6-MW-02 08/30/12 FD
Total Petroleum Hydrocarbons (TPH)												
Gasoline Range Hydrocarbons in µg/L	1,000	350		680		24,000	25,000	9,800		100 U	100 U	
Diesel Range Hydrocarbons in µg/L	500	100 U	100 U	50 U	50 U			50 U			50 U	
Oil Range Hydrocarbons in µg/L	500	500 U	500 U	250 U	250 U			250 U			250 U	
Total TPHs in µg/L	500	ND	ND	ND	ND			ND			ND	
Dissolved Metals												
Dissolved Antimony in µg/L	640									1 U	1 U	
Dissolved Arsenic in µg/L	5									3.44	3.89	
Dissolved Beryllium in µg/L	270									1 U	1 U	
Dissolved Cadmium in µg/L	8.8									1 U	1 U	
Dissolved Chromium (Total) in µg/L	240,000									4.03	3.47	
Dissolved Copper in µg/L	3.1									2.56	6.52	
Dissolved Lead in µg/L	8.1									1 U	1 U	
Dissolved Mercury in µg/L	0.15									0.1 U	0.1 U	
Dissolved Nickel in µg/L	8.2									4.08	3.58	
Dissolved Selenium in µg/L	71									4.54 J	5.07	
Dissolved Silver in µg/L	1.9									1 U	1 U	
Dissolved Thallium in µg/L	0.47									1 U	1 U	
Dissolved Zinc in µg/L	81									1 U	4.3	
Conventionals												
Ammonia as Nitrogen in mg/L	0.035									8.27	8.15	8.30
Dissolved Sulfide in mg/L										21.5	0.906 J	0.551 J
Formaldehyde in µg/L	1,600					30 J	29 J	100 U	100 U	100 U	100 UJ	
Total Suspended Solids in mg/L		10 U	10 U	10 U		20 U	20 U	26		10 U	10 U	
Polycyclic Aromatic Hydrocarbons (PAHs)												
Acenaphthene in µg/L	640	0.18	0.19	1.1						1 U	1 U	
Acenaphthylene in µg/L		0.05 U	0.05 U	0.05 U						1 U	1 U	
Anthracene in µg/L	26,000	0.059	0.065	0.23						1 U	1 U	
Benzo(g,h,i)perylene in µg/L		0.05 U	0.05 U	0.05 U						1 U	1 U	
Fluoranthene in µg/L	90	0.19	0.22	0.35						1 U	1 U	
Fluorene in µg/L	3,500	0.085	0.09	0.5						1 U	1 U	
Phenanthrene in µg/L		0.29	0.31	1.3						1 U	1 U	
Pyrene in µg/L	2,600	0.16	0.18	0.25						1 U	1 U	
Naphthalene in µg/L	170	0.064	0.065	0.19						1 U	1 U	
Benz(a)anthracene in µg/L	0.018	0.036	0.042	0.031						1 U	1 U	
Benzo(a)pyrene in µg/L	0.018	0.018	0.023	0.01						1 U	1 U	
Benzo(b)fluoranthene in µg/L	0.018	0.026	0.033	0.017						1 U	1 U	
Benzo(k)fluoranthene in µg/L	0.018	0.01 U	0.011	0.01 U						1 U	1 U	
Chrysene in µg/L	0.018	0.037	0.041	0.028						1 U	1 U	
Dibenzo(a,h)anthracene in µg/L	0.018	0.01 U	0.01 U	0.01 U						1 U	1 U	
Indeno(1,2,3-cd)pyrene in µg/L	0.018	0.01 U	0.011	0.01 U						1 U	1 U	
Total cPAHs TEQ in µg/L	0.018	0.0261	0.0336	0.0166						ND	ND	
Other Semivolatiles												
1,2,4-Trichlorobenzene in µg/L	2									1 U	1 U	
1,2-Dichlorobenzene in µg/L	1,300									1 U	1 U	
1,3-Dichlorobenzene in µg/L	960									1 U	1 U	
1,4-Dichlorobenzene in µg/L	190									1 U	1 U	
2,4,5-Trichlorophenol in µg/L	3,600									10 U	10 U	
2,4,6-Trichlorophenol in µg/L	2.4									10 U	10 U	
2,4-Dichlorophenol in µg/L	190									10 U	10 U	
2,4-Dimethylphenol in µg/L	550									10 U	10 U	
2,4-Dinitrophenol in µg/L	3,500									30 U	30 U	
2-Chloronaphthalene in µg/L	1,000									1 U	1 U	
2-Chlorophenol in µg/L	97									10 U	10 U	
2-Methylphenol in µg/L										10 U	10 U	
2-Nitroaniline in µg/L										3 U	3 U	
2-Nitrophenol in µg/L										10 U	10 U	
3 & 4 Methylphenol in µg/L										20 U	20 U	
3-Nitroaniline in µg/L										3 U	3 U	
4,6-Dinitro-2-methylphenol in µg/L										30 U	30 U	
4-Bromophenyl phenyl ether in µg/L										1 U	1 U	
4-Chloro-3-methylphenol in µg/L										10 U	10 U	
4-Chloroaniline in µg/L										3 U	3 U	
4-Chlorophenyl phenyl ether in µg/L										1 U	1 U	
4-Nitroaniline in µg/L										10 U	10 U	
4-Nitrophenol in µg/L										10 U	10 U	
Benzoic acid in µg/L										50 U	50 U	
Benzyl alcohol in µg/L										10 U	10 U	
Benzyl butyl phthalate in µg/L	8.2									1 U	1 U	
Bis(2-chloro-1-methylethyl) ether in µg/L	37									10 U	10 U	
Bis(2-chloroethoxy)methane in µg/L										1 U	1 U	
Bis(2-chloroethyl) ether in µg/L	0.53									10 U	10 U	
Bis(2-ethylhexyl) phthalate in µg/L	2.2									10 U	10 U	
Carbazole in µg/L										1 U	1 U	
Dibenzofuran in µg/L										1 U	1 U	
Diethyl phthalate in µg/L	28,000									1 U	1 U	
Dimethyl phthalate in µg/L	1,100,000									1 U	1 U	
Di-n-butyl phthalate in µg/L	2,900									1 U	1 U	
Di-n-octyl phthalate in µg/L										1 U	1 U	
Hexachlorobenzene in µg/L	0.00029									1 U	1 U	
Hexachlorobutadiene in µg/L	0.81									1 U	1 U	
Hexachlorocyclopentadiene in µg/L	1,100									3 U	3 U	
Hexachloroethane in µg/L	3.3									1 U	1 U	
Isophorone in µg/L	600									1 U	1 U	
Nitrobenzene in µg/L	690									1 U	1 U	
N-Nitroso-di-n-propylamine in µg/L	0.51									10 U	10 U	
N-Nitrosodiphenylamine in µg/L	6									1 U	1 U	
Pentachlorophenol in µg/L	1.5									10 U	10 U	
Phenol in µg/L	560,000									10 U	10 U	
2,4-Dinitrotoluene in µg/L	3.4									1 U	1 U	
2,6-Dinitrotoluene in µg/L										1 U	1 U	
Volatile Organic Compounds (VOC)												
1,1,1,2-Tetrachloroethane in µg/L	7.4	1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
1,1,1-Trichloroethane in µg/L	11,000	1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
1,1,2,2-Tetrachloroethane in µg/L	4	1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
1,1,2-Trichloroethane in µg/L	7.9	1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
1,1-Dichloroethane in µg/L	2,300	1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
1,1-Dichloroethene in µg/L	3.2	1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
1,1-Dichloropropene in µg/L		1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
1,2,3-Trichlorobenzene in µg/L		1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
1,2,3-Trichloropropane in µg/L		1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
1,2,4-Trichlorobenzene in µg/L	2	1 U		1 U		1 U	1 U	1 U	1 U	1 U		
1,2,4-Trimethylbenzene in µg/L	24	1 U		1 U		9.3	8.9	2.5	2.2	1 U	1 U	
1,2-Dibromo-3-chloropropane in µg/L		10 U		10 U		10 U	10 U	10 U	10 U	10 U	10 U	
1,2-Dibromoethane (EDB) in µg/L	0.74	1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
1,2-Dichlorobenzene in µg/L	1,300	1 U		1 U		1 U	1 U	1 U	1 U	1 U		
1,2-Dichloroethane (EDC) in µg/L	4.2	1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
1,2-Dichloropropane in µg/L	15	1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
1,3,5-Trimethylbenzene in µg/L	25	1 U		1 U		4.3	4.2	1.4	1.2	1 U	1 U	

Table 3-5B - Groundwater Quality Data for REC 6 (Latex Spill) + USTs 29, 67

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	UST29-MW-01 07/02/12	UST29-MW-01 07/02/12 FD	UST29-MW-01 08/28/12	UST29-MW-01 08/28/12 FD	REC6-MW-01 07/02-06/12	REC6-MW-01 07/02-06/12 FD	REC6-MW-01 08/28/12	REC6-MW-01 08/28/12 FD	REC6-MW-02 06/05/12	REC6-MW-02 08/30/12	REC6-MW-02 08/30/12 FD
1,3-Dichlorobenzene in µg/L	960	1 U		1 U		1 U	1 U	1 U	1 U	1 U		
1,3-Dichloropropane in µg/L		1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
1,4-Dichlorobenzene in µg/L	190	1 U		1 U		1 U	1 U	1 U	1 U	1 U		
1,4-Dioxane in µg/L				10 UJ		10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	
2,2-Dichloropropane in µg/L		1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
2-Butanone in µg/L	350,000	10 U		10 U		10 U	10 U	10 U	10 U	10 U	10 U	
2-Chlorotoluene in µg/L		1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
2-Hexanone in µg/L		10 U		10 U		10 U	10 U	10 U	10 U	10 U	10 U	
4-Chlorotoluene in µg/L		1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
4-Methyl-2-pentanone in µg/L	11,000	10 U		10 U		10 U	10 U	10 U	10 U	10 U	10 U	
Acetone in µg/L		11		10 U		14	14	10 U	10 U	10 U	10 U	
Benzene in µg/L	2.4	0.35 U		0.35 U		0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	
Bromobenzene in µg/L		1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
Bromodichloromethane in µg/L	0.09	1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
Bromoform in µg/L	140	1 U		1 U		1 U	1 U	1 U	1 U	1 UJ	1 UJ	
Bromomethane in µg/L	13	1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
Carbon tetrachloride in µg/L	0.22	1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
Chlorobenzene in µg/L	100	1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
Chloroethane in µg/L	12	1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
Chloroform in µg/L	1.2	1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
Chloromethane in µg/L	5.2	10 U		10 U		10 U	10 U	10 U	10 U	10 U	10 U	
cis-1,2-Dichloroethene (DCE) in µg/L	160	1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
cis-1,3-Dichloropropene in µg/L		1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
Dibromochloromethane in µg/L	0.22	1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
Dibromomethane in µg/L		1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
Dichlorodifluoromethane in µg/L	9.9	1 U		1 U		1 U	1 U	1 U	1 U	1 UJ	1 U	
Ethylbenzene in µg/L	2,100	10		53		2,000	2,000	850	790	1 U	1 U	
Hexachlorobutadiene in µg/L	0.81	1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
Isopropylbenzene in µg/L	720	1.2		9.7		14	13	6.2	5.3	1 U	1 U	
Methylene chloride in µg/L	94	5 U		5 U		5 U	5 U	5 U	5 U	5 U	5 U	
Methyl-Tert-Butyl Ether in µg/L	610	1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
n-Propylbenzene in µg/L		1 U		4.2		7.7	7.4	3.7	3.2	1 U	1 U	
p-Isopropyltoluene in µg/L		1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
sec-Butylbenzene in µg/L		1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
Styrene in µg/L	78	1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
tert-Butylbenzene in µg/L		1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
Tetrachloroethene (PCE) in µg/L	0.39	1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
Toluene in µg/L	15,000	1 U		1.1		18	17	8	7	1 U	1 U	
trans-1,2-Dichloroethene in µg/L	130	1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
trans-1,3-Dichloropropene in µg/L		1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
Trichloroethene (TCE) in µg/L	1.6	1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
Trichlorofluoromethane in µg/L	120	1 U		1 U		1 U	1 U	1 U	1 U	1 U	1 U	
Vinyl acetate in µg/L	7,800			10 UJ		10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	
Vinyl chloride in µg/L	0.35	0.2 U		0.2 U		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
m,p-Xylenes in µg/L	310	53		200		6,900	6,900	3,100	2,900	2 U	2 U	
o-Xylene in µg/L	440	19		37		1,600	1,600	670	620	1 U	1 U	
Xylenes (total) in µg/L	310	72.0		237		8,500	8,500	3,770	3,520	ND	ND	
Naphthalene in µg/L	170					1.7	1.4	1 U	1 U			
Field Parameters												
Dissolved Oxygen in mg/L		0.25		1.2		1.39		1.14		0.02	4.28	
ORP in mVolts		-46.9		-68.1		7.6		-128.1		-233	-453.2	
pH in pH Units		6.52		6.36		6.46		6.62		6.97	7.63	
Specific Conductance in us/cm		264.7		150.8		232		132.3		1,935	2,280	
Temperature in deg C		17		20.7		16.5		19.8		14.85	17.7	
Turbidity in NTU		19.4		4.38		11.7		21.5		5.38	7.7	

Notes:

Concentrations in shaded cells indicate value exceeds Groundwater Screening Level.

-

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-6 - Groundwater Quality Data for REC 7 - East Waterway Shoreline Wells

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	MW-01 02/17/12	MW-01 06/06/12	MW-01 08/27/12	MW-02 02/17/12	MW-02 06/06/12	MW-02 08/27/12	MW-05 02/17/12	MW-05 06/05/12	MW-05 08/31/12	MW-06 02/17/12	MW-06 06/07/12	MW-06 08/29/12	NRP-MW-02 06/05/12	NRP-MW-02 08/31/12	NRP-MW-03 06/05/12	NRP-MW-03 06/05/12 FD	NRP-MW-03 08/30/12	OMS-MW-01 06/06/12	OMS-MW-01 08/28/12
Total Petroleum Hydrocarbons (TPH)																				
Gasoline Range Hydrocarbons in µg/L	1,000	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U		100 U	100 U	100 U
Diesel Range Hydrocarbons in µg/L	500	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U		50 U	50 U	50 U
Oil Range Hydrocarbons in µg/L	500	250 U	250 UJ	250 U	250 U	250 UJ	250 U	250 U	250 U	250 U	250 U	250 UJ	250 U	250 U	250 U	250 U		250 U	250 UJ	250 U
Total TPHs in µg/L	500	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND
Dissolved Metals																				
Dissolved Antimony in µg/L	640		1 U	1.00 U		0.69 J	1.00 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1.1	0.51 J
Dissolved Arsenic in µg/L	5		0.95	0.68 J		1.35	1.57	4.68	3.92	6.67	5.2	6.38	7.8	1 U	2.18	2.11		2.6	0.76	0.64
Dissolved Beryllium in µg/L	270		0.02 U	0.0500 U		0.02 U	0.0500 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	0.02 U	0.0222 U
Dissolved Cadmium in µg/L	8.8		0.096	0.228		0.077	0.022 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	0.079	0.009 J
Dissolved Chromium (Total) in µg/L	240,000		0.34	4.32		1.13	0.33 J	1.92	1.58	1.42	4.28	5.26	5.32	1 U	1 U	5.48		4.54	0.35	3.11
Dissolved Copper in µg/L	3.1		2.56	4.350		1.36	1.020	7.09	5.21	15.9	4.14	3.29	5.29	1 U	1 U	1.84		3.55	1.07	0.557
Dissolved Lead in µg/L	8.1	5 U	0.097	0.088	1 U	6.42	0.280	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	0.056	0.058 J
Dissolved Mercury in µg/L	0.15		0.1 U	0.1 U		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U		0.1 U	0.1 U	0.1 U
Dissolved Nickel in µg/L	8.2		2.65	23.0		12.3	6.80	3.48	3.38	4.87	5.95	7.81	10.5	2.12	4.08	2.31		2.18	6.75	18.6
Dissolved Selenium in µg/L	71		1 U	1.0 U		1 U	1.0 U	15.3	13.8 J	25.6	12.4	16.3	24.9	1.11 J	8.26	4.49 J		4.42	0.8 J	1.0 U
Dissolved Silver in µg/L	1.9		0.009 J	0.031 J		0.013 J	0.050 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	0.005 J	0.006 J
Dissolved Thallium in µg/L	0.47		0.02 U	0.050 U		0.02 U	0.050 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	0.026	0.022 U
Dissolved Zinc in µg/L	81		8.84	21.1		2.31	1.07 J	1.61	1 U	5.67	1.49	13	3.16	4.44	2.45 J	3.57		2.78	3.99	6.31
Total Metals																				
Total Antimony in µg/L	640					0.57 J	1.00 U					1 U	1 U							
Total Arsenic in µg/L	5					1.33	1.44					5.88	6.07							
Total Beryllium in µg/L	270					0.02 U	0.0222 U					1 U	1 U							
Total Cadmium in µg/L	8.8					0.035	0.049					1 U	1 U							
Total Chromium (Total) in µg/L	240,000					0.38	0.76					6.62	6.95							
Total Copper in µg/L	3.1					0.718	1.800					3.85	4.85							
Total Lead in µg/L	8.1					0.198	4.490					1 U	1.41							
Total Mercury in µg/L	0.15					0.1 U	0.1 U					0.1 U	0.1 U							
Total Nickel in µg/L	8.2					13.1	6.70					7.82	9.59							
Total Selenium in µg/L	71					1 U	1.0 U					14.6	17							
Total Silver in µg/L	1.9					0.02 U	0.005 J					1 U	1 U							
Total Thallium in µg/L	0.47					0.02 U	0.022 U					1 U	1 U							
Total Zinc in µg/L	81					1.7	1.24					3.96	12.9							
Conventional Chemistry Parameters																				
Ammonia as Nitrogen in mg/L	0.035		0.05 U	0.050 U		0.118	0.098		0.662	0.667		15.5	15.6	0.383	0.451	11.3		15.7	0.023 J	0.129
Dissolved Sulfide in mg/L			0.05 U	0.050 U		0.05 U	0.050 U		3.01	0.050 U		0.05 U	0.050 U	0.506	0.050 U	0.2 U		0.240	0.05 U	0.050 U
Formaldehyde in µg/L	1,600																			
Total Dissolved Solids in mg/L		22,632			4,771			2,775			2,726									
Total Suspended Solids in mg/L		10 U	12	13	20	10 U	10 U	100	10 U	10 U	41	13	29	10 U	19	19		83	17	10 U
Polycyclic Aromatic Hydrocarbons (PAHs)																				
Acenaphthene in µg/L	640	0.1 U	1 U	0.05 U	0.1 U	0.05 U	0.05 U	0.28	0.22	0.5 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.6	1 U	0.54	0.05 U	0.05 U
Acenaphthylene in µg/L		0.1 U	1 U	0.05 U	0.1 U	0.05 U	0.05 U	0.1 U	0.05 U	0.5 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	1 U	0.05 U	0.05 U	0.05 U
Anthracene in µg/L	26,000	0.1 U	1 U	0.05 U	0.1 U	0.05 U	0.05 U	0.1 U	0.05 U	0.5 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	1 U	0.05 U	0.05 U	0.05 U
Benzo(g,h,i)perylene in µg/L		0.1 U	1 U	0.05 U	0.1 U	0.05 UJ	0.05 U	0.1 U	0.05 U	0.5 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	1 U	0.05 U	0.05 UJ	0.05 U
Fluoranthene in µg/L	90	0.1 U	1 U	0.05 U	0.1 U	0.05 UJ	0.05 U	0.1 U	0.05 U	0.5 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.075	1 U	0.07	0.05 UJ	0.05 U
Fluorene in µg/L	3,500	0.1 U	1 U	0.05 U	0.1 U	0.05 U	0.05 U	0.1 U	0.05 U	0.5 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.12	1 U	0.13	0.05 U	0.05 U
Phenanthrene in µg/L		0.1 U	1 U	0.05 U	0.1 U	0.05 U	0.05 U	0.1 U	0.05 U	0.5 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.2	1 U	0.2	0.05 U	0.05 U
Pyrene in µg/L	2,600	0.1 U	1 U	0.05 U	0.1 U	0.05 UJ	0.05 U	0.1 U	0.05 U	0.5 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.067	1 U	0.057	0.05 UJ	0.05 U
2-Methylnaphthalene in µg/L			1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Naphthalene in µg/L	170	0.1 U	0.05 U	0.05 U	0.1 U	0.05 U	0.05 U	0.1 U	0.05 U	0.5 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	1 U	0.05 U	0.05 U	0.05 U
Benz(a)anthracene in µg/L	0.018	0.1 U	1 U	0.01 U	0.1 U	0.01 UJ	0.01 U	0.1 U	0.01 U	0.1 U	0.1 U	0.01 U	0.01 U	0.01 U	0.01 U	0.014	1 U	0.011	0.01 UJ	0.01 U
Benzo(a)pyrene in µg/L	0.018	0.1 U	1 U	0.01 U	0.1 U	0.01 UJ	0.01 U	0.1 U	0.01 U	0.1 U	0.1 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	1 U	0.01 U	0.01 UJ	0.01 U
Benzo(b)fluoranthene in µg/L	0.018	0.1 U	1 U	0.01 U	0.1 U	0.01 UJ	0.01 U	0.1 U	0.01 U	0.1 U	0.1 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	1 U	0.01 U	0.01 UJ	0.01 U
Benzo(k)fluoranthene in µg/L	0.018	0.1 U	1 U	0.01 U	0.1 U	0.01 UJ	0.01 U	0.1 U	0.01 U	0.1 U	0.1 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	1 U	0.01 U	0.01 UJ	0.01 U
Chrysene in µg/L	0.018	0.1 U	1 U	0.01 U	0.1 U	0.01 UJ	0.01 U	0.1 U	0.01 U	0.1 U	0.1 U	0.01 U	0.01 U	0.01 U	0.01 U	0.011	1 U	0.01 U	0.01 UJ	0.01 U
Dibenzo(a,h)anthracene in µg/L	0.018	0.1 U	1 U	0.01 U	0.1 U	0.01 UJ	0.01 U	0.1 U	0.01 U	0.1 U	0.1 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	1 U	0.01 U	0.01 UJ	0.01 U
Indeno(1,2,3-cd)pyrene in µg/L	0.018	0.1 U	1 U	0.01 U	0.1 U	0.01 UJ	0.01 U	0.1 U	0.01 U	0.1 U	0.1 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	1 U	0.01 U	0.01 UJ	0.01 U
Total cPAHs TEQ in µg/L	0.018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00851	ND	0.00815	ND	ND

Table 3-6 - Groundwater Quality Data for REC 7 - East Waterway Shoreline Wells

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	MW-01 02/17/12	MW-01 06/06/12	MW-01 08/27/12	MW-02 02/17/12	MW-02 06/06/12	MW-02 08/27/12	MW-05 02/17/12	MW-05 06/05/12	MW-05 08/31/12	MW-06 02/17/12	MW-06 06/07/12	MW-06 08/29/12	NRP-MW-02 06/05/12	NRP-MW-02 08/31/12	NRP-MW-03 06/05/12	NRP-MW-03 06/05/12 FD	NRP-MW-03 08/30/12	OMS-MW-01 06/06/12	OMS-MW-01 08/28/12
Other Semivolatiles																				
1,2,4-Trichlorobenzene in µg/L	2		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene in µg/L	1,300		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene in µg/L	960		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene in µg/L	190		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2,4,5-Trichlorophenol in µg/L	3,600		10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol in µg/L	2.4		10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol in µg/L	190		10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol in µg/L	550		10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol in µg/L	3,500		30 U	30 U		30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U
2-Chloronaphthalene in µg/L	1,000		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Chlorophenol in µg/L	97		10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol in µg/L			10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline in µg/L			3 U	3 U		3 U	3 U	1 U	3 U	3 U	1 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
2-Nitrophenol in µg/L			10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3 & 4 Methylphenol in µg/L			20 U	20 U		20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	68	20 U	20 U
3-Nitroaniline in µg/L			3 U	3 U		3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
4,6-Dinitro-2-methylphenol in µg/L			30 U	30 U		30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U
4-Bromophenyl phenyl ether in µg/L			1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-Chloro-3-methylphenol in µg/L			10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline in µg/L			3 U	3 U		3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
4-Chlorophenyl phenyl ether in µg/L			1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-Nitroaniline in µg/L			10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitrophenol in µg/L			10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzoic acid in µg/L			50 U	50 U		50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Benzyl alcohol in µg/L			10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzyl butyl phthalate in µg/L	8.2		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bis(2-chloro-1-methylethyl) ether in µg/L	37		10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane in µg/L			1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bis(2-chloroethyl) ether in µg/L	0.53		10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl) phthalate in µg/L	2.2		10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole in µg/L			1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibenzofuran in µg/L			1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Diethyl phthalate in µg/L	28,000		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dimethyl phthalate in µg/L	1,100,000		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Di-n-butyl phthalate in µg/L	2,900		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Di-n-octyl phthalate in µg/L			1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobenzene in µg/L	0.00029		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene in µg/L	0.81		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorocyclopentadiene in µg/L	1,100		3 U	3 U		3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Hexachloroethane in µg/L	3.3		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Isophorone in µg/L	600		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Nitrobenzene in µg/L	690		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
N-Nitroso-di-n-propylamine in µg/L	0.51		10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine in µg/L	6		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Pentachlorophenol in µg/L	1.5		10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Phenol in µg/L	560,000		10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene in µg/L	3.4		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2,6-Dinitrotoluene in µg/L			1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Table 3-6 - Groundwater Quality Data for REC 7 - East Waterway Shoreline Wells

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	MW-01 02/17/12	MW-01 06/06/12	MW-01 08/27/12	MW-02 02/17/12	MW-02 06/06/12	MW-02 08/27/12	MW-05 02/17/12	MW-05 06/05/12	MW-05 08/31/12	MW-06 02/17/12	MW-06 06/07/12	MW-06 08/29/12	NRP-MW-02 06/05/12	NRP-MW-02 08/31/12	NRP-MW-03 06/05/12	NRP-MW-03 06/05/12 FD	NRP-MW-03 08/30/12	OMS-MW-01 06/06/12	OMS-MW-01 08/28/12
Volatile Organic Compounds (VOC)																				
1,1,1,2-Tetrachloroethane in µg/L	7.4		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,1,1-Trichloroethane in µg/L	11,000		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,1,2,2-Tetrachloroethane in µg/L	4		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,1,2-Trichloroethane in µg/L	7.9		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,1-Dichloroethane in µg/L	2,300		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,1-Dichloroethene in µg/L	3.2		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,1-Dichloropropene in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,2,3-Trichlorobenzene in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,2,3-Trichloropropane in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,2,4-Trichlorobenzene in µg/L	2		1 U			1 U			1 U			1 U		1 U		1 U			1 U	
1,2,4-Trimethylbenzene in µg/L	24		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,2-Dibromo-3-chloropropane in µg/L			10 U	10 U		10 U	10 U		10 U	10 U		10 U	10 U	10 U	10 U	10 U		10 U	10 U	10 U
1,2-Dibromoethane (EDB) in µg/L	0.74		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,2-Dichlorobenzene in µg/L	1,300		1 U			1 U			1 U			1 U		1 U		1 U			1 U	
1,2-Dichloroethane (EDC) in µg/L	4.2		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,2-Dichloropropane in µg/L	15		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,3,5-Trimethylbenzene in µg/L	25		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,3-Dichlorobenzene in µg/L	960		1 U			1 U			1 U			1 U		1 U		1 U			1 U	
1,3-Dichloropropane in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,4-Dichlorobenzene in µg/L	190		1 U			1 U			1 U			1 U		1 U		1 U			1 U	
1,4-Dioxane in µg/L																				
2,2-Dichloropropane in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
2-Butanone in µg/L	350,000		10 U	10 U		10 U	10 U		10 U	10 U		10 U	10 U	10 U	10 U	10 U		10 U	10 U	10 U
2-Chlorotoluene in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
2-Hexanone in µg/L			10 U	10 U		10 U	10 U		10 U	10 U		10 U	10 U	10 U	10 U	10 U		10 U	10 U	10 U
4-Chlorotoluene in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
4-Methyl-2-pentanone in µg/L	11,000		10 U	10 U		10 U	10 U		10 U	10 U		10 U	10 U	10 U	10 U	10 U		10 U	10 U	10 U
Acetone in µg/L			10 U	10 U		10 U	10 U		10 U	10 U		10 U	10 U	10 U	10 U	10 U		10 U	10 U	10 U
Benzene in µg/L	2.4	1 U	0.35 U	0.35 U	1 U	0.35 U	0.35 U	1 U	0.35 U	0.35 U	1 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U		0.35 U	0.35 U	0.35 U
Bromobenzene in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
Bromodichloromethane in µg/L	0.09		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
Bromoform in µg/L	140		1 UJ	1 U		1 UJ	1 U		1 UJ	1 U		1 U	1 U	1 UJ	1 UJ	1 UJ		1 UJ	1 UJ	1 U
Bromomethane in µg/L	13		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
Carbon tetrachloride in µg/L	0.22		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
Chlorobenzene in µg/L	100		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
Chloroethane in µg/L	12		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
Chloroform in µg/L	1.2		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
Chloromethane in µg/L	5.2		10 U	10 U		10 U	10 U		10 U	10 U		10 U	10 U	10 U	10 U	10 U		10 U	10 U	10 U
cis-1,2-Dichloroethene (DCE) in µg/L	160		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
cis-1,3-Dichloropropene in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
Dibromochloromethane in µg/L	0.22		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
Dibromomethane in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
Dichlorodifluoromethane in µg/L	9.9		1 U	1 U		1 U	1 U		1 UJ	1 U		1 U	1 U	1 UJ	1 U	1 UJ		1 U	1 U	1 U
Ethylbenzene in µg/L	2,100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
Hexachlorobutadiene in µg/L	0.81		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
Isopropylbenzene in µg/L	720		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
Methylene chloride in µg/L	94		5 UJ	5 U		5 UJ	5 U		5 U	5 U		5 U	5 U	5 U	5 U	5 U		5 U	5 UJ	5 U
Methyl-Tert-Butyl Ether in µg/L	610		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
n-Propylbenzene in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
p-Isopropyltoluene in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
sec-Butylbenzene in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
Styrene in µg/L	78		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
tert-Butylbenzene in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
Tetrachloroethene (PCE) in µg/L	0.39		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
Toluene in µg/L	15,000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
trans-1,2-Dichloroethene in µg/L	130		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
trans-1,3-Dichloropropene in µg/L			1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U

Table 3-6 - Groundwater Quality Data for REC 7 - East Waterway Shoreline Wells

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	MW-01 02/17/12	MW-01 06/06/12	MW-01 08/27/12	MW-02 02/17/12	MW-02 06/06/12	MW-02 08/27/12	MW-05 02/17/12	MW-05 06/05/12	MW-05 08/31/12	MW-06 02/17/12	MW-06 06/07/12	MW-06 08/29/12	NRP-MW-02 06/05/12	NRP-MW-02 08/31/12	NRP-MW-03 06/05/12	NRP-MW-03 06/05/12 FD	NRP-MW-03 08/30/12	OMS-MW-01 06/06/12	OMS-MW-01 08/28/12
Trichloroethene (TCE) in µg/L	0.42		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
Trichlorofluoromethane in µg/L	120		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
Vinyl acetate in µg/L	7,800																			
Vinyl chloride in µg/L	0.35		0.2 U	0.2 U		0.2 U	0.2 U		0.2 U	0.2 U		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U	0.2 U	0.2 U
m,p-Xylenes in µg/L	310		2 U	2 U		2 U	2 U		2 U	2 U		2 U	2 U	2 U	2 U	2 U		2 U	2 U	2 U
o-Xylene in µg/L	440		1 U	1 U		1 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
Xylenes (total) in µg/L	310	3 U	ND	ND	3 U	ND	ND	3 U	ND	ND	3 U	ND	ND	ND	ND	ND		ND	ND	ND
Naphthalene in µg/L	170																			
Field Parameters																				
Dissolved Oxygen in mg/L		6.31	6.99	5.23	6.6	1.44	1	1.53	0.07	5.36	4.96	0.23	1.66	0.35	6.48	2.01		6.4	4.69	2.41
ORP in mVolts		118	114.1	136	-102	87.5	13	-222	-78.1	-189.2	-141	-39.9	-144	-1.3	-148.8	-98.9		-241.6	115.1	-55.1
pH in pH Units		7.43	7.61	7	8.85	8.04	8.19	6.67	5.8	6.67	7.39	7.34	7.11	6.13	6.58	6.51		6.45	7.16	6.91
Specific Conductance in us/cm		36,646	19,290	43,088	9,109	19,510	22,874	5,773	3,554	6,538	3,809	3,347	3,856	770	1,197	1,410		1,522	19,300	25,177
Temperature in deg C		8.3	14.57	18.4	10.4	14.67	17.6	11	12.94	16.1	17.2	17.73	18.6	13.37	17	12.6		15.5	14.5	18.2
Turbidity in NTU		4.7	2.47	4.43	79.4	2.01	6.3	70	0.73	1.89	25.8	22.1	12.6	1.9	2	37.4		377	15.8	1.73

Notes

Concentrations in shaded cells indicate value exceeds Groundwater Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-6 - Groundwater Quality Data for REC 7 - East Waterway Shoreline Wells

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	REC1-MW-09 09/13/12	REC1-MW-09 09/13/12 FD	REC3-MW-01 06/07/12	REC3-MW-01 08/29/12	REC6-MW-02 06/05/12	REC6-MW-02 08/30/12	REC6-MW-02 08/30/12 FD	REC7-MW-01 06/05/12	REC7-MW-01 08/30/12	REC7-MW-02 06/05/12	REC7-MW-02 08/30/12	REC7-MW-03 06/06/12	REC7-MW-03 08/28/12	REC7-MW-04 06/06/12	REC7-MW-04 08/28/12	UST70-MW-02 06/07/12	UST70-MW-02 08/29/12
Total Petroleum Hydrocarbons (TPH)																		
Gasoline Range Hydrocarbons in µg/L	1,000	100 U				100 U	100 U									100 U		
Diesel Range Hydrocarbons in µg/L	500	50 U		50 U	50 U		50 U									50 U	50 U	50 U
Oil Range Hydrocarbons in µg/L	500	250 U		250 UJ	250 U		250 U									250 U	250 UJ	250 U
Total TPHs in µg/L	500	ND		ND	ND		ND									ND	ND	ND
Dissolved Metals																		
Dissolved Antimony in µg/L	640			1.2	1.00 U	1 U	1 U		1 U	1 U	1 U	1 U	0.93 J	3.88	1.8	1.00 U	2.27	1.21
Dissolved Arsenic in µg/L	5			2.22	1.91	3.44	3.89		2.52	1.12	1 U	1 U	1.9	1.84	2.64	1.57	5.23	1.11 J
Dissolved Beryllium in µg/L	270			0.02 U	0.0500 U	1 U	1 U		1 U	1 U	1 U	1 U	0.02 U	0.0222 U	0.02 U	0.0222 U	0.02 U	0.0500 U
Dissolved Cadmium in µg/L	8.8			0.776	0.286	1 U	1 U		1 U	1 U	1 U	1 U	0.094	0.129	0.118	0.422	0.135	0.284
Dissolved Chromium (Total) in µg/L	240,000			0.09 J	0.20 J	4.03	3.47		1.74	1.94	1.02	1 U	0.31	0.73	0.15 J	0.19 J	0.18 J	110
Dissolved Copper in µg/L	3.1			0.568	0.300	2.56	6.52		4.41	2.49	1 U	1 U	1.48	1.920	0.311	0.536	1.09	0.741
Dissolved Lead in µg/L	8.1			0.022	0.050 U	1 U	1 U		1 U	1 U	1 U	1 U	0.045	0.060 J	1.49	0.086	0.125	0.050 U
Dissolved Mercury in µg/L	0.15			0.1 U	0.1 U	0.1 U	0.1 U		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dissolved Nickel in µg/L	8.2			4.95	83.3	4.08	3.58		4.55	5.13	2.97	2.75	0.73	19.4	6.22	40.0	2.01	308
Dissolved Selenium in µg/L	71			1 U	1.0 U	4.54 J	5.07		8.59 J	3.77	1 U	1 U	1 U	1.0 U	1 U	1.0 U	1 U	1.0 U
Dissolved Silver in µg/L	1.9			0.02 U	0.050 U	1 U	1 U		1 U	1 U	1 U	1 U	0.013 J	0.016 J	0.03	0.022 U	0.02 U	0.050 U
Dissolved Thallium in µg/L	0.47			0.02 U	0.050 U	1 U	1 U		1 U	1 U	1 U	1 U	0.02 U	0.022 U	0.02 U	0.022 U	0.02 U	0.050 U
Dissolved Zinc in µg/L	81			2.4	2.07	1 U	4.3		17	9.1	1 U	1.63	2.58	3.85	8.3	19.9	116	12.2
Total Metals																		
Total Antimony in µg/L	640										1 U	1 U			2.06	1.16		
Total Arsenic in µg/L	5										1 U	1 UJ			2.66	1.54		
Total Beryllium in µg/L	270										1 U	1 U			0.02 U	0.0250 U		
Total Cadmium in µg/L	8.8										1 U	1 U			0.105	0.432		
Total Chromium (Total) in µg/L	240,000										1.06	1.11			0.08 J	1.12		
Total Copper in µg/L	3.1										1 U	1 U			0.212	1.360		
Total Lead in µg/L	8.1										1 U	1 U			0.421	0.597		
Total Mercury in µg/L	0.15										0.1 U	0.1 U			0.1 U	0.1 U		
Total Nickel in µg/L	8.2										2.62	2.71			6.25	39.3		
Total Selenium in µg/L	71										1 U	1 U			1 U	1.0 U		
Total Silver in µg/L	1.9										1 U	1 U			0.004 J	0.035		
Total Thallium in µg/L	0.47										1 U	1 U			0.02 U	0.025 U		
Total Zinc in µg/L	81										1 U	1.82 J			7.58	19.8		
Conventional Chemistry Parameters																		
Ammonia as Nitrogen in mg/L	0.035	0.249	0.236	0.05 U	0.025 J	8.27	8.15	8.30	1.9	1.49	1.21	1.00	0.05 U	0.050 U	0.05 U	0.050 U	0.575	0.158
Dissolved Sulfide in mg/L		0.050 U	0.050 U	0.05 U	0.050 U	21.5	0.906 J	0.551 J	0.429	0.050	0.14	0.050 U	0.05 U	0.050 U	0.05 U	0.050 U	0.05 U	0.050 U
Formaldehyde in µg/L	1,600					100 U	100 UJ											
Total Dissolved Solids in mg/L																		
Total Suspended Solids in mg/L		10 U		17	20	10 U	10 U		10 U	10 U	14	10 U	10 U	16	10 U	12	10 U	24
Polycyclic Aromatic Hydrocarbons (PAHs)																		
Acenaphthene in µg/L	640	0.05 U		0.05 U	0.05 U	1 U	1 U		2.7	5.1	1 U	1 U	1 U	1 U	1 U	1 U	0.15	0.13 J
Acenaphthylene in µg/L		0.05 U		0.05 U	0.05 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.05 U	0.05 UJ
Anthracene in µg/L	26,000	0.05 U		0.05 U	0.05 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.05 U	0.05 UJ
Benzo(g,h,i)perylene in µg/L		0.05 U		0.05 UJ	0.05 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.05 UJ	0.05 UJ
Fluoranthene in µg/L	90	0.05 U		0.05 UJ	0.05 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.05 UJ	0.05 UJ
Fluorene in µg/L	3,500	0.05 U		0.05 U	0.05 U	1 U	1 U		1 U	1.7	1 U	1 U	1 U	1 U	1 U	1 U	0.05 U	0.05 UJ
Phenanthrene in µg/L		0.05 U		0.05 U	0.05 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.05 U	0.05 UJ
Pyrene in µg/L	2,600	0.05 U		0.05 UJ	0.05 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.05 UJ	0.05 U
2-Methylnaphthalene in µg/L		1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Naphthalene in µg/L	170	0.05 U		0.05 U	0.05 U	1 U	1 U		1 U	1 U	1 U		1 U	1 U	1 U	1 U	0.19	0.05 UJ
Benz(a)anthracene in µg/L	0.018	0.01 U		0.01 UJ	0.01 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.01 UJ	0.01 U
Benzo(a)pyrene in µg/L	0.018	0.01 U		0.01 UJ	0.01 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.01 UJ	0.01 UJ
Benzo(b)fluoranthene in µg/L	0.018	0.01 U		0.01 UJ	0.01 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.01 UJ	0.01 UJ
Benzo(k)fluoranthene in µg/L	0.018	0.01 U		0.01 UJ	0.01 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.01 UJ	0.01 UJ
Chrysene in µg/L	0.018	0.01 U		0.01 UJ	0.01 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.01 UJ	0.01 U
Dibenzo(a,h)anthracene in µg/L	0.018	0.01 U		0.01 UJ	0.01 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.01 UJ	0.01 UJ
Indeno(1,2,3-cd)pyrene in µg/L	0.018	0.01 U		0.01 UJ	0.01 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.01 UJ	0.01 UJ
Total cPAHs TEQ in µg/L	0.018	ND		ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 3-6 - Groundwater Quality Data for REC 7 - East Waterway Shoreline Wells

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	REC1-MW-09 09/13/12	REC1-MW-09 09/13/12 FD	REC3-MW-01 06/07/12	REC3-MW-01 08/29/12	REC6-MW-02 06/05/12	REC6-MW-02 08/30/12	REC6-MW-02 08/30/12 FD	REC7-MW-01 06/05/12	REC7-MW-01 08/30/12	REC7-MW-02 06/05/12	REC7-MW-02 08/30/12	REC7-MW-03 06/06/12	REC7-MW-03 08/28/12	REC7-MW-04 06/06/12	REC7-MW-04 08/28/12	UST70-MW-02 06/07/12	UST70-MW-02 08/29/12
Other Semivolatiles																		
1,2,4-Trichlorobenzene in µg/L	2	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene in µg/L	1,300	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene in µg/L	960	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene in µg/L	190	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2,4,5-Trichlorophenol in µg/L	3,600	10 U		10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol in µg/L	2.4	10 U		10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol in µg/L	190	10 U		10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol in µg/L	550	10 U		10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol in µg/L	3,500	30 U		30 U	30 U	30 U	30 U		30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U
2-Chloronaphthalene in µg/L	1,000	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Chlorophenol in µg/L	97	10 U		10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol in µg/L		10 U		10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline in µg/L		3 U		3 U	3 U	3 U	3 U		3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
2-Nitrophenol in µg/L		10 U		10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3 & 4 Methylphenol in µg/L		20 U		20 U	20 U	20 U	20 U		20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
3-Nitroaniline in µg/L		3 U		3 U	3 U	3 U	3 U		3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
4,6-Dinitro-2-methylphenol in µg/L		30 U		30 U	30 U	30 U	30 U		30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U
4-Bromophenyl phenyl ether in µg/L		1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-Chloro-3-methylphenol in µg/L		10 U		10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline in µg/L		3 U		3 U	3 U	3 U	3 U		3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
4-Chlorophenyl phenyl ether in µg/L		1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-Nitroaniline in µg/L		10 U		10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitrophenol in µg/L		10 U		10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzoic acid in µg/L		50 U		50 U	50 U	50 U	50 U		50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Benzyl alcohol in µg/L		10 U		10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzyl butyl phthalate in µg/L	8.2	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bis(2-chloro-1-methylethyl) ether in µg/L	37	10 UJ		10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane in µg/L		1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bis(2-chloroethyl) ether in µg/L	0.53	10 U		10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl) phthalate in µg/L	2.2	10 U		10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole in µg/L		1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibenzofuran in µg/L		1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Diethyl phthalate in µg/L	28,000	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	4.1	1 U	1 U	1 U	1 U	1 U	1 U
Dimethyl phthalate in µg/L	1,100,000	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Di-n-butyl phthalate in µg/L	2,900	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Di-n-octyl phthalate in µg/L		1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobenzene in µg/L	0.00029	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene in µg/L	0.81	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorocyclopentadiene in µg/L	1,100	3 U		3 U	3 U	3 U	3 U		3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Hexachloroethane in µg/L	3.3	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Isophorone in µg/L	600	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Nitrobenzene in µg/L	690	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
N-Nitroso-di-n-propylamine in µg/L	0.51	10 U		10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine in µg/L	6	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Pentachlorophenol in µg/L	1.5	10 U		10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Phenol in µg/L	560,000	10 U		10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene in µg/L	3.4	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2,6-Dinitrotoluene in µg/L		1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Table 3-6 - Groundwater Quality Data for REC 7 - East Waterway Shoreline Wells

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	REC1-MW-09 09/13/12	REC1-MW-09 09/13/12 FD	REC3-MW-01 06/07/12	REC3-MW-01 08/29/12	REC6-MW-02 06/05/12	REC6-MW-02 08/30/12	REC6-MW-02 08/30/12 FD	REC7-MW-01 06/05/12	REC7-MW-01 08/30/12	REC7-MW-02 06/05/12	REC7-MW-02 08/30/12	REC7-MW-03 06/06/12	REC7-MW-03 08/28/12	REC7-MW-04 06/06/12	REC7-MW-04 08/28/12	UST70-MW-02 06/07/12	UST70-MW-02 08/29/12
Volatile Organic Compounds (VOC)																		
1,1,1,2-Tetrachloroethane in µg/L	7.4	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane in µg/L	11,000	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane in µg/L	4	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane in µg/L	7.9	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane in µg/L	2,300	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene in µg/L	3.2	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloropropene in µg/L		1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene in µg/L		1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichloropropane in µg/L		1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene in µg/L	2			1 U		1 U			1 U		1 U		1 U		1 U		1 U	
1,2,4-Trimethylbenzene in µg/L	24	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane in µg/L		10 U		10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U	10 UJ	10 U	10 UJ	10 U	10 U	10 U
1,2-Dibromoethane (EDB) in µg/L	0.74	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene in µg/L	1,300			1 U		1 U			1 U		1 U		1 U		1 U		1 U	
1,2-Dichloroethane (EDC) in µg/L	4.2	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane in µg/L	15	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene in µg/L	25	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene in µg/L	960			1 U		1 U			1 U		1 U		1 U		1 U		1 U	
1,3-Dichloropropane in µg/L		1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene in µg/L	190			1 U		1 U			1 U		1 U		1 U		1 U		1 U	
1,4-Dioxane in µg/L						10 UJ	10 UJ											
2,2-Dichloropropane in µg/L		1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone in µg/L	350,000	10 U		10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorotoluene in µg/L		1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Hexanone in µg/L		10 U		10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorotoluene in µg/L		1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-pentanone in µg/L	11,000	10 U		10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone in µg/L		10 U		10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene in µg/L	2.4	0.35 U		0.35 U	0.35 U	0.35 U	0.35 U		0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U
Bromobenzene in µg/L		1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane in µg/L	0.09	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform in µg/L	140	1 U		1 UJ	1 U	1 UJ	1 UJ		1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 U	1 UJ	1 U	1 UJ	1 U
Bromomethane in µg/L	13	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride in µg/L	0.22	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene in µg/L	100	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane in µg/L	12	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform in µg/L	1.2	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane in µg/L	5.2	10 U		10 U	10 U	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,2-Dichloroethene (DCE) in µg/L	160	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene in µg/L		1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane in µg/L	0.22	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 UJ	1 U	1 UJ	1 U	1 U	1 U
Dibromomethane in µg/L		1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane in µg/L	9.9	1 U		1 U	1 U	1 UJ	1 U		1 UJ	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene in µg/L	2,100	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene in µg/L	0.81	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene in µg/L	720	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride in µg/L	94	5 U		5 U	5 U	5 U	5 U		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl-Tert-Butyl Ether in µg/L	610	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
n-Propylbenzene in µg/L		1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
p-Isopropyltoluene in µg/L		1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
sec-Butylbenzene in µg/L		1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene in µg/L	78	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
tert-Butylbenzene in µg/L		1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene (PCE) in µg/L	0.39	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene in µg/L	15,000	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene in µg/L	130	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene in µg/L		1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Table 3-6 - Groundwater Quality Data for REC 7 - East Waterway Shoreline Wells

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	REC1-MW-09 09/13/12	REC1-MW-09 09/13/12 FD	REC3-MW-01 06/07/12	REC3-MW-01 08/29/12	REC6-MW-02 06/05/12	REC6-MW-02 08/30/12	REC6-MW-02 08/30/12 FD	REC7-MW-01 06/05/12	REC7-MW-01 08/30/12	REC7-MW-02 06/05/12	REC7-MW-02 08/30/12	REC7-MW-03 06/06/12	REC7-MW-03 08/28/12	REC7-MW-04 06/06/12	REC7-MW-04 08/28/12	UST70-MW-02 06/07/12	UST70-MW-02 08/29/12
Trichloroethene (TCE) in µg/L	0.42	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane in µg/L	120	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl acetate in µg/L	7,800					10 UJ	10 UJ											
Vinyl chloride in µg/L	0.35	0.2 U		0.2 U	0.2 U	0.2 U	0.2 U		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
m,p-Xylenes in µg/L	310	2 U		2 U	2 U	2 U	2 U		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
o-Xylene in µg/L	440	1 U		1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes (total) in µg/L	310	ND		ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene in µg/L	170											1 U						
Field Parameters																		
Dissolved Oxygen in mg/L		0.11		0.29	0.26	0.02	4.28		0.39	5.43	1.04	4.34	6.92	6.08	0.19	0.38	0.47	2.07
ORP in mVolts		-349.9		22.7	35.9	-233	-453.2		-88.8	-240.6	-128.1	-247.1	100.6	80.1	-154.7	66.7	-62.3	43.3
pH in pH Units		9.02		7.8	6.87	6.97	7.63		0.61	6.49	6.91	6.8	7.76	7.29	8.11	7.77	7.28	6.89
Specific Conductance in us/cm		24,753		17,829	25,071	1,935	2,280		3,340	1,920	872	770	21,420	34,071	21,882	23,311	8,768	21,365
Temperature in deg C		16.2		13.1	16.3	14.85	17.7		12.6	17.5	14	19.3	13.75	17.5	13.2	16.6	23.2	26.3
Turbidity in NTU		1.67		7.03	43.5	5.38	7.7		0.58	2.83	1.21	2.89	1.39	2.73	2.49	5.82	1.47	292

Notes

Concentrations in shaded cells indicate value exceeds Groundwater Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-7A - Soil Quality Data for USTs 68, 68R

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	UST68-MW-1 5/25/12 (7-8 ft)	UST68-MW-2 5/30/12 (10-11 ft)	UST68-MW-2 FD 5/30/12 (10-11 ft)	UST68-MW-4 5/24/12 (11-12 ft)	UST68-MW-4 FD 5/24/12 (11-12 ft)	UST68-MW-5 5/24/12 (7-8 ft)	UST68-MW-5 5/24/12 (12-13 ft)	UST68-MW-6 9/10/12 (14-15 ft)	UST68-MW-6 FD 9/10/12 (14-15 ft)
Total Petroleum Hydrocarbons (TPH)											
Gasoline Range Hydrocarbons in mg/kg	100	100	2 U	4.9	2 U	2 U	2 U	2 U	2 U	4.9	
Volatile Organic Compounds (VOC)											
1,1,1,2-Tetrachloroethane in mg/kg	38	5,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1,1-Trichloroethane in mg/kg	2	2	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1,2,2-Tetrachloroethane in mg/kg	5	660	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1,2-Trichloroethane in mg/kg	18	2,300	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2,3-Trichlorobenzene in mg/kg			0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2,3-Trichloropropane in mg/kg	0.033	4.4	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2,4-Trichlorobenzene in mg/kg	35	4,500	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2,4-Trimethylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dibromo-3-chloropropane in mg/kg	1.3	160	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichloroethane (EDC) in mg/kg	11	1,400	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,3,5-Trimethylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,3-Dichlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,3-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,4-Dichlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2,2-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2-Butanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Chlorotoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2-Hexanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
4-Chlorotoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
4-Methyl-2-pentanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Acetone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene in mg/kg	0.03	0.03	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Bromobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Bromodichloromethane in mg/kg	16	2,100	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Bromoform in mg/kg	130	17,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Bromomethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride in mg/kg	14	1,900	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chloroethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chloromethane in mg/kg			0.5 UJ	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 U	0.5 U
cis-1,2-Dichloroethene (DCE) in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
cis-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dibromochloromethane in mg/kg	12	1,600	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dibromomethane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dichlorodifluoromethane in mg/kg			0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 U	0.5 U
Ethylbenzene in mg/kg	6	6	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Hexachlorobutadiene in mg/kg	13	1,700	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Isopropylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.068	0.05 U
Methylene chloride in mg/kg	0.02	0.02	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
n-Propylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.31 J	0.05 UJ
p-Isopropyltoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
sec-Butylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.068	0.05 U
Styrene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
tert-Butylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Tetrachloroethene (PCE) in mg/kg	0.05	0.05	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
Toluene in mg/kg	7	7	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
trans-1,2-Dichloroethene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
trans-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Trichloroethene (TCE) in mg/kg	0.03	0.03	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Trichlorofluoromethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl chloride in mg/kg	0.67	88	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
m,p-Xylenes in mg/kg	16,000	700,000	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
o-Xylene in mg/kg	16,000	700,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Xylenes (total) in mg/kg	9	9	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene in mg/kg	5	5	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U

Notes:

Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.

Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-7B - Groundwater Quality Data for USTs 68, 68R

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	UST68-MW-01 06/06/12	UST68-MW-01 08/27/12	UST68-MW-02 06/06/12	UST68-MW-02 08/27/12	UST68-MW-04 06/06/12	UST68-MW-04 08/27/12	UST68-MW-05 06/06/12	UST68-MW-05 08/28/12	UST68-MW-06 09/13/12
Total Petroleum Hydrocarbons (TPH)										
Gasoline Range Hydrocarbons in µg/L	1,000	100 U	100 U	100 U	100 U	100 U	100	100 U	100 U	320
Conventional Chemistry Parameters										
Total Suspended Solids in mg/L		10 U	10 U	10 U	10 U	10 U	23	10 U	10 U	10 U
Volatile Organic Compounds (VOC)										
1,1,1,2-Tetrachloroethane in µg/L	7.4	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane in µg/L	11,000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane in µg/L	4	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane in µg/L	7.9	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane in µg/L	2,300	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene in µg/L	3.2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloropropene in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichloropropane in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene in µg/L	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene in µg/L	24	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane in µg/L		10 UJ	10 U	10 UJ	10 U	10 UJ	10 U	10 UJ	10 U	10 U
1,2-Dibromoethane (EDB) in µg/L	0.74	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	1 U
1,2-Dichlorobenzene in µg/L	1,300	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane (EDC) in µg/L	4.2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane in µg/L	15	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene in µg/L	25	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene in µg/L	960	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropane in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene in µg/L	190	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2,2-Dichloropropane in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone in µg/L	350,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorotoluene in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Hexanone in µg/L		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorotoluene in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-pentanone in µg/L	11,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone in µg/L		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene in µg/L	2.4	0.35 U	0.35 U	0.35 U	0.92	0.35 U	0.35 U	0.35 U	0.5	0.35 U
Bromobenzene in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane in µg/L	0.09	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform in µg/L	140	1 UJ	1 U	1 UJ	1 U	1 UJ	1 U	1 UJ	1 U	1 U
Bromomethane in µg/L	13	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride in µg/L	0.22	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene in µg/L	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane in µg/L	12	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform in µg/L	1.2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane in µg/L	5.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,2-Dichloroethene (DCE) in µg/L	160	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane in µg/L	0.22	1 UJ	1 U	1 UJ	1 U	1 UJ	1 U	1 UJ	1 U	1 U
Dibromomethane in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane in µg/L	9.9	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene in µg/L	2,100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene in µg/L	0.81	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene in µg/L	720	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2
Methylene chloride in µg/L	94	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl-Tert-Butyl Ether in µg/L	610	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
n-Propylbenzene in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2.4
p-Isopropyltoluene in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
sec-Butylbenzene in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene in µg/L	78	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
tert-Butylbenzene in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene (PCE) in µg/L	0.39	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene in µg/L	15,000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene in µg/L	130	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene in µg/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene (TCE) in µg/L	1.6	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane in µg/L	120	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride in µg/L	0.35	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
m,p-Xylenes in µg/L	310	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
o-Xylene in µg/L	440	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes (total) in µg/L	310	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene in µg/L	170	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Field Parameters										
Dissolved Oxygen in mg/L		0.37	1.17	1.09	1.72	0.61	1.13	0.28	0.83	0.73
ORP in mVolts		-19.2	-68.5	-12.9	-67.9	-124.1	-142.3	-77.3	-272.7	-142.3
pH in pH Units		7.3	7.17	6.78	6.74	6.74	7.11	7.24	8.57	7.4
Specific Conductance in us/cm		433.5	845	228.6	526.8	409	1,054	20,253	2,535	325.6
Temperature in deg C		14.8	18.2	15	17.3	14.4	17	15.9	18.6	18.5
Turbidity in NTU		4.12	3.66	2.33	4.67	10.1	8.08	2.39	1.1	

Notes

Concentrations in shaded cells indicate value exceeds Groundwater Screening Level.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-8A - Soil Quality Data for UST 69

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	UST69-MW-1 5/25/12 (6-7 ft)	UST69-MW-1 FD 5/25/12 (6-7 ft)
Total Petroleum Hydrocarbons (TPH)				
Gasoline Range Hydrocarbons in mg/kg	100	100	2 U	2 U
Metals				
Lead in mg/kg	250	1,000	2.91	2.1
Volatile Organic Compounds (VOC)				
1,1,1,2-Tetrachloroethane in mg/kg	38	5,000	0.05 U	0.05 U
1,1,1-Trichloroethane in mg/kg	2	2	0.05 U	0.05 U
1,1,2,2-Tetrachloroethane in mg/kg	5	660	0.05 U	0.05 U
1,1,2-Trichloroethane in mg/kg	18	2,300	0.05 U	0.05 U
1,1-Dichloroethane in mg/kg			0.05 U	0.05 U
1,1-Dichloroethene in mg/kg			0.05 U	0.05 U
1,1-Dichloropropene in mg/kg			0.05 U	0.05 U
1,2,3-Trichlorobenzene in mg/kg			0.25 U	0.25 U
1,2,3-Trichloropropane in mg/kg	0.033	4.4	0.05 U	0.05 U
1,2,4-Trichlorobenzene in mg/kg	35	4,500	0.25 U	0.25 U
1,2,4-Trimethylbenzene in mg/kg			0.05 U	0.05 U
1,2-Dibromo-3-chloropropane in mg/kg	1.3	160	0.5 U	0.5 U
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005	0.05 U	0.05 U
1,2-Dichlorobenzene in mg/kg			0.05 U	0.05 U
1,2-Dichloroethane (EDC) in mg/kg	11	1,400	0.05 U	0.05 U
1,2-Dichloropropane in mg/kg			0.05 U	0.05 U
1,3,5-Trimethylbenzene in mg/kg			0.05 U	0.05 U
1,3-Dichlorobenzene in mg/kg			0.05 U	0.05 U
1,3-Dichloropropane in mg/kg			0.05 U	0.05 U
1,4-Dichlorobenzene in mg/kg			0.05 U	0.05 U
2,2-Dichloropropane in mg/kg			0.05 U	0.05 U
2-Butanone in mg/kg			0.5 U	0.5 U
2-Chlorotoluene in mg/kg			0.05 U	0.05 U
2-Hexanone in mg/kg			0.5 U	0.5 U
4-Chlorotoluene in mg/kg			0.05 U	0.05 U
4-Methyl-2-pentanone in mg/kg			0.5 U	0.5 U
Acetone in mg/kg			0.5 U	0.5 U
Benzene in mg/kg	0.03	0.03	0.03 U	0.03 U
Bromobenzene in mg/kg			0.05 U	0.05 U
Bromodichloromethane in mg/kg	16	2,100	0.05 U	0.05 U
Bromoform in mg/kg	130	17,000	0.05 U	0.05 U
Bromomethane in mg/kg			0.5 U	0.5 U
Carbon tetrachloride in mg/kg	14	1,900	0.05 U	0.05 U
Chlorobenzene in mg/kg			0.05 U	0.05 U
Chloroethane in mg/kg			0.5 U	0.5 U
Chloroform in mg/kg			0.05 U	0.05 U
Chloromethane in mg/kg			0.5 UJ	0.5 UJ
cis-1,2-Dichloroethene (DCE) in mg/kg			0.05 U	0.05 U
cis-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U
Dibromochloromethane in mg/kg	12	1,600	0.05 U	0.05 U
Dibromomethane in mg/kg			0.05 U	0.05 U
Dichlorodifluoromethane in mg/kg			0.5 UJ	0.5 UJ
Ethylbenzene in mg/kg	6	6	0.05 U	0.05 U
Hexachlorobutadiene in mg/kg	13	1,700	0.25 U	0.25 U
Isopropylbenzene in mg/kg			0.05 U	0.05 U
Methylene chloride in mg/kg	0.02	0.02	0.5 U	0.5 U
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1	0.05 U	0.05 U
n-Propylbenzene in mg/kg			0.05 U	0.05 U
p-Isopropyltoluene in mg/kg			0.05 U	0.05 U
sec-Butylbenzene in mg/kg			0.05 U	0.05 U
Styrene in mg/kg			0.05 U	0.05 U
tert-Butylbenzene in mg/kg			0.05 U	0.05 U
Tetrachloroethene (PCE) in mg/kg	0.05	0.05	0.025 U	0.025 U
Toluene in mg/kg	7	7	0.05 U	0.05 U
trans-1,2-Dichloroethene in mg/kg			0.05 U	0.05 U
trans-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U
Trichloroethene (TCE) in mg/kg	0.03	0.03	0.03 U	0.03 U
Trichlorofluoromethane in mg/kg			0.5 U	0.5 U
Vinyl chloride in mg/kg	0.67	88	0.05 U	0.05 U
m,p-Xylenes in mg/kg	16,000	700,000	0.1 U	0.1 U
o-Xylene in mg/kg	16,000	700,000	0.05 U	0.05 U
Xylenes (total) in mg/kg	9	9	ND	ND
Naphthalene in mg/kg	5	5	0.05 U	0.05 U

Notes:

Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level

Concentrations within bold border indicate value exceeds Industrial Soil Screening Level

J - Analyte was positively identified. The reported result is an estimate

U - Analyte was not detected at or above the reported result

UJ - Analyte was not detected at or above the reported estimate

Table 3-8B - Groundwater Quality Data for UST 69

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	UST69-MW-01 06/08/12	UST69-MW-01 06/08/12 FD	UST69-MW-01 08/28/12	UST69-MW-01 08/28/12 FD
Total Petroleum Hydrocarbons (TPH)					
Gasoline Range Hydrocarbons in µg/L	1,000	100 U	100 U	100 U	100 U
Dissolved and Total Metals					
Dissolved Lead in µg/L	8.1	1 U		1 U	
Total Lead in µg/L	8.1	1 U		1 U	
Conventional Chemistry Parameters					
Total Suspended Solids in mg/L		10 U	10 U	10 U	10 U
Volatile Organic Compounds (VOC)					
1,1,1,2-Tetrachloroethane in µg/L	7.4	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane in µg/L	11,000	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane in µg/L	4	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane in µg/L	7.9	1 U	1 U	1 U	1 U
1,1-Dichloroethane in µg/L	2,300	1 U	1 U	1 U	1 U
1,1-Dichloroethene in µg/L	3.2	1 U	1 U	1 U	1 U
1,1-Dichloropropene in µg/L		1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene in µg/L		1 U	1 U	1 U	1 U
1,2,3-Trichloropropane in µg/L		1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene in µg/L	2	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene in µg/L	24	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane in µg/L		10 U	10 U	10 U	10 U
1,2-Dibromoethane (EDB) in µg/L	0.74	1 U	1 U	0.01 U	0.01 U
1,2-Dichlorobenzene in µg/L	1,300	1 U	1 U	1 U	1 U
1,2-Dichloroethane (EDC) in µg/L	4.2	1 U	1 U	1 U	1 U
1,2-Dichloropropane in µg/L	15	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene in µg/L	25	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene in µg/L	960	1 U	1 U	1 U	1 U
1,3-Dichloropropane in µg/L		1 U	1 U	1 U	1 U
1,4-Dichlorobenzene in µg/L	190	1 U	1 U	1 U	1 U
2,2-Dichloropropane in µg/L		1 U	1 U	1 U	1 U
2-Butanone in µg/L	350,000	10 U	10 U	10 U	10 U
2-Chlorotoluene in µg/L		1 U	1 U	1 U	1 U
2-Hexanone in µg/L		10 U	10 U	10 U	10 U
4-Chlorotoluene in µg/L		1 U	1 U	1 U	1 U
4-Methyl-2-pentanone in µg/L	11,000	10 U	10 U	10 U	10 U
Acetone in µg/L		10 U	10 U	10 U	10 U
Benzene in µg/L	2.4	0.35 U	0.35 U	0.35 U	0.35 U
Bromobenzene in µg/L		1 U	1 U	1 U	1 U
Bromodichloromethane in µg/L	0.09	1 U	1 U	1 U	1 U
Bromoform in µg/L	140	1 U	1 U	1 U	1 U
Bromomethane in µg/L	13	1 U	1 U	1 U	1 U
Carbon tetrachloride in µg/L	0.22	1 U	1 U	1 U	1 U
Chlorobenzene in µg/L	100	1 U	1 U	1 U	1 U
Chloroethane in µg/L	12	1 U	1 U	1 U	1 U
Chloroform in µg/L	1.2	1 U	1 U	1 U	1 U
Chloromethane in µg/L	5.2	10 U	10 U	10 U	10 U
cis-1,2-Dichloroethene (DCE) in µg/L	160	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene in µg/L		1 U	1 U	1 U	1 U
Dibromochloromethane in µg/L	0.22	1 U	1 U	1 U	1 U
Dibromomethane in µg/L		1 U	1 U	1 U	1 U
Dichlorodifluoromethane in µg/L	9.9	1 U	1 U	1 U	1 U
Ethylbenzene in µg/L	2,100	1 U	1 U	1 U	1 U
Hexachlorobutadiene in µg/L	0.81	1 U	1 U	1 U	1 U
Isopropylbenzene in µg/L	720	1 U	1 U	1 U	1 U
Methylene chloride in µg/L	94	5 U	5 U	5 U	5 U
Methyl-Tert-Butyl Ether in µg/L	610	1 U	1 U	1 U	1 U
n-Propylbenzene in µg/L		1 U	1 U	1 U	1 U
p-Isopropyltoluene in µg/L		1 U	1 U	1 U	1 U
sec-Butylbenzene in µg/L		1 U	1 U	1 U	1 U
Styrene in µg/L	78	1 U	1 U	1 U	1 U
tert-Butylbenzene in µg/L		1 U	1 U	1 U	1 U
Tetrachloroethene (PCE) in µg/L	0.39	1 U	1 U	1 U	1 U
Toluene in µg/L	15,000	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene in µg/L	130	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene in µg/L		1 U	1 U	1 U	1 U
Trichloroethene (TCE) in µg/L	1.6	1 U	1 U	1 U	1 U
Trichlorofluoromethane in µg/L	120	1 U	1 U	1 U	1 U
Vinyl chloride in µg/L	0.35	0.2 U	0.2 U	0.2 U	0.2 U
m,p-Xylenes in µg/L	310	2 U	2 U	2 U	2 U
o-Xylene in µg/L	440	1 U	1 U	1 U	1 U
Xylenes (total) in µg/L	310	ND	ND	ND	ND
Naphthalene in µg/L	170	1 U	1 U	1 U	1 U
Field Parameters					
Dissolved Oxygen in mg/L		0.24		1.06	
ORP in mVolts		-104.6		-126.2	
pH in pH Units		7.12		7.08	
Specific Conductance in us/cm		292		321.2	
Temperature in deg C		15.9		19.2	
Turbidity in NTU		4.58		4.62	

Notes

Concentrations in shaded cells indicate value exceeds Groundwater Screening Level

U - Analyte was not detected at or above the reported result

UJ - Analyte was not detected at or above the reported estimate

Table 3-9A - Soil Quality Data for USTs 70, 70R

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	UST70-B-1 5/31/12 (3-4 ft)	UST70-B-1 FD 5/31/12 (3-4 ft)	UST70-B-1 5/31/12 (13.5-14.5 ft)	UST70-B-2 5/31/12 (9-10 ft)	UST70-B-3 5/31/12 (8-9 ft)	UST70-B-4 5/31/12 (0-1 ft)	UST70-B-4 5/31/12 (4.5-5.5 ft)	UST70-MW-2 6/5/12 (8-9 ft)
Total Petroleum Hydrocarbons (TPH)										
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	12,000 J	8,300 J	50 U	120 J	50 U	50 U	50 U	50 U
Oil Range Hydrocarbons in mg/kg	2,000	2,000	330	250 U	250 U	450	250 U	250 U	250 U	250 U
Total TPH in mg/kg	2,000	2,000	12,300	8,420 J	ND	570	ND	ND	ND	ND
Polycyclic Aromatic Hydrocarbons (PAHs)										
Acenaphthene in mg/kg	4,800	210,000	0.18 J	0.40 J	0.01 U	0.082	0.01 U	0.01 U	0.01 U	0.01 U
Acenaphthylene in mg/kg			0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Anthracene in mg/kg	24,000	1,100,000	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Benzo(g,h,i)perylene in mg/kg			0.01 U	0.01 U	0.01 U	0.052	0.02	0.012	0.01 U	0.01 U
Fluoranthene in mg/kg	3,200	140,000	0.037 J	0.01 UJ	0.01 U	0.018	0.01 U	0.025	0.01 U	0.01 U
Fluorene in mg/kg	3,200	140,000	0.33 J	0.18 J	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Phenanthrene in mg/kg			0.47 J	0.31 J	0.01 U	0.016	0.01 U	0.012	0.01 U	0.01 U
Pyrene in mg/kg	2,400	110,000	0.047 J	0.085 J	0.01 U	0.026	0.01 U	0.025	0.01	0.01 U
Naphthalene in mg/kg	5	5	0.083 J	0.18 J	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Benz(a)anthracene in mg/kg	1.4	180	0.01 U	0.01 U	0.01 U	0.012	0.01 U	0.014	0.01 U	0.01 U
Benzo(a)pyrene in mg/kg	0.14	2	0.01 U	0.01 U	0.01 U	0.017	0.01 U	0.016	0.01 U	0.01 U
Benzo(b)fluoranthene in mg/kg	1.4	180	0.01 U	0.01 U	0.01 U	0.019	0.01 U	0.023	0.011	0.01 U
Benzo(k)fluoranthene in mg/kg	14	1,800	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Chrysene in mg/kg	140	18,000	0.017	0.033	0.01 U	0.02	0.01 U	0.017	0.01 U	0.01 U
Dibenzo(a,h)anthracene in mg/kg	0.14	18	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	180	0.01 U	0.01 U	0.01 U	0.017	0.01 U	0.013	0.01 U	0.01 U
Total cPAHs TEQ in mg/kg	0.14	2	0.00767	0.00783	ND	0.023	ND	0.0222	0.00815	ND
Volatile Organic Compounds (VOC)										
1,1,1,2-Tetrachloroethane in mg/kg	38	5,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1,1-Trichloroethane in mg/kg	2	2	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1,2,2-Tetrachloroethane in mg/kg	5	660	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1,2-Trichloroethane in mg/kg	18	2,300	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2,3-Trichlorobenzene in mg/kg			0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2,3-Trichloropropane in mg/kg	0.033	4.4	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2,4-Trichlorobenzene in mg/kg	35	4,500	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2,4-Trimethylbenzene in mg/kg			0.076	0.088	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dibromo-3-chloropropane in mg/kg	1.3	160	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichloroethane (EDC) in mg/kg	11	1,400	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,3,5-Trimethylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,3-Dichlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,3-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,4-Dichlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2,2-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2-Butanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Chlorotoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2-Hexanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
4-Chlorotoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
4-Methyl-2-pentanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Acetone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.5	0.5 U	0.5 U
Benzene in mg/kg	0.03	0.03	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Bromobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Bromodichloromethane in mg/kg	16	2,100	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Bromoform in mg/kg	130	17,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Bromomethane in mg/kg			0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride in mg/kg	14	1,900	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chloroethane in mg/kg			0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chloromethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene (DCE) in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
cis-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dibromochloromethane in mg/kg	12	1,600	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dibromomethane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dichlorodifluoromethane in mg/kg			0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ
Ethylbenzene in mg/kg	6	6	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Hexachlorobutadiene in mg/kg	13	1,700	0.25 UJ	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Isopropylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Methylene chloride in mg/kg	0.02	0.02	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
n-Propylbenzene in mg/kg			0.06	0.067	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
p-Isopropyltoluene in mg/kg			0.14	0.16	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
sec-Butylbenzene in mg/kg			0.13	0.14	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Styrene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
tert-Butylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Tetrachloroethene (PCE) in mg/kg	0.05	0.05	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
Toluene in mg/kg	7	7	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
trans-1,2-Dichloroethene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
trans-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Trichloroethene (TCE) in mg/kg	0.03	0.03	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Trichlorofluoromethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl chloride in mg/kg	0.67	88	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
m,p-Xylenes in mg/kg	16,000	700,000	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.13	0.1 U	0.1 U
o-Xylene in mg/kg	16,000	700,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.058	0.05 U	0.05 U
Xylenes (total) in mg/kg	9	9	ND	ND	ND	ND	ND	0.188	ND	ND

Notes:

Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.

Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-9B - Groundwater Quality Data for USTs 70, 70R

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	UST70-MW-01 06/07/12	UST70-MW-01 08/29/12	UST70-MW-02 06/07/12	UST70-MW-02 08/29/12
Total Petroleum Hydrocarbons (TPH)					
Diesel Range Hydrocarbons in µg/L	500	54	50 U	50 U	50 U
Oil Range Hydrocarbons in µg/L	500	250 UJ	250 U	250 UJ	250 U
Total TPHs in µg/L	500	179	ND	ND	ND
Dissolved Metals					
Dissolved Antimony in µg/L	640			2.27	1.21
Dissolved Arsenic in µg/L	5			5.23	1.11 J
Dissolved Beryllium in µg/L	270			0.02 U	0.0500 U
Dissolved Cadmium in µg/L	8.8			0.135	0.284
Dissolved Chromium (Total) in µg/L	240,000			0.18 J	110
Dissolved Copper in µg/L	3.1			1.09	0.741
Dissolved Lead in µg/L	8.1			0.125	0.050 U
Dissolved Mercury in µg/L	0.15			0.1 U	0.1 U
Dissolved Nickel in µg/L	8.2			2.01	308
Dissolved Selenium in µg/L	71			1 U	1.0 U
Dissolved Silver in µg/L	1.9			0.02 U	0.050 U
Dissolved Thallium in µg/L	0.47			0.02 U	0.050 U
Dissolved Zinc in µg/L	81			116	12.2
Conventional Chemistry Parameters					
Ammonia as Nitrogen in mg/L	0.035			0.575	0.158
Dissolved Sulfide in mg/L				0.05 U	0.050 U
Total Suspended Solids in mg/L		10 U	10 U	10 U	24
Polycyclic Aromatic Hydrocarbons (PAHs)					
Acenaphthene in µg/L	640	0.49	0.88	0.15	0.13 J
Acenaphthylene in µg/L		0.05 U	0.05 UJ	0.05 U	0.05 UJ
Anthracene in µg/L	26,000	0.026	0.05 UJ	0.05 U	0.05 UJ
Benzo(g,h,i)perylene in µg/L		0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
Fluoranthene in µg/L	90	0.18	0.18 J	0.05 UJ	0.05 UJ
Fluorene in µg/L	3,500	0.12	0.13 J	0.05 U	0.05 UJ
Phenanthrene in µg/L		0.061	0.056 J	0.05 U	0.05 UJ
Pyrene in µg/L	2,600	0.15	0.17 J	0.05 UJ	0.05 U
2-Methylnaphthalene in µg/L				1 U	1 U
Naphthalene in µg/L	170	0.34	1.8	0.19	0.05 UJ
Benz(a)anthracene in µg/L	0.018	0.015	0.011 J	0.01 UJ	0.01 U
Benzo(a)pyrene in µg/L	0.018	0.01 U	0.01 UJ	0.01 UJ	0.01 UJ
Benzo(b)fluoranthene in µg/L	0.018	0.01 U	0.01 UJ	0.01 UJ	0.01 UJ
Benzo(k)fluoranthene in µg/L	0.018	0.01 U	0.01 UJ	0.01 UJ	0.01 UJ
Chrysene in µg/L	0.018	0.016	0.016 J	0.01 UJ	0.01 U
Dibenzo(a,h)anthracene in µg/L	0.018	0.01 U	0.01 UJ	0.01 UJ	0.01 UJ
Indeno(1,2,3-cd)pyrene in µg/L	0.018	0.01 U	0.01 UJ	0.01 UJ	0.01 UJ
Total cPAHs TEQ in µg/L	0.018	0.00866	0.00826 J	ND	ND
Other Semivolatiles					
1,2,4-Trichlorobenzene in µg/L	2			1 U	1 U
1,2-Dichlorobenzene in µg/L	1,300			1 U	1 U
1,3-Dichlorobenzene in µg/L	960			1 U	1 U
1,4-Dichlorobenzene in µg/L	190			1 U	1 U
2,4,5-Trichlorophenol in µg/L	3,600			10 U	10 U
2,4,6-Trichlorophenol in µg/L	2.4			10 U	10 U
2,4-Dichlorophenol in µg/L	190			10 U	10 U
2,4-Dimethylphenol in µg/L	550			10 U	10 U
2,4-Dinitrophenol in µg/L	3,500			30 U	30 U
2-Chloronaphthalene in µg/L	1,000			1 U	1 U
2-Chlorophenol in µg/L	97			10 U	10 U
2-Methylphenol in µg/L				10 U	10 U
2-Nitroaniline in µg/L				3 U	3 U
2-Nitrophenol in µg/L				10 U	10 U
3 & 4 Methylphenol in µg/L				20 U	20 U
3-Nitroaniline in µg/L				3 U	3 U
4,6-Dinitro-2-methylphenol in µg/L				30 U	30 U
4-Bromophenyl phenyl ether in µg/L				1 U	1 U
4-Chloro-3-methylphenol in µg/L				10 U	10 U
4-Chloroaniline in µg/L				3 U	3 U
4-Chlorophenyl phenyl ether in µg/L				1 U	1 U
4-Nitroaniline in µg/L				10 U	10 U
4-Nitrophenol in µg/L				10 U	10 U
Benzoic acid in µg/L				50 U	50 U
Benzyl alcohol in µg/L				10 U	10 U
Benzyl butyl phthalate in µg/L	8.2			1 U	1 U
Bis(2-chloro-1-methylethyl) ether in µg/L	37			10 U	10 U
Bis(2-chloroethoxy)methane in µg/L				1 U	1 U
Bis(2-chloroethyl) ether in µg/L	0.53			10 U	10 U
Bis(2-ethylhexyl) phthalate in µg/L	2.2			10 U	10 U
Carbazole in µg/L				1 U	1 U
Dibenzofuran in µg/L				1 U	1 U
Diethyl phthalate in µg/L	28,000			1 U	1 U
Dimethyl phthalate in µg/L	1,100,000			1 U	1 U
Di-n-butyl phthalate in µg/L	2,900			1 U	1 U
Di-n-octyl phthalate in µg/L				1 U	1 U
Hexachlorobenzene in µg/L	0.00029			1 U	1 U
Hexachlorobutadiene in µg/L	0.81			1 U	1 U
Hexachlorocyclopentadiene in µg/L	1,100			3 U	3 U
Hexachloroethane in µg/L	3.3			1 U	1 U
Isophorone in µg/L	600			1 U	1 U
Nitrobenzene in µg/L	690			1 U	1 U
N-Nitroso-di-n-propylamine in µg/L	0.51			10 U	10 U
N-Nitrosodiphenylamine in µg/L	6			1 U	1 U
Pentachlorophenol in µg/L	1.5			10 U	10 U
Phenol in µg/L	560,000			10 U	10 U
2,4-Dinitrotoluene in µg/L	3.4			1 U	1 U
2,6-Dinitrotoluene in µg/L				1 U	1 U
Volatile Organic Compounds (VOC)					
1,1,1,2-Tetrachloroethane in µg/L	7.4	1 U		1 U	1 U
1,1,1-Trichloroethane in µg/L	11,000	1 U		1 U	1 U
1,1,2,2-Tetrachloroethane in µg/L	4	1 U		1 U	1 U
1,1,2-Trichloroethane in µg/L	7.9	1 U		1 U	1 U
1,1-Dichloroethane in µg/L	2,300	1 U		1 U	1 U
1,1-Dichloroethene in µg/L	3.2	1 U		1 U	1 U
1,1-Dichloropropene in µg/L		1 U		1 U	1 U
1,2,3-Trichlorobenzene in µg/L		1 U		1 U	1 U
1,2,3-Trichloropropane in µg/L		1 U		1 U	1 U

Table 3-9B - Groundwater Quality Data for USTs 70, 70R

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	UST70-MW-01 06/07/12	UST70-MW-01 08/29/12	UST70-MW-02 06/07/12	UST70-MW-02 08/29/12
1,2,4-Trichlorobenzene in µg/L	2	1 U		1 U	
1,2,4-Trimethylbenzene in µg/L	24	1 U		1 U	1 U
1,2-Dibromo-3-chloropropane in µg/L		10 U		10 U	10 U
1,2-Dibromoethane (EDB) in µg/L	0.74	1 U		1 U	1 U
1,2-Dichlorobenzene in µg/L	1,300	1 U		1 U	
1,2-Dichloroethane (EDC) in µg/L	4.2	1 U		1 U	1 U
1,2-Dichloropropane in µg/L	15	1 U		1 U	1 U
1,3,5-Trimethylbenzene in µg/L	25	1 U		1 U	1 U
1,3-Dichlorobenzene in µg/L	960	1 U		1 U	
1,3-Dichloropropane in µg/L		1 U		1 U	1 U
1,4-Dichlorobenzene in µg/L	190	1 U		1 U	
2,2-Dichloropropane in µg/L		1 U		1 U	1 U
2-Butanone in µg/L	350,000	10 U		10 U	10 U
2-Chlorotoluene in µg/L		1 U		1 U	1 U
2-Hexanone in µg/L		10 U		10 U	10 U
4-Chlorotoluene in µg/L		1 U		1 U	1 U
4-Methyl-2-pentanone in µg/L	11,000	10 U		10 U	10 U
Acetone in µg/L		25		10 U	10 U
Benzene in µg/L	2.4	0.35 U		0.35 U	0.35 U
Bromobenzene in µg/L		1 U		1 U	1 U
Bromodichloromethane in µg/L	0.09	1 U		1 U	1 U
Bromoform in µg/L	140	1 U		1 UJ	1 U
Bromomethane in µg/L	13	1 U		1 U	1 U
Carbon tetrachloride in µg/L	0.22	1 U		1 U	1 U
Chlorobenzene in µg/L	100	1 U		1 U	1 U
Chloroethane in µg/L	12	1 U		1 U	1 U
Chloroform in µg/L	1.2	1 U		1 U	1 U
Chloromethane in µg/L	5.2	10 U		10 U	10 U
cis-1,2-Dichloroethene (DCE) in µg/L	160	2.2		1 U	1 U
cis-1,3-Dichloropropene in µg/L		1 U		1 U	1 U
Dibromochloromethane in µg/L	0.22	1 U		1 U	1 U
Dibromomethane in µg/L		1 U		1 U	1 U
Dichlorodifluoromethane in µg/L	9.9	1 U		1 U	1 U
Ethylbenzene in µg/L	2,100	1.2		1 U	1 U
Hexachlorobutadiene in µg/L	0.81	1 U		1 U	1 U
Isopropylbenzene in µg/L	720	1 U		1 U	1 U
Methylene chloride in µg/L	94	5 U		5 U	5 U
Methyl-Tert-Butyl Ether in µg/L	610	1 U		1 U	1 U
n-Propylbenzene in µg/L		1 U		1 U	1 U
p-Isopropyltoluene in µg/L		1 U		1 U	1 U
sec-Butylbenzene in µg/L		1 U		1 U	1 U
Styrene in µg/L	78	1 U		1 U	1 U
tert-Butylbenzene in µg/L		1 U		1 U	1 U
Tetrachloroethene (PCE) in µg/L	0.39	1 U		1 U	1 U
Toluene in µg/L	15,000	1 U		1 U	1 U
trans-1,2-Dichloroethene in µg/L	130	1 U		1 U	1 U
trans-1,3-Dichloropropene in µg/L		1 U		1 U	1 U
Trichloroethene (TCE) in µg/L	1.6	1 U		1 U	1 U
Trichlorofluoromethane in µg/L	120	1 U		1 U	1 U
Vinyl chloride in µg/L	0.35	0.2 U		0.2 U	0.2 U
m,p-Xylenes in µg/L	310	2 U		2 U	2 U
o-Xylene in µg/L	440	1 U		1 U	1 U
Xylenes (total) in µg/L	310	ND		ND	ND
Field Parameters					
Dissolved Oxygen in mg/L		0.26	1.16	0.47	2.07
ORP in mVolts		-216.3	-226.3	-62.3	43.3
pH in pH Units		7.48	7.51	7.28	6.89
Specific Conductance in us/cm		1,403	2,325	8,768	21,365
Temperature in deg C		36.4	37.1	23.2	26.3
Turbidity in NTU		6.19	2.45	1.47	292

Notes:

Concentrations in shaded cells indicate value exceeds Groundwater Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-10A - Soil Quality Data for USTs 71, 72, 73

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	UST71-B-1 5/31/12 (12-13 ft)	UST71-B-2 5/31/12 (13-14 ft)	UST71-B-3 5/31/12 (18-19 ft)	UST71-B-3 5/31/12 (19-20 ft)	UST71-B-4 5/31/12 (12.5-13.5 ft)	UST71-B-4 5/31/12 (28-29 ft)
Total Petroleum Hydrocarbons (TPH)								
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	50 U	18,000 J	17,000 J	50 U	16,000 J	50 U
Oil Range Hydrocarbons in mg/kg	2,000	2,000	250 U	20,000 J	19,000 J	250 U	16,000 J	250 U
Total TPH in mg/kg	2,000	2,000	ND	38,000 J	36,000 J	ND	32,000 J	ND
Polycyclic Aromatic Hydrocarbons (PAHs)								
Acenaphthene in mg/kg	4,800	210,000	0.012	7.5	8	0.039	0.95	0.01 U
Acenaphthylene in mg/kg			0.01 U	0.5 U	0.5 U	0.01 U	0.5 U	0.01 U
Anthracene in mg/kg	24,000	1,100,000	0.01 U	6.8	11	0.066	1.2	0.01 U
Benzo(g,h,i)perylene in mg/kg			0.015	2.6	2.2	0.013	0.5 U	0.01 U
Fluoranthene in mg/kg	3,200	140,000	0.01 U	4	3.3	0.019	0.5 U	0.014
Fluorene in mg/kg	3,200	140,000	0.01 U	9.5	6.2	0.021	1.1	0.01 U
Phenanthrene in mg/kg			0.01 U	32	22	0.083	4.4	0.031
Pyrene in mg/kg	2,400	110,000	0.021	21	20	0.13	2.2	0.028
Naphthalene in mg/kg	5	5	0.01 U	7.7	1.1	0.01 U	0.5 U	0.01 U
Benz(a)anthracene in mg/kg	1.4	180	0.012	8.5	9.2	0.055	0.85	0.01 U
Benzo(a)pyrene in mg/kg	0.14	2	0.01 U	4.8	4.5	0.026	0.5 U	0.01 U
Benzo(b)fluoranthene in mg/kg	1.4	180	0.01 U	2.6	1.6	0.01 U	0.5 U	0.01 U
Benzo(k)fluoranthene in mg/kg	14	1,800	0.01 U	0.5 U	0.5 U	0.01 U	0.5 U	0.01 U
Chrysene in mg/kg	140	18,000	0.015	9.7	12	0.083	1.3	0.012
Dibenzo(a,h)anthracene in mg/kg	0.14	18	0.01 U	0.78	0.5 U	0.01 U	0.5 U	0.01 U
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	180	0.01 U	1.3	0.97	0.01 U	0.5 U	0.01 U
Total cPAHs TEQ in mg/kg	0.14	2	0.00835	6.24	5.85	0.0343	0.448	0.00762
Volatile Organic Compounds (VOC)								
1,1,1,2-Tetrachloroethane in mg/kg	38	5,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1,1-Trichloroethane in mg/kg	2	2	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1,2,2-Tetrachloroethane in mg/kg	5	660	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1,2-Trichloroethane in mg/kg	18	2,300	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2,3-Trichlorobenzene in mg/kg			0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2,3-Trichloropropane in mg/kg	0.033	4.4	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2,4-Trichlorobenzene in mg/kg	35	4,500	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2,4-Trimethylbenzene in mg/kg			0.05 U	0.72	0.056	0.05 U	0.05 U	0.05 U
1,2-Dibromo-3-chloropropane in mg/kg	1.3	160	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichloroethane (EDC) in mg/kg	11	1,400	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,3,5-Trimethylbenzene in mg/kg			0.05 U	0.19	0.05 U	0.05 U	0.05 U	0.05 U
1,3-Dichlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,3-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,4-Dichlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2,2-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2-Butanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Chlorotoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2-Hexanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
4-Chlorotoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
4-Methyl-2-pentanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Acetone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene in mg/kg	0.03	0.03	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Bromobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Bromodichloromethane in mg/kg	16	2,100	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Bromoform in mg/kg	130	17,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Bromomethane in mg/kg			0.5 UJ	0.5 UJ	0.5 UJ	0.5 U	0.5 UJ	0.5 U
Carbon tetrachloride in mg/kg	14	1,900	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chloroethane in mg/kg			0.5 UJ	0.5 UJ	0.5 UJ	0.5 U	0.5 UJ	0.5 U
Chloroform in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chloromethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene (DCE) in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
cis-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dibromochloromethane in mg/kg	12	1,600	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dibromomethane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dichlorodifluoromethane in mg/kg			0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ
Ethylbenzene in mg/kg	6	6	0.05 U	0.19	0.05 U	0.05 U	0.05 U	0.05 U
Hexachlorobutadiene in mg/kg	13	1,700	0.25 UJ	0.25 UJ	0.25 UJ	0.25 U	0.25 UJ	0.25 U
Isopropylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Methylene chloride in mg/kg	0.02	0.02	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
n-Propylbenzene in mg/kg			0.05 U	0.12	0.05 U	0.05 U	0.05 U	0.05 U
p-Isopropyltoluene in mg/kg			0.05 U	0.2	0.05 U	0.05 U	0.05 U	0.05 U
sec-Butylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Styrene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
tert-Butylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Tetrachloroethene (PCE) in mg/kg	0.05	0.05	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
Toluene in mg/kg	7	7	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
trans-1,2-Dichloroethene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
trans-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Trichloroethene (TCE) in mg/kg	0.03	0.03	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Trichlorofluoromethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl chloride in mg/kg	0.67	88	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
m,p-Xylenes in mg/kg	16,000	700,000	0.1 U	0.5	0.1 U	0.1 U	0.1 U	0.1 U
o-Xylene in mg/kg	16,000	700,000	0.05 U	0.4	0.05 U	0.05 U	0.05 U	0.05 U
Xylenes (total) in mg/kg	9	9	ND	0.9	ND	ND	ND	ND

Notes:

Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.

Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-10B - Groundwater Quality Data for USTs 71, 72, 73

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	UST71-MW-01 06/07/12		UST71-MW-01 08/29/12	
Total Petroleum Hydrocarbons (TPH)					
Diesel Range Hydrocarbons in µg/L	500	900		1,200	
Oil Range Hydrocarbons in µg/L	500	280	J	380	
Total TPHs in µg/L	500	1,180		1,580	
Conventional Chemistry Parameters					
Total Suspended Solids in mg/L		110		17	
Polycyclic Aromatic Hydrocarbons (PAHs)					
Acenaphthene in µg/L	640	4.1		4.6	
Acenaphthylene in µg/L		0.05	U	0.5	U
Anthracene in µg/L	26,000	2.5		3.9	
Benzo(g,h,i)perylene in µg/L		0.15		0.5	U
Fluoranthene in µg/L	90	0.66		1.2	
Fluorene in µg/L	3,500	4.4		6.3	
Phenanthrene in µg/L		10		20	
Pyrene in µg/L	2,600	5		9.8	
Naphthalene in µg/L	170	1.9		5.8	
Benz(a)anthracene in µg/L	0.018	0.71		1.5	
Benzo(a)pyrene in µg/L	0.018	0.33		0.67	
Benzo(b)fluoranthene in µg/L	0.018	0.12		0.28	
Benzo(k)fluoranthene in µg/L	0.018	0.018		0.1	U
Chrysene in µg/L	0.018	1.3		2.6	
Dibenzo(a,h)anthracene in µg/L	0.018	0.033		0.1	U
Indeno(1,2,3-cd)pyrene in µg/L	0.018	0.052		0.1	U
Total cPAHs TEQ in µg/L	0.018	0.436		0.854	
Volatile Organic Compounds (VOC)					
1,1,1,2-Tetrachloroethane in µg/L	7.4	1	U	1	U
1,1,1-Trichloroethane in µg/L	11,000	1	U	1	U
1,1,2,2-Tetrachloroethane in µg/L	4	1	U	1	U
1,1,2-Trichloroethane in µg/L	7.9	1	U	1	U
1,1-Dichloroethane in µg/L	2,300	1	U	1	U
1,1-Dichloroethene in µg/L	3.2	1	U	1	U
1,1-Dichloropropene in µg/L		1	U	1	U
1,2,3-Trichlorobenzene in µg/L		1	U	1	U
1,2,3-Trichloropropane in µg/L		1	U	1	U
1,2,4-Trichlorobenzene in µg/L	2	1	U	1	U
1,2,4-Trimethylbenzene in µg/L	24	3.4		1	U
1,2-Dibromo-3-chloropropane in µg/L		10	U	10	U
1,2-Dibromoethane (EDB) in µg/L	0.74	1	U	1	U
1,2-Dichlorobenzene in µg/L	1,300	1	U	1	U
1,2-Dichloroethane (EDC) in µg/L	4.2	1	U	1	U
1,2-Dichloropropane in µg/L	15	1	U	1	U
1,3,5-Trimethylbenzene in µg/L	25	1	U	1	U
1,3-Dichlorobenzene in µg/L	960	1	U	1	U
1,3-Dichloropropane in µg/L		1	U	1	U
1,4-Dichlorobenzene in µg/L	190	1	U	1	U
2,2-Dichloropropane in µg/L		1	U	1	U
2-Butanone in µg/L	350,000	10	U	10	U
2-Chlorotoluene in µg/L		1	U	1	U
2-Hexanone in µg/L		10	U	10	U
4-Chlorotoluene in µg/L		1	U	1	U
4-Methyl-2-pentanone in µg/L	11,000	10	U	10	U
Acetone in µg/L		10	U	10	U
Benzene in µg/L	2.4	0.35	U	0.35	U
Bromobenzene in µg/L		1	U	1	U
Bromodichloromethane in µg/L	0.09	1	U	1	U
Bromoform in µg/L	140	1	UJ	1	U
Bromomethane in µg/L	13	1	U	1	U
Carbon tetrachloride in µg/L	0.22	1	U	1	U
Chlorobenzene in µg/L	100	1	U	1	U
Chloroethane in µg/L	12	1	U	1	U
Chloroform in µg/L	1.2	1	U	1	U
Chloromethane in µg/L	5.2	10	U	10	U
cis-1,2-Dichloroethene (DCE) in µg/L	160	1	U	1	U
cis-1,3-Dichloropropene in µg/L		1	U	1	U
Dibromochloromethane in µg/L	0.22	1	U	1	U
Dibromomethane in µg/L		1	U	1	U
Dichlorodifluoromethane in µg/L	9.9	1	U	1	U
Ethylbenzene in µg/L	2,100	1	U	1	U
Hexachlorobutadiene in µg/L	0.81	1	U	1	U
Isopropylbenzene in µg/L	720	1	U	1	U
Methylene chloride in µg/L	94	5	U	5	U
Methyl-Tert-Butyl Ether in µg/L	610	1	U	1	U
n-Propylbenzene in µg/L		1	U	1	U
p-Isopropyltoluene in µg/L		1	U	1	U
sec-Butylbenzene in µg/L		1	U	1	U
Styrene in µg/L	78	1	U	1	U
tert-Butylbenzene in µg/L		1	U	1	U
Tetrachloroethene (PCE) in µg/L	0.39	1	U	1	U
Toluene in µg/L	15,000	1	U	1	U
trans-1,2-Dichloroethene in µg/L	130	1	U	1	U
trans-1,3-Dichloropropene in µg/L		1	U	1	U
Trichloroethene (TCE) in µg/L	1.6	1	U	1	U
Trichlorofluoromethane in µg/L	120	1	U	1	U
Vinyl chloride in µg/L	0.35	0.2	U	0.2	U
m,p-Xylenes in µg/L	310	2	U	2	U
o-Xylene in µg/L	440	1.6		1	U
Xylenes (total) in µg/L	310	2.6		ND	
Field Parameters					
Dissolved Oxygen in mg/L		0.08		1.5	
ORP in mVolts		-22.1		-245.6	
pH in pH Units		6.85		6.82	
Specific Conductance in us/cm		1,913		1,868	
Temperature in deg C		37.7		35.2	
Turbidity in NTU		208		79.5	

Notes:

Concentrations in shaded cells indicate value exceeds Groundwater Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-11A - Soil Quality Data for HREC 2 - Naval Reserve Parcel

K-C Worldwide Site Upland Area 110207

			Former USTS Area																	
Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	MW-5 2/16/12 (6-7 ft)	NRP-B-1 6/1/12 (9-12 ft)	NRP-B-2 6/1/12 (8-10 ft)	NRP-B-2 FD 6/1/12 (8-10 ft)	NRP-B-2 6/1/12 (14-15 ft)	NRP-B-3 6/1/12 (8.5-9.5 ft)	NRP-B-4 6/1/12 (13.5-14.5 ft)	NRP-B-5 6/1/12 (9-10 ft)	NRP-B-7 6/1/12 (9-10 ft)	NRP-B-7 6/1/12 (19-20 ft)	NRP-B-8 6/1/12 (8.5-9.5 ft)	NRP-B-8 6/1/12 (11-12 ft)	NRP-B-17 9/6/12 (8-9 ft)	NRP-B-17 FD 9/6/12 (8-9 ft)	NRP-B-17 9/6/12 (11-12 ft)	NRP-B-17 9/6/12 (12-13 ft)	NRP-B-18 9/6/12 (8-9 ft)	NRP-B-18 9/6/12 (11.5-12.5 ft)
Total Petroleum Hydrocarbons (TPH)																				
Gasoline Range Hydrocarbons in mg/kg	100	100	2 U	2 U	4,400 J	220 J	2 U	2 U	4.1	23	120	2 U	2 U	2 U	2 U	2 U	2 U	18	2 U	12 J
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	50 U	50 U	780	920	50 U	50 U	240	430	1,000	50 U	50 U	50 U	50 U		50 U	2,800	50 U	50 U
Oil Range Hydrocarbons in mg/kg	2,000	2,000	250 U	250 UJ	1,600 UJ	1,900 UJ	250 UJ	250 UJ	250 UJ	250 U	540	250 U	250 U	250 U	250 U		250 U	9,000	250 U	250 U
Total TPH in mg/kg	2,000	2,000	ND	ND	1,580	1,870	ND	ND	365	555	1,540	ND	ND	ND	ND		ND	11,800	ND	ND
Metals																				
Antimony in mg/kg				1 U	1 U	1 U	1 U	1.95	2.13	1 U	1 U	1 U	1 U	1 U						
Arsenic in mg/kg	20	20	8.47	4.18	4.14	5.07	4.01	11.8	14	7.75	5.96	4.42	6.02	4.26						
Beryllium in mg/kg				1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U						
Cadmium in mg/kg	2	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U						
Chromium (Total) in mg/kg	2,000	2,000	16.7	14.1	13	12.9	11.3	21	13.7	14.3	14.8	12.4	17.6	13.1						
Copper in mg/kg			24.3	13.2	11.4	12.6	10.1	30.1	28.3	25.3	15.8	11.6	19.4	13.7						
Lead in mg/kg	250	1,000	15.6	3.98	3.95	2.56	1.8	28.3	27.9	15	5.24	2.21	4.75	2.66						
Mercury in mg/kg	2	2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U						
Nickel in mg/kg			21.9	20.7	23.3	26	17.8	29.7	22.5	23.7	20.8	18.3	24.1	19.6						
Selenium in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U						
Silver in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U						
Thallium in mg/kg				1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U						
Zinc in mg/kg			63.2	40.6	37.6	39.2	33.3	117	125	66.2	42.4	36.3	50.6	39.1						
Polycyclic Aromatic Hydrocarbons (PAHs)																				
Acenaphthene in mg/kg	4,800	210,000	0.17	0.43	0.045	0.048	0.18	0.13	0.097	0.37	16	0.49	0.12	0.022	0.01 U		0.01 U	1 U	0.01 U	0.085 J
Acenaphthylene in mg/kg			0.03 U	0.012	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	1 U	0.012	0.01 U	0.01 U	0.01 U		0.01 U	1 U	0.01 U	0.01 U
Anthracene in mg/kg	24,000	1,100,000	0.036	0.4	0.01 U	0.01 U	0.01 U	0.064	0.1	0.16	13	0.16	0.09	0.012	0.01 U		0.01 U	1.1	0.01 U	0.01 U
Benzo(g,h,i)perylene in mg/kg			0.14	0.03	0.01 U	0.01 U	0.01 U	0.14	0.032	0.034	3.9	0.049	0.015	0.01 U	0.01 U		0.019	1	0.01 U	0.01 U
Fluoranthene in mg/kg	3,200	140,000	0.33	0.84	0.042	0.035 J	0.01 U	0.54	0.21	0.12	76	0.77	0.12	0.06	0.01 U		0.062	6.5	0.01 U	0.021 J
Fluorene in mg/kg	3,200	140,000	0.087	0.46	0.038	0.034	0.086	0.078	0.066	0.42	17	0.33	0.16	0.023	0.01 U		0.01 U	1 U	0.01 U	0.077 J
Phenanthrene in mg/kg			0.093	2.3	0.044	0.039	0.05	0.23	0.062	0.92	82	1	0.17	0.039	0.01 U		0.076	4.6	0.01 U	0.034 J
Pyrene in mg/kg	2,400	110,000	0.33	0.9	0.042	0.039 J	0.01 U	0.59	0.3	0.34	73	0.83	0.18	0.062	0.01 U		0.11	6.5	0.01 U	0.021 J
2-Methylnaphthalene in mg/kg			0.03 U																	
Naphthalene in mg/kg	5	5	0.057	0.35	0.043	0.052	0.024	0.11	0.084	0.081	4.8	1.7	0.058	0.05	0.01 U		0.01 U	1.6	0.01 U	0.26 J
Benz(a)anthracene in mg/kg	1.4	180	0.14	0.13	0.01 U	0.01 U	0.01 U	0.21	0.11	0.13	20	0.22	0.064	0.018	0.01 U		0.027	2.4	0.01 U	0.01 U
Benzo(a)pyrene in mg/kg	0.14	2	0.19	0.064	0.01 U	0.01 U	0.01 U	0.25	0.061	0.061	12	0.13	0.028	0.012	0.01 U		0.027	2	0.01 U	0.01 U
Benzo(b)fluoranthene in mg/kg	1.4	180	0.19	0.079	0.01 U	0.01 U	0.01 U	0.3	0.062	0.048	18	0.21	0.026	0.018	0.01 U		0.030 J	3.4 J	0.01 U	0.01 U
Benzo(k)fluoranthene in mg/kg	14	1,800	0.076	0.028	0.01 U	0.01 U	0.01 U	0.096	0.018	0.014	6	0.071	0.01 U	0.01 U	0.01 U		0.01 U	1.2	0.01 U	0.01 U
Chrysene in mg/kg	140	18,000	0.16	0.13	0.011	0.012 J	0.01 U	0.24	0.13	0.15	19	0.19	0.091	0.016	0.01 U		0.038	3.1	0.01 U	0.01 U
Dibenzo(a,h)anthracene in mg/kg	0.14	18	0.037	0.01 U	0.01 U	0.01 U	0.01 U	0.035	0.01	0.011	1 U	0.01 U	0.01 U	0.01 U	0.01 U		0.01 U	1 U	0.01 U	0.01 U
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	180	0.12	0.029	0.01 U	0.011 J	0.01 U	0.17	0.025	0.022	4.3	0.049	0.011	0.01 U	0.01 U		0.017	1.2	0.01 U	0.01 U
Total cPAHs TEQ in mg/kg	0.14	2	0.248	0.0924	0.00761	0.00822 J	ND	0.334	0.0848	0.085	17.1	0.187	0.04	0.0173	ND		0.0358	2.9	ND	ND
Other Semivolatiles																				
1,2,4-Trichlorobenzene in mg/kg	35	4,500	0.03 U																	
1,2-Dichlorobenzene in mg/kg			0.03 U																	
1,3-Dichlorobenzene in mg/kg			0.03 U																	
1,4-Dichlorobenzene in mg/kg			0.03 U																	
2,4,5-Trichlorophenol in mg/kg			0.3 U																	
2,4,6-Trichlorophenol in mg/kg	91	12,000	0.3 U																	
2,4-Dichlorophenol in mg/kg			0.3 U																	
2,4-Dimethylphenol in mg/kg			0.3 U																	
2,4-Dinitrophenol in mg/kg			0.9 U																	
2-Chloronaphthalene in mg/kg			0.03 U																	
2-Chlorophenol in mg/kg			0.3 U																	
2-Methylphenol in mg/kg			0.3 U																	
2-Nitroaniline in mg/kg			0.03 U																	
2-Nitrophenol in mg/kg			0.3 U																	
3 & 4 Methylphenol in mg/kg			0.6 U																	
3-Nitroaniline in mg/kg			3 U																	
4,6-Dinitro-2-methylphenol in mg/kg			0.9 U																	
4-Bromophenyl phenyl ether in mg/kg			0.03 U																	
4-Chloro-3-methylphenol in mg/kg			0.3 U																	
4-Chloroaniline in mg/kg	5	660	3 U																	

Table 3-11A - Soil Quality Data for HREC 2 - Naval Reserve Parcel

K-C Worldwide Site Upland Area 110207

			Former USTS Area																	
Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	MW-5 2/16/12 (6-7 ft)	NRP-B-1 6/1/12 (9-12 ft)	NRP-B-2 6/1/12 (8-10 ft)	NRP-B-2 FD 6/1/12 (8-10 ft)	NRP-B-2 6/1/12 (14-15 ft)	NRP-B-3 6/1/12 (8.5-9.5 ft)	NRP-B-4 6/1/12 (13.5-14.5 ft)	NRP-B-5 6/1/12 (9-10 ft)	NRP-B-7 6/1/12 (9-10 ft)	NRP-B-7 6/1/12 (19-20 ft)	NRP-B-8 6/1/12 (8.5-9.5 ft)	NRP-B-8 6/1/12 (11-12 ft)	NRP-B-17 9/6/12 (8-9 ft)	NRP-B-17 FD 9/6/12 (8-9 ft)	NRP-B-17 9/6/12 (11-12 ft)	NRP-B-17 9/6/12 (12-13 ft)	NRP-B-18 9/6/12 (8-9 ft)	NRP-B-18 9/6/12 (11.5-12.5 ft)
4-Chlorophenyl phenyl ether in mg/kg			0.03 U																	
4-Nitroaniline in mg/kg			3 U																	
4-Nitrophenol in mg/kg			0.9 U																	
Benzoic acid in mg/kg			1.5 U																	
Benzyl alcohol in mg/kg			0.3 U																	
Benzyl butyl phthalate in mg/kg	530	69,000	0.03 U																	
Bis(2-chloro-1-methylethyl) ether in mg/kg	14	1,900	0.03 U																	
Bis(2-chloroethoxy)methane in mg/kg			0.03 U																	
Bis(2-chloroethyl) ether in mg/kg	0.91	120	0.03 U																	
Bis(2-ethylhexyl) phthalate in mg/kg	71	9,400	0.3 U																	
Carbazole in mg/kg			0.03 U																	
Dibenzofuran in mg/kg			0.03 U																	
Diethyl phthalate in mg/kg			0.03 U																	
Dimethyl phthalate in mg/kg			0.03 U																	
Di-n-butyl phthalate in mg/kg			0.03 U																	
Di-n-octyl phthalate in mg/kg			0.03 U																	
Hexachlorobenzene in mg/kg	0.63	82	0.03 U																	
Hexachlorobutadiene in mg/kg	13	1,700	0.03 U																	
Hexachlorocyclopentadiene in mg/kg			0.09 U																	
Hexachloroethane in mg/kg	71	9,400	0.03 U																	
Isophorone in mg/kg	1,100	140,000	0.03 U																	
Nitrobenzene in mg/kg			0.03 U																	
N-Nitroso-di-n-propylamine in mg/kg	0.14	19	0.03 U																	
N-Nitrosodiphenylamine in mg/kg	200	27,000	0.03 U																	
Pentachlorophenol in mg/kg	2.5	330	0.3 U																	
Phenol in mg/kg			0.3 U																	
2,4-Dinitrotoluene in mg/kg			0.03 U																	
2,6-Dinitrotoluene in mg/kg			0.03 U																	
Volatile Organic Compounds (VOC)																				
1,1,1,2-Tetrachloroethane in mg/kg	38	5,000		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
1,1,1-Trichloroethane in mg/kg	2	2		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
1,1,2,2-Tetrachloroethane in mg/kg	5	660		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
1,1,2-Trichloroethane in mg/kg	18	2,300		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethane in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethene in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloropropene in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
1,2,3-Trichlorobenzene in mg/kg				0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U		0.25 U	0.25 U	0.25 U	0.25 U
1,2,3-Trichloropropane in mg/kg	0.033	4.4		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
1,2,4-Trichlorobenzene in mg/kg	35	4,500		0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U		0.25 U	0.25 U	0.25 U	0.25 U
1,2,4-Trimethylbenzene in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.11	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dibromo-3-chloropropane in mg/kg	1.3	160		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichlorobenzene in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichloroethane (EDC) in mg/kg	11	1,400		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichloropropane in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
1,3,5-Trimethylbenzene in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
1,3-Dichlorobenzene in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
1,3-Dichloropropane in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
1,4-Dichlorobenzene in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
2,2-Dichloropropane in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
2-Butanone in mg/kg				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U
2-Chlorotoluene in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
2-Hexanone in mg/kg				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U
4-Chlorotoluene in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
4-Methyl-2-pentanone in mg/kg				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U
Acetone in mg/kg				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U
Benzene in mg/kg	0.03	0.03	0.02 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U
Bromobenzene in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
Bromodichloromethane in mg/kg	16	2,100		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
Bromoform in mg/kg	130	17,000		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U

Table 3-11A - Soil Quality Data for HREC 2 - Naval Reserve Parcel

K-C Worldwide Site Upland Area 110207

			Former USTS Area																	
Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	MW-5 2/16/12 (6-7 ft)	NRP-B-1 6/1/12 (9-12 ft)	NRP-B-2 6/1/12 (8-10 ft)	NRP-B-2 FD 6/1/12 (8-10 ft)	NRP-B-2 6/1/12 (14-15 ft)	NRP-B-3 6/1/12 (8.5-9.5 ft)	NRP-B-4 6/1/12 (13.5-14.5 ft)	NRP-B-5 6/1/12 (9-10 ft)	NRP-B-7 6/1/12 (9-10 ft)	NRP-B-7 6/1/12 (19-20 ft)	NRP-B-8 6/1/12 (8.5-9.5 ft)	NRP-B-8 6/1/12 (11-12 ft)	NRP-B-17 9/6/12 (8-9 ft)	NRP-B-17 FD 9/6/12 (8-9 ft)	NRP-B-17 9/6/12 (11-12 ft)	NRP-B-17 9/6/12 (12-13 ft)	NRP-B-18 9/6/12 (8-9 ft)	NRP-B-18 9/6/12 (11.5-12.5 ft)
Bromomethane in mg/kg				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride in mg/kg	14	1,900		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
Chlorobenzene in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
Chloroethane in mg/kg				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U
Chloroform in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
Chloromethane in mg/kg				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene (DCE) in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
cis-1,3-Dichloropropene in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
Dibromochloromethane in mg/kg	12	1,600		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
Dibromomethane in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
Dichlorodifluoromethane in mg/kg				0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene in mg/kg	6	6	0.02 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.093	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
Hexachlorobutadiene in mg/kg	13	1,700		0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U		0.25 U	0.25 U	0.25 U	0.25 U
Isopropylbenzene in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.13	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
Methylene chloride in mg/kg	0.02	0.02		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
n-Propylbenzene in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.063	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
p-Isopropyltoluene in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
sec-Butylbenzene in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.051	0.092	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
Styrene in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
tert-Butylbenzene in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.059	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
Tetrachloroethene (PCE) in mg/kg	0.05	0.05		0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U		0.025 U	0.025 U	0.025 U	0.025 U
Toluene in mg/kg	7	7	0.02 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
trans-1,2-Dichloroethene in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
trans-1,3-Dichloropropene in mg/kg				0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
Trichloroethene (TCE) in mg/kg	0.03	0.03		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U
Trichlorofluoromethane in mg/kg				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U
Vinyl chloride in mg/kg	0.67	88		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
m,p-Xylenes in mg/kg	16,000	700,000		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U		0.1 U	0.1 U	0.1 U	0.1 U
o-Xylene in mg/kg	16,000	700,000		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U
Xylenes (total) in mg/kg	9	9	0.06 U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND
Polychlorinated Biphenyls (PCBs)																				
Aroclor 1016 in mg/kg	14	1,900	0.1 U																	
Aroclor 1221 in mg/kg			0.1 U																	
Aroclor 1232 in mg/kg			0.1 U																	
Aroclor 1242 in mg/kg			0.1 U																	
Aroclor 1248 in mg/kg			0.1 U																	
Aroclor 1254 in mg/kg	0.5	66	0.1 U																	
Aroclor 1260 in mg/kg	0.5	66	0.1 U																	
Total PCBs in mg/kg	1	10	ND																	

Notes:

Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.

Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-11A - Soil Quality Data for HREC 2 - Naval Reserve Parcel

K-C Worldwide Site Upland Area 110207

			Former USTS Area																
Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	NRP-B-18 FD 9/6/12 (11.5-12.5 ft)	NRP-B-18 9/6/12 (14-15 ft)	NRP-B-19 9/6/12 (8-9 ft)	NRP-B-19 9/6/12 (10-11 ft)	NRP-B-19 9/6/12 (13-14 ft)	NRP-B-20 9/7/12 (8-9 ft)	NRP-B-20 9/7/12 (10-11 ft)	NRP-B-20 9/7/12 (12-13 ft)	NRP-B-21 9/7/12 (7-8 ft)	NRP-B-21 9/7/12 (10.5-11.5 ft)	NRP-B-21 9/7/12 (14-15 ft)	NRP-B-22 9/6/12 (7-8 ft)	NRP-B-22 9/6/12 (11-12 ft)	NRP-B-22 FD 9/6/12 (11-12 ft)	NRP-B-22 9/6/12 (15.5-16.5 ft)	NRP-MW-2 5/29/12 (7.5-8.5 ft)	NRP-MW-3 5/29/12 (6.5-7.5 ft)
Total Petroleum Hydrocarbons (TPH)																			
Gasoline Range Hydrocarbons in mg/kg	100	100	310 J	2 U	580	200	2 U	2,000	600	2 U	2,100	330	2 U	2 U	230 J	120 J	2 U	2 U	2 U
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	78	50 U	500	100	91	290	400	130	4,400	160	50 U	50 U	14,000 J	22,000 J	50 U	50 U	50 U
Oil Range Hydrocarbons in mg/kg	2,000	2,000	250 U	250 U	1,600	440	250 U	930	1,000	460	7,900	530	250 U	250 U	7,500 J	11,000 J	250 U	250 U	250 U
Total TPH in mg/kg	2,000	2,000	203	ND	2,100	540	216	1,220	1,400	590	12,300	690	ND	ND	21,500	33,000	ND	ND	ND
Metals																			
Antimony in mg/kg																		1 U	1 U
Arsenic in mg/kg	20	20																5.72	3.48
Beryllium in mg/kg																		1 U	1 U
Cadmium in mg/kg	2	2																1 U	1 U
Chromium (Total) in mg/kg	2,000	2,000																20.7	10.2
Copper in mg/kg																		24.8	10
Lead in mg/kg	250	1,000																3.74	1.78
Mercury in mg/kg	2	2																0.1 U	0.1 U
Nickel in mg/kg																		23.3	16.2
Selenium in mg/kg																		1 U	1 U
Silver in mg/kg																		1 U	1 U
Thallium in mg/kg																		1 U	1 U
Zinc in mg/kg																		36.9	19.7
Polycyclic Aromatic Hydrocarbons (PAHs)																			
Acenaphthene in mg/kg	4,800	210,000	0.01 UJ	0.016	0.058	0.091	0.23	0.02	0.01 U	0.029	3.6	0.051	0.099	0.01	12	13	0.18	0.01 U	0.38
Acenaphthylene in mg/kg			0.01 U	0.013	0.01 U	0.01 U	0.013	0.01 U	0.01 U	0.04	0.066 J	0.014	0.01 U	0.01 U	3	3.8	0.029	0.01 U	0.01 U
Anthracene in mg/kg	24,000	1,100,000	0.01 U	0.016	0.01 U	0.013	0.055	0.013	0.01 U	0.04	2.2	0.024	0.021	0.02	10	11	0.032	0.014	0.011
Benzo(g,h,i)perylene in mg/kg			0.01 U	0.013	0.01 U	0.015	0.031	0.01 UJ	0.01 U	0.016	0.031 J	0.025 J	0.014 J	0.015	1.7	1.8	0.018 J	0.01 U	0.02
Fluoranthene in mg/kg	3,200	140,000	0.01 UJ	0.084	0.01 U	0.059	0.28	0.044	0.019	0.21	0.76	0.13	0.1	0.17	3.7	3.7	0.15	0.04	0.049
Fluorene in mg/kg	3,200	140,000	0.01 UJ	0.017	0.027	0.027	0.098	0.012	0.01 U	0.04	3.1	0.03	0.047	0.01 U	18	19	0.087	0.01 U	0.15
Phenanthrene in mg/kg			0.01 UJ	0.083	0.01 U	0.06	0.2	0.061	0.019	0.21	18	0.12	0.095	0.014	51	55	0.15	0.026	0.054
Pyrene in mg/kg	2,400	110,000	0.01 UJ	0.11	0.01 U	0.081	0.29	0.14 J	0.027 J	0.21 J	0.77 J	0.14 J	0.11 J	0.17	19	20	0.17	0.036	0.049
2-Methylnaphthalene in mg/kg																			
Naphthalene in mg/kg	5	5	0.01 UJ	0.16	0.046	0.066	0.14	0.081	0.01 U	0.49	0.21 J	0.16	0.15	0.016	5.5 J	2.8 J	0.19	0.033	0.64 J
Benz(a)anthracene in mg/kg	1.4	180	0.01 U	0.012	0.01 U	0.017	0.052	0.014 J	0.01 U	0.023	0.098 J	0.037	0.018	0.044	6.8	5.8	0.026	0.017	0.023
Benzo(a)pyrene in mg/kg	0.14	2	0.01 U	0.012	0.01 U	0.019	0.038	0.012 J	0.01 U	0.017	0.078 J	0.051 J	0.013 J	0.027	3.6	3.6	0.021 J	0.01 U	0.028
Benzo(b)fluoranthene in mg/kg	1.4	180	0.01 U	0.015 J	0.01 U	0.019 J	0.061 J	0.012 J	0.01 U	0.026	0.12 J	0.080 J	0.021 J	0.043 J	1.8 J	1.9 J	0.030 J	0.012	0.035
Benzo(k)fluoranthene in mg/kg	14	1,800	0.01 U	0.01 U	0.01 U	0.01 U	0.016	0.01 UJ	0.01 U	0.01 U	0.042 J	0.024 J	0.01 UJ	0.013	1 U	1 U	0.01 UJ	0.01 U	0.013
Chrysene in mg/kg	140	18,000	0.01 U	0.014	0.01 U	0.021	0.078	0.016 J	0.01 U	0.032	0.11 J	0.059	0.023	0.056	12	13	0.035	0.035	0.029
Dibenzo(a,h)anthracene in mg/kg	0.14	18	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 UJ	0.01 U	0.01 U	0.01 UJ	0.01 UJ	0.01 UJ	0.01 U	1 U	1 U	0.01 UJ	0.01 U	0.01 U
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	180	0.01 U	0.01 U	0.01 U	0.011	0.023	0.01 UJ	0.01 U	0.011	0.041 J	0.029 J	0.011 J	0.016	1 U	1 U	0.013 J	0.01 U	0.021
Total cPAHs TEQ in mg/kg	0.14	2	ND	0.0163	ND	0.0249	0.0545	0.0163 J	ND	0.0243	0.11 J	0.0691	0.0192	0.0397	4.73	4.65	0.0293	0.00975	0.038
Other Semivolatiles																			
1,2,4-Trichlorobenzene in mg/kg	35	4,500																	
1,2-Dichlorobenzene in mg/kg																			
1,3-Dichlorobenzene in mg/kg																			
1,4-Dichlorobenzene in mg/kg																			
2,4,5-Trichlorophenol in mg/kg																			
2,4,6-Trichlorophenol in mg/kg	91	12,000																	
2,4-Dichlorophenol in mg/kg																			
2,4-Dimethylphenol in mg/kg																			
2,4-Dinitrophenol in mg/kg																			
2-Chloronaphthalene in mg/kg																			
2-Chlorophenol in mg/kg																			
2-Methylphenol in mg/kg																			
2-Nitroaniline in mg/kg																			
2-Nitrophenol in mg/kg																			
3 & 4 Methylphenol in mg/kg																			
3-Nitroaniline in mg/kg																			
4,6-Dinitro-2-methylphenol in mg/kg																			
4-Bromophenyl phenyl ether in mg/kg																			
4-Chloro-3-methylphenol in mg/kg																			
4-Chloroaniline in mg/kg	5	660																	

Table 3-11A - Soil Quality Data for HREC 2 - Naval Reserve Parcel

K-C Worldwide Site Upland Area 110207

			Former USTS Area																
Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	NRP-B-18 FD 9/6/12 (11.5-12.5 ft)	NRP-B-18 9/6/12 (14-15 ft)	NRP-B-19 9/6/12 (8-9 ft)	NRP-B-19 9/6/12 (10-11 ft)	NRP-B-19 9/6/12 (13-14 ft)	NRP-B-20 9/7/12 (8-9 ft)	NRP-B-20 9/7/12 (10-11 ft)	NRP-B-20 9/7/12 (12-13 ft)	NRP-B-21 9/7/12 (7-8 ft)	NRP-B-21 9/7/12 (10.5-11.5 ft)	NRP-B-21 9/7/12 (14-15 ft)	NRP-B-22 9/6/12 (7-8 ft)	NRP-B-22 9/6/12 (11-12 ft)	NRP-B-22 FD 9/6/12 (11-12 ft)	NRP-B-22 9/6/12 (15.5-16.5 ft)	NRP-MW-2 5/29/12 (7.5-8.5 ft)	NRP-MW-3 5/29/12 (6.5-7.5 ft)
4-Chlorophenyl phenyl ether in mg/kg																			
4-Nitroaniline in mg/kg																			
4-Nitrophenol in mg/kg																			
Benzoic acid in mg/kg																			
Benzyl alcohol in mg/kg																			
Benzyl butyl phthalate in mg/kg	530	69,000																	
Bis(2-chloro-1-methylethyl) ether in mg/kg	14	1,900																	
Bis(2-chloroethoxy)methane in mg/kg																			
Bis(2-chloroethyl) ether in mg/kg	0.91	120																	
Bis(2-ethylhexyl) phthalate in mg/kg	71	9,400																	
Carbazole in mg/kg																			
Dibenzofuran in mg/kg																			
Diethyl phthalate in mg/kg																			
Dimethyl phthalate in mg/kg																			
Di-n-butyl phthalate in mg/kg																			
Di-n-octyl phthalate in mg/kg																			
Hexachlorobenzene in mg/kg	0.63	82																	
Hexachlorobutadiene in mg/kg	13	1,700																	
Hexachlorocyclopentadiene in mg/kg																			
Hexachloroethane in mg/kg	71	9,400																	
Isophorone in mg/kg	1,100	140,000																	
Nitrobenzene in mg/kg																			
N-Nitroso-di-n-propylamine in mg/kg	0.14	19																	
N-Nitrosodiphenylamine in mg/kg	200	27,000																	
Pentachlorophenol in mg/kg	2.5	330																	
Phenol in mg/kg																			
2,4-Dinitrotoluene in mg/kg																			
2,6-Dinitrotoluene in mg/kg																			
Volatile Organic Compounds (VOC)																			
1,1,1,2-Tetrachloroethane in mg/kg	38	5,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1,1-Trichloroethane in mg/kg	2	2	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ
1,1,2,2-Tetrachloroethane in mg/kg	5	660	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1,2-Trichloroethane in mg/kg	18	2,300	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ
1,1-Dichloroethene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ
1,1-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ
1,2,3-Trichlorobenzene in mg/kg			0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ
1,2,3-Trichloropropane in mg/kg	0.033	4.4	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2,4-Trichlorobenzene in mg/kg	35	4,500	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ
1,2,4-Trimethylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.07	0.12	0.05 U	0.05 U	0.05 U
1,2-Dibromo-3-chloropropane in mg/kg	1.3	160	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichloroethane (EDC) in mg/kg	11	1,400	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,3,5-Trimethylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,3-Dichlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,3-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,4-Dichlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2,2-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ
2-Butanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Chlorotoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2-Hexanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
4-Chlorotoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
4-Methyl-2-pentanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Acetone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene in mg/kg	0.03	0.03	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 UJ
Bromobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Bromodichloromethane in mg/kg	16	2,100	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Bromoform in mg/kg	130	17,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U

Table 3-11A - Soil Quality Data for HREC 2 - Naval Reserve Parcel

K-C Worldwide Site Upland Area 110207

			Former USTS Area																
Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	NRP-B-18 FD 9/6/12 (11.5-12.5 ft)	NRP-B-18 9/6/12 (14-15 ft)	NRP-B-19 9/6/12 (8-9 ft)	NRP-B-19 9/6/12 (10-11 ft)	NRP-B-19 9/6/12 (13-14 ft)	NRP-B-20 9/7/12 (8-9 ft)	NRP-B-20 9/7/12 (10-11 ft)	NRP-B-20 9/7/12 (12-13 ft)	NRP-B-21 9/7/12 (7-8 ft)	NRP-B-21 9/7/12 (10.5-11.5 ft)	NRP-B-21 9/7/12 (14-15 ft)	NRP-B-22 9/6/12 (7-8 ft)	NRP-B-22 9/6/12 (11-12 ft)	NRP-B-22 FD 9/6/12 (11-12 ft)	NRP-B-22 9/6/12 (15.5-16.5 ft)	NRP-MW-2 5/29/12 (7.5-8.5 ft)	NRP-MW-3 5/29/12 (6.5-7.5 ft)
Bromomethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
Carbon tetrachloride in mg/kg	14	1,900	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ
Chlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chloroethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
Chloroform in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ
Chloromethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ
cis-1,2-Dichloroethene (DCE) in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
cis-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dibromochloromethane in mg/kg	12	1,600	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dibromomethane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dichlorodifluoromethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ
Ethylbenzene in mg/kg	6	6	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.5 J	0.74 J	0.05 U	0.05 U	0.05 U
Hexachlorobutadiene in mg/kg	13	1,700	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ
Isopropylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.41 J	0.72 J	0.05 U	0.05 U	0.05 U
Methylene chloride in mg/kg	0.02	0.02	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
n-Propylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.5 J	0.89 J	0.05 U	0.05 U	0.05 U
p-Isopropyltoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.33 J	0.65 J	0.05 U	0.05 U	0.05 U
sec-Butylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.055	0.05 U	0.14	0.094	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.27 J	0.56 J	0.05 U	0.05 U	0.05 U
Styrene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
tert-Butylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.37 J	0.7 J	0.05 U	0.05 U	0.05 U
Tetrachloroethene (PCE) in mg/kg	0.05	0.05	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 UJ
Toluene in mg/kg	7	7	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
trans-1,2-Dichloroethene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ
trans-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Trichloroethene (TCE) in mg/kg	0.03	0.03	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 UJ
Trichlorofluoromethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
Vinyl chloride in mg/kg	0.67	88	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ
m,p-Xylenes in mg/kg	16,000	700,000	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.12	0.18	0.1 U	0.1 U	0.1 U
o-Xylene in mg/kg	16,000	700,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.052	0.086	0.05 U	0.05 U	0.05 U
Xylenes (total) in mg/kg	9	9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.172	0.266	ND	ND	ND
Polychlorinated Biphenyls (PCBs)																			
Aroclor 1016 in mg/kg	14	1,900																	
Aroclor 1221 in mg/kg																			
Aroclor 1232 in mg/kg																			
Aroclor 1242 in mg/kg																			
Aroclor 1248 in mg/kg																			
Aroclor 1254 in mg/kg	0.5	66																	
Aroclor 1260 in mg/kg	0.5	66																	
Total PCBs in mg/kg	1	10																	

Notes:

Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening L

Concentrations within bold border indicate value exceeds Industrial Soil Screening

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-11A - Soil Quality Data for HREC 2 - Naval Reserve Parcel

K-C Worldwide Site Upland Area 110207

			Former Firing Range Area															
Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	NRP-B-9 6/27/12 (0-1 ft)	NRP-B-9 6/27/12 (3-4 ft)	NRP-B-10 6/27/12 (0-1 ft)	NRP-B-10 6/27/12 (3-4 ft)	NRP-B-11 6/6/12 (0-1 ft)	NRP-B-11 6/6/12 (3-4 ft)	NRP-B-12 6/6/12 (0-1 ft)	NRP-B-12 6/6/12 (3-4 ft)	NRP-B-13 6/6/12 (0-1 ft)	NRP-B-13 6/6/12 (3-4 ft)	NRP-B-14 6/27/12 (0-1 ft)	NRP-B-14 6/27/12 (3-4 ft)	NRP-B-15 6/6/12 (0-1 ft)	NRP-B-15 6/6/12 (3-4 ft)	NRP-B-16 6/27/12 (0-1 ft)	NRP-B-16 6/27/12 (3-4 ft)
Total Petroleum Hydrocarbons (TPH)																		
Gasoline Range Hydrocarbons in mg/kg	100	100																
Diesel Range Hydrocarbons in mg/kg	2,000	2,000																
Oil Range Hydrocarbons in mg/kg	2,000	2,000																
Total TPH in mg/kg	2,000	2,000																
Metals																		
Antimony in mg/kg			2.43	1 U	7.36	1 U	1.03	1 U	3.34	1 U	1 U	1 U	1 U	1 U	2.21	1 U	1.36	1 U
Arsenic in mg/kg	20	20	12.9	6.14	35.3	12.7	5.62	9.72	18	5.42	12.3	8.16	1.56	8.74	22.2	6.12	7.33	3.57
Beryllium in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium in mg/kg	2	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chromium (Total) in mg/kg	2,000	2,000	18.3 J	16 J	12.6 J	28.9 J	17	32.3	10.6	15.6	9.05	30.8	17.7 J	34.5 J	7.81	18.4	18.6 J	20.1 J
Copper in mg/kg			32.1	14.8	38.4	38	22.4	45.7	24.6	19.1	19.9	38.5	16.6	35.6	50.3	21.8	21.9	18.1
Lead in mg/kg	250	1,000	52	18.5	74.1	7.68	14.5	9.26	28.3	3.76	6.03	7.82	2.52	6.24	15.3	3.94	10.3	2.52
Mercury in mg/kg	2	2	0.1	0.18	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.31	0.1 U	0.1 U	0.1 U	0.1 U
Nickel in mg/kg			36.5 J	21.8 J	25.6 J	30.5 J	32.8	35.2	21.1	20.5	12.1	33.5	44.7 J	32.5 J	9.04	18.6	28.3 J	23.7 J
Selenium in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Silver in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Thallium in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Zinc in mg/kg			123	45.8	345	59.6	60.6	57.9	138	31.9	42.6	56.6	27.4	55.4	92	32	86.1	35.6
Polycyclic Aromatic Hydrocarbons (PAHs)																		
Acenaphthene in mg/kg	4,800	210,000																
Acenaphthylene in mg/kg																		
Anthracene in mg/kg	24,000	1,100,000																
Benzo(g,h,i)perylene in mg/kg																		
Fluoranthene in mg/kg	3,200	140,000																
Fluorene in mg/kg	3,200	140,000																
Phenanthrene in mg/kg																		
Pyrene in mg/kg	2,400	110,000																
2-Methylnaphthalene in mg/kg																		
Naphthalene in mg/kg	5	5																
Benz(a)anthracene in mg/kg	1.4	180																
Benzo(a)pyrene in mg/kg	0.14	2																
Benzo(b)fluoranthene in mg/kg	1.4	180																
Benzo(k)fluoranthene in mg/kg	14	1,800																
Chrysene in mg/kg	140	18,000																
Dibenzo(a,h)anthracene in mg/kg	0.14	18																
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	180																
Total cPAHs TEQ in mg/kg	0.14	2																
Other Semivolatiles																		
1,2,4-Trichlorobenzene in mg/kg	35	4,500																
1,2-Dichlorobenzene in mg/kg																		
1,3-Dichlorobenzene in mg/kg																		
1,4-Dichlorobenzene in mg/kg																		
2,4,5-Trichlorophenol in mg/kg																		
2,4,6-Trichlorophenol in mg/kg	91	12,000																
2,4-Dichlorophenol in mg/kg																		
2,4-Dimethylphenol in mg/kg																		
2,4-Dinitrophenol in mg/kg																		
2-Chloronaphthalene in mg/kg																		
2-Chlorophenol in mg/kg																		
2-Methylphenol in mg/kg																		
2-Nitroaniline in mg/kg																		
2-Nitrophenol in mg/kg																		
3 & 4 Methylphenol in mg/kg																		
3-Nitroaniline in mg/kg																		
4,6-Dinitro-2-methylphenol in mg/kg																		
4-Bromophenyl phenyl ether in mg/kg																		
4-Chloro-3-methylphenol in mg/kg																		
4-Chloroaniline in mg/kg	5	660																

Table 3-11A - Soil Quality Data for HREC 2 - Naval Reserve Parcel

K-C Worldwide Site Upland Area 110207

			Former Firing Range Area															
Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	NRP-B-9 6/27/12 (0-1 ft)	NRP-B-9 6/27/12 (3-4 ft)	NRP-B-10 6/27/12 (0-1 ft)	NRP-B-10 6/27/12 (3-4 ft)	NRP-B-11 6/6/12 (0-1 ft)	NRP-B-11 6/6/12 (3-4 ft)	NRP-B-12 6/6/12 (0-1 ft)	NRP-B-12 6/6/12 (3-4 ft)	NRP-B-13 6/6/12 (0-1 ft)	NRP-B-13 6/6/12 (3-4 ft)	NRP-B-14 6/27/12 (0-1 ft)	NRP-B-14 6/27/12 (3-4 ft)	NRP-B-15 6/6/12 (0-1 ft)	NRP-B-15 6/6/12 (3-4 ft)	NRP-B-16 6/27/12 (0-1 ft)	NRP-B-16 6/27/12 (3-4 ft)
4-Chlorophenyl phenyl ether in mg/kg																		
4-Nitroaniline in mg/kg																		
4-Nitrophenol in mg/kg																		
Benzoic acid in mg/kg																		
Benzyl alcohol in mg/kg																		
Benzyl butyl phthalate in mg/kg	530	69,000																
Bis(2-chloro-1-methylethyl) ether in mg/kg	14	1,900																
Bis(2-chloroethoxy)methane in mg/kg																		
Bis(2-chloroethyl) ether in mg/kg	0.91	120																
Bis(2-ethylhexyl) phthalate in mg/kg	71	9,400																
Carbazole in mg/kg																		
Dibenzofuran in mg/kg																		
Diethyl phthalate in mg/kg																		
Dimethyl phthalate in mg/kg																		
Di-n-butyl phthalate in mg/kg																		
Di-n-octyl phthalate in mg/kg																		
Hexachlorobenzene in mg/kg	0.63	82																
Hexachlorobutadiene in mg/kg	13	1,700																
Hexachlorocyclopentadiene in mg/kg																		
Hexachloroethane in mg/kg	71	9,400																
Isophorone in mg/kg	1,100	140,000																
Nitrobenzene in mg/kg																		
N-Nitroso-di-n-propylamine in mg/kg	0.14	19																
N-Nitrosodiphenylamine in mg/kg	200	27,000																
Pentachlorophenol in mg/kg	2.5	330																
Phenol in mg/kg																		
2,4-Dinitrotoluene in mg/kg																		
2,6-Dinitrotoluene in mg/kg																		
Volatile Organic Compounds (VOC)																		
1,1,1,2-Tetrachloroethane in mg/kg	38	5,000																
1,1,1-Trichloroethane in mg/kg	2	2																
1,1,2,2-Tetrachloroethane in mg/kg	5	660																
1,1,2-Trichloroethane in mg/kg	18	2,300																
1,1-Dichloroethane in mg/kg																		
1,1-Dichloroethene in mg/kg																		
1,1-Dichloropropene in mg/kg																		
1,2,3-Trichlorobenzene in mg/kg																		
1,2,3-Trichloropropane in mg/kg	0.033	4.4																
1,2,4-Trichlorobenzene in mg/kg	35	4,500																
1,2,4-Trimethylbenzene in mg/kg																		
1,2-Dibromo-3-chloropropane in mg/kg	1.3	160																
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005																
1,2-Dichlorobenzene in mg/kg																		
1,2-Dichloroethane (EDC) in mg/kg	11	1,400																
1,2-Dichloropropane in mg/kg																		
1,3,5-Trimethylbenzene in mg/kg																		
1,3-Dichlorobenzene in mg/kg																		
1,3-Dichloropropane in mg/kg																		
1,4-Dichlorobenzene in mg/kg																		
2,2-Dichloropropane in mg/kg																		
2-Butanone in mg/kg																		
2-Chlorotoluene in mg/kg																		
2-Hexanone in mg/kg																		
4-Chlorotoluene in mg/kg																		
4-Methyl-2-pentanone in mg/kg																		
Acetone in mg/kg																		
Benzene in mg/kg	0.03	0.03																
Bromobenzene in mg/kg																		
Bromodichloromethane in mg/kg	16	2,100																
Bromoform in mg/kg	130	17,000																

Table 3-11A - Soil Quality Data for HREC 2 - Naval Reserve Parcel

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	Former Firing Range Area															
			NRP-B-9 6/27/12 (0-1 ft)	NRP-B-9 6/27/12 (3-4 ft)	NRP-B-10 6/27/12 (0-1 ft)	NRP-B-10 6/27/12 (3-4 ft)	NRP-B-11 6/6/12 (0-1 ft)	NRP-B-11 6/6/12 (3-4 ft)	NRP-B-12 6/6/12 (0-1 ft)	NRP-B-12 6/6/12 (3-4 ft)	NRP-B-13 6/6/12 (0-1 ft)	NRP-B-13 6/6/12 (3-4 ft)	NRP-B-14 6/27/12 (0-1 ft)	NRP-B-14 6/27/12 (3-4 ft)	NRP-B-15 6/6/12 (0-1 ft)	NRP-B-15 6/6/12 (3-4 ft)	NRP-B-16 6/27/12 (0-1 ft)	NRP-B-16 6/27/12 (3-4 ft)
Bromomethane in mg/kg																		
Carbon tetrachloride in mg/kg	14	1,900																
Chlorobenzene in mg/kg																		
Chloroethane in mg/kg																		
Chloroform in mg/kg																		
Chloromethane in mg/kg																		
cis-1,2-Dichloroethene (DCE) in mg/kg																		
cis-1,3-Dichloropropene in mg/kg																		
Dibromochloromethane in mg/kg	12	1,600																
Dibromomethane in mg/kg																		
Dichlorodifluoromethane in mg/kg																		
Ethylbenzene in mg/kg	6	6																
Hexachlorobutadiene in mg/kg	13	1,700																
Isopropylbenzene in mg/kg																		
Methylene chloride in mg/kg	0.02	0.02																
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1																
n-Propylbenzene in mg/kg																		
p-Isopropyltoluene in mg/kg																		
sec-Butylbenzene in mg/kg																		
Styrene in mg/kg																		
tert-Butylbenzene in mg/kg																		
Tetrachloroethene (PCE) in mg/kg	0.05	0.05																
Toluene in mg/kg	7	7																
trans-1,2-Dichloroethene in mg/kg																		
trans-1,3-Dichloropropene in mg/kg																		
Trichloroethene (TCE) in mg/kg	0.03	0.03																
Trichlorofluoromethane in mg/kg																		
Vinyl chloride in mg/kg	0.67	88																
m,p-Xylenes in mg/kg	16,000	700,000																
o-Xylene in mg/kg	16,000	700,000																
Xylenes (total) in mg/kg	9	9																
Polychlorinated Biphenyls (PCBs)																		
Aroclor 1016 in mg/kg	14	1,900																
Aroclor 1221 in mg/kg																		
Aroclor 1232 in mg/kg																		
Aroclor 1242 in mg/kg																		
Aroclor 1248 in mg/kg																		
Aroclor 1254 in mg/kg	0.5	66																
Aroclor 1260 in mg/kg	0.5	66																
Total PCBs in mg/kg	1	10																

Notes:

Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening L

Concentrations within bold border indicate value exceeds Industrial Soil Screening

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-11B - Groundwater Quality Data for HREC 2 - Naval Reserve Parcel

K-C Worldwide Site Upland Area 110207

		Former USTS Area												Former Firing Range Area			
Chemical Name	Groundwater Screening Level	MW-05 02/17/12	MW-05 06/05/12	MW-05 08/31/12	NRP-MW-01 06/08/12	NRP-MW-01 06/08/12 FD	NRP-MW-01 08/31/12	NRP-MW-01 08/31/12 FD	NRP-MW-02 06/05/12	NRP-MW-02 08/31/12	NRP-MW-03 06/05/12	NRP-MW-03 06/05/12 FD	NRP-MW-03 08/30/12	NRP-MW-04 07/03/12	NRP-MW-04 08/30/12	NRP-MW-05 07/03/12	NRP-MW-05 08/30/12
Total Petroleum Hydrocarbons (TPH)																	
Gasoline Range Hydrocarbons in µg/L	1,000	100 U	100 U	100 U	100		100 U		100 U	100 U	100 U		100 U				
Diesel Range Hydrocarbons in µg/L	500	50 U	50 U	50 U	50 U	50 U	50 U		50 U	50 U	50 U		50 U				
Oil Range Hydrocarbons in µg/L	500	250 U	250 U	250 U	250 UJ	250 UJ	250 U		250 U	250 U	250 U		250 U				
Total TPHs in µg/L	500	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND				
Dissolved Metals																	
Dissolved Antimony in µg/L	640		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U
Dissolved Arsenic in µg/L	5	4.68	3.92	6.67	1.6	1.51	1.1	1.13	1 U	2.18	2.11		2.6	1 U	1 U	1 U	1 U
Dissolved Beryllium in µg/L	270		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U
Dissolved Cadmium in µg/L	8.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U
Dissolved Chromium (Total) in µg/L	240,000	1.92	1.58	1.42	1.13	1.04	1 U	1 U	1 U	1 U	5.48		4.54	1 U	1 U	1 U	1 U
Dissolved Copper in µg/L	3.1	7.09	5.21	15.9	1 U	1.92	1 U	1 U	1 U	1 U	1.84		3.55	1.09	1 U	1 U	1 U
Dissolved Lead in µg/L	8.1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U
Dissolved Mercury in µg/L	0.15	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dissolved Nickel in µg/L	8.2	3.48	3.38	4.87	3.2	2.94	4.47	4.88	2.12	4.08	2.31		2.18	2.69	3.18	3.65	4.15
Dissolved Selenium in µg/L	71	15.3	13.8 J	25.6	3.61	3.12	3.37	3.51	1.11 J	8.26	4.49 J		4.42	1 U	1 U	1 U	1 U
Dissolved Silver in µg/L	1.9	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U
Dissolved Thallium in µg/L	0.47		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U
Dissolved Zinc in µg/L	81	1.61	1 U	5.67	2.01	1 U	1 U	1 U	4.44	2.45 J	3.57		2.78	3.54	1.58	2.77	1 U
Total Metals																	
Total Antimony in µg/L	640													1 U	1 U	1 U	1 U
Total Arsenic in µg/L	5													1 U	1 UJ	1 U	1 UJ
Total Beryllium in µg/L	270													1 U	1 U	1 U	1 U
Total Cadmium in µg/L	8.8													1 U	1 U	1 U	1 U
Total Chromium (Total) in µg/L	240,000													1 U	1 U	1 U	1 U
Total Copper in µg/L	3.1													9.2	1 U	1 U	1 U
Total Lead in µg/L	8.1													1 U	1 U	1 U	1 U
Total Mercury in µg/L	0.15													0.1 U	0.1 U	0.1 U	0.1 U
Total Nickel in µg/L	8.2													3.64	2.67	3.28	3.94
Total Selenium in µg/L	71													1 U	1 U	1 U	1 U
Total Silver in µg/L	1.9													1 U	1 U	1 U	1 U
Total Thallium in µg/L	0.47													1 U	1 U	1 U	1 U
Total Zinc in µg/L	81													6.16	4.53 J	2.34	2.7 J
Conventional Chemistry Parameters																	
Ammonia as Nitrogen in mg/L	0.035		0.662	0.667	3.26	3.26			0.383	0.451	11.3		15.7				
Dissolved Sulfide in mg/L			3.01	0.050 U	0.05 U	0.05 U			0.506	0.050 U	0.2 U		0.240				
Total Dissolved Solids in mg/L		2,775															
Total Suspended Solids in mg/L		100	10 U	10 U	10 U		18		10 U	19	19		83	10 U	10 U	10 U	12
Polycyclic Aromatic Hydrocarbons (PAHs)																	
Acenaphthene in µg/L	640	0.28	0.22	0.5 U	0.2	0.19	0.22		0.05 U	0.05 U	0.6	1 U	0.54				
Acenaphthylene in µg/L		0.1 U	0.05 U	0.5 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	1 U	0.05 U				
Anthracene in µg/L	26,000	0.1 U	0.05 U	0.5 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	1 U	0.05 U				
Benzo(g,h,i)perylene in µg/L		0.1 U	0.05 U	0.5 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	1 U	0.05 U				
Fluoranthene in µg/L	90	0.1 U	0.05 U	0.5 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.075	1 U	0.07				
Fluorene in µg/L	3,500	0.1 U	0.05 U	0.5 U	0.089	0.084	0.089		0.05 U	0.05 U	0.12	1 U	0.13				
Phenanthrene in µg/L		0.1 U	0.05 U	0.5 U	0.17	0.17	0.19		0.05 U	0.05 U	0.2	1 U	0.2				
Pyrene in µg/L	2,600	0.1 U	0.05 U	0.5 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.067	1 U	0.057				
2-Methylnaphthalene in µg/L		1 U	1 U	1 U					1 U	1 U	1 U	1 U	1 U				
Naphthalene in µg/L	170	0.1 U	0.05 U	0.5 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	1 U	0.05 U				
Benz(a)anthracene in µg/L	0.018	0.1 U	0.01 U	0.1 U	0.01 U	0.01 U	0.01 U		0.01 U	0.01 U	0.014	1 U	0.011				
Benzo(a)pyrene in µg/L	0.018	0.1 U	0.01 U	0.1 U	0.01 U	0.01 U	0.01 U		0.01 U	0.01 U	0.01 U	1 U	0.01 U				
Benzo(b)fluoranthene in µg/L	0.018	0.1 U	0.01 U	0.1 U	0.01 U	0.01 U	0.01 U		0.01 U	0.01 U	0.01 U	1 U	0.01 U				
Benzo(k)fluoranthene in µg/L	0.018	0.1 U	0.01 U	0.1 U	0.01 U	0.01 U	0.01 U		0.01 U	0.01 U	0.01 U	1 U	0.01 U				
Chrysene in µg/L	0.018	0.1 U	0.01 U	0.1 U	0.01 U	0.01 U	0.01 U		0.01 U	0.01 U	0.011	1 U	0.01 U				
Dibenzo(a,h)anthracene in µg/L	0.018	0.1 U	0.01 U	0.1 U	0.01 U	0.01 U	0.01 U		0.01 U	0.01 U	0.01 U	1 U	0.01 U				
Indeno(1,2,3-cd)pyrene in µg/L	0.018	0.1 U	0.01 U	0.1 U	0.01 U	0.01 U	0.01 U		0.01 U	0.01 U	0.01 U	1 U	0.01 U				
Total cPAHs TEQ in µg/L	0.018	ND	ND	ND	ND	ND	ND		ND	ND	0.00851	ND	0.00815				
Other Semivolatiles																	
1,2,4-Trichlorobenzene in µg/L	2	1 U	1 U	1 U					1 U	1 U	1 U	1 U	1 U				
1,2-Dichlorobenzene in µg/L	1,300	1 U	1 U	1 U					1 U	1 U	1 U	1 U	1 U				
1,3-Dichlorobenzene in µg/L	960	1 U	1 U	1 U					1 U	1 U	1 U	1 U	1 U				

Table 3-11B - Groundwater Quality Data for HREC 2 - Naval Reserve Parcel

K-C Worldwide Site Upland Area 110207

		Former USTS Area												Former Firing Range Area			
Chemical Name	Groundwater Screening Level	MW-05 02/17/12	MW-05 06/05/12	MW-05 08/31/12	NRP-MW-01 06/08/12	NRP-MW-01 06/08/12 FD	NRP-MW-01 08/31/12	NRP-MW-01 08/31/12 FD	NRP-MW-02 06/05/12	NRP-MW-02 08/31/12	NRP-MW-03 06/05/12	NRP-MW-03 06/05/12 FD	NRP-MW-03 08/30/12	NRP-MW-04 07/03/12	NRP-MW-04 08/30/12	NRP-MW-05 07/03/12	NRP-MW-05 08/30/12
1,4-Dichlorobenzene in µg/L	190	1 U	1 U	1 U					1 U	1 U	1 U	1 U	1 U				
2,4,5-Trichlorophenol in µg/L	3,600	10 U	10 U	10 U					10 U	10 U	10 U	10 U	10 U				
2,4,6-Trichlorophenol in µg/L	2.4	10 U	10 U	10 U					10 U	10 U	10 U	10 U	10 U				
2,4-Dichlorophenol in µg/L	190	10 U	10 U	10 U					10 U	10 U	10 U	10 U	10 U				
2,4-Dimethylphenol in µg/L	550	10 U	10 U	10 U					10 U	10 U	10 U	10 U	10 U				
2,4-Dinitrophenol in µg/L	3,500	30 U	30 U	30 U					30 U	30 U	30 U	30 U	30 U				
2-Chloronaphthalene in µg/L	1,000	1 U	1 U	1 U					1 U	1 U	1 U	1 U	1 U				
2-Chlorophenol in µg/L	97	10 U	10 U	10 U					10 U	10 U	10 U	10 U	10 U				
2-Methylphenol in µg/L		10 U	10 U	10 U					10 U	10 U	10 U	10 U	10 U				
2-Nitroaniline in µg/L		1 U	3 U	3 U					3 U	3 U	3 U	3 U	3 U				
2-Nitrophenol in µg/L		10 U	10 U	10 U					10 U	10 U	10 U	10 U	10 U				
3 & 4 Methylphenol in µg/L		20 U	20 U	20 U					20 U	20 U	20 U	20 U	68				
3-Nitroaniline in µg/L		3 U	3 U	3 U					3 U	3 U	3 U	3 U	3 U				
4,6-Dinitro-2-methylphenol in µg/L		30 U	30 U	30 U					30 U	30 U	30 U	30 U	30 U				
4-Bromophenyl phenyl ether in µg/L		1 U	1 U	1 U					1 U	1 U	1 U	1 U	1 U				
4-Chloro-3-methylphenol in µg/L		10 U	10 U	10 U					10 U	10 U	10 U	10 U	10 U				
4-Chloroaniline in µg/L		3 U	3 U	3 U					3 U	3 U	3 U	3 U	3 U				
4-Chlorophenyl phenyl ether in µg/L		1 U	1 U	1 U					1 U	1 U	1 U	1 U	1 U				
4-Nitroaniline in µg/L		10 U	10 U	10 U					10 U	10 U	10 U	10 U	10 U				
4-Nitrophenol in µg/L		10 U	10 U	10 U					10 U	10 U	10 U	10 U	10 U				
Benzoic acid in µg/L		50 U	50 U	50 U					50 U	50 U	50 U	50 U	50 U				
Benzyl alcohol in µg/L		10 U	10 U	10 U					10 U	10 U	10 U	10 U	10 U				
Benzyl butyl phthalate in µg/L	8.2	1 U	1 U	1 U					1 U	1 U	1 U	1 U	1 U				
Bis(2-chloro-1-methylethyl) ether in µg/L	37	10 U	10 U	10 U					10 U	10 U	10 U	10 U	10 U				
Bis(2-chloroethoxy)methane in µg/L		1 U	1 U	1 U					1 U	1 U	1 U	1 U	1 U				
Bis(2-chloroethyl) ether in µg/L	0.53	10 U	10 U	10 U					10 U	10 U	10 U	10 U	10 U				
Bis(2-ethylhexyl) phthalate in µg/L	2.2	10 U	10 U	10 U					10 U	10 U	10 U	10 U	10 U				
Carbazole in µg/L		1 U	1 U	1 U					1 U	1 U	1 U	1 U	1 U				
Dibenzofuran in µg/L		1 U	1 U	1 U					1 U	1 U	1 U	1 U	1 U				
Diethyl phthalate in µg/L	28,000	1 U	1 U	1 U					1 U	1 U	1 U	1 U	1 U				
Dimethyl phthalate in µg/L	1,100,000	1 U	1 U	1 U					1 U	1 U	1 U	1 U	1 U				
Di-n-butyl phthalate in µg/L	2,900	1 U	1 U	1 U					1 U	1 U	1 U	1 U	1 U				
Di-n-octyl phthalate in µg/L		1 U	1 U	1 U					1 U	1 U	1 U	1 U	1 U				
Hexachlorobenzene in µg/L	0.00029	1 U	1 U	1 U					1 U	1 U	1 U	1 U	1 U				
Hexachlorobutadiene in µg/L	0.81	1 U	1 U	1 U					1 U	1 U	1 U	1 U	1 U				
Hexachlorocyclopentadiene in µg/L	1,100	3 U	3 U	3 U					3 U	3 U	3 U	3 U	3 U				
Hexachloroethane in µg/L	3.3	1 U	1 U	1 U					1 U	1 U	1 U	1 U	1 U				
Isophorone in µg/L	600	1 U	1 U	1 U					1 U	1 U	1 U	1 U	1 U				
Nitrobenzene in µg/L	690	1 U	1 U	1 U					1 U	1 U	1 U	1 U	1 U				
N-Nitroso-di-n-propylamine in µg/L	0.51	10 U	10 U	10 U					10 U	10 U	10 U	10 U	10 U				
N-Nitrosodiphenylamine in µg/L	6	1 U	1 U	1 U					1 U	1 U	1 U	1 U	1 U				
Pentachlorophenol in µg/L	1.5	10 U	10 U	10 U					10 U	10 U	10 U	10 U	10 U				
Phenol in µg/L	560,000	10 U	10 U	10 U					10 U	10 U	10 U	10 U	10 U				
2,4-Dinitrotoluene in µg/L	3.4	1 U	1 U	1 U					1 U	1 U	1 U	1 U	1 U				
2,6-Dinitrotoluene in µg/L		1 U	1 U	1 U					1 U	1 U	1 U	1 U	1 U				
Volatile Organic Compounds (VOC)																	
1,1,1,2-Tetrachloroethane in µg/L	7.4		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
1,1,1-Trichloroethane in µg/L	11,000		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
1,1,2,2-Tetrachloroethane in µg/L	4		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
1,1,2-Trichloroethane in µg/L	7.9		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
1,1-Dichloroethane in µg/L	2,300		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
1,1-Dichloroethene in µg/L	3.2		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
1,1-Dichloropropene in µg/L			1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
1,2,3-Trichlorobenzene in µg/L			1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
1,2,3-Trichloropropane in µg/L			1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
1,2,4-Trichlorobenzene in µg/L	2		1 U		1 U		1 U		1 U		1 U						
1,2,4-Trimethylbenzene in µg/L	24		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
1,2-Dibromo-3-chloropropane in µg/L			10 U	10 U	10 U		10 U		10 U	10 U	10 U		10 U				
1,2-Dibromoethane (EDB) in µg/L	0.74		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
1,2-Dichlorobenzene in µg/L	1,300		1 U		1 U		1 U		1 U		1 U						
1,2-Dichloroethane (EDC) in µg/L	4.2		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				

Table 3-11B - Groundwater Quality Data for HREC 2 - Naval Reserve Parcel

K-C Worldwide Site Upland Area 110207

		Former USTS Area												Former Firing Range Area			
Chemical Name	Groundwater Screening Level	MW-05 02/17/12	MW-05 06/05/12	MW-05 08/31/12	NRP-MW-01 06/08/12	NRP-MW-01 06/08/12 FD	NRP-MW-01 08/31/12	NRP-MW-01 08/31/12 FD	NRP-MW-02 06/05/12	NRP-MW-02 08/31/12	NRP-MW-03 06/05/12	NRP-MW-03 06/05/12 FD	NRP-MW-03 08/30/12	NRP-MW-04 07/03/12	NRP-MW-04 08/30/12	NRP-MW-05 07/03/12	NRP-MW-05 08/30/12
1,2-Dichloropropane in µg/L	15		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
1,3,5-Trimethylbenzene in µg/L	25		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
1,3-Dichlorobenzene in µg/L	960		1 U		1 U		1 U		1 U		1 U						
1,3-Dichloropropane in µg/L			1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
1,4-Dichlorobenzene in µg/L	190		1 U		1 U		1 U		1 U		1 U						
2,2-Dichloropropane in µg/L			1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
2-Butanone in µg/L	350,000		10 U	10 U	10 U		10 U		10 U	10 U	10 U		10 U				
2-Chlorotoluene in µg/L			1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
2-Hexanone in µg/L			10 U	10 U	10 U		10 U		10 U	10 U	10 U		10 U				
4-Chlorotoluene in µg/L			1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
4-Methyl-2-pentanone in µg/L	11,000		10 U	10 U	10 U		10 U		10 U	10 U	10 U		10 U				
Acetone in µg/L			10 U	10 U	10 U		10 U		10 U	10 U	10 U		10 U				
Benzene in µg/L	2.4	1 U	0.35 U	0.35 U	0.35 U		0.35 U		0.35 U	0.35 U	0.35 U		0.35 U				
Bromobenzene in µg/L			1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
Bromodichloromethane in µg/L	0.09		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
Bromoform in µg/L	140		1 UJ	1 U	1 U		1 UJ		1 UJ	1 UJ	1 UJ		1 UJ				
Bromomethane in µg/L	13		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
Carbon tetrachloride in µg/L	0.22		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
Chlorobenzene in µg/L	100		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
Chloroethane in µg/L	12		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
Chloroform in µg/L	1.2		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
Chloromethane in µg/L	5.2		10 U	10 U	10 U		10 U		10 U	10 U	10 U		10 U				
cis-1,2-Dichloroethene (DCE) in µg/L	160		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
cis-1,3-Dichloropropene in µg/L			1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
Dibromochloromethane in µg/L	0.22		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
Dibromomethane in µg/L			1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
Dichlorodifluoromethane in µg/L	9.9		1 UJ	1 U	1 U		1 U		1 UJ	1 U	1 UJ		1 U				
Ethylbenzene in µg/L	2,100	1 U	1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
Hexachlorobutadiene in µg/L	0.81		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
Isopropylbenzene in µg/L	720		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
Methylene chloride in µg/L	94		5 U	5 U	5 U		5 U		5 U	5 U	5 U		5 U				
Methyl-Tert-Butyl Ether in µg/L	610		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
n-Propylbenzene in µg/L			1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
p-Isopropyltoluene in µg/L			1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
sec-Butylbenzene in µg/L			1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
Styrene in µg/L	78		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
tert-Butylbenzene in µg/L			1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
Tetrachloroethene (PCE) in µg/L	0.39		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
Toluene in µg/L	15,000	1 U	1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
trans-1,2-Dichloroethene in µg/L	130		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
trans-1,3-Dichloropropene in µg/L			1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
Trichloroethene (TCE) in µg/L	1.6		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
Trichlorofluoromethane in µg/L	120		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
Vinyl chloride in µg/L	0.35		0.2 U	0.2 U	0.2 U		0.2 U		0.2 U	0.2 U	0.2 U		0.2 U				
m,p-Xylenes in µg/L	310		2 U	2 U	2 U		2 U		2 U	2 U	2 U		2 U				
o-Xylene in µg/L	440		1 U	1 U	1 U		1 U		1 U	1 U	1 U		1 U				
Xylenes (total) in µg/L	310	3 U	ND	ND	ND		ND		ND	ND	ND		ND				
Field Parameters																	
Dissolved Oxygen in mg/L		1.53	0.07	5.36	0.59		5.11		0.35	6.48	2.01		6.4	0.35	4.94	0.37	5.25
ORP in mVolts		-222	-78.1	-189.2	-77.5		-115.5		-1.3	-148.8	-98.9		-241.6	-102.2	-221.5	-110.9	-221.7
pH in pH Units		6.67	5.8	6.67	6.64		6.58		6.13	6.58	6.51		6.45	7.16	7.18	7.12	7.08
Specific Conductance in us/cm		5,773	3,554	6,538	991		1,101		770	1,197	1,410		1,522	717	600	736	708
Temperature in deg C		11	12.94	16.1	15.4		20.7		13.37	17	12.6		15.5	14	17	14.4	16.5
Turbidity in NTU		70	0.73	1.89	3.89		1.84		1.9	2	37.4		377	2.72	4.11	2.54	4.31

Notes:

Concentrations in shaded cells indicate value exceeds Groundwater Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-12A - Soil Quality Data for Log Pond Fill

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	DP-18 2/16/12 (2.5-3.5 ft)	DP-19 2/16/12 (2.5-3.5 ft)	DP-20 2/16/12 (2.5-3.5 ft)	DP-21 2/16/12 (4-5 ft)	DP-22 2/16/12 (3-4 ft)	MW-6 2/16/12 (22-23 ft)
Total Petroleum Hydrocarbons (TPH)								
Gasoline Range Hydrocarbons in mg/kg	100	100	2 U	2 U	2 U	2 U	2 U	2 U
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	50 U	50 U	50 U	50 U	50 U	50 U
Oil Range Hydrocarbons in mg/kg	2,000	2,000	250 U	250 U	250 U	250 U	250 U	250 U
Total TPH in mg/kg	2,000	2,000	ND	ND	ND	ND	ND	ND
Metals								
Arsenic in mg/kg	20	20	2.81	1.89	3.18	9.19	4.81	2.96
Cadmium in mg/kg	2	2	1 U	1 U	1 U	1 U	1 U	1 U
Chromium (Total) in mg/kg	2,000	2,000	18.9	13.3	12.3	75.8	12	17.2
Copper in mg/kg			38.8	13.2	27.1	63.4	15.1	23.2
Lead in mg/kg	250	1,000	11.5	3.94	128	22.8	3.8	17.5
Mercury in mg/kg	2	2	0.1 U	0.1 U	0.2	0.1 U	0.1 U	0.1 U
Nickel in mg/kg			34.1	41.4	24.2	47.4	16	28
Selenium in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U
Silver in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U
Zinc in mg/kg			189	21.9	106	75	26.7	280
Polycyclic Aromatic Hydrocarbons (PAHs)								
Acenaphthene in mg/kg	4,800	210,000	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Acenaphthylene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Anthracene in mg/kg	24,000	1,100,000	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Benzo(g,h,i)perylene in mg/kg			0.03 U	0.03 U	0.051	0.033	0.03 U	0.03 U
Fluoranthene in mg/kg	3,200	140,000	0.03 U	0.03 U	0.06	0.049	0.03 U	0.049
Fluorene in mg/kg	3,200	140,000	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Phenanthrene in mg/kg			0.03 U	0.03 U	0.032	0.03 U	0.03 U	0.044
Pyrene in mg/kg	2,400	110,000	0.03 U	0.03 U	0.068	0.052	0.03 U	0.056
2-Methylnaphthalene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Naphthalene in mg/kg	5	5	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.063
Benz(a)anthracene in mg/kg	1.4	180	0.03 U	0.03 U	0.031	0.03 U	0.03 U	0.03 U
Benzo(a)pyrene in mg/kg	0.14	2	0.03 U	0.03 U	0.047	0.033	0.03 U	0.03 U
Benzo(b)fluoranthene in mg/kg	1.4	180	0.03 U	0.03 U	0.051	0.051	0.03 U	0.03 U
Benzo(k)fluoranthene in mg/kg	14	1,800	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Chrysene in mg/kg	140	18,000	0.03 U	0.03 U	0.041	0.036	0.03 U	0.03 U
Dibenzo(a,h)anthracene in mg/kg	0.14	18	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	180	0.03 U	0.03 U	0.038	0.03 U	0.03 U	0.03 U
Total cPAHs TEQ in mg/kg	0.14	2	ND	ND	0.0624	0.0445	ND	ND
Other Semivolatiles								
1,2,4-Trichlorobenzene in mg/kg	35	4,500	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
1,2-Dichlorobenzene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
1,3-Dichlorobenzene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
1,4-Dichlorobenzene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
2,4,5-Trichlorophenol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2,4,6-Trichlorophenol in mg/kg	91	12,000	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2,4-Dichlorophenol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2,4-Dimethylphenol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2,4-Dinitrophenol in mg/kg			0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U
2-Chloronaphthalene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
2-Chlorophenol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2-Methylphenol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2-Nitroaniline in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
2-Nitrophenol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
3 & 4 Methylphenol in mg/kg			0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
3-Nitroaniline in mg/kg			3 U	3 U	3 U	3 U	3 U	3 U
4,6-Dinitro-2-methylphenol in mg/kg			0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U
4-Bromophenyl phenyl ether in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
4-Chloro-3-methylphenol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
4-Chloroaniline in mg/kg	5	660	3 U	3 U	3 U	3 U	3 U	3 U
4-Chlorophenyl phenyl ether in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
4-Nitroaniline in mg/kg			3 U	3 U	3 U	3 U	3 U	3 U
4-Nitrophenol in mg/kg			0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U
Benzoic acid in mg/kg			1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Benzyl alcohol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Benzyl butyl phthalate in mg/kg	530	69,000	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Bis(2-chloro-1-methylethyl) ether in mg/kg	14	1,900	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Bis(2-chloroethoxy)methane in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Bis(2-chloroethyl) ether in mg/kg	0.91	120	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Bis(2-ethylhexyl) phthalate in mg/kg	71	9,400	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Carbazole in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Dibenzofuran in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Diethyl phthalate in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Dimethyl phthalate in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Di-n-butyl phthalate in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Di-n-octyl phthalate in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Hexachlorobenzene in mg/kg	0.63	82	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Hexachlorobutadiene in mg/kg	13	1,700	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Hexachlorocyclopentadiene in mg/kg			0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U
Hexachloroethane in mg/kg	71	9,400	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Isophorone in mg/kg	1,100	140,000	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Nitrobenzene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
N-Nitroso-di-n-propylamine in mg/kg	0.14	19	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
N-Nitrosodiphenylamine in mg/kg	200	27,000	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Pentachlorophenol in mg/kg	2.5	330	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Phenol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2,4-Dinitrotoluene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
2,6-Dinitrotoluene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Volatile Organic Compounds (VOC)								
Benzene in mg/kg	0.03	0.03	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Ethylbenzene in mg/kg	6	6	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Toluene in mg/kg	7	7	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Xylenes (total) in mg/kg	9	9	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Polychlorinated Biphenyls (PCBs)								
Aroclor 1016 in mg/kg	14	1,900	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor 1221 in mg/kg			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor 1232 in mg/kg			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor 1242 in mg/kg			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor 1248 in mg/kg			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor 1254 in mg/kg	0.5	66	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor 1260 in mg/kg	0.5	66	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Total PCBs in mg/kg	1	10	ND	ND	ND	ND	ND	ND

Notes:
Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.
Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.
U - Analyte was not detected at or above the reported result.

Table 3-12B - Groundwater Quality Data for Log Pond Fill
K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	MW-06 02/17/12	MW-06 06/07/12	MW-06 08/29/12
Total Petroleum Hydrocarbons (TPH)				
Gasoline Range Hydrocarbons in µg/L	1,000	100 U	100 U	100 U
Diesel Range Hydrocarbons in µg/L	500	50 U	50 U	50 U
Oil Range Hydrocarbons in µg/L	500	250 U	250 UJ	250 U
Total TPHs in µg/L	500	ND	ND	ND
Dissolved Metals				
Dissolved Antimony in µg/L	640		1 U	1 U
Dissolved Arsenic in µg/L	5	5.2	6.38	7.8
Dissolved Beryllium in µg/L	270		1 U	1 U
Dissolved Cadmium in µg/L	8.8	1 U	1 U	1 U
Dissolved Chromium (Total) in µg/L	240,000	4.28	5.26	5.32
Dissolved Copper in µg/L	3.1	4.14	3.29	5.29
Dissolved Lead in µg/L	8.1	1 U	1 U	1 U
Dissolved Mercury in µg/L	0.15	0.1 U	0.1 U	0.1 U
Dissolved Nickel in µg/L	8.2	5.95	7.81	10.5
Dissolved Selenium in µg/L	71	12.4	16.3	24.9
Dissolved Silver in µg/L	1.9	1 U	1 U	1 U
Dissolved Thallium in µg/L	0.47		1 U	1 U
Dissolved Zinc in µg/L	81	1.49	13	3.16
Total Metals				
Total Antimony in µg/L	640		1 U	1 U
Total Arsenic in µg/L	5		5.88	6.07
Total Beryllium in µg/L	270		1 U	1 U
Total Cadmium in µg/L	8.8		1 U	1 U
Total Chromium (Total) in µg/L	240,000		6.62	6.95
Total Copper in µg/L	3.1		3.85	4.85
Total Lead in µg/L	8.1		1 U	1.41
Total Mercury in µg/L	0.15		0.1 U	0.1 U
Total Nickel in µg/L	8.2		7.82	9.59
Total Selenium in µg/L	71		14.6	17
Total Silver in µg/L	1.9		1 U	1 U
Total Thallium in µg/L	0.47		1 U	1 U
Total Zinc in µg/L	81		3.96	12.9
Conventional Chemistry Parameters				
Ammonia as Nitrogen in mg/L	0.035		15.5	15.6
Dissolved Sulfide in mg/L			0.05 U	0.050 U
Total Dissolved Solids in mg/L		2,726		
Total Suspended Solids in mg/L		41	13	29
Polycyclic Aromatic Hydrocarbons (PAHs)				
Acenaphthene in µg/L	640	0.1 U	0.05 U	0.05 U
Acenaphthylene in µg/L		0.1 U	0.05 U	0.05 U
Anthracene in µg/L	26,000	0.1 U	0.05 U	0.05 U
Benzo(g,h,i)perylene in µg/L		0.1 U	0.05 U	0.05 U
Fluoranthene in µg/L	90	0.1 U	0.05 U	0.05 U
Fluorene in µg/L	3,500	0.1 U	0.05 U	0.05 U
Phenanthrene in µg/L		0.1 U	0.05 U	0.05 U
Pyrene in µg/L	2,600	0.1 U	0.05 U	0.05 U
2-Methylnaphthalene in µg/L		1 U	1 U	1 U
Naphthalene in µg/L	170	0.1 U	0.05 U	0.05 U
Benz(a)anthracene in µg/L	0.018	0.1 U	0.01 U	0.01 U
Benzo(a)pyrene in µg/L	0.018	0.1 U	0.01 U	0.01 U
Benzo(b)fluoranthene in µg/L	0.018	0.1 U	0.01 U	0.01 U
Benzo(k)fluoranthene in µg/L	0.018	0.1 U	0.01 U	0.01 U
Chrysene in µg/L	0.018	0.1 U	0.01 U	0.01 U
Dibenzo(a,h)anthracene in µg/L	0.018	0.1 U	0.01 U	0.01 U
Indeno(1,2,3-cd)pyrene in µg/L	0.018	0.1 U	0.01 U	0.01 U
Total cPAHs TEQ in µg/L	0.018	ND	ND	ND
Other Semivolatiles				
1,2,4-Trichlorobenzene in µg/L	2	1 U	1 U	1 U
1,2-Dichlorobenzene in µg/L	1,300	1 U	1 U	1 U
1,3-Dichlorobenzene in µg/L	960	1 U	1 U	1 U
1,4-Dichlorobenzene in µg/L	190	1 U	1 U	1 U
2,4,5-Trichlorophenol in µg/L	3,600	10 U	10 U	10 U
2,4,6-Trichlorophenol in µg/L	2.4	10 U	10 U	10 U
2,4-Dichlorophenol in µg/L	190	10 U	10 U	10 U
2,4-Dimethylphenol in µg/L	550	10 U	10 U	10 U
2,4-Dinitrophenol in µg/L	3,500	30 U	30 U	30 U
2-Chloronaphthalene in µg/L	1,000	1 U	1 U	1 U
2-Chlorophenol in µg/L	97	10 U	10 U	10 U
2-Methylphenol in µg/L		10 U	10 U	10 U
2-Nitroaniline in µg/L		1 U	3 U	3 U
2-Nitrophenol in µg/L		10 U	10 U	10 U
3 & 4 Methylphenol in µg/L		20 U	20 U	20 U
3-Nitroaniline in µg/L		3 U	3 U	3 U
4,6-Dinitro-2-methylphenol in µg/L		30 U	30 U	30 U
4-Bromophenyl phenyl ether in µg/L		1 U	1 U	1 U
4-Chloro-3-methylphenol in µg/L		10 U	10 U	10 U
4-Chloroaniline in µg/L		3 U	3 U	3 U
4-Chlorophenyl phenyl ether in µg/L		1 U	1 U	1 U
4-Nitroaniline in µg/L		10 U	10 U	10 U
4-Nitrophenol in µg/L		10 U	10 U	10 U
Benzoic acid in µg/L		50 U	50 U	50 U
Benzyl alcohol in µg/L		10 U	10 U	10 U
Benzyl butyl phthalate in µg/L	8.2	1 U	1 U	1 U
Bis(2-chloro-1-methylethyl) ether in µg/L	37	10 U	10 U	10 U
Bis(2-chloroethoxy)methane in µg/L		1 U	1 U	1 U
Bis(2-chloroethyl) ether in µg/L	0.53	10 U	10 U	10 U
Bis(2-ethylhexyl) phthalate in µg/L	2.2	10 U	10 U	10 U
Carbazole in µg/L		1 U	1 U	1 U
Dibenzofuran in µg/L		1 U	1 U	1 U
Diethyl phthalate in µg/L	28,000	1 U	1 U	1 U
Dimethyl phthalate in µg/L	1,100,000	1 U	1 U	1 U
Di-n-butyl phthalate in µg/L	2,900	1 U	1 U	1 U
Di-n-octyl phthalate in µg/L		1 U	1 U	1 U
Hexachlorobenzene in µg/L	0.00029	1 U	1 U	1 U
Hexachlorobutadiene in µg/L	0.81	1 U	1 U	1 U
Hexachlorocyclopentadiene in µg/L	1,100	3 U	3 U	3 U
Hexachloroethane in µg/L	3.3	1 U	1 U	1 U
Isophorone in µg/L	600	1 U	1 U	1 U
Nitrobenzene in µg/L	690	1 U	1 U	1 U

Table 3-12B - Groundwater Quality Data for Log Pond Fill

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	MW-06 02/17/12	MW-06 06/07/12	MW-06 08/29/12
N-Nitroso-di-n-propylamine in µg/L	0.51	10 U	10 U	10 U
N-Nitrosodiphenylamine in µg/L	6	1 U	1 U	1 U
Pentachlorophenol in µg/L	1.5	10 U	10 U	10 U
Phenol in µg/L	560,000	10 U	10 U	10 U
2,4-Dinitrotoluene in µg/L	3.4	1 U	1 U	1 U
2,6-Dinitrotoluene in µg/L		1 U	1 U	1 U
Volatile Organic Compounds (VOC)				
1,1,1,2-Tetrachloroethane in µg/L	7.4		1 U	1 U
1,1,1-Trichloroethane in µg/L	11,000		1 U	1 U
1,1,2,2-Tetrachloroethane in µg/L	4		1 U	1 U
1,1,2-Trichloroethane in µg/L	7.9		1 U	1 U
1,1-Dichloroethane in µg/L	2,300		1 U	1 U
1,1-Dichloroethene in µg/L	3.2		1 U	1 U
1,1-Dichloropropene in µg/L			1 U	1 U
1,2,3-Trichlorobenzene in µg/L			1 U	1 U
1,2,3-Trichloropropane in µg/L			1 U	1 U
1,2,4-Trichlorobenzene in µg/L	2		1 U	
1,2,4-Trimethylbenzene in µg/L	24		1 U	1 U
1,2-Dibromo-3-chloropropane in µg/L			10 U	10 U
1,2-Dibromoethane (EDB) in µg/L	0.74		1 U	1 U
1,2-Dichlorobenzene in µg/L	1,300		1 U	
1,2-Dichloroethane (EDC) in µg/L	4.2		1 U	1 U
1,2-Dichloropropane in µg/L	15		1 U	1 U
1,3,5-Trimethylbenzene in µg/L	25		1 U	1 U
1,3-Dichlorobenzene in µg/L	960		1 U	
1,3-Dichloropropane in µg/L			1 U	1 U
1,4-Dichlorobenzene in µg/L	190		1 U	
2,2-Dichloropropane in µg/L			1 U	1 U
2-Butanone in µg/L	350,000		10 U	10 U
2-Chlorotoluene in µg/L			1 U	1 U
2-Hexanone in µg/L			10 U	10 U
4-Chlorotoluene in µg/L			1 U	1 U
4-Methyl-2-pentanone in µg/L	11,000		10 U	10 U
Acetone in µg/L			10 U	10 U
Benzene in µg/L	2.4	1 U	0.35 U	0.35 U
Bromobenzene in µg/L			1 U	1 U
Bromodichloromethane in µg/L	0.09		1 U	1 U
Bromoform in µg/L	140		1 U	1 U
Bromomethane in µg/L	13		1 U	1 U
Carbon tetrachloride in µg/L	0.22		1 U	1 U
Chlorobenzene in µg/L	100		1 U	1 U
Chloroethane in µg/L	12		1 U	1 U
Chloroform in µg/L	1.2		1 U	1 U
Chloromethane in µg/L	5.2		10 U	10 U
cis-1,2-Dichloroethene (DCE) in µg/L	160		1 U	1 U
cis-1,3-Dichloropropene in µg/L			1 U	1 U
Dibromochloromethane in µg/L	0.22		1 U	1 U
Dibromomethane in µg/L			1 U	1 U
Dichlorodifluoromethane in µg/L	9.9		1 U	1 U
Ethylbenzene in µg/L	2,100	1 U	1 U	1 U
Hexachlorobutadiene in µg/L	0.81		1 U	1 U
Isopropylbenzene in µg/L	720		1 U	1 U
Methylene chloride in µg/L	94		5 U	5 U
Methyl-Tert-Butyl Ether in µg/L	610		1 U	1 U
n-Propylbenzene in µg/L			1 U	1 U
p-Isopropyltoluene in µg/L			1 U	1 U
sec-Butylbenzene in µg/L			1 U	1 U
Styrene in µg/L	78		1 U	1 U
tert-Butylbenzene in µg/L			1 U	1 U
Tetrachloroethene (PCE) in µg/L	0.39		1 U	1 U
Toluene in µg/L	15,000	1 U	1 U	1 U
trans-1,2-Dichloroethene in µg/L	130		1 U	1 U
trans-1,3-Dichloropropene in µg/L			1 U	1 U
Trichloroethene (TCE) in µg/L	1.6		1 U	1 U
Trichlorofluoromethane in µg/L	120		1 U	1 U
Vinyl chloride in µg/L	0.35		0.2 U	0.2 U
m,p-Xylenes in µg/L	310		2 U	2 U
o-Xylene in µg/L	440		1 U	1 U
Xylenes (total) in µg/L	310	3 U	ND	ND
Field Parameters				
Dissolved Oxygen in mg/L		4.96	0.23	1.66
ORP in mVolts		-141	-39.9	-144
pH in pH Units		7.39	7.34	7.11
Specific Conductance in us/cm		3,809	3,347	3,856
Temperature in deg C		17.2	17.73	18.6
Turbidity in NTU		25.8	22.1	12.6

Notes:

Concentrations in shaded cells indicate value exceeds Groundwater Screening Level.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-13A - Soil Quality Data for Acid Plant

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	AP-MW-1 6/29/12 (1-2 ft)	AP-MW-1 FD 6/29/12 (1-2 ft)	AP-MW-1 6/29/12 (6-7 ft)	AP-MW-1 FD 6/29/12 (6-7 ft)
Metals						
Antimony in mg/kg			1 U	1 U	1 U	1 U
Arsenic in mg/kg	20	20	4.86	4.62	5.72 J	2.57 J
Beryllium in mg/kg			1 U	1 U	1 U	1 U
Cadmium in mg/kg	2	2	1 U	1 U	1 U	1 U
Chromium (Total) in mg/kg	2,000	2,000	11.6	11	18.3	14.6
Copper in mg/kg			11.8	9.5	17.2 J	12 J
Lead in mg/kg	250	1,000	2.42	2.89	2.52	2.13
Mercury in mg/kg	2	2	0.1 U	0.1 U	0.1 U	0.1 U
Nickel in mg/kg			19	18.6	28.7	20.6
Selenium in mg/kg			1 U	1 U	1 U	1 U
Silver in mg/kg			1 U	1 U	1 U	1 U
Thallium in mg/kg			1 U	1 U	1 U	1 U
Zinc in mg/kg			21.9	21.5	32.2	27.2
Conventional Chemistry Parameters						
pH in pH units			7.44	7.45	7.51	

Notes:

Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.

Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

Table 3-13B - Groundwater Quality Data for Acid Plant

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	AP-MW-01 07/03/12	AP-MW-01 07/03/12 FD	AP-MW-01 08/31/12
Dissolved Metals				
Dissolved Antimony in µg/L	640	1 U	1 U	1 U
Dissolved Arsenic in µg/L	5	1.2	1.22	1 U
Dissolved Beryllium in µg/L	270	1 U	1 U	1 U
Dissolved Cadmium in µg/L	8.8	1 U	1 U	1 U
Dissolved Chromium (Total) in µg/L	240,000	1 U	1 U	1 U
Dissolved Copper in µg/L	3.1	1 U	1 U	7.12
Dissolved Lead in µg/L	8.1	1 U	1 U	1 U
Dissolved Mercury in µg/L	0.15	0.1 U	0.1 U	0.1 U
Dissolved Nickel in µg/L	8.2	1.85	2.04	2.41
Dissolved Selenium in µg/L	71	1 U	1 U	1 U
Dissolved Silver in µg/L	1.9	1 U	1 U	1 U
Dissolved Thallium in µg/L	0.47	1 U	1 U	1 U
Dissolved Zinc in µg/L	81	1.39	1.74	5.63
Total Metals				
Total Antimony in µg/L	640	1 U	1 U	1 U
Total Arsenic in µg/L	5	1 U	1.11	1 UJ
Total Beryllium in µg/L	270	1 U	1 U	1 U
Total Cadmium in µg/L	8.8	1 U	1 U	1 U
Total Chromium (Total) in µg/L	240,000	1 U	1 U	1.12
Total Copper in µg/L	3.1	1 U	1 U	1 U
Total Lead in µg/L	8.1	1 U	1 U	1 U
Total Mercury in µg/L	0.15	0.1 U	0.1 U	0.1 U
Total Nickel in µg/L	8.2	1.80	2.02	1.97
Total Selenium in µg/L	71	1 U	1 U	1 U
Total Silver in µg/L	1.9	1 U	1 U	1 U
Total Thallium in µg/L	0.47	1 U	1 U	1 U
Total Zinc in µg/L	81	1.68	1.82	9.51
Conventional Chemistry Parameters				
Total Suspended Solids in mg/L		10 U		10 U
Field Parameters				
Dissolved Oxygen in mg/L		0.39		4.81
ORP in mVolts		-90.4		-93.6
pH in pH Units		7.18		7.22
Specific Conductance in us/cm		661		541.2
Temperature in deg C		14.5		15.9
Turbidity in NTU				3.1

Notes:

Concentrations in shaded cells indicate value exceeds Groundwater Screening Level.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-14A - Soil Quality Data for Central Maintenance Shop

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	CMS-B-1 7/6/12 (0-1 ft)	CMS-B-1 7/6/12 (2-3 ft)	CMS-B-2 7/6/12 (0-1 ft)	CMS-B-2 7/6/12 (2-3 ft)	CMS-B-3 7/6/12 (0-1 ft)	CMS-B-3 7/6/12 (2-3 ft)
Total Petroleum Hydrocarbons (TPH)								
Gasoline Range Hydrocarbons in mg/kg	100	100	2 U	2 U	11	2 U	2 U	2 U
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	50 U	50 U	50 U	58	50 U	50 U
Oil Range Hydrocarbons in mg/kg	2,000	2,000	250 U	250 U	250 U	250 U	250 U	250 U
Total TPH in mg/kg	2,000	2,000	ND	ND	ND	183	ND	ND
Metals								
Antimony in mg/kg			1.68	1 U	1.23	1.21	1 U	1 U
Arsenic in mg/kg	20	20	6.02	4.25	7.06	4.63	6.17	4.3
Beryllium in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U
Cadmium in mg/kg	2	2	1.32	1 U	1 U	1 U	1 U	1 U
Chromium (Total) in mg/kg	2,000	2,000	16.6 J	11.4 J	22.7 J	15.4 J	19.1 J	12.8 J
Copper in mg/kg			74.2	20.1	44.1	37.5	29.9	27.4
Lead in mg/kg	250	1,000	73.3 J	17 J	55.8 J	37.9 J	32.7 J	28.2 J
Mercury in mg/kg	2	2	0.32	0.1 U	0.14	0.24	0.1 U	0.1 U
Nickel in mg/kg			22.4	17	47.5	16.4	17.8	17.7
Selenium in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U
Silver in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U
Thallium in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U
Zinc in mg/kg			297	35.2	57.4	46.1	44.9	58.9
Polycyclic Aromatic Hydrocarbons (PAHs)								
Acenaphthene in mg/kg	4,800	210,000	0.01 U	0.01 U	0.01 U	0.011	0.01 U	0.01 U
Acenaphthylene in mg/kg			0.01 U	0.01 U	0.01 U	0.025	0.01 U	0.01 U
Anthracene in mg/kg	24,000	1,100,000	0.01 U	0.01 U	0.014	0.028	0.01 U	0.01 U
Benzo(g,h,i)perylene in mg/kg			0.01 U	0.03	0.032	0.045	0.013	0.032
Fluoranthene in mg/kg	3,200	140,000	0.01 U	0.01 U	0.12	0.18	0.03	0.083
Fluorene in mg/kg	3,200	140,000	0.01 U	0.01 U	0.01 U	0.016	0.01 U	0.01 U
Phenanthrene in mg/kg			0.01 U	0.01 U	0.062	0.2	0.024	0.068
Pyrene in mg/kg	2,400	110,000	0.01 U	0.01 U	0.14	0.23	0.037	0.098
Naphthalene in mg/kg	5	5	0.01 U	0.01 U	0.092	0.25	0.015	0.05
Benz(a)anthracene in mg/kg	1.4	180	0.01 U	0.01 U	0.034	0.057	0.013	0.031
Benzo(a)pyrene in mg/kg	0.14	2	0.01 U	0.01 U	0.034	0.048	0.013	0.031
Benzo(b)fluoranthene in mg/kg	1.4	180	0.01 U	0.017	0.06	0.083	0.021	0.053
Benzo(k)fluoranthene in mg/kg	14	1,800	0.01 U	0.01 U	0.018	0.021	0.01 U	0.016
Chrysene in mg/kg	140	18,000	0.01 U	0.01 U	0.06	0.093	0.019	0.048
Dibenzo(a,h)anthracene in mg/kg	0.14	18	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	180	0.01 U	0.023	0.029	0.036	0.012	0.027
Total cPAHs TEQ in mg/kg	0.14	2	ND	0.0106	0.0492	0.0691	0.0188	0.0447
Volatile Organic Compounds (VOC)								
1,1,1,2-Tetrachloroethane in mg/kg	38	5,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1,1-Trichloroethane in mg/kg	2	2	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1,2,2-Tetrachloroethane in mg/kg	5	660	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1,2-Trichloroethane in mg/kg	18	2,300	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2,3-Trichlorobenzene in mg/kg			0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2,3-Trichloropropane in mg/kg	0.033	4.4	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2,4-Trichlorobenzene in mg/kg	35	4,500	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2,4-Trimethylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dibromo-3-chloropropane in mg/kg	1.3	160	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichloroethane (EDC) in mg/kg	11	1,400	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,3,5-Trimethylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,3-Dichlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,3-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,4-Dichlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2,2-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2-Butanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Chlorotoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2-Hexanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
4-Chlorotoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
4-Methyl-2-pentanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Acetone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene in mg/kg	0.03	0.03	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Bromobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Bromodichloromethane in mg/kg	16	2,100	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Bromoform in mg/kg	130	17,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Bromomethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride in mg/kg	14	1,900	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chloroethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chloromethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene (DCE) in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
cis-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dibromochloromethane in mg/kg	12	1,600	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dibromomethane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dichlorodifluoromethane in mg/kg			0.5 U		0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene in mg/kg	6	6	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Hexachlorobutadiene in mg/kg	13	1,700	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Isopropylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Methylene chloride in mg/kg	0.02	0.02	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
n-Propylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
p-Isopropyltoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
sec-Butylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Styrene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
tert-Butylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Tetrachloroethene (PCE) in mg/kg	0.05	0.05	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
Toluene in mg/kg	7	7	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
trans-1,2-Dichloroethene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
trans-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Trichloroethene (TCE) in mg/kg	0.03	0.03	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Trichlorofluoromethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl chloride in mg/kg	0.67	88	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
m,p-Xylenes in mg/kg	16,000	700,000	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
o-Xylene in mg/kg	16,000	700,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Xylenes (total) in mg/kg	9	9	ND	ND	ND	ND	ND	ND
Polychlorinated Biphenyls (PCBs)								
Aroclor 1016 in mg/kg	14	1,900	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor 1221 in mg/kg			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor 1232 in mg/kg			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor 1242 in mg/kg			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor 1248 in mg/kg			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor 1254 in mg/kg	0.5	66	0.1 U	0.1 U	1.3	0.4	1.3	1
Aroclor 1260 in mg/kg	0.5	66	0.1 U	0.1 U	0.6	0.2	1	0.9
Total PCBs in mg/kg	1	10	ND	ND	2.15	0.85	2.55	2.15

Notes:

Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.

Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

Table 3-14B - Groundwater Quality Data for Central Maintenance Shop

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	CMS-MW-01 07/02/12	CMS-MW-01 07/03/12	CMS-MW-01 08/29/12
Total Petroleum Hydrocarbons (TPH)				
Gasoline Range Hydrocarbons in µg/L	1,000	100 U		290
Diesel Range Hydrocarbons in µg/L	500	610		620
Oil Range Hydrocarbons in µg/L	500	250 U		250 U
Total TPHs in µg/L	500	735		745
Dissolved Metals				
Dissolved Antimony in µg/L	640		1 U	1 U
Dissolved Arsenic in µg/L	5		1.26	1.22
Dissolved Beryllium in µg/L	270		1 U	1 U
Dissolved Cadmium in µg/L	8.8		1 U	1 U
Dissolved Chromium (Total) in µg/L	240,000		1.59	1.42
Dissolved Copper in µg/L	3.1		1 U	1 U
Dissolved Lead in µg/L	8.1		1 U	1 U
Dissolved Mercury in µg/L	0.15		0.1 U	0.1 U
Dissolved Nickel in µg/L	8.2		7.18	1.54
Dissolved Selenium in µg/L	71		1 U	1 U
Dissolved Silver in µg/L	1.9		1 U	1 U
Dissolved Thallium in µg/L	0.47		1 U	1 U
Dissolved Zinc in µg/L	81		2.73	1.09
Total Metals				
Total Antimony in µg/L	640	1 U		1 U
Total Arsenic in µg/L	5	1 U		1.5
Total Beryllium in µg/L	270	1 U		1 U
Total Cadmium in µg/L	8.8	1 U		1 U
Total Chromium (Total) in µg/L	240,000	1.61		1.66
Total Copper in µg/L	3.1	1 U		1 U
Total Lead in µg/L	8.1	1 U		1 U
Total Mercury in µg/L	0.15	0.1 U		0.1 U
Total Nickel in µg/L	8.2	1.11		1.9
Total Selenium in µg/L	71	1 U		1.01
Total Silver in µg/L	1.9	1 U		1 U
Total Thallium in µg/L	0.47	1 U		1 U
Total Zinc in µg/L	81	1.65		1.87 J
Conventional Chemistry Parameters				
Total Suspended Solids in mg/L		10 U		10 U
Polycyclic Aromatic Hydrocarbons (PAHs)				
Acenaphthene in µg/L	640	54		58
Acenaphthylene in µg/L		0.68		0.73
Anthracene in µg/L	26,000	1.9		2.6
Benzo(g,h,i)perylene in µg/L		0.05 U		0.5 U
Fluoranthene in µg/L	90	6.1		6.4
Fluorene in µg/L	3,500	29		35
Phenanthrene in µg/L		36		41
Pyrene in µg/L	2,600	4.2		4.2
Naphthalene in µg/L	170	200		180
Benz(a)anthracene in µg/L	0.018	0.26		0.24
Benzo(a)pyrene in µg/L	0.018	0.011		0.1 U
Benzo(b)fluoranthene in µg/L	0.018	0.022		0.1 U
Benzo(k)fluoranthene in µg/L	0.018	0.01 U		0.1 U
Chrysene in µg/L	0.018	0.14		0.11
Dibenzo(a,h)anthracene in µg/L	0.018	0.01 U		0.1 U
Indeno(1,2,3-cd)pyrene in µg/L	0.018	0.01 U		0.1 U
Total cPAHs TEQ in µg/L	0.018	0.0421		0.0405 J
Volatile Organic Compounds (VOC)				
1,1,1,2-Tetrachloroethane in µg/L	7.4	1 U		1 U
1,1,1-Trichloroethane in µg/L	11,000	1 U		1 U
1,1,2,2-Tetrachloroethane in µg/L	4	1 U		1 U
1,1,2-Trichloroethane in µg/L	7.9	1 U		1 U
1,1-Dichloroethane in µg/L	2,300	1 U		1 U
1,1-Dichloroethene in µg/L	3.2	1 U		1 U
1,1-Dichloropropene in µg/L		1 U		1 U
1,2,3-Trichlorobenzene in µg/L		1 U		1 U
1,2,3-Trichloropropane in µg/L		1 U		1 U
1,2,4-Trichlorobenzene in µg/L	2	1 U		1 U
1,2,4-Trimethylbenzene in µg/L	24	1 U		1 U

Table 3-14B - Groundwater Quality Data for Central Maintenance Shop

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	CMS-MW-01 07/02/12	CMS-MW-01 07/03/12	CMS-MW-01 08/29/12
1,2-Dibromo-3-chloropropane in µg/L		10 U		10 U
1,2-Dibromoethane (EDB) in µg/L	0.74	1 U		1 U
1,2-Dichlorobenzene in µg/L	1,300	1 U		1 U
1,2-Dichloroethane (EDC) in µg/L	4.2	1 U		1 U
1,2-Dichloropropane in µg/L	15	1 U		1 U
1,3,5-Trimethylbenzene in µg/L	25	1 U		1 U
1,3-Dichlorobenzene in µg/L	960	1 U		1 U
1,3-Dichloropropane in µg/L		1 U		1 U
1,4-Dichlorobenzene in µg/L	190	1 U		1 U
2,2-Dichloropropane in µg/L		1 U		1 U
2-Butanone in µg/L	350,000	10 U		10 U
2-Chlorotoluene in µg/L		1 U		1 U
2-Hexanone in µg/L		10 U		10 U
4-Chlorotoluene in µg/L		1 U		1 U
4-Methyl-2-pentanone in µg/L	11,000	10 U		10 U
Acetone in µg/L		10 U		10 U
Benzene in µg/L	2.4	0.35 U		0.35 U
Bromobenzene in µg/L		1 U		1 U
Bromodichloromethane in µg/L	0.09	1 U		1 U
Bromoform in µg/L	140	1 U		1 U
Bromomethane in µg/L	13	1 U		1 U
Carbon tetrachloride in µg/L	0.22	1 U		1 U
Chlorobenzene in µg/L	100	1 U		1 U
Chloroethane in µg/L	12	1 U		1 U
Chloroform in µg/L	1.2	1 U		1 U
Chloromethane in µg/L	5.2	10 U		10 U
cis-1,2-Dichloroethene (DCE) in µg/L	160	1 U		1 U
cis-1,3-Dichloropropene in µg/L		1 U		1 U
Dibromochloromethane in µg/L	0.22	1 U		1 U
Dibromomethane in µg/L		1 U		1 U
Dichlorodifluoromethane in µg/L	9.9	1 U		1 U
Ethylbenzene in µg/L	2,100	1 U		1 U
Hexachlorobutadiene in µg/L	0.81	1 U		1 U
Isopropylbenzene in µg/L	720	1 U		1 U
Methylene chloride in µg/L	94	5 U		5 U
Methyl-Tert-Butyl Ether in µg/L	610	1 U		1 U
n-Propylbenzene in µg/L		1 U		1 U
p-Isopropyltoluene in µg/L		1 U		1 U
sec-Butylbenzene in µg/L		1 U		1 U
Styrene in µg/L	78	1 U		1 U
tert-Butylbenzene in µg/L		1 U		1 U
Tetrachloroethene (PCE) in µg/L	0.39	1 U		1 U
Toluene in µg/L	15,000	1 U		1 U
trans-1,2-Dichloroethene in µg/L	130	1 U		1 U
trans-1,3-Dichloropropene in µg/L		1 U		1 U
Trichloroethene (TCE) in µg/L	1.6	1 U		1 U
Trichlorofluoromethane in µg/L	120	1 U		1 U
Vinyl chloride in µg/L	0.35	0.2 U		0.2 U
m,p-Xylenes in µg/L	310	2 U		2 U
o-Xylene in µg/L	440	1 U		1 U
Xylenes (total) in µg/L	310	ND		ND
Field Parameters				
Dissolved Oxygen in mg/L		0.42		3.71
ORP in mVolts		-117.5		-138.6
pH in pH Units		6.87		7.02
Specific Conductance in us/cm		434		380.6
Temperature in deg C		16.8		18.5
Turbidity in NTU				1.59

Notes:

Concentrations in shaded cells indicate value exceeds Groundwater Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

Table 3-15A - Soil Quality Data for Old Machine Shop

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	OMS-B-1 7/5/12 (0-1 ft)	OMS-B-1 7/5/12 (2-3 ft)	OMS-B-2 7/5/12 (0-1 ft)	OMS-B-2 7/5/12 (2-3 ft)	OMS-B-3 7/5/12 (0-1 ft)	OMS-B-3 7/6/12 (2-3 ft)
Total Petroleum Hydrocarbons (TPH)								
Gasoline Range Hydrocarbons in mg/kg	100	100	2 U	2 U	2 U	2 U	2 U	2 U
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	50 U	50 U	50 U	50 U	50 U	50 U
Oil Range Hydrocarbons in mg/kg	2,000	2,000	250 U	250 U	250 U	250 U	250 U	250 U
Total TPH in mg/kg	2,000	2,000	ND	ND	ND	ND	ND	ND
Metals								
Antimony in mg/kg			1 U	1 U	1 U	1 U	4.81	22
Arsenic in mg/kg	20	20	5.54	8.16	5.99	5.48	3.84	7.12
Beryllium in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U
Cadmium in mg/kg	2	2	1 U	1 U	1 U	1 U	1 U	1 U
Chromium (Total) in mg/kg	2,000	2,000	16.4	20.7	20.7	16.9	10.8	22.4
Copper in mg/kg			19.2	31.6	34	18.4	59.7	265
Lead in mg/kg	250	1,000	4.17	4.92	4.31	3.89	116	378
Mercury in mg/kg	2	2	0.1 U	0.1 U	0.1 U	0.1 U	0.23	0.84
Nickel in mg/kg			22.6 J	28.5 J	30.9 J	20.5 J	23.9 J	62.7 J
Selenium in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U
Silver in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U
Thallium in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U
Zinc in mg/kg			33.7	43.4	37.6	32.4	59.3	117
Polycyclic Aromatic Hydrocarbons (PAHs)								
Acenaphthene in mg/kg	4,800	210,000	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.013
Acenaphthylene in mg/kg			0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.017
Anthracene in mg/kg	24,000	1,100,000	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.054
Benzo(g,h,i)perylene in mg/kg			0.01 U	0.01 U	0.01 U	0.01 U	0.064	
Fluoranthene in mg/kg	3,200	140,000	0.01 U	0.01 U	0.01 U	0.01 U	0.14	0.62
Fluorene in mg/kg	3,200	140,000	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.018
Phenanthrene in mg/kg			0.01 U	0.01 U	0.01 U	0.01 U	0.094	0.42
Pyrene in mg/kg	2,400	110,000	0.01 U	0.01 U	0.01 U	0.01 U	0.17	0.66
Naphthalene in mg/kg	5	5	0.01 U	0.01 U	0.01 U	0.01 U	0.012	0.053
Benz(a)anthracene in mg/kg	1.4	180	0.01 U	0.01 U	0.01 U	0.01 U	0.053	0.3
Benzo(a)pyrene in mg/kg	0.14	2	0.01 U	0.01 U	0.01 U	0.01 U	0.069	
Benzo(b)fluoranthene in mg/kg	1.4	180	0.01 U	0.01 U	0.01 U	0.01 U	0.093	
Benzo(k)fluoranthene in mg/kg	14	1,800	0.01 U	0.01 U	0.01 U	0.01 U	0.036	
Chrysene in mg/kg	140	18,000	0.01 U	0.01 U	0.01 U	0.01 U	0.087	0.46
Dibenzo(a,h)anthracene in mg/kg	0.14	18	0.01 U	0.01 U	0.01 U	0.01 U	0.012	
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	180	0.01 U	0.01 U	0.01 U	0.01 U	0.06	
Total cPAHs TEQ in mg/kg	0.14	2	ND	ND	ND	ND	0.0953	0.462
Volatile Organic Compounds (VOC)								
1,1,1,2-Tetrachloroethane in mg/kg	38	5,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1,1-Trichloroethane in mg/kg	2	2	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1,2,2-Tetrachloroethane in mg/kg	5	660	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1,2-Trichloroethane in mg/kg	18	2,300	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2,3-Trichlorobenzene in mg/kg			0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2,3-Trichloropropane in mg/kg	0.033	4.4	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2,4-Trichlorobenzene in mg/kg	35	4,500	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2,4-Trimethylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dibromo-3-chloropropane in mg/kg	1.3	160	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichloroethane (EDC) in mg/kg	11	1,400	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,3,5-Trimethylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,3-Dichlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,3-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,4-Dichlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2,2-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2-Butanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Chlorotoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2-Hexanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
4-Chlorotoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
4-Methyl-2-pentanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Acetone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene in mg/kg	0.03	0.03	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Bromobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Bromodichloromethane in mg/kg	16	2,100	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Bromoform in mg/kg	130	17,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Bromomethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride in mg/kg	14	1,900	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chloroethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chloromethane in mg/kg			0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene (DCE) in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
cis-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dibromochloromethane in mg/kg	12	1,600	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dibromomethane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dichlorodifluoromethane in mg/kg			0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene in mg/kg	6	6	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Hexachlorobutadiene in mg/kg	13	1,700	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Isopropylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Methylene chloride in mg/kg	0.02	0.02	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
n-Propylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
p-Isopropyltoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
sec-Butylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Styrene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
tert-Butylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Tetrachloroethene (PCE) in mg/kg	0.05	0.05	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
Toluene in mg/kg	7	7	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
trans-1,2-Dichloroethene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
trans-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Trichloroethene (TCE) in mg/kg	0.03	0.03	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Trichlorofluoromethane in mg/kg			0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl chloride in mg/kg	0.67	88	0.05 UJ	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
m,p-Xylenes in mg/kg	16,000	700,000	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
o-Xylene in mg/kg	16,000	700,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Xylenes (total) in mg/kg	9	9	ND	ND	ND	ND	ND	ND
Polychlorinated Biphenyls (PCBs)								
Aroclor 1016 in mg/kg	14	1,900	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor 1221 in mg/kg			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor 1232 in mg/kg			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor 1242 in mg/kg			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor 1248 in mg/kg			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor 1254 in mg/kg	0.5	66	0.1 U	0.1 U	0.1 U	0.1 U	1.1	1.9
Aroclor 1260 in mg/kg	0.5	66	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Total PCBs in mg/kg	1	10	ND	ND	ND	ND	1.4	2.2

Notes:

Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.

Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-15B - Groundwater Quality Data for Old Machine Shop

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	OMS-MW-01 06/06/12	OMS-MW-01 08/28/12
Total Petroleum Hydrocarbons (TPH)			
Gasoline Range Hydrocarbons in µg/L	1,000	100 U	100 U
Diesel Range Hydrocarbons in µg/L	500	50 U	50 U
Oil Range Hydrocarbons in µg/L	500	250 UJ	250 U
Total TPHs in µg/L	500	ND	ND
Dissolved Metals			
Dissolved Antimony in µg/L	640	1.1	0.51 J
Dissolved Arsenic in µg/L	5	0.76	0.64
Dissolved Beryllium in µg/L	270	0.02 U	0.0222 U
Dissolved Cadmium in µg/L	8.8	0.079	0.009 J
Dissolved Chromium (Total) in µg/L	240,000	0.35	3.11
Dissolved Copper in µg/L	3.1	1.07	0.557
Dissolved Lead in µg/L	8.1	0.056	0.058 J
Dissolved Mercury in µg/L	0.15	0.1 U	0.1 U
Dissolved Nickel in µg/L	8.2	6.75	18.6
Dissolved Selenium in µg/L	71	0.8 J	1.0 U
Dissolved Silver in µg/L	1.9	0.005 J	0.006 J
Dissolved Thallium in µg/L	0.47	0.026	0.022 U
Dissolved Zinc in µg/L	81	3.99	6.31
Conventional Chemistry Parameters			
Ammonia as Nitrogen in mg/L	0.035	0.023 J	0.129
Dissolved Sulfide in mg/L		0.05 U	0.050 U
Total Suspended Solids in mg/L		17	10 U
Polycyclic Aromatic Hydrocarbons (PAHs)			
Acenaphthene in µg/L	640	0.05 U	0.05 U
Acenaphthylene in µg/L		0.05 U	0.05 U
Anthracene in µg/L	26,000	0.05 U	0.05 U
Benzo(g,h,i)perylene in µg/L		0.05 UJ	0.05 U
Fluoranthene in µg/L	90	0.05 UJ	0.05 U
Fluorene in µg/L	3,500	0.05 U	0.05 U
Phenanthrene in µg/L		0.05 U	0.05 U
Pyrene in µg/L	2,600	0.05 UJ	0.05 U
2-Methylnaphthalene in µg/L		1 U	1 U
Naphthalene in µg/L	170	0.05 U	0.05 U
Benz(a)anthracene in µg/L	0.018	0.01 UJ	0.01 U
Benzo(a)pyrene in µg/L	0.018	0.01 UJ	0.01 U
Benzo(b)fluoranthene in µg/L	0.018	0.01 UJ	0.01 U
Benzo(k)fluoranthene in µg/L	0.018	0.01 UJ	0.01 U
Chrysene in µg/L	0.018	0.01 UJ	0.01 U
Dibenzo(a,h)anthracene in µg/L	0.018	0.01 UJ	0.01 U
Indeno(1,2,3-cd)pyrene in µg/L	0.018	0.01 UJ	0.01 U
Total cPAHs TEQ in µg/L	0.018	ND	ND
Other Semivolatiles			
1,2,4-Trichlorobenzene in µg/L	2	1 U	1 U
1,2-Dichlorobenzene in µg/L	1,300	1 U	1 U
1,3-Dichlorobenzene in µg/L	960	1 U	1 U
1,4-Dichlorobenzene in µg/L	190	1 U	1 U
2,4,5-Trichlorophenol in µg/L	3,600	10 U	10 U
2,4,6-Trichlorophenol in µg/L	2.4	10 U	10 U
2,4-Dichlorophenol in µg/L	190	10 U	10 U
2,4-Dimethylphenol in µg/L	550	10 U	10 U
2,4-Dinitrophenol in µg/L	3,500	30 U	30 U
2-Chloronaphthalene in µg/L	1,000	1 U	1 U
2-Chlorophenol in µg/L	97	10 U	10 U
2-Methylphenol in µg/L		10 U	10 U
2-Nitroaniline in µg/L		3 U	3 U
2-Nitrophenol in µg/L		10 U	10 U
3 & 4 Methylphenol in µg/L		20 U	20 U
3-Nitroaniline in µg/L		3 U	3 U
4,6-Dinitro-2-methylphenol in µg/L		30 U	30 U
4-Bromophenyl phenyl ether in µg/L		1 U	1 U
4-Chloro-3-methylphenol in µg/L		10 U	10 U
4-Chloroaniline in µg/L		3 U	3 U
4-Chlorophenyl phenyl ether in µg/L		1 U	1 U
4-Nitroaniline in µg/L		10 U	10 U
4-Nitrophenol in µg/L		10 U	10 U
Benzoic acid in µg/L		50 U	50 U
Benzyl alcohol in µg/L		10 U	10 U
Benzyl butyl phthalate in µg/L	8.2	1 U	1 U
Bis(2-chloro-1-methylethyl) ether in µg/L	37	10 U	10 U
Bis(2-chloroethoxy)methane in µg/L		1 U	1 U
Bis(2-chloroethyl) ether in µg/L	0.53	10 U	10 U
Bis(2-ethylhexyl) phthalate in µg/L	2.2	10 U	10 U
Carbazole in µg/L		1 U	1 U
Dibenzofuran in µg/L		1 U	1 U
Diethyl phthalate in µg/L	28,000	1 U	1 U
Dimethyl phthalate in µg/L	1,100,000	1 U	1 U
Di-n-butyl phthalate in µg/L	2,900	1 U	1 U
Di-n-octyl phthalate in µg/L		1 U	1 U
Hexachlorobenzene in µg/L	0.00029	1 U	1 U
Hexachlorobutadiene in µg/L	0.81	1 U	1 U
Hexachlorocyclopentadiene in µg/L	1,100	3 U	3 U
Hexachloroethane in µg/L	3.3	1 U	1 U
Isophorone in µg/L	600	1 U	1 U
Nitrobenzene in µg/L	690	1 U	1 U
N-Nitroso-di-n-propylamine in µg/L	0.51	10 U	10 U
N-Nitrosodiphenylamine in µg/L	6	1 U	1 U
Pentachlorophenol in µg/L	1.5	10 U	10 U
Phenol in µg/L	560,000	10 U	10 U
2,4-Dinitrotoluene in µg/L	3.4	1 U	1 U
2,6-Dinitrotoluene in µg/L		1 U	1 U
Volatile Organic Compounds (VOC)			
1,1,1,2-Tetrachloroethane in µg/L	7.4	1 U	1 U
1,1,1-Trichloroethane in µg/L	11,000	1 U	1 U
1,1,2,2-Tetrachloroethane in µg/L	4	1 U	1 U
1,1,2-Trichloroethane in µg/L	7.9	1 U	1 U
1,1-Dichloroethane in µg/L	2,300	1 U	1 U
1,1-Dichloroethene in µg/L	3.2	1 U	1 U
1,1-Dichloropropene in µg/L		1 U	1 U
1,2,3-Trichlorobenzene in µg/L		1 U	1 U

Table 3-15B - Groundwater Quality Data for Old Machine Shop

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	OMS-MW-01 06/06/12	OMS-MW-01 08/28/12
1,2,3-Trichloropropane in µg/L		1 U	1 U
1,2,4-Trichlorobenzene in µg/L	2	1 U	
1,2,4-Trimethylbenzene in µg/L	24	1 U	1 U
1,2-Dibromo-3-chloropropane in µg/L		10 U	10 U
1,2-Dibromoethane (EDB) in µg/L	0.74	1 U	1 U
1,2-Dichlorobenzene in µg/L	1,300	1 U	
1,2-Dichloroethane (EDC) in µg/L	4.2	1 U	1 U
1,2-Dichloropropane in µg/L	15	1 U	1 U
1,3,5-Trimethylbenzene in µg/L	25	1 U	1 U
1,3-Dichlorobenzene in µg/L	960	1 U	
1,3-Dichloropropane in µg/L		1 U	1 U
1,4-Dichlorobenzene in µg/L	190	1 U	
2,2-Dichloropropane in µg/L		1 U	1 U
2-Butanone in µg/L	350,000	10 U	10 U
2-Chlorotoluene in µg/L		1 U	1 U
2-Hexanone in µg/L		10 U	10 U
4-Chlorotoluene in µg/L		1 U	1 U
4-Methyl-2-pentanone in µg/L	11,000	10 U	10 U
Acetone in µg/L		10 U	10 U
Benzene in µg/L	2.4	0.35 U	0.35 U
Bromobenzene in µg/L		1 U	1 U
Bromodichloromethane in µg/L	0.09	1 U	1 U
Bromoform in µg/L	140	1 UJ	1 U
Bromomethane in µg/L	13	1 U	1 U
Carbon tetrachloride in µg/L	0.22	1 U	1 U
Chlorobenzene in µg/L	100	1 U	1 U
Chloroethane in µg/L	12	1 U	1 U
Chloroform in µg/L	1.2	1 U	1 U
Chloromethane in µg/L	5.2	10 U	10 U
cis-1,2-Dichloroethene (DCE) in µg/L	160	1 U	1 U
cis-1,3-Dichloropropene in µg/L		1 U	1 U
Dibromochloromethane in µg/L	0.22	1 U	1 U
Dibromomethane in µg/L		1 U	1 U
Dichlorodifluoromethane in µg/L	9.9	1 U	1 U
Ethylbenzene in µg/L	2,100	1 U	1 U
Hexachlorobutadiene in µg/L	0.81	1 U	1 U
Isopropylbenzene in µg/L	720	1 U	1 U
Methylene chloride in µg/L	94	5 UJ	5 U
Methyl-Tert-Butyl Ether in µg/L	610	1 U	1 U
n-Propylbenzene in µg/L		1 U	1 U
p-Isopropyltoluene in µg/L		1 U	1 U
sec-Butylbenzene in µg/L		1 U	1 U
Styrene in µg/L	78	1 U	1 U
tert-Butylbenzene in µg/L		1 U	1 U
Tetrachloroethene (PCE) in µg/L	0.39	1 U	1 U
Toluene in µg/L	15,000	1 U	1 U
trans-1,2-Dichloroethene in µg/L	130	1 U	1 U
trans-1,3-Dichloropropene in µg/L		1 U	1 U
Trichloroethene (TCE) in µg/L	1.6	1 U	1 U
Trichlorofluoromethane in µg/L	120	1 U	1 U
Vinyl chloride in µg/L	0.35	0.2 U	0.2 U
m,p-Xylenes in µg/L	310	2 U	2 U
o-Xylene in µg/L	440	1 U	1 U
Xylenes (total) in µg/L	310	ND	ND
Field Parameters			
Dissolved Oxygen in mg/L		4.69	2.41
ORP in mVolts		115.1	-55.1
pH in pH Units		7.16	6.91
Specific Conductance in us/cm		19,300	25,177
Temperature in deg C		14.5	18.2
Turbidity in NTU		15.8	1.73

Notes:

Concentrations in shaded cells indicate value exceeds Groundwater Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-16A - Soil Quality Data for Boiler/Baghouse Area

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	Boiler-B-1 7/5/12 (1-2 ft)	Boiler-B-2 7/5/12 (1-2 ft)	Boiler-B-3 7/5/12 (1-2 ft)	Boiler-B-3A 9/5/12 (1-2 ft)	Boiler-B-3A 9/5/12 (4-5 ft)	Boiler-B-3A 9/5/12 (6.5-7.5 ft	Boiler-B-3B 9/5/12 (1-2 ft)	Boiler-B-3B 9/5/12 (4-5 ft)	Boiler-B-4 7/6/12 (1-1.5 ft)	Boiler-B-5 7/6/12 (1-1.5 ft)	Boiler-HA-2A 9/5/12 (1 ft)	Boiler-HA-2A 9/5/12 (2-3 ft)	Boiler-HA-2B 9/5/12 (0-1 ft)	Boiler-HA-2B FD 9/5/12 (0-1 ft	Boiler-HA-2C 9/5/12 (0-1 ft)	Boiler-HA-2C 9/5/12 (2-3 ft)	Boiler-MW-1 9/5/12 (10-11 ft)	Boiler-MW-1 9/5/12 (12-13 ft)	Boiler-MW-1 9/5/12 (16-17 ft)
Total Petroleum Hydrocarbons (TPH)																					
Diesel Range Hydrocarbons in mg/kg	2,000	2,000			62,000 J	440	50 U	50 U	50 U	50 U			50 U	50 U	59		160	50 U	77	13,000	50 U
Oil Range Hydrocarbons in mg/kg	2,000	2,000			46,000 J	420	250 U	250 U	250 U	250 U			250 U	250 U	280		380	250 U	250 U	11,000	250 U
Total TPH in mg/kg	2,000	2,000			108,000	860	ND	ND	ND	ND			ND	ND	339		540	ND	202	24,000	ND
Metals																					
Antimony in mg/kg			7.2	71.9	1.46	2.92	1 U	1.03	23.2	1.06	1 U	1 U							1 U	1 U	1 U
Arsenic in mg/kg	20	20	33.6	8.77	8.79	11.2	2.35	2.41	74.4	3.92	4.06	2.11	3.74	4.03	14.5	20.3	7.44	4.35	2.47	2.26	3.78
Beryllium in mg/kg			1 U	1 U	1 U	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 U	1 U							1 UJ	1 UJ	1 UJ
Cadmium in mg/kg	2	2	1 U	1 U	1 U	7.85	1 U	1 U	2.3	1 U	1 U	1 U							1 U	1 U	1 U
Chromium (Total) in mg/kg	2,000	2,000	15.3	15.5	18.6	18.9	9.02	11.2	60.4 J	17.8	17.1	10.7							7.85	6.62	6.17
Copper in mg/kg			65.4	167	153	86.7	14.3	9.04	278 J	90.5	33.2	13.3							6.88	5.2	5.85
Lead in mg/kg	250	1,000	118	1,870	342	136	8.75	2.47	489	28.5	19.8	6.02	22.1	35.1	1,590	1,780	328	74	3.62	1.15	1.22
Mercury in mg/kg	2	2	0.2	1.8 J	1.5	0.96	0.1 U	0.1 U	1.6	0.1 U	0.1 U	0.1 U							0.1 U	0.1 U	0.1 U
Nickel in mg/kg			12.3 J	18.4 J	21.3 J	35.9	15.4	15.3	15.7 J	21.4	78.7 J	26 J							12.6	16	14.6
Selenium in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U	1.84	1 U	1 U	1 U							1 U	1 U	1 U
Silver in mg/kg			1 U	1 U	1 U	1.94	1 U	1 U	1 U	1 U	1 U	1 U							1 U	1 U	1 U
Thallium in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U							1 U	1 U	1 U
Zinc in mg/kg			222	87.9	61.3	812	33.3	19.3	308 J	56.5	54.1	34.9							15.6	14.5	13.3
TCLP Metals																					
Arsenic in mg/L				1 U	1 U				1 U						1 U		1 U				
Barium in mg/L				1 U	1 U				1 U						1 U		1 U				
Cadmium in mg/L				1 U	1 U				1 U						1 U		1 U				
Chromium in mg/L				1 U	1 U				1 U						1 U		1 U				
Lead in mg/L				4.22	1 U				1 U						1 U		1 U				
Mercury in mg/L				0.1 U	0.1 U				0.1 U						0.1 U		0.1 U				
Silver in mg/L				1 U	1 U				1 U						1 U		1 U				
Selenium in mg/L				1 U	1 U				1 U						1 U		1 U				
Polycyclic Aromatic Hydrocarbons (PAHs)																					
Acenaphthene in mg/kg	4,800	210,000	0.03 U	0.03 U	31	0.01 U	0.01 U	0.01 U	0.01 UJ	0.01 U	0.03 U	0.03 U	0.01 U	0.01 U	0.11		0.013	0.01 U	0.018	4	0.01 U
Acenaphthylene in mg/kg			0.03 U	0.03 U	3 U	0.01 U	0.01 U	0.01 U	0.01 UJ	0.01 U	0.03 U	0.03 U	0.01 U	0.01 U	0.015		0.032	0.01 U	0.01 U	1 U	0.01 U
Anthracene in mg/kg	24,000	1,100,000	0.03 U	0.03 U	32	0.01 U	0.01 U	0.01 U	0.013 J	0.01 U	0.03 U	0.03 U	0.01 U	0.01 U	0.22		0.071	0.011	0.024	4.5	0.01 U
Benzo(g,h,i)perylene in mg/kg			0.037	0.15	11	0.18	0.01 U	0.01 U	0.024 J	0.012	0.03 U	0.03 U	0.049	0.058	0.17		0.15	0.05	0.016	1 U	0.01 U
Fluoranthene in mg/kg	3,200	140,000	0.19	0.26	16	0.026	0.01 U	0.01 U	0.064 J	0.01 U	0.11	0.032	0.093	0.082	1		0.33	0.055	0.014	1.4	0.01 U
Fluorene in mg/kg	3,200	140,000	0.03 U	0.03 U	64	0.01 U	0.01 U	0.01 U	0.01 UJ	0.01 U	0.03 U	0.03 U	0.01 U	0.01 U	0.12		0.025	0.01 U	0.03	2.1	0.01 U
Phenanthrene in mg/kg			0.03 U	0.11	300	0.036	0.01 U	0.01 U	0.091 J	0.011	0.072	0.03 U	0.05	0.048	0.99		0.35	0.064	0.074	1.1	0.01 U
Pyrene in mg/kg	2,400	110,000	0.18	0.29	120	0.018	0.01 U	0.01 U	0.073 J	0.012	0.081	0.034	0.1	0.083	1		0.39	0.065	0.074	8.9	0.01 U
2-Methylnaphthalene in mg/kg			0.03 U	0.053	300						0.11	0.03 U									
Naphthalene in mg/kg	5	5	0.053	0.035	5.9	0.024	0.01 U	0.01 U	0.17 J	0.014	0.28	0.03 U	0.019	0.017	0.32		0.39	0.098	0.01 U	1 U	0.01 U
Benz(a)anthracene in mg/kg	1.4	180	0.059	0.19	32	0.01 U	0.01 U	0.01 U	0.033 J	0.01 U	0.032	0.03 U	0.049	0.037	0.47		0.2	0.033	0.019	3.1	0.01 U
Benzo(a)pyrene in mg/kg	0.14	2	0.039	0.2	26	0.028	0.01 U	0.01 U	0.024 J	0.01 U	0.03 U	0.03 U	0.061	0.066	0.35		0.2	0.039	0.018	1.3	0.01 U
Benzo(b)fluoranthene in mg/kg	1.4	180	0.12	0.27	11	0.037	0.01 U	0.01 U	0.045 J	0.014	0.05 J	0.03 U	0.11	0.088	0.56		0.33	0.068	0.01	1 U	0.01 U
Benzo(k)fluoranthene in mg/kg	14	1,800	0.035	0.096	3 U	0.01 U	0.01 U	0.01 U	0.015 J	0.01 U	0.03 U	0.03 U	0.034	0.027	0.19		0.086	0.015	0.01 U	1 U	0.01 U
Chrysene in mg/kg	140	18,000	0.092	0.22	70	0.02	0.01 U	0.01 U	0.050 J	0.011	0.043	0.03 U	0.078	0.064	0.54		0.25	0.046	0.047	6.3	0.01 U
Dibenzo(a,h)anthracene in mg/kg	0.14	18	0.03 U	0.035	4.5	0.019	0.01 U	0.01 U	0.01 UJ	0.01 U	0.03 U	0.03 U	0.012	0.011	0.054		0.042	0.01 U	0.01 U	1 U	0.01 U
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	180	0.041	0.15	3.5	0.056	0.01 U	0.01 U	0.024 J	0.013 J	0.03 U	0.03 U	0.061 J	0.063	0.21 J		0.18 J	0.046 J	0.01 U	1 U	0.01 U
Total cPAHs TEQ in mg/kg	0.14	2	0.0669	0.276	32.0	0.0404	ND	ND	0.0367 J	0.00931	0.0281	ND	0.0884	0.0892	0.504		0.286	0.0562	0.0229	1.87	ND
Other Semivolatiles																					
1,2,4-Trichlorobenzene in mg/kg	35	4,500	0.03 U	0.03 U							0.03 U	0.03 U									
1,2-Dichlorobenzene in mg/kg			0.03 U	0.03 U							0.03 U	0.03 U									
1,3-Dichlorobenzene in mg/kg			0.03 U	0.03 U							0.03 U	0.03 U									
1,4-Dichlorobenzene in mg/kg			0.03 U	0.03 U							0.03 U	0.03 U									
2,4,5-Trichlorophenol in mg/kg			0.3 U	0.3 U	30 U						0.3 U	0.3 U									
2,4,6-Trichlorophenol in mg/kg	91	12,000	0.3 U	0.3 U	30 U						0.3 U	0.3 U									
2,4-Dichlorophenol in mg/kg			0.3 U	0.3 U	30 U						0.3 U	0.3 U									
2,4-Dimethylphenol in mg/kg			0.3 U	0.3 U	30 U						0.3 U	0.3 U									
2,4-Dinitrophenol in mg/kg			0.9 U	0.9 U	90 U						0.9 U	0.9 U									
2-Chloronaphthalene in mg/kg			0.03 U	0.03 U	3 U						0.03 U	0.03 U									
2-Chlorophenol in mg/kg			0.3 U	0.3 U	30 U						0.3 U	0.3 U									
2-Methylphenol in mg/kg			0.3 U	0.3 U	30 U						0.3 U	0.3 U									
2-Nitroaniline in mg/kg			0.03 U	0.03 U	3 U						0.03 U	0.03 U									
2-Nitrophenol in mg/kg			0.3 U	0.3 U	30 U						0.3 U	0.3 U									
3 & 4 Methylphenol in mg/kg			0.6 U	0.6 U	60 U						0.6 U	0.6 U									
3-Nitroaniline in mg/kg			3 U	3 U	300 U						3 U	3 U									
4,6-Dinitro-2-methylphenol in mg/kg			0.9 U	0.9 U	90 U						0.9 U	0.9 U									

Table 3-16A - Soil Quality Data for Boiler/Baghouse Area

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	Boiler-B-1 7/5/12 (1-2 ft)	Boiler-B-2 7/5/12 (1-2 ft)	Boiler-B-3 7/5/12 (1-2 ft)	Boiler-B-3A 9/5/12 (1-2 ft)	Boiler-B-3A 9/5/12 (4-5 ft)	Boiler-B-3A 9/5/12 (6.5-7.5 ft)	Boiler-B-3B 9/5/12 (1-2 ft)	Boiler-B-3B 9/5/12 (4-5 ft)	Boiler-B-4 7/6/12 (1-1.5 ft)	Boiler-B-5 7/6/12 (1-1.5 ft)	Boiler-HA-2A 9/5/12 (1 ft)	Boiler-HA-2A 9/5/12 (2-3 ft)	Boiler-HA-2B 9/5/12 (0-1 ft)	Boiler-HA-2B FD 9/5/12 (0-1 ft	Boiler-HA-2C 9/5/12 (0-1 ft)	Boiler-HA-2C 9/5/12 (2-3 ft)	Boiler-MW-1 9/5/12 (10-11 ft)	Boiler-MW-1 9/5/12 (12-13 ft)	Boiler-MW-1 9/5/12 (16-17 ft)
4-Bromophenyl phenyl ether in mg/kg			0.03 U	0.03 U	3 U						0.03 U	0.03 U									
4-Chloro-3-methylphenol in mg/kg			0.3 U	0.3 U	30 U						0.3 U	0.3 U									
4-Chloroaniline in mg/kg	5	660	3 U	3 U	300 U						3 U	3 U									
4-Chlorophenyl phenyl ether in mg/kg			0.03 U	0.03 U	3 U						0.03 U	0.03 U									
4-Nitroaniline in mg/kg			3 U	3 U	300 U						3 U	3 U									
4-Nitrophenol in mg/kg			0.9 U	0.9 U	90 U						0.9 U	0.9 U									
Benzoic acid in mg/kg			1.5 U	1.5 U	150 U						1.5 U	1.5 U									
Benzyl alcohol in mg/kg			0.3 U	0.3 U	30 U						0.3 U	0.3 U									
Benzyl butyl phthalate in mg/kg	530	69,000	0.065	0.03 U	3 U						0.03 U	0.03 U									
Bis(2-chloro-1-methylethyl) ether in mg/kg	14	1,900	0.03 U	0.03 U	3 U						0.03 U	0.03 U									
Bis(2-chloroethoxy)methane in mg/kg			0.03 U	0.03 U	3 U						0.03 U	0.03 U									
Bis(2-chloroethyl) ether in mg/kg	0.91	120	0.03 U	0.03 U	3 U						0.03 U	0.03 U									
Bis(2-ethylhexyl) phthalate in mg/kg	71	9,400	0.48 U	0.48 U	48 U						0.48 U	1.0									
Carbazole in mg/kg			0.03 U	0.03 U	3 U						0.03 U	0.03 U									
Dibenzofuran in mg/kg			0.03 U	0.03 U	18						0.04	0.03 U									
Diethyl phthalate in mg/kg			0.03 U	0.03 U	3 U						0.03 U	0.03 U									
Dimethyl phthalate in mg/kg			0.033	0.03 U	3 U						0.03 U	0.03 U									
Di-n-butyl phthalate in mg/kg			0.03 U	0.03 U	3 U						0.03 U	0.03 U									
Di-n-octyl phthalate in mg/kg			0.03 U	0.03 U	3 U						0.03 U	0.03 U									
Hexachlorobenzene in mg/kg	0.63	82	0.03 U	0.03 U	3 U						0.03 U	0.03 U									
Hexachlorobutadiene in mg/kg	13	1,700	0.03 U	0.03 U	3 U						0.03 U	0.03 U									
Hexachlorocyclopentadiene in mg/kg			0.09 U	0.09 U	9 U						0.09 U	0.09 U									
Hexachloroethane in mg/kg	71	9,400	0.03 U	0.03 U	3 U						0.03 U	0.03 U									
Isophorone in mg/kg	1,100	140,000	0.03 U	0.03 U	3 U						0.03 U	0.03 U									
Nitrobenzene in mg/kg			0.03 U	0.03 U	3 U						0.03 U	0.03 U									
N-Nitroso-di-n-propylamine in mg/kg	0.14	19	0.03 U	0.03 U	3 U						0.03 U	0.03 U									
N-Nitrosodiphenylamine in mg/kg	200	27,000	0.03 U	0.03 U	3 U						0.03 U	0.03 U									
Pentachlorophenol in mg/kg	2.5	330	0.3 U	0.3 U	30 U						0.3 U	0.3 U									
Phenol in mg/kg			0.3 U	0.3 U	30 U						0.3 U	0.3 U									
2,4-Dinitrotoluene in mg/kg			0.03 U	0.03 U	3 U						0.03 U	0.03 U									
2,6-Dinitrotoluene in mg/kg			0.03 U	0.03 U	3 U						0.03 U	0.03 U									
Volatile Organic Compounds (VOC)																					
1,1,1,2-Tetrachloroethane in mg/kg	38	5,000	0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
1,1,1-Trichloroethane in mg/kg	2	2	0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
1,1,2,2-Tetrachloroethane in mg/kg	5	660	0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
1,1,2-Trichloroethane in mg/kg	18	2,300	0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
1,1-Dichloroethane in mg/kg			0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
1,1-Dichloroethene in mg/kg			0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
1,1-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
1,2,3-Trichlorobenzene in mg/kg			0.25 U	0.25 U	0.25 U						0.25 U	0.25 U									
1,2,3-Trichloropropane in mg/kg	0.033	4.4	0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
1,2,4-Trichlorobenzene in mg/kg	35	4,500			0.25 U																
1,2,4-Trimethylbenzene in mg/kg			0.05 U	0.05 U	0.19						0.05 U	0.05 U									
1,2-Dibromo-3-chloropropane in mg/kg	1.3	160	0.5 U	0.5 U	0.5 U						0.5 U	0.5 U									
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005	0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
1,2-Dichlorobenzene in mg/kg					0.05 U																
1,2-Dichloroethane (EDC) in mg/kg	11	1,400	0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
1,2-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
1,3,5-Trimethylbenzene in mg/kg			0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
1,3-Dichlorobenzene in mg/kg					0.05 U																
1,3-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
1,4-Dichlorobenzene in mg/kg					0.05 U																
2,2-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
2-Butanone in mg/kg			0.5 U	0.5 U	0.5 U						0.5 U	0.5 U									
2-Chlorotoluene in mg/kg			0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
2-Hexanone in mg/kg			0.5 U	0.5 U	0.5 U						0.5 U	0.5 U									
4-Chlorotoluene in mg/kg			0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
4-Methyl-2-pentanone in mg/kg			0.5 U	0.5 U	0.5 U						0.5 U	0.5 U									
Acetone in mg/kg			0.5 U	0.5 U	0.5 U						0.5 U	0.5 U									
Benzene in mg/kg	0.03	0.03	0.03 U	0.03 U	0.03 U						0.03 U	0.03 U									
Bromobenzene in mg/kg			0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
Bromodichloromethane in mg/kg	16	2,100	0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
Bromoform in mg/kg	130	17,000	0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
Bromomethane in mg/kg			0.5 U	0.5 U	0.5 U						0.5 U	0.5 U									
Carbon tetrachloride in mg/kg	14	1,900	0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									

Table 3-16A - Soil Quality Data for Boiler/Baghouse Area

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	Boiler-B-1 7/5/12 (1-2 ft)	Boiler-B-2 7/5/12 (1-2 ft)	Boiler-B-3 7/5/12 (1-2 ft)	Boiler-B-3A 9/5/12 (1-2 ft)	Boiler-B-3A 9/5/12 (4-5 ft)	Boiler-B-3A 9/5/12 (6.5-7.5 ft	Boiler-B-3B 9/5/12 (1-2 ft)	Boiler-B-3B 9/5/12 (4-5 ft)	Boiler-B-4 7/6/12 (1-1.5 ft)	Boiler-B-5 7/6/12 (1-1.5 ft)	Boiler-HA-2A 9/5/12 (1 ft)	Boiler-HA-2A 9/5/12 (2-3 ft)	Boiler-HA-2B 9/5/12 (0-1 ft)	Boiler-HA-2B FD 9/5/12 (0-1 ft	Boiler-HA-2C 9/5/12 (0-1 ft)	Boiler-HA-2C 9/5/12 (2-3 ft)	Boiler-MW-1 9/5/12 (10-11 ft)	Boiler-MW-1 9/5/12 (12-13 ft)	Boiler-MW-1 9/5/12 (16-17 ft)
Chlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
Chloroethane in mg/kg			0.5 U	0.5 U	0.5 U						0.5 U	0.5 U									
Chloroform in mg/kg			0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
Chloromethane in mg/kg			0.5 U	0.5 U	0.5 U						0.5 U	0.5 U									
cis-1,2-Dichloroethene (DCE) in mg/kg			0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
cis-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
Dibromochloromethane in mg/kg	12	1,600	0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
Dibromomethane in mg/kg			0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
Dichlorodifluoromethane in mg/kg			0.5 U	0.5 U	0.5 U						0.5 U	0.5 U									
Ethylbenzene in mg/kg	6	6	0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
Hexachlorobutadiene in mg/kg	13	1,700	0.25 U	0.25 U	0.25 U						0.25 U	0.25 U									
Isopropylbenzene in mg/kg			0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
Methylene chloride in mg/kg	0.02	0.02	0.5 U	0.5 U	0.5 U						0.5 U	0.5 U									
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1	0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
n-Propylbenzene in mg/kg			0.05 U	0.05 U	0.083						0.05 U	0.05 U									
p-Isopropyltoluene in mg/kg			0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
sec-Butylbenzene in mg/kg			0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
Styrene in mg/kg			0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
tert-Butylbenzene in mg/kg			0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
Tetrachloroethene (PCE) in mg/kg	0.05	0.05	0.025 U	0.025 U	0.025 U						0.025 U	0.025 U									
Toluene in mg/kg	7	7	0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
trans-1,2-Dichloroethene in mg/kg			0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
trans-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
Trichloroethene (TCE) in mg/kg	0.03	0.03	0.03 U	0.03 U	0.03 U						0.03 U	0.03 U									
Trichlorofluoromethane in mg/kg			0.5 U	0.5 U	0.5 U						0.5 U	0.5 U									
Vinyl chloride in mg/kg	0.67	88	0.05 U	0.05 U	0.05 U						0.05 U	0.05 U									
m,p-Xylenes in mg/kg	16,000	700,000	0.1 U	0.1 U	0.1						0.1 U	0.1 U									
o-Xylene in mg/kg	16,000	700,000	0.05 U	0.05 U	0.092						0.05 U	0.05 U									
Xylenes (total) in mg/kg	9	9	ND	ND	0.192						ND	ND									
Dioxins/Furans																					
Total HpCDD in mg/kg			8.43E-05	0.000646							0.000273	0.000012									
Total HpCDF in mg/kg			2.42E-05	2.31E-05							0.000038	3.84E-06									
Total HxCDD in mg/kg			0.000144	0.00199							0.000108	5.76E-06									
Total HxCDF in mg/kg			0.000014	5.81E-05							2.27E-05	1.6E-06 J									
Total PeCDD in mg/kg			8.93E-05	0.001							9.71E-05	2.23E-06									
Total PeCDF in mg/kg			1.62E-05	0.000103							3.84E-05	8.15E-07 J									
Total TCDD in mg/kg			7.97E-05	0.000801							0.000108	1.32E-06									
Total TCDF in mg/kg			0.000016	0.000127							0.000073	1.7E-07 J									
2,3,7,8-TCDD in mg/kg	0.000011	0.0015	1.08E-06 U	2.2E-06							1.61E-06	8.8E-07 U									
1,2,3,7,8-PeCDD in mg/kg			1.31E-06 J	2.85E-06 U							3.49E-06	2.2E-06 U									
1,2,3,4,7,8-HxCDD in mg/kg			1.81E-06 J	1.38E-05							2.32E-06 J	2.2E-06 U									
1,2,3,6,7,8-HxCDD in mg/kg			4.2E-06	3.61E-05							5.64E-06	4.71E-07 J									
1,2,3,7,8,9-HxCDD in mg/kg	0.00016	0.021	3.74E-06	3.06E-05							5.84E-06	2.2E-06 U									
1,2,3,4,6,7,8-HpCDD in mg/kg			4.14E-05	0.000367							6.05E-05	5.64E-06									
OCDD in mg/kg			0.00019	0.000535							0.00057	4.01E-05									
1,2,3,7,8-PeCDF in mg/kg			9.4E-07 J	5.66E-06 J							3.89E-06 J	2.2E-06 U									
2,3,4,7,8-PeCDF in mg/kg			1.29E-06 J	8.29E-06 J							3.11E-06 J	2.2E-06 U									
1,2,3,4,7,8-HxCDF in mg/kg			1.97E-06 J	1.46E-05 J							3.81E-06 J	2.2E-06 U									
1,2,3,6,7,8-HxCDF in mg/kg			1.02E-06 J	7.06E-06							2.19E-06 J	2.2E-06 U									
1,2,3,7,8,9-HxCDF in mg/kg			2.69E-06 U	2.82E-07 J							2.49E-06 U	2.2E-06 U									
2,3,4,6,7,8-HxCDF in mg/kg			1.17E-06 J	5.87E-06							1.96E-06 J	2.2E-06 U									
1,2,3,4,6,7,8-HpCDF in mg/kg			1.13E-05	1.04E-05							0.00002	1.31E-06 J									
1,2,3,4,7,8,9-HpCDF in mg/kg			5.69E-07 J	2.71E-06 J							6.12E-07 J	2.2E-06 U									
OCDF in mg/kg			1.68E-05 J	0.000016 J							2.58E-05	2.94E-06 J									
Total 2,3,7,8 TCDD (TEQ) in mg/kg	0.000011	0.0015	4.17E-06	2.69E-05							9.9E-06	1.74E-07									

Notes:

Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.

Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-16B - Groundwater Quality Data for Boiler/Baghouse Area

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	Boiler-MW-01 09/14/12	Boiler-MW-01 09/14/12 FD
Total Petroleum Hydrocarbons (TPH)			
Diesel Range Hydrocarbons in µg/L	500	50 U	
Oil Range Hydrocarbons in µg/L	500	250 U	
Total TPHs in µg/L	500	ND	
Dissolved Metals			
Dissolved Antimony in µg/L	640	1.78	1.79
Dissolved Arsenic in µg/L	5	2.02	2.03
Dissolved Beryllium in µg/L	270	1 U	1 U
Dissolved Cadmium in µg/L	8.8	1 U	1 U
Dissolved Chromium (Total) in µg/L	240,000	11.3	11.9
Dissolved Copper in µg/L	3.1	17.1	17.2
Dissolved Lead in µg/L	8.1	4.42	4.86
Dissolved Mercury in µg/L	0.15	0.1 U	0.1 U
Dissolved Nickel in µg/L	8.2	1.94	2.09
Dissolved Selenium in µg/L	71	1 U	1 U
Dissolved Silver in µg/L	1.9	1 U	1 U
Dissolved Thallium in µg/L	0.47	1 U	1 U
Dissolved Zinc in µg/L	81	2.64	2.95
Conventional Chemistry Parameters			
Total Suspended Solids in mg/L		10 U	
Polycyclic Aromatic Hydrocarbons (PAHs)			
Acenaphthene in µg/L	640	0.34	
Acenaphthylene in µg/L		0.05 U	
Anthracene in µg/L	26,000	0.091	
Benzo(g,h,i)perylene in µg/L		0.05 U	
Fluoranthene in µg/L	90	0.13	
Fluorene in µg/L	3,500	0.21	
Phenanthrene in µg/L		0.12	
Pyrene in µg/L	2,600	0.26	
Naphthalene in µg/L	170	0.12	
Benz(a)anthracene in µg/L	0.018	0.029	
Benzo(a)pyrene in µg/L	0.018	0.014	
Benzo(b)fluoranthene in µg/L	0.018	0.014	
Benzo(k)fluoranthene in µg/L	0.018	0.01 U	
Chrysene in µg/L	0.018	0.065	
Dibenzo(a,h)anthracene in µg/L	0.018	0.01 U	
Indeno(1,2,3-cd)pyrene in µg/L	0.018	0.01 U	
Total cPAHs TEQ in µg/L	0.018	0.0205	
Field Parameters			
Dissolved Oxygen in mg/L		0.08	
ORP in mVolts		-168.2	
pH in pH Units		9.92	
Specific Conductance in us/cm		1,609	
Temperature in deg C		28.4	
Turbidity in NTU		8.91	

Notes:

Concentrations in shaded cells indicate value exceeds Groundwater Screening Level.

U - Analyte was not detected at or above the reported result.

Table 3-17A - Soil Quality Data for Hazardous Waste Cage

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	HW-B-1 6/29/12 (0-1 ft)	HW-B-1 6/29/12 (3-4 ft)	HW-B-1 6/29/12 (6-7 ft)	HW-B-2 6/29/12 (0-1 ft)	HW-B-2 6/29/12 (3-4 ft)	HW-B-2 6/29/12 (6-7 ft)	HW-B-3 9/6/12 (0-1 ft)	HW-B-3 9/6/12 (3-4 ft)	HW-B-3 9/6/12 (6-7 ft)	HW-B-4 9/6/12 (0-1 ft)	HW-B-4 9/6/12 (3.5-4 ft)	HW-B-4 9/6/12 (6-6.5 ft)	HW-MW-1 6/29/12 (0-1 ft)	HW-MW-1 6/29/12 (3-4 ft)	HW-MW-1 6/29/12 (6-7 ft)
Total Petroleum Hydrocarbons (TPH)																	
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	50 U														
Oil Range Hydrocarbons in mg/kg	2,000	2,000	250 U														
Total TPH in mg/kg	2,000	2,000	ND														
Metals																	
Antimony in mg/kg			1 U	1 U	1 U	1 U	1.19	1.98							9.42	6.15	6.41
Arsenic in mg/kg	20	20	2	2.28	6.34	1.22	4.34	8.05	26	5.27	6.83	5.26	4.4	1.79	20.6	16.6	18.5
Beryllium in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U							1 U	1 U	1 U
Cadmium in mg/kg	2	2	1 U	1 U	1 U	1 U	1 U	1 U							1 U	1 U	1 U
Chromium (Total) in mg/kg	2,000	2,000	12.3	15.3	14.4	11.5	16.1	19.6							24.8	26.6	30.4
Copper in mg/kg			12.1	11.3	13	11	29.8	23.7							66.1	60.3	46.3
Lead in mg/kg	250	1,000	3.92	1.99	4.26	1.88	41	20.4	35.7	12.5	53.6	36.7	42.7	5.56	198	303	115
Mercury in mg/kg	2	2	0.1 U	0.1 U	0.1 U	0.1 U	0.1	0.1 U							0.31	0.1 U	0.12
Nickel in mg/kg			25.7	35.8	42.6	28.8	34.1	34.7							35.3	48.5	37.7
Selenium in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U							1 U	1 U	1 U
Silver in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U							1 U	1 U	1 U
Thallium in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U							1 U	1 U	1 U
Zinc in mg/kg			21.7	94.9	57.2	19.3	60.8	78.5							191	109	107
Polycyclic Aromatic Hydrocarbons (PAHs)																	
Acenaphthene in mg/kg	4,800	210,000	3 U	0.03 U	0.032	0.03 U	0.03 U	0.03 U							0.03 U	0.032	0.03 U
Acenaphthylene in mg/kg			3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
Anthracene in mg/kg	24,000	1,100,000	3 U	0.03 U	0.03 UJ	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
Benzo(g,h,i)perylene in mg/kg			3 UJ	0.03 U	0.03 U	0.03 U	0.082	0.03 U							0.038	0.034	0.031
Fluoranthene in mg/kg	3,200	140,000	3 U	0.03 U	0.066 J	0.03 U	0.091	0.081							0.06	0.093	0.25
Fluorene in mg/kg	3,200	140,000	3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.033							0.03 U	0.03 U	0.03 U
Phenanthrene in mg/kg			3 U	0.03 U	0.049 J	0.03 U	0.033	0.084							0.042	0.085	0.21
Pyrene in mg/kg	2,400	110,000	3 U	0.03 U	0.072 J	0.03 U	0.13 J	0.081 J							0.085 J	0.10 J	0.22 J
2-Methylnaphthalene in mg/kg			3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
Naphthalene in mg/kg	5	5		0.03 U	0.14	0.03 U	0.046	0.03 U							0.03 U	0.03 U	0.03 U
Benz(a)anthracene in mg/kg	1.4	180	3 U	0.03 U	0.03 U	0.03 U	0.098	0.03 U							0.042	0.04	0.055
Benzo(a)pyrene in mg/kg	0.14	2	3 UJ	0.03 U	0.03 U	0.03 U	0.12	0.03 U							0.05	0.044	0.041
Benzo(b)fluoranthene in mg/kg	1.4	180	3 UJ	0.03 U	0.03 U	0.03 U	0.13	0.035							0.06	0.055	0.065
Benzo(k)fluoranthene in mg/kg	14	1,800	3 UJ	0.03 U	0.03 U	0.03 U	0.05	0.03 U							0.03 U	0.03 U	0.03 U
Chrysene in mg/kg	140	18,000	3 U	0.03 U	0.03 U	0.03 U	0.11	0.03 U							0.048	0.047	0.063
Dibenzo(a,h)anthracene in mg/kg	0.14	18	3 UJ	0.03 U	0.03 U	0.03 U	0.033	0.03 U							0.03 U	0.03 U	0.03 U
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	180	3 UJ	0.03 U	0.03 U	0.03 U	0.096	0.035							0.05	0.049	0.045
Total cPAHs TEQ in mg/kg	0.14	2	ND	ND	ND	ND	0.162	0.0267							0.0687	0.0619	0.0611
Other Semivolatiles																	
1,2,4-Trichlorobenzene in mg/kg	35	4,500		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
1,2-Dichlorobenzene in mg/kg				0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
1,3-Dichlorobenzene in mg/kg				0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
1,4-Dichlorobenzene in mg/kg				0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
2,4,5-Trichlorophenol in mg/kg			30 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U							0.3 U	0.3 U	0.3 U
2,4,6-Trichlorophenol in mg/kg	91	12,000	30 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U							0.3 U	0.3 U	0.3 U
2,4-Dichlorophenol in mg/kg			30 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U							0.3 U	0.3 U	0.3 U
2,4-Dimethylphenol in mg/kg			30 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U							0.3 U	0.3 U	0.3 U
2,4-Dinitrophenol in mg/kg			90 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U							0.9 U	0.9 U	0.9 U
2-Chloronaphthalene in mg/kg			3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
2-Chlorophenol in mg/kg			30 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U							0.3 U	0.3 U	0.3 U
2-Methylphenol in mg/kg			30 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U							0.3 U	0.3 U	0.3 U
2-Nitroaniline in mg/kg			3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
2-Nitrophenol in mg/kg			30 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U							0.3 U	0.3 U	0.3 U
3 & 4 Methylphenol in mg/kg			60 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U							0.6 U	0.6 U	0.6 U
3-Nitroaniline in mg/kg			300 U	3 U	3 U	3 U	3 U	3 U							3 U	3 U	3 U
4,6-Dinitro-2-methylphenol in mg/kg			90 U	0.9 U	0.9 UJ	0.9 U	0.9 U	0.9 U							0.9 U	0.9 U	0.9 U
4-Bromophenyl phenyl ether in mg/kg			3 U	0.03 U	0.03 UJ	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
4-Chloro-3-methylphenol in mg/kg			30 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U							0.3 U	0.3 U	0.3 U
4-Chloroaniline in mg/kg	5	660	300 U	3 U	3 U	3 U	3 U	3 U							3 U	3 U	3 U
4-Chlorophenyl phenyl ether in mg/kg			3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U

Table 3-17A - Soil Quality Data for Hazardous Waste Cage

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	HW-B-1 6/29/12 (0-1 ft)	HW-B-1 6/29/12 (3-4 ft)	HW-B-1 6/29/12 (6-7 ft)	HW-B-2 6/29/12 (0-1 ft)	HW-B-2 6/29/12 (3-4 ft)	HW-B-2 6/29/12 (6-7 ft)	HW-B-3 9/6/12 (0-1 ft)	HW-B-3 9/6/12 (3-4 ft)	HW-B-3 9/6/12 (6-7 ft)	HW-B-4 9/6/12 (0-1 ft)	HW-B-4 9/6/12 (3.5-4 ft)	HW-B-4 9/6/12 (6-6.5 ft)	HW-MW-1 6/29/12 (0-1 ft)	HW-MW-1 6/29/12 (3-4 ft)	HW-MW-1 6/29/12 (6-7 ft)
4-Nitroaniline in mg/kg			300 U	3 U	3 UJ	3 U	3 U	3 U							3 U	3 U	3 U
4-Nitrophenol in mg/kg			90 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U							0.9 U	0.9 U	0.9 U
Benzoic acid in mg/kg			150 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U							1.5 U	1.5 U	1.5 U
Benzyl alcohol in mg/kg			30 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U							0.3 U	0.3 U	0.3 U
Benzyl butyl phthalate in mg/kg	530	69,000	3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
Bis(2-chloro-1-methylethyl) ether in mg/kg	14	1,900	3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
Bis(2-chloroethoxy)methane in mg/kg			3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
Bis(2-chloroethyl) ether in mg/kg	0.91	120	3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
Bis(2-ethylhexyl) phthalate in mg/kg	71	9,400	48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U							0.48 U	0.48 U	0.48 U
Carbazole in mg/kg			3 U	0.03 U	0.03 UJ	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
Dibenzofuran in mg/kg			3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
Diethyl phthalate in mg/kg			3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
Dimethyl phthalate in mg/kg			3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
Di-n-butyl phthalate in mg/kg			3 U	0.03 U	0.03 UJ	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
Di-n-octyl phthalate in mg/kg			3 UJ	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
Hexachlorobenzene in mg/kg	0.63	82	3 U	0.03 U	0.03 UJ	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
Hexachlorobutadiene in mg/kg	13	1,700	3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
Hexachlorocyclopentadiene in mg/kg			9 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U							0.09 U	0.09 U	0.09 U
Hexachloroethane in mg/kg	71	9,400	3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
Isophorone in mg/kg	1,100	140,000	3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
Nitrobenzene in mg/kg			3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
N-Nitroso-di-n-propylamine in mg/kg	0.14	19	3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
N-Nitrosodiphenylamine in mg/kg	200	27,000	3 U	0.03 U	0.03 UJ	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
Pentachlorophenol in mg/kg	2.5	330	30 U	0.3 U	0.3 UJ	0.3 U	0.3 U	0.3 U							0.3 U	0.3 U	0.3 U
Phenol in mg/kg			30 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U							0.3 U	0.3 U	0.3 U
2,4-Dinitrotoluene in mg/kg			3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
2,6-Dinitrotoluene in mg/kg			3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
Volatile Organic Compounds (VOC)																	
1,1,1,2-Tetrachloroethane in mg/kg	38	5,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
1,1,1-Trichloroethane in mg/kg	2	2	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
1,1,2,2-Tetrachloroethane in mg/kg	5	660	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
1,1,2-Trichloroethane in mg/kg	18	2,300	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
1,1-Dichloroethane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
1,1-Dichloroethene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
1,1-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
1,2,3-Trichlorobenzene in mg/kg			0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U							0.25 U	0.25 U	0.25 U
1,2,3-Trichloropropane in mg/kg	0.033	4.4	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
1,2,4-Trichlorobenzene in mg/kg	35	4,500	0.25 U														
1,2,4-Trimethylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
1,2-Dibromo-3-chloropropane in mg/kg	1.3	160	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U							0.5 U	0.5 U	0.5 U
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
1,2-Dichlorobenzene in mg/kg			0.05 U														
1,2-Dichloroethane (EDC) in mg/kg	11	1,400	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
1,2-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
1,3,5-Trimethylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
1,3-Dichlorobenzene in mg/kg			0.05 U														
1,3-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
1,4-Dichlorobenzene in mg/kg			0.05 U														
2,2-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
2-Butanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U							0.5 U	0.5 U	0.5 U
2-Chlorotoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
2-Hexanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U							0.5 U	0.5 U	0.5 U
4-Chlorotoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
4-Methyl-2-pentanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U							0.5 U	0.5 U	0.5 U
Acetone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U							0.5 U	0.5 U	0.5 U
Benzene in mg/kg	0.03	0.03	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
Bromobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
Bromodichloromethane in mg/kg	16	2,100	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
Bromoform in mg/kg	130	17,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U

Table 3-17A - Soil Quality Data for Hazardous Waste Cage

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	HW-B-1 6/29/12 (0-1 ft)	HW-B-1 6/29/12 (3-4 ft)	HW-B-1 6/29/12 (6-7 ft)	HW-B-2 6/29/12 (0-1 ft)	HW-B-2 6/29/12 (3-4 ft)	HW-B-2 6/29/12 (6-7 ft)	HW-B-3 9/6/12 (0-1 ft)	HW-B-3 9/6/12 (3-4 ft)	HW-B-3 9/6/12 (6-7 ft)	HW-B-4 9/6/12 (0-1 ft)	HW-B-4 9/6/12 (3.5-4 ft)	HW-B-4 9/6/12 (6-6.5 ft)	HW-MW-1 6/29/12 (0-1 ft)	HW-MW-1 6/29/12 (3-4 ft)	HW-MW-1 6/29/12 (6-7 ft)
Bromomethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U							0.5 U	0.5 U	0.5 U
Carbon tetrachloride in mg/kg	14	1,900	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
Chlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
Chloroethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U							0.5 U	0.5 U	0.5 U
Chloroform in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
Chloromethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U							0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene (DCE) in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
cis-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
Dibromochloromethane in mg/kg	12	1,600	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
Dibromomethane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
Dichlorodifluoromethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U							0.5 U	0.5 U	0.5 U
Ethylbenzene in mg/kg	6	6	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
Hexachlorobutadiene in mg/kg	13	1,700	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U							0.25 U	0.25 U	0.25 U
Isopropylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
Methylene chloride in mg/kg	0.02	0.02	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U							0.5 U	0.5 U	0.5 U
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
n-Propylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
p-Isopropyltoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
sec-Butylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
Styrene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
tert-Butylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
Tetrachloroethene (PCE) in mg/kg	0.05	0.05	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U							0.025 U	0.025 U	0.025 U
Toluene in mg/kg	7	7	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
trans-1,2-Dichloroethene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
trans-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
Trichloroethene (TCE) in mg/kg	0.03	0.03	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U							0.03 U	0.03 U	0.03 U
Trichlorofluoromethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U							0.5 U	0.5 U	0.5 U
Vinyl chloride in mg/kg	0.67	88	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
m,p-Xylenes in mg/kg	16,000	700,000	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U							0.1 U	0.1 U	0.1 U
o-Xylene in mg/kg	16,000	700,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U							0.05 U	0.05 U	0.05 U
Xylenes (total) in mg/kg	9	9	ND	ND	ND	ND	ND	ND							ND	ND	ND
Naphthalene in mg/kg	5	5	0.05 U														
Polychlorinated Biphenyls (PCBs)																	
Aroclor 1016 in mg/kg	14	1,900	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U							0.1 U	0.1 U	0.1 U
Aroclor 1221 in mg/kg			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U							0.1 U	0.1 U	0.1 U
Aroclor 1232 in mg/kg			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U							0.1 U	0.1 U	0.1 U
Aroclor 1242 in mg/kg			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U							0.1 U	0.1 U	0.1 U
Aroclor 1248 in mg/kg			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U							0.1 U	0.1 U	0.1 U
Aroclor 1254 in mg/kg	0.5	66	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U							0.1 U	0.1 U	0.1 U
Aroclor 1260 in mg/kg	0.5	66	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U							0.1 U	0.1 U	0.1 U
Total PCBs in mg/kg	1	10	ND	ND	ND	ND	ND	ND							ND	ND	ND

Notes:
Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.
Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.
J - Analyte was positively identified. The reported result is an estimate.
U - Analyte was not detected at or above the reported result.
UJ - Analyte was not detected at or above the reported estimate.

Table 3-17B - Groundwater Quality Data for Hazardous Waste Cage

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	HW-MW-01 07/02-03/12	HW-MW-01 08/28/12
Total Petroleum Hydrocarbons (TPH)			
Gasoline Range Hydrocarbons in µg/L	1,000		100 U
Diesel Range Hydrocarbons in µg/L	500		50 U
Oil Range Hydrocarbons in µg/L	500		250 U
Total TPHs in µg/L	500		ND
Dissolved Metals			
Dissolved Antimony in µg/L	640	1.04	1 U
Dissolved Arsenic in µg/L	5	14.9	25.9
Dissolved Beryllium in µg/L	270	1 U	1 U
Dissolved Cadmium in µg/L	8.8	1 U	1 U
Dissolved Chromium (Total) in µg/L	240,000	2.96	5.8
Dissolved Copper in µg/L	3.1	3.37	1.47
Dissolved Lead in µg/L	8.1	1 U	1 U
Dissolved Mercury in µg/L	0.15	0.1 U	0.1 U
Dissolved Nickel in µg/L	8.2	18	7.84
Dissolved Selenium in µg/L	71	20	4.71
Dissolved Silver in µg/L	1.9	1 U	1 U
Dissolved Thallium in µg/L	0.47	1 U	1 U
Dissolved Zinc in µg/L	81	4.04	2.07 J
Total Metals			
Total Antimony in µg/L	640	3.51	
Total Arsenic in µg/L	5	14.9	
Total Beryllium in µg/L	270	1 U	
Total Cadmium in µg/L	8.8	1 U	
Total Chromium (Total) in µg/L	240,000	6.86	
Total Copper in µg/L	3.1	8.28	
Total Lead in µg/L	8.1	6.81	
Total Mercury in µg/L	0.15	0.1 U	
Total Nickel in µg/L	8.2	30.1	
Total Selenium in µg/L	71	10.5	
Total Silver in µg/L	1.9	1 U	
Total Thallium in µg/L	0.47	1 U	
Total Zinc in µg/L	81	21.9	
Conventional Chemistry Parameters			
Total Suspended Solids in mg/L		15	97
Polycyclic Aromatic Hydrocarbons (PAHs)			
Acenaphthene in µg/L	640	0.05 U	0.05 U
Acenaphthylene in µg/L		0.05 U	0.05 U
Anthracene in µg/L	26,000	0.05 U	0.05 U
Benzo(g,h,i)perylene in µg/L		0.05 U	0.05 U
Fluoranthene in µg/L	90	0.05 U	0.05 U
Fluorene in µg/L	3,500	0.05 U	0.05 U
Phenanthrene in µg/L		0.05 U	0.05 U
Pyrene in µg/L	2,600	0.05 U	0.05 U
Naphthalene in µg/L	170	0.051	0.05 U
Benz(a)anthracene in µg/L	0.018	0.01 U	0.01 U
Benzo(a)pyrene in µg/L	0.018	0.01 U	0.01 U
Benzo(b)fluoranthene in µg/L	0.018	0.01 U	0.01 U
Benzo(k)fluoranthene in µg/L	0.018	0.01 U	0.01 U
Chrysene in µg/L	0.018	0.01 U	0.01 U
Dibenzo(a,h)anthracene in µg/L	0.018	0.01 U	0.01 U
Indeno(1,2,3-cd)pyrene in µg/L	0.018	0.01 U	0.01 U
Total cPAHs TEQ in µg/L	0.018	ND	ND
Volatile Organic Compounds (VOC)			
1,1,1,2-Tetrachloroethane in µg/L	7.4	1 U	1 U
1,1,1-Trichloroethane in µg/L	11,000	1 U	1 U
1,1,2,2-Tetrachloroethane in µg/L	4	1 U	1 U
1,1,2-Trichloroethane in µg/L	7.9	1 U	1 U
1,1-Dichloroethane in µg/L	2,300	1 U	1 U
1,1-Dichloroethene in µg/L	3.2	1 U	1 U
1,1-Dichloropropene in µg/L		1 U	1 U
1,2,3-Trichlorobenzene in µg/L		1 U	1 U
1,2,3-Trichloropropane in µg/L		1 U	1 U
1,2,4-Trichlorobenzene in µg/L	2	1 U	1 U
1,2,4-Trimethylbenzene in µg/L	24	1 U	1 U

Table 3-17B - Groundwater Quality Data for Hazardous Waste Cage

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	HW-MW-01 07/02-03/12		HW-MW-01 08/28/12	
1,2-Dibromo-3-chloropropane in µg/L		10	U	10	U
1,2-Dibromoethane (EDB) in µg/L	0.74	1	U	1	U
1,2-Dichlorobenzene in µg/L	1,300	1	U	1	U
1,2-Dichloroethane (EDC) in µg/L	4.2	1	U	1	U
1,2-Dichloropropane in µg/L	15	1	U	1	U
1,3,5-Trimethylbenzene in µg/L	25	1	U	1	U
1,3-Dichlorobenzene in µg/L	960	1	U	1	U
1,3-Dichloropropane in µg/L		1	U	1	U
1,4-Dichlorobenzene in µg/L	190	1	U	1	U
2,2-Dichloropropane in µg/L		1	U	1	U
2-Butanone in µg/L	350,000	10	U	10	U
2-Chlorotoluene in µg/L		1	U	1	U
2-Hexanone in µg/L		10	U	10	U
4-Chlorotoluene in µg/L		1	U	1	U
4-Methyl-2-pentanone in µg/L	11,000	10	U	10	U
Acetone in µg/L		12		10	U
Benzene in µg/L	2.4	0.35	U	0.35	U
Bromobenzene in µg/L		1	U	1	U
Bromodichloromethane in µg/L	0.09	1	U	1	U
Bromoform in µg/L	140	1	U	1	U
Bromomethane in µg/L	13	1	U	1	U
Carbon tetrachloride in µg/L	0.22	1	U	1	U
Chlorobenzene in µg/L	100	1	U	1	U
Chloroethane in µg/L	12	1	U	1	U
Chloroform in µg/L	1.2	1	U	1	U
Chloromethane in µg/L	5.2	10	U	10	U
cis-1,2-Dichloroethene (DCE) in µg/L	160	1	U	1	U
cis-1,3-Dichloropropene in µg/L		1	U	1	U
Dibromochloromethane in µg/L	0.22	1	U	1	U
Dibromomethane in µg/L		1	U	1	U
Dichlorodifluoromethane in µg/L	9.9	1	U	1	U
Ethylbenzene in µg/L	2,100	1	U	1	U
Hexachlorobutadiene in µg/L	0.81	1	U	1	U
Isopropylbenzene in µg/L	720	1	U	1	U
Methylene chloride in µg/L	94	5	U	5	U
Methyl-Tert-Butyl Ether in µg/L	610	1	U	1	U
n-Propylbenzene in µg/L		1	U	1	U
p-Isopropyltoluene in µg/L		1	U	1	U
sec-Butylbenzene in µg/L		1	U	1	U
Styrene in µg/L	78	1	U	1	U
tert-Butylbenzene in µg/L		1	U	1	U
Tetrachloroethene (PCE) in µg/L	0.39	1	U	1	U
Toluene in µg/L	15,000	1	U	1	U
trans-1,2-Dichloroethene in µg/L	130	1	U	1	U
trans-1,3-Dichloropropene in µg/L		1	U	1	U
Trichloroethene (TCE) in µg/L	1.6	1	U	1	U
Trichlorofluoromethane in µg/L	120	1	U	1	U
Vinyl chloride in µg/L	0.35	0.2	U	0.2	U
m,p-Xylenes in µg/L	310	2	U	2	U
o-Xylene in µg/L	440	1	U	1	U
Xylenes (total) in µg/L	310	ND		ND	
Naphthalene in µg/L	170	1	U		
Field Parameters					
Dissolved Oxygen in mg/L		1.08		2.57	
ORP in mVolts		-77.6		-165.6	
pH in pH Units		7.04		6.95	
Specific Conductance in us/cm		3,857		2,360	
Temperature in deg C		17.2		18.5	
Turbidity in NTU		51.2		36.5	

Notes:

Concentrations in shaded cells indicate value exceeds Groundwater Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

Table 3-18A - Soil Quality Data for Diesel AST Area

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	DA-B-1 9/5/12 (1-2 ft)	DA-B-1 9/5/12 (5-6 ft)	DA-B-1 9/5/12 (7-8 ft)	DA-MW-1 9/7/12 (1-2 ft)	DA-MW-1 9/7/12 (5-6 ft)	DA-MW-1 9/7/12 (7-8 ft)
Total Petroleum Hydrocarbons (TPH)								
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	50 U	50 U	50 U	50 U	70	50 U
Oil Range Hydrocarbons in mg/kg	2,000	2,000	250 U	250 U	250 U	250 U	250 U	250 U
Total TPH in mg/kg	2,000	2,000	ND	ND	ND	ND	195	ND
Polycyclic Aromatic Hydrocarbons (PAHs)								
Acenaphthene in mg/kg	4,800	210,000	0.01 U	0.02	0.01 U	0.036	7.3	0.029
Acenaphthylene in mg/kg			0.01 U	0.01 U	0.01 U	0.011	1 U	0.01 U
Anthracene in mg/kg	24,000	1,100,000	0.01 U	0.01 U	0.01 U	0.061	1.7	0.026
Benzo(g,h,i)perylene in mg/kg			0.02	0.027	0.01 U	0.078	1	0.01 U
Fluoranthene in mg/kg	3,200	140,000	0.025	0.055	0.01 U	0.28	9.5	0.13
Fluorene in mg/kg	3,200	140,000	0.01 U	0.01 U	0.01 U	0.048	4.5	0.049
Phenanthrene in mg/kg			0.014	0.034	0.01 U	0.26	5.7	0.042
Pyrene in mg/kg	2,400	110,000	0.042	0.067	0.01 U	0.33 J	7.3 J	0.10 J
Naphthalene in mg/kg	5	5	0.01 U	0.01 U	0.01 U	0.094	5.7	0.014
Benz(a)anthracene in mg/kg	1.4	180	0.03	0.032	0.01 U	0.14	2.5	0.028
Benzo(a)pyrene in mg/kg	0.14	2	0.038	0.036	0.01 U	0.14	2	0.016
Benzo(b)fluoranthene in mg/kg	1.4	180	0.042	0.051	0.01 U	0.18	2.1	0.025
Benzo(k)fluoranthene in mg/kg	14	1,800	0.013	0.017	0.01 U	0.051	1 U	0.01 U
Chrysene in mg/kg	140	18,000	0.045	0.047	0.01 U	0.2	2.9	0.028
Dibenzo(a,h)anthracene in mg/kg	0.14	18	0.01 U	0.01 U	0.01 U	0.02	1 U	0.01 U
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	180	0.023 J	0.033 J	0.01 U	0.085	1.3	0.01 U
Total cPAHs TEQ in mg/kg	0.14	2	0.0498	0.0503	ND	0.19	2.72	0.0231

Notes:

Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.

Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

Table 3-18B - Groundwater Quality Data for Diesel AST Area

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	DA-MW-01 09/13/12	DA-MW-01 09/13/12 FD	REC2-MW-05 06/08/12	REC2-MW-05 08/27/12
Total Petroleum Hydrocarbons (TPH)					
Gasoline Range Hydrocarbons in µg/L	1000			100 U	100 U
Diesel Range Hydrocarbons in µg/L	500	50 U	50 U	97	65
Oil Range Hydrocarbons in µg/L	500	250 U	250 U	250 UJ	250 U
Total TPHs in µg/L	500	ND	ND	222	190
Conventional Chemistry Parameters					
Total Suspended Solids in mg/L		10 U	18	15	10 U
Polycyclic Aromatic Hydrocarbons (PAHs)					
Acenaphthene in µg/L	640	7	8	9.9	11
Acenaphthylene in µg/L		0.05 U	0.05 U	0.05 U	0.05 U
Anthracene in µg/L	26,000	0.11	0.11	0.05 U	0.05 U
Benzo(g,h,i)perylene in µg/L		0.05 U	0.05 U	0.05 U	0.05 U
Fluoranthene in µg/L	90	0.7	0.74	0.05 U	0.05 U
Fluorene in µg/L	3,500	1.2	1.2	0.71	0.51
Phenanthrene in µg/L		0.69	0.7	0.05 U	0.05 U
Pyrene in µg/L	2,600	0.6	0.6	0.05 U	0.05 U
Naphthalene in µg/L	170	0.33	0.38	0.05 U	0.055
Benz(a)anthracene in µg/L	0.018	0.055	0.053	0.01 U	0.01 U
Benzo(a)pyrene in µg/L	0.018	0.01	0.01 U	0.01 U	0.01 U
Benzo(b)fluoranthene in µg/L	0.018	0.016	0.013	0.01 U	0.01 U
Benzo(k)fluoranthene in µg/L	0.018	0.01 U	0.01 U	0.01 U	0.01 U
Chrysene in µg/L	0.018	0.042	0.04	0.01 U	0.01 U
Dibenzo(a,h)anthracene in µg/L	0.018	0.01 U	0.01 U	0.01 U	0.01 U
Indeno(1,2,3-cd)pyrene in µg/L	0.018	0.01 U	0.01 U	0.01 U	0.01 U
Total cPAHs TEQ in µg/L	0.018	0.019	0.0135	ND	ND
Volatile Organic Compounds (VOC)					
1,1,1,2-Tetrachloroethane in µg/L	7.4	1 U		1 U	1 U
1,1,1-Trichloroethane in µg/L	11,000	1 U		1 U	1 U
1,1,2,2-Tetrachloroethane in µg/L	4	1 U		1 U	1 U
1,1,2-Trichloroethane in µg/L	7.9	1 U		1 U	1 U
1,1-Dichloroethane in µg/L	2,300	1 U		1 U	1 U
1,1-Dichloroethene in µg/L	3.2	1 U		1 U	1 U
1,1-Dichloropropene in µg/L		1 U		1 U	1 U
1,2,3-Trichlorobenzene in µg/L		1 U		1 U	1 U
1,2,3-Trichloropropane in µg/L		1 U		1 U	1 U
1,2,4-Trichlorobenzene in µg/L	2	1 U		1 U	1 U
1,2,4-Trimethylbenzene in µg/L	24	1 U		1 U	1 U
1,2-Dibromo-3-chloropropane in µg/L		10 U		10 U	10 U
1,2-Dibromoethane (EDB) in µg/L	0.74	1 U		1 U	1 U
1,2-Dichlorobenzene in µg/L	1,300	1 U		1 U	1 U
1,2-Dichloroethane (EDC) in µg/L	4.2	1 U		1 U	1 U
1,2-Dichloropropane in µg/L	15	1 U		1 U	1 U
1,3,5-Trimethylbenzene in µg/L	25	1 U		1 U	1 U
1,3-Dichlorobenzene in µg/L	960	1 U		1 U	1 U
1,3-Dichloropropane in µg/L		1 U		1 U	1 U
1,4-Dichlorobenzene in µg/L	190	1 U		1 U	1 U
2,2-Dichloropropane in µg/L		1 U		1 U	1 U
2-Butanone in µg/L	350,000	10 U		10 U	10 U
2-Chlorotoluene in µg/L		1 U		1 U	1 U
2-Hexanone in µg/L		10 U		10 U	10 U
4-Chlorotoluene in µg/L		1 U		1 U	1 U
4-Methyl-2-pentanone in µg/L	11,000	10 U		10 U	10 U
Acetone in µg/L		10 U		10 U	10 U
Benzene in µg/L	2.4	0.35 U		0.35 U	0.35 U
Bromobenzene in µg/L		1 U		1 U	1 U
Bromodichloromethane in µg/L	0.09	1 U		1 U	1 U
Bromoform in µg/L	140	1 U		1 U	1 U
Bromomethane in µg/L	13	1 U		1 U	1 U
Carbon tetrachloride in µg/L	0.22	1 U		1 U	1 U
Chlorobenzene in µg/L	100	1 U		1 U	1 U

Table 3-18B - Groundwater Quality Data for Diesel AST Area

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	DA-MW-01 09/13/12		DA-MW-01 09/13/12 FD	REC2-MW-05 06/08/12		REC2-MW-05 08/27/12	
Chloroethane in µg/L	12	1	U		1	U	1	U
Chloroform in µg/L	1.2	1	U		1	U	1	U
Chloromethane in µg/L	5.2	10	U		10	U	10	U
cis-1,2-Dichloroethene (DCE) in µg/L	160	1	U		1	U	1	U
cis-1,3-Dichloropropene in µg/L		1	U		1	U	1	U
Dibromochloromethane in µg/L	0.22	1	U		1	U	1	U
Dibromomethane in µg/L		1	U		1	U	1	U
Dichlorodifluoromethane in µg/L	9.9	1	U		1	U	1	U
Ethylbenzene in µg/L	2,100	1	U		1	U	1	U
Hexachlorobutadiene in µg/L	0.81	1	U		1	U	1	U
Isopropylbenzene in µg/L	720	1	U		1	U	1	U
Methylene chloride in µg/L	94	5	U		5	U	5	U
Methyl-Tert-Butyl Ether in µg/L	610	1	U		1	U	1	U
n-Propylbenzene in µg/L		1	U		1	U	1	U
p-Isopropyltoluene in µg/L		1	U		1	U	1	U
sec-Butylbenzene in µg/L		1	U		1	U	1	U
Styrene in µg/L	78	1	U		1	U	1	U
tert-Butylbenzene in µg/L		1	U		1	U	1	U
Tetrachloroethene (PCE) in µg/L	0.39	1	U		1	U	1	U
Toluene in µg/L	15,000	1	U		1	U	1	U
trans-1,2-Dichloroethene in µg/L	130	1	U		1	U	1	U
trans-1,3-Dichloropropene in µg/L		1	U		1	U	1	U
Trichloroethene (TCE) in µg/L	1.6	1	U		1	U	1	U
Trichlorofluoromethane in µg/L	120	1	U		1	U	1	U
Vinyl chloride in µg/L	0.35	0.2	U		0.2	U	0.2	U
m,p-Xylenes in µg/L	310	2	U		2	U	2	U
o-Xylene in µg/L	440	1	U		1	U	1	U
Xylenes (total) in µg/L	310	ND			ND		ND	
Field Parameters								
Dissolved Oxygen in mg/L		1.1			0.18		1.04	
ORP in mVolts		-118.7			-145.7		-138.6	
pH in pH Units		7.14			7.02		7.02	
Specific Conductance in us/cm		321.8			265.7		406.4	
Temperature in deg C		16.1			13.6		16.6	
Turbidity in NTU		4.21			13.8		3.04	

Notes:

Concentrations in shaded cells indicate value exceeds Groundwater Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-19A - Soil Quality Data for Hydraulic Barker Building

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	HB-B-1 9/7/12 (2-3 ft)	HB-B-1 FD 9/7/12 (2-3 ft)	HB-B-1 9/7/12 (3-4 ft)	HB-B-1 9/7/12 (6-7 ft)	HB-B-2 9/7/12 (1-1.5 ft)	HB-B-2 9/7/12 (5-6 ft)	HB-B-2 9/7/12 (6-7 ft)	HB-B-3 9/6/12 (1-2 ft)	HB-B-3 9/6/12 (3-4 ft)	HB-B-3 9/6/12 (6-7 ft)	HB-MW-1 9/7/12 (1.5-2 ft)	HB-MW-1 FD 9/7/12 (1.5-2 ft)	HB-MW-1 9/7/12 (3-3.5 ft)	HB-MW-1 9/7/12 (6-7 ft)
Total Petroleum Hydrocarbons (TPH)																
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	50 U	50 U	50 U	50 U	290	200	50 U	50 U	50 U	50 U	50 U		140	50 U
Oil Range Hydrocarbons in mg/kg	2,000	2,000	250 U	250 U	250 U	250 U	3,100	1,800	250 U	250 U	250 U	250 U	310		1,300	250 U
Total TPH in mg/kg	2,000	2,000	ND	ND	ND	ND	3,390	2,000	ND	ND	ND	ND	335		1,440	ND
Metals																
Antimony in mg/kg			1.28	1.62	1 U	1 U	6.73	1.9	1 U	1 U	1 U	1 U	2.15		2.36	1 U
Arsenic in mg/kg	20	20	7.3	7.1	3.9	2.59	9.06	5.85	2.1	7.23	2.49	1.13	4.83		6.67	4.09
Beryllium in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U
Cadmium in mg/kg	2	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U
Chromium (Total) in mg/kg	2,000	2,000	10.1	10.4	9.86	9.62	13.3	14.5	6.87	14.4	7.65	7.92	14.2		12.9	13.1
Copper in mg/kg			34.7	41.4	30.3	42.5	46.7	67.7	14.1	16.8	8.65	9.27	25.2		143	75.8
Lead in mg/kg	250	1,000	119	99.1	122	74.4	99.3	107	38.5	3.45	4.91	6.49	65.9		231	64.2
Mercury in mg/kg	2	2	0.13	0.13	0.1 U	0.1 U	0.1 U	0.15	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U		0.37	0.14
Nickel in mg/kg			19.6	21	19	20.4	22.1	27.2	15.9	24	16.5	16.3	27.4		36.7	21.7
Selenium in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U
Silver in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U
Thallium in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U
Zinc in mg/kg			82.6	96.9	90.5	99.5	131	87.4	58	31.6	23.2	23.5	159		311	158
Polycyclic Aromatic Hydrocarbons (PAHs)																
Acenaphthene in mg/kg	4,800	210,000	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.01 U	0.01 U	0.01 U	0.03 U	0.03 U	0.03 U	0.03 U
Acenaphthylene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.01 U	0.01 U	0.01 U	0.03 U	0.03 U	0.12	0.03 U
Anthracene in mg/kg	24,000	1,100,000	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.01 U	0.01 U	0.01 U	0.03 U	0.03 U	0.079	0.03 U
Benzo(g,h,i)perylene in mg/kg			0.059	0.058	0.047	0.043	0.03 U	0.044	0.03 U	0.01 U	0.024	0.01 U	0.054	0.069 J	0.49	0.062
Fluoranthene in mg/kg	3,200	140,000	0.13	0.11	0.047	0.13	0.03 U	0.059	0.046	0.01 U	0.01 U	0.01 U	0.06	0.083	0.51	0.13
Fluorene in mg/kg	3,200	140,000	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.01 U	0.01 U	0.01 U	0.03 U	0.03 U	0.03 U	0.03 U
Phenanthrene in mg/kg			0.075	0.07	0.035	0.12	0.03 U	0.03 U	0.03 U	0.01 U	0.01 U	0.01 U	0.033	0.043	0.22	0.078
Pyrene in mg/kg	2,400	110,000	0.16	0.13	0.056	0.16	0.03 U	0.072	0.047	0.01 U	0.01 U	0.01 U	0.096	0.11	0.64	0.15
2-Methylnaphthalene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.03 U	0.03 U
Naphthalene in mg/kg	5	5	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.01 U	0.01 U	0.01 U	0.03 U	0.03 U	0.03 U	0.03 U
Benz(a)anthracene in mg/kg	1.4	180	0.071	0.06	0.03 U	0.072	0.03 U	0.04	0.03 U	0.01 U	0.016	0.01 U	0.053	0.063	0.45	0.066
Benzo(a)pyrene in mg/kg	0.14	2	0.081	0.07	0.03 U	0.074	0.03 U	0.049	0.03 U	0.01 U	0.025	0.01 U	0.069	0.080 J	0.63	0.073
Benzo(b)fluoranthene in mg/kg	1.4	180	0.096	0.085	0.035	0.07	0.03 U	0.057	0.03 U	0.01 U	0.036	0.01 U	0.073	0.091 J	0.69	0.087
Benzo(k)fluoranthene in mg/kg	14	1,800	0.037	0.03	0.03 U	0.031	0.03 U	0.03 U	0.03 U	0.01 U	0.013	0.01 U	0.03 U	0.03 UJ	0.24	0.032
Chrysene in mg/kg	140	18,000	0.086	0.074	0.031	0.076	0.03 U	0.049	0.03 U	0.01 U	0.056	0.01 U	0.073	0.089	0.48	0.085
Dibenzo(a,h)anthracene in mg/kg	0.14	18	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.01 U	0.01 U	0.01 U	0.03 U	0.03 UJ	0.13	0.03 U
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	180	0.055	0.05	0.03 U	0.041	0.03 U	0.042	0.03 U	0.01 U	0.028	0.01 U	0.04	0.052 J	0.45	0.053
Total cPAHs TEQ in mg/kg	0.14	2	0.109	0.0947	0.0248	0.0977	ND	0.0664	ND	ND	0.0354	ND	0.0893	0.104	0.831	0.0992
Other Semivolatiles																
1,2,4-Trichlorobenzene in mg/kg	35	4,500	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.03 U	0.03 U
1,2-Dichlorobenzene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.03 U	0.03 U
1,3-Dichlorobenzene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.03 U	0.03 U
1,4-Dichlorobenzene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.03 U	0.03 U
2,4,5-Trichlorophenol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U				0.3 U	0.3 U	0.3 U	0.3 U
2,4,6-Trichlorophenol in mg/kg	91	12,000	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U				0.3 U	0.3 U	0.3 U	0.3 U
2,4-Dichlorophenol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U				0.3 U	0.3 U	0.3 U	0.3 U
2,4-Dimethylphenol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U				0.3 U	0.3 U	0.3 U	0.3 U
2,4-Dinitrophenol in mg/kg			0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U				0.9 U	0.9 U	0.9 U	0.9 U
2-Chloronaphthalene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.03 U	0.03 U
2-Chlorophenol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U				0.3 U	0.3 U	0.3 U	0.3 U
2-Methylphenol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U				0.3 U	0.3 U	0.3 U	0.3 U
2-Nitroaniline in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.03 U	0.03 U
2-Nitrophenol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U				0.3 U	0.3 U	0.3 U	0.3 U
3 & 4 Methylphenol in mg/kg			0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U				0.6 U	0.6 U	0.6 U	0.6 U
3-Nitroaniline in mg/kg			3 U	3 U	3 U	3 U	3 U	3 U	3 U				3 U	3 U	3 U	3 U
4,6-Dinitro-2-methylphenol in mg/kg			0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U				0.9 U	0.9 U	0.9 U	0.9 U
4-Bromophenyl phenyl ether in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.03 U	0.03 U
4-Chloro-3-methylphenol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U				0.3 U	0.3 U	0.3 U	0.3 U
4-Chloroaniline in mg/kg	5	660	3 U	3 U	3 U	3 U	3 U	3 U	3 U				3 U	3 U	3 U	3 U
4-Chlorophenyl phenyl ether in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.03 U	0.03 U

Table 3-19A - Soil Quality Data for Hydraulic Barker Building

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	HB-B-1 9/7/12 (2-3 ft)	HB-B-1 FD 9/7/12 (2-3 ft)	HB-B-1 9/7/12 (3-4 ft)	HB-B-1 9/7/12 (6-7 ft)	HB-B-2 9/7/12 (1-1.5 ft)	HB-B-2 9/7/12 (5-6 ft)	HB-B-2 9/7/12 (6-7 ft)	HB-B-3 9/6/12 (1-2 ft)	HB-B-3 9/6/12 (3-4 ft)	HB-B-3 9/6/12 (6-7 ft)	HB-MW-1 9/7/12 (1.5-2 ft)	HB-MW-1 FD 9/7/12 (1.5-2 ft)	HB-MW-1 9/7/12 (3-3.5 ft)	HB-MW-1 9/7/12 (6-7 ft)
4-Nitroaniline in mg/kg			3 U	3 U	3 U	3 U	3 U	3 U	3 U				3 U	3 U	3 U	3 U
4-Nitrophenol in mg/kg			0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U				0.9 U	0.9 U	0.9 U	0.9 U
Benzoic acid in mg/kg			1.5 UJ	1.5 U	1.5 U	1.5 U	1.5 U	1.5 UJ	1.5 UJ				1.5 U	1.5 UJ	1.5 UJ	1.5 U
Benzyl alcohol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U				0.3 U	0.3 U	0.3 U	0.3 U
Benzyl butyl phthalate in mg/kg	530	69,000	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.043	0.03 U
Bis(2-chloro-1-methylethyl) ether in mg/kg	14	1,900	0.03 UJ	0.03 UJ	0.03 UJ	0.03 UJ	0.03 UJ	0.03 UJ	0.03 UJ				0.03 UJ	0.03 UJ	0.03 UJ	0.03 UJ
Bis(2-chloroethoxy)methane in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.03 U	0.03 U
Bis(2-chloroethyl) ether in mg/kg	0.91	120	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.03 U	0.03 U
Bis(2-ethylhexyl) phthalate in mg/kg	71	9,400	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U				0.48 U	0.48 U	0.48 U	0.48 U
Carbazole in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.043	0.03 U
Dibenzofuran in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.03 U	0.03 U
Diethyl phthalate in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.03 U	0.03 U
Dimethyl phthalate in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.03 U	0.03 U
Di-n-butyl phthalate in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.037	0.03 U
Di-n-octyl phthalate in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 UJ	0.03 U	0.03 U
Hexachlorobenzene in mg/kg	0.63	82	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.03 U	0.03 U
Hexachlorobutadiene in mg/kg	13	1,700	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.03 U	0.03 U
Hexachlorocyclopentadiene in mg/kg			0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U				0.09 U	0.09 U	0.09 U	0.09 U
Hexachloroethane in mg/kg	71	9,400	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.03 U	0.03 U
Isophorone in mg/kg	1,100	140,000	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.03 U	0.03 U
Nitrobenzene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.03 U	0.03 U
N-Nitroso-di-n-propylamine in mg/kg	0.14	19	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.03 U	0.03 U
N-Nitrosodiphenylamine in mg/kg	200	27,000	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.03 U	0.03 U
Pentachlorophenol in mg/kg	2.5	330	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U				0.3 U	0.3 U	0.3 U	0.3 U
Phenol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U				0.3 U	0.3 U	0.3 U	0.3 U
2,4-Dinitrotoluene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.03 U	0.03 U
2,6-Dinitrotoluene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U				0.03 U	0.03 U	0.03 U	0.03 U
Volatile Organic Compounds (VOC)																
1,1,1,2-Tetrachloroethane in mg/kg	38	5,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
1,1,1-Trichloroethane in mg/kg	2	2	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
1,1,2,2-Tetrachloroethane in mg/kg	5	660	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
1,1,2-Trichloroethane in mg/kg	18	2,300	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
1,1-Dichloroethane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
1,1-Dichloroethene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
1,1-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
1,2,3-Trichlorobenzene in mg/kg			0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U		0.25 U	0.25 U
1,2,3-Trichloropropane in mg/kg	0.033	4.4	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
1,2,4-Trichlorobenzene in mg/kg	35	4,500								0.25 U	0.25 U	0.25 U				
1,2,4-Trimethylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
1,2-Dibromo-3-chloropropane in mg/kg	1.3	160	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
1,2-Dichlorobenzene in mg/kg										0.05 U	0.05 U	0.05 U				
1,2-Dichloroethane (EDC) in mg/kg	11	1,400	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
1,2-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
1,3,5-Trimethylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
1,3-Dichlorobenzene in mg/kg										0.05 U	0.05 U	0.05 U				
1,3-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
1,4-Dichlorobenzene in mg/kg										0.05 U	0.05 U	0.05 U				
2,2-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
2-Butanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U
2-Chlorotoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
2-Hexanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U
4-Chlorotoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
4-Methyl-2-pentanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U
Acetone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U
Benzene in mg/kg	0.03	0.03	0.03 U	0.03 U	0.03 U	0.036	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U
Bromobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
Bromodichloromethane in mg/kg	16	2,100	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
Bromoform in mg/kg	130	17,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U

Table 3-19A - Soil Quality Data for Hydraulic Barker Building

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	HB-B-1 9/7/12 (2-3 ft)	HB-B-1 FD 9/7/12 (2-3 ft)	HB-B-1 9/7/12 (3-4 ft)	HB-B-1 9/7/12 (6-7 ft)	HB-B-2 9/7/12 (1-1.5 ft)	HB-B-2 9/7/12 (5-6 ft)	HB-B-2 9/7/12 (6-7 ft)	HB-B-3 9/6/12 (1-2 ft)	HB-B-3 9/6/12 (3-4 ft)	HB-B-3 9/6/12 (6-7 ft)	HB-MW-1 9/7/12 (1.5-2 ft)	HB-MW-1 FD 9/7/12 (1.5-2 ft)	HB-MW-1 9/7/12 (3-3.5 ft)	HB-MW-1 9/7/12 (6-7 ft)
Bromomethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U
Carbon tetrachloride in mg/kg	14	1,900	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
Chlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
Chloroethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U
Chloroform in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
Chloromethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U
cis-1,2-Dichloroethene (DCE) in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
cis-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
Dibromochloromethane in mg/kg	12	1,600	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
Dibromomethane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
Dichlorodifluoromethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U
Ethylbenzene in mg/kg	6	6	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
Hexachlorobutadiene in mg/kg	13	1,700	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U		0.25 U	0.25 U
Isopropylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
Methylene chloride in mg/kg	0.02	0.02	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
n-Propylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
p-Isopropyltoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
sec-Butylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
Styrene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
tert-Butylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
Tetrachloroethene (PCE) in mg/kg	0.05	0.05	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U		0.025 U	0.025 U
Toluene in mg/kg	7	7	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
trans-1,2-Dichloroethene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
trans-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
Trichloroethene (TCE) in mg/kg	0.03	0.03	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U
Trichlorofluoromethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U
Vinyl chloride in mg/kg	0.67	88	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
m,p-Xylenes in mg/kg	16,000	700,000	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U		0.1 U	0.1 U
o-Xylene in mg/kg	16,000	700,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U
Xylenes (total) in mg/kg	9	9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND
Polychlorinated Biphenyls (PCBs)																
Aroclor 1016 in mg/kg	14	1,900	0.1 U				0.1 U			0.1 U			0.1 U			
Aroclor 1221 in mg/kg			0.1 U				0.1 U			0.1 U			0.1 U			
Aroclor 1232 in mg/kg			0.1 U				0.1 U			0.1 U			0.1 U			
Aroclor 1242 in mg/kg			0.1 U				0.1 U			0.1 U			0.1 U			
Aroclor 1248 in mg/kg			0.1 U				0.1 U			0.1 U			0.1 U			
Aroclor 1254 in mg/kg	0.5	66	0.1 U				0.1 U			0.1 U			0.1 U			
Aroclor 1260 in mg/kg	0.5	66	0.1 U				0.1 U			0.1 U			0.15			
Total PCBs in mg/kg	1	10	ND				ND			ND			0.45			

Notes:
Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.
Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.
J - Analyte was positively identified. The reported result is an estimate.
U - Analyte was not detected at or above the reported result.
UJ - Analyte was not detected at or above the reported estimate.

Table 3-19B - Groundwater Quality Data for Hydraulic Barker Building

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	HB-MW-01 09/14/12	HB-MW-01 09/14/12 FD
Total Petroleum Hydrocarbons (TPH)			
Diesel Range Hydrocarbons in µg/L	500	50 U	
Oil Range Hydrocarbons in µg/L	500	250 U	
Total TPHs in µg/L	500	ND	
Dissolved Metals			
Dissolved Antimony in µg/L	640	1 U	
Dissolved Arsenic in µg/L	5	4.37	
Dissolved Beryllium in µg/L	270	1 U	
Dissolved Cadmium in µg/L	8.8	1 U	
Dissolved Chromium (Total) in µg/L	240,000	1 U	
Dissolved Copper in µg/L	3.1	1 U	
Dissolved Lead in µg/L	8.1	1 U	
Dissolved Mercury in µg/L	0.15	0.1 U	
Dissolved Nickel in µg/L	8.2	2.95	
Dissolved Selenium in µg/L	71	1 U	
Dissolved Silver in µg/L	1.9	1 U	
Dissolved Thallium in µg/L	0.47	1 U	
Dissolved Zinc in µg/L	81	1 U	
Conventional Chemistry Parameters			
Total Suspended Solids in mg/L		10 U	
Polycyclic Aromatic Hydrocarbons (PAHs)			
Acenaphthene in µg/L	640	0.05 U	1 U
Acenaphthylene in µg/L		0.05 U	1 U
Anthracene in µg/L	26,000	0.05 U	1 U
Benzo(g,h,i)perylene in µg/L		0.05 U	1 U
Fluoranthene in µg/L	90	0.05 U	1 U
Fluorene in µg/L	3,500	0.05 U	1 U
Phenanthrene in µg/L		0.05 U	1 U
Pyrene in µg/L	2,600	0.05 U	1 U
2-Methylnaphthalene in µg/L		1 U	1 U
Naphthalene in µg/L	170	0.05 U	1 U
Benz(a)anthracene in µg/L	0.018	0.01 U	1 U
Benzo(a)pyrene in µg/L	0.018	0.01 U	1 U
Benzo(b)fluoranthene in µg/L	0.018	0.01 U	1 U
Benzo(k)fluoranthene in µg/L	0.018	0.01 U	1 U
Chrysene in µg/L	0.018	0.01 U	1 U
Dibenzo(a,h)anthracene in µg/L	0.018	0.01 U	1 U
Indeno(1,2,3-cd)pyrene in µg/L	0.018	0.01 U	1 U
Total cPAHs TEQ in µg/L	0.018	ND	ND
Other Semivolatiles			
1,2,4-Trichlorobenzene in µg/L	2	1 U	1 U
1,2-Dichlorobenzene in µg/L	1,300	1 U	1 U
1,3-Dichlorobenzene in µg/L	960	1 U	1 U
1,4-Dichlorobenzene in µg/L	190	1 U	1 U
2,4,5-Trichlorophenol in µg/L	3,600	10 U	10 U
2,4,6-Trichlorophenol in µg/L	2.4	10 U	10 U
2,4-Dichlorophenol in µg/L	190	10 U	10 U
2,4-Dimethylphenol in µg/L	550	10 U	10 U
2,4-Dinitrophenol in µg/L	3,500	30 U	30 U
2-Chloronaphthalene in µg/L	1,000	1 U	1 U
2-Chlorophenol in µg/L	97	10 U	10 U
2-Methylphenol in µg/L		10 U	10 U
2-Nitroaniline in µg/L		3 U	3 U
2-Nitrophenol in µg/L		10 U	10 U
3 & 4 Methylphenol in µg/L		20 U	20 U
3-Nitroaniline in µg/L		3 U	3 U
4,6-Dinitro-2-methylphenol in µg/L		30 U	30 U
4-Bromophenyl phenyl ether in µg/L		1 U	1 U
4-Chloro-3-methylphenol in µg/L		10 U	10 U

Table 3-19B - Groundwater Quality Data for Hydraulic Barker Building

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	HB-MW-01 09/14/12	HB-MW-01 09/14/12 FD
4-Chloroaniline in µg/L		3 U	3 U
4-Chlorophenyl phenyl ether in µg/L		1 U	1 U
4-Nitroaniline in µg/L		10 U	10 U
4-Nitrophenol in µg/L		10 UJ	10 U
Benzoic acid in µg/L		50 UJ	50 UJ
Benzyl alcohol in µg/L		10 U	10 U
Benzyl butyl phthalate in µg/L	8.2	1 U	1 U
Bis(2-chloro-1-methylethyl) ether in µg/L	37	10 UJ	10 UJ
Bis(2-chloroethoxy)methane in µg/L		1 U	1 U
Bis(2-chloroethyl) ether in µg/L	0.53	10 U	10 U
Bis(2-ethylhexyl) phthalate in µg/L	2.2	10 U	10 U
Carbazole in µg/L		1 U	1 U
Dibenzofuran in µg/L		1 U	1 U
Diethyl phthalate in µg/L	28,000	1 U	1 U
Dimethyl phthalate in µg/L	1,100,000	1 U	1 U
Di-n-butyl phthalate in µg/L	2,900	1 U	1 U
Di-n-octyl phthalate in µg/L		1 UJ	1 U
Hexachlorobenzene in µg/L	0.00029	1 U	1 U
Hexachlorobutadiene in µg/L	0.81	1 U	1 U
Hexachlorocyclopentadiene in µg/L	1,100	3 U	3 U
Hexachloroethane in µg/L	3.3	1 U	1 U
Isophorone in µg/L	600	1 U	1 U
Nitrobenzene in µg/L	690	1 U	1 U
N-Nitroso-di-n-propylamine in µg/L	0.51	10 U	10 U
N-Nitrosodiphenylamine in µg/L	6	1 U	1 U
Pentachlorophenol in µg/L	1.5	10 U	10 U
Phenol in µg/L	560,000	10 UJ	10 U
2,4-Dinitrotoluene in µg/L	3.4	1 U	1 U
2,6-Dinitrotoluene in µg/L		1 U	1 U
Volatile Organic Compounds (VOC)			
1,1,1,2-Tetrachloroethane in µg/L	7.4	1 U	
1,1,1-Trichloroethane in µg/L	11,000	1 U	
1,1,2,2-Tetrachloroethane in µg/L	4	1 U	
1,1,2-Trichloroethane in µg/L	7.9	1 U	
1,1-Dichloroethane in µg/L	2,300	1 U	
1,1-Dichloroethene in µg/L	3.2	1 U	
1,1-Dichloropropene in µg/L		1 U	
1,2,3-Trichlorobenzene in µg/L		1 U	
1,2,3-Trichloropropane in µg/L		1 U	
1,2,4-Trimethylbenzene in µg/L	24	1 U	
1,2-Dibromo-3-chloropropane in µg/L		10 U	
1,2-Dibromoethane (EDB) in µg/L	0.74	1 U	
1,2-Dichloroethane (EDC) in µg/L	4.2	1 U	
1,2-Dichloropropane in µg/L	15	1 U	
1,3,5-Trimethylbenzene in µg/L	25	1 U	
1,3-Dichloropropane in µg/L		1 U	
2,2-Dichloropropane in µg/L		1 U	
2-Butanone in µg/L	350,000	10 U	
2-Chlorotoluene in µg/L		1 U	
2-Hexanone in µg/L		10 U	
4-Chlorotoluene in µg/L		1 U	
4-Methyl-2-pentanone in µg/L	11,000	10 U	
Acetone in µg/L		10 U	
Benzene in µg/L	2.4	0.35 U	
Bromobenzene in µg/L		1 U	
Bromodichloromethane in µg/L	0.09	1 U	
Bromoform in µg/L	140	1 U	
Bromomethane in µg/L	13	1 U	
Carbon tetrachloride in µg/L	0.22	1 U	

Table 3-19B - Groundwater Quality Data for Hydraulic Barker Building

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	HB-MW-01 09/14/12	HB-MW-01 09/14/12 FD
Chlorobenzene in µg/L	100	1 U	
Chloroethane in µg/L	12	1 U	
Chloroform in µg/L	1.2	1 U	
Chloromethane in µg/L	5.2	10 U	
cis-1,2-Dichloroethene (DCE) in µg/L	160	1 U	
cis-1,3-Dichloropropene in µg/L		1 U	
Dibromochloromethane in µg/L	0.22	1 U	
Dibromomethane in µg/L		1 U	
Dichlorodifluoromethane in µg/L	9.9	1 U	
Ethylbenzene in µg/L	2,100	1 U	
Hexachlorobutadiene in µg/L	0.81	1 U	
Isopropylbenzene in µg/L	720	1 U	
Methylene chloride in µg/L	94	5 U	
Methyl-Tert-Butyl Ether in µg/L	610	1 U	
n-Propylbenzene in µg/L		1 U	
p-Isopropyltoluene in µg/L		1 U	
sec-Butylbenzene in µg/L		1 U	
Styrene in µg/L	78	1 U	
tert-Butylbenzene in µg/L		1 U	
Tetrachloroethene (PCE) in µg/L	0.39	1 U	
Toluene in µg/L	15,000	1 U	
trans-1,2-Dichloroethene in µg/L	130	1 U	
trans-1,3-Dichloropropene in µg/L		1 U	
Trichloroethene (TCE) in µg/L	1.6	1 U	
Trichlorofluoromethane in µg/L	120	1 U	
Vinyl chloride in µg/L	0.35	0.2 U	
m,p-Xylenes in µg/L	310	2 U	
o-Xylene in µg/L	440	1 U	
Xylenes (total) in µg/L	310	ND	
Field Parameters			
Dissolved Oxygen in mg/L		0.18	
ORP in mVolts		-103.9	
pH in pH Units		7.1	
Specific Conductance in us/cm		469.7	
Temperature in deg C		16.8	
Turbidity in NTU		3.05	

Notes:

Concentrations in shaded cells indicate value exceeds Groundwater Screening Level.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-20A - Soil Quality Data for General Fill

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	GF11-B-1 9/5/12 (0-1 ft)	GF11-B-1 9/5/12 (2-3 ft)	GF11-B-1 FD 9/5/12 (2-3 ft)	GF11-B-1 9/5/12 (5-6 ft)	GF11-B-2 9/5/12 (0-1 ft)	GF11-B-2 9/5/12 (2-3 ft)	GF11-B-2 9/5/12 (5-6 ft)	GF11-B-2 9/5/12 (7-8 ft)	GF11-B-3 9/5/12 (0-1 ft)	GF11-B-3 9/5/12 (2-3 ft)	GF11-B-3 9/5/12 (5-6 ft)	GF9-B-1 9/6/12 (4-4.5 ft)	GF9-B-1 9/6/12 (5-6 ft)	GF9-B-1 9/6/12 (8-9 ft)	GF9-B-2 9/6/12 (3-3.5 ft)	GF9-B-2 9/6/12 (6-7 ft)	GF9-B-2 9/6/12 (9-9.5 ft)	GF9-MW-1 9/6/12 (5.5-6.5 ft)	GF9-MW-1 FD 9/6/12 (5.5-6.5 ft)	GF9-MW-1 9/6/12 (10-11 ft)	GF9-MW-1 9/6/12 (13-14 ft)
Total Petroleum Hydrocarbons (TPH)																							
Gasoline Range Hydrocarbons in mg/kg	100	100																					
Diesel Range Hydrocarbons in mg/kg	2,000	2,000												50 U	50 U	90	50 U	50 U	1,900	50 U	50 U	1,200	50 U
Oil Range Hydrocarbons in mg/kg	2,000	2,000												250 U	250 U	910	250 U	250 U	3,700	250 U	250 U	460	250 U
Total TPH in mg/kg	2,000	2,000												ND	ND	1,000	ND	ND	5,600	ND	ND	1,660	ND
Metals																							
Antimony in mg/kg																							
Arsenic in mg/kg	20	20																					
Beryllium in mg/kg																							
Cadmium in mg/kg	2	2																					
Chromium (Total) in mg/kg	2,000	2,000																					
Copper in mg/kg																							
Lead in mg/kg	250	1,000	15.3	43.9	31	19	3.52	11.7	41.5	19	13.3	44.6	7.09										
Mercury in mg/kg	2	2																					
Nickel in mg/kg																							
Selenium in mg/kg																							
Silver in mg/kg																							
Thallium in mg/kg																							
Zinc in mg/kg																							
TCLP Metals																							
Arsenic in mg/L																							
Barium in mg/L																							
Cadmium in mg/L																							
Chromium in mg/L																							
Lead in mg/L																							
Mercury in mg/L																							
Silver in mg/L																							
Selenium in mg/L																							
Polycyclic Aromatic Hydrocarbons (PAHs)																							
Acenaphthene in mg/kg	4,800	210,000												0.01 U	0.01 U	0.01	0.01 U	0.01 U	9	0.01 U		72	0.032
Acenaphthylene in mg/kg														0.01 U	0.01 U	0.027	0.01 U	0.01 U	0.01 U	0.01 U		1 U	0.01 U
Anthracene in mg/kg	24,000	1,100,000												0.01 U	0.01 U	0.035	0.01 U	0.01 U	0.27	0.01 U		25	0.01 U
Benzo(g,h,i)perylene in mg/kg														0.016	0.056	0.41	0.01 U	0.039	0.085 J	0.028		1 U	0.01 U
Fluoranthene in mg/kg	3,200	140,000												0.04	0.13	0.71	0.01 U	0.065	0.65	0.043		74	0.012
Fluorene in mg/kg	3,200	140,000												0.01 U	0.01 U	0.031	0.01 U	0.01 U	3.5	0.01 U		79	0.01 U
Phenanthrene in mg/kg														0.048	0.071	0.36	0.01 U	0.027	3.2	0.031		210	0.026
Pyrene in mg/kg	2,400	110,000												0.05	0.14	1.5	0.01 U	0.091	1.2 J	0.056		45	0.011
2-Methylnaphthalene in mg/kg																							
Naphthalene in mg/kg	5	5												0.023	0.016	0.027	0.01 U	0.021	0.87	0.025		79	0.011
Benz(a)anthracene in mg/kg	1.4	180												0.016	0.046	0.28	0.01 U	0.035	0.17 J	0.024		8.6	0.01 U
Benzo(a)pyrene in mg/kg	0.14	2												0.019	0.067	0.41	0.01 U	0.044	0.11 J	0.03		2	0.01 U
Benzo(b)fluoranthene in mg/kg	1.4	180												0.028	0.096	0.5	0.01 U	0.078 J	0.14 J	0.045 J		3.2 J	0.013 J
Benzo(k)fluoranthene in mg/kg	14	1,800												0.01 U	0.025	0.18	0.01 U	0.022	0.029 J	0.014		1.4	0.01 U
Chrysene in mg/kg	140	18,000												0.027	0.074	0.51	0.01 U	0.052	0.21 J	0.041		9	0.01 U
Dibenzo(a,h)anthracene in mg/kg	0.14	18												0.01 U	0.012	0.1 U	0.01 U	0.01 U	0.023 J	0.01 U		1 U	0.01 U
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	180												0.015	0.065 J	0.4	0.01 U	0.044 J	0.089 J	0.030 J		1 U	0.01 U
Total cPAHs TEQ in mg/kg	0.14	2												0.0262	0.0921	0.7	ND	0.0629	0.157 J	0.0422		3.51	0.00835 J
Other Semivolatiles																							
1,2,4-Trichlorobenzene in mg/kg	35	4,500																					
1,2-Dichlorobenzene in mg/kg																							
1,3-Dichlorobenzene in mg/kg																							
1,4-Dichlorobenzene in mg/kg																							
2,4,5-Trichlorophenol in mg/kg																							
2,4,6-Trichlorophenol in mg/kg	91	12,000																					
2,4-Dichlorophenol in mg/kg																							
2,4-Dimethylphenol in mg/kg																							
2,4-Dinitrophenol in mg/kg																							
2-Chloronaphthalene in mg/kg																							
2-Chlorophenol in mg/kg																							
2-Methylphenol in mg/kg																							
2-Nitroaniline in mg/kg																							
2-Nitrophenol in mg/kg																							
3 & 4 Methylphenol in mg/kg																							
3-Nitroaniline in mg/kg																							
4,6-Dinitro-2-methylphenol in mg/kg																							
4-Bromophenyl phenyl ether in mg/kg																							
4-Chloro-3-methylphenol in mg/kg																							
4-Chloroaniline in mg/kg	5	660																					
4-Chlorophenyl phenyl ether in mg/kg																							

Table 3-20A - Soil Quality Data for General Fill

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	GF11-B-1 9/5/12 (0-1 ft)	GF11-B-1 9/5/12 (2-3 ft)	GF11-B-1 FD 9/5/12 (2-3 ft)	GF11-B-1 9/5/12 (5-6 ft)	GF11-B-2 9/5/12 (0-1 ft)	GF11-B-2 9/5/12 (2-3 ft)	GF11-B-2 9/5/12 (5-6 ft)	GF11-B-2 9/5/12 (7-8 ft)	GF11-B-3 9/5/12 (0-1 ft)	GF11-B-3 9/5/12 (2-3 ft)	GF11-B-3 9/5/12 (5-6 ft)	GF9-B-1 9/6/12 (4-4.5 ft)	GF9-B-1 9/6/12 (5-6 ft)	GF9-B-1 9/6/12 (8-9 ft)	GF9-B-2 9/6/12 (3-3.5 ft)	GF9-B-2 9/6/12 (6-7 ft)	GF9-B-2 9/6/12 (9-9.5 ft)	GF9-MW-1 9/6/12 (5.5-6.5 ft)	GF9-MW-1 FD 9/6/12 (5.5-6.5 ft)	GF9-MW-1 9/6/12 (10-11 ft)	GF9-MW-1 9/6/12 (13-14 ft)
4-Nitroaniline in mg/kg																							
4-Nitrophenol in mg/kg																							
Benzoic acid in mg/kg																							
Benzyl alcohol in mg/kg																							
Benzyl butyl phthalate in mg/kg	530	69,000																					
Bis(2-chloro-1-methylethyl) ether in mg/kg	14	1,900																					
Bis(2-chloroethoxy)methane in mg/kg																							
Bis(2-chloroethyl) ether in mg/kg	0.91	120																					
Bis(2-ethylhexyl) phthalate in mg/kg	71	9,400																					
Carbazole in mg/kg																							
Dibenzofuran in mg/kg																							
Diethyl phthalate in mg/kg																							
Dimethyl phthalate in mg/kg																							
Di-n-butyl phthalate in mg/kg																							
Di-n-octyl phthalate in mg/kg																							
Hexachlorobenzene in mg/kg	0.63	82																					
Hexachlorobutadiene in mg/kg	13	1,700																					
Hexachlorocyclopentadiene in mg/kg																							
Hexachloroethane in mg/kg	71	9,400																					
Isophorone in mg/kg	1,100	140,000																					
Nitrobenzene in mg/kg																							
N-Nitroso-di-n-propylamine in mg/kg	0.14	19																					
N-Nitrosodiphenylamine in mg/kg	200	27,000																					
Pentachlorophenol in mg/kg	2.5	330																					
Phenol in mg/kg																							
2,4-Dinitrotoluene in mg/kg																							
2,6-Dinitrotoluene in mg/kg																							
Volatile Organic Compounds (VOC)																							
1,1,1,2-Tetrachloroethane in mg/kg	38	5,000																					
1,1,1-Trichloroethane in mg/kg	2	2																					
1,1,2,2-Tetrachloroethane in mg/kg	5	660																					
1,1,2-Trichloroethane in mg/kg	18	2,300																					
1,1-Dichloroethane in mg/kg																							
1,1-Dichloroethene in mg/kg																							
1,1-Dichloropropene in mg/kg																							
1,2,3-Trichlorobenzene in mg/kg																							
1,2,3-Trichloropropane in mg/kg	0.033	4.4																					
1,2,4-Trichlorobenzene in mg/kg	35	4,500																					
1,2,4-Trimethylbenzene in mg/kg																							
1,2-Dibromo-3-chloropropane in mg/kg	1.3	160																					
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005																					
1,2-Dichlorobenzene in mg/kg																							
1,2-Dichloroethane (EDC) in mg/kg	11	1,400																					
1,2-Dichloropropane in mg/kg																							
1,3,5-Trimethylbenzene in mg/kg																							
1,3-Dichlorobenzene in mg/kg																							
1,3-Dichloropropane in mg/kg																							
1,4-Dichlorobenzene in mg/kg																							
2,2-Dichloropropane in mg/kg																							
2-Butanone in mg/kg																							
2-Chlorotoluene in mg/kg																							
2-Hexanone in mg/kg																							
4-Chlorotoluene in mg/kg																							
4-Methyl-2-pentanone in mg/kg																							
Acetone in mg/kg																							
Benzene in mg/kg	0.03	0.03																					
Bromobenzene in mg/kg																							
Bromodichloromethane in mg/kg	16	2,100																					
Bromoform in mg/kg	130	17,000																					
Bromomethane in mg/kg																							
Carbon tetrachloride in mg/kg	14	1,900																					
Chlorobenzene in mg/kg																							
Chloroethane in mg/kg																							
Chloroform in mg/kg																							
Chloromethane in mg/kg																							
cis-1,2-Dichloroethene (DCE) in mg/kg																							
cis-1,3-Dichloropropene in mg/kg																							
Dibromochloromethane in mg/kg	12	1,600																					
Dibromomethane in mg/kg																							

Table 3-20A - Soil Quality Data for General Fill

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	GF11-B-1 9/5/12 (0-1 ft)	GF11-B-1 9/5/12 (2-3 ft)	GF11-B-1 FD 9/5/12 (2-3 ft)	GF11-B-1 9/5/12 (5-6 ft)	GF11-B-2 9/5/12 (0-1 ft)	GF11-B-2 9/5/12 (2-3 ft)	GF11-B-2 9/5/12 (5-6 ft)	GF11-B-2 9/5/12 (7-8 ft)	GF11-B-3 9/5/12 (0-1 ft)	GF11-B-3 9/5/12 (2-3 ft)	GF11-B-3 9/5/12 (5-6 ft)	GF9-B-1 9/6/12 (4-4.5 ft)	GF9-B-1 9/6/12 (5-6 ft)	GF9-B-1 9/6/12 (8-9 ft)	GF9-B-2 9/6/12 (3-3.5 ft)	GF9-B-2 9/6/12 (6-7 ft)	GF9-B-2 9/6/12 (9-9.5 ft)	GF9-MW-1 9/6/12 (5.5-6.5 ft)	GF9-MW-1 FD 9/6/12 (5.5-6.5 ft)	GF9-MW-1 9/6/12 (10-11 ft)	GF9-MW-1 9/6/12 (13-14 ft)
Dichlorodifluoromethane in mg/kg																							
Ethylbenzene in mg/kg	6	6																					
Hexachlorobutadiene in mg/kg	13	1,700																					
Isopropylbenzene in mg/kg																							
Methylene chloride in mg/kg	0.02	0.02																					
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1																					
n-Propylbenzene in mg/kg																							
p-Isopropyltoluene in mg/kg																							
sec-Butylbenzene in mg/kg																							
Styrene in mg/kg																							
tert-Butylbenzene in mg/kg																							
Tetrachloroethene (PCE) in mg/kg	0.05	0.05																					
Toluene in mg/kg	7	7																					
trans-1,2-Dichloroethene in mg/kg																							
trans-1,3-Dichloropropene in mg/kg																							
Trichloroethene (TCE) in mg/kg	0.03	0.03																					
Trichlorofluoromethane in mg/kg																							
Vinyl chloride in mg/kg	0.67	88																					
m,p-Xylenes in mg/kg	16,000	700,000																					
o-Xylene in mg/kg	16,000	700,000																					
Xylenes (total) in mg/kg	9	9																					
Naphthalene in mg/kg	5	5																					
Polychlorinated Biphenyls (PCBs)																							
Aroclor 1016 in mg/kg	14	1,900																					
Aroclor 1221 in mg/kg																							
Aroclor 1232 in mg/kg																							
Aroclor 1242 in mg/kg																							
Aroclor 1248 in mg/kg																							
Aroclor 1254 in mg/kg	0.5	66																					
Aroclor 1260 in mg/kg	0.5	66																					
Total PCBs in mg/kg	1	10																					
Dioxins/Furans																							
Total HpCDD in mg/kg																							
Total HpCDF in mg/kg																							
Total HxCDD in mg/kg																							
Total HxCDF in mg/kg																							
Total PeCDD in mg/kg																							
Total PeCDF in mg/kg																							
Total TCDD in mg/kg																							
Total TCDF in mg/kg																							
2,3,7,8-TCDD in mg/kg	0.000011	0.0015																					
1,2,3,7,8-PeCDD in mg/kg																							
1,2,3,4,7,8-HxCDD in mg/kg																							
1,2,3,6,7,8-HxCDD in mg/kg																							
1,2,3,7,8,9-HxCDD in mg/kg	0.00016	0.021																					
1,2,3,4,6,7,8-HpCDD in mg/kg																							
OCDD in mg/kg																							
2,3,7,8-TCDF in mg/kg																							
1,2,3,7,8-PeCDF in mg/kg																							
2,3,4,7,8-PeCDF in mg/kg																							
1,2,3,4,7,8-HxCDF in mg/kg																							
1,2,3,6,7,8-HxCDF in mg/kg																							
1,2,3,7,8,9-HxCDF in mg/kg																							
2,3,4,6,7,8-HxCDF in mg/kg																							
1,2,3,4,6,7,8-HpCDF in mg/kg																							
1,2,3,4,7,8,9-HpCDF in mg/kg																							
OCDF in mg/kg																							
Total 2,3,7,8 TCDD (TEQ) in mg/kg	0.000011	0.0015																					

Notes:
Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.
Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.
J - Analyte was positively identified. The reported result is an estimate.
U - Analyte was not detected at or above the reported result.
UJ - Analyte was not detected at or above the reported estimate.

Table 3-20A - Soil Quality Data for General Fill

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	GF-B-1 5/25/12 (1-2.5 ft)	GF-B-2 5/25/12 (2.5-4 ft)	GF-B-3 5/29/12 (1-2.5 ft)	GF-B-3 5/29/12 (7.5-9 ft)	GF-B-3 5/29/12 (11-12.5 ft)	GF-B-4 5/25/12 (2.5-4 ft)	GF-B-4 5/25/12 (7.5-9 ft)	GF-B-5 5/29/12 (1-2.5 ft)	GF-B-5 5/29/12 (7.5-9 ft)	GF-B-6 5/29/12 (1-2.5 ft)	GF-B-6 5/29/12 (7.5-9 ft)	GF-B-6 5/29/12 (20-21.5 ft)	GF-B-7 5/24/12 (1-2.5 ft)	GF-B-7 5/24/12 (7.5-9 ft)	GF-B-7 5/24/12 (10-11.5 ft)	GF-B-8 5/30/12 (1-2.5 ft)	GF-B-8 5/30/12 (7.5-9 ft)	GF-B-9 6/28/12 (1-2.5 ft)	GF-B-9 6/28/12 (2.5-3.5 ft)	GF-B-9 FD 6/28/12 (2.5-3.5 ft)	GF-B-9 6/28/12 (7.5-9 ft)
Total Petroleum Hydrocarbons (TPH)																							
Gasoline Range Hydrocarbons in mg/kg	100	100	2 U	2 U	2 U	2 U	6.8	2 U	2 U	40	18	2 U	5	2 U	2 U	2 U		2 U	2 U	2 U			2 U
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	50 U	50 U	50 UJ	50 UJ	50 UJ	65	50 U	270 J	76 J	50 UJ	150 J	50 U	110	50 U		50 U	50 U	50 U			6,400
Oil Range Hydrocarbons in mg/kg	2,000	2,000	250 U	250 U	250 U	250 U	250 U	620	250 U	720	250 U	250 U	250 U	250 U	480	250 U		250 U	250 U	250 U			250 U
Total TPH in mg/kg	2,000	2,000	ND	ND	ND	ND	ND	685	ND	990	201 J	ND	275 J	ND	590	ND		ND	ND	ND			6,520
Metals																							
Antimony in mg/kg			1 U	3.02	1 U	1 U	1 U	1 U	1 U	3.68	1 U	1 U	1 U	1 U	1 U	1 U		1.07	1 U	1 U			1 U
Arsenic in mg/kg	20	20	6.05	12.6	3.58	6.32	9.26	6.75	1.63	11.7	3.36	3.1	4.64	1.5	1.81	2		6.46	5.15	3.88			1.12
Beryllium in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U			1 U
Cadmium in mg/kg	2	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U			1 U
Chromium (Total) in mg/kg	2,000	2,000	13.2	12.9	17.4	21	21.1	19.5	9.67	16.2	7.74	10.2	17.5	7.65	9.99	9.19		17.2	8.85	13.9 J			10.7 J
Copper in mg/kg			16.2	23.4	21.3	27.6	52.4	26.9	8.01	42.1	7.85	19.9	20.7	5.84	10.1	9.15		65.6	11.9	16.4			10.8
Lead in mg/kg	250	1,000	4.66	32.4	6.86	12.4	34	5.82	2.79	59.5	5.26	6.94	13.4	1.28	2.49	5.11		214	59.8	18.3			11.2
Mercury in mg/kg	2	2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.14	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U		0.1 U	0.58	0.13			0.1 U
Nickel in mg/kg			28.7	21.1	36.3	24	24.9	23.2	12.1	44.1	12.3	31.2	20.7	15.3	23.8	17.4		22.3	14.1	25.3 J			19.1 J
Selenium in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U			1 U
Silver in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U			1 U
Thallium in mg/kg			1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U			1 U
Zinc in mg/kg			22.4	140	41.9	44.5	93.5	40	18.2	214	19.8	24.5	40.2	13	16.3	26.8		65.3	33.8	31.3			26.6
TCLP Metals																							
Arsenic in mg/L																							
Barium in mg/L																							
Cadmium in mg/L																							
Chromium in mg/L																							
Lead in mg/L																							
Mercury in mg/L																							
Silver in mg/L																							
Selenium in mg/L																							
Polycyclic Aromatic Hydrocarbons (PAHs)																							
Acenaphthene in mg/kg	4,800	210,000	0.03 U	0.03 U	0.01 U	0.1 U	0.019			0.01 U	0.015	0.41	0.14	0.01 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Acenaphthylene in mg/kg			0.03 U	0.03 U	0.01 U	0.3	0.065			0.01 U	0.01 U	0.048	0.019	0.01 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Anthracene in mg/kg	24,000	1,100,000	0.03 U	0.03 U	0.01 U	0.25	0.057			0.012	0.022	0.32	0.13	0.01 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Benzo(g,h,i)perylene in mg/kg			0.03 U	0.03 U	0.01 U	0.83	0.2			0.043	0.011	0.1	0.034	0.01 U	0.063	0.03 U		0.035	0.03 U	0.03 U			0.03 U
Fluoranthene in mg/kg	3,200	140,000	0.03 U	0.062	0.019	3.1	0.53			0.061	0.19	0.64	0.28	0.01 U	0.053	0.03 U		0.03 U	0.03 U	0.03 U			0.062
Fluorene in mg/kg	3,200	140,000	0.03 U	0.03 U	0.01 U	0.29	0.036			0.014	0.029	0.36	0.16	0.01 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Phenanthrene in mg/kg			0.03 U	0.064	0.016	3.3	0.37			0.05	0.025	1	0.57	0.01 U	0.077	0.03 U		0.03 U	0.03 U	0.031			0.035
Pyrene in mg/kg	2,400	110,000	0.03 U	0.064 J	0.016	3	0.49			0.074	0.18	0.51	0.2	0.01 U	0.068	0.03 U		0.03 U	0.03 U	0.036 J			0.064 J
2-Methylnaphthalene in mg/kg			0.03 U	0.03 U	0.03 U	0.22	0.03 U			0.036	0.03 U	0.21	0.087	0.03 U	0.075	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Naphthalene in mg/kg	5	5	0.031	0.083	0.012	0.54	0.13			0.12	0.018	0.42	0.09	0.01 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Benz(a)anthracene in mg/kg	1.4	180	0.03 U	0.03 U	0.01 U	0.77	0.17			0.028	0.042	0.15	0.074	0.01 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.041
Benzo(a)pyrene in mg/kg	0.14	2	0.03 U	0.03 U	0.01 U	1.2	0.25			0.039	0.022	0.091	0.039	0.01 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.039
Benzo(b)fluoranthene in mg/kg	1.4	180	0.03 U	0.03 U	0.01 U	1.5	0.32			0.056	0.039	0.14	0.054	0.01 U	0.03 U	0.03 U		0.06	0.03 U	0.03 U			0.052
Benzo(k)fluoranthene in mg/kg	14	1,800	0.03 U	0.03 U	0.01 U	0.42	0.11			0.013	0.01 U	0.029	0.016	0.01 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Chrysene in mg/kg	140	18,000	0.03 U	0.03 U	0.01	1.3	0.26			0.054	0.051	0.17	0.076	0.01 U	0.03 U	0.03 U		0.031	0.03 U	0.03 U			0.039
Dibenzo(a,h)anthracene in mg/kg	0.14	18	0.03 U	0.03 U	0.01 U	0.14	0.033			0.01 U	0.01 U	0.014	0.01 U	0.01 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	180	0.03 U	0.03 U	0.01 U	0.88	0.2			0.036	0.01 U	0.092	0.025	0.01 U	0.03 U	0.03 U		0.033	0.03 U	0.03 U			0.045
Total cPAHs TEQ in mg/kg	0.14	2	ND	ND	0.0076	1.58	0.336			0.0533	0.0321	0.135	0.0572	ND	ND	ND		0.0291	ND	ND			0.0562
Other Semivolatiles																							
1,2,4-Trichlorobenzene in mg/kg	35	4,500	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
1,2-Dichlorobenzene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
1,3-Dichlorobenzene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
1,4-Dichlorobenzene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
2,4,5-Trichlorophenol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U		0.3 U	0.3 U	0.3 U			0.3 U
2,4,6-Trichlorophenol in mg/kg	91	12,000	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U		0.3 U	0.3 U	0.3 U			0.3 U
2,4-Dichlorophenol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U		0.3 U	0.3 U	0.3 U			0.3 U
2,4-Dimethylphenol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U		0.3 U	0.3 U	0.3 U			0.3 U
2,4-Dinitrophenol in mg/kg			0.9 U	0.9 U	0.9 U	0.9 U	0.9 U			0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U		0.9 U	0.9 U	0.9 U			0.9 U
2-Chloronaphthalene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
2-Chlorophenol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U		0.3 U	0.3 U	0.3 U			0.3 U
2-Methylphenol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U		0.3 U	0.3 U	0.3 U			0.3 U
2-Nitroaniline in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
2-Nitrophenol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U		0.3 U	0.3 U	0.3 U			0.3 U
3 & 4 Methylphenol in mg/kg			0.6 U	0.6 U	0.6 U	0.6 U	0.6 U			0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U		0.6 U	0.6 U	0.6 U			0.6 U
3-Nitroaniline in mg/kg			3 U	3 U	3 U	3 U	3 U			3 U	3 U	3 U	3 U	3 U	3 U	3 U		3 U	3 U	3 U			3 U
4,6-Dinitro-2-methylphenol in mg/kg			0.9 U	0.9 U	0.9 U	0.9 U	0.9 U			0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U		0.9 U	0.9 U	0.9 U			0.9 U
4-Bromophenyl phenyl ether in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
4-Chloro-3-methylphenol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U		0.3 U	0.3 U	0.3 U			0.3 U
4-Chloroaniline in mg/kg	5	660	3 U	3 U	3 U	3 U	3 U			3 U	3 U	3 U	3 U	3 U	3 U	3 U		3 U	3 U	3 U			3 U
4-Chlorophenyl phenyl ether in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U

Table 3-20A - Soil Quality Data for General Fill

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	GF-B-1 5/25/12 (1-2.5 ft)	GF-B-2 5/25/12 (2.5-4 ft)	GF-B-3 5/29/12 (1-2.5 ft)	GF-B-3 5/29/12 (7.5-9 ft)	GF-B-3 5/29/12 (11-12.5 ft)	GF-B-4 5/25/12 (2.5-4 ft)	GF-B-4 5/25/12 (7.5-9 ft)	GF-B-5 5/29/12 (1-2.5 ft)	GF-B-5 5/29/12 (7.5-9 ft)	GF-B-6 5/29/12 (1-2.5 ft)	GF-B-6 5/29/12 (7.5-9 ft)	GF-B-6 5/29/12 (20-21.5 ft)	GF-B-7 5/24/12 (1-2.5 ft)	GF-B-7 5/24/12 (7.5-9 ft)	GF-B-7 5/24/12 (10-11.5 ft)	GF-B-8 5/30/12 (1-2.5 ft)	GF-B-8 5/30/12 (7.5-9 ft)	GF-B-9 6/28/12 (1-2.5 ft)	GF-B-9 6/28/12 (2.5-3.5 ft)	GF-B-9 FD 6/28/12 (2.5-3.5 ft)	GF-B-9 6/28/12 (7.5-9 ft)
4-Nitroaniline in mg/kg			3 U	3 U	3 U	3 U	3 U			3 U	3 U	3 U	3 U	3 U	3 U	3 U		3 U	3 U	3 U			3 U
4-Nitrophenol in mg/kg			0.9 U	0.9 U	0.9 U	0.9 U	0.9 U			0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U		0.9 U	0.9 U	0.9 U			0.9 U
Benzoic acid in mg/kg			1.5 U	1.5 U	1.5 U	1.5 U	1.5 U			1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U		1.5 U	1.5 U	1.5 U			1.5 U
Benzyl alcohol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U		0.3 U	0.3 U	0.3 U			0.3 U
Benzyl butyl phthalate in mg/kg	530	69,000	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Bis(2-chloro-1-methylethyl) ether in mg/kg	14	1,900	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Bis(2-chloroethoxy)methane in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Bis(2-chloroethyl) ether in mg/kg	0.91	120	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Bis(2-ethylhexyl) phthalate in mg/kg	71	9,400	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U			0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U		0.48 U	0.48 U	0.48 U			0.48 U
Carbazole in mg/kg			0.03 U	0.03 U	0.03 U	0.29	0.033			0.03 U	0.03 U	0.053	0.037	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Dibenzofuran in mg/kg			0.03 U	0.03 U	0.03 U	0.19	0.03 U			0.03 U	0.033	0.27	0.12	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Diethyl phthalate in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Dimethyl phthalate in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Di-n-butyl phthalate in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.042	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Di-n-octyl phthalate in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.03 U	0.03 U	0.03 UJ	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Hexachlorobenzene in mg/kg	0.63	82	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Hexachlorobutadiene in mg/kg	13	1,700	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Hexachlorocyclopentadiene in mg/kg			0.09 U	0.09 U	0.09 U	0.09 U	0.09 U			0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U		0.09 U	0.09 U	0.09 U			0.09 U
Hexachloroethane in mg/kg	71	9,400	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Isophorone in mg/kg	1,100	140,000	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Nitrobenzene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
N-Nitroso-di-n-propylamine in mg/kg	0.14	19	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
N-Nitrosodiphenylamine in mg/kg	200	27,000	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Pentachlorophenol in mg/kg	2.5	330	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U		0.3 U	0.3 U	0.3 U			0.3 U
Phenol in mg/kg			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U			0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U		0.3 U	0.3 U	0.3 U			0.3 U
2,4-Dinitrotoluene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
2,6-Dinitrotoluene in mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Volatile Organic Compounds (VOC)																							
1,1,1,2-Tetrachloroethane in mg/kg	38	5,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
1,1,1-Trichloroethane in mg/kg	2	2	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
1,1,2,2-Tetrachloroethane in mg/kg	5	660	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
1,1,2-Trichloroethane in mg/kg	18	2,300	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
1,1-Dichloroethane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
1,1-Dichloroethene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
1,1-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
1,2,3-Trichlorobenzene in mg/kg			0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U		0.25 U	0.25 U	0.25 U			0.25 U
1,2,3-Trichloropropane in mg/kg	0.033	4.4	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
1,2,4-Trichlorobenzene in mg/kg	35	4,500	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U		0.25 U	0.25 U				
1,2,4-Trimethylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.051	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
1,2-Dibromo-3-chloropropane in mg/kg	1.3	160	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U	0.5 U			0.5 U
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
1,2-Dichlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U				
1,2-Dichloroethane (EDC) in mg/kg	11	1,400	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
1,2-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
1,3,5-Trimethylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
1,3-Dichlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U				
1,3-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
1,4-Dichlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U				
2,2-Dichloropropane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
2-Butanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U	0.5 U			0.5 U
2-Chlorotoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	7.6	0.81	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
2-Hexanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U	0.5 U			0.5 U
4-Chlorotoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.11	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
4-Methyl-2-pentanone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U	0.5 U			0.5 U
Acetone in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U	0.5 U			0.5 U
Benzene in mg/kg	0.03	0.03	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Bromobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
Bromodichloromethane in mg/kg	16	2,100	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
Bromoform in mg/kg	130	17,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
Bromomethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U	0.5 U			0.5 U
Carbon tetrachloride in mg/kg	14	1,900	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
Chlorobenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
Chloroethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U	0.5 U			0.5 U
Chloroform in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
Chloromethane in mg/kg			0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ		0.5 U	0.5 U	0.5 U			0.5 U
cis-1,2-Dichloroethene (DCE) in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
cis-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
Dibromochloromethane in mg/kg	12	1,600	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
Dibromomethane in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U

Table 3-20A - Soil Quality Data for General Fill

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	GF-B-1 5/25/12 (1-2.5 ft)	GF-B-2 5/25/12 (2.5-4 ft)	GF-B-3 5/29/12 (1-2.5 ft)	GF-B-3 5/29/12 (7.5-9 ft)	GF-B-3 5/29/12 (11-12.5 ft)	GF-B-4 5/25/12 (2.5-4 ft)	GF-B-4 5/25/12 (7.5-9 ft)	GF-B-5 5/29/12 (1-2.5 ft)	GF-B-5 5/29/12 (7.5-9 ft)	GF-B-6 5/29/12 (1-2.5 ft)	GF-B-6 5/29/12 (7.5-9 ft)	GF-B-6 5/29/12 (20-21.5 ft)	GF-B-7 5/24/12 (1-2.5 ft)	GF-B-7 5/24/12 (7.5-9 ft)	GF-B-7 5/24/12 (10-11.5 ft)	GF-B-8 5/30/12 (1-2.5 ft)	GF-B-8 5/30/12 (7.5-9 ft)	GF-B-9 6/28/12 (1-2.5 ft)	GF-B-9 6/28/12 (2.5-3.5 ft)	GF-B-9 FD 6/28/12 (2.5-3.5 ft)	GF-B-9 6/28/12 (7.5-9 ft)
Dichlorodifluoromethane in mg/kg			0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ		0.5 U	0.5 UJ	0.5 U			0.5 U
Ethylbenzene in mg/kg	6	6	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
Hexachlorobutadiene in mg/kg	13	1,700	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U		0.25 U	0.25 U	0.25 U			0.25 U
Isopropylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
Methylene chloride in mg/kg	0.02	0.02	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U	0.5 U			0.5 U
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
n-Propylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
p-Isopropyltoluene in mg/kg			0.05 U	0.05 U	0.05 U	0.052	1.5	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.25	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
sec-Butylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
Styrene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
tert-Butylbenzene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
Tetrachloroethene (PCE) in mg/kg	0.05	0.05	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U		0.025 U	0.025 U	0.025 U			0.025 U
Toluene in mg/kg	7	7	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
trans-1,2-Dichloroethene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
trans-1,3-Dichloropropene in mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
Trichloroethene (TCE) in mg/kg	0.03	0.03	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		0.03 U	0.03 U	0.03 U			0.03 U
Trichlorofluoromethane in mg/kg			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U	0.5 U			0.5 U
Vinyl chloride in mg/kg	0.67	88	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
m,p-Xylenes in mg/kg	16,000	700,000	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U		0.1 U	0.1 U	0.1 U			0.1 U
o-Xylene in mg/kg	16,000	700,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U			0.05 U
Xylenes (total) in mg/kg	9	9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND			ND
Naphthalene in mg/kg	5	5						0.05 U	0.05 U														
Polychlorinated Biphenyls (PCBs)																							
Aroclor 1016 in mg/kg	14	1,900	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U			0.1 U	0.1 U	0.1 U			0.1 U
Aroclor 1221 in mg/kg			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U			0.1 U	0.1 U	0.1 U			0.1 U
Aroclor 1232 in mg/kg			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U			0.1 U	0.1 U	0.1 U			0.1 U
Aroclor 1242 in mg/kg			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U			0.1 U	0.1 U	0.1 U			0.1 U
Aroclor 1248 in mg/kg			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U			0.1 U	0.1 U	0.1 U			0.1 U
Aroclor 1254 in mg/kg	0.5	66	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U			0.4	0.1 U	0.1 U			0.1 U
Aroclor 1260 in mg/kg	0.5	66	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U			0.1 U	0.1 U	0.1 U			0.1 U
Total PCBs in mg/kg	1	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			0.7	ND	ND			ND
Dioxins/Furans																							
Total HpCDD in mg/kg			7.03E-06	4.04E-05	1.22E-05			3.4E-06		0.000801		1.46E-05			2.21E-06 J		3.5E-06	4.06E-05			8.28E-06 J	1.68E-05 J	
Total HpCDF in mg/kg			1.6E-06 J	1.62E-05	7.32E-06			3.02E-06 U		0.000154		3.59E-06			6.71E-07 J		1.07E-06 J	2.02E-05			2.1E-06 J	3.1E-06	
Total HxCDD in mg/kg			1.16E-05	5.77E-05	4.55E-06			1.88E-06 J		0.000227		1.22E-05			2.81E-06		8.45E-06	4.97E-05			8.76E-06 J	1.62E-05 J	
Total HxCDF in mg/kg			2.27E-06 J	3.98E-05	2.68E-06			3.02E-06 U		9.14E-05		2.46E-06 J			2.54E-06 U		1.13E-06 J	0.000017			1.16E-06 J	1.89E-06 J	
Total PeCDD in mg/kg			9.04E-06	3.88E-05	2.45E-06 J			1.15E-06 J		9.78E-05		9.55E-06			2.54E-06 U		6.62E-06	3.13E-05			4.69E-06 J	1.07E-05 J	
Total PeCDF in mg/kg			4.93E-06	0.000081	3.87E-06			1.72E-07 J		4.68E-05		3.56E-06			2.54E-06 U		2.58E-06 J	0.00002			4.46E-07 J	3.38E-06	
Total TCDD in mg/kg			7.36E-06	4.03E-05	3.76E-06			3.12E-06		8.92E-05		1.34E-05			7.77E-07 J		7.86E-06	2.54E-05			3.88E-06 J	0.00001 J	
Total TCDF in mg/kg			1.88E-06	5.46E-05	1.43E-06			1.21E-06 U		3.91E-05		1.94E-06			1.01E-06 U		7.42E-06	5.74E-06			1.02E-06 U	1.03E-06	
2,3,7,8-TCDD in mg/kg	0.000011	0.0015	1.01E-06 U	4.67E-07 U	1.04E-06 U			1.21E-06 U		6.87E-07 U		1.02E-06 U			1.01E-06 U		1.1E-06 U	1.16E-06 U			1.02E-06 U	8.6E-07 U	
1,2,3,7,8-PeCDD in mg/kg			2.51E-06 U	8.31E-07 U	2.59E-06 U			3.02E-06 U		2.32E-06 J		2.55E-06 U			2.54E-06 U		2.76E-06 U	5.13E-07 U			2.56E-06 U	2.15E-06 U	
1,2,3,4,7,8-HxCDD in mg/kg			1.51E-07 U	1.2E-06 U	4.22E-07 J			3.02E-06 U		5.11E-06		2.13E-07 J			2.54E-06 U		2.76E-06 U	8.54E-07 J			1.07E-07 J	2.15E-06 U	
1,2,3,6,7,8-HxCDD in mg/kg			5.09E-07 J	2.56E-06 J	3.24E-07 J			3.02E-06 U		0.00002		4.19E-07 U			2.54E-06 U		2.76E-06 U	1.85E-06 J			2.7E-07 J	4.43E-07 J	
1,2,3,7,8,9-HxCDD in mg/kg	0.00016	0.021	4.53E-07 U	2.32E-06 J	3.76E-07 U			3.02E-06 U		0.000011		4.38E-07 J			2.54E-06 U		2.76E-06 U	2.04E-06 J			2.32E-07 J	2.15E-06 U	
1,2,3,4,6,7,8-HpCDD in mg/kg			3.76E-06	2.14E-05	6.77E-06			1.28E-06 J		0.000395		6.06E-06			2.21E-06 J		1.79E-06 J	2.04E-05			3.73E-06	8.01E-06	
OCDD in mg/kg			1.72E-05	0.000106 J	5.66E-05			1.27E-05 J		0.00383 J		4.91E-05			1.37E-05 J		4.29E-06 J	0.0001			0.000019 J	0.000139 J	
2,3,7,8-TCDF in mg/kg			5.19E-07 U	5.16E-06	6.72E-07 U			1.21E-06 U		7.05E-06		3.98E-07 U			1.01E-06 U		1.21E-06 U	3.37E-06 U			1.02E-06 U	8.6E-07 U	
1,2,3,7,8-PeCDF in mg/kg			2.51E-06 U	1.07E-06 U	2.59E-06 U			3.02E-06 U		1.98E-06 U		2.55E-06 U			2.54E-06 U		2.55E-07 U	1.26E-06 U			2.56E-06 U	2.15E-06 U	
2,3,4,7,8-PeCDF in mg/kg			2.51E-06 U	1.55E-06 J	2.48E-07 U			3.02E-06 U		2.66E-06 J		1.51E-07 J			2.54E-06 U		2.76E-06 U	1.65E-06 U			2.56E-06 U	2.64E-07 J	
1,2,3,4,7,8-HxCDF in mg/kg			1.79E-07 J	1.63E-06 U	2.73E-07 U			3.02E-06 U		5.91E-06 U		1.5E-07 J			2.28E-07 U		3.55E-07 U	3.52E-06			2.56E-06 U	3.6E-07 J	
1,2,3,6,7,8-HxCDF in mg/kg			2.51E-06 U	1.55E-06 J	2.16E-07 U			3.02E-06 U		2.78E-06		1.43E-07 J			2.54E-06 U		1.81E-07 J	1.45E-06 J			9.83E-08 J	2.15E-06 U	
1,2,3,7,8,9-HxCDF in mg/kg			2.51E-06 U	2.68E-06 U	2.59E-06 U			3.02E-06 U		2.73E-06 U		2.55E-06 U			2.54E-06 U		2.76E-06 U	2.9E-06 U			2.56E-06 U	2.15E-06 U	
2,3,4,6,7,8-HxCDF in mg/kg			2.02E-07 J	2.97E-06 U	2.96E-07 J			3.02E-06 U		3.92E-06		1.95E-07 J			2.54E-06 U		2.76E-06 U	1.17E-06 U			2.56E-06 U	2.19E-07 J	
1,2,3,4,6,7,8-HpCDF in mg/kg			5.71E-07 J	5.74E-06	2.8E-06			3.02E-06 U		5.69E-05		1.16E-06 J			5.7E-07 U		8.16E-07 J	9.37E-06			7.2E-07 J	1.22E-06 J	
1,2,3,4,7,8,9-HpCDF in mg/kg			2.51E-06 U	4.44E-07 U	2.59E-06 U			3.02E-06 U		1.65E-06 U		2.55E-06 U			2.54E-06 U		2.76E-06 U	7.48E-07 J			2.56E-06 U	2.15E-06 U	
OCDF in mg/kg			1.06E-06 U	9.92E-06	4.93E-06 J			6.03E-06 UJ		8.49E-05 J		3.11E-06 J			6.97E-07 J		5.52E-06 U	1.14E-05			1.51E-06 J	4.24E-06 J	
Total 2,3,7,8 TCDD (TEQ) in mg/kg	0.000011	0.0015	2.29E-07	3.57E-06	4.16E-07			1.66E-08		1.48E-05		2.89E-07			5.49E-08		1.29E-07	2.68E-06			1.48E-07	5.59E-07	

Notes:

Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.

Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

UJ - Analyte was not detected at or above the reported estimate.

Table 3-20A - Soil Quality Data for General Fill

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	GF-B-9 FD 6/28/12 (7.5-9 ft)	GF-B-10 5/24/12 (1-1.25 ft)	GF-B-10 5/24/12 (1-2.5 ft)	GF-B-10 5/24/12 (7.5-9 ft)	GF-B-10 5/24/12 (10-11.5 ft)	GF-B-11 5/24/12 (1-2.5 ft)	GF-B-11 5/24/12 (7.5-9 ft)	GF-B-12 6/28/12 (1-2.5 ft)	GF-B-12 6/28/12 (7.5-9 ft)	GF-B-13 5/24/12 (1-2.5 ft)	GF-B-13 5/24/12 (10-11.5 ft)	GF-B-14 5/23/12 (1-2.5 ft)	GF-B-14 5/23/12 (7.5-9 ft)	GF-B-15A 5/23/12 (1-2.5 ft)	GF-B-15A 5/23/12 (7.5-9 ft)	GF-B-15A 5/23/12 (10-11.5 ft)	GF-B-15A 5/23/12 (15-16.5 ft)	GF-B-15A 5/23/12 (25-26.5 ft)
Total Petroleum Hydrocarbons (TPH)																				
Gasoline Range Hydrocarbons in mg/kg	100	100			2 U	2 U		2 U	2 U	2 U	2 U	2 U	2 U	3	2 U	2 U	2 U	2 U		
Diesel Range Hydrocarbons in mg/kg	2,000	2,000			50 U	50 U		50 U	50 U	50 U	50 U	50 U	50 U	2,900	50 U	50 U	230	50 U	310	50 U
Oil Range Hydrocarbons in mg/kg	2,000	2,000			250 U	250 U		250 U	250 U	250 U	250 U	250 U	250 U	4,900	250 U	250 U	810	250 U	440	250 U
Total TPH in mg/kg	2,000	2,000			ND	ND		ND	ND	ND	ND	ND	ND	7,800	ND	ND	1,040	ND	750	ND
Metals																				
Antimony in mg/kg					2.64	1 U		1 U	1 U	1 U	1 U	4	1 U	1.08	1 U	1.74	1.98	1 U		
Arsenic in mg/kg	20	20			4.86	1 U		6.48	5.65	4.79	2.77	2.22	2	4.19	2.12	7.09	6.65	5.17		
Beryllium in mg/kg					1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		
Cadmium in mg/kg	2	2			1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		
Chromium (Total) in mg/kg	2,000	2,000			14.4	6.76		8.72	16.9	36.6 J	33.3 J	10.2	8.37	9.62	6.82	12.6	17.4	15.5		
Copper in mg/kg					13.3	4.42		26.4	21.2	20.8	15.9	13.6	6.31	12.7	4.2	40.8	63	36.6		
Lead in mg/kg	250	1,000			5.89	1.94		659	15.4	116	33.1	115	3.69	30.5	1.46	34.4	84.8	119		
Mercury in mg/kg	2	2			0.1 U	0.1 U		0.1 U	0.1 U	0.21	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U		
Nickel in mg/kg					29.1	7.32		17.6	27.1	10.4 J	29.5 J	25.8	14	13.5	12.1	20.6	22.2	21.4		
Selenium in mg/kg					1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		
Silver in mg/kg					1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		
Thallium in mg/kg					1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		
Zinc in mg/kg					27.7	9.76		50	37.8	21.8	46.5	23.4	14.1	153	12.3	58.3	69.4	71.5		
TCLP Metals																				
Arsenic in mg/L								1 U												
Barium in mg/L								1 U												
Cadmium in mg/L								1 U												
Chromium in mg/L								1 U												
Lead in mg/L								40.7												
Mercury in mg/L								0.1 U												
Silver in mg/L								1 U												
Selenium in mg/L								1 U												
Polycyclic Aromatic Hydrocarbons (PAHs)																				
Acenaphthene in mg/kg	4,800	210,000	0.03 U		0.03 U	0.03 U		0.03 U	0.12	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.14	0.01 U	0.01 U	0.01 U	0.012	0.2
Acenaphthylene in mg/kg			0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.01 U	0.01 U	0.01 U	0.01 U	0.014
Anthracene in mg/kg	24,000	1,100,000	0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.01 U	0.01 U	0.01 U	0.01 U	0.076
Benzo(g,h,i)perylene in mg/kg			0.03 U		0.03 U	0.03 U		0.03 U	0.031	0.03 U	0.03 U	0.03 U	0.03 U	1	0.03 U	0.036	0.012	0.028	0.012	0.066
Fluoranthene in mg/kg	3,200	140,000	0.03 U		0.03 U	0.03 U		0.03 U	0.042	0.03 U	0.03 U	0.03 U	0.03 U	0.41	0.03 U	0.068	0.017	0.029	0.032	0.9
Fluorene in mg/kg	3,200	140,000	0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.073	0.01 U	0.01 U	0.01 U	0.01 U	0.099
Phenanthrene in mg/kg			0.03 U		0.03 U	0.03 U		0.03 U	0.036	0.03 U	0.03 U	0.03 U	0.03 U	0.45	0.11	0.027	0.01 U	0.018	0.026	0.22
Pyrene in mg/kg	2,400	110,000	0.033 J		0.03 U	0.03 U		0.03 U	0.04	0.03 U	0.03 U	0.03 U	0.03 U	2.7	0.052 J	0.081	0.019	0.035	0.038	0.83
2-Methylnaphthalene in mg/kg			0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.073	0.03 U	0.15 U	0.03 U		
Naphthalene in mg/kg	5	5	0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.01 U	0.01 U	0.03 U	0.03 U	0.3 U	0.2	0.01 U	0.01 U	0.01 U	0.021	0.099
Benz(a)anthracene in mg/kg	1.4	180	0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	1.1	0.03 U	0.035	0.01	0.02	0.011	0.29
Benzo(a)pyrene in mg/kg	0.14	2	0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	1.2	0.03 U	0.043	0.011	0.042	0.011	0.19
Benzo(b)fluoranthene in mg/kg	1.4	180	0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.52	0.03 U	0.05	0.013	0.054	0.018	0.34
Benzo(k)fluoranthene in mg/kg	14	1,800	0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.018	0.01 U	0.015	0.01 U	0.094
Chrysene in mg/kg	140	18,000	0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	1.8	0.03 U	0.049	0.013	0.031	0.018	0.4
Dibenzo(a,h)anthracene in mg/kg	0.14	18	0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.01 U	0.01 U	0.01 U	0.01 U	0.014
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	180	0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.034	0.01	0.026	0.01	0.072
Total cPAHs TEQ in mg/kg	0.14	2	ND		ND	ND		ND	ND	ND	ND	ND	ND	1.43	ND	0.0577	0.0154	0.0543	0.0161	0.275
Other Semivolatiles																				
1,2,4-Trichlorobenzene in mg/kg	35	4,500	0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
1,2-Dichlorobenzene in mg/kg			0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
1,3-Dichlorobenzene in mg/kg			0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
1,4-Dichlorobenzene in mg/kg			0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
2,4,5-Trichlorophenol in mg/kg			0.3 U		0.3 U	0.3 U		0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	3 U	0.3 U	0.3 U	1.5 U	0.3 U		
2,4,6-Trichlorophenol in mg/kg	91	12,000	0.3 U		0.3 U	0.3 U		0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	3 U	0.3 U	0.3 U	1.5 U	0.3 U		
2,4-Dichlorophenol in mg/kg			0.3 U		0.3 U	0.3 U		0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	3 U	0.3 U	0.3 U	1.5 U	0.3 U		
2,4-Dimethylphenol in mg/kg			0.3 U		0.3 U	0.3 U		0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	3 U	0.3 U	0.3 U	1.5 U	0.3 U		
2,4-Dinitrophenol in mg/kg			0.9 U		0.9 U	0.9 U		0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	9 U	0.9 U	0.9 U	4.5 U	0.9 U		
2-Chloronaphthalene in mg/kg			0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
2-Chlorophenol in mg/kg			0.3 U		0.3 U	0.3 U		0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	3 U	0.3 U	0.3 U	1.5 U	0.3 U		
2-Methylphenol in mg/kg			0.3 U		0.3 U	0.3 U		0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	3 U	0.3 U	0.3 U	1.5 U	0.3 U		
2-Nitroaniline in mg/kg			0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
2-Nitrophenol in mg/kg			0.3 U		0.3 U	0.3 U		0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	3 U	0.3 U	0.3 U	1.5 U	0.3 U		
3 & 4 Methylphenol in mg/kg			0.6 U		0.6 U	0.6 U		0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	6 U	0.6 U	0.6 U	3 U	0.6 U		
3-Nitroaniline in mg/kg			3 U		3 U	3 U		3 U	3 U	3 U	3 U	3 U	3 U	30 U	3 U	3 U	15 U	3 U		
4,6-Dinitro-2-methylphenol in mg/kg			0.9 U		0.9 U	0.9 U		0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	9 U	0.9 U	0.9 U	4.5 U	0.9 U		
4-Bromophenyl phenyl ether in mg/kg			0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
4-Chloro-3-methylphenol in mg/kg			0.3 U		0.3 U	0.3 U		0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	3 U	0.3 U	0.3 U	1.5 U	0.3 U		
4-Chloroaniline in mg/kg	5	660	3 U		3 U	3 U		3 U	3 U	3 U	3 U	3 U	3 U	30 U	3 U	3 U	15 U	3 U		
4-Chlorophenyl phenyl ether in mg/kg			0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		

Table 3-20A - Soil Quality Data for General Fill

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	GF-B-9 FD 6/28/12 (7.5-9 ft)	GF-B-10 5/24/12 (1-1.25 ft)	GF-B-10 5/24/12 (1-2.5 ft)	GF-B-10 5/24/12 (7.5-9 ft)	GF-B-10 5/24/12 (10-11.5 ft)	GF-B-11 5/24/12 (1-2.5 ft)	GF-B-11 5/24/12 (7.5-9 ft)	GF-B-12 6/28/12 (1-2.5 ft)	GF-B-12 6/28/12 (7.5-9 ft)	GF-B-13 5/24/12 (1-2.5 ft)	GF-B-13 5/24/12 (10-11.5 ft)	GF-B-14 5/23/12 (1-2.5 ft)	GF-B-14 5/23/12 (7.5-9 ft)	GF-B-15A 5/23/12 (1-2.5 ft)	GF-B-15A 5/23/12 (7.5-9 ft)	GF-B-15A 5/23/12 (10-11.5 ft)	GF-B-15A 5/23/12 (15-16.5 ft)	GF-B-15A 5/23/12 (25-26.5 ft)
4-Nitroaniline in mg/kg			3 U		3 U	3 U		3 U	3 U	3 U	3 U	3 U	3 U	30 U	3 U	3 U	15 U	3 U		
4-Nitrophenol in mg/kg			0.9 U		0.9 U	0.9 U		0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	9 U	0.9 U	0.9 U	4.5 U	0.9 U		
Benzoic acid in mg/kg			1.5 U		1.5 U	1.5 U		1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	15 U	1.5 U	1.5 U	7.5 U	1.5 U		
Benzyl alcohol in mg/kg			0.3 U		0.3 U	0.3 U		0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	3 U	0.3 U	0.3 U	1.5 U	0.3 U		
Benzyl butyl phthalate in mg/kg	530	69,000	0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
Bis(2-chloro-1-methylethyl) ether in mg/kg	14	1,900	0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
Bis(2-chloroethoxy)methane in mg/kg			0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
Bis(2-chloroethyl) ether in mg/kg	0.91	120	0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
Bis(2-ethylhexyl) phthalate in mg/kg	71	9,400	0.48 U		0.48 U	0.48 U		0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	4.8 U	0.48 U	0.48 U	2.4 U	0.48 U		
Carbazole in mg/kg			0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
Dibenzofuran in mg/kg			0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.038	0.03 U	0.15 U	0.03 U		
Diethyl phthalate in mg/kg			0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
Dimethyl phthalate in mg/kg			0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
Di-n-butyl phthalate in mg/kg			0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
Di-n-octyl phthalate in mg/kg			0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
Hexachlorobenzene in mg/kg	0.63	82	0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
Hexachlorobutadiene in mg/kg	13	1,700	0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
Hexachlorocyclopentadiene in mg/kg			0.09 U		0.09 U	0.09 U		0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.9 U	0.09 U	0.09 U	0.45 U	0.09 U		
Hexachloroethane in mg/kg	71	9,400	0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
Isophorone in mg/kg	1,100	140,000	0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
Nitrobenzene in mg/kg			0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
N-Nitroso-di-n-propylamine in mg/kg	0.14	19	0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
N-Nitrosodiphenylamine in mg/kg	200	27,000	0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
Pentachlorophenol in mg/kg	2.5	330	0.3 U		0.3 U	0.3 U		0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	3 U	0.3 U	0.3 U	1.5 U	0.3 U		
Phenol in mg/kg			0.3 U		0.3 U	0.3 U		0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	3 U	0.3 U	0.3 U	1.5 U	0.3 U		
2,4-Dinitrotoluene in mg/kg			0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
2,6-Dinitrotoluene in mg/kg			0.03 U		0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U	0.03 U	0.03 U	0.15 U	0.03 U		
Volatile Organic Compounds (VOC)																				
1,1,1,2-Tetrachloroethane in mg/kg	38	5,000			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
1,1,1-Trichloroethane in mg/kg	2	2			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
1,1,2,2-Tetrachloroethane in mg/kg	5	660			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
1,1,2-Trichloroethane in mg/kg	18	2,300			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
1,1-Dichloroethane in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
1,1-Dichloroethene in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
1,1-Dichloropropene in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
1,2,3-Trichlorobenzene in mg/kg					0.25 U	0.25 U		0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U		
1,2,3-Trichloropropane in mg/kg	0.033	4.4			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
1,2,4-Trichlorobenzene in mg/kg	35	4,500			0.25 U	0.25 U		0.25 U	0.25 U			0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U		
1,2,4-Trimethylbenzene in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
1,2-Dibromo-3-chloropropane in mg/kg	1.3	160			0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
1,2-Dibromoethane (EDB) in mg/kg	0.005	0.005			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
1,2-Dichlorobenzene in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
1,2-Dichloroethane (EDC) in mg/kg	11	1,400			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
1,2-Dichloropropane in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
1,3,5-Trimethylbenzene in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
1,3-Dichlorobenzene in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
1,3-Dichloropropane in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
1,4-Dichlorobenzene in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
2,2-Dichloropropane in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
2-Butanone in mg/kg					0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
2-Chlorotoluene in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
2-Hexanone in mg/kg					0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
4-Chlorotoluene in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
4-Methyl-2-pentanone in mg/kg					0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
Acetone in mg/kg					0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
Benzene in mg/kg	0.03	0.03			0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 UJ	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		
Bromobenzene in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
Bromodichloromethane in mg/kg	16	2,100			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
Bromoform in mg/kg	130	17,000			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
Bromomethane in mg/kg					0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
Carbon tetrachloride in mg/kg	14	1,900			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
Chlorobenzene in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
Chloroethane in mg/kg					0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
Chloroform in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
Chloromethane in mg/kg					0.5 UJ	0.5 UJ		0.5 UJ	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ		
cis-1,2-Dichloroethene (DCE) in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
cis-1,3-Dichloropropene in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
Dibromochloromethane in mg/kg	12	1,600			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ		
Dibromomethane in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		

Table 3-20A - Soil Quality Data for General Fill

K-C Worldwide Site Upland Area 110207

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	GF-B-9 FD 6/28/12 (7.5-9 ft)	GF-B-10 5/24/12 (1-1.25 ft)	GF-B-10 5/24/12 (1-2.5 ft)	GF-B-10 5/24/12 (7.5-9 ft)	GF-B-10 5/24/12 (10-11.5 ft)	GF-B-11 5/24/12 (1-2.5 ft)	GF-B-11 5/24/12 (7.5-9 ft)	GF-B-12 6/28/12 (1-2.5 ft)	GF-B-12 6/28/12 (7.5-9 ft)	GF-B-13 5/24/12 (1-2.5 ft)	GF-B-13 5/24/12 (10-11.5 ft)	GF-B-14 5/23/12 (1-2.5 ft)	GF-B-14 5/23/12 (7.5-9 ft)	GF-B-15A 5/23/12 (1-2.5 ft)	GF-B-15A 5/23/12 (7.5-9 ft)	GF-B-15A 5/23/12 (10-11.5 ft)	GF-B-15A 5/23/12 (15-16.5 ft)	GF-B-15A 5/23/12 (25-26.5 ft)
Dichlorodifluoromethane in mg/kg					0.5 UJ	0.5 UJ		0.5 UJ	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ		
Ethylbenzene in mg/kg	6	6			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
Hexachlorobutadiene in mg/kg	13	1,700			0.25 U	0.25 U		0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U		
Isopropylbenzene in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
Methylene chloride in mg/kg	0.02	0.02			0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
Methyl-Tert-Butyl Ether in mg/kg	0.1	0.1			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
n-Propylbenzene in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
p-Isopropyltoluene in mg/kg					0.05 U	0.05 U		0.05 U	0.35	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
sec-Butylbenzene in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
Styrene in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
tert-Butylbenzene in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
Tetrachloroethene (PCE) in mg/kg	0.05	0.05			0.025 U	0.025 U		0.025 U	0.025 U	0.025 U	0.025 UJ	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U		
Toluene in mg/kg	7	7			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
trans-1,2-Dichloroethene in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
trans-1,3-Dichloropropene in mg/kg					0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
Trichloroethene (TCE) in mg/kg	0.03	0.03			0.03 U	0.03 U		0.03 U	0.03 U	0.03 U	0.03 UJ	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U		
Trichlorofluoromethane in mg/kg					0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
Vinyl chloride in mg/kg	0.67	88			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
m,p-Xylenes in mg/kg	16,000	700,000			0.1 U	0.1 U		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U		
o-Xylene in mg/kg	16,000	700,000			0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
Xylenes (total) in mg/kg	9	9			ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Naphthalene in mg/kg	5	5																		
Polychlorinated Biphenyls (PCBs)																				
Aroclor 1016 in mg/kg	14	1,900	0.1 U		0.1 U	0.1 U		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.24 U	0.1 U		
Aroclor 1221 in mg/kg			0.1 U		0.1 U	0.1 U		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.24 U	0.1 U		
Aroclor 1232 in mg/kg			0.1 U		0.1 U	0.1 U		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.24 U	0.1 U		
Aroclor 1242 in mg/kg			0.1 U		0.1 U	0.1 U		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.24 U	0.1 U		
Aroclor 1248 in mg/kg			0.1 U		0.1 U	0.1 U		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.24 U	0.1 U		
Aroclor 1254 in mg/kg	0.5	66	0.1 U		0.1 U	0.1 U		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.24 U	0.1 U		
Aroclor 1260 in mg/kg	0.5	66	0.1 U		0.1 U	0.1 U		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.24 U	0.22		
Total PCBs in mg/kg	1	10	ND		ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.52		
Dioxins/Furans																				
Total HpCDD in mg/kg				0.000517			8.14E-06	0.000161	7.33E-06	1.94E-05		1.09E-05	3.05E-06 UJ	5.75E-05		0.000115				
Total HpCDF in mg/kg				0.000258			3.14E-06	3.14E-05	2.22E-06 J	5.8E-06		0.000005	1.16E-06 J	1.02E-05		3.96E-05				
Total HxCDD in mg/kg				0.000079			8.77E-06	0.00005	3.43E-06	9.88E-06		1.58E-05	1.58E-06 J	0.000131		0.000105				
Total HxCDF in mg/kg				5.46E-05			4.1E-07 J	2.58E-05	1.16E-06 J	1.23E-06 J		3.71E-06	3.05E-06 UJ	1.72E-05		1.93E-05				
Total PeCDD in mg/kg				3.34E-05			6.26E-06	3.92E-05	7.8E-07 J	7.3E-06		4.62E-06	3.65E-07 J	0.000083		5.36E-05				
Total PeCDF in mg/kg				6.71E-06			9.27E-07 J	1.17E-05	4.24E-07 J	1.05E-06 J		4.34E-06	1.93E-07 J	0.000045		2.33E-05				
Total TCDD in mg/kg				3.71E-05			5.86E-06	3.84E-05	5.22E-07 J	6.21E-06		4.53E-06	1.22E-06 UJ	8.04E-05		3.04E-05				
Total TCDF in mg/kg				6.51E-06			1.18E-06 U	2.12E-06	1.2E-06 U	1.39E-06		2.76E-06	1.22E-06 UJ	3.12E-05		2.41E-05				
2,3,7,8-TCDD in mg/kg	0.000011	0.0015		1.05E-06 U			1.18E-06 U	1.1E-06 U	1.2E-06 U	1.14E-06 U		0.000001 U	1.22E-06 UJ	5.71E-07 J		5.37E-07 U				
1,2,3,7,8-PeCDD in mg/kg				2.62E-06 U			2.95E-06 U	7.56E-07 J	0.000003 U	3.16E-07 J		2.5E-06 U	3.05E-06 UJ	1.22E-06 J		8.76E-07 U				
1,2,3,4,7,8-HxCDD in mg/kg				6.62E-07 J			2.95E-06 U	1.63E-06 U	0.000003 U	2.78E-07 J		2.5E-06 U	3.05E-06 UJ	1.74E-06 J		1.79E-06 J				
1,2,3,6,7,8-HxCDD in mg/kg				9.73E-06			2.95E-06 U	5.53E-06	0.000003 U	2.86E-06 U		6.32E-07 J	3.05E-06 UJ	2.77E-06		3.86E-06				
1,2,3,7,8,9-HxCDD in mg/kg	0.00016	0.021		2.02E-06 J			2.95E-06 U	3.33E-06 U	0.000003 U	7.31E-07 J		7.16E-07 J	3.05E-06 UJ	2.73E-06 U		3.53E-06				
1,2,3,4,6,7,8-HpCDD in mg/kg				0.000274			4.2E-06	9.28E-05	3.98E-06	9.28E-06		5.59E-06	5.87E-07 U	3.14E-05		5.93E-05				
OCDD in mg/kg				0.00305			3.14E-05	0.000511	2.56E-05	5.37E-05		2.12E-05	2.42E-06 J	0.000124 J		0.000546				
2,3,7,8-TCDF in mg/kg				1.49E-06			1.18E-06 U	0.000001 J	1.2E-06 U			7.39E-07 U	1.22E-06 UJ			4.43E-06				
1,2,3,7,8-PeCDF in mg/kg				4.56E-07 U			2.95E-06 U	6.81E-07 J	0.000003 U	2.86E-06 U		2.08E-07 U	3.05E-06 UJ	1.25E-06 J		9.38E-07 U				
2,3,4,7,8-PeCDF in mg/kg				4.54E-07 J			2.95E-06 U	7.24E-07 J	0.000003 U	2.86E-06 U		3.35E-07 J	3.05E-06 UJ	1.71E-06 J		1.5E-06 U				
1,2,3,4,7,8-HxCDF in mg/kg				2.62E-06 U			2.95E-06 U	1.76E-06 J	2.86E-07 J	2.86E-06 U		6.47E-07 J	3.05E-06 UJ	1.38E-06 J		1.91E-06 U				
1,2,3,6,7,8-HxCDF in mg/kg				2.62E-06 U			2.95E-06 U	7.67E-07 J	0.000003 U	2.86E-06 U		2.74E-07 J	3.05E-06 UJ	2.73E-06 U		1.17E-06 J				
1,2,3,7,8,9-HxCDF in mg/kg				2.62E-06 U			2.95E-06 U	2.75E-06 U	0.000003 U	2.86E-06 U		2.5E-06 U	3.05E-06 UJ	2.73E-06 U		2.68E-07 U				
2,3,4,6,7,8-HxCDF in mg/kg				1.43E-06 J			2.95E-06 U	9.39E-07 J	0.000003 U	1.95E-07 J		3.92E-07 J	3.05E-06 UJ	1.52E-06 J		1.77E-06 J				
1,2,3,4,6,7,8-HpCDF in mg/kg				5.72E-05			1.19E-06 J	1.04E-05	8.99E-07 J	1.89E-06 J		2.45E-06 J	2.37E-07 J	4.3E-06		1.24E-05				
1,2,3,4,7,8,9-HpCDF in mg/kg				1.96E-06 J			2.95E-06 U	7.32E-07 J	0.000003 U	1.2E-07 J		2.5E-06 U	9.26E-07 J	4.02E-07 J		2.36E-06 J				
OCDF in mg/kg				0.000222			2.4E-06 J	1.05E-05	1.5E-06 J	6.17E-06		2.29E-06 U	6.09E-06 UJ	6.17E-06 J		3.19E-05				
Total 2,3,7,8 TCDD (TEQ) in mg/kg	0.000011	0.0015		5.91E-06			6.4E-08	3.58E-06	8.55E-08	6.58E-07		5.01E-07	1.82E-08	4.05E-06		4.49E-06				

Notes:
Concentrations in shaded cells indicate value exceeds Unrestricted Soil Screening Level.
Concentrations within bold border indicate value exceeds Industrial Soil Screening Level.
J - Analyte was positively identified. The reported result is an estimate.
U - Analyte was not detected at or above the reported result.
UJ - Analyte was not detected at or above the reported estimate.

Table 3-20B - Groundwater Quality Data for General Fill

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	GF9-MW-01 09/14/12
Total Petroleum Hydrocarbons (TPH)		
Diesel Range Hydrocarbons in µg/L	500	400
Oil Range Hydrocarbons in µg/L	500	250 U
Total TPHs in µg/L	500	525
Conventional Chemistry Parameters		
Total Suspended Solids in mg/L		19.0
Polycyclic Aromatic Hydrocarbons (PAHs)		
Acenaphthene in µg/L	640	51
Acenaphthylene in µg/L		0.05 U
Anthracene in µg/L	26,000	3.2
Benzo(g,h,i)perylene in µg/L		0.05 U
Fluoranthene in µg/L	90	4.8
Fluorene in µg/L	3,500	30
Phenanthrene in µg/L		38
Pyrene in µg/L	2,600	2.8
Naphthalene in µg/L	170	0.12
Benz(a)anthracene in µg/L	0.018	0.18
Benzo(a)pyrene in µg/L	0.018	0.025
Benzo(b)fluoranthene in µg/L	0.018	0.041
Benzo(k)fluoranthene in µg/L	0.018	0.015
Chrysene in µg/L	0.018	0.19
Dibenzo(a,h)anthracene in µg/L	0.018	0.01 U
Indeno(1,2,3-cd)pyrene in µg/L	0.018	0.01 U
Total cPAHs TEQ in µg/L	0.018	0.0515
Field Parameters		
Dissolved Oxygen in mg/L		0.13
ORP in mVolts		-175.9
pH in pH Units		7.4
Specific Conductance in µs/cm		657
Temperature in deg C		16.1
Turbidity in NTU		13.8

Notes:

Concentrations in shaded cells indicate value exceeds Groundwater Screening Level.

U - Analyte was not detected at or above the reported result.

Table 3-21 - Groundwater Quality Data for Upgradient Groundwater Quality

K-C Worldwide Site Upland Area 110207

Chemical Name	Groundwater Screening Level	UG-MW-01 07/03/12	UG-MW-01 08/30/12	UG-MW-02 07/03/12	UG-MW-02 08/29/12
Dissolved Metals					
Dissolved Antimony in µg/L	640	1 U	1 U	1 U	1 U
Dissolved Arsenic in µg/L	5	1 U	1	1 U	1 U
Dissolved Beryllium in µg/L	270	1 U	1 U	1 U	1 U
Dissolved Cadmium in µg/L	8.8	1 U	1 U	1 U	1 U
Dissolved Chromium (Total) in µg/L	240,000	1.05	1 U	1 U	1 U
Dissolved Copper in µg/L	3.1	1 U	1 U	1 U	1 U
Dissolved Lead in µg/L	8.1	1 U	1 U	1 U	1 U
Dissolved Mercury in µg/L	0.15	0.1 U	0.1 U	0.1 U	0.1 U
Dissolved Nickel in µg/L	8.2	5.04	3.96	2.31	2.54
Dissolved Selenium in µg/L	71	1 U	1 U	1 U	1 U
Dissolved Silver in µg/L	1.9	1 U	1 U	1 U	1 U
Dissolved Thallium in µg/L	0.47	1 U	1 U	1 U	1 U
Dissolved Zinc in µg/L	81	1.75	1.26	5.03	1.94
Total Metals					
Total Antimony in µg/L	640	1 U	1 U		
Total Arsenic in µg/L	5	1 U	1.07		
Total Beryllium in µg/L	270	1 U	1 U		
Total Cadmium in µg/L	8.8	1 U	1 U		
Total Chromium (Total) in µg/L	240,000	1 U	1 U		
Total Copper in µg/L	3.1	1 U	1 U		
Total Lead in µg/L	8.1	1 U	1 U		
Total Mercury in µg/L	0.15	0.1 U	0.1 U		
Total Nickel in µg/L	8.2	4.79	3.65		
Total Selenium in µg/L	71	1 U	1 U		
Total Silver in µg/L	1.9	1 U	1 U		
Total Thallium in µg/L	0.47	1 U	1 U		
Total Zinc in µg/L	81	2.42	3.36 J		
Conventional Chemistry Parameters					
Total Suspended Solids in mg/L		10 U	10 U	10 U	10 U
Field Parameters					
Dissolved Oxygen in mg/L		3.86	8	0.3	4.2
ORP in mVolts		53.5	79.6	-36.7	-57.4
pH in pH Units		6.77	6.56	7.03	7.02
Specific Conductance in µs/cm		400.7	346.7	556	452.3
Temperature in deg C		13	14.7	14.5	17.5
Turbidity in NTU			4.83	2.99	7.89

Notes:

Concentrations in shaded cells indicate value exceeds Groundwater Screening Level.

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the reported result.

Table 3-22A - Statistical Summary of Soil Quality Data from Phase 2 ESA

K-C Worldwide Site Upland Area 110207

						Relative to Unrestricted Soil Screening Levels			*Relative to Industrial Soil Screening Levels*		
Analyte	**Units**	**No. Analyses**	**No. Detects**	**Detection Frequency**	**Max Detection**	**Unrestricted Soil Screening Level for Assessment**	**No. Exceedances of Unrestricted Screening Level**	**Exceedance Frequency (Unrestricted)**	**Industrial Soil Screening Level for Assessment**	**No. Exceedances of Industrial Screening Level**	**Exceedance Frequency (Industrial)**
TPH											
Gasoline Range Hydrocarbons	mg/kg	142	32	23%	9700	100	13	9%	100	13	9%
Diesel Range Hydrocarbons	mg/kg	228	68	30%	62000	2000	23	10%	2000	23	10%
Oil Range Hydrocarbons	mg/kg	228	49	21%	46000	2000	21	9%	2000	21	9%
Total TPHs	mg/kg	228	69	30%	108000	2000	32	14%	2000	32	14%
Metals											
Antimony	mg/kg	118	39	33%	71.9			0%			0%
Arsenic	mg/kg	136	135	99%	74.4	20	6	4%	20	6	4%
Beryllium	mg/kg	118		0%				0%			0%
Cadmium	mg/kg	125	3	2%	7.85	2	2	2%	2	2	2%
Chromium (Total)	mg/kg	124	124	100%	75.8	2000		0%	2000		0%
Copper	mg/kg	124	124	100%	265			0%			0%
Lead	mg/kg	149	149	100%	1870	250	8	5%	1000	2	1%
Mercury	mg/kg	125	26	21%	1.8	2		0%	2		0%
Nickel	mg/kg	124	124	100%	78.7			0%			0%
Selenium	mg/kg	125	1	1%	1.84			0%			0%
Silver	mg/kg	125	1	1%	1.94			0%			0%
Thallium	mg/kg	118		0%				0%			0%
Zinc	mg/kg	124	124	100%	812			0%			0%
VOCs											
1,1,1,2-Tetrachloroethane	mg/kg	146		0%		38		0%	5000		0%
1,1,1-Trichloroethane	mg/kg	146		0%		2		0%	2		0%
1,1,2,2-Tetrachloroethane	mg/kg	146		0%		5		0%	660		0%
1,1,2-Trichloroethane	mg/kg	146		0%		18		0%	2300		0%
1,1-Dichloroethane	mg/kg	146		0%				0%			0%
1,1-Dichloroethene	mg/kg	146		0%				0%			0%
1,1-Dichloropropene	mg/kg	146		0%				0%			0%
1,2,3-Trichlorobenzene	mg/kg	146		0%				0%			0%
1,2,3-Trichloropropane	mg/kg	146		0%		0.033		0%	4.4		0%
1,2,4-Trichlorobenzene	mg/kg	121		0%		35		0%	4500		0%
1,2,4-Trimethylbenzene	mg/kg	146	8	5%	9.3			0%			0%
1,2-Dibromo-3-chloropropane	mg/kg	146		0%		1.3		0%	160		0%
1,2-Dibromoethane (EDB)	mg/kg	147		0%		0.005		0%	0.005		0%
1,2-Dichlorobenzene	mg/kg	121	1	1%	0.4			0%			0%
1,2-Dichloroethane (EDC)	mg/kg	147		0%		11		0%	1400		0%
1,2-Dichloropropane	mg/kg	146		0%				0%			0%
1,3,5-Trimethylbenzene	mg/kg	146	2	1%	5.1			0%			0%
1,3-Dichlorobenzene	mg/kg	121		0%				0%			0%
1,3-Dichloropropane	mg/kg	146		0%				0%			0%
1,4-Dichlorobenzene	mg/kg	121		0%				0%			0%
1,4-Dioxane	mg/kg	1		0%				0%			0%
2,2-Dichloropropane	mg/kg	146		0%				0%			0%
2-Butanone	mg/kg	146		0%				0%			0%
2-Chlorotoluene	mg/kg	146	2	1%	7.6			0%			0%
2-Hexanone	mg/kg	146		0%				0%			0%
4-Chlorotoluene	mg/kg	146	1	1%	0.11			0%			0%
4-Methyl-2-pentanone	mg/kg	146		0%				0%			0%
Acetone	mg/kg	146	1	1%	1.5			0%			0%
Benzene	mg/kg	183	2	1%	0.055	0.03	2	1%	0.03	2	1%
Bromobenzene	mg/kg	146		0%				0%			0%
Bromodichloromethane	mg/kg	146		0%		16		0%	2100		0%
Bromoform	mg/kg	146		0%		130		0%	17000		0%
Bromomethane	mg/kg	146		0%				0%			0%
Carbon tetrachloride	mg/kg	145		0%		14		0%	1900		0%
Chlorobenzene	mg/kg	146		0%				0%			0%
Chloroethane	mg/kg	146		0%				0%			0%
Chloroform	mg/kg	146		0%				0%			0%
Chloromethane	mg/kg	146		0%				0%			0%
cis-1,2-Dichloroethene (DCE)	mg/kg	146		0%				0%			0%
cis-1,3-Dichloropropene	mg/kg	146		0%				0%			0%
Dibromochloromethane	mg/kg	146		0%		12		0%	1600		0%
Dibromomethane	mg/kg	146		0%				0%			0%
Dichlorodifluoromethane	mg/kg	142		0%				0%			0%
Diisopropyl ether (DIPE)	mg/kg	1		0%				0%			0%
Ethanol	mg/kg	1		0%				0%			0%
Ethyl t-butyl ether (ETBE)	mg/kg	1		0%				0%			0%
Ethylbenzene	mg/kg	183	9	5%	630	6	1	1%	6	1	1%
Hexachlorobutadiene	mg/kg	146		0%		13		0%	1700		0%
Isopropylbenzene	mg/kg	146	7	5%	9.6			0%			0%
Methyl tert-butyl ether (MTBE)	mg/kg	147		0%		0.1		0%	0.1		0%
Methylene chloride	mg/kg	146	1	1%	0.5	0.02	1	1%	0.02	1	1%
n-Propylbenzene	mg/kg	146	10	7%	7.6			0%			0%
p-Isopropyltoluene	mg/kg	146	9	6%	1.5			0%			0%
sec-Butylbenzene	mg/kg	146	12	8%	1.9			0%			0%
Styrene	mg/kg	146		0%				0%			0%
t-Amyl methyl ether (TAME)	mg/kg	1		0%				0%			0%
t-Butyl alcohol (TBA)	mg/kg	1		0%				0%			0%
tert-Butylbenzene	mg/kg	146	2	1%	0.37			0%			0%
Tetrachloroethene (PCE)	mg/kg	146		0%		0.05		0%	0.05		0%
Toluene	mg/kg	183	3	2%	1.6	7		0%	7		0%
trans-1,2-Dichloroethene	mg/kg	146		0%				0%			0%
trans-1,3-Dichloropropene	mg/kg	146		0%				0%			0%
Trichloroethene (TCE)	mg/kg	146		0%		0.03		0%	0.03		0%
Trichlorofluoromethane	mg/kg	146		0%				0%			0%
Vinyl acetate	mg/kg	1		0%				0%			0%
Vinyl chloride	mg/kg	146		0%		0.67		0%	88		0%
m,p-Xylenes	mg/kg	146	6	4%	1800	16000		0%	700000		0%
o-Xylene	mg/kg	146	5	3%	450	16000		0%	700000		0%
Total Xylenes	mg/kg	146	6	4%	2250	9	1	1%	9	1	1%
PAHs											
Acenaphthene	mg/kg	214	75	35%	72	4800		0%	210000		0%
Acenaphthylene	mg/kg	214	25	12%	3			0%			0%
Anthracene	mg/kg	214	64	30%	32	24000		0%	1100000		0%
Benzo(g,h,i)perylene	mg/kg	213	109	51%	11			0%			0%
Fluoranthene	mg/kg	214	126	59%	76	3200		0%	140000		0%

Table 3-22A - Statistical Summary of Soil Quality Data from Phase 2 ESA

K-C Worldwide Site Upland Area 110207

						Relative to Unrestricted Soil Screening Levels			*Relative to Industrial Soil Screening Levels*		
Analyte	**Units**	**No. Analyses**	**No. Detects**	**Detection Frequency**	**Max Detection**	**Unrestricted Soil Screening Level for Assessment**	**No. Exceedances of Unrestricted Screening Level**	**Exceedance Frequency (Unrestricted)**	**Industrial Soil Screening Level for Assessment**	**No. Exceedances of Industrial Screening Level**	**Exceedance Frequency (Industrial)**
Fluorene	mg/kg	214	68	32%	79	3200		0%	140000		0%
Phenanthrene	mg/kg	214	127	59%	300			0%			0%
Pyrene	mg/kg	214	139	65%	120	2400		0%	110000		0%
2-Methylnaphthalene	mg/kg	59	9	15%	300			0%			0%
Naphthalene	mg/kg	211	80	38%	79	5	6	3%	5	6	3%
Benz(a)anthracene	mg/kg	214	111	52%	32	1.4	15	7%	180		0%
Benzo(a)pyrene	mg/kg	213	107	50%	26	0.14	34	16%	2	10	5%
Benzo(b)fluoranthene	mg/kg	213	113	53%	18	1.4	13	6%	180		0%
Benzo(k)fluoranthene	mg/kg	213	58	27%	6	14		0%	1800		0%
Chrysene	mg/kg	214	122	57%	70	140		0%	18000		0%
Dibenzo(a,h)anthracene	mg/kg	213	29	14%	4.5	0.14	5	2%	18		0%
Indeno(1,2,3-cd)pyrene	mg/kg	213	94	44%	4.3	1.4	3	1%	180		0%
Total cPAHs TEQ	mg/kg	212	127	60%	32	0.14	42	20%	2	13	6%
Other Semivolatiles											
1,2,4-Trichlorobenzene	mg/kg	57		0%		35		0%	4500		0%
1,2-Dichlorobenzene	mg/kg	57		0%				0%			0%
1,3-Dichlorobenzene	mg/kg	57		0%				0%			0%
1,4-Dichlorobenzene	mg/kg	57		0%				0%			0%
2,4,5-Trichlorophenol	mg/kg	59		0%				0%			0%
2,4,6-Trichlorophenol	mg/kg	59		0%		91		0%	12000		0%
2,4-Dichlorophenol	mg/kg	59		0%				0%			0%
2,4-Dimethylphenol	mg/kg	59		0%				0%			0%
2,4-Dinitrophenol	mg/kg	59		0%				0%			0%
2-Chloronaphthalene	mg/kg	59		0%				0%			0%
2-Chlorophenol	mg/kg	59		0%				0%			0%
2-Methylphenol	mg/kg	59		0%				0%			0%
2-Nitroaniline	mg/kg	59		0%				0%			0%
2-Nitrophenol	mg/kg	59		0%				0%			0%
3 & 4 Methylphenol	mg/kg	59		0%				0%			0%
3-Nitroaniline	mg/kg	59		0%				0%			0%
4,6-Dinitro-2-methylphenol	mg/kg	59		0%				0%			0%
4-Bromophenyl phenyl ether	mg/kg	59		0%				0%			0%
4-Chloro-3-methylphenol	mg/kg	59		0%				0%			0%
4-Chloroaniline	mg/kg	59		0%		5		0%	660		0%
4-Chlorophenyl phenyl ether	mg/kg	59		0%				0%			0%
4-Nitroaniline	mg/kg	59		0%				0%			0%
4-Nitrophenol	mg/kg	59		0%				0%			0%
Benzoic acid	mg/kg	59		0%				0%			0%
Benzyl alcohol	mg/kg	59		0%				0%			0%
Benzyl butyl phthalate	mg/kg	59	2	3%	0.065	530		0%	69000		0%
Bis(2-chloro-1-methylethyl) ethe	mg/kg	59		0%		14		0%	1900		0%
Bis(2-chloroethoxy)methane	mg/kg	59		0%				0%			0%
Bis(2-chloroethyl) ether	mg/kg	59		0%		0.91		0%	120		0%
Bis(2-ethylhexyl) phthalate	mg/kg	59	1	2%	1	71		0%	9400		0%
Carbazole	mg/kg	59	5	8%	0.29			0%			0%
Dibenzofuran	mg/kg	59	7	12%	18			0%			0%
Diethyl phthalate	mg/kg	59		0%				0%			0%
Dimethyl phthalate	mg/kg	59	1	2%	0.033			0%			0%
Di-n-butyl phthalate	mg/kg	59	2	3%	0.042			0%			0%
Di-n-octyl phthalate	mg/kg	59		0%				0%			0%
Hexachlorobenzene	mg/kg	59		0%		0.63		0%	82		0%
Hexachlorobutadiene	mg/kg	59		0%		13		0%	1700		0%
Hexachlorocyclopentadiene	mg/kg	59		0%				0%			0%
Hexachloroethane	mg/kg	59		0%		71		0%	9400		0%
Isophorone	mg/kg	59		0%		1100		0%	140000		0%
Nitrobenzene	mg/kg	59		0%				0%			0%
N-Nitroso-di-n-propylamine	mg/kg	59		0%		0.14		0%	19		0%
N-Nitrosodiphenylamine	mg/kg	59		0%		200		0%	27000		0%
Pentachlorophenol	mg/kg	59		0%		2.5		0%	330		0%
Phenol	mg/kg	59		0%				0%			0%
2,4-Dinitrotoluene	mg/kg	59		0%				0%			0%
2,6-Dinitrotoluene	mg/kg	59		0%				0%			0%
PCBs											
Aroclor 1016	mg/kg	63		0%		14		0%	1900		0%
Aroclor 1221	mg/kg	63		0%				0%			0%
Aroclor 1232	mg/kg	63		0%				0%			0%
Aroclor 1242	mg/kg	63		0%				0%			0%
Aroclor 1248	mg/kg	63		0%				0%			0%
Aroclor 1254	mg/kg	63	7	11%	1.9	0.5	5	8%	66		0%
Aroclor 1260	mg/kg	63	6	10%	1	0.5	3	5%	66		0%
Total PCBs	mg/kg	63	9	14%	2.55	1	5	8%	10		0%
Dioxins/Furans											
2,3,7,8-TCDD	mg/kg	23	3	13%	2.2E-06	1.1E-05		0%	1.5E-03		0%
1,2,3,7,8-PeCDD	mg/kg	23	6	26%	3.5E-06			0%			0%
1,2,3,4,7,8-HxCDD	mg/kg	23	12	52%	1.4E-05			0%			0%
1,2,3,6,7,8-HxCDD	mg/kg	23	15	65%	3.6E-05			0%			0%
1,2,3,7,8,9-HxCDD	mg/kg	23	12	52%	3.1E-05	1.6E-04		0%	2.1E-02		0%
1,2,3,4,6,7,8-HpCDD	mg/kg	23	22	96%	4.0E-04			0%			0%
OCDD	mg/kg	23	23	100%	3.8E-03			0%			0%
2,3,7,8-TCDF	mg/kg	17	5	29%	7.1E-06			0%			0%
1,2,3,7,8-PeCDF	mg/kg	23	5	22%	5.7E-06			0%			0%
2,3,4,7,8-PeCDF	mg/kg	23	10	43%	8.3E-06			0%			0%
1,2,3,4,7,8-HxCDF	mg/kg	23	10	43%	1.5E-05			0%			0%
1,2,3,6,7,8-HxCDF	mg/kg	23	12	52%	7.1E-06			0%			0%
1,2,3,7,8,9-HxCDF	mg/kg	23	1	4%	2.8E-07			0%			0%
2,3,4,6,7,8-HxCDF	mg/kg	23	13	57%	5.9E-06			0%			0%
1,2,3,4,6,7,8-HpCDF	mg/kg	23	21	91%	5.7E-05			0%			0%
1,2,3,4,7,8,9-HpCDF	mg/kg	23	10	43%	2.7E-06			0%			0%
OCDF	mg/kg	23	18	78%	2.2E-04			0%			0%
Total 2,3,7,8 TCDD (TEF)	mg/kg	23	23	100%	2.7E-05	1.1E-05	2	9%	1.5E-03		0%

Note: A blank indicates a value of zero, except for the screening level for which it indicates none available.

Table 3-22B - Statistical Summary of Groundwater Quality Data from Phase 2 ESA

KC Worldwide Site Upland Area

Analyte	Units	No. Analyses	No. Detects	Detection Frequency	Max Detection	Groundwater Screening Level for Assessment	No. Exceedances of Screening Level	Exceedance Frequency
TPH								
Gasoline Range Hydrocarbons	µg/L	58	13	22%	24000	1000	2	3%
Diesel Range Hydrocarbons	µg/L	57	17	30%	1200	500	5	9%
Oil Range Hydrocarbons	µg/L	57	2	4%	380	500		0%
Total TPHs	µg/L	57	17	30%	1580	500	7	12%
Dissolved Metals								
Antimony	µg/L	48	13	27%	3.96	640		0%
Arsenic	µg/L	50	39	78%	202	5	9	18%
Beryllium	µg/L	48		0%		270		0%
Cadmium	µg/L	50	14	28%	0.776	8.8		0%
Chromium (Total)	µg/L	50	36	72%	110	240000		0%
Copper	µg/L	50	33	66%	44.9	3.1	15	30%
Lead	µg/L	58	18	31%	37.3	8.1	4	7%
Mercury	µg/L	50	1	2%	0.12	0.15		0%
Nickel	µg/L	50	50	100%	308	8.2	9	18%
Selenium	µg/L	50	20	40%	25.6	71		0%
Silver	µg/L	50	8	16%	0.031	1.9		0%
Thallium	µg/L	48	1	2%	0.026	0.47		0%
Zinc	µg/L	50	44	88%	116	81	1	2%
Total Metals								
Antimony	µg/L	21	6	29%	9.02	640		0%
Arsenic	µg/L	21	11	52%	218	5	5	24%
Beryllium	µg/L	21		0%		270		0%
Cadmium	µg/L	21	5	24%	5.22	8.8		0%
Chromium (Total)	µg/L	21	14	67%	83.8	240000		0%
Copper	µg/L	21	10	48%	226	3.1	6	29%
Lead	µg/L	25	10	40%	234	8.1	4	16%
Mercury	µg/L	21	2	10%	0.57	0.15	2	10%
Nickel	µg/L	21	21	100%	39.3	8.2	5	24%
Selenium	µg/L	21	6	29%	17	71		0%
Silver	µg/L	21	3	14%	0.035	1.9		0%
Thallium	µg/L	21		0%		0.47		0%
Zinc	µg/L	21	20	95%	274	81	1	5%
VOCs								
1,1,1,2-Tetrachloroethane	µg/L	71		0%		7.4		0%
1,1,1-Trichloroethane	µg/L	71		0%		11000		0%
1,1,2,2-Tetrachloroethane	µg/L	71		0%		4		0%
1,1,2-Trichloroethane	µg/L	71		0%		7.9		0%
1,1-Dichloroethane	µg/L	71		0%		2300		0%
1,1-Dichloroethene	µg/L	71		0%		3.2		0%
1,1-Dichloropropene	µg/L	71		0%				0%
1,2,3-Trichlorobenzene	µg/L	71		0%				0%
1,2,3-Trichloropropane	µg/L	71		0%				0%
1,2,4-Trichlorobenzene	µg/L	55		0%		2		0%
1,2,4-Trimethylbenzene	µg/L	71	3	4%	9.3	24		0%
1,2-Dibromo-3-chloropropane	µg/L	71		0%				0%
1,2-Dibromoethane (EDB)	mg/L	22		0%		0.74		0%
1,2-Dibromoethane (EDB)	µg/L	89		0%		0.74		0%
1,2-Dichlorobenzene	µg/L	55		0%		1300		0%
1,2-Dichloroethane (EDC)	µg/L	73		0%		4.2		0%
1,2-Dichloropropane	µg/L	71		0%		15		0%
1,3,5-Trimethylbenzene	µg/L	71	2	3%	4.3	25		0%
1,3-Dichlorobenzene	µg/L	55		0%		960		0%
1,3-Dichloropropane	µg/L	71		0%				0%
1,4-Dichlorobenzene	µg/L	55		0%		190		0%
1,4-Dioxane	µg/L	6		0%				0%
2,2-Dichloropropane	µg/L	71		0%				0%
2-Butanone	µg/L	71		0%		350000		0%
2-Chlorotoluene	µg/L	71		0%				0%
2-Hexanone	µg/L	71		0%				0%
4-Chlorotoluene	µg/L	71		0%				0%
4-Methyl-2-pentanone	µg/L	71		0%		11000		0%
Acetone	µg/L	71	4	6%	25			0%
Benzene	µg/L	77	2	3%	0.92	2.4		0%
Bromobenzene	µg/L	71		0%				0%
Bromodichloromethane	µg/L	71		0%		0.09		0%
Bromoform	µg/L	71		0%		140		0%
Bromomethane	µg/L	71		0%		13		0%
Carbon tetrachloride	µg/L	71		0%		0.22		0%
Chlorobenzene	µg/L	71		0%		100		0%
Chloroethane	µg/L	71		0%		12		0%
Chloroform	µg/L	71		0%		1.2		0%
Chloromethane	µg/L	71		0%		5.2		0%
cis-1,2-Dichloroethene (DCE)	µg/L	71	1	1%	2.2	160		0%
cis-1,3-Dichloropropene	µg/L	71		0%				0%
Dibromochloromethane	µg/L	71		0%		0.22		0%
Dibromomethane	µg/L	71		0%				0%
Dichlorodifluoromethane	µg/L	71		0%		9.9		0%
Ethylbenzene	µg/L	77	6	8%	2000	2100		0%
Hexachlorobutadiene	µg/L	71		0%		0.81		0%
Isopropylbenzene	µg/L	71	7	10%	14	720		0%
Methyl tert-butyl ether (MTBE)	µg/L	73		0%		610		0%
Methylene chloride	µg/L	71		0%		94		0%
n-Propylbenzene	µg/L	71	7	10%	28			0%
p-Isopropyltoluene	µg/L	71		0%				0%
sec-Butylbenzene	µg/L	71	2	3%	6.7			0%
Styrene	µg/L	71		0%		78		0%
tert-Butylbenzene	µg/L	71		0%				0%
Tetrachloroethene (PCE)	µg/L	71		0%		0.39		0%
Toluene	µg/L	77	4	5%	18	15000		0%

Table 3-22B - Statistical Summary of Groundwater Quality Data from Phase 2 ESA

KC Worldwide Site Upland Area

Analyte	Units	No. Analyses	No. Detects	Detection Frequency	Max Detection	Groundwater Screening Level for Assessment	No. Exceedances of Screening Level	Exceedance Frequency
trans-1,2-Dichloroethene	µg/L	71		0%		130		0%
trans-1,3-Dichloropropene	µg/L	71		0%				0%
Trichloroethene (TCE)	µg/L	71		0%		0.42		0%
Trichlorofluoromethane	µg/L	71		0%		120		0%
Vinyl acetate	µg/L	6		0%		7800		0%
Vinyl chloride	µg/L	71		0%		0.35		0%
m,p-Xylenes	µg/L	71	4	6%	6900	310	2	3%
o-Xylene	µg/L	71	5	7%	1600	440	2	3%
Total Xylenes	µg/L	70	4	6%	8500	310	1	1%
PAHs								
Acenaphthene	µg/L	66	34	52%	58	640		0%
Acenaphthylene	µg/L	66	2	3%	0.73			0%
Anthracene	µg/L	66	14	21%	3.9	26000		0%
Benzo(g,h,i)perylene	µg/L	66	1	2%	0.15			0%
Fluoranthene	µg/L	66	18	27%	6.4	90		0%
Fluorene	µg/L	66	27	41%	35	3500		0%
Phenanthrene	µg/L	66	24	36%	41			0%
Pyrene	µg/L	66	18	27%	9.8	2600		0%
2-Methylnaphthalene	µg/L	32		0%				0%
Naphthalene	µg/L	64	18	28%	200	170	2	3%
Benz(a)anthracene	µg/L	66	14	21%	1.5	0.018	9	14%
Benzo(a)pyrene	µg/L	66	9	14%	0.67	0.018	3	5%
Benzo(b)fluoranthene	µg/L	66	8	12%	0.28	0.018	5	8%
Benzo(k)fluoranthene	µg/L	66	2	3%	0.018	0.018		0%
Chrysene	µg/L	66	14	21%	2.6	0.018	10	15%
Dibenzo(a,h)anthracene	µg/L	66	1	2%	0.033	0.018	1	2%
Indeno(1,2,3-cd)pyrene	µg/L	66	1	2%	0.052	0.018	1	2%
Total cPAHs TEQ	µg/L	65	15	23%	0.854	0.018	9	14%
Other Semivolatiles								
1,2,4-Trichlorobenzene	µg/L	32		0%		2		0%
1,2-Dichlorobenzene	µg/L	32		0%		1300		0%
1,3-Dichlorobenzene	µg/L	32		0%		960		0%
1,4-Dichlorobenzene	µg/L	32		0%		190		0%
2,4,5-Trichlorophenol	µg/L	32		0%		3600		0%
2,4,6-Trichlorophenol	µg/L	32		0%		2.4		0%
2,4-Dichlorophenol	µg/L	32		0%		190		0%
2,4-Dimethylphenol	µg/L	32		0%		550		0%
2,4-Dinitrophenol	µg/L	32		0%		3500		0%
2-Chloronaphthalene	µg/L	32		0%		1000		0%
2-Chlorophenol	µg/L	32		0%		97		0%
2-Methylphenol	µg/L	32		0%				0%
2-Nitroaniline	µg/L	32		0%				0%
2-Nitrophenol	µg/L	32		0%				0%
3 & 4 Methylphenol	µg/L	32	1	3%	68			0%
3-Nitroaniline	µg/L	32		0%				0%
4,6-Dinitro-2-methylphenol	µg/L	32		0%				0%
4-Bromophenyl phenyl ether	µg/L	32		0%				0%
4-Chloro-3-methylphenol	µg/L	32		0%				0%
4-Chloroaniline	µg/L	32		0%				0%
4-Chlorophenyl phenyl ether	µg/L	32		0%				0%
4-Nitroaniline	µg/L	32		0%				0%
4-Nitrophenol	µg/L	32		0%				0%
Benzoic acid	µg/L	32		0%				0%
Benzyl alcohol	µg/L	32		0%				0%
Benzyl butyl phthalate	µg/L	32		0%		8.2		0%
Bis(2-chloro-1-methylethyl) ether	µg/L	32		0%		37		0%
Bis(2-chloroethoxy)methane	µg/L	32		0%				0%
Bis(2-chloroethyl) ether	µg/L	32		0%		0.53		0%
Bis(2-ethylhexyl) phthalate	µg/L	32		0%		2.2		0%
Carbazole	µg/L	32		0%				0%
Dibenzofuran	µg/L	32		0%				0%
Diethyl phthalate	µg/L	32	1	3%	4.1	28000		0%
Dimethyl phthalate	µg/L	32		0%		1100000		0%
Di-n-butyl phthalate	µg/L	32		0%		2900		0%
Di-n-octyl phthalate	µg/L	32		0%				0%
Hexachlorobenzene	µg/L	32		0%		0.00029		0%
Hexachlorobutadiene	µg/L	32		0%		0.81		0%
Hexachlorocyclopentadiene	µg/L	32		0%		1100		0%
Hexachloroethane	µg/L	32		0%		3.3		0%
Isophorone	µg/L	32		0%		600		0%
Nitrobenzene	µg/L	32		0%		690		0%
N-Nitroso-di-n-propylamine	µg/L	32		0%		0.51		0%
N-Nitrosodiphenylamine	µg/L	32		0%		6		0%
Pentachlorophenol	µg/L	32		0%		1.5		0%
Phenol	µg/L	32		0%		560000		0%
2,4-Dinitrotoluene	µg/L	32		0%		3.4		0%
2,6-Dinitrotoluene	µg/L	32		0%				0%
Conventionals								
Ammonia as Nitrogen	mg/L	30	23	77%	15.7	0.035	21	70%
Dissolved Sulfide	µg/L	4	1	25%	30	1600		0%
Formaldehyde	mg/L	30	8	27%	21.5			0%
Total Dissolved Solids	mg/L	6	6	100%	22632			0%
Total Suspended Solids	mg/L	90	36	40%	170			0%

Note: A blank indicates a value of zero, except for the screening level for which it indicates none available.

Table 4-1 - Water Level Data Collected During Phase 2 ESA

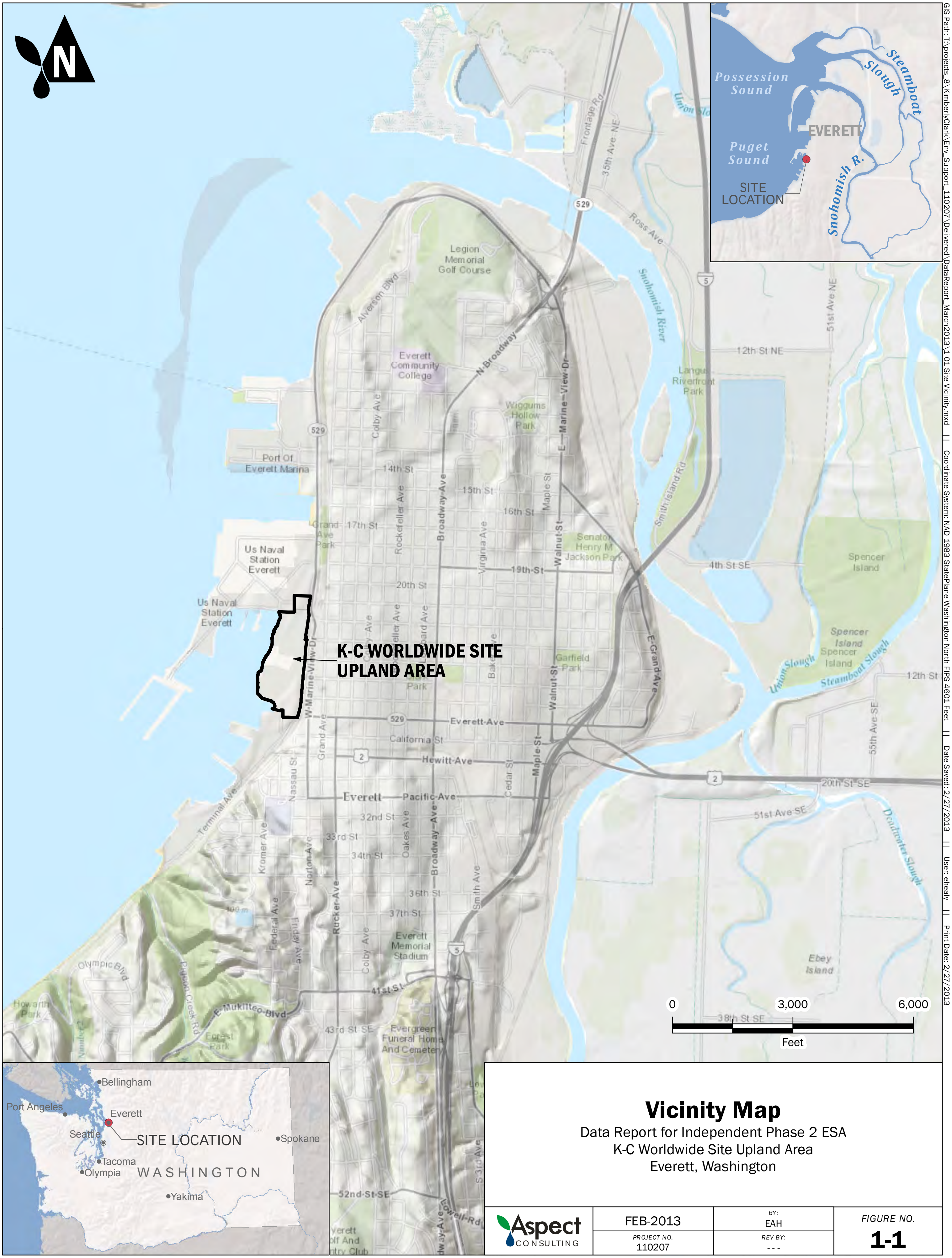
K-C Worldwide Site Upland Area Independent Environmental Assessment 110207

				February 2012 - "Low Tide"			July 2012 - "Low Tide"			July 2012 - "High Tide"			July 2012 - "Tidal Average"		September 2012 - "Low Tide"			September 2012 - "High Tide"		
Location	Easting (WA SPN)	Northing (WA SPN)	Top of Casing Elevation (ft NAVD 88)	Date/Time	Depth to Water (ft)	Groundwater Elevation (ft NAVD 88)	Date/Time	Depth to Water (ft)	Groundwater Elevation (ft NAVD 88)	Date/Time	Depth to Water (ft)	Groundwater Elevation (ft NAVD 88)	Date Range	Groundwater Elevation (ft NAVD 88)	Date/Time	Depth to Water (ft)	Groundwater Elevation (ft NAVD 88)	Date/Time	Depth to Water (ft)	Groundwater Elevation (ft NAVD 88)
AP-MW-1	1301638	362341	15.45	-	-	-	7/3/12 10:56	5.83	9.62	7/6/12 7:47	5.83	9.62	7/3 to 6/12	9.6	9/14/12 11:00	6.90	8.55	9/13/12 16:49	6.78	8.67
BOILER-MW 1	1301246	362183	14.99	-	-	-	-	-	-	-	-	-	-	-	9/14/12 9:48	8.14	6.85	9/13/12 16:42	8.07	6.92
CMS-MW-1	1301860	361961	14.70	-	-	-	7/3/12 11:05	1.72	12.98	7/6/12 7:50	1.73	12.97	-	-	9/14/12 11:48	2.35	12.35	9/13/12 15:57	2.31	12.39
DA-MW 1	1301858	361850	14.63	-	-	-	-	-	-	-	-	-	-	-	9/14/12 11:45	1.41	13.22	9/13/12 15:15	1.38	13.25
GF9-MW 1	1301606	362523	15.18	-	-	-	-	-	-	-	-	-	-	-	9/14/12 11:49	6.95	8.23	9/13/12 16:55	6.57	8.61
HB-MW 1	1301867	362657	15.96	-	-	-	-	-	-	-	-	-	-	-	9/14/12 11:51	5.05	10.91	9/13/12 15:47	4.99	10.97
HW-MW-1	1301704	362732	15.43	-	-	-	7/3/12 11:30	5.08	10.35	7/6/12 7:59	3.72	11.71	-	-	9/14/12 10:48	4.68	10.75	9/13/12 15:51	4.79	10.64
MW-1	1301334	361628	14.15	2/17/12 16:13	7.95	6.20	7/3/12 10:50	8.78	5.37	7/6/12 7:32	6.48	7.67	-	-	9/14/12 11:06	8.94	5.21	9/13/12 16:15	7.46	6.69
MW-2	1301390	361597	13.23	2/17/12 16:09	8.91	4.32	7/3/12 11:02	8.55	4.68	7/6/12 7:34	5.10	8.13	-	-	9/14/12 10:57	9.08	4.15	9/13/12 16:13	5.00	8.23
MW-3	1301616	361596	15.11	2/17/12 14:59	6.68	8.43	7/3/12 11:31	7.24	7.87	7/6/12 7:49	6.93	8.18	-	-	9/14/12 11:25	7.50	7.61	9/13/12 15:55	7.46	7.65
MW-4	1301672	361660	15.20	2/17/12 15:00	6.59	8.61	7/3/12 11:26	7.02	8.18	7/6/12 7:53	6.34	8.86	-	-	9/14/12 11:23	7.32	7.88	9/13/12 15:50	7.35	7.85
MW-5	1301427	363433	13.36	2/17/12 17:41	9.29	4.07	7/3/12 10:17	8.85	4.51	7/6/12 7:34	5.92	7.44	-	-	9/14/12 10:19	9.50	3.86	9/13/12 16:32	6.96	6.40
MW-6	1301239	362762	20.43	2/17/12 17:34	13.11	7.32	7/3/12 10:50	13.04	7.39	7/6/12 7:29	13.10	7.33	7/3 to 6/12	7.5	9/14/12 10:05	13.44	6.99	9/13/12 16:14	13.03	7.40
NRP-MW-1	1301454	363324	13.56	-	-	-	7/3/12 11:02	6.07	7.49	7/6/12 7:41	5.72	7.84	-	-	9/14/12 10:14	6.57	6.99	9/13/12 16:24	6.40	7.16
NRP-MW-2	1301424	363405	15.09	-	-	-	7/3/12 11:12	8.50	6.59	7/6/12 7:37	7.99	7.10	-	-	9/14/12 10:17	9.28	5.81	9/13/12 16:30	9.02	6.07
NRP-MW-3	1301445	363454	13.30	-	-	-	7/3/12 10:28	7.72	5.58	7/6/12 7:30	5.93	7.37	-	-	9/14/12 10:21	8.16	5.14	9/13/12 16:35	6.92	6.38
NRP-MW-4	1301808	363345	15.39	-	-	-	7/3/12 10:54	5.05	10.34	7/6/12 7:48	4.94	10.45	7/3 to 6/12	1.4	9/14/12 10:31	5.34	10.05	9/13/12 16:45	5.25	10.14
NRP-MW-5	1301810	363382	15.14	-	-	-	7/3/12 10:50	4.48	10.66	7/6/12 7:49	4.43	10.71	-	-	9/14/12 10:32	4.77	10.37	9/13/12 16:48	4.74	10.40
OMS-MW-1	1301247	361669	14.68	-	-	-	7/3/12 10:45	11.41	3.27	7/6/12 7:27	7.11	7.57	-	-	9/14/12 11:02	11.46	3.22	9/13/12 16:19	7.92	6.76
REC1-MW-1	1301953	361519	18.87	-	-	-	-	-	-	-	-	-	-	-	9/14/12 11:31	5.15	13.72	9/13/12 16:48	5.14	13.73
REC1-MW-2	1301775	361459	18.85	-	-	-	-	-	-	-	-	-	-	-	9/14/12 11:31	6.10	12.75	9/13/12 16:51	6.09	12.76
REC1-MW-3	1301751	361535	18.74	-	-	-	-	-	-	-	-	-	-	-	9/14/12 11:34	5.82	12.92	9/13/12 16:53	5.81	12.93
REC1-MW-4	1301607	361547	14.81	-	-	-	-	-	-	-	-	-	-	-	9/14/12 11:28	7.14	7.67	9/13/12 15:59	7.05	7.76
REC1-MW-5	1301569	361412	14.91	-	-	-	-	-	-	-	-	-	-	-	9/14/12 11:21	6.97	7.94	9/13/12 16:40	6.74	8.17
REC1-MW-6	1301767	361307	18.77	-	-	-	-	-	-	-	-	-	-	-	9/14/12 11:28	8.26	10.51	9/13/12 16:45	8.22	10.55
REC1-MW-7	1301638	361316	18.83	-	-	-	-	-	-	-	-	-	-	-	9/14/12 11:26	9.44	9.39	9/13/12 16:43	9.46	9.37
REC1-MW-8	1301499	361411	13.30	-	-	-	-	-	-	-	-	-	-	-	9/14/12 11:19	7.09	6.21	9/13/12 16:02	6.42	6.88
REC1-MW-9	1301429	361441	12.49	-	-	-	-	-	-	-	-	-	-	-	9/14/12 11:12	6.78	5.71	9/13/12 16:04	6.23	6.26
REC2-MW-5	1301882	361789	15.05	-	-	-	7/3/12 11:10	0.73	14.32	7/6/12 7:56	0.91	14.14	-	-	9/14/12 11:43	1.47	13.58	9/13/12 15:54	1.43	13.62
REC3-MW-1	1301051	362102	14.43	-	-	-	7/3/12 10:30	8.91	5.52	7/6/12 7:38	7.45	6.98	-	-	9/14/12 10:43	7.66	6.77	9/13/12 16:20	8.76	5.67
REC5-MW-1	1301248	362287	15.49	-	-	-	7/3/12 10:41	6.85	8.64	7/6/12 7:42	7.05	8.44	7/3 to 6/12	8.7	9/14/12 10:04	8.16	7.33	9/13/12 16:44	8.16	7.33
REC6-MW-1	1301673	362819	15.38	-	-	-	7/3/12 11:45	5.49	9.89	7/6/12 0:00	-	-	-	-	9/14/12 10:41	4.01	11.37	9/13/12 15:55	4.01	11.37
REC6-MW-2	1301331	362874	16.67	-	-	-	7/3/12 11:53	9.05	7.62	7/6/12 7:25	8.83	7.84	-	-	9/14/12 10:08	9.73	6.94	9/13/12 16:04	9.60	7.07
REC7-MW-1	1301520	363659	13.14	-	-	-	7/3/12 10:35	7.70	5.44	7/6/12 7:20	5.86	7.28	7/3 to 6/12	6.9	9/14/12 10:24	7.33	5.81	9/13/12 16:39	6.01	7.13
REC7-MW-2	1301358	363144	15.11	-	-	-	7/3/12 11:50	7.01	8.10	7/6/12 7:43	6.64	8.47	7/3 to 6/12	8.5	9/14/12 10:10	7.42	7.69	9/13/12 16:20	7.18	7.93
REC7-MW-3	1301068	361727	14.92	-	-	-	7/3/12 10:40	9.43	5.49	7/6/12 7:25	6.97	7.95	7/3 to 6/12	6.9	9/14/12 11:04	10.31	4.61	9/13/12 16:23	6.95	7.97
REC7-MW-4	1301406	361493	12.69	-	-	-	7/3/12 11:16	9.18	3.51	7/6/12 7:39	4.93	7.76	7/3 to 6/12	6.5	9/14/12 11:14	9.46	3.23	9/13/12 16:31	4.43	8.26
UG-MW-1	1302148	363340	16.95	-	-	-	7/3/12 11:58	1.21	15.74	7/6/12 7:55	1.20	15.75	-	-	9/14/12 10:34	1.30	15.65	9/13/12 16:52	1.25	15.70
UG-MW-2	1302024	362365	18.05	-	-	-	7/3/12 11:00	4.55	13.50	7/6/12 7:55	4.50	13.55	-	-	9/14/12 11:45	5.09	12.96	9/13/12 16:51	5.08	12.97
UST29-MW-1	1301647	362816	15.24	-	-	-	7/3/12 11:40	4.69	10.55	7/6/12 0:00	-	-	-	-	9/14/12 10:43	4.03	11.21	9/13/12 16:01	4.02	11.22
UST68-MW-1	1301537	361783	15.12	-	-	-	7/3/12 11:16	7.55	7.57	7/6/12 7:46	7.19	7.93	7/3 to 6/12	7.9	9/14/12 11:20	8.01	7.11	9/13/12 15:49	7.98	7.14
UST68-MW-2	1301411	361732	15.33	-	-	-	7/3/12 11:27	7.98	7.35	7/6/12 7:43	7.92	7.41	-	-	9/14/12 11:18	8.59	6.74	9/13/12 15:48	8.59	6.74
UST68-MW-4	1301483	361601	14.34	-	-	-	7/3/12 11:07	6.85	7.49	7/6/12 7:37	6.54	7.80	-	-	9/14/12 11:14	7.25	7.09	9/13/12 16:37	7.12	7.22
UST68-MW-5	1301375	361645	14.12	-	-	-	7/3/12 11:00	7.10	7.02	7/6/12 7:31	6.89	7.23	7/3 to 6/12	7.2	9/14/12 11:10	7.69	6.43	9/13/12 16:11	7.65	6.47
UST68-MW-6	1301587	361639	15.20	-	-	-	-	-	-	-	-	-	-	-	9/14/12 11:26	7.89	7.31	9/13/12 16:35	7.76	7.44
UST69-MW-1	1301555	362846	14.88	-	-	-	7/3/12 11:41	4.60	10.28	7/6/12 7:30	3.60	11.28	7/3 to 6/12	11.1	9/14/12 10:45	3.76	11.12	9/13/12 15:57	3.75	11.13
UST70-MW-1	1301076	362234	14.65	-	-	-	7/3/12 10:35	8.23	6.42	7/6/12 7:34	7.13	7.52	-	-	9/14/12 10:51	8.82	5.83	9/13/12 16:31	8.18	6.47
UST70-MW-2	1301043	362221	14.23	-	-	-	7/3/12 10:33	7.64	6.59	7/6/12 7:32	6.90	7.33	7/3 to 6/12	7.6	9/14/12 10:49	8.69	5.54	9/13/12 16:27	8.10	6.13
UST71-MW-1	1301192	362185	13.66	-	-	-	7/3/12 10:41	6.43	7.23	7/6/12 7:35	5.96	7.70	-	-	9/14/12 10:38	7.29	6.37	9/13/12 16:38	7.15	6.51
TM-1 (tide)	1300951	362325	16.63	-	-	-	7/3/12 11:05	19.47	-2.84	7/6/12 7:44	9.00	7.63	7/3 to 6/12	4.6	9/14/12 10:48	17.99	-1.36	9/13/12 16:35	8.58	8.05

Table 4-2 - Tidal Lag Time and Efficiency Measured at Selected Wells during Tidal Study

K-C Worldwide Site Upland Area Independent Environmental Assessment 110207

	REC7-MW-1	**REC7-MW-4**	**REC7-MW-3**	**REC7-MW-2**	**UST68-MW-5**	**UST70-MW-2**
Approximate Distance from Tide in Feet	10	15	18	32	59	84
Tidal Efficiency (Average)	0.12	0.43	0.29	0.06	0.05	0.08
Tidal Lag Time in Hours	1.4	0.6	0.8	1.1	2.5	1.1



GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\1-01 Site Vicinity.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/27/2013 || User: ehealy || Print Date: 2/27/2013

Vicinity Map

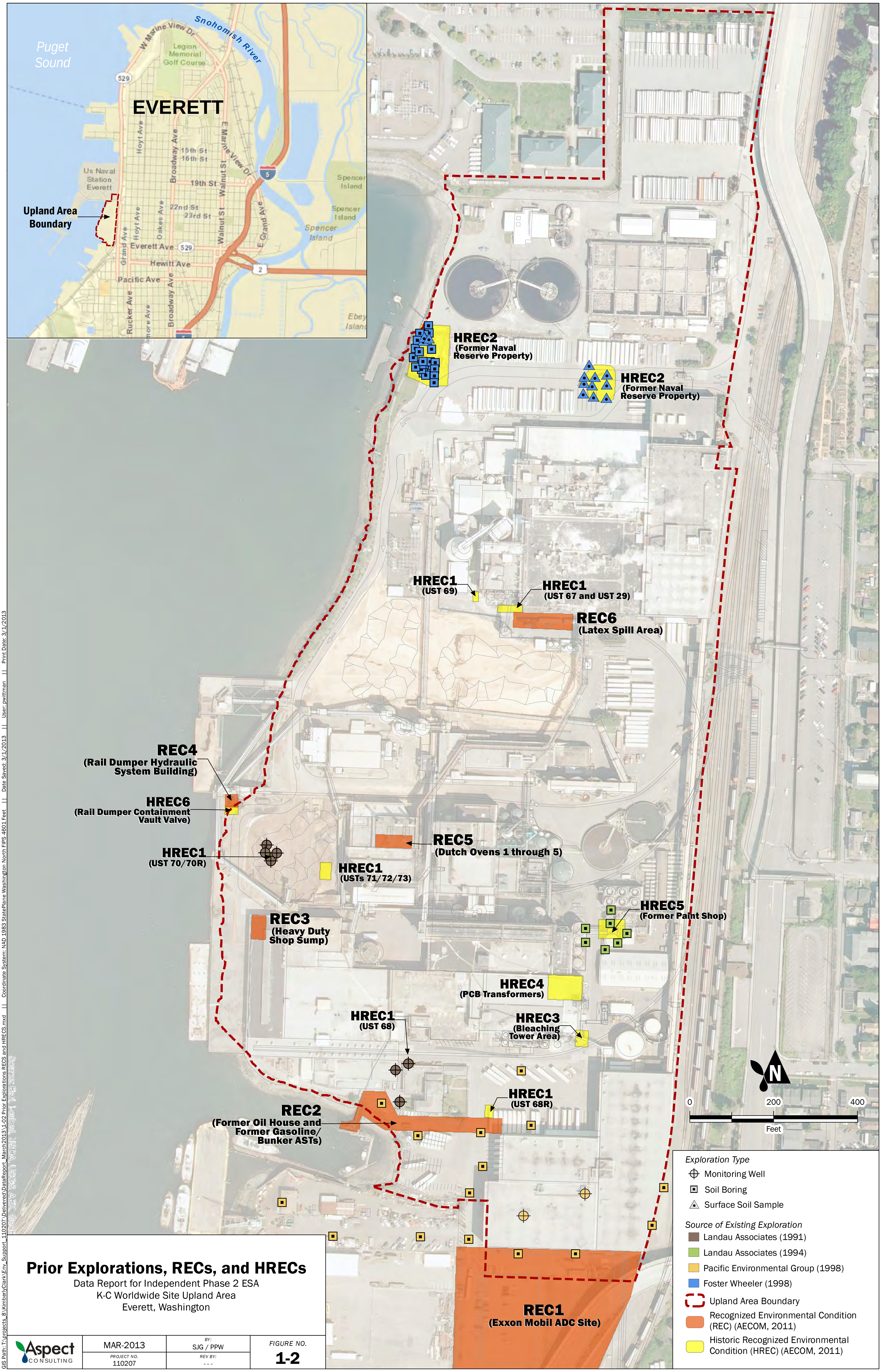
Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect
CONSULTING

FEB-2013
PROJECT NO.
110207

BY:
EAH
REV BY:
- - -

FIGURE NO.
1-1



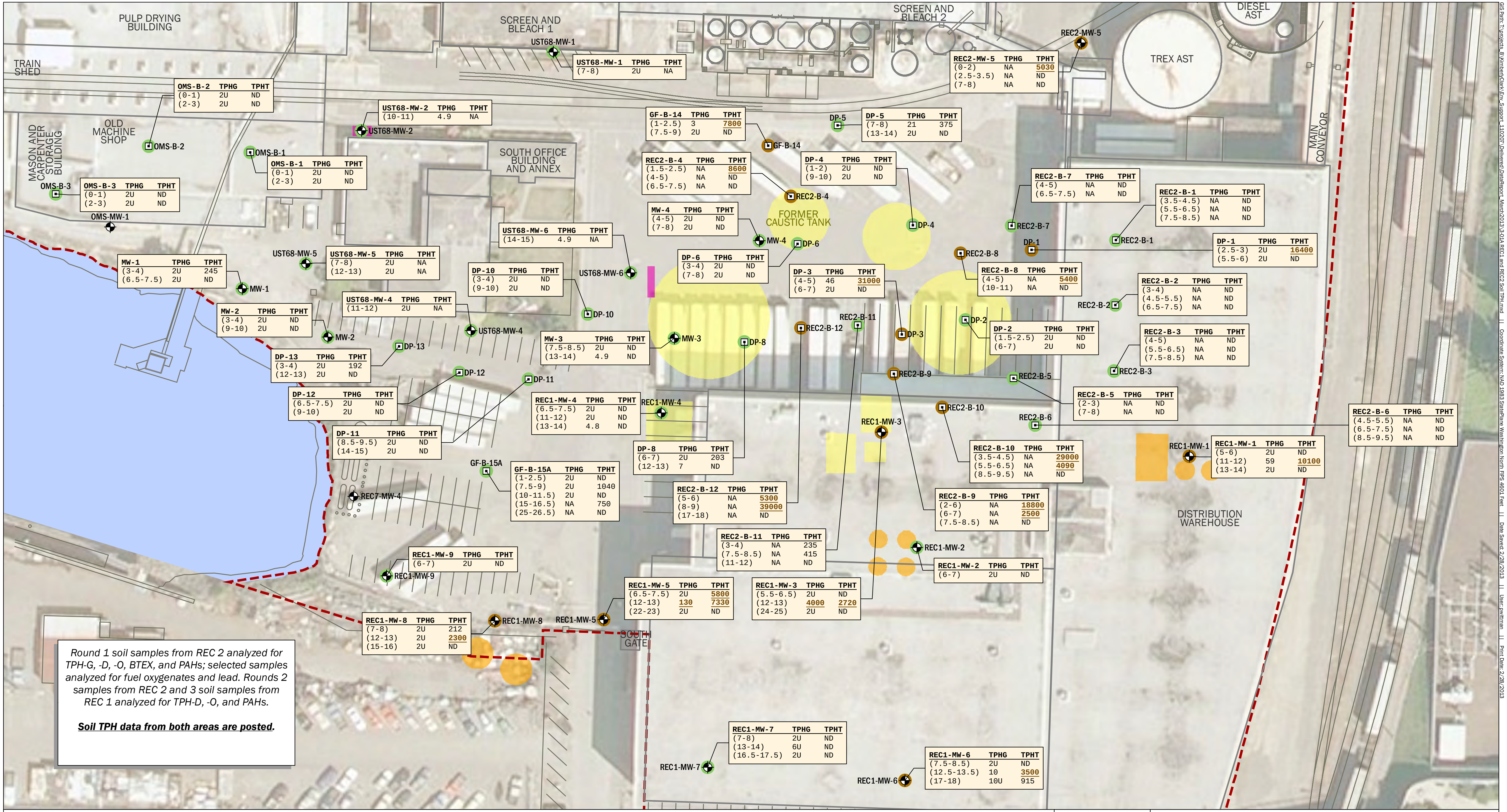
Prior Explorations, RECs, and HRECs

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

MAR-2013	BY: SJG / PPW	FIGURE NO.
PROJECT NO. 110207	REV BY: - - -	1-2

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\1-02 Prior Explorations RECs and HRECs.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 3/1/2013 || User: pwittman || Print Date: 3/1/2013



OMS-B-2	TPHG	TPHT
(0-1)	2U	ND
(2-3)	2U	ND

OMS-B-3	TPHG	TPHT
(0-1)	2U	ND
(2-3)	2U	ND

OMS-B-1	TPHG	TPHT
(0-1)	2U	ND
(2-3)	2U	ND

UST68-MW-2	TPHG	TPHT
(10-11)	4.9	NA

UST68-MW-1	TPHG	TPHT
(7-8)	2U	NA

MW-1	TPHG	TPHT
(3-4)	2U	245
(6.5-7.5)	2U	ND

UST68-MW-5	TPHG	TPHT
(7-8)	2U	NA
(12-13)	2U	NA

UST68-MW-6	TPHG	TPHT
(14-15)	4.9	NA

UST68-MW-4	TPHG	TPHT
(11-12)	2U	NA

MW-2	TPHG	TPHT
(3-4)	2U	ND
(9-10)	2U	ND

DP-10	TPHG	TPHT
(3-4)	2U	ND
(9-10)	2U	ND

DP-13	TPHG	TPHT
(3-4)	2U	192
(12-13)	2U	ND

DP-12	TPHG	TPHT
(6.5-7.5)	2U	ND
(9-10)	2U	ND

DP-11	TPHG	TPHT
(8.5-9.5)	2U	ND
(14-15)	2U	ND

MW-3	TPHG	TPHT
(7.5-8.5)	2U	ND
(13-14)	4.9	ND

REC1-MW-4	TPHG	TPHT
(6.5-7.5)	2U	ND
(11-12)	2U	ND
(13-14)	4.8	ND

GF-B-15A	TPHG	TPHT
(1-2.5)	2U	ND
(7.5-9)	2U	1040
(10-11.5)	2U	ND
(15-16.5)	NA	750
(25-26.5)	NA	ND

REC1-MW-9	TPHG	TPHT
(6-7)	2U	ND

REC1-MW-8	TPHG	TPHT
(7-8)	2U	212
(12-13)	2U	**2300**
(15-16)	2U	ND

GF-B-14	TPHG	TPHT
(1-2.5)	3	**7800**
(7.5-9)	2U	ND

REC2-B-4	TPHG	TPHT
(1.5-2.5)	NA	**8600**
(4-5)	NA	ND
(6.5-7.5)	NA	ND

MW-4	TPHG	TPHT
(4-5)	2U	ND
(7-8)	2U	ND

DP-6	TPHG	TPHT
(3-4)	2U	ND
(7-8)	2U	ND

DP-8	TPHG	TPHT
(6-7)	2U	203
(12-13)	7	ND

REC2-B-12	TPHG	TPHT
(5-6)	NA	**5300**
(8-9)	NA	**39000**
(17-18)	NA	ND

REC2-B-11	TPHG	TPHT
(3-4)	NA	235
(7.5-8.5)	NA	415
(11-12)	NA	ND

REC1-MW-5	TPHG	TPHT
(6.5-7.5)	2U	**5800**
(12-13)	**130**	**7330**
(22-23)	2U	ND

REC1-MW-3	TPHG	TPHT
(5.5-6.5)	2U	ND
(12-13)	**4000**	**2720**
(24-25)	2U	ND

REC1-MW-7	TPHG	TPHT
(7-8)	2U	ND
(13-14)	6U	ND
(16.5-17.5)	2U	ND

DP-5	TPHG	TPHT
(7-8)	21	375
(13-14)	2U	ND

DP-4	TPHG	TPHT
(1-2)	2U	ND
(9-10)	2U	ND

DP-3	TPHG	TPHT
(4-5)	46	**31000**
(6-7)	2U	ND

REC2-MW-5	TPHG	TPHT
(0-2)	NA	**5030**
(2.5-3.5)	NA	ND
(7-8)	NA	ND

REC2-B-7	TPHG	TPHT
(4-5)	NA	ND
(6.5-7.5)	NA	ND

REC2-B-8	TPHG	TPHT
(4-5)	NA	**5400**
(10-11)	NA	ND

DP-2	TPHG	TPHT
(1.5-2.5)	2U	ND
(6-7)	2U	ND

REC2-B-10	TPHG	TPHT
(3.5-4.5)	NA	**29000**
(5.5-6.5)	NA	**4090**
(8.5-9.5)	NA	ND

REC2-B-9	TPHG	TPHT
(2-6)	NA	**18800**
(6-7)	NA	**2500**
(7.5-8.5)	NA	ND

REC1-MW-2	TPHG	TPHT
(6-7)	2U	ND

REC1-MW-6	TPHG	TPHT
(7.5-8.5)	2U	ND
(12.5-13.5)	10	**3500**
(17-18)	10U	915

REC2-B-1	TPHG	TPHT
(3.5-4.5)	NA	ND
(5.5-6.5)	NA	ND
(7.5-8.5)	NA	ND

DP-1	TPHG	TPHT
(2.5-3)	2U	**16400**
(5.5-6)	2U	ND

REC2-B-2	TPHG	TPHT
(3-4)	NA	ND
(4.5-5.5)	NA	ND
(6.5-7.5)	NA	ND

REC2-B-3	TPHG	TPHT
(4-5)	NA	ND
(5.5-6.5)	NA	ND
(7.5-8.5)	NA	ND

REC2-B-5	TPHG	TPHT
(2-3)	NA	ND
(7-8)	NA	ND

REC2-B-6	TPHG	TPHT
(4.5-5.5)	NA	ND
(6.5-7.5)	NA	ND
(8.5-9.5)	NA	ND

REC1-MW-1	TPHG	TPHT
(5-6)	2U	ND
(11-12)	59	**10100**
(13-14)	2U	ND

Round 1 soil samples from REC 2 analyzed for TPH-G, -D, -O, BTEX, and PAHs; selected samples analyzed for fuel oxygenates and lead. Rounds 2 samples from REC 2 and 3 soil samples from REC 1 analyzed for TPH-D, -O, and PAHs.

Soil TPH data from both areas are posted.

⊡	Soil Boring
⌖	Monitoring Well
●	Locations with Exceedance
●	Locations with No Exceedance
⬚	Upland Area Boundary
🟨	Approx. Location of Former Assoc. Oil Co. Facilities
🟧	Approx. Location of Former Chevron Facilities
🟪	Former USTs

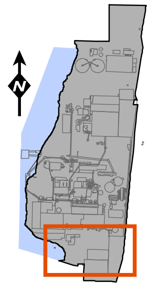
Exploration ID → REC2-B-8; *Sample Depth Interval* → (4-5), (10-11); *Gasoline-Range TPH in Soil (in mg/kg)* → TPHG; *Total TPH* in Soil (in mg/kg)* → TPHT

REC2-B-8	TPHG	TPHT
(4-5)	NA	**5400**
(10-11)	NA	ND

NOTES:
–BROWN, BOLD, UNDERLINED TEXT indicates exceedance of unrestricted and industrial soil screening level
–Qualifier “U” = Analyte was not detected at or above the reported result.
–“ND” = Non-detect.
–“NA” = Not Analyzed
–*Total TPH is the sum of diesel- and oil- range TPHs

N

0 60 120
Feet



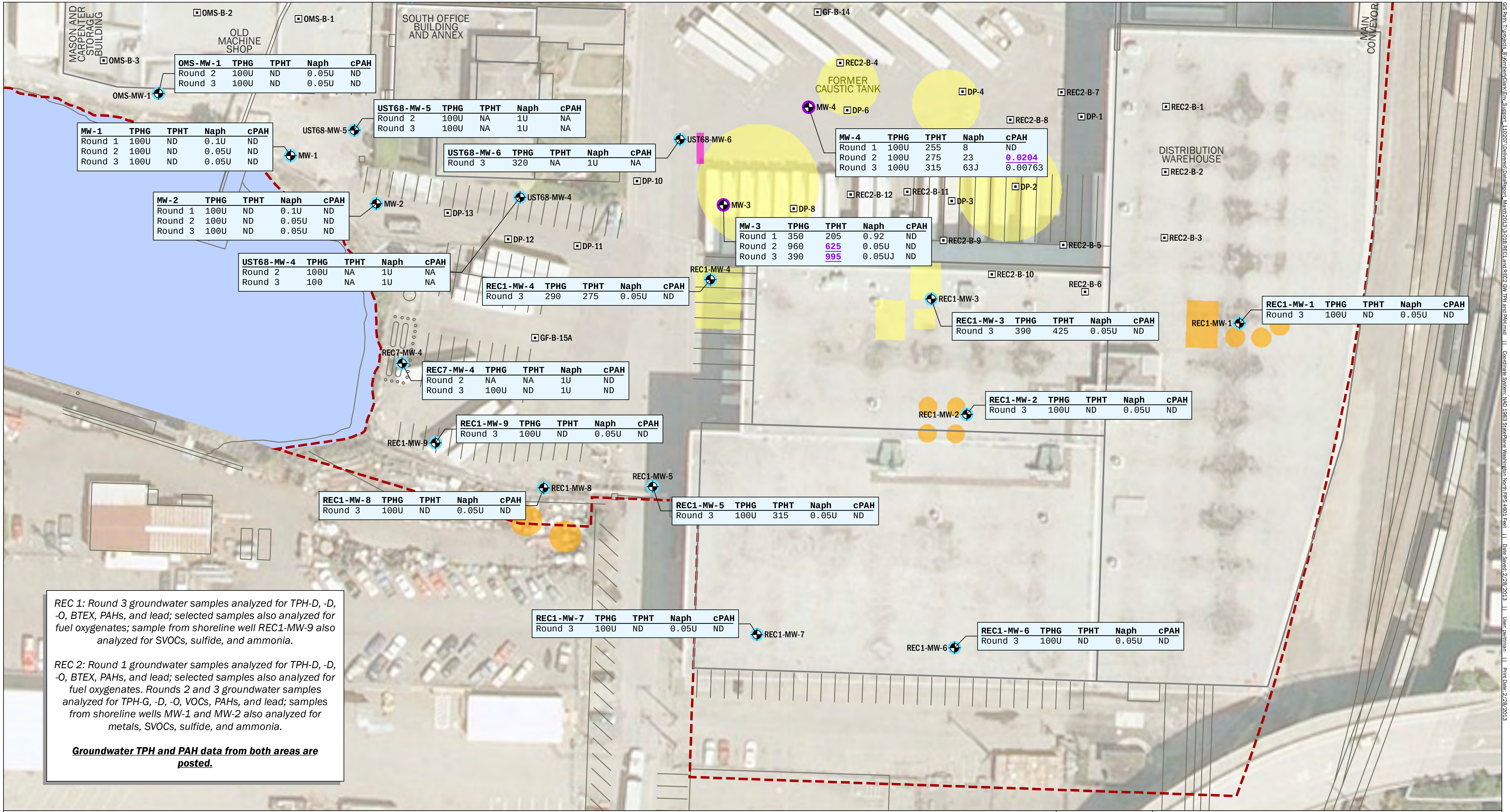
REC 1 and REC 2 Soil TPH Data

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

FEB-2013	BY: SJG / PPW	FIGURE NO.
PROJECT NO. 110207	REV BY: PPW	3-1A

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\3-01A REC1 and REC2 Soil TPH.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/28/2013 || User: pwittman || Print Date: 2/28/2013



OMS-MW-1	TPHG	TPHT	Naph	cPAH
Round 2	100U	ND	0.05U	ND
Round 3	100U	ND	0.05U	ND

UST68-MW-5	TPHG	TPHT	Naph	cPAH
Round 2	100U	NA	1U	NA
Round 3	100U	NA	1U	NA

MW-1	TPHG	TPHT	Naph	cPAH
Round 1	100U	ND	0.1U	ND
Round 2	100U	ND	0.05U	ND
Round 3	100U	ND	0.05U	ND

UST68-MW-6	TPHG	TPHT	Naph	cPAH
Round 3	320	NA	1U	NA

MW-4	TPHG	TPHT	Naph	cPAH
Round 1	100U	255	8	ND
Round 2	100U	275	23	**<u>0.0204</u>**
Round 3	100U	315	63J	0.00763

MW-2	TPHG	TPHT	Naph	cPAH
Round 1	100U	ND	0.1U	ND
Round 2	100U	ND	0.05U	ND
Round 3	100U	ND	0.05U	ND

MW-3	TPHG	TPHT	Naph	cPAH
Round 1	350	205	0.92	ND
Round 2	960	**<u>625</u>**	0.05U	ND
Round 3	390	**<u>995</u>**	0.05UJ	ND

UST68-MW-4	TPHG	TPHT	Naph	cPAH
Round 2	100U	NA	1U	NA
Round 3	100	NA	1U	NA

REC1-MW-4	TPHG	TPHT	Naph	cPAH
Round 3	290	275	0.05U	ND

REC1-MW-1	TPHG	TPHT	Naph	cPAH
Round 3	100U	ND	0.05U	ND

REC1-MW-3	TPHG	TPHT	Naph	cPAH
Round 3	390	425	0.05U	ND

REC7-MW-4	TPHG	TPHT	Naph	cPAH
Round 2	NA	NA	1U	ND
Round 3	100U	ND	1U	ND

REC1-MW-2	TPHG	TPHT	Naph	cPAH
Round 3	100U	ND	0.05U	ND

REC1-MW-9	TPHG	TPHT	Naph	cPAH
Round 3	100U	ND	0.05U	ND

REC1-MW-8	TPHG	TPHT	Naph	cPAH
Round 3	100U	ND	0.05U	ND

REC1-MW-5	TPHG	TPHT	Naph	cPAH
Round 3	100U	315	0.05U	ND

REC1-MW-7	TPHG	TPHT	Naph	cPAH
Round 3	100U	ND	0.05U	ND

REC1-MW-6	TPHG	TPHT	Naph	cPAH
Round 3	100U	ND	0.05U	ND

REC 1: Round 3 groundwater samples analyzed for TPH-D, -D, -O, BTEX, PAHs, and lead; selected samples also analyzed for fuel oxygenates; sample from shoreline well REC1-MW-9 also analyzed for SVOCs, sulfide, and ammonia.

REC 2: Round 1 groundwater samples analyzed for TPH-D, -D, -O, BTEX, PAHs, and lead; selected samples also analyzed for fuel oxygenates. Rounds 2 and 3 groundwater samples analyzed for TPH-G, -D, -O, VOCs, PAHs, and lead; samples from shoreline wells MW-1 and MW-2 also analyzed for metals, SVOCs, sulfide, and ammonia.

<u>Groundwater TPH and PAH data from both areas are posted.</u>

- ▣ Soil Boring
- ⌖ Monitoring Well
- ● Locations with Exceedance
- ● Locations with No Exceedance
- ▭ Upland Area Boundary
- 🟨 Approx. Location of Former Assoc. Oil Co. Facilities
- 🟧 Approx. Location of Former Chevron Facilities
- 🟪 Former USTs

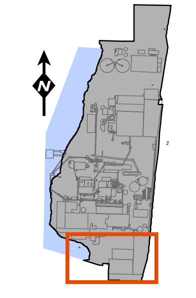
Exploration ID
Naphthalene in GW (in µg/L)
Total cPAH (TEQ) in GW (in µg/L)

REC7-MW-4	TPHG	TPHT	Naph	cPAH
Round 2	NA	NA	1U	ND
Round 3	100U	ND	1U	ND

Sampling Round
Total TPH in GW (in µg/L)*
Gasoline-Range TPH in GW (in µg/L)

<u>NOTES:</u>
–BOLD, PURPLE, UNDERLINED TEXT indicates exceedance of groundwater screening level
–Qualifier "U" = Analyte was not detected at or above the reported result.
–"ND" = Non-detect.
–"NA" = Not Analyzed
–*Total TPH is the sum of diesel- and oil- range TPHs

N
0 60
Feet



REC1 and REC 2
Groundwater TPH and PAH Data

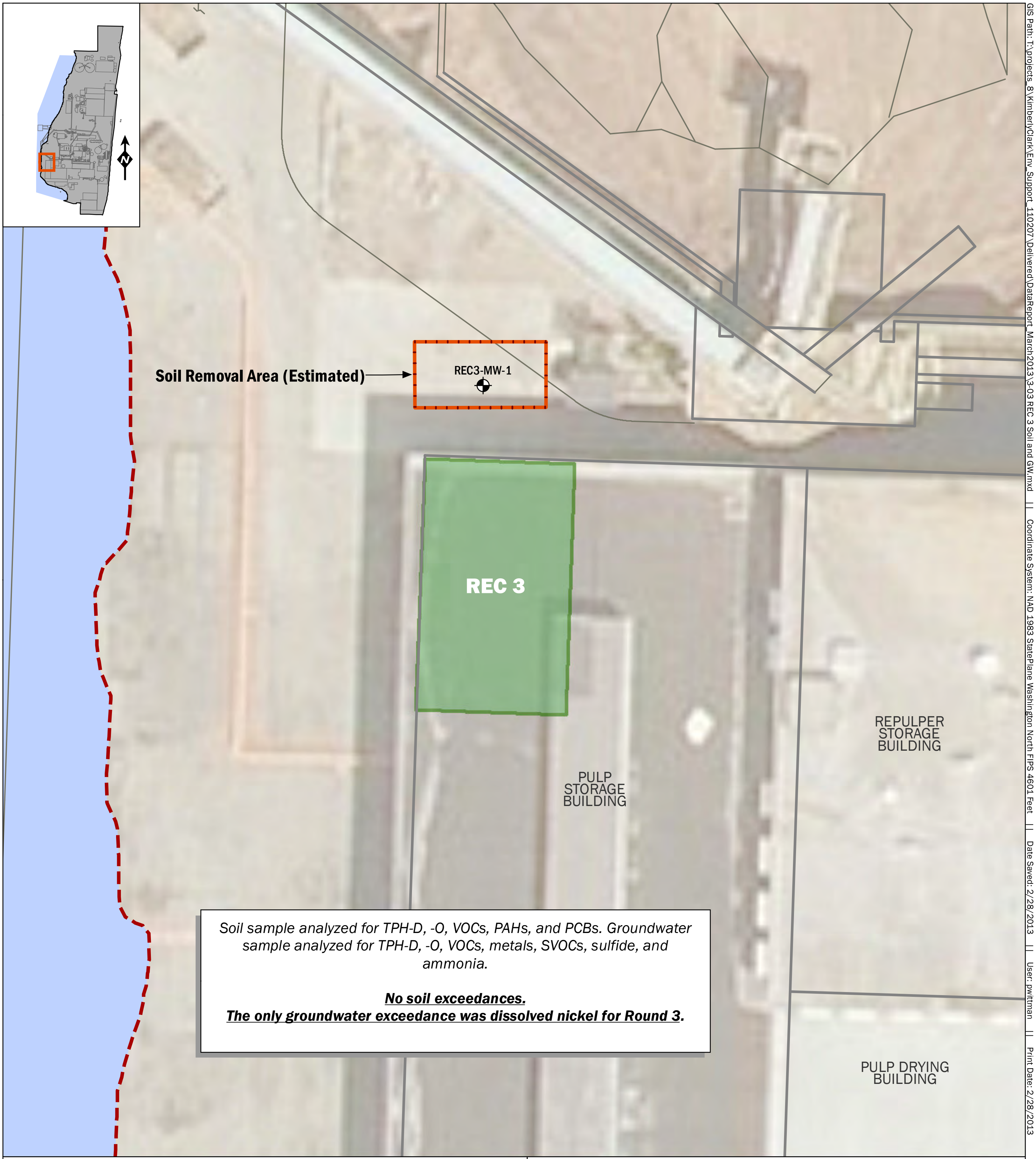
Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

FEB-2013	BY: SJG / PPW
PROJECT NO. 110207	REV BY: PPW

FIGURE NO.
3-1B

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\3-01B REC1 and REC2 GW TPH and PAH.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/28/2013 || User: pwittman || Print Date: 2/28/2013



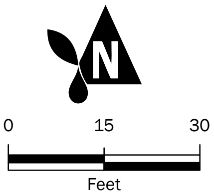
Soil sample analyzed for TPH-D, -O, VOCs, PAHs, and PCBs. Groundwater sample analyzed for TPH-D, -O, VOCs, metals, SVOCs, sulfide, and ammonia.

No soil exceedances.

The only groundwater exceedance was dissolved nickel for Round 3.

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\3-03 REC 3 Soil and GW.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/28/2013 || User: pwittman || Print Date: 2/28/2013

- ⌖ Monitoring Well
- ▭ Upland Area Boundary
- 🟩 REC 3
- 🟧 Soil Removal Area (Estimated)

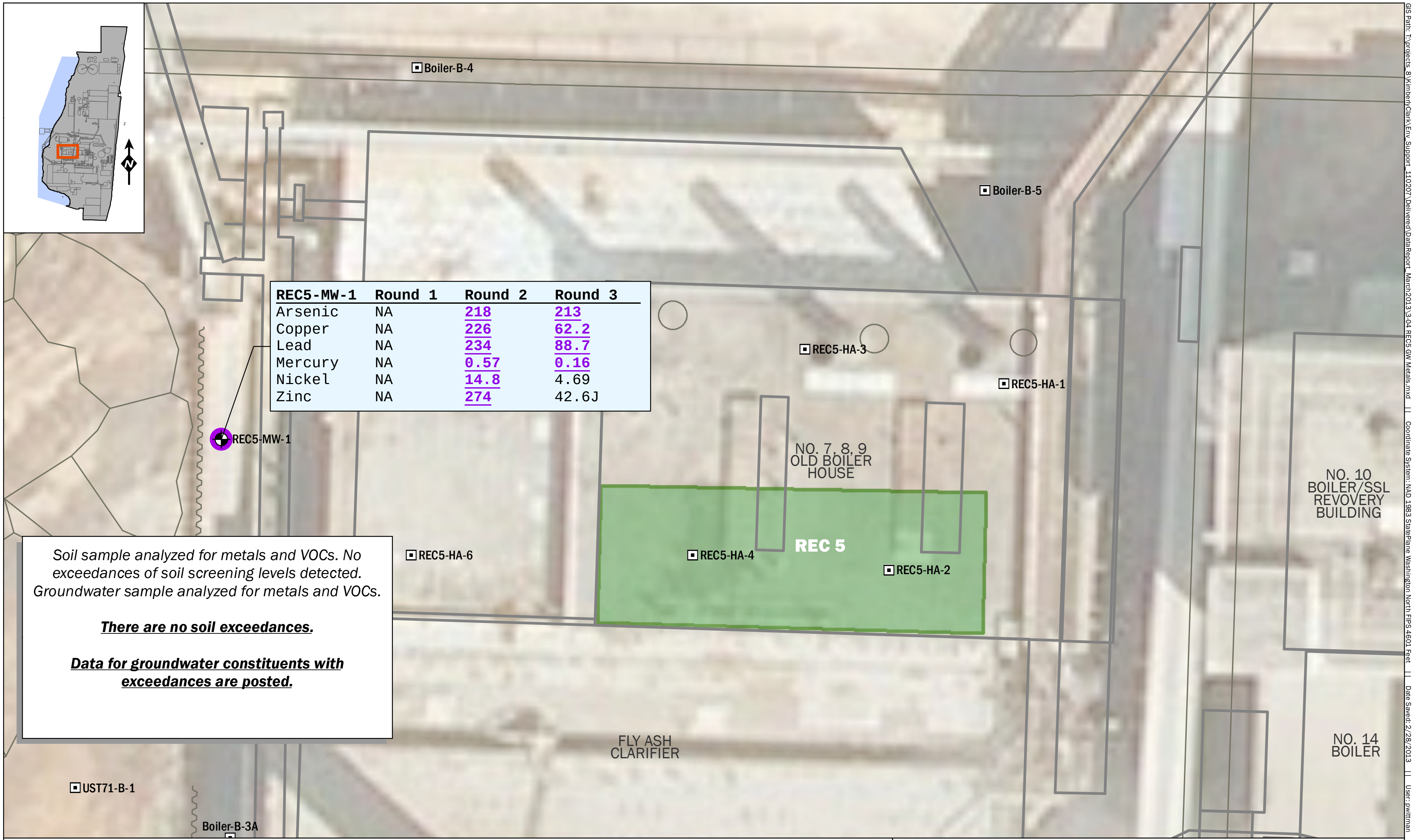


REC 3 Soil and Groundwater Data

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

FEB-2013	BY: SJG / PPW	FIGURE NO.
PROJECT NO. 110207	REV BY: PPW	**3-3**



REC5-MW-1	Round 1	Round 2	Round 3
Arsenic	NA	**218**	**213**
Copper	NA	**226**	**62.2**
Lead	NA	**234**	**88.7**
Mercury	NA	**0.57**	**0.16**
Nickel	NA	**14.8**	4.69
Zinc	NA	**274**	42.6J

Soil sample analyzed for metals and VOCs. No exceedances of soil screening levels detected. Groundwater sample analyzed for metals and VOCs.

There are no soil exceedances.

Data for groundwater constituents with exceedances are posted.

⊡	Soil Boring
⊕	Monitoring Well
●	Locations with Metals Exceedance

Exploration ID

Concentration in Groundwater from June/July 2012 Sampling

Metal Exceeding Screening Level (maximum of total and dissolved concentrations is shown)

REC5-MW-1	Round 1	Round 2	Round 3
Arsenic	NA	**218**	**213**
Copper	NA	**226**	**62.2**
Lead	NA	**234**	**88.7**
Mercury	NA	**0.57**	**0.16**
Nickel	NA	**14.8**	4.69
Zinc	NA	**274**	42.6J

Concentration in Groundwater from February 2012 Sampling

Concentration in Groundwater from Aug/Sept 2012 Sampling

NOTES:
–BOLD, PURPLE, UNDERLINED TEXT indicates exceedance of site groundwater screening level
–"NA" = Not Analyzed

N
0 15 30
Feet

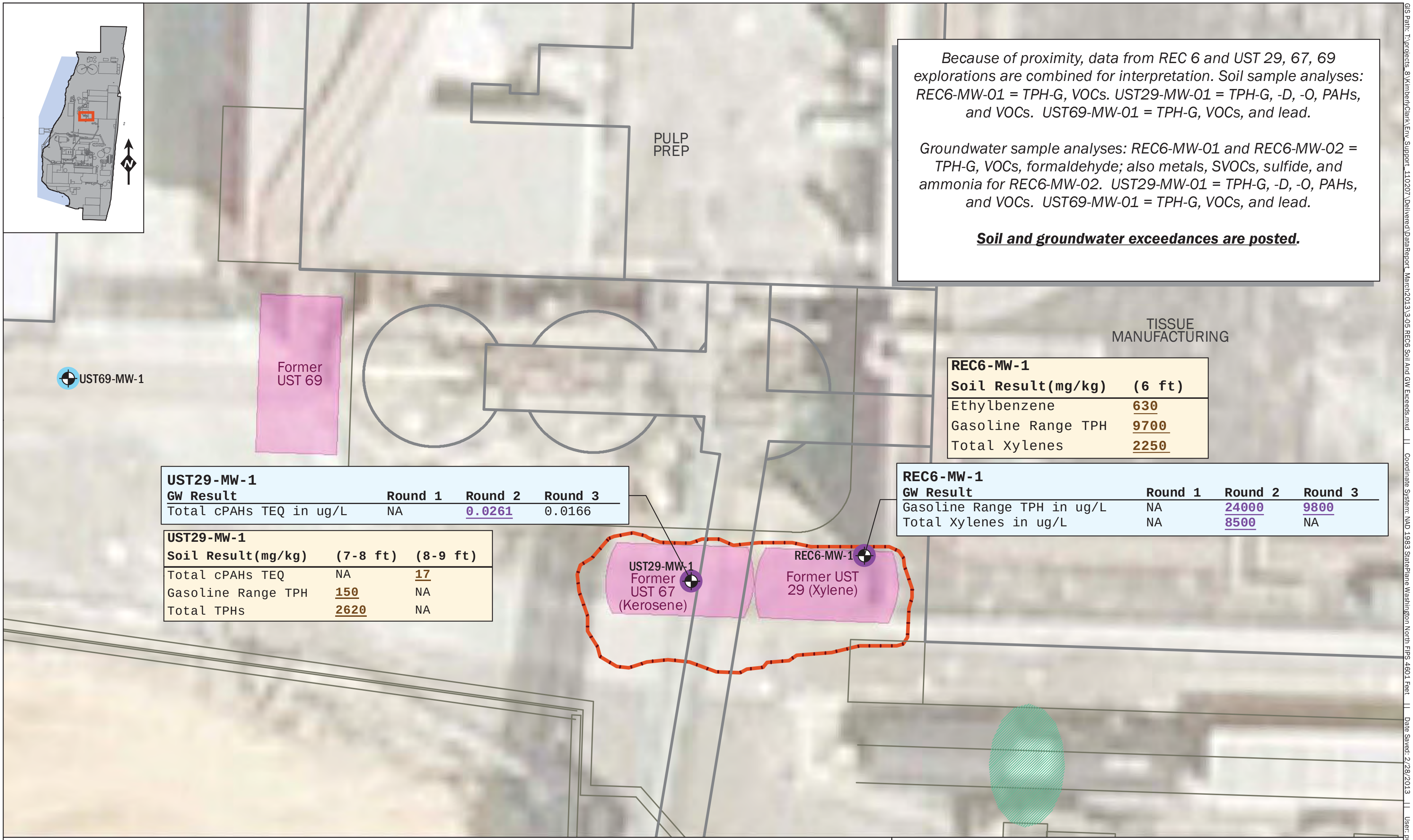
REC 5 Groundwater Metals Exceedances

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

FEB-2013	BY: SJG / PPW	FIGURE NO.
PROJECT NO. 110207	REV BY: PPW	3-4

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\3-04 REC5 GW Metals.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/28/2013 || User: pwittman || Print Date: 2/28/2013



Because of proximity, data from REC 6 and UST 29, 67, 69 explorations are combined for interpretation. Soil sample analyses: REC6-MW-01 = TPH-G, VOCs. UST29-MW-01 = TPH-G, -D, -O, PAHs, and VOCs. UST69-MW-01 = TPH-G, VOCs, and lead.

Groundwater sample analyses: REC6-MW-01 and REC6-MW-02 = TPH-G, VOCs, formaldehyde; also metals, SVOCs, sulfide, and ammonia for REC6-MW-02. UST29-MW-01 = TPH-G, -D, -O, PAHs, and VOCs. UST69-MW-01 = TPH-G, VOCs, and lead.

Soil and groundwater exceedances are posted.

REC6-MW-1

Soil Result(mg/kg)	**(6 ft)**
Ethylbenzene	**630**
Gasoline Range TPH	**9700**
Total Xylenes	**2250**

UST29-MW-1

GW Result	**Round 1**	**Round 2**	**Round 3**
Total cPAHs TEQ in ug/L	NA	**0.0261**	0.0166

UST29-MW-1

Soil Result(mg/kg)	**(7-8 ft)**	**(8-9 ft)**
Total cPAHs TEQ	NA	**17**
Gasoline Range TPH	**150**	NA
Total TPHs	**2620**	NA

REC6-MW-1

GW Result	**Round 1**	**Round 2**	**Round 3**
Gasoline Range TPH in ug/L	NA	**24000**	**9800**
Total Xylenes in ug/L	NA	**8500**	NA

⌖	Monitoring Well
●	Location with Exceedance
●	Locations with No Exceedance
▨	Former UST
▨	Limits of USTs 29/67 Excavation
▨	Inferred Location of Latex Release

NOTES:
–Shoreline well REC6-MW-2 is not shown. It is shown with groundwater exceedances on Figure 7 and had no soil data collected.
–BOLD, PURPLE, UNDERLINED TEXT indicates exceedance of groundwater screening level
–BOLD, BROWN, UNDERLINED TEXT indicates exceedance of unrestricted soil screening level
–"ND" = Non-detect.
–"NA" = Not Analyzed
–*Total TPH is the sum of diesel- and oil- range TPHs

REC 6, USTs 29, 67, 69 Area Soil and Groundwater Exceedances

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

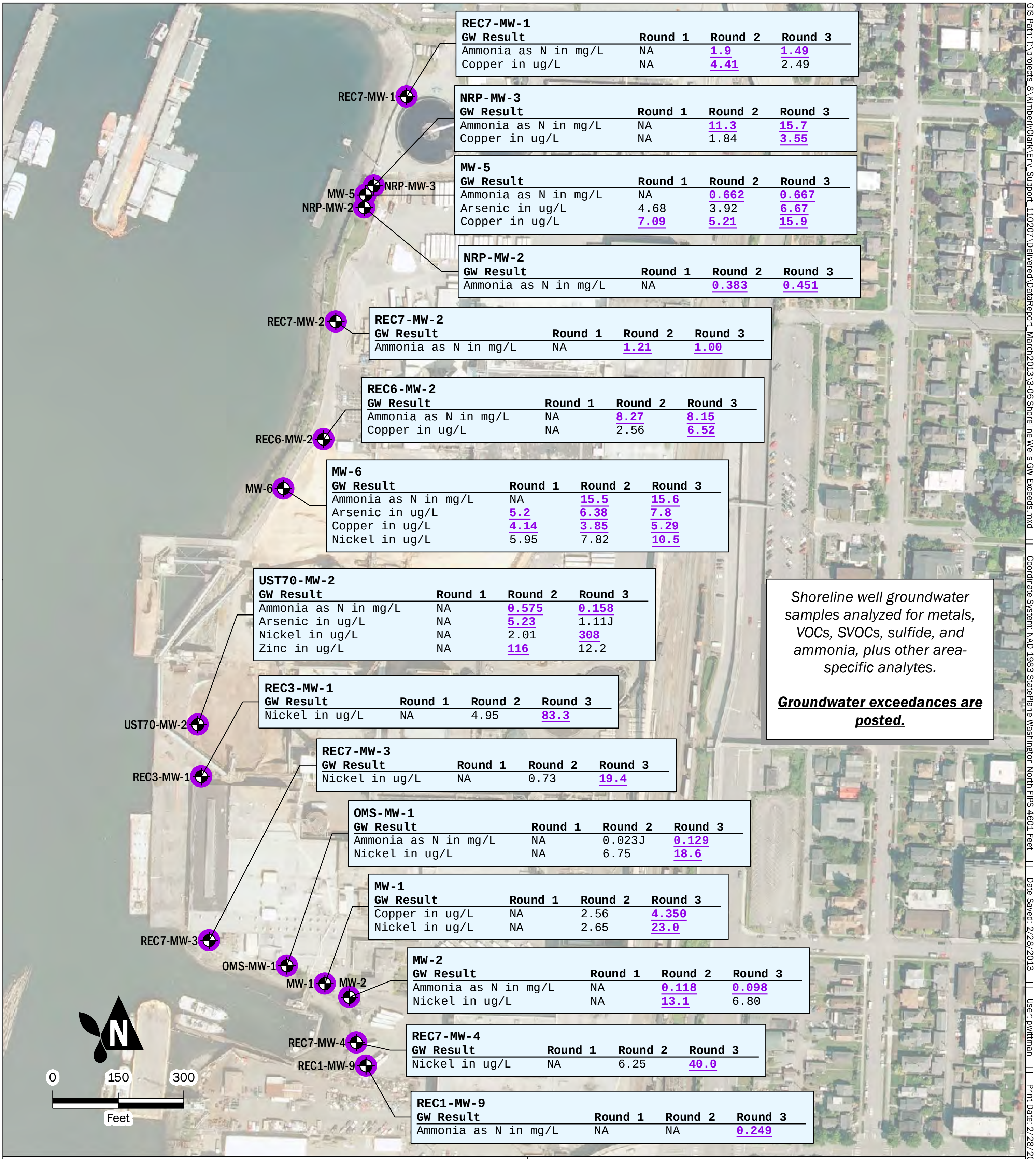
Aspect CONSULTING

FEB-2013
PROJECT NO.
110207

BY:
SJG / PPW
REV BY:
PPW

FIGURE NO.
3-5

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\3-05 REC6 Soil And GW Exceeds.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/28/2013 || User: pwittman || Print Date: 2/28/2013



REC7-MW-1

GW Result	Round 1	Round 2	Round 3
Ammonia as N in mg/L	NA	**1.9**	**1.49**
Copper in ug/L	NA	**4.41**	2.49

NRP-MW-3

GW Result	Round 1	Round 2	Round 3
Ammonia as N in mg/L	NA	**11.3**	**15.7**
Copper in ug/L	NA	1.84	**3.55**

MW-5

GW Result	Round 1	Round 2	Round 3
Ammonia as N in mg/L	NA	**0.662**	**0.667**
Arsenic in ug/L	4.68	3.92	**6.67**
Copper in ug/L	**7.09**	**5.21**	**15.9**

NRP-MW-2

GW Result	Round 1	Round 2	Round 3
Ammonia as N in mg/L	NA	**0.383**	**0.451**

REC7-MW-2

GW Result	Round 1	Round 2	Round 3
Ammonia as N in mg/L	NA	**1.21**	**1.00**

REC6-MW-2

GW Result	Round 1	Round 2	Round 3
Ammonia as N in mg/L	NA	**8.27**	**8.15**
Copper in ug/L	NA	2.56	**6.52**

MW-6

GW Result	Round 1	Round 2	Round 3
Ammonia as N in mg/L	NA	**15.5**	**15.6**
Arsenic in ug/L	**5.2**	**6.38**	**7.8**
Copper in ug/L	**4.14**	**3.85**	**5.29**
Nickel in ug/L	5.95	7.82	**10.5**

UST70-MW-2

GW Result	Round 1	Round 2	Round 3
Ammonia as N in mg/L	NA	**0.575**	**0.158**
Arsenic in ug/L	NA	**5.23**	1.11J
Nickel in ug/L	NA	2.01	**308**
Zinc in ug/L	NA	**116**	12.2

REC3-MW-1

GW Result	Round 1	Round 2	Round 3
Nickel in ug/L	NA	4.95	**83.3**

REC7-MW-3

GW Result	Round 1	Round 2	Round 3
Nickel in ug/L	NA	0.73	**19.4**

OMS-MW-1

GW Result	Round 1	Round 2	Round 3
Ammonia as N in mg/L	NA	0.023J	**0.129**
Nickel in ug/L	NA	6.75	**18.6**

MW-1

GW Result	Round 1	Round 2	Round 3
Copper in ug/L	NA	2.56	**4.350**
Nickel in ug/L	NA	2.65	**23.0**

MW-2

GW Result	Round 1	Round 2	Round 3
Ammonia as N in mg/L	NA	**0.118**	**0.098**
Nickel in ug/L	NA	**13.1**	6.80

REC7-MW-4

GW Result	Round 1	Round 2	Round 3
Nickel in ug/L	NA	6.25	**40.0**

REC1-MW-9

GW Result	Round 1	Round 2	Round 3
Ammonia as N in mg/L	NA	NA	**0.249**

Shoreline well groundwater samples analyzed for metals, VOCs, SVOCs, sulfide, and ammonia, plus other area-specific analytes.

Groundwater exceedances are posted.

⊕	Monitoring Well
●	Locations with Exceedance

NOTES:
--BOLD, PURPLE, UNDERLINED TEXT indicates exceedance of groundwater screening level
--For samples with both dissolved and total metals detected, the higher concentration is listed.
--"NA" = Not Analyzed

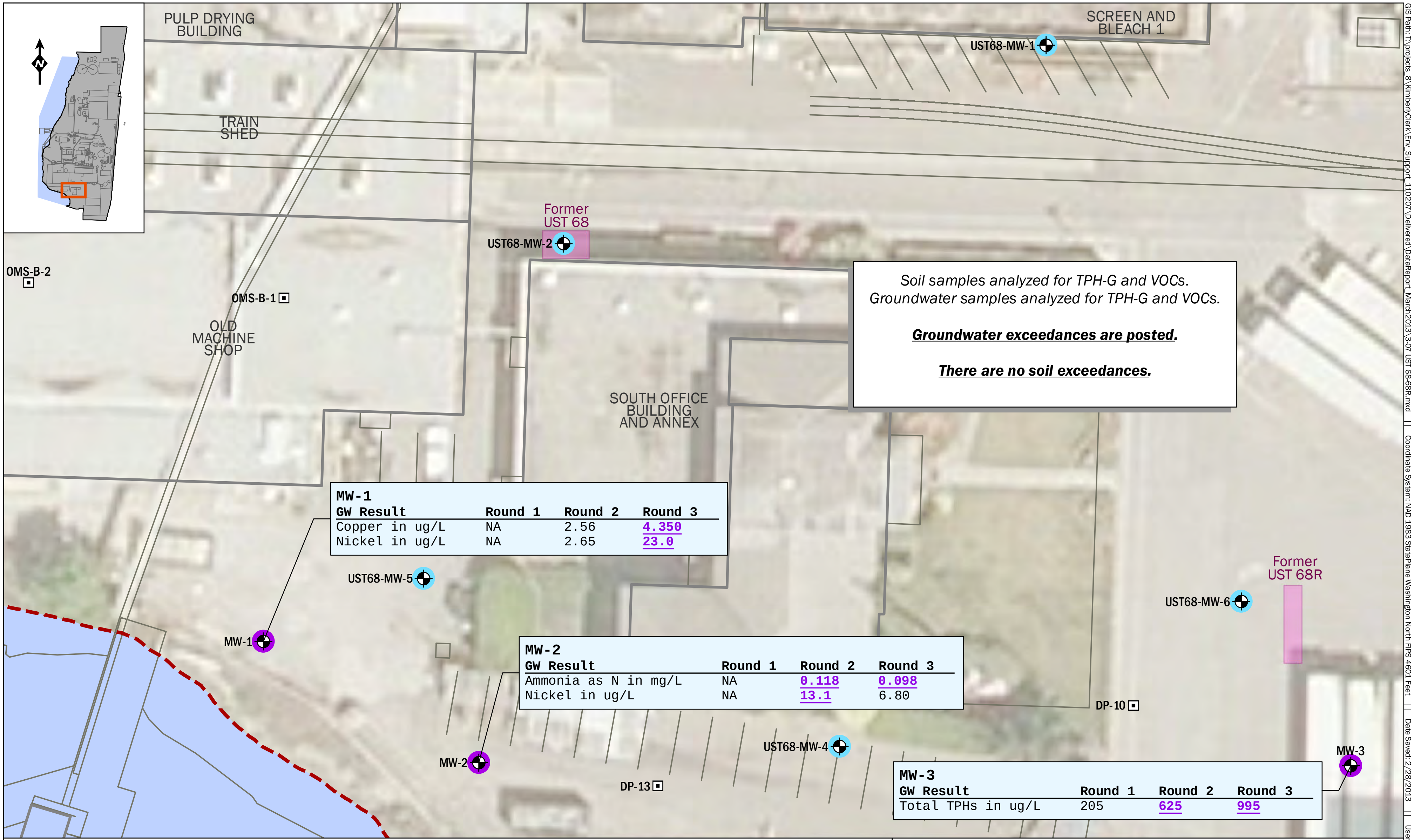
REC 7 (East Waterway Shoreline) Groundwater Exceedances

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

FEB-2013	BY: SJG / PPW	FIGURE NO.
PROJECT NO. 110207	REV BY: PPW	**3-6**

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\3-06 Shoreline Wells GW Exceeds.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/28/2013 || User: pwittman || Print Date: 2/28/2013



Soil samples analyzed for TPH-G and VOCs.
Groundwater samples analyzed for TPH-G and VOCs.

Groundwater exceedances are posted.

There are no soil exceedances.

MW-1

GW Result	Round 1	Round 2	Round 3
Copper in ug/L	NA	2.56	**4.350**
Nickel in ug/L	NA	2.65	**23.0**

MW-2

GW Result	Round 1	Round 2	Round 3
Ammonia as N in mg/L	NA	**0.118**	**0.098**
Nickel in ug/L	NA	**13.1**	6.80

MW-3

GW Result	Round 1	Round 2	Round 3
Total TPHs in ug/L	205	**625**	**995**

▣	Soil Boring
⌖	Monitoring Well
▭	Former UST
●	Locations with Groundwater Exceedance
●	Locations with No Groundwater Exceedance
⬚	Upland Area Boundary

0 35 70
Feet

NOTES:
–BOLD, PURPLE, UNDERLINED TEXT indicates exceedance of site groundwater screening level
–"NA" = Not Analyzed
–Total TPH is the sum of diesel- and oil- range TPHs

UST 68, 68R Soil and Groundwater Data

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

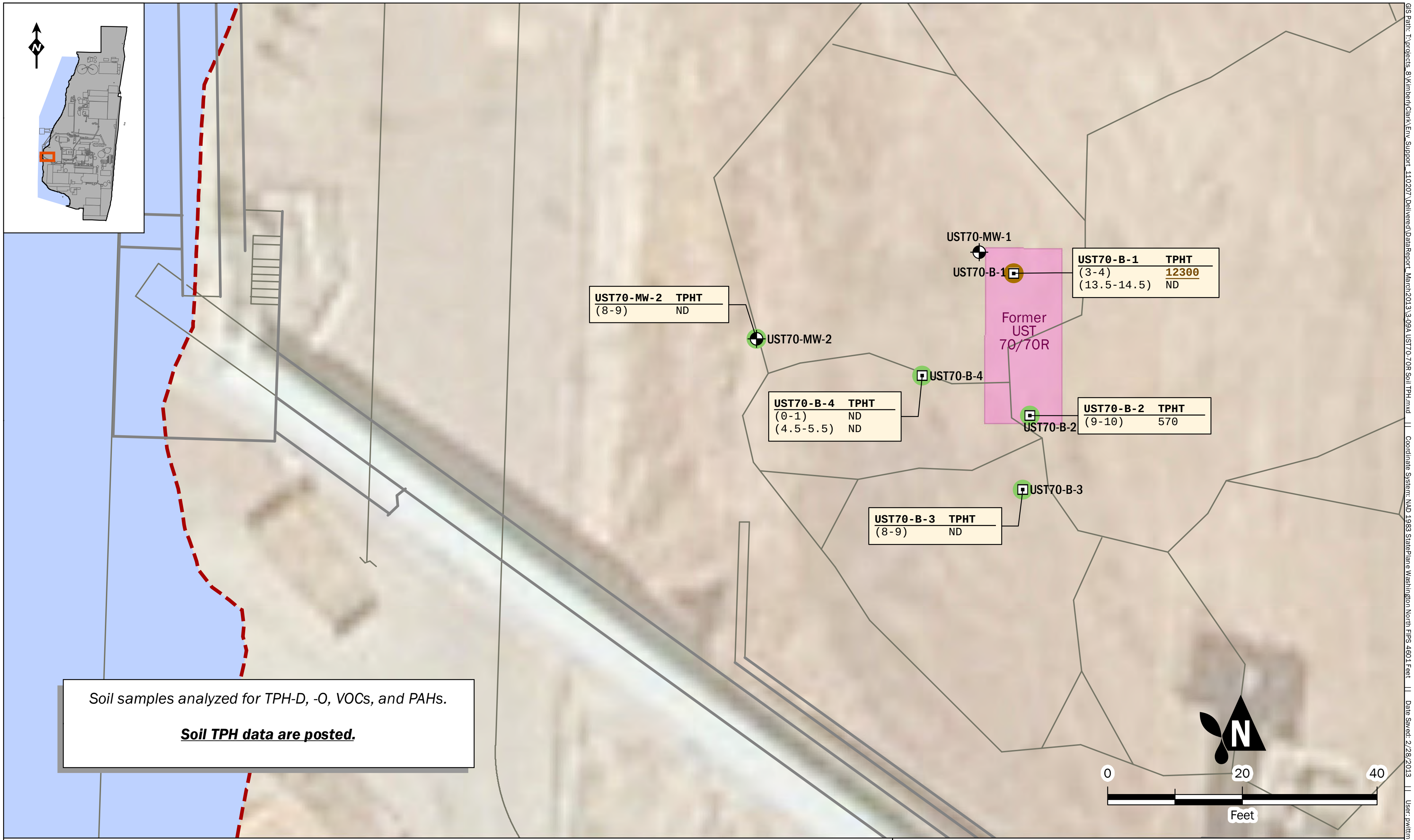
Aspect CONSULTING

FEB-2013
PROJECT NO.
110207

BY:
SJG / PPW
REV BY:
PPW

FIGURE NO.
3-7

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\3-07 UST 68-68R.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/28/2013 || User: pwittman || Print Date: 2/28/2013



Soil samples analyzed for TPH-D, -O, VOCs, and PAHs.

Soil TPH data are posted.

- ▣ Soil Boring
- ⌖ Monitoring Well
- ● Locations with Exceedance
- ● Locations with No Exceedance
- ⬚ Upland Area Boundary

Exploration ID → UST70-B-1 TPHT

Sample Depth Interval → (3-4) 12300 / (13.5-14.5) ND

Total TPH in Soil (in mg/kg)*

NOTES:

–BROWN BOLD TEXT indicates exceedance of unrestricted and industrial soil screening level
–Qualifier “U” = Analyte was not detected at or above the reported result.
–“ND” = Non-detect.
–“NA” = Not Analyzed
–*Total TPH is the sum of diesel- and oil- range TPHs

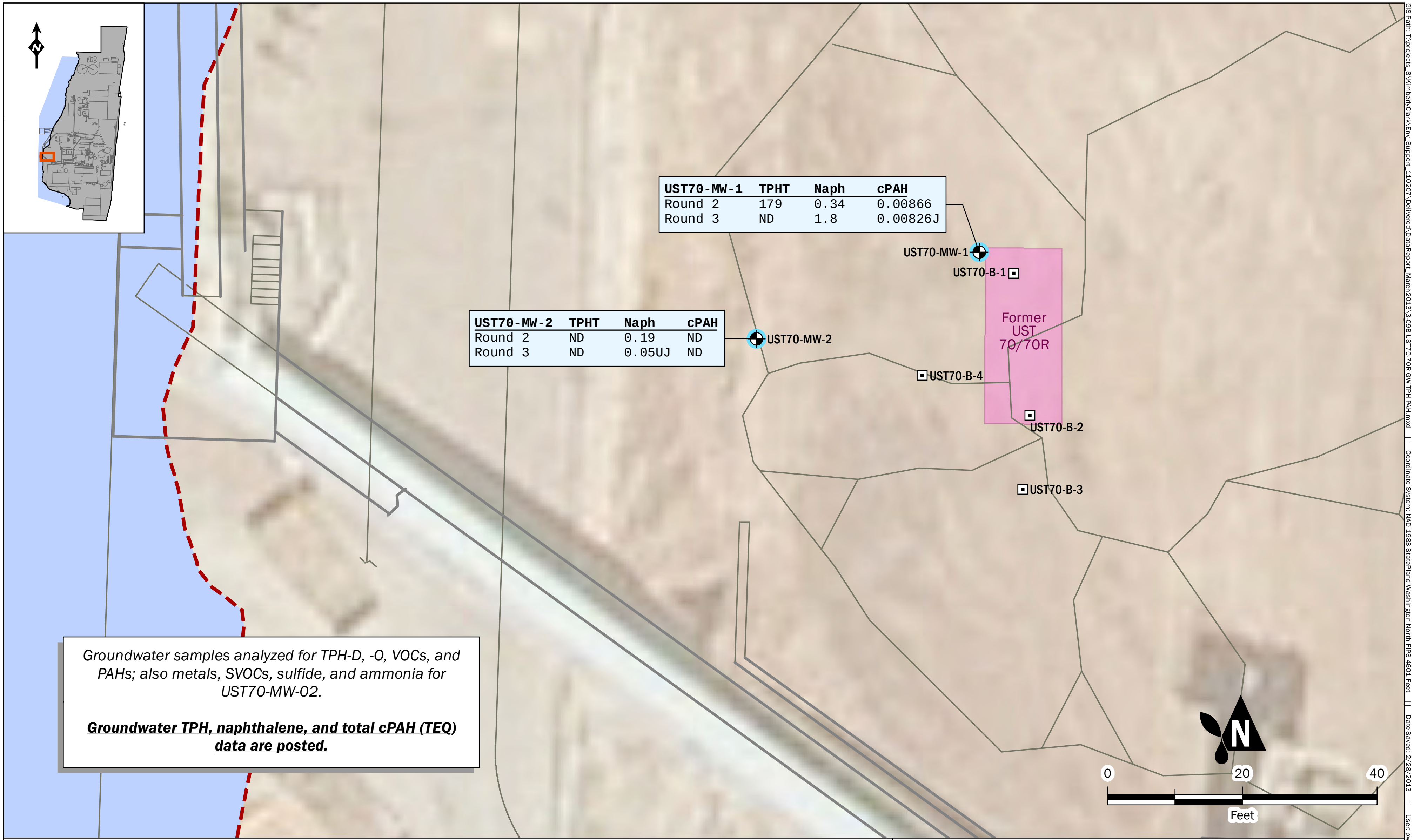
UST 70, 70R Soil TPH Data

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

FEB-2013	BY: SJG / PPW	FIGURE NO.
PROJECT NO. 110207	REV BY: PPW	3-9A

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\3-09A UST70-70R Soil TPH.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/28/2013 || User: pwittman || Print Date: 2/28/2013



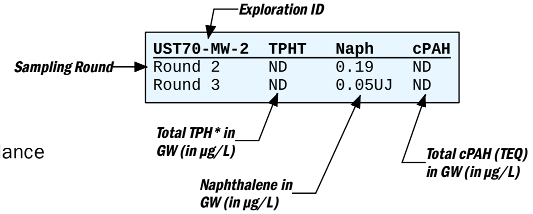
UST70-MW-1	TPHT	Naph	cPAH
Round 2	179	0.34	0.00866
Round 3	ND	1.8	0.00826J

UST70-MW-2	TPHT	Naph	cPAH
Round 2	ND	0.19	ND
Round 3	ND	0.05UJ	ND

Groundwater samples analyzed for TPH-D, -O, VOCs, and PAHs; also metals, SVOCs, sulfide, and ammonia for UST70-MW-02.

<u>Groundwater TPH, naphthalene, and total cPAH (TEQ) data are posted.</u>

- ⊡ Soil Boring
- ⊕ Monitoring Well
- ⬚ Upland Area Boundary
- ● Locations with No Exceedance
- 🟪 Former UST



UST70-MW-2	TPHT	Naph	cPAH
Round 2	ND	0.19	ND
Round 3	ND	0.05UJ	ND

NOTES:
BOLD, PURPLE, UNDERLINED TEXT indicates exceedance of groundwater screening level
–Qualifier "U" = Analyte was not detected at or above the reported result.
–"ND" = Non-detect.
–"NA" = Not Analyzed
–*Total TPH is the sum of diesel- and oil- range TPHs

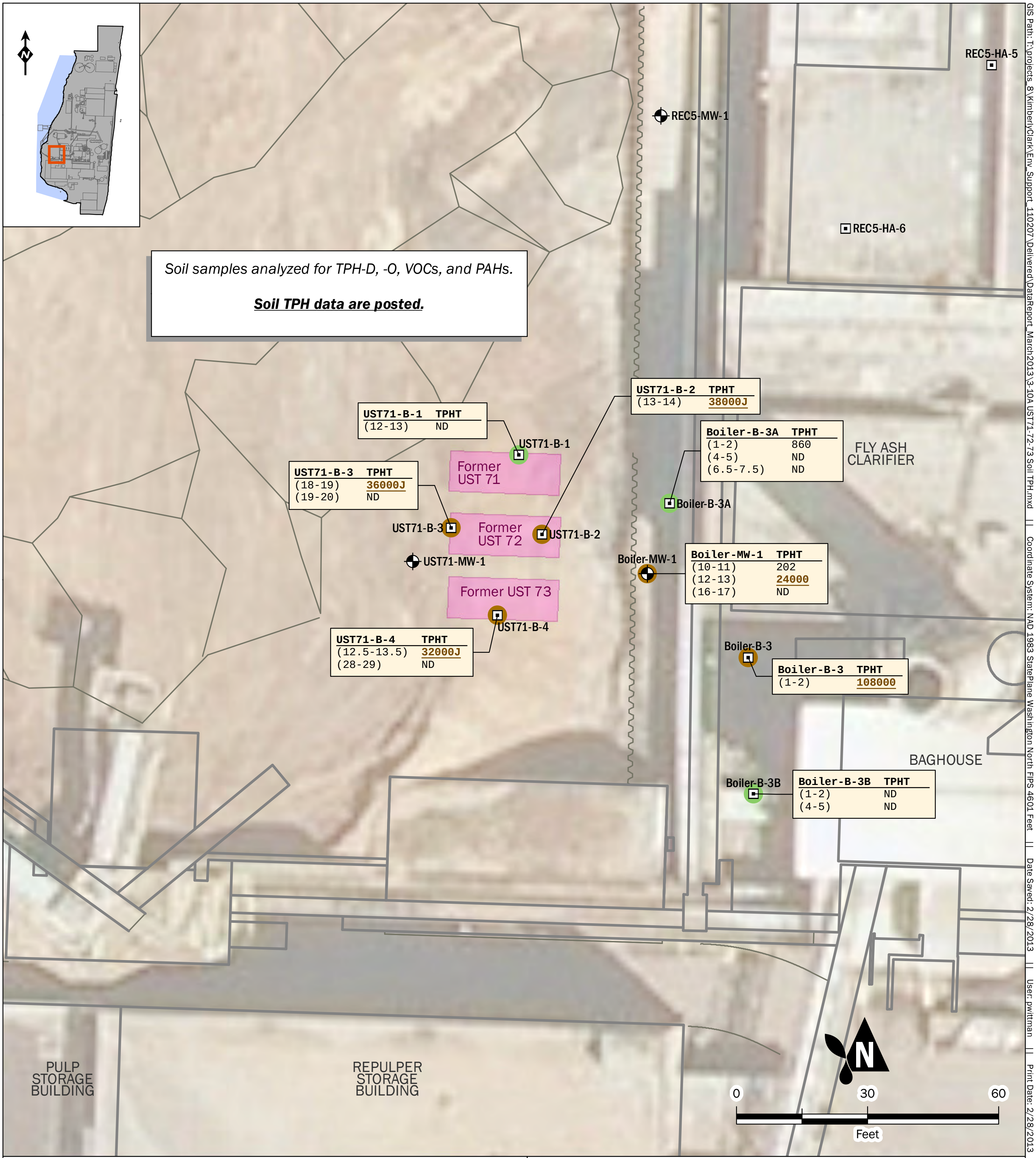
UST 70, 70R Groundwater TPH and PAH Data

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

FEB-2013	BY: SJG / PPW	FIGURE NO.
PROJECT NO. 110207	REV BY: PPW	3-9B

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\3-09B UST70-70R GW TPH PAH.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/28/2013 || User: pwittman || Print Date: 2/28/2013



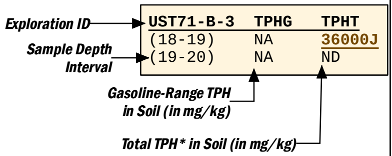
GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\3-10A UST71-72-73 Soil TPH.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/28/2013 || User: pwittman || Print Date: 2/28/2013

⊡ Soil Boring

⌖ Monitoring Well

● Locations with Exceedance

● Locations with No Exceedance



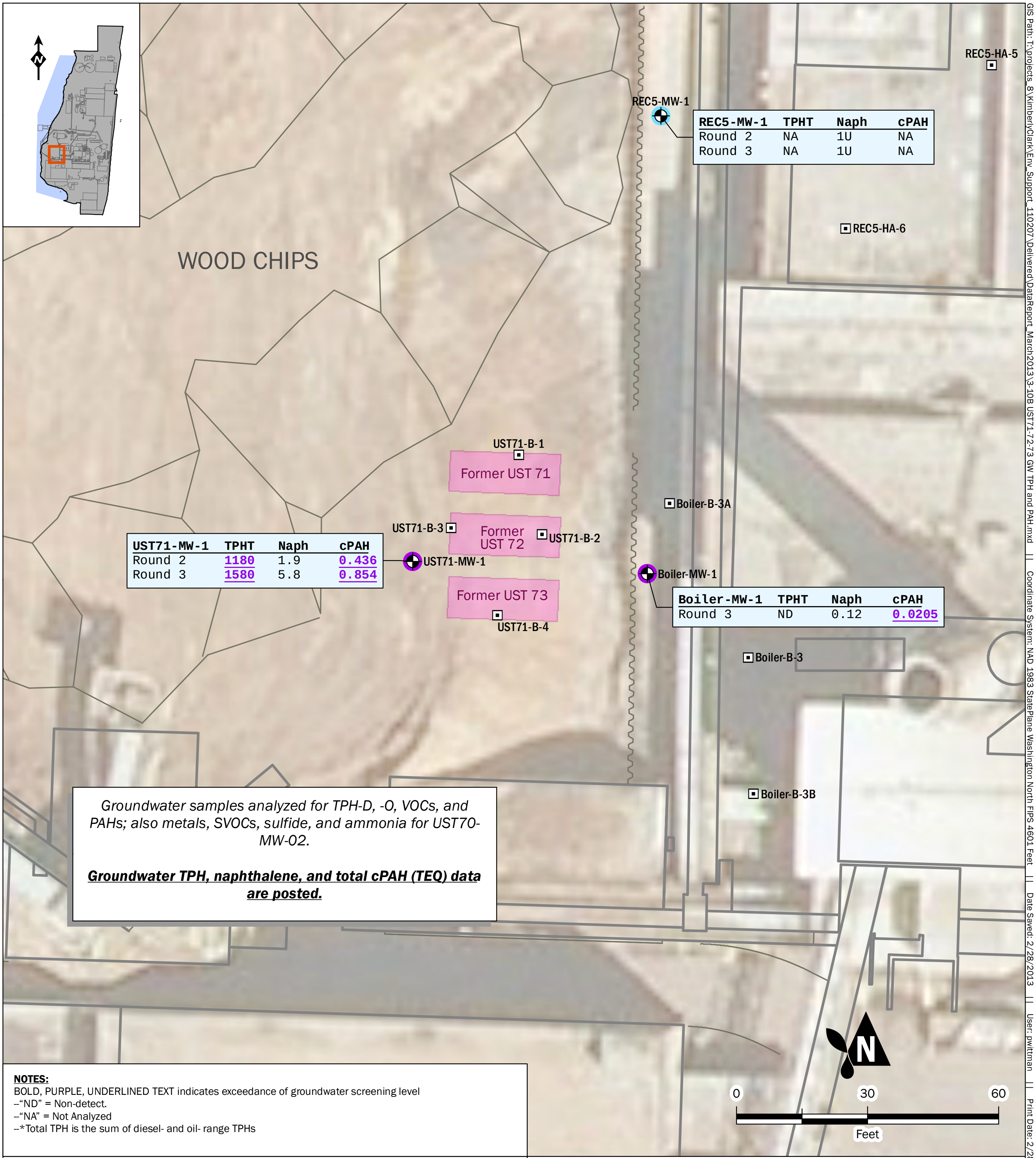
NOTES:
- –BROWN BOLD, UNDERLINED TEXT indicates exceedance of unrestricted and industrial soil screening level
- –Qualifier "J" = The reported result is an estimate
- –"ND" = Non-detect
- –"NA" = Not Analyzed
- –*Total TPH is the sum of diesel- and oil- range TPHs

USTs 71, 72, 73 Soil TPH Data

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

FEB-2013	BY: SJG / PPW	FIGURE NO.
PROJECT NO. 110207	REV BY: PPW	**3-10A**



REC5-MW-1	**TPHT**	**Naph**	**cPAH**
Round 2	NA	1U	NA
Round 3	NA	1U	NA

UST71-MW-1	**TPHT**	**Naph**	**cPAH**
Round 2	**1180**	1.9	**0.436**
Round 3	**1580**	5.8	**0.854**

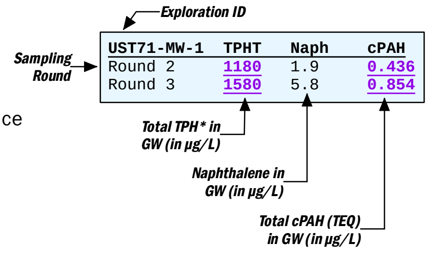
Boiler-MW-1	**TPHT**	**Naph**	**cPAH**
Round 3	ND	0.12	**0.0205**

Groundwater samples analyzed for TPH-D, -O, VOCs, and PAHs; also metals, SVOCs, sulfide, and ammonia for UST70-MW-02.

Groundwater TPH, naphthalene, and total cPAH (TEQ) data are posted.

NOTES:
BOLD, PURPLE, UNDERLINED TEXT indicates exceedance of groundwater screening level
–"ND" = Non-detect.
–"NA" = Not Analyzed
–*Total TPH is the sum of diesel- and oil- range TPHs

- ▣ Soil Boring
- ⊕ Monitoring Well
- ● Locations with Exceedance
- ⬚ Upland Area Boundary
- 🟪 Former UST

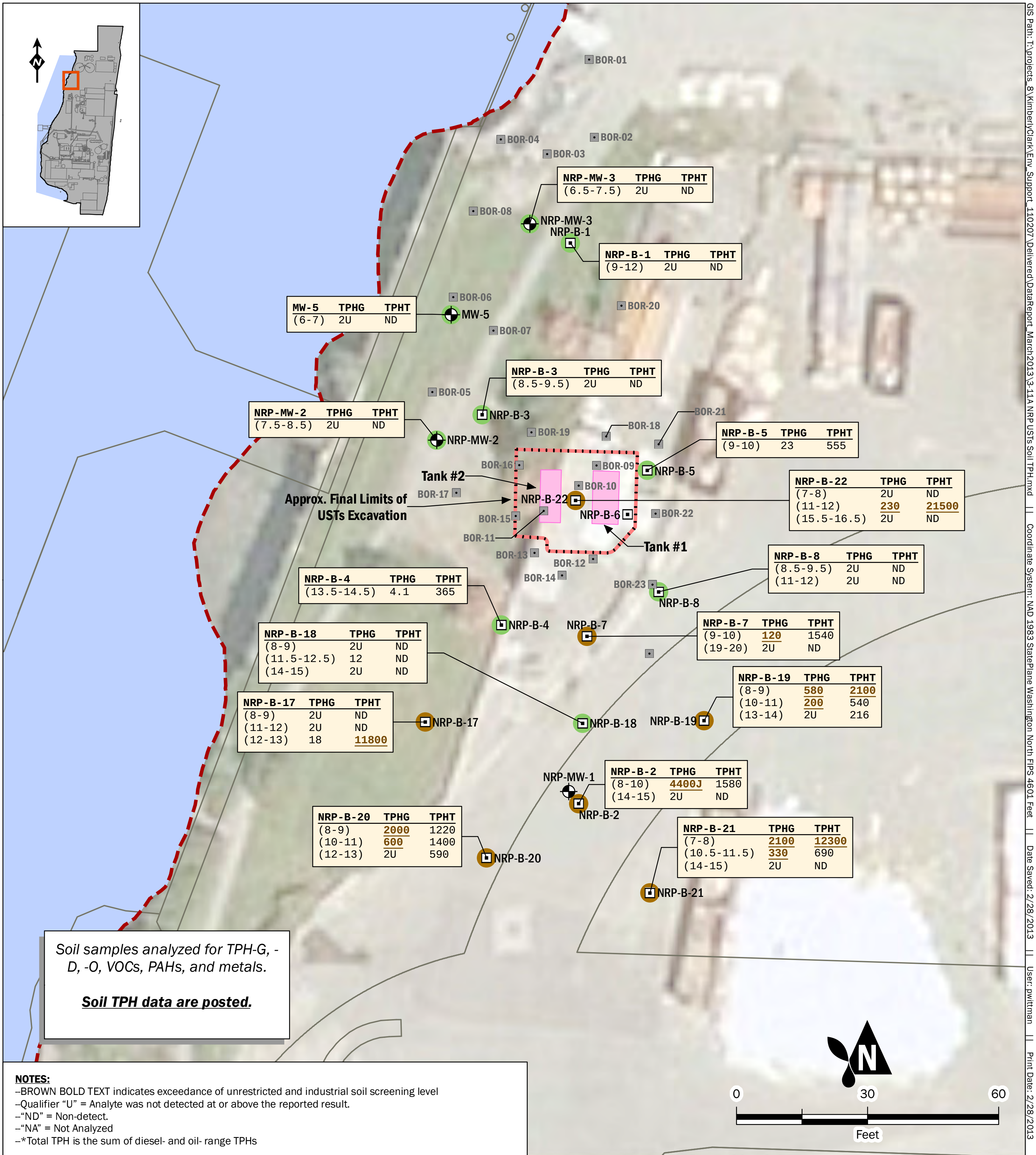


USTs 71, 72, 73 Groundwater TPH and PAH Data

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING	FEB-2013	BY: SJG / PPW	FIGURE NO.
	PROJECT NO. 110207	REV BY: PPW	**3-10B**

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\3-10B UST71-72-73 GW TPH and PAH.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/28/2013 || User: pwittman || Print Date: 2/28/2013

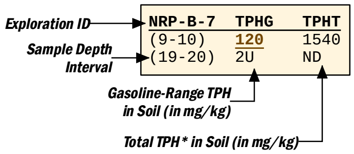


Soil samples analyzed for TPH-G, -D, -O, VOCs, PAHs, and metals.

Soil TPH data are posted.

NOTES:
- –BROWN BOLD TEXT indicates exceedance of unrestricted and industrial soil screening level
- –Qualifier "U" = Analyte was not detected at or above the reported result.
- –"ND" = Non-detect.
- –"NA" = Not Analyzed
- –*Total TPH is the sum of diesel- and oil- range TPHs

⊡	Soil Boring
⊕	Monitoring Well
●	Locations with Exceedance
●	Locations with No Exceedance
▭	Upland Area Boundary
▪	Approximate Location of 1998 Soil Boring



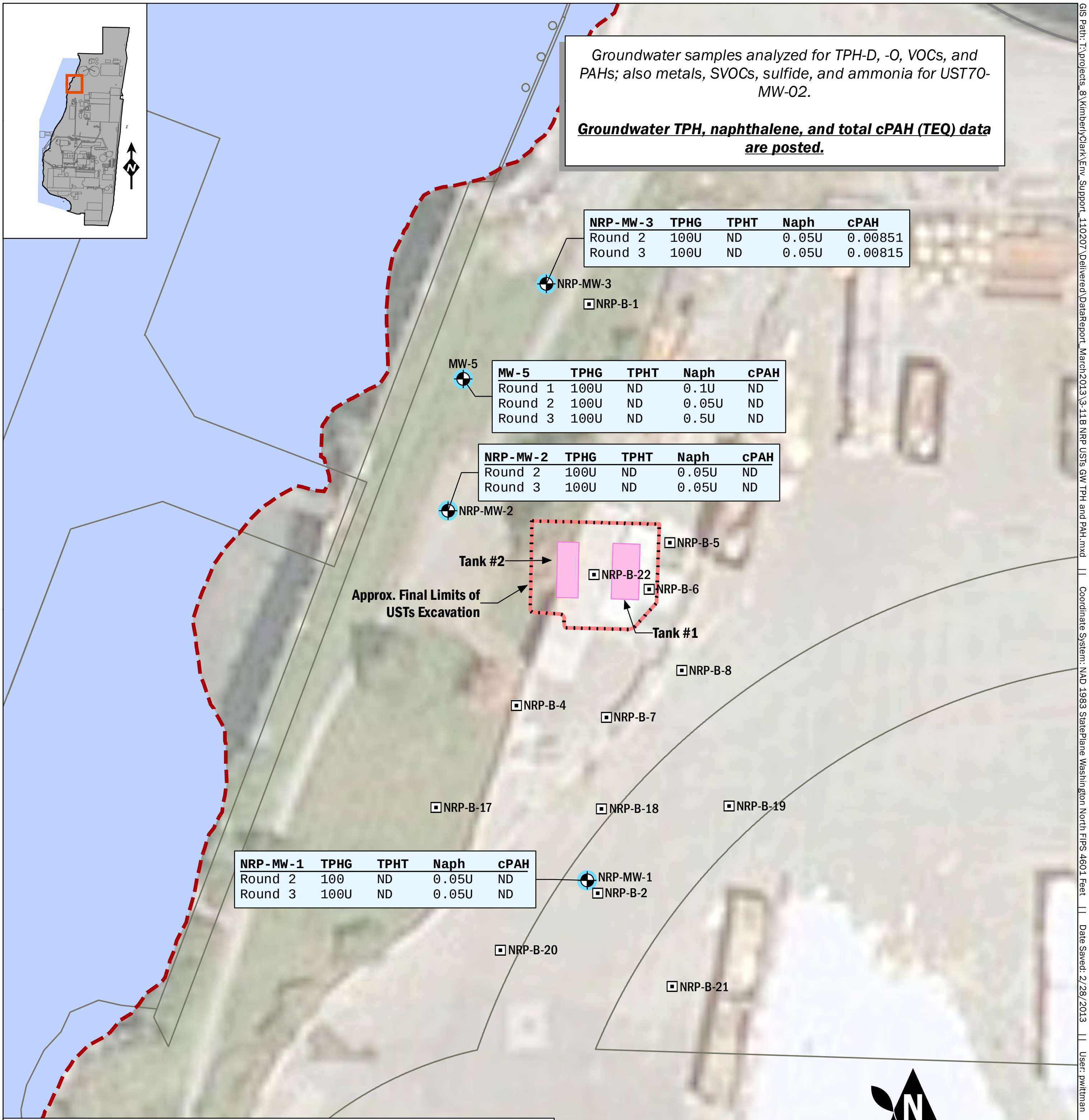
Naval Reserve Parcel USTs Area Soil Data

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

FEB-2013	BY: SJG / PPW	FIGURE NO.
PROJECT NO. 110207	REV BY: PPW	3-11A

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\3-11A NRP USTs Soil TPH.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/28/2013 || User: pwittman || Print Date: 2/28/2013



Groundwater samples analyzed for TPH-D, -O, VOCs, and PAHs; also metals, SVOCs, sulfide, and ammonia for UST70-MW-02.

Groundwater TPH, naphthalene, and total cPAH (TEQ) data are posted.

NRP-MW-3	TPHG	TPHT	Naph	cPAH
Round 2	100U	ND	0.05U	0.00851
Round 3	100U	ND	0.05U	0.00815

MW-5	TPHG	TPHT	Naph	cPAH
Round 1	100U	ND	0.1U	ND
Round 2	100U	ND	0.05U	ND
Round 3	100U	ND	0.5U	ND

NRP-MW-2	TPHG	TPHT	Naph	cPAH
Round 2	100U	ND	0.05U	ND
Round 3	100U	ND	0.05U	ND

NRP-MW-1	TPHG	TPHT	Naph	cPAH
Round 2	100	ND	0.05U	ND
Round 3	100U	ND	0.05U	ND

NOTES:
BOLD, PURPLE TEXT indicates exceedance of groundwater screening level
–Qualifier “U” = Analyte was not detected at or above the reported result.
–“ND” = Non-detect.
–“NA” = Not Analyzed
–*Total TPH is the sum of diesel- and oil- range TPHs

- ▣ Soil Boring
- ⊕ Monitoring Well
- ● Locations with No Exceedance
- ▭ Upland Area Boundary

Exploration ID

Sampling Round

MW-5	TPHG	TPHT	Naph	cPAH
Round 1	100U	ND	0.1U	ND
Round 2	100U	ND	0.05U	ND
Round 3	100U	ND	0.5U	ND

Total cPAH (TEQ) in GW (in µg/L)

Naphthalene in GW (in µg/L)

Total TPH in GW (in µg/L)*

Gasoline-Range TPH in GW (in µg/L)

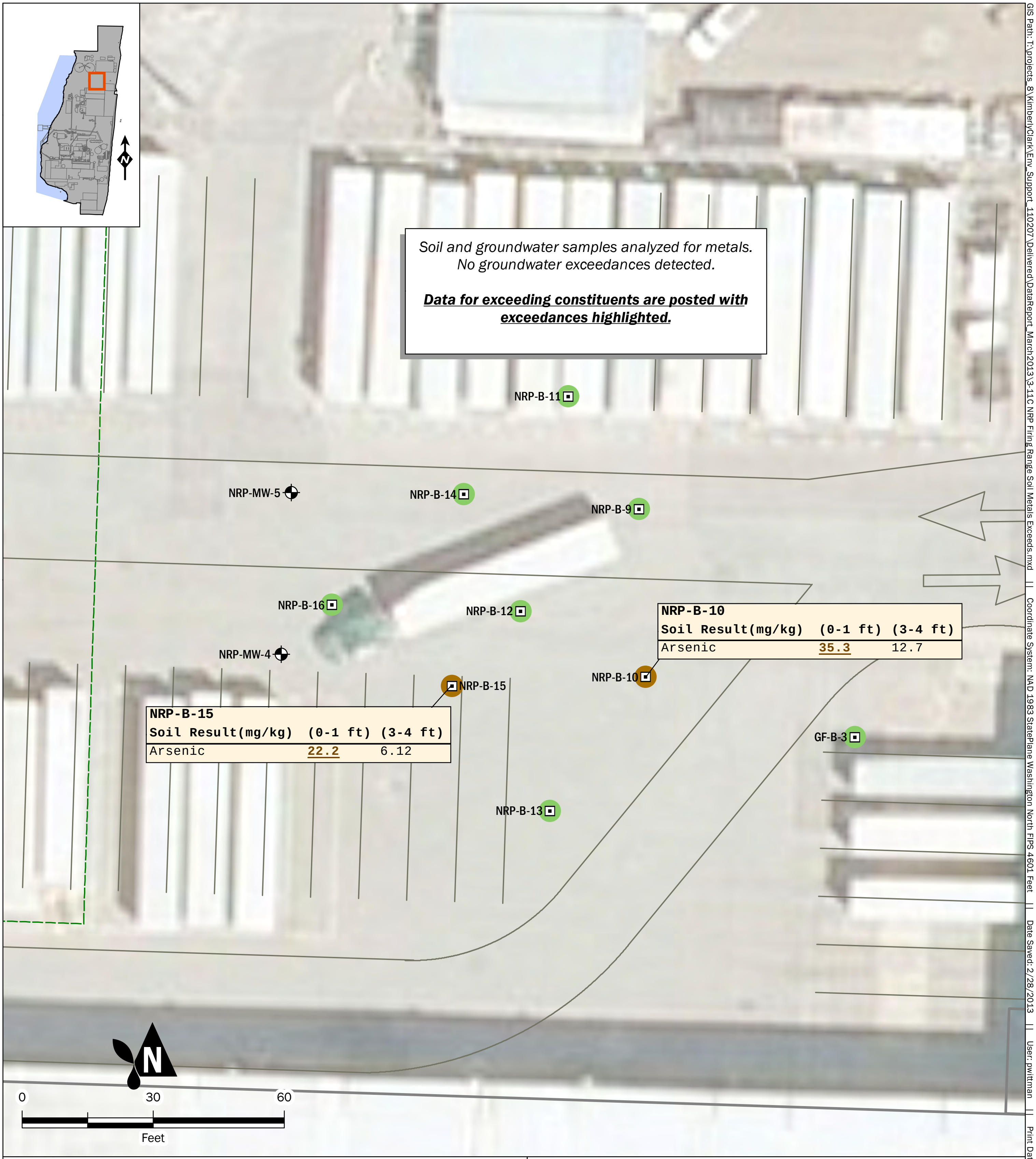
Naval Reserve Parcel USTs Area Groundwater Data

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

FEB-2013	BY: SJG / PPW	FIGURE NO.	3-11B
PROJECT NO. 110207	REV BY: PPW		

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\3-11B NRP USTs GW TPH and PAH.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/28/2013 || User: pwittman || Print Date: 2/28/2013



GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\3-11C NRP Firing Range Soil Metals Exceeds.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/28/2013 || User: pwittman || Print Date: 2/28/2013

- ▣ Soil Boring
- ⌖ Monitoring Well
- ● Loctions with Metals Exceedance
- ● Loctions with No Metals Exceedance

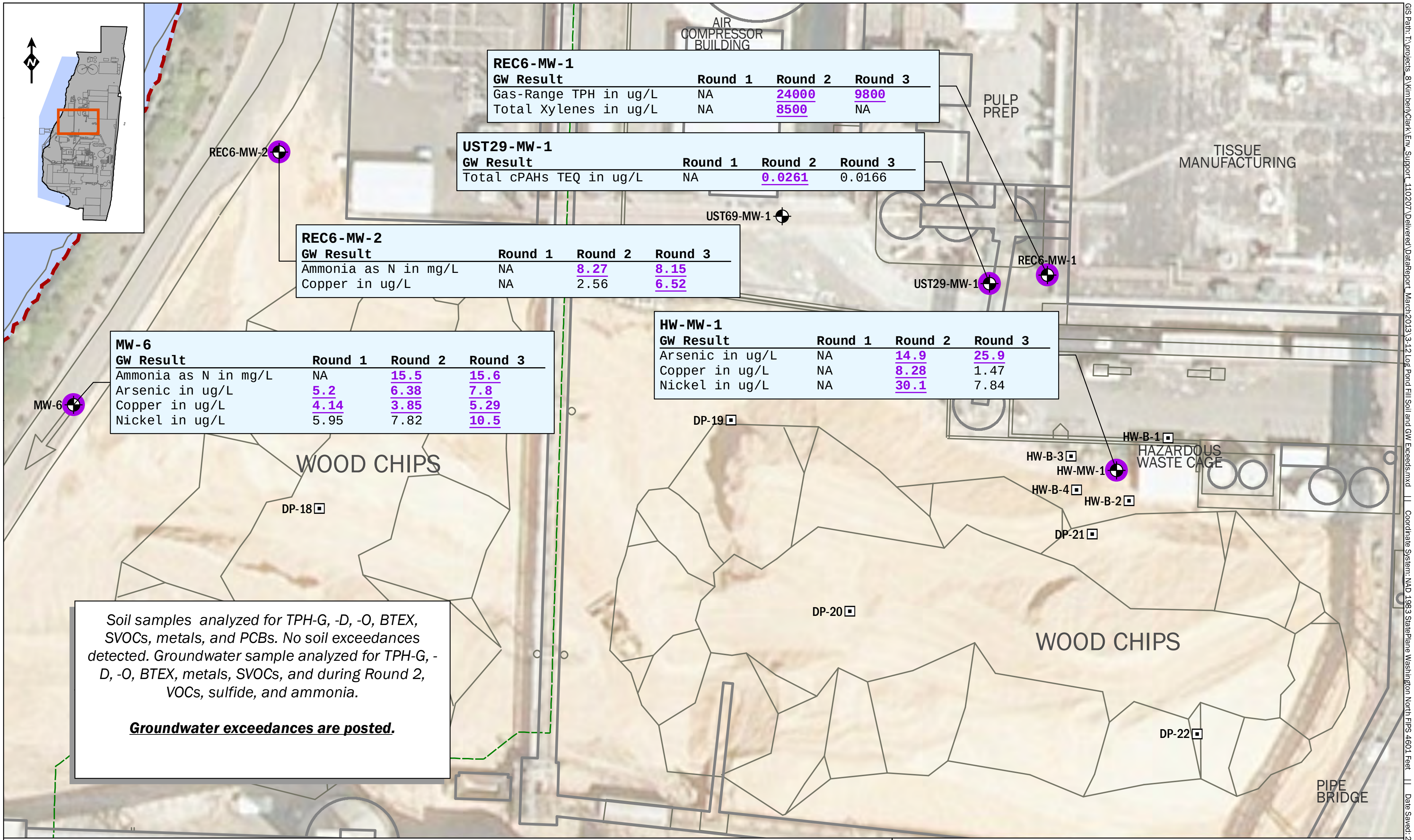
NOTES:
--BOLD, BROWN UNDERLINED TEXT indicates exceedance of unrestricted soil screening level

Naval Reserve Parcel Firing Range Area Soil Metals Exceedances

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

FEB-2013	BY: SJG / PPW	FIGURE NO.
PROJECT NO. 110207	REV BY: - - -	3-11C



REC6-MW-1

GW Result	Round 1	Round 2	Round 3
Gas-Range TPH in ug/L	NA	**24000**	**9800**
Total Xylenes in ug/L	NA	**8500**	NA

UST29-MW-1

GW Result	Round 1	Round 2	Round 3
Total cPAHs TEQ in ug/L	NA	**0.0261**	0.0166

REC6-MW-2

GW Result	Round 1	Round 2	Round 3
Ammonia as N in mg/L	NA	**8.27**	**8.15**
Copper in ug/L	NA	2.56	**6.52**

HW-MW-1

GW Result	Round 1	Round 2	Round 3
Arsenic in ug/L	NA	**14.9**	**25.9**
Copper in ug/L	NA	**8.28**	1.47
Nickel in ug/L	NA	**30.1**	7.84

MW-6

GW Result	Round 1	Round 2	Round 3
Ammonia as N in mg/L	NA	**15.5**	**15.6**
Arsenic in ug/L	**5.2**	**6.38**	**7.8**
Copper in ug/L	**4.14**	**3.85**	**5.29**
Nickel in ug/L	5.95	7.82	**10.5**

Soil samples analyzed for TPH-G, -D, -O, BTEX, SVOCs, metals, and PCBs. No soil exceedances detected. Groundwater sample analyzed for TPH-G, -D, -O, BTEX, metals, SVOCs, and during Round 2, VOCs, sulfide, and ammonia.

Groundwater exceedances are posted.

▣	Soil Boring
⊕	Monitoring Well
●	Locations with Groundwater Exceedance
⬚	Upland Area Boundary

NOTES:
–BOLD, PURPLE UNDERLINED TEXT indicates exceedance of groundwater screening level
–"ND" = Non-detect.
–"NA" = Not Analyzed
–*Total TPH is the sum of diesel- and oil- range TPHs

N

0 60 120
Feet

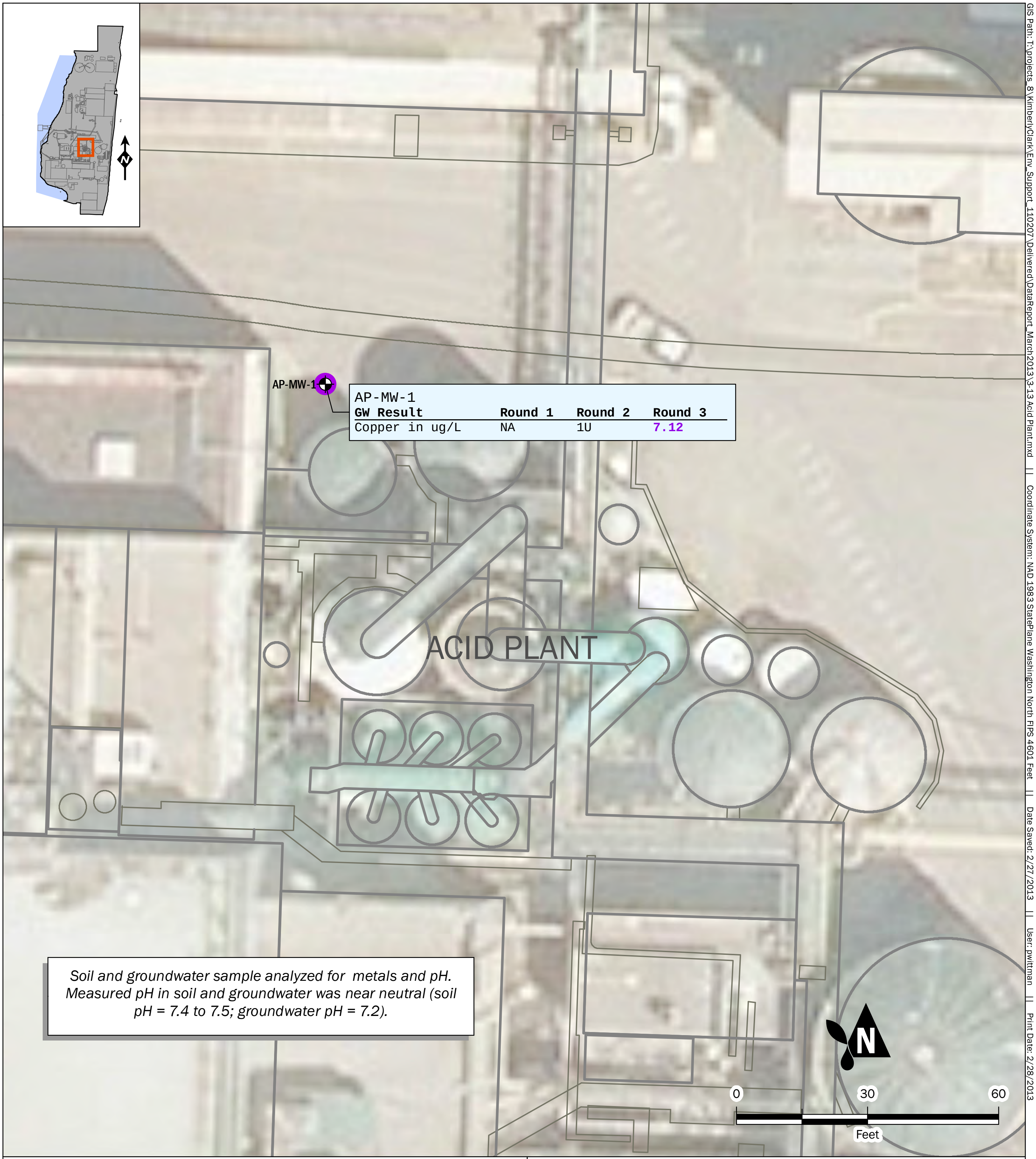
Log Pond Fill Soil and Groundwater Exceedances

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

FEB-2013
PROJECT NO. 110207
BY: SJG / PPW
REV BY: PPW
FIGURE NO. 3-12

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\3-12 Log Pond Fill Soil and GW Exceeds.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/27/2013 || User: pwittman || Print Date: 2/28/2013



AP-MW-1

GW Result	Round 1	Round 2	Round 3
Copper in ug/L	NA	1U	**7.12**

Soil and groundwater sample analyzed for metals and pH. Measured pH in soil and groundwater was near neutral (soil pH = 7.4 to 7.5; groundwater pH = 7.2).

⌖ Monitoring Well

● Locations with Groundwater Exceedance

NOTES:
–BOLD, PURPLE TEXT indicates exceedance of site groundwater screening level
–"NA" = Not Analyzed

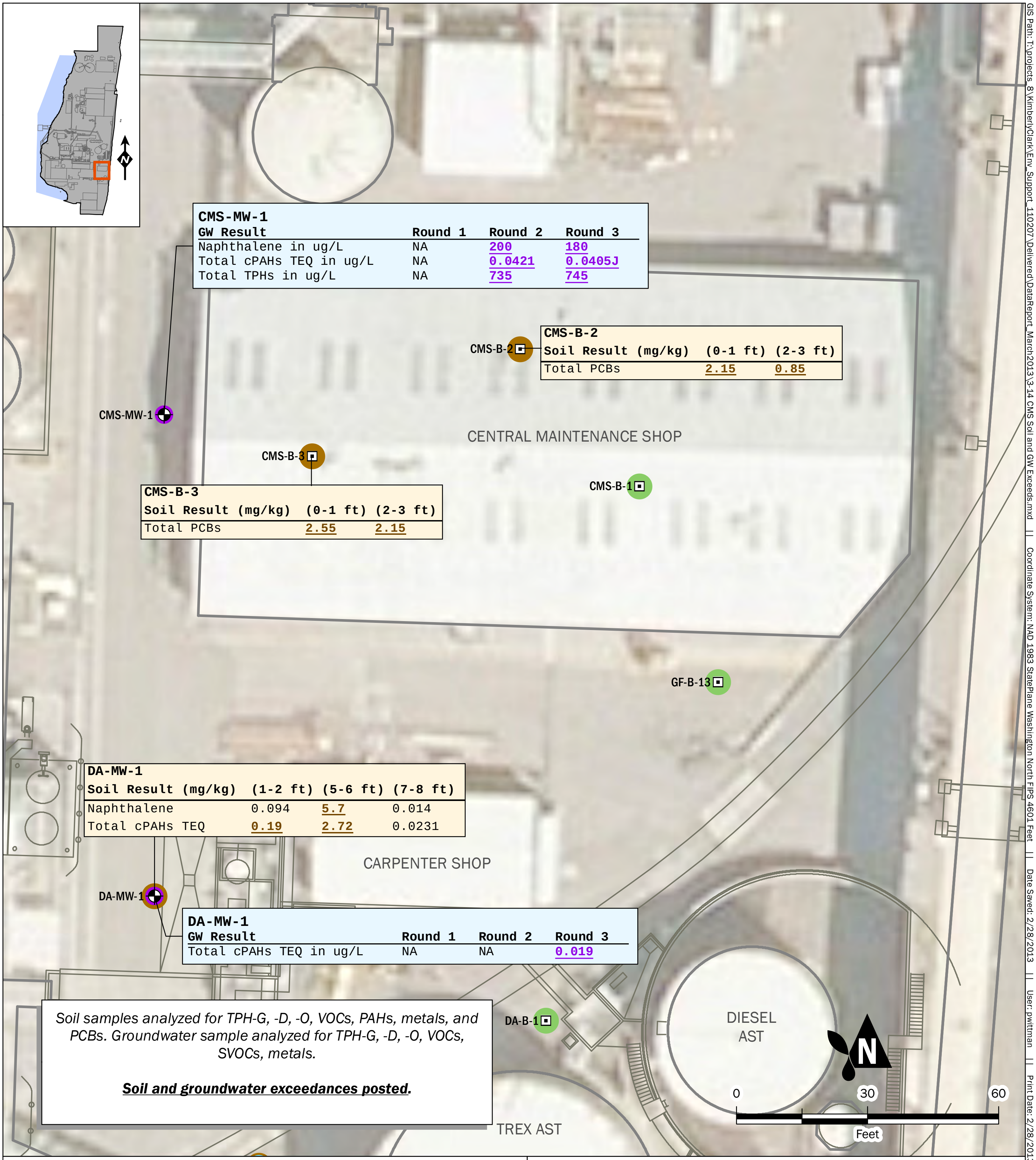
Acid Plant Soil and Groundwater Data

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

FEB-2013	BY: SJG / PPW	FIGURE NO.
PROJECT NO. 110207	REV BY: - - -	3-13

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\3-13 Acid Plant.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/27/2013 || User: pwittman || Print Date: 2/28/2013



CMS-MW-1

GW Result	Round 1	Round 2	Round 3
Naphthalene in ug/L	NA	**200**	**180**
Total cPAHs TEQ in ug/L	NA	**0.0421**	**0.0405J**
Total TPHs in ug/L	NA	**735**	**745**

CMS-B-2

Soil Result (mg/kg)	(0-1 ft)	(2-3 ft)
Total PCBs	**2.15**	**0.85**

CMS-B-3

Soil Result (mg/kg)	(0-1 ft)	(2-3 ft)
Total PCBs	**2.55**	**2.15**

DA-MW-1

Soil Result (mg/kg)	(1-2 ft)	(5-6 ft)	(7-8 ft)
Naphthalene	0.094	**5.7**	0.014
Total cPAHs TEQ	**0.19**	**2.72**	0.0231

DA-MW-1

GW Result	Round 1	Round 2	Round 3
Total cPAHs TEQ in ug/L	NA	NA	**0.019**

Soil samples analyzed for TPH-G, -D, -O, VOCs, PAHs, metals, and PCBs. Groundwater sample analyzed for TPH-G, -D, -O, VOCs, SVOCs, metals.

Soil and groundwater exceedances posted.

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\3-14 CMS Soil and GW Exceeds.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/28/2013 || User: pwittman || Print Date: 2/28/2013

⊡	Soil Boring
⊕	Monitoring Well
●	Locations with Groundwater Exceedance
●	Locations with No Groundwater Exceedance
●	Locations with Soil Exceedance
●	Locations with No Soil Exceedance

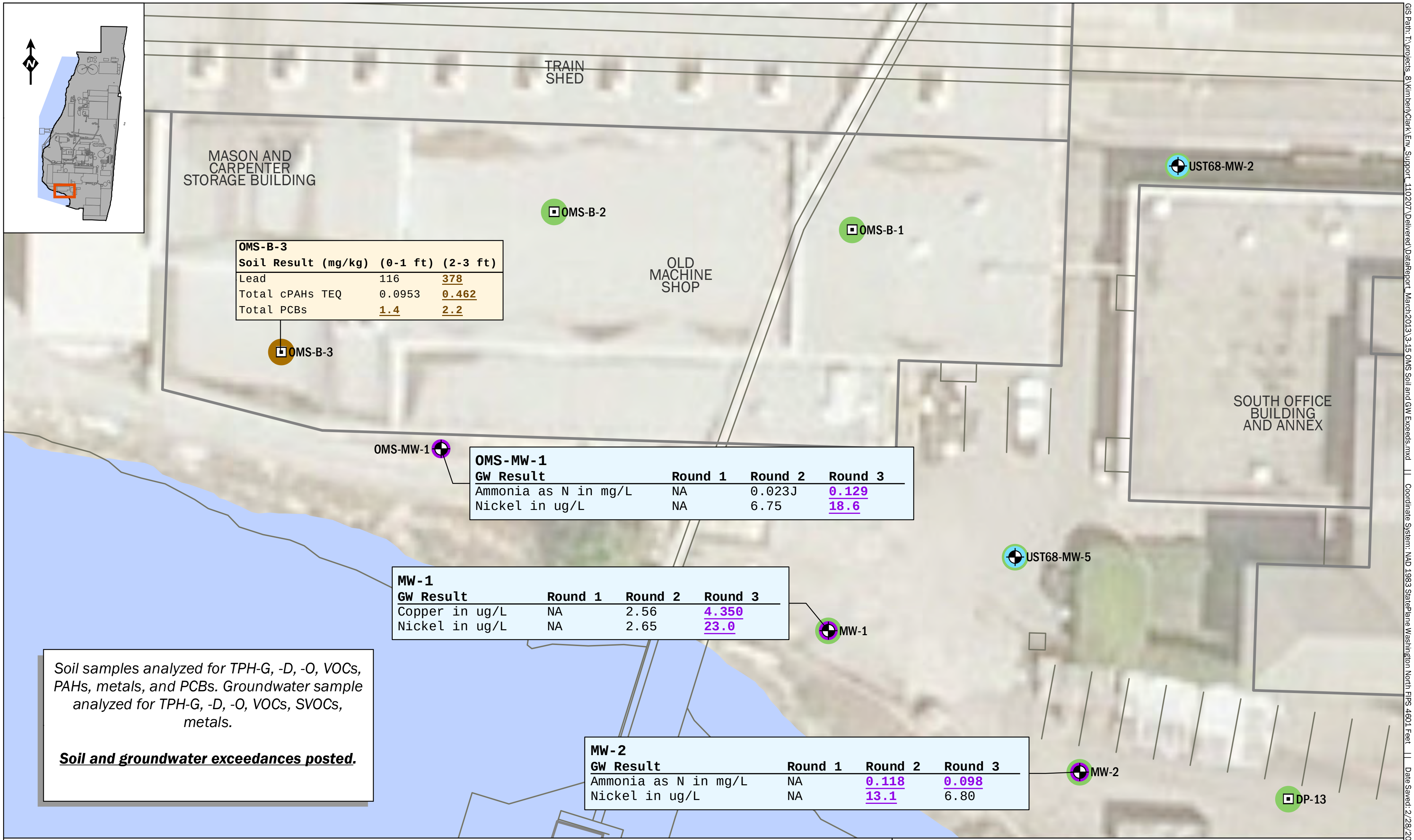
NOTES:
–BOLD, PURPLE TEXT indicates exceedance of groundwater screening level
–BOLD, BROWN TEXT indicates exceedance of unrestricted soil screening level
–"ND" = Non-detect.
–"NA" = Not Analyzed
–*Total TPH is the sum of diesel- and oil- range TPHs

Central Maintenance Shop
Soil and Groundwater Exceedances

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

FEB-2013	BY: SJG / PPW	FIGURE NO.
PROJECT NO. 110207	REV BY: PPW	3-14



OMS-B-3

Soil Result (mg/kg)	(0-1 ft)	(2-3 ft)
Lead	116	**378**
Total cPAHs TEQ	0.0953	**0.462**
Total PCBs	**1.4**	**2.2**

OMS-MW-1

GW Result	Round 1	Round 2	Round 3
Ammonia as N in mg/L	NA	0.023J	**0.129**
Nickel in ug/L	NA	6.75	**18.6**

MW-1

GW Result	Round 1	Round 2	Round 3
Copper in ug/L	NA	2.56	**4.350**
Nickel in ug/L	NA	2.65	**23.0**

MW-2

GW Result	Round 1	Round 2	Round 3
Ammonia as N in mg/L	NA	**0.118**	**0.098**
Nickel in ug/L	NA	**13.1**	6.80

Soil samples analyzed for TPH-G, -D, -O, VOCs, PAHs, metals, and PCBs. Groundwater sample analyzed for TPH-G, -D, -O, VOCs, SVOCs, metals.

Soil and groundwater exceedances posted.

▣	Soil Boring
⊕	Monitoring Well
●	Locations with Groundwater Exceedance
●	Locations with No Groundwater Exceedance
●	Locations with Soil Exceedance
●	Locations with No Soil Exceedance

0 30 60

Feet

NOTES:
–BOLD, PURPLE UNDERLINED TEXT indicates exceedance of groundwater screening level
–BOLD, BROWN UNDERLINED TEXT indicates exceedance of unrestricted soil screening level
–Qualifier “J” = The reported result is an estimate
–“NA” = Not Analyzed

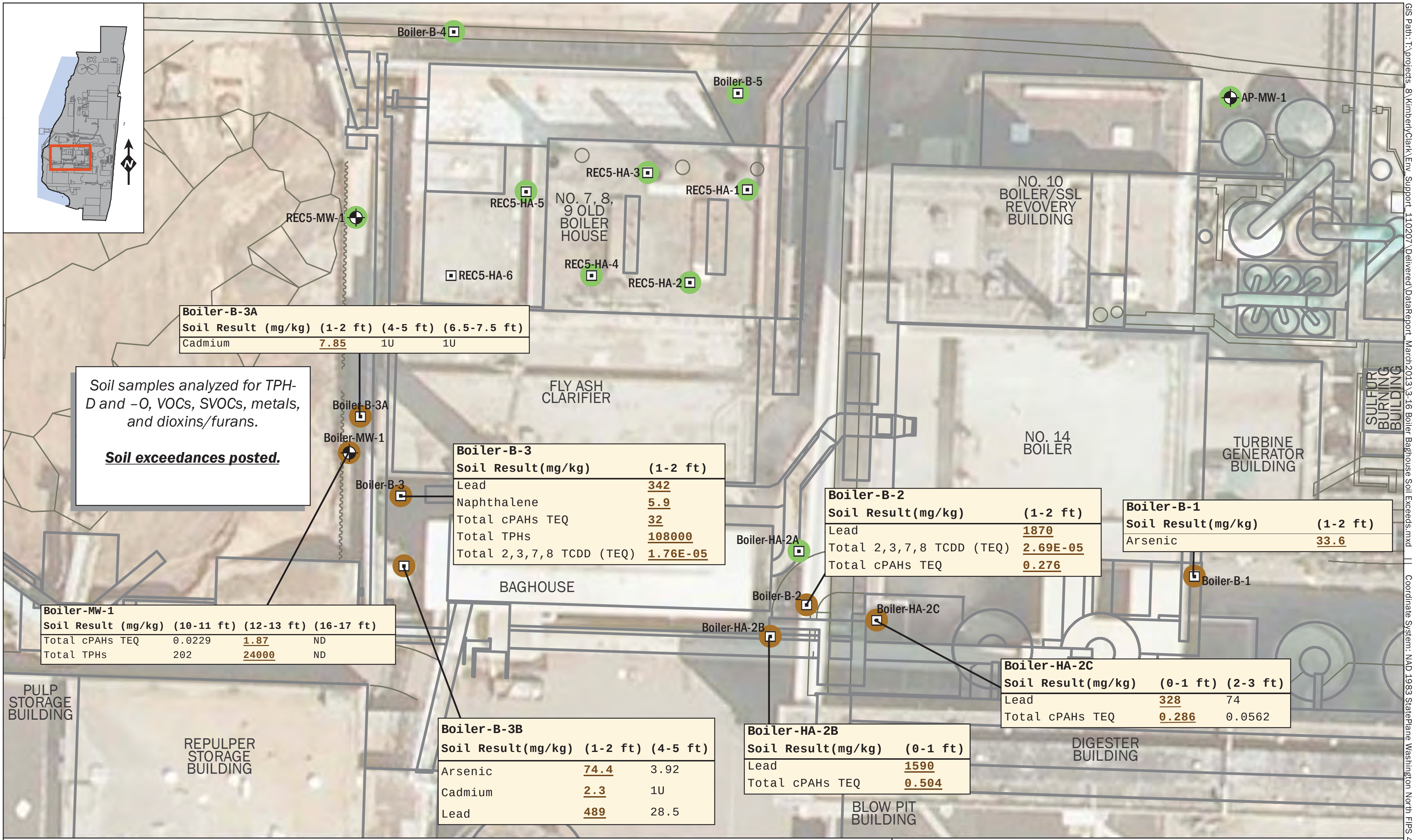
Old Machine Shop Soil and Groundwater Exceedances

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

FEB-2013	BY: SJG / PPW		FIGURE NO.
PROJECT NO. 110207	REV BY: PPW		3-15

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\3-15 OMS Soil and GW Exceeds.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/28/2013 || User: pwittman || Print Date: 2/28/2013



Soil samples analyzed for TPH-D and –O, VOCs, SVOCs, metals, and dioxins/furans.

Soil exceedances posted.

Boiler-B-3A

Soil Result (mg/kg)	(1-2 ft)	(4-5 ft)	(6.5-7.5 ft)
Cadmium	**7.85**	1U	1U

Boiler-B-3

Soil Result(mg/kg)	(1-2 ft)
Lead	**342**
Naphthalene	**5.9**
Total cPAHs TEQ	**32**
Total TPHs	**108000**
Total 2,3,7,8 TCDD (TEQ)	**1.76E-05**

Boiler-B-2

Soil Result(mg/kg)	(1-2 ft)
Lead	**1870**
Total 2,3,7,8 TCDD (TEQ)	**2.69E-05**
Total cPAHs TEQ	**0.276**

Boiler-B-1

Soil Result(mg/kg)	(1-2 ft)
Arsenic	**33.6**

Boiler-MW-1

Soil Result (mg/kg)	(10-11 ft)	(12-13 ft)	(16-17 ft)
Total cPAHs TEQ	0.0229	**1.87**	ND
Total TPHs	202	**24000**	ND

Boiler-HA-2C

Soil Result(mg/kg)	(0-1 ft)	(2-3 ft)
Lead	**328**	74
Total cPAHs TEQ	**0.286**	0.0562

Boiler-B-3B

Soil Result(mg/kg)	(1-2 ft)	(4-5 ft)
Arsenic	**74.4**	3.92
Cadmium	**2.3**	1U
Lead	**489**	28.5

Boiler-HA-2B

Soil Result(mg/kg)	(0-1 ft)
Lead	**1590**
Total cPAHs TEQ	**0.504**

⊡ Soil Boring

⊕ Monitoring Well

● Locations with Soil Exceedance

● Locations with No Soil Exceedance

NOTES:
–BOLD, BROWN TEXT indicates exceedance of unrestricted soil screening level
–*Total TPH is the sum of diesel- and oil- range TPHs

0 60 120
Feet

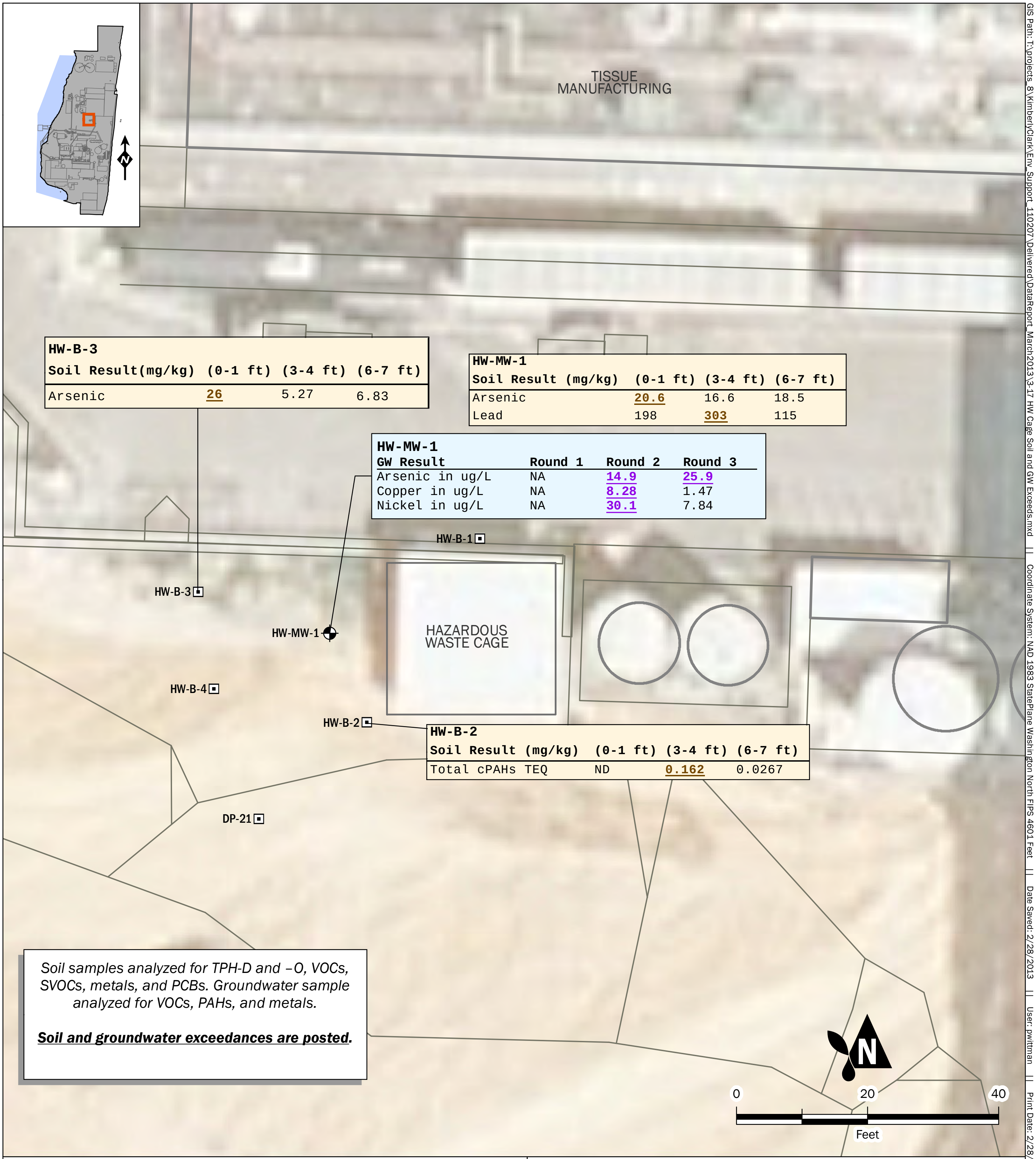
Boiler/Baghouse Area Soil Exceedances

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

FEB-2013	BY: SJG / PPW	FIGURE NO.	
PROJECT NO. 110207	REV BY: - - -	3-16	

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\3-16 Boiler Baghouse Soil Exceeds.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/28/2013



HW-B-3

Soil Result(mg/kg)	(0-1 ft)	(3-4 ft)	(6-7 ft)
Arsenic	**26**	5.27	6.83

HW-MW-1

Soil Result (mg/kg)	(0-1 ft)	(3-4 ft)	(6-7 ft)
Arsenic	**20.6**	16.6	18.5
Lead	198	**303**	115

HW-MW-1

GW Result	Round 1	Round 2	Round 3
Arsenic in ug/L	NA	**14.9**	**25.9**
Copper in ug/L	NA	**8.28**	1.47
Nickel in ug/L	NA	**30.1**	7.84

HW-B-2

Soil Result (mg/kg)	(0-1 ft)	(3-4 ft)	(6-7 ft)
Total cPAHs TEQ	ND	**0.162**	0.0267

Soil samples analyzed for TPH-D and –O, VOCs, SVOCs, metals, and PCBs. Groundwater sample analyzed for VOCs, PAHs, and metals.

Soil and groundwater exceedances are posted.

⊡	Soil Boring
⌖	Monitoring Well

NOTES:
–BOLD, PURPLE UNDERLINED TEXT indicates exceedance of groundwater screening level
–BOLD, BROWN UNDERLINED TEXT indicates exceedance of unrestricted soil screening level
–"ND" = Non-detect.
–"NA" = Not Analyzed

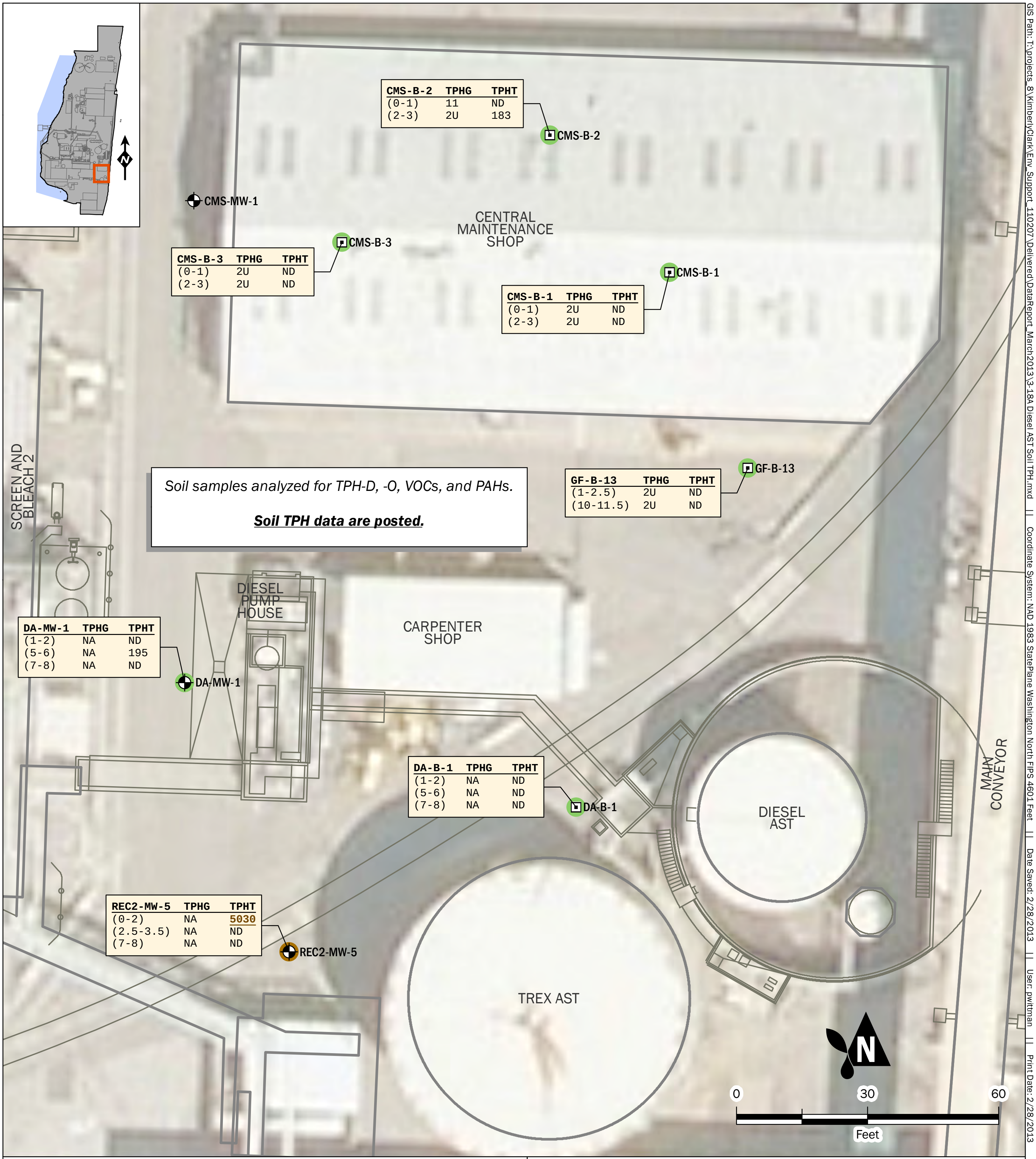
Hazardous Waste Cage Soil and Groundwater Exceedances

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

FEB-2013	BY: SJG / PPW	FIGURE NO. **3-17**
PROJECT NO. 110207	REV BY: PPW	

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\3-17 HW Cage Soil and GW Exceeds.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/28/2013 || User: pwittman || Print Date: 2/28/2013



⊡ Soil Boring

⊕ Monitoring Well

● Locations with Exceedance

● Locations with No Exceedance

Exploration ID

Sample Depth Interval

REC2-MW-5	TPHG	TPHT
(0-2)	NA	**5030**
(2.5-3.5)	NA	ND
(7-8)	NA	ND

Gasoline-Range TPH in Soil (in mg/kg)

Total TPH in Soil (in mg/kg)*

NOTES:

–BROWN BOLD UNDERLINED TEXT indicates exceedance of unrestricted and industrial soil screening level

–Qualifier "U" = Analyte was not detected at or above the reported result.

–"ND" = Non-detect.

–"NA" = Not Analyzed

Diesel AST Area Soil TPH Data

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

FEB-2013

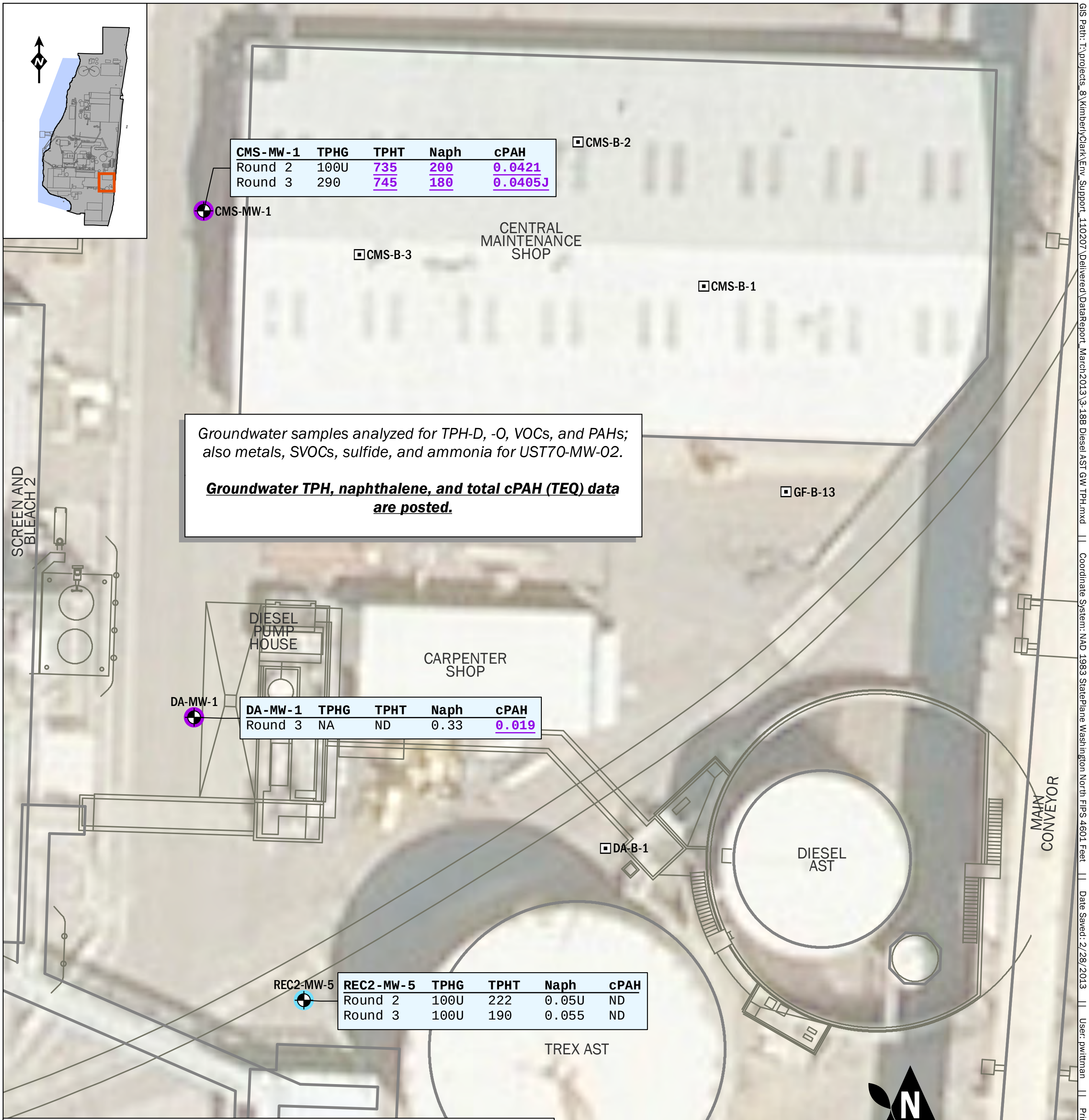
PROJECT NO.
110207

BY:
SJG / PPW

REV BY:
PPW

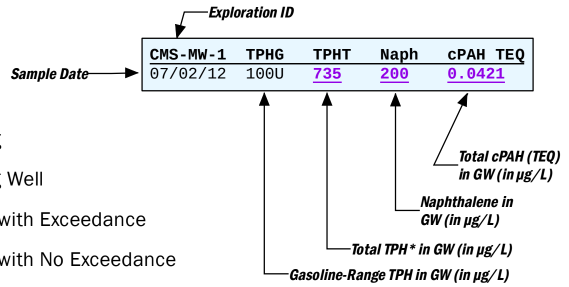
FIGURE NO.
3-18A

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\3-18A Diesel AST Soil TPH.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/28/2013 || User: pwittman || Print Date: 2/28/2013



GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\3-18B Diesel AST GW TPH.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/28/2013 || User: pwittman || Print Date: 2/28/2013

NOTES:
–BOLD, PURPLE TEXT indicates exceedance of unrestricted and industrial soil screening level
–Qualifier "U" = Analyte was not detected at or above the reported result.
–"ND" = Non-detect.
–*Total TPH is the sum of diesel- and oil- range TPHs



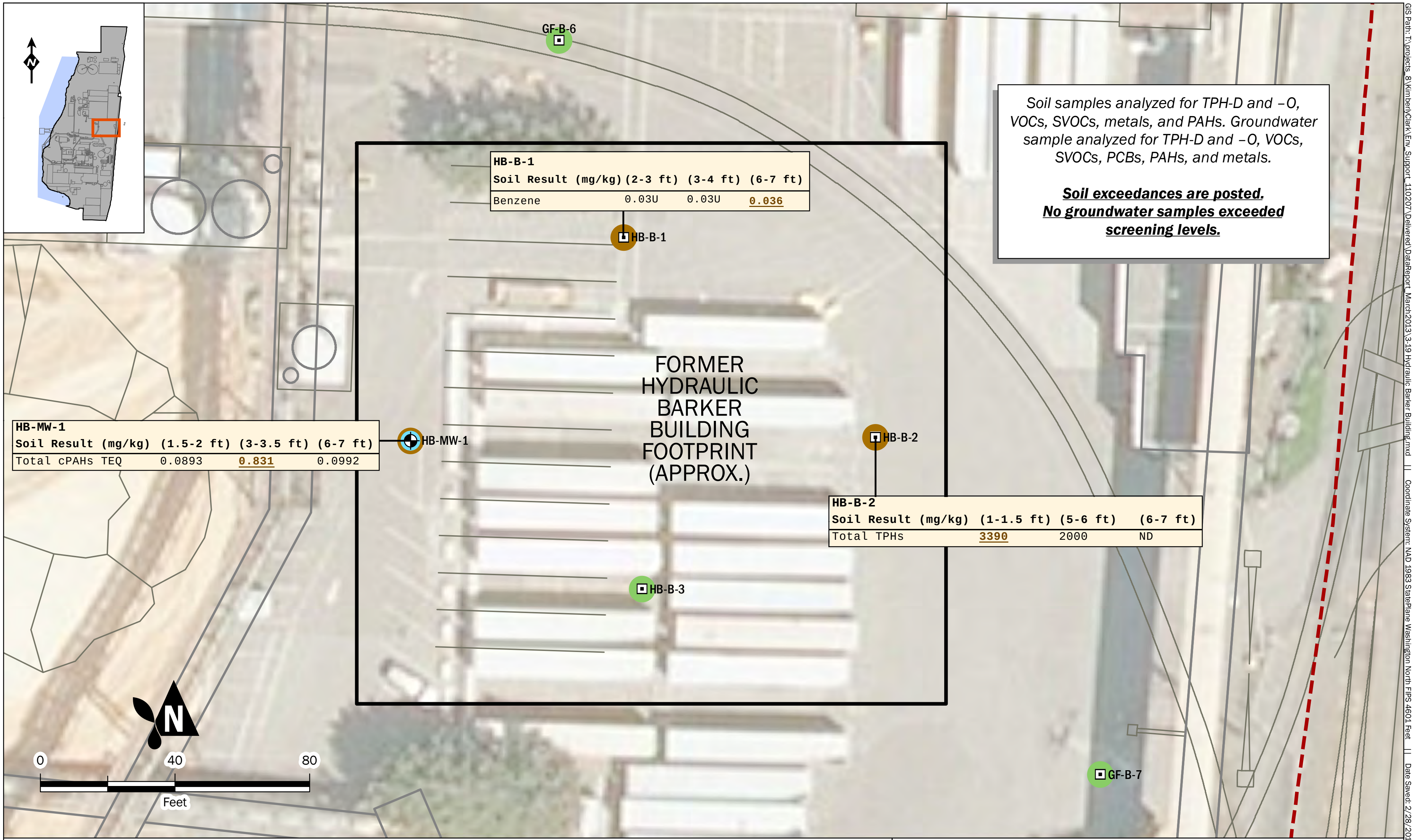
▣ Soil Boring
⊕ Monitoring Well
● Locations with Exceedance
● Locations with No Exceedance

Diesel AST Area Groundwater TPH Data

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

FEB-2013	BY: SJG / PPW	FIGURE NO.	
PROJECT NO. 110207	REV BY: PPW	3-18B	



Soil samples analyzed for TPH-D and –O, VOCs, SVOCs, metals, and PAHs. Groundwater sample analyzed for TPH-D and –O, VOCs, SVOCs, PCBs, PAHs, and metals.

Soil exceedances are posted.
No groundwater samples exceeded screening levels.

HB-B-1

Soil Result (mg/kg)	(2-3 ft)	(3-4 ft)	(6-7 ft)
Benzene	0.03U	0.03U	**0.036**

HB-MW-1

Soil Result (mg/kg)	(1.5-2 ft)	(3-3.5 ft)	(6-7 ft)
Total cPAHs TEQ	0.0893	**0.831**	0.0992

HB-B-2

Soil Result (mg/kg)	(1-1.5 ft)	(5-6 ft)	(6-7 ft)
Total TPHs	**3390**	2000	ND

▣	Soil Boring
⌖	Monitoring Well
⬚	Upland Area Boundary
●	Locations with No Groundwater Exceedance
●	Locations with Soil Exceedance
●	Locations with No Soil Exceedance

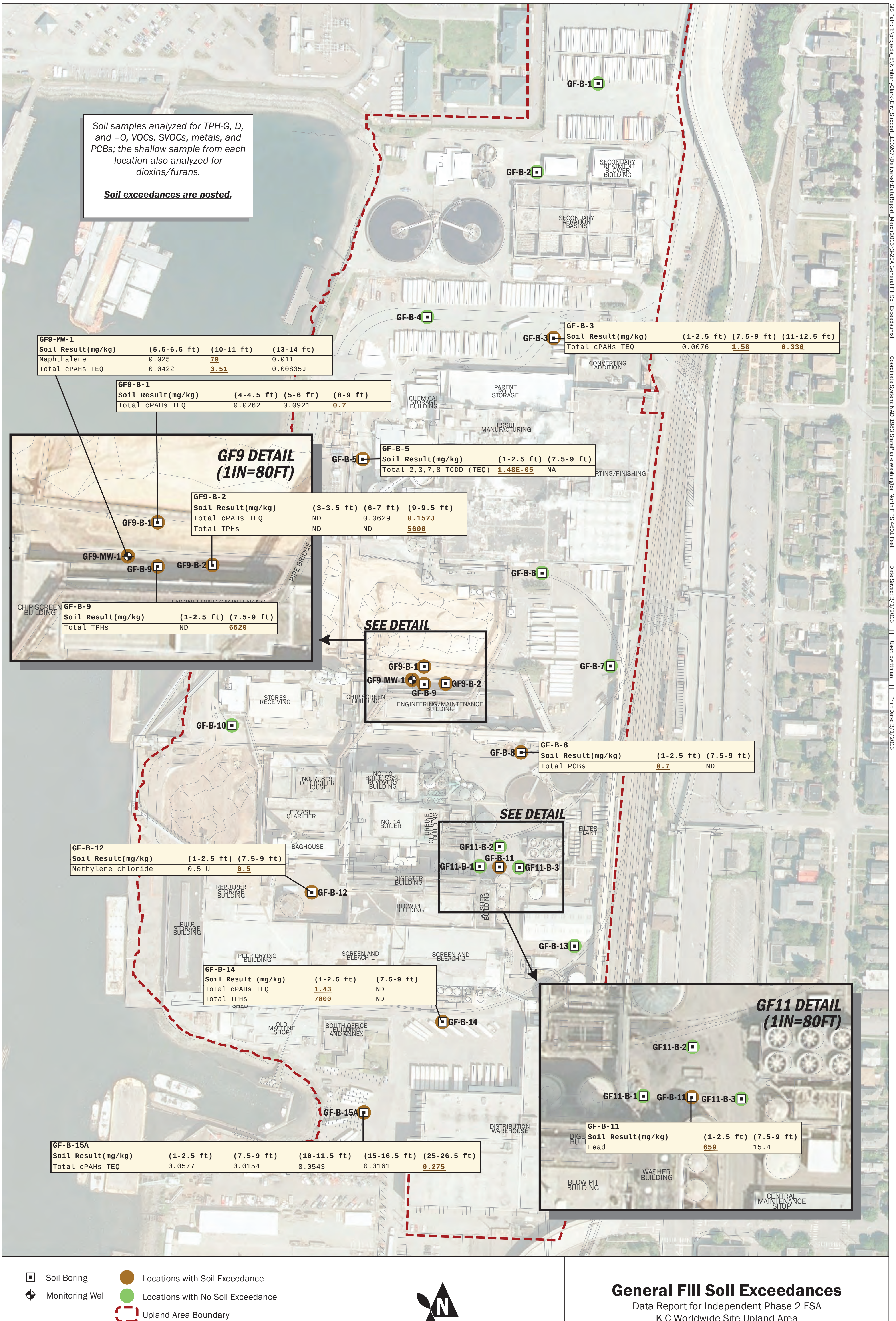
NOTES:
–BOLD, PURPLE UNDERLINED TEXT indicates exceedance of groundwater screening level
–BOLD, BROWN UNDERLINED TEXT indicates exceedance of unrestricted soil screening level
–"ND" = Non-detect.
–"NA" = Not Analyzed
–*Total TPH is the sum of diesel- and oil- range TPHs

Hydraulic Barker Building Soil Exceedances

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

FEB-2013	BY: SJG / PPW	FIGURE NO.	3-19
PROJECT NO. 110207	REV BY: PPW		

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\3-19 Hydraulic Barker Building.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/28/2013 || User: pwittman || Print Date: 2/28/2013



Soil samples analyzed for TPH-G, D, and –O, VOCs, SVOCs, metals, and PCBs; the shallow sample from each location also analyzed for dioxins/furans.

Soil exceedances are posted.

GF-B-3

Soil Result(mg/kg)	(1-2.5 ft)	(7.5-9 ft)	(11-12.5 ft)
Total cPAHs TEQ	0.0076	**1.58**	**0.336**

GF9-MW-1

Soil Result(mg/kg)	(5.5-6.5 ft)	(10-11 ft)	(13-14 ft)
Naphthalene	0.025	**79**	0.011
Total cPAHs TEQ	0.0422	**3.51**	0.00835J

GF9-B-1

Soil Result(mg/kg)	(4-4.5 ft)	(5-6 ft)	(8-9 ft)
Total cPAHs TEQ	0.0262	0.0921	**0.7**

GF-B-5

Soil Result(mg/kg)	(1-2.5 ft)	(7.5-9 ft)
Total 2,3,7,8 TCDD (TEQ)	**1.48E-05**	NA

GF9-B-2

Soil Result(mg/kg)	(3-3.5 ft)	(6-7 ft)	(9-9.5 ft)
Total cPAHs TEQ	ND	0.0629	**0.157J**
Total TPHs	ND	ND	**5600**

GF-B-9

Soil Result(mg/kg)	(1-2.5 ft)	(7.5-9 ft)
Total TPHs	ND	**6520**

GF-B-8

Soil Result(mg/kg)	(1-2.5 ft)	(7.5-9 ft)
Total PCBs	**0.7**	ND

GF-B-12

Soil Result(mg/kg)	(1-2.5 ft)	(7.5-9 ft)
Methylene chloride	0.5 U	**0.5**

GF-B-14

Soil Result (mg/kg)	(1-2.5 ft)	(7.5-9 ft)
Total cPAHs TEQ	**1.43**	ND
Total TPHs	**7800**	ND

GF-B-11

Soil Result(mg/kg)	(1-2.5 ft)	(7.5-9 ft)
Lead	**659**	15.4

GF-B-15A

Soil Result(mg/kg)	(1-2.5 ft)	(7.5-9 ft)	(10-11.5 ft)	(15-16.5 ft)	(25-26.5 ft)
Total cPAHs TEQ	0.0577	0.0154	0.0543	0.0161	**0.275**

▣	Soil Boring
⊕	Monitoring Well
●	Locations with Soil Exceedance
●	Locations with No Soil Exceedance
⬚	Upland Area Boundary

NOTES:
–BOLD, BROWN TEXT indicates exceedance of unrestricted soil screening level
–"ND" = Non-detect.
–"NA" = Not Analyzed
–*Total TPH is the sum of diesel- and oil- range TPHs

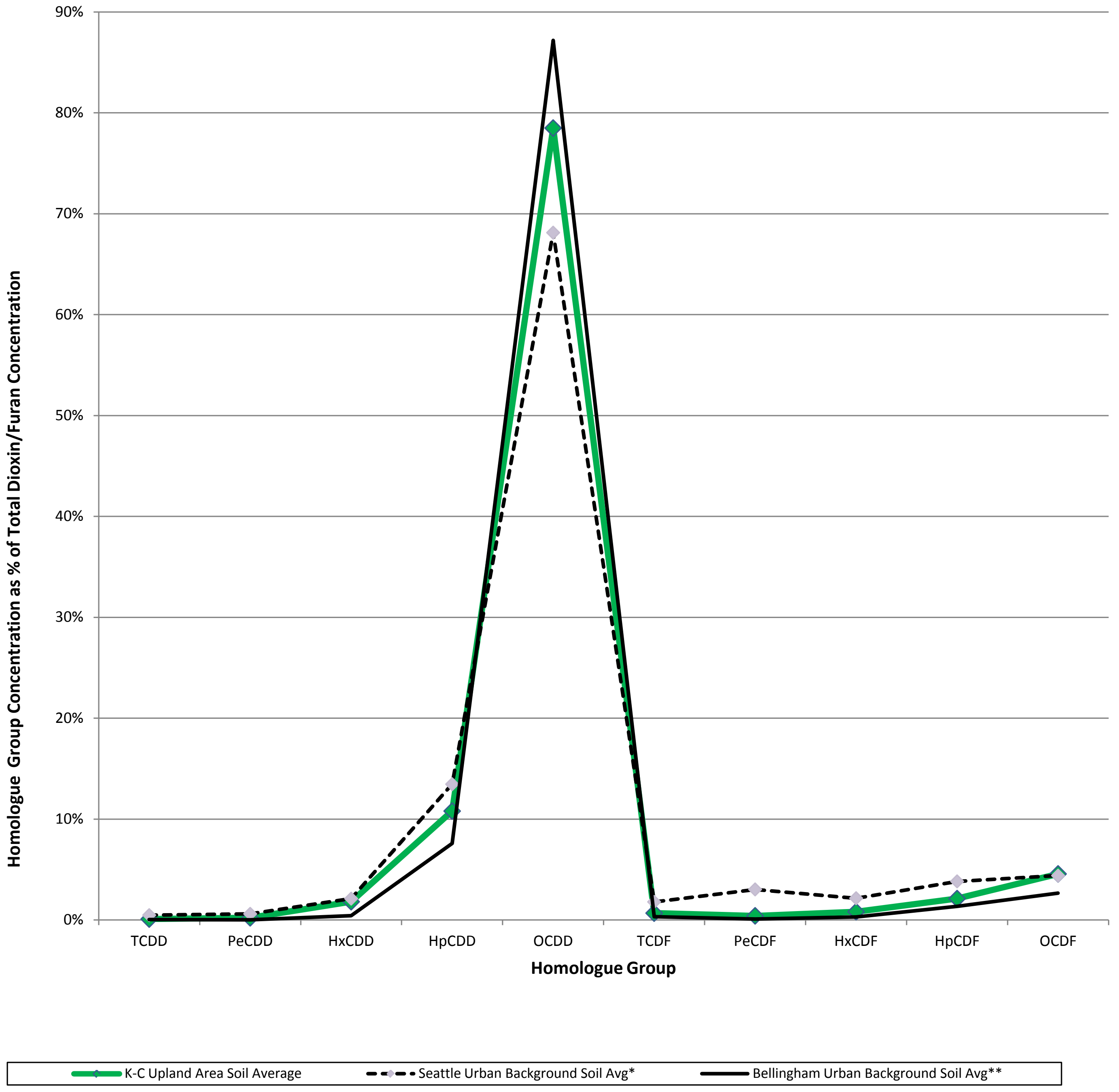
General Fill Soil Exceedances

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

MAR-2013
PROJECT NO. 110207
BY: SJG / PPW
REV BY: PPW
FIGURE NO. 3-20A

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\3-20A General Fill Soil Exceeds.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 3/1/2013 || User: pwittman || Print Date: 3/1/2013



*: Average homologue group proportion from 100 soil samples collected throughout five Seattle residential neighborhoods (Ecology, 2011). South Park neighborhood data are distinctly different, and are excluded from the averaging.

**: Average homologue group proportion from 10 samples of "background residential soil" collected for the Oeser Site RI (E&E, 2002).

Figure 3-20B
Dioxin/Furan Congener Signatures,
Upland Area Soil vs. Urban Background Soil

Aspect Consulting
2/15/13
S:\Kimberly Clark\Everett Mill 110207\Draft Deliverables\Data Report for Independent Assessment\Revised figures\Fig 3-20 Dioxin Data w Signature Plot

⊡ Soil Boring (not labeled)

⊕ Monitoring Well

▭ Upland Area Boundary

Opportunistic Cleanup Areas

(by contaminant)

🟧 Xylene with Latex

🟫 Petroleum

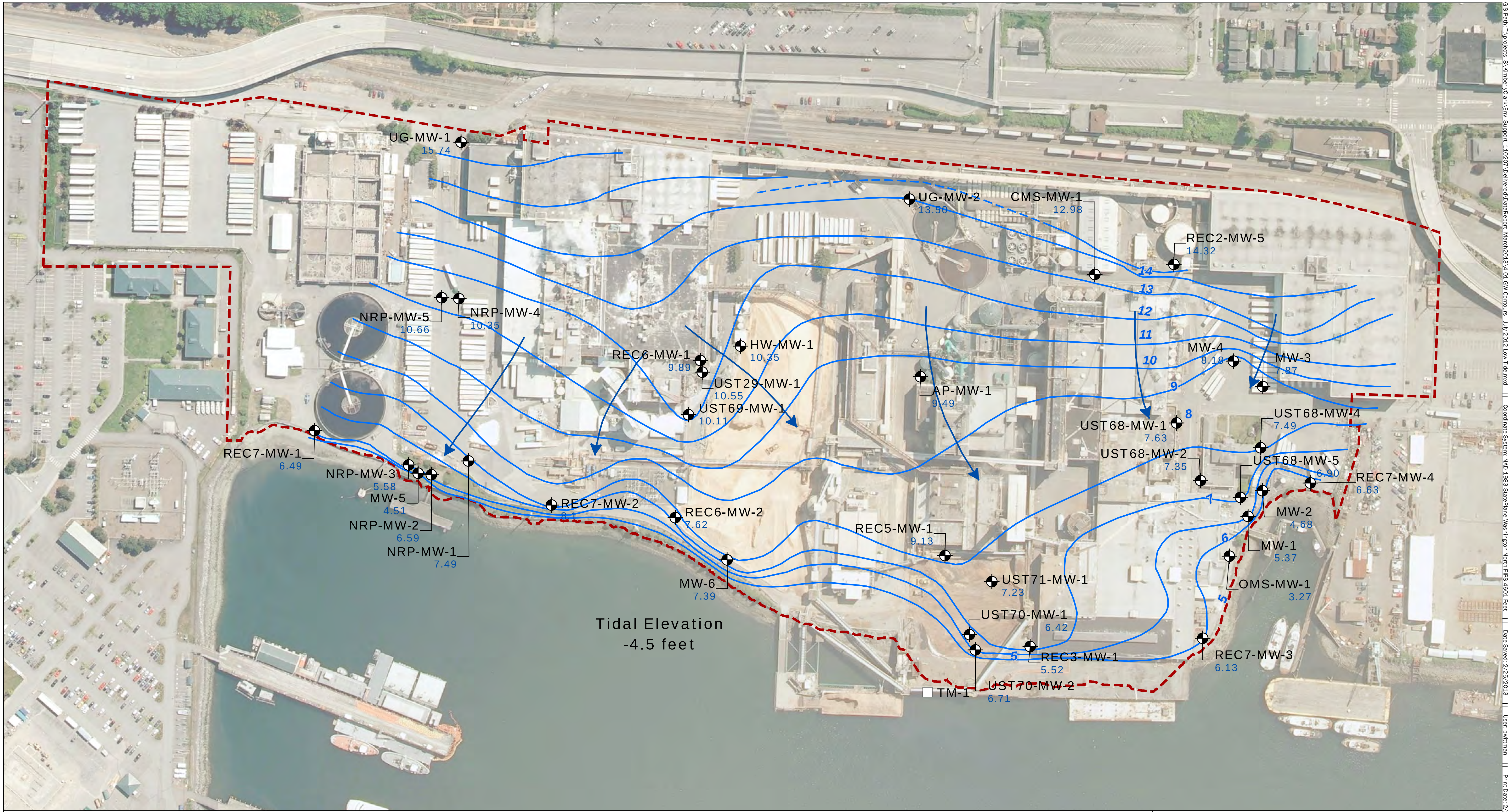
🟪 Lead (Non-Hazardous Waste)

🟩 Lead (Hazardous Waste)

Phase 2 ESA Explorations and Planned Opportunistic Cleanup Areas

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING	MAR-2013	BY: SJG / PPW	FIGURE NO. 3-21
	PROJECT NO. 110207	REV BY: EAH	



Well Name

UG-MW-2
13.53

Water Level Elevation (ft)

Monitoring Well

☐ Tidal Monitoring Station

Water Level Elevation (ft)

Groundwater Contour
[dashed where inferred]

Groundwater Flow Direction

Upland Area Boundary

0 200 400
Feet

Notes:
- Measurements collected 10:17AM to 11:58AM, 7/3/12
with tide elevations ranging between -4.7 ft and -3.9 ft
- Elevations relative to NAVD88 Vertical Datum

Groundwater Elevation Contours
“Low” Tide - 7/3/2012

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

FEB-2013	BY: EAH / DFG	FIGURE NO.
PROJECT NO. 110207	REV BY: - - -	4-1

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\4-01 GW Contours - July 2012 Low Tide.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/25/2013 || User: pwittman || Print Date: 2/28/2013

Well Name
UG-MW-2
13.53
Water Level Elevation (ft)
Monitoring Well

☐ Tidal Monitoring Station

Water Level Elevation (ft)
8 Groundwater Contour [dashed where inferred]

Groundwater Flow Direction

Upland Area Boundary

N

0 200 400
Feet

Notes:
- Measurements collected 7:20 AM through 7:59AM, 7/6/12 with tide elevations ranging between 7.5 ft and 8.2 ft
- Elevations relative to NAVD88 Vertical Datum
- NM: Not Measured

Groundwater Elevation Contours
"High" Tide - 7/6/2012

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

FEB-2013	BY: EAH / DFG	FIGURE NO.
PROJECT NO. 110207	REV BY: HRL	4-2

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\4-02 GW Contours - July 2012 High Tide.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/25/2013 || User: pwittman || Print Date: 3/1/2013

Well Name

UG-MW-2

72 hour Average Groundwater Elevation shown, calculated using the Serfes (1991) Method with 15 minute pressure transducer measurements.

13.53

13.53

Average Groundwater Elevation shown, calculated using the arithmetic average of the "Low" and "High" Tide manual water level measurements.

Water Level Elevation (ft)

⊕ Monitoring Well

☐ Tidal Monitoring Station

Water Level Elevation (ft)

Groundwater Contour [dashed where inferred]

Groundwater Flow Direction

Upland Area Boundary

N

0 200 400

Feet

Notes:
- NM: Not Measured
- Elevations relative to NAVD88 Vertical Datum

Groundwater Elevation Contours
72-hour Tidal Average (7/3 - 6/12)

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

FEB-2013	BY: EAH / DFG	FIGURE NO.	
PROJECT NO. 110207	REV BY: - - -	4-3	

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\4-03 GW Contours - July 2012 72HrAvg.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/25/2013 || User: pwittman || Print Date: 3/1/2013

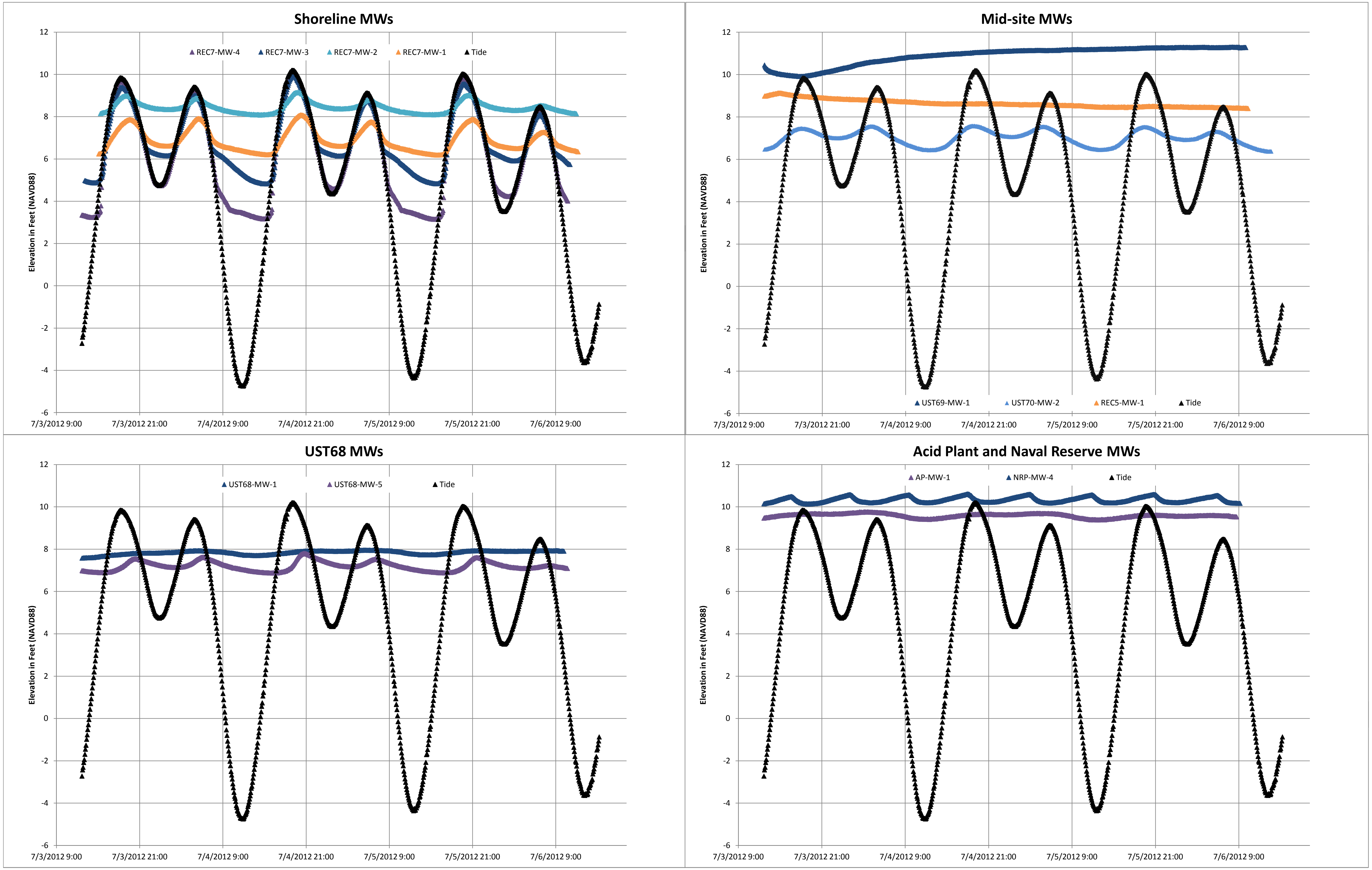


Figure 4-4
Tidal Study Groundwater and Tide Elevation Data

Aspect Consulting
February 2013
S:\Kimberly Clark\Everett Mill 110207\Draft Deliverables\Data Report for Independent Assessment\Revised figures\Fig 4-4 Tide Study Data Plots.xlsx

Well Name

UG-MW-2
13.53

Water Level Elevation (ft)

Monitoring Well

☐ Tidal Monitoring Station

Water Level Elevation (ft)

Groundwater Contour

Low Tide

Upland Area Boundary

N

0 200 400
Feet

Notes:
- Measurements collected 9:48AM to 11:51AM, 9/14/12 with tide elevations ranging between -1.4 ft and 0 ft
- Elevations relative to NAVD88 Vertical Datum

Groundwater Elevation Contours "Low" Tide - 9/14/2012

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING	FEB-2013	BY: EAH / DFG	FIGURE NO.
	PROJECT NO. 110207	REV BY: HRL	4-5

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\4-05 GW Contours - Sept 2012 Low Tide.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/25/2013 || User: pwittman || Print Date: 2/28/2013

Well Name
UG-MW-2
13.53
Water Level Elevation (ft)

Monitoring Well

☐ Tidal Monitoring Station

Water Level Elevation (ft)

8 Groundwater Contour [dashed where inferred]

High Tide

Upland Area Boundary

N

0 200 400
Feet

Notes:
- Measurements collected 3:15 PM through 4:55 PM, 9/13/12 with tide elevations ranging between 7.4 ft and 8.2 ft
- Elevations relative to NAVD88 Vertical Datum
- NM: Not Measured

Groundwater Elevation Contours
"High" Tide - 9/13/2012

Data Report for Independent Phase 2 ESA
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING

FEB-2013	BY: EAH / DFG	FIGURE NO.	4-6
PROJECT NO. 110207	REV BY: HRL		

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\DataReport_March2013\4-06 GW Contours Sept 2012 High Tide.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/25/2013 || User: pwittman || Print Date: 2/28/2013

APPENDIX A

Exploration Logs

Coarse-Grained Soils - More than 50% (1) Retained on No. 200 Sieve	Gravels - More than 50% (1) of Coarse Fraction Retained on No. 4 Sieve	≤5% Fines (5)	GW	Well-graded gravel and gravel with sand, little to no fines
			GP	Poorly-graded gravel and gravel with sand, little to no fines
		≥15% Fines (5)	GM	Silty gravel and silty gravel with sand
			GC	Clayey gravel and clayey gravel with sand
	Sands - 50% (1) or More of Coarse Fraction Passes No. 4 Sieve	≤5% Fines (5)	SW	Well-graded sand and sand with gravel, little to no fines
			SP	Poorly-graded sand and sand with gravel, little to no fines
		≥15% Fines (5)	SM	Silty sand and silty sand with gravel
			SC	Clayey sand and clayey sand with gravel
Fine-Grained Soils - 50% (1) or More Passes No. 200 Sieve	Silts and Clays Liquid Limit Less than 50		ML	Silt, sandy silt, gravelly silt, silt with sand or gravel
			CL	Clay of low to medium plasticity; silty, sandy, or gravelly clay, lean clay
			OL	Organic clay or silt of low plasticity
	Silts and Clays Liquid Limit 50 or More		MH	Elastic silt, clayey silt, silt with micaceous or diatomaceous fine sand or silt
			CH	Clay of high plasticity, sandy or gravelly clay, fat clay with sand or gravel
			OH	Organic clay or silt of medium to high plasticity
Highly Organic Soils			PT	Peat, muck and other highly organic soils

Terms Describing Relative Density and Consistency

	Density	SPT (2) blows/foot
Coarse-Grained Soils	Very Loose	0 to 4
	Loose	4 to 10
	Medium Dense	10 to 30
	Dense	30 to 50
	Very Dense	>50

	Consistency	SPT (2) blows/foot
Fine-Grained Soils	Very Soft	0 to 2
	Soft	2 to 4
	Medium Stiff	4 to 8
	Stiff	8 to 15
	Very Stiff	15 to 30
	Hard	>30

Test Symbols

FC = Fines Content
G = Grain Size
M = Moisture Content
A = Atterberg Limits
C = Consolidation
DD = Dry Density
K = Permeability
Str = Shear Strength
Env = Environmental
PiD = Photoionization Detector

Component Definitions

Descriptive Term	Size Range and Sieve Number
Boulders	Larger than 12"
Cobbles	3" to 12"
Gravel	3" to No. 4 (4.75 mm)
Coarse Gravel	3" to 3/4"
Fine Gravel	3/4" to No. 4 (4.75 mm)
Sand	No. 4 (4.75 mm) to No. 200 (0.075 mm)
Coarse Sand	No. 4 (4.75 mm) to No. 10 (2.00 mm)
Medium Sand	No. 10 (2.00 mm) to No. 40 (0.425 mm)
Fine Sand	No. 40 (0.425 mm) to No. 200 (0.075 mm)
Silt and Clay	Smaller than No. 200 (0.075 mm)

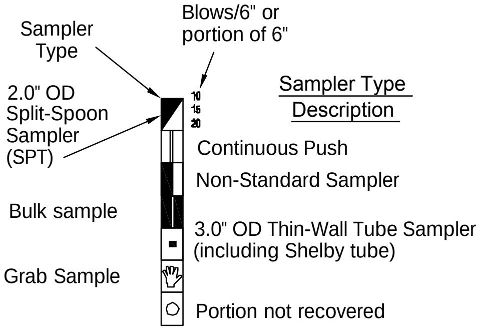
(3) Estimated Percentage

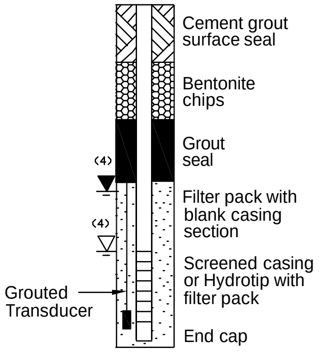
Percentage by Weight	Modifier
<5	Trace
5 to 15	Slightly (sandy, silty, clayey, gravelly)
15 to 30	Sandy, silty, clayey, gravelly)
30 to 49	Very (sandy, silty, clayey, gravelly)

Moisture Content

Dry - Absence of moisture, dusty, dry to the touch
Slightly Moist - Perceptible moisture
Moist - Damp but no visible water
Very Moist - Water visible but not free draining
Wet - Visible free water, usually from below water table

Symbols





(1) Percentage by dry weight
(2) (SPT) Standard Penetration Test (ASTM D-1586)
(3) In General Accordance with Standard Practice for Description and Identification of Soils (ASTM D-2488)
(4) Depth of groundwater
∇ ATD = At time of drilling
▼ Static water level (date)
(5) Combined USCS symbols used for fines between 5% and 15% as estimated in General Accordance with Standard Practice for Description and Identification of Soils (ASTM D-2488)

BGS = below ground surface

Classifications of soils in this report are based on visual field and/or laboratory observations, which include density/consistency, moisture condition, grain size, and plasticity estimates and should not be construed to imply field or laboratory testing unless presented herein. Visual-manual and/or laboratory classification methods of ASTM D-2487 and D-2488 were used as an identification guide for the Unified Soil Classification System.

Aspect CONSULTING

Exploration Log Key

DATE:
DESIGNED BY:
DRAWN BY:
REVISED BY:
PROJECT NO.
FIGURE NO.
A-1

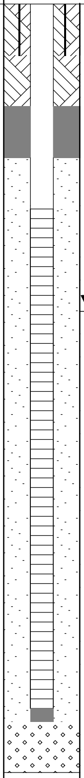
Q:_ACAD Standards\Standard Details\Exploration Log Key A1.dwg

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	AP-MW-01	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Grab

Ground Surface Elev: 15.84
Top of Casing Elev.: 15.45
Depth to Water (ft BGS): 6
Start/Finish Date: 6/29/2012



Borehole Completion:

8" Flush-mount monument and thermos cap
Concrete surface seal 0' to 2'
3/8" Hydrated bentonite chips 2' to 3'
10/20 pre-pack Silica sand filter pack 3' to 14'
▼
2" Diameter PVC pre-packed .001 slot screen 4' to 14'
Threaded cap
Slough

Depth (feet)	Elevation (feet)	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Description	Depth (ft)
		CC-1				Asphalt	
1	15		AP-MW-1-1-2	0		Moist, brown, iron-oxide-gray mottled SAND (SP); trace fine gravel, fine sand, scattered organics-seashells	1
2	14			0			2
3	13			0			3
4	12	○		0		Moist, dark gray SAND (SP); fine sand	4
5	11	CC-2		0		Moist, brown SAND (SP); fine sand	5
6	10		AP-MW-1-6-7	0			6
7	9			0		Wet, dark gray, silty SAND (SM); fine sand, rapid dilatency, scattered organics-seashells	7
8	8			0		Numerous organics-seashells- 8' to 8.5'	8
9	7			0		Wet, dark gray SAND (SP); trace gravel, fine to medium sand	9
10	6	CC-3		0			10
11	5			0			11
12	4			0			12
13	3			0			13
14	2			0			14
15	1			0		Bottom of boring at 15' BGS	15
16	0						16
17	-1						17
18	-2						18
19	-3						19
20	-4						20
21	-5						21
22	-6						22
23	-7						23
24	-8						24
25	-9						25
26	-10						26
27	-11						27
28	-12						28
29	-13						29
	-14						

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: SJG
Figure No. A-2

_MONITORING WELL KIMBERLY CLARK-EVERETT.GPJ January 17, 2013

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	Boiler-B-01	1 of 1

Project Name: Kimberly Clark-Everett Mill
Ground Surface Elev
Location: Everett, WA
Driller/Method: Aspect / Hand Auger
Depth to Water (ft BGS) Not Encountered
Sampling Method: Grab
Start/Finish Date 7/6/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	▨ Backfilled boring with same material that was pulled from hole.					■	**ASPHALT**	
1		✋	Boiler-B-1-1-2-070512			▨	**FILL** Moist, brown and dark brown, gravelly SAND (SW); subrounded gravel and fine to coarse sand.	1
2							Bottom of boring at 2 ft BGS.	2
3								3
4								4
5								5
6								6
7								7
8								8
9								9
10								10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29

Sampler Type:

○ No Recovery

✋ Grab Sample

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: GL

Approved by: SJG

Figure No. A-3

Boring Log

Project Number	Boring Number	Sheet
110207	Boiler-B-02	1 of 1

Project Name: Kimberly Clark-Everett Mill

Ground Surface Elev

Location: Everett, WA

Driller/Method: Aspect / Hand Auger

Depth to Water (ft BGS) Not Encountered

Sampling Method: Grab

Start/Finish Date 7/6/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	▨					■	**ASPHALT**	
1	▨ Backfilled boring with same material that was pulled from hole.	✋	Boiler-B-2-1-2-070512			▨	**FILL** Moist, brown and dark brown, gravelly SAND (SW); subrounded gravel and fine to coarse sand.	1
2							Bottom of boring at 2 ft BGS.	2
3								3
4								4
5								5
6								6
7								7
8								8
9								9
10								10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29

Sampler Type:

○ No Recovery

✋ Grab Sample

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: GL

Approved by: SJG

Figure No. A-4

_ENV PROBE LOG KIMBERLY CLARK-EVERETT.GPJ January 17, 2013

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	Boiler-B-03	1 of 1

Project Name: Kimberly Clark-Everett Mill

Ground Surface Elev

Location: Everett, WA

Driller/Method: Aspect / Hand Auger

Depth to Water (ft BGS) Not Encountered

Sampling Method: Grab

Start/Finish Date 7/6/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	▨ Backfilled boring with same material that was pulled from hole.					■	**ASPHALT**	
1		✋	Boiler-B-3-1-2-070512			▨	**FILL** Moist, brown and dark brown, gravelly SAND (SW); subrounded gravel and fine to coarse sand; sticky with apparent petroleum-based product.	1
2							Bottom of boring at 2 ft BGS.	2
3								3
4								4
5								5
6								6
7								7
8								8
9								9
10								10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29

Sampler Type:

○ No Recovery

✋ Grab Sample

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: GL

Approved by: SJG

Figure No. A-5

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	Boiler-B-03A	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous core

Ground Surface Elev

Depth to Water (ft BGS) 6 ATD

Start/Finish Date 9/5/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	3/8" hydrated bentonite chips	▌ CC-1					Concrete	
			BOILER-B-3A-1-2	0			Moist, brown black, silty, gravelly SAND (SM); fine sand	
				0			Crushed rock	
		○					No recovery	
		▌ CC-2	BOILER-B-3A-4-5	0			Moist, brown to gray, slightly gravelly SAND (SP); fine to medium sand	
5		○		0			No recovery	5
	▽ ▽	▌ CC-3	BOILER-B-3A-6.5-7.5	0 0 0			Wet, brown to gray, slightly gravelly SAND (SP); fine to medium sand, trace silt	
10				0			Bottom of boring at 10' BGS	10
15								15
20								20
25								25

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-6

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	Boiler-B-03B	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous core

Ground Surface Elev

Depth to Water (ft BGS) Not encountered

Start/Finish Date 9/5/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	3/8" hydrated bentonite chips	▌ CC-1	BOILER-B-3B-1-2	0 0 0			Concrete	
							Moist, dark brown, gravelly, very sandy SILT (ML) Iron staining and fill debris 1.5' to 2'	
							Moist, brown SAND (SP); fine sand	
		○					No recovery	
		▌ CC-2	BOILER-B-3B-4-5	0 0 0			Moist, brown SAND (SP); fine sand	
							Wood and concrete	
5		○ CC-3					No recovery	5
							Refusal at 6' BGS	
10								10
15								15
20								20
25								25

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-7

Aspect
CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	Boiler-B-04	1 of 1

Project Name: Kimberly Clark-Everett Mill
Ground Surface Elev
Location: Everett, WA
Driller/Method: Aspect / Hand Auger
Depth to Water (ft BGS) Not Encountered
Sampling Method: Grab
Start/Finish Date 7/6/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	▨ Backfilled boring with same material that was pulled from hole.					■	**ASPHALT**	
1		✋	Boiler-B-4-1-1.5-070612			▨	**FILL** Moist, brown and dark brown, gravelly SAND (SP); sand and concrete rubble; soil concrete slab at 1.5 ft BGS.	1
2							Hit refusal on concrete slab at 1.5 ft BGS (bottom of boring).	2
3								3
4								4
5								5
6								6
7								7
8								8
9								9
10								10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29

Sampler Type:

○ No Recovery
✋ Grab Sample

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level
▽ Water Level (ATD)

Logged by: GL
Approved by: SJG
Figure No. A-8

Boring Log

Project Number	Boring Number	Sheet
110207	Boiler-B-05	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Aspect / Hand Auger

Sampling Method: Grab

Ground Surface Elev

Depth to Water (ft BGS) Not Encountered

Start/Finish Date 7/6/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	░ Backfilled boring with same material that was pulled from hole.					■	**ASPHALT**	
1		✋	Boiler-B-5-1-1.5-070612			░	**FILL** Moist, brown and dark brown, gravelly SAND (SP); sand and concrete rubble; soil concrete slab at 1.5 ft BGS.	1
2								2
3							Hit refusal on concrete slab at 1.5 ft BGS (bottom of boring).	3
4								4
5								5
6								6
7								7
8								8
9								9
10								10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29

Sampler Type:

○ No Recovery

✋ Grab Sample

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: GL

Approved by: SJG

Figure No. A-9

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	Boiler-HA-02A	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Aspect / Hand Auger

Sampling Method: Grab

Ground Surface Elev

Depth to Water (ft BGS) Not encountered

Start/Finish Date 9/5/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	▨ Backfilled with excavated material	✋	Boiler-HA-B2A-0-1			■	Asphalt	
						▨	Moist, brown, gravelly SAND (SP); poorly graded fine to medium sand, no odor	
		✋	Boiler-HA-B2A-2-3					
							Bottom of boring at 3' BGS	
5								5
10								10
15								15
20								20
25								25

Sampler Type:

○ No Recovery

✋ Grab Sample

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET/ERP

Approved by: SJG

Figure No. A-10

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	Boiler-HA-02B	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Aspect / Hand Auger

Sampling Method: Grab

Ground Surface Elev

Depth to Water (ft BGS) Not encountered

Start/Finish Date 9/5/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Backfilled with excavated material	✋	Boiler-HA-B2B-0-1			■	Asphalt	
						▨	Slightly moist, brown to gray, gravelly SAND (SP)	
							Refusal at 1' BGS	
5								5
10								10
15								15
20								20
25								25

Sampler Type:

○ No Recovery

✋ Grab Sample

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET/ERP

Approved by: SJG

Figure No. A-11

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	Boiler-HA-02C	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Aspect / Hand Auger

Sampling Method: Grab

Ground Surface Elev

Depth to Water (ft BGS) Not encountered

Start/Finish Date 9/5/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Backfilled with excavated material	✋	Boiler-HA-B2C-0-1			■	Asphalt	
						░	Moist, brown, gravelly SAND (SP); subround gravel, fine to coarse sand	
		✋	Boiler-HA-B2C-2-3				Bottom of boring at 3' BGS	
5								5
10								10
15								15
20								20
25								25

Sampler Type:

○ No Recovery

✋ Grab Sample

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET/ERP

Approved by: SJG

Figure No. A-12

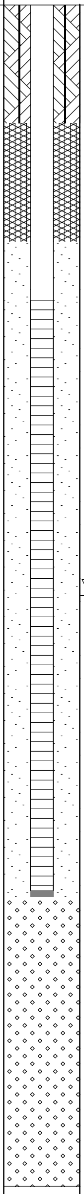
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	Boiler-MW-01	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core

Ground Surface Elev
Top of Casing Elev.
Depth to Water (ft BGS) 10
Start/Finish Date 9/5/2012



Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
	8" flush-mount monument and thermos cap Concrete surface seal 0' to 2'						Concrete	
							Moist, dark gray, sandy, gravelly SILT (ML); numerous organics; petroleum-like odor	
		CC-1		29.7			Moist, dark gray SAND (SP); fine sand; slight petroleum-like odor	
	3/8" hydrated bentonite chips 2' to 4'			19.2 1.3				
	10/20 silica sand filter pack 4' to 15'	○					No recovery	
5							Moist, dark gray SAND (SP); medium sand, faint petroleum-like odor	5
	2" diameter PVC pre-packed .001 slot screen 5' to 15'			0.8				
		CC-2		0.9				
				0.9				
		○		0.9			No recovery	
10	▽		BOILER-MW-01-10-11	0.4			Wet, gray SAND (SW); fine to coarse sand	10
		CC-3	BOILER-MW-01-12-13	0.7 24.4 36.4			Visible separate phase product and strong petroleum-like odor at 12'	
		○		0.7			No recovery	
15	Threaded cap						Wet, gray SAND (SP); medium sand, trace coarse sand; numerous seashell fragments	15
	Slough and bentonite	CC-4	BOILER-MW-01-16-17	0.4 0.2 0.2 0.2				
20				0.3			Bottom of boring at 20' BGS	20
25								25

Sampler Type:

○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: SJG
Figure No. A-13

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	CMS-B-1	1 of 1

Project Name: Kimberly Clark-Everett Mill

Ground Surface Elev

Location: Everett, WA

Driller/Method: Aspect / Hand Auger

Depth to Water (ft BGS) 2 - ATD

Sampling Method: Continuous Grab

Start/Finish Date 7/6/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	▨ Backfilled with material that was pulled from hole. ▽	✋	CMS-1-0-1-070612			■	**CONCRETE**	
1						▨	**FILL** Moist, dark brown and gray, gravelly SAND (SW); subrounded gravel and fine to coarse sand. Wet at 2 ft BGS	1
2		✋	CMS-1-2-3-070612					2
3							Bottom of boring at 3 ft BGS.	3
4								4
5								5
6								6
7								7
8								8
9								9
10								10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29

Sampler Type:

○ No Recovery

✋ Grab Sample

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: GL

Approved by: SJG

Figure No. A-14

_ENV PROBE LOG KIMBERLY CLARK-EVERETT.GPJ January 17, 2013

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	CMS-B-2	1 of 1

Project Name: Kimberly Clark-Everett Mill

Ground Surface Elev

Location: Everett, WA

Driller/Method: Aspect / Hand Auger

Depth to Water (ft BGS) Not Encountered

Sampling Method: Continuous Grab

Start/Finish Date 7/6/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	▨ Backfilled with the material that was pulled from the hole.	✋	CMS-2-0-1-070612			■	**CONCRETE**	
1	▨					▨	**FILL** Moist, gray, gravelly SAND (SW); subrounded gravel and fine to coarse sand; trace silt.	1
2	▨	✋	CMS-2-2-3-070612			▨		2
3							Bottom of boring at 3 ft BGS.	3
4								4
5								5
6								6
7								7
8								8
9								9
10								10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29

Sampler Type:

○ No Recovery

✋ Grab Sample

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: GL

Approved by: SJG

Figure No. A-15

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	CMS-B-3	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Aspect / Hand Auger

Sampling Method: Continuous Grab

Ground Surface Elev

Depth to Water (ft BGS) Not Encountered

Start/Finish Date 7/6/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	▨	✋	CMS-3-0-1-070612			■	**CONCRETE**	
1	▨					▨	**FILL** Moist, gray, gravelly, silty SAND (SM); subrounded gravel and fine to coarse sand.	1
2	▨	✋	CMS-3-2-3-070612			▨		2
3							Bottom of boring at 3 ft BGS	3
4								4
5								5
6								6
7								7
8								8
9								9
10								10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29

Sampler Type:

○ No Recovery

✋ Grab Sample

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: GL

Approved by: SJG

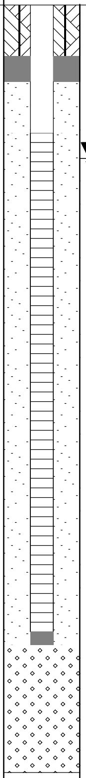
Figure No. A-16

Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	CMS-MW-01	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core
Ground Surface Elev: 15.22
Top of Casing Elev.: 14.7
Depth to Water (ft BGS): 3
Start/Finish Date: 6/28/2012



Depth (feet)	Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
	15	8" Flush-mount monument and thermos cap						No Recovery	
1	14	Concrete surface seal 0' to 1'							1
2	13	3/8" Hydrated bentonite chips 1' to 1.5'	○ CC-1						2
3	12	10/20 pre-pack Silica sand filter pack 1.5' to 12.5'							3
4	11								4
5	10				0			Wet, dark gray, slightly silty SAND (SP-SM); fine sand	5
6	9	2" Diameter PVC pre-packed .001 slot screen 2.5' to 12.5'			0				6
7	8		CC-2		0			Wet, dark gray SAND (SP); trace gravel, fine to medium sand	7
8	7				0				8
9	6				0			Wet, dark gray, silty CLAY (CL)	9
10	5							Wet, dark gray, slightly gravelly SAND (SP); fine to medium sand, fine gravel	10
11	4				0				11
12	3	Threaded cap	CC-3					Wet, dark brown, organic SILT (OL); peat-like	12
13	2				0.4				13
14	1	Slough	○		0.1			Wet, dark brown, sandy organic SILT (OL); fine to medium sand	14
15	0							Bottom of boring at 15' BGS	15
16	-1								16
17	-2								17
18	-3								18
19	-4								19
20	-5								20
21	-6								21
22	-7								22
23	-8								23
24	-9								24
25	-10								25
26	-11								26
27	-12								27
28	-13								28
29	-14								29

Sampler Type:
○ No Recovery
▌▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: SJG
Figure No. A-17

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	DA-B-01	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core
Ground Surface Elev
Depth to Water (ft BGS) 1.5 ATD
Start/Finish Date 9/5/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
		CC-1					Asphalt	
	▽		DA-B-01-1-2	0			Moist to wet, brown, gravelly SAND (SP); poorly graded fine to medium sand	
	▽ 3/8" hydrated bentonite chips			0			Thin bed silt Becomes wet, black, slightly gravelly	
				0				
		○		0			No recovery	
5		CC-2	DA-B-01-5-6	0 0			Wet, gray to black, gravelly SAND (SP); poorly graded medium sand	5
			DA-B-01-7-8	0				
				0				
				0			Numerous seashells	
10				0			Bottom of boring at 10' BGS	10
15								15
20								20
25								25

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

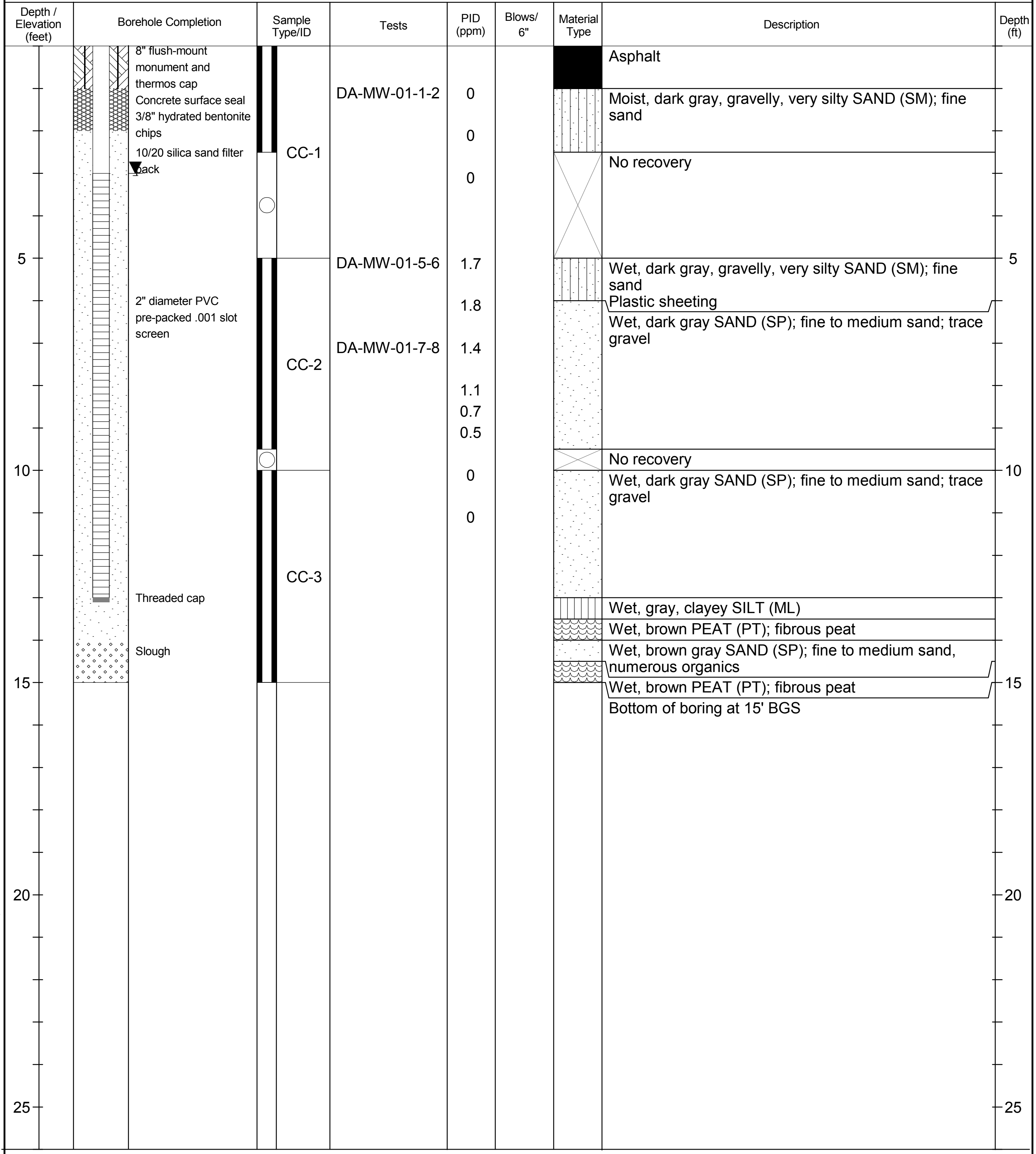
Logged by: AET/MAR
Approved by: SJG
Figure No. A-18

Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	DA-MW-01	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core
Ground Surface Elev
Top of Casing Elev.
Depth to Water (ft BGS) 3
Start/Finish Date 9/7/2012



Asphalt

Moist, dark gray, gravelly, very silty SAND (SM); fine sand

No recovery

Wet, dark gray, gravelly, very silty SAND (SM); fine sand

Plastic sheeting

Wet, dark gray SAND (SP); fine to medium sand; trace gravel

No recovery

Wet, dark gray SAND (SP); fine to medium sand; trace gravel

Wet, gray, clayey SILT (ML)

Wet, brown PEAT (PT); fibrous peat

Wet, brown gray SAND (SP); fine to medium sand, numerous organics

Wet, brown PEAT (PT); fibrous peat

Bottom of boring at 15' BGS

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET/MAR
Approved by: SJG
Figure No. A-19

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	DP-01	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

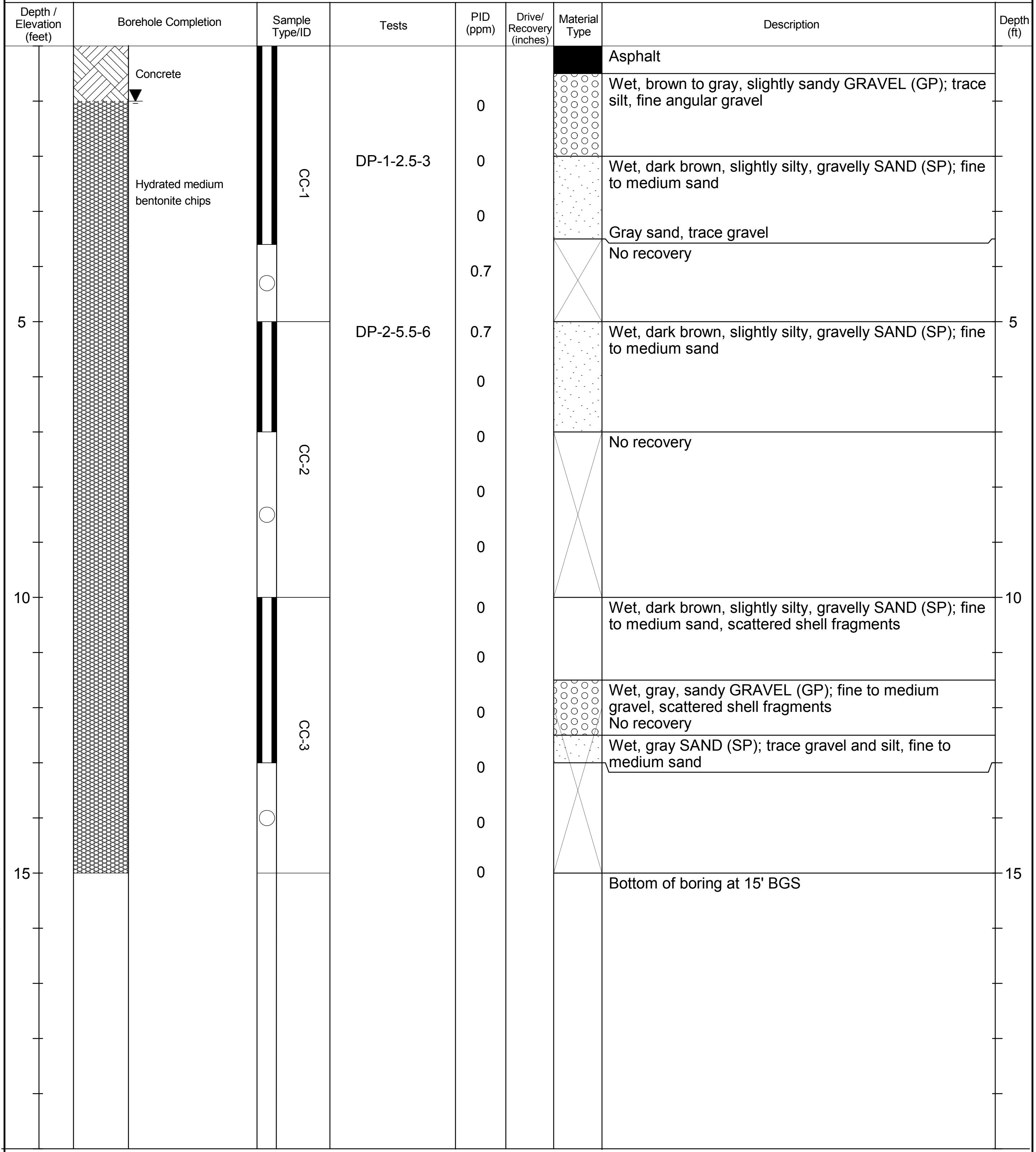
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 1

Start/Finish Date 2/14/2012



Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Concrete	CC-1					Asphalt	
				0			Wet, brown to gray, slightly sandy GRAVEL (GP); trace silt, fine angular gravel	
	Hydrated medium bentonite chips		DP-1-2.5-3	0			Wet, dark brown, slightly silty, gravelly SAND (SP); fine to medium sand	
				0			Gray sand, trace gravel	
				0.7			No recovery	
5		CC-2	DP-2-5.5-6	0.7			Wet, dark brown, slightly silty, gravelly SAND (SP); fine to medium sand	5
				0				
				0			No recovery	
				0				
				0				
10		CC-3		0			Wet, dark brown, slightly silty, gravelly SAND (SP); fine to medium sand, scattered shell fragments	10
				0				
				0			Wet, gray, sandy GRAVEL (GP); fine to medium gravel, scattered shell fragments No recovery	
				0			Wet, gray SAND (SP); trace gravel and silt, fine to medium sand	
				0				
15				0			Bottom of boring at 15' BGS	15

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-20

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	DP-02	1 of 1

Project Name: Kimberly Clark-Everett Mill

Ground Surface Elev

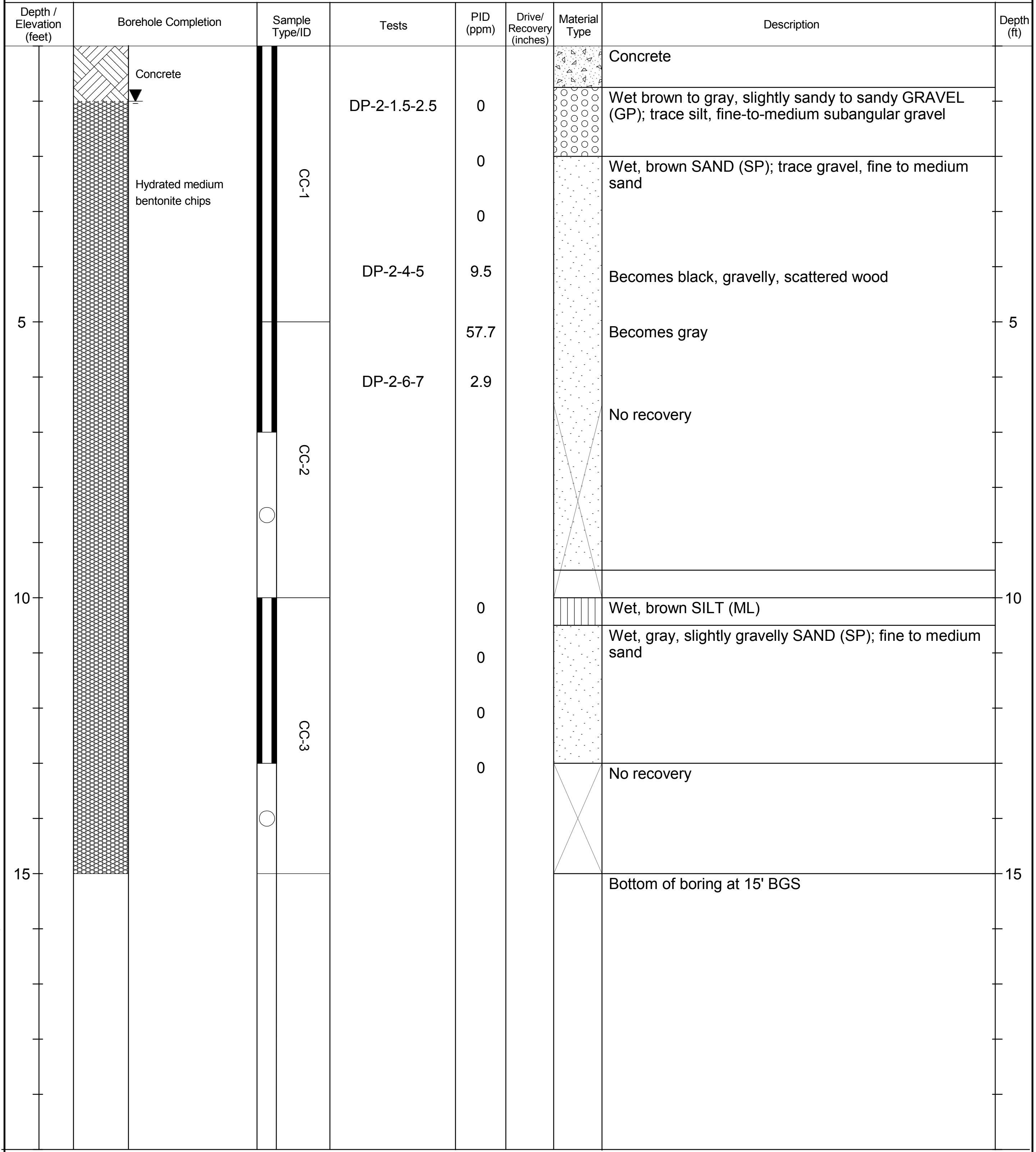
Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Depth to Water (ft BGS) 1

Sampling Method: Continuous Core

Start/Finish Date 2/14/2012



Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Description	Depth (ft)
	Concrete	CC-1				Concrete	
	▼						
			DP-2-1.5-2.5	0		Wet brown to gray, slightly sandy to sandy GRAVEL (GP); trace silt, fine-to-medium subangular gravel	
	Hydrated medium bentonite chips			0		Wet, brown SAND (SP); trace gravel, fine to medium sand	
				0			
			DP-2-4-5	9.5		Becomes black, gravelly, scattered wood	
5		CC-2		57.7		Becomes gray	5
			DP-2-6-7	2.9			
						No recovery	
10		CC-3		0		Wet, brown SILT (ML)	10
				0		Wet, gray, slightly gravelly SAND (SP); fine to medium sand	
				0			
				0		No recovery	
15						Bottom of boring at 15' BGS	15

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-21

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	DP-03	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

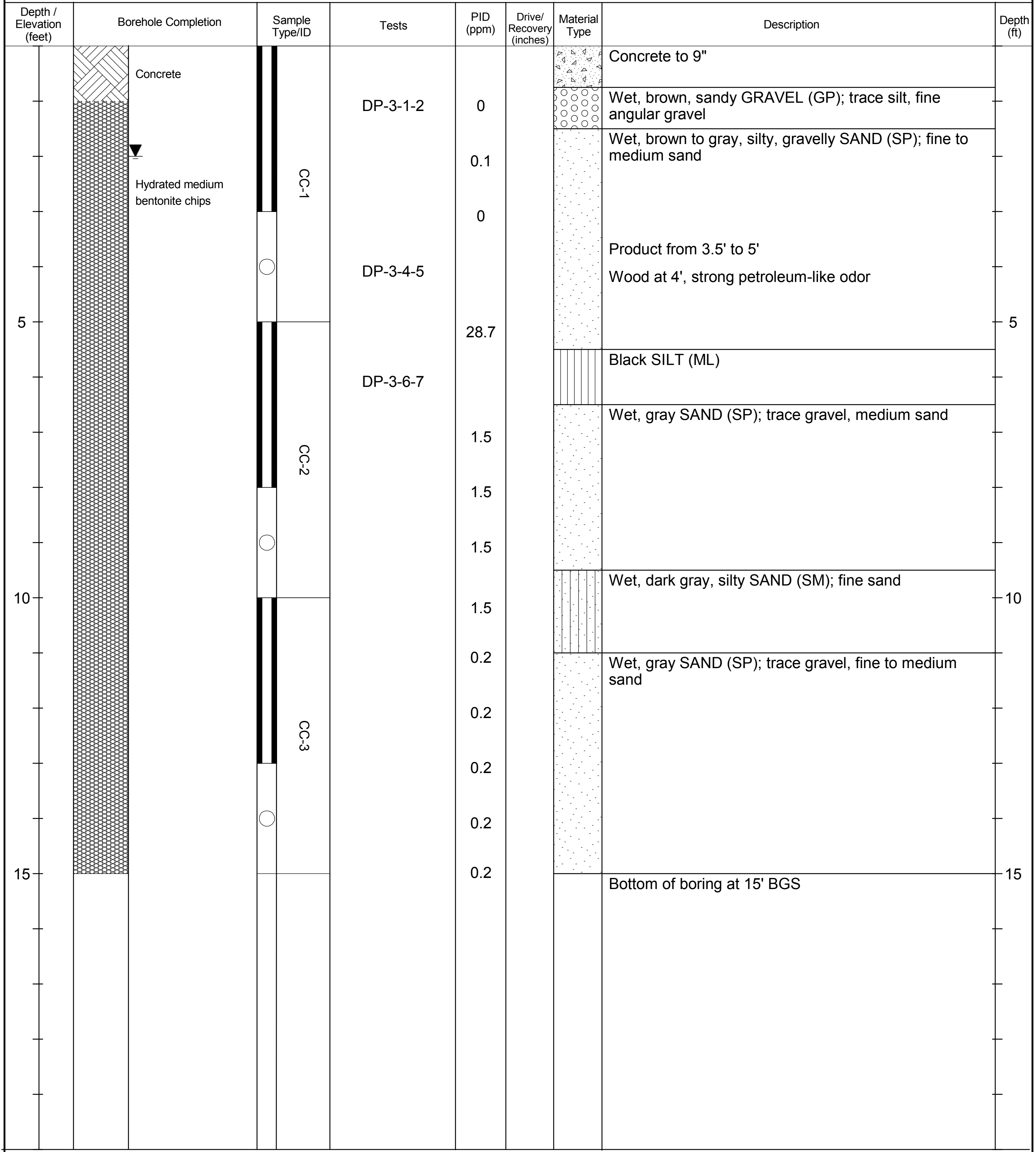
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 2

Start/Finish Date 2/14/2012



Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Concrete	CC-1					Concrete to 9"	
			DP-3-1-2	0			Wet, brown, sandy GRAVEL (GP); trace silt, fine angular gravel	
	▼			0.1			Wet, brown to gray, silty, gravelly SAND (SP); fine to medium sand	
	Hydrated medium bentonite chips							
				0				
							Product from 3.5' to 5'	
		○	DP-3-4-5				Wood at 4', strong petroleum-like odor	
5		CC-2		28.7				5
			DP-3-6-7				Black SILT (ML)	
				1.5			Wet, gray SAND (SP); trace gravel, medium sand	
				1.5				
		○		1.5				
10		CC-3		1.5			Wet, dark gray, silty SAND (SM); fine sand	10
				0.2			Wet, gray SAND (SP); trace gravel, fine to medium sand	
				0.2				
				0.2				
		○		0.2				
15				0.2			Bottom of boring at 15' BGS	15

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-22

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	DP-04	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 1.5

Start/Finish Date 2/14/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Concrete	CC-1					Asphalt	
							Wet, brown, slightly sandy GRAVEL (GP); subangular fine-medium gravel	
	▼		DP-4-1-2	0			Wet, gray, SAND (SP); fine to medium sand	
	Hydrated medium bentonite chips			0			Wet, gray, silty SAND (SM); fine sand, brick fragment	
				0				
		○		0			Wet, gray SAND (SP); fine to medium sand	
5		CC-2		0				5
				0				
				0				
				0				
		○	DP-4-9-10	0			Very silty SAND (SP); numerous organics	
10		CC-3		0				10
				0				
				0			Fibrous brown PEAT (PT); hydrogen sulfide odor	
				0			Sand lens	
				0			Fibrous brown PEAT (PT); hydrogen sulfide odor	
							Silty SAND (SM); fine sand, numerous organics	
15				0			Bottom of boring at 15' BGS	15

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-23

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	DP-05	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 2

Start/Finish Date 2/14/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Concrete	CC-1					Concrete to 9"	
			DP-5-1.5-2.5	0.2			Wet, brown, sandy GRAVEL (GP); angular fine-to-medium gravel	
	▼ Hydrated medium bentonite chips			0.2			Wet, gray, slightly sandy SILT (ML); trace gravel	
		○		0.3				
				0.2			Wet, gray SAND (SP); fine to medium sand	
							Wet, gray, slightly sandy SILT (ML)	
5		CC-2		65.9				5
				65.9				
			DP-5-7-8	65.9				
				65.9				
				65.9				
10		CC-3		0			Wet, gray SAND (SP); fine to medium sand	10
				0				
				0			Wet, brown, organic SILT (OL)	
			DP-5-13-14	0			Wet, gray SAND (SP); fine to medium sand	
		○		0			Wet, gray SAND (SW); fine to coarse sand	
15				0			Bottom of boring at 15' BGS	15

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-24

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	DP-06	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 3

Start/Finish Date 2/14/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Concrete	CC-1					Asphalt	
				0.2			Moist, gray, slightly silty, sandy GRAVEL (GP); fine-to-medium subrounded gravel	
							Moist, brown, SILT (ML)	
	Hydrated medium bentonite chips			0.2			Wet, brown, sandy GRAVEL (GP); fine to medium subrounded gravel	
	▼		DP-6-3-4	0.2			Wet, dark gray, slightly sandy SILT (ML)	
		○		0.2				
5		CC-2		0				5
				0				
			DP-6-7-8	0				
				0				
				0			Wet, dark gray SAND (SP); trace gravel, fine to medium sand	
10		CC-3		0				10
				0				
				0				
				0			4" organic SILT (OL)	
		○		0			Wet, gray, silty SAND (SP); fine to medium sand, numerous organics	
15				0			Bottom of boring at 15' BGS	15

Sampler Type:

○ No Recovery

▌▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-25

Boring Log

Project Number	Boring Number	Sheet
110207	DP-08	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

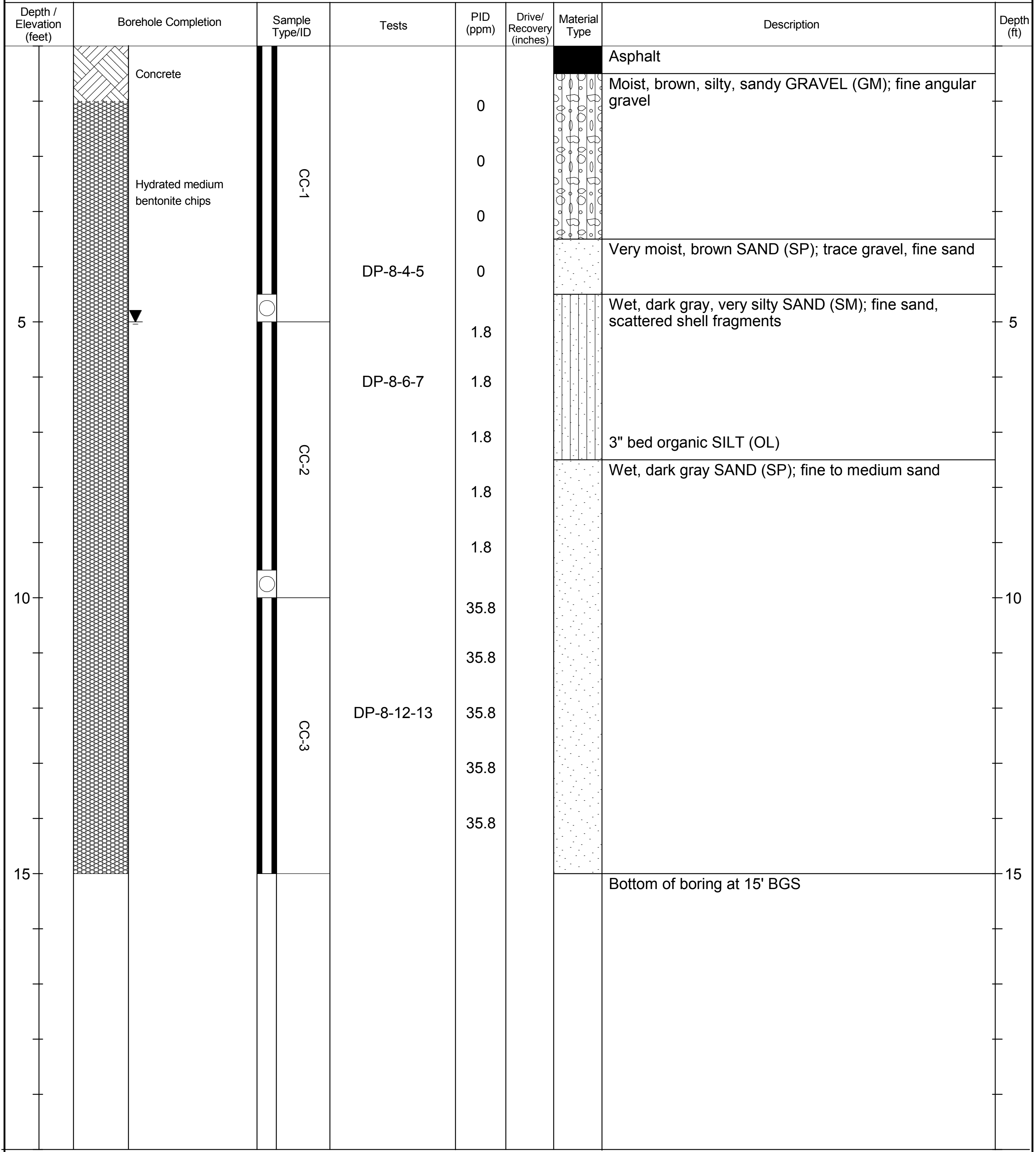
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 5

Start/Finish Date 2/14/2012



Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Concrete						Asphalt	
				0			Moist, brown, silty, sandy GRAVEL (GM); fine angular gravel	
	Hydrated medium bentonite chips	CC-1		0				
				0				
							Very moist, brown SAND (SP); trace gravel, fine sand	
			DP-8-4-5	0				
		○					Wet, dark gray, very silty SAND (SM); fine sand, scattered shell fragments	
5	▼							5
				1.8				
			DP-8-6-7	1.8				
				1.8			3" bed organic SILT (OL)	
		CC-2					Wet, dark gray SAND (SP); fine to medium sand	
				1.8				
				1.8				
		○						
10								10
				35.8				
				35.8				
		CC-3	DP-8-12-13	35.8				
				35.8				
				35.8				
15							Bottom of boring at 15' BGS	15

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-26

Boring Log

Project Number	Boring Number	Sheet
110207	DP-10	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 4

Start/Finish Date 2/14/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Concrete	CC-1					Asphalt	
							Concrete	
	Hydrated medium bentonite chips			0.2			Moist, brown to gray, silty SAND (SM); fine sand, alternating bands of gray and brown	
				0.2				
			DP-10-3-4	0.2				
	▼	○		0.2			Moist to wet, dark gray SAND (SP); fine to medium sand with numerous shell fragments	
5		CC-2		0.8				5
				0.8				
				0.8				
				0.8				
		○	DP-10-9-10	0.8				
10		CC-3		0.8			2" silt interbed	10
				21.4			Wet, dark gray, silty SAND (SM); fine sand	
				21.4			Wet, dark gray SAND (SP); fine to medium sand	
				21.4			Wet, dark gray, silty SAND (SM); fine sand	
		○		21.4			Wet, dark gray SAND (SP); fine to medium sand	
15				21.4			Bottom of boring at 15' BGS	15

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-27

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	DP-11	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 4

Start/Finish Date 2/15/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Concrete					■	Asphalt	
							Very moist, brown to dark brown, gravelly SAND (SP); poorly graded fine-to-medium sand	
				0				
				0				
	Hydrated medium bentonite chips	CC-1		0				
	▼		DP-11-4-5	0				
		○					Wet, dark gray SILT (ML); scattered organics (wood), slight H2S odor	
5				0				5
				0				
		CC-2		0				
			DP-11-8.5-9.5	0				
		○		0				
10				0				10
				0				
				2.7			Wet, black, SAND (SP); fine to medium sand, scattered shell fragments, H2S odor	
		CC-3		2.7				
			DP-11-14-15	2.7				
15				10.0			Bottom of boring at 15' BGS	15

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-28

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	DP-12	1 of 1

Project Name: Kimberly Clark-Everett Mill
Ground Surface Elev
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Depth to Water (ft BGS) 6
Sampling Method: Continuous Core
Start/Finish Date 2/15/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Concrete	▌				■	Asphalt	
		▌		0			Moist, brown, very silty GRAVEL (GM); trace sand, no odor	
	Hydrated medium bentonite chips	▌ CC-1		0				
		▌		0			Moist, brown, gravelly SAND (SP); fine to medium sand; debris (burnt/melted plastic, charred brick)	
		○		0				
5		▌		0			Wet, brown, very silty GRAVEL (GM); fine to medium subangular gravel; debris (burnt/melted plastic, charred brick) to 8'	5
	▼	▌	DP-12-6.5-7.5	0				
		▌ CC-2		0				
		▌		0				
		▌	DP-12-9-10	0				
		▌					Wet, black, SAND (SP); fine to medium sand	
10		▌		0			Wet, dark brown to dark gray, very sandy GRAVEL (GP); trace black silt, fine to medium subrounded gravel	10
		▌		0				
		▌ CC-3		0				
		▌		0				
		○		0			H2S odor at 14'	
15				0			Bottom of boring at 15' BGS	15

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-29

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	DP-13	1 of 1

Project Name: Kimberly Clark-Everett Mill

Ground Surface Elev

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Depth to Water (ft BGS) 5.5

Sampling Method: Continuous Core

Start/Finish Date 2/15/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Concrete	▌ CC-1				■	Asphalt	
	Hydrated medium bentonite chips	▌		0			Very moist, brown, very gravelly SAND (SP); poorly graded fine-to-medium sand	
		▌		0				
		▌	DP-13-3-4	0				
		○		0			Very moist, dark brown, slightly gravelly SILT (ML)	
5	▼	▌ CC-2		0				5
		▌		0			Wet, brown, very silty GRAVEL (GM); fine to medium subangular gravel; debris (firebrick, ceramic, wood)	
		○		0				
		○		0				
		○		0				
10		▌ CC-3		0				10
		▌		0			Wet, dark gray to black, sandy SILT (ML), no odor	
		▌	DP-13-12-13	0				
		▌		0				
		○		0			Wet, black SAND (SP); trace silt, fine to medium sand	
15				0			Bottom of boring at 15' BGS	15

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-30

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	DP-18	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core
Ground Surface Elev
Depth to Water (ft BGS) 5
Start/Finish Date 2/16/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
0	Concrete	▌ CC-1				▨	Wood chips	
1		▌		0		▨		
2		▌		0		▨		
2.5	Hydrated medium bentonite chips	▌				▥	Moist, gray, sandy, gravelly SILT (ML); poorly graded fine-to-medium subrounded gravel	
3		▌	DP-18-2.5-3.5	0		▥		
4		○		0		▥		
5	▼	▌ CC-2		0		▥		5
6		▌		0		▥		
7		▌		0		▥		
8		▌		0		▥		
9		▌		0		▥		
9.5		○				▥		
10							Bottom of boring at 10' BGS	10
15								15

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-31

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	DP-19	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 5

Start/Finish Date 2/16/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
0	Concrete	CC-1		0 0			Wood chips	
2.5	Hydrated medium bentonite chips		DP-19-2.5-3.5	0 0			Moist, gray, slightly gravelly, very silty SAND (SM); fine sand	
5	▼	CC-2		0				5
6				0 0 0 0			Wet, gray to blue-gray, slightly gravelly SILT (ML); slight H2S odor	
10		CC-3						10
15							Bottom of boring at 15' BGS	15

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-32

Boring Log

Project Number	Boring Number	Sheet
110207	DP-20	1 of 1

Project Name: Kimberly Clark-Everett Mill

Ground Surface Elev

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Depth to Water (ft BGS) 6

Sampling Method: Continuous Core

Start/Finish Date 2/16/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Concrete	CC-1		0 0			Wood chips	
	Hydrated medium bentonite chips		DP-20-2.5-3.5	0			Moist, gray, gravelly, silty SAND (SM); fine sand	
		○		0			Moist, dark gray, gravelly, sandy SILT (ML)	
5		CC-2		0			Concrete rubble 5' to 6'	5
	▼			0 0 0			Wet, black, gravelly, silty SAND (SM); Wood chips at 7', fine sand	
		○		0			Wet, brown, sandy SILT (ML)	
10							Bottom of boring at 10' BGS	10
15								15

Sampler Type:

○ No Recovery

▌▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-33

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	DP-21	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

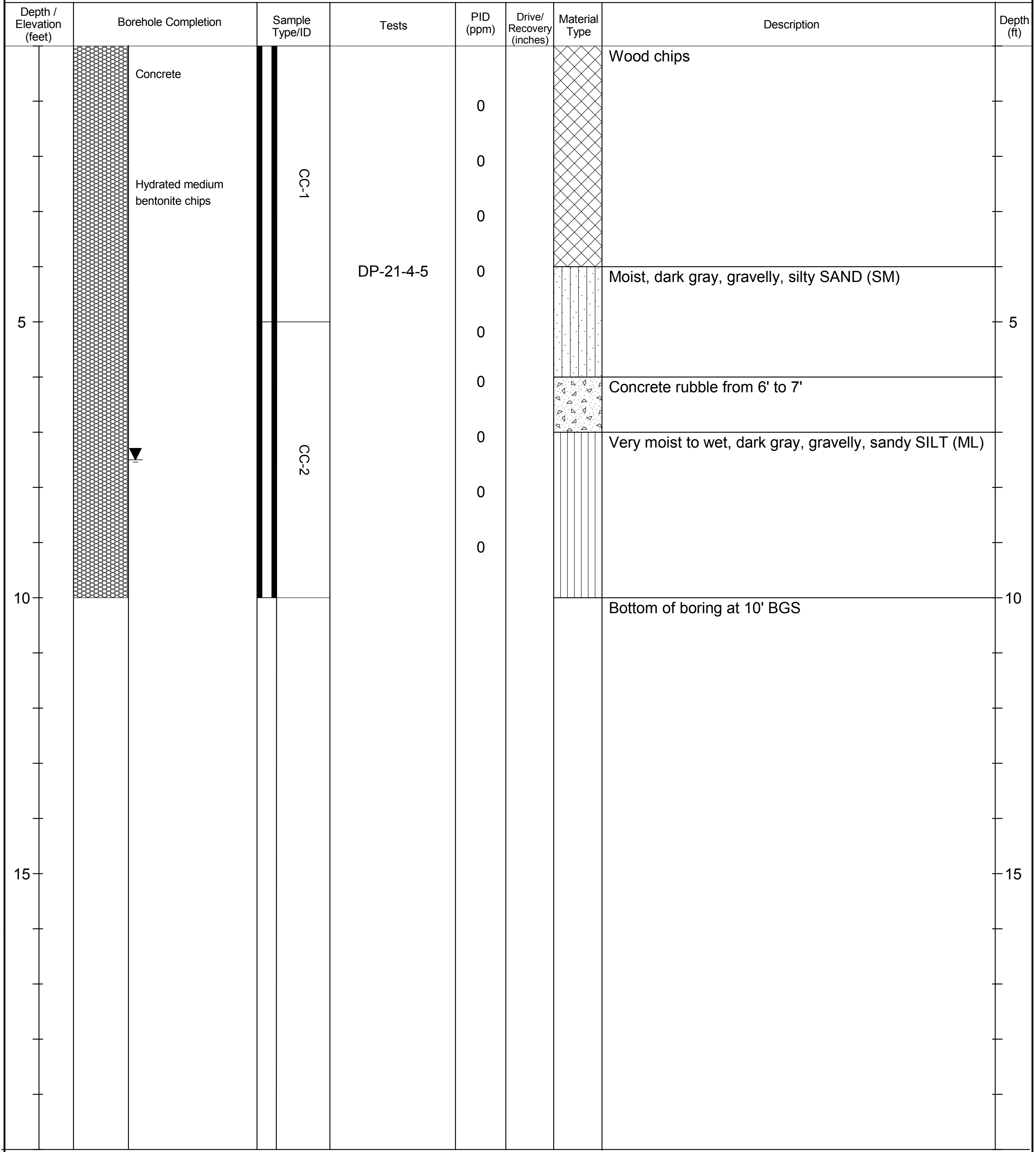
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 7.5

Start/Finish Date 2/16/2012



Tests	PID (ppm)
	0
	0
	0
DP-21-4-5	0
	0
	0
	0
	0
	0

Description:

Wood chips

Moist, dark gray, gravelly, silty SAND (SM)

Concrete rubble from 6' to 7'

Very moist to wet, dark gray, gravelly, sandy SILT (ML)

Bottom of boring at 10' BGS

Sampler Type:

○ No Recovery

▌▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-34

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	DP-22	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS)

Start/Finish Date 2/16/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Concrete Hydrated medium bentonite chips	▌ CC-1		0 0		▨	Wood chips	
			DP-22-3-4	0			Moist, gray, very silty SAND (SM); fine sand	
5		○		0 0			Moist, dark gray, sandy, gravelly SILT (ML)	5
		▌ CC-2		0			Concrete rubble 6' to 7'	
		○		0 0 0 0			Moist, gray, sandy SILT (ML); silt is mottled brown and gray	
10							Bottom of boring at 10' BGS	10
15								15

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-35

_ENV PROBE LOG KIMBERLY CLARK-EVERETT.GPJ January 17, 2013

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF11-B-01	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 3 ATD

Start/Finish Date 9/5/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	3/8" hydrated bentonite chips	CC-1	GF11-B-01-0-1	0			Asphalt	
							Moist, brown gray, silty GRAVEL (GM); fine subangular gravel	
			GF11-B-01-2-3	0 0			Moist, black, slightly gravelly SAND (SP); trace silt; fine sand Thin bed silt	
	▽	○					No recovery	
5	▽	CC-2	GF11-B-01-5-6	0			Wet, black, slightly gravelly, slightly silty SAND (SP-SM); fine sand, trace organics	5
				0			Wet, black SAND (SP); fine sand	
		○		0			No recovery	
10							Bottom of boring at 10' BGS	10
15								15
20								20
25								25

Sampler Type:

○ No Recovery

▌▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET/MAR

Approved by: SJG

Figure No. A-36

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF11-B-02	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

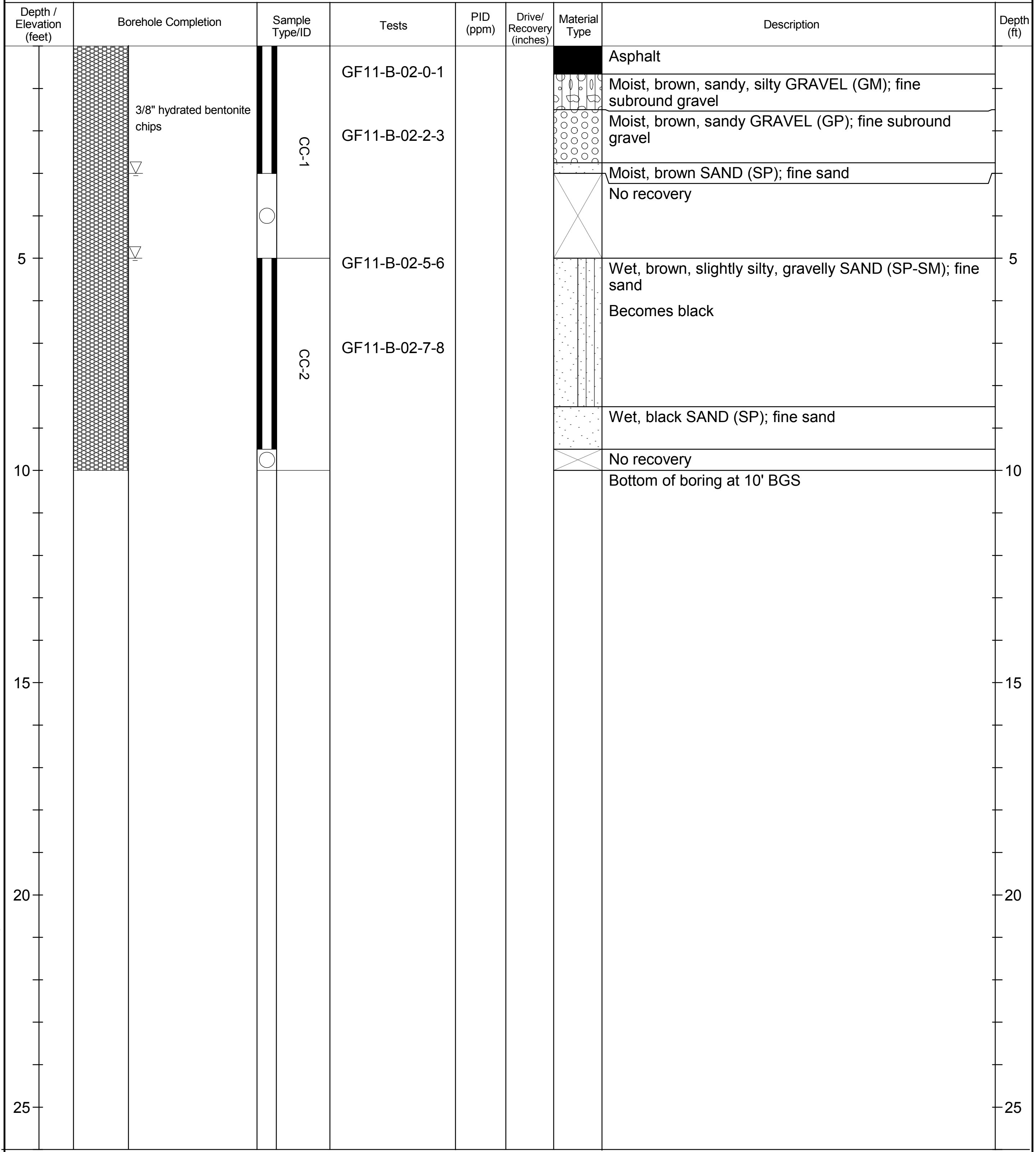
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 3 ATD

Start/Finish Date 9/5/2012



Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
0	3/8" hydrated bentonite chips	CC-1	GF11-B-02-0-1				Asphalt	
							Moist, brown, sandy, silty GRAVEL (GM); fine subround gravel	
			GF11-B-02-2-3				Moist, brown, sandy GRAVEL (GP); fine subround gravel	
	▽						Moist, brown SAND (SP); fine sand	
		○					No recovery	
5	▽	CC-2	GF11-B-02-5-6				Wet, brown, slightly silty, gravelly SAND (SP-SM); fine sand Becomes black	5
			GF11-B-02-7-8					
							Wet, black SAND (SP); fine sand	
		○					No recovery	
10							Bottom of boring at 10' BGS	10
15								15
20								20
25								25

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET/MAR

Approved by: SJG

Figure No. A-37

Aspect CONSULTING	# Boring Log	
Project Number 110207	Boring Number GF11-B-03	Sheet 1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 3 ATD

Start/Finish Date 9/5/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	▨	▌ CC-1				■	Asphalt	
	▨	▌	GF11-B-03-0-1	0		⛆	Moist, brown, gravelly SAND (SP); poorly graded fine to medium sand	
	▨ 3/8" hydrated bentonite chips	▌				⛆	Becomes dark gray to black, slightly gravelly; fine sand	
	▨	▌	GF11-B-03-2-3	0		⛆		
	▨ ▽	▌		0		⛆	Becomes wet, gray; medium to coarse sand	
	▨	▌		0		⛆	Becomes brown	
	▨	○				☒	No recovery	
5	▨	▌ CC-2	GF11-B-03-5-6			⛆	Wet, gray to brown, gravelly SAND (SP); poorly graded fine to medium sand	5
	▨	▌		0		⛆		
	▨	▌		0		⛆	Thin bed silty sand Becomes gray	
	▨	▌		0		⛆	Thin bed black clayey silt	
	▨	▌		0		⛆	Thin bed sandy organic silt	
	▨	○				☒	No recovery	
10							Bottom of boring at 10' BGS	10
15								15
20								20
25								25

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET/MAR

Approved by: SJG

Figure No. A-38

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF9-B-01	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core
Ground Surface Elev
Depth to Water (ft BGS) 5 ATD
Start/Finish Date 9/6/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	3/8" hydrated bentonite chips	CC-1					Wood chips	
				0			Moist, dark gray, gravelly, very silty SAND (SM); fine sand, trace organics	
				0				
				0				
			GF9-B-01-4-4.5	0				
		○					No recovery	
5	▽	CC-2	GF9-B-01-5-6				Wet, dark gray, clayey SILT (ML)	5
				0				
				0				
			GF9-B-01-8-9	0				
		○		0			No recovery	
10				0			Bottom of boring at 10' BGS	10
15								15
20								20
25								25

Sampler Type:
○ No Recovery
▌▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET/MAR
Approved by: SJG
Figure No. A-39

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF9-B-02	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core

Ground Surface Elev
Depth to Water (ft BGS) 5 ATD
Start/Finish Date 9/6/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	3/8" hydrated bentonite chips	▌ CC-1					Asphalt	
				0			Moist, brown SAND (SW); fine to coarse sand	
				0			Moist, dark brown, gravelly, silty SAND (SM)	
			GF9-B-01-3-3.5	0			Moist to wet, brown, gravelly SAND (SP); poorly graded fine to medium sand	
		○		0			No recovery	
5	▽ ▽	▌ CC-2	GF9-B-01-6-7	0 0 0			Wet, dark brown to dark gray, gravelly SAND (SP); poorly-graded fine-to-medium sand, numerous organics	5
			GF9-B-01-9-9.5	0			Wet, dark brown to black PEAT (PT)	
		○		0			No recovery	
10							Bottom of boring at 10' BGS	10
15								15
20								20
25								25

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET/MAR
Approved by: SJG
Figure No. A-40

_ENV PROBE LOG KIMBERLY CLARK-EVERETT.GPJ January 17, 2013

Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	GF9-MW-01	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

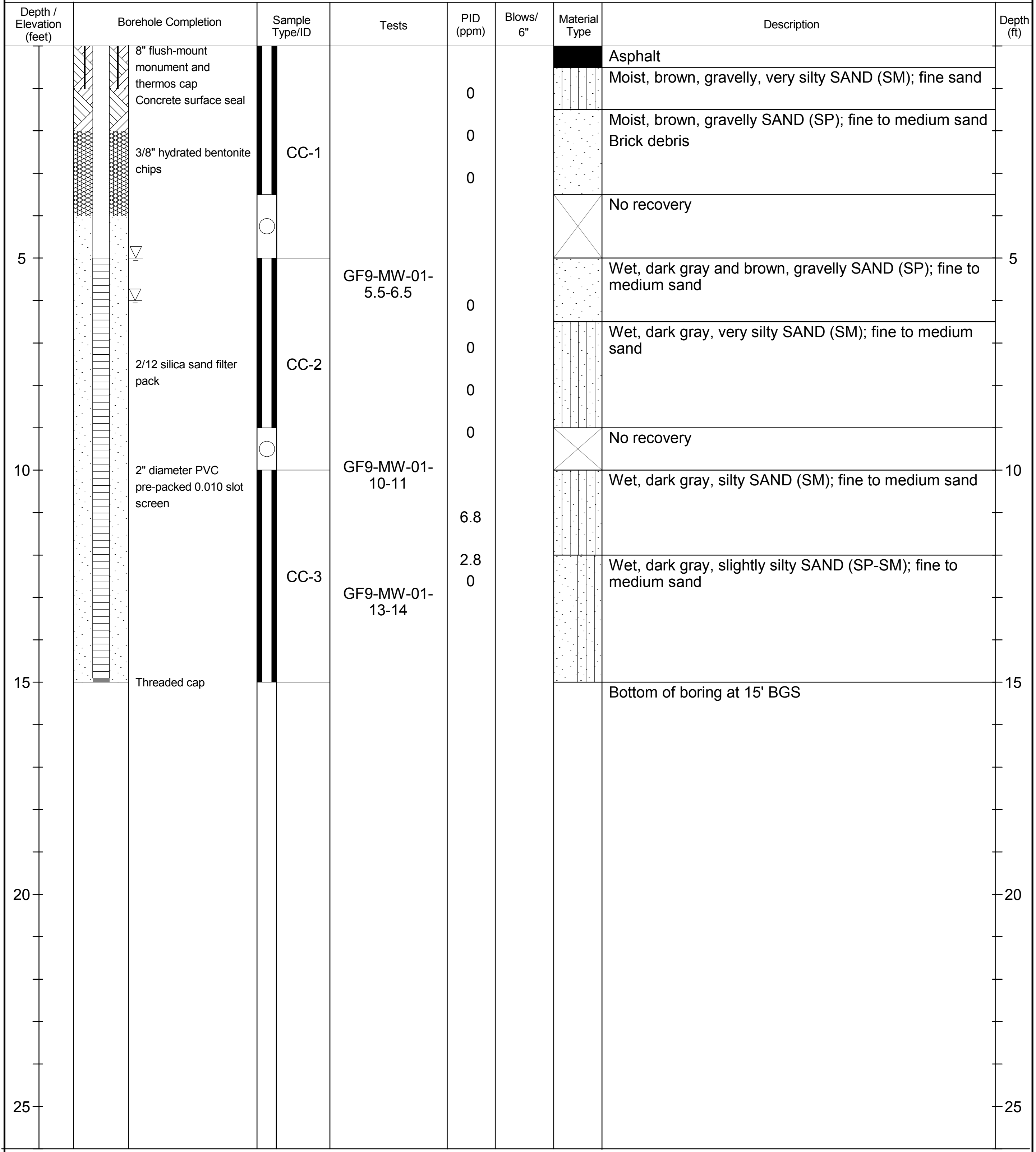
Sampling Method: Continuous Core

Ground Surface Elev

Top of Casing Elev.

Depth to Water (ft BGS) 5

Start/Finish Date 9/6/2012



Borehole Completion:

- 8" flush-mount monument and thermos cap
- Concrete surface seal
- 3/8" hydrated bentonite chips
- 2/12 silica sand filter pack
- 2" diameter PVC pre-packed 0.010 slot screen
- Threaded cap

Sample Type/ID: CC-1, CC-2, CC-3

Tests: GF9-MW-01-5.5-6.5, GF9-MW-01-10-11, GF9-MW-01-13-14

PID (ppm): 0, 0, 0, 0, 0, 0, 0, 6.8, 2.8, 0

Description:

- Asphalt
- Moist, brown, gravelly, very silty SAND (SM); fine sand
- Moist, brown, gravelly SAND (SP); fine to medium sand
  Brick debris
- No recovery
- Wet, dark gray and brown, gravelly SAND (SP); fine to medium sand
- Wet, dark gray, very silty SAND (SM); fine to medium sand
- No recovery
- Wet, dark gray, silty SAND (SM); fine to medium sand
- Wet, dark gray, slightly silty SAND (SP-SM); fine to medium sand
- Bottom of boring at 15' BGS

Sampler Type:

○ No Recovery

▮ Continuous Core

PID - Photoionization Detector

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET/MAR

Approved by: SJG

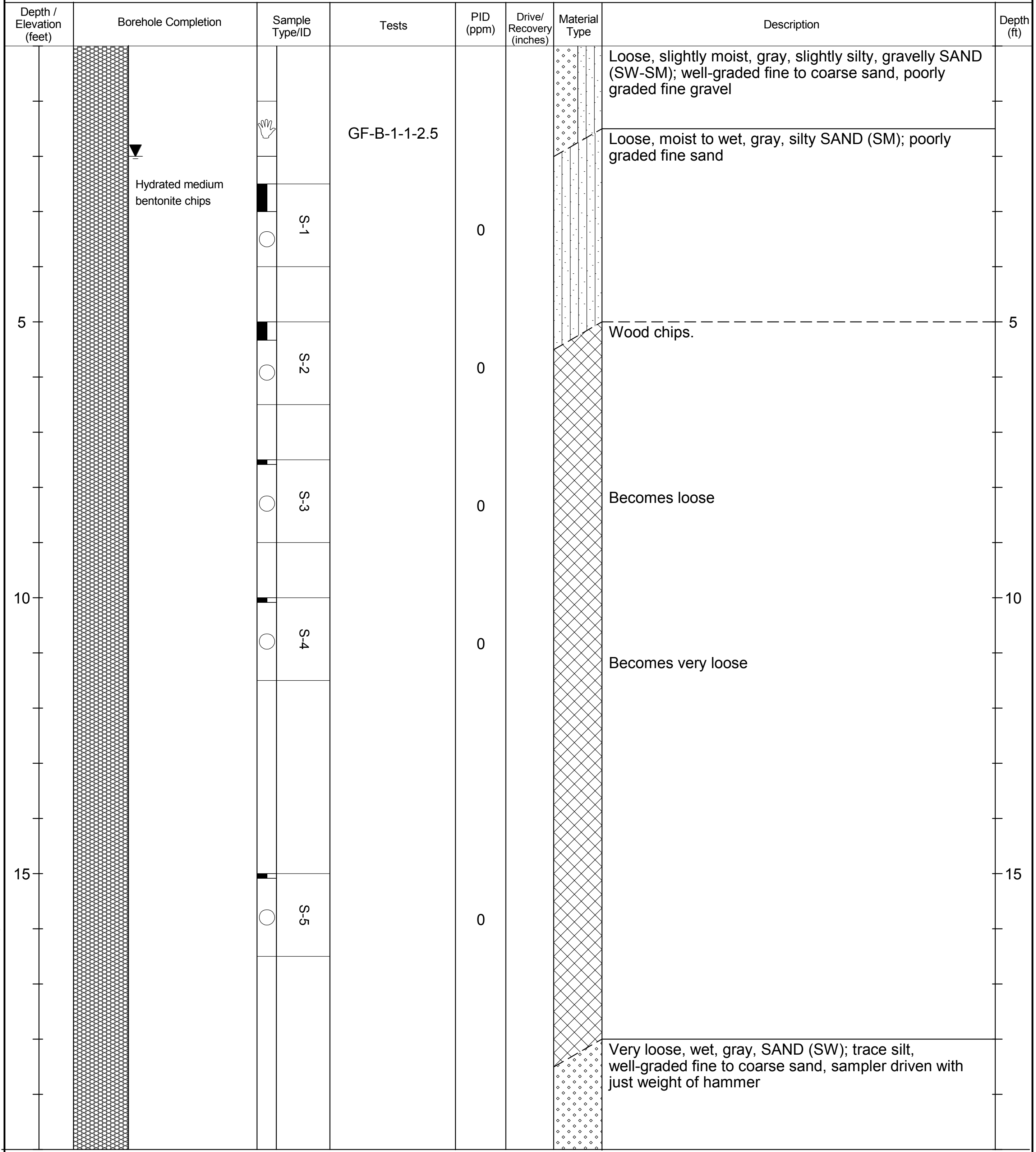
Figure No. A-41

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-01	1 of 2

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger
Sampling Method: Splitspoon
Ground Surface Elev
Depth to Water (ft BGS) 2
Start/Finish Date 5/25/2012



Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
							Loose, slightly moist, gray, slightly silty, gravelly SAND (SW-SM); well-graded fine to coarse sand, poorly graded fine gravel	
	▼	🖑	GF-B-1-1-2.5				Loose, moist to wet, gray, silty SAND (SM); poorly graded fine sand	
	Hydrated medium bentonite chips	○ S-1		0				
5		○ S-2		0			Wood chips.	5
		○ S-3		0			Becomes loose	
10		○ S-4		0			Becomes very loose	10
15		○ S-5		0				15
							Very loose, wet, gray, SAND (SW); trace silt, well-graded fine to coarse sand, sampler driven with just weight of hammer	

Sampler Type:
○ No Recovery
🖑 Grab Sample
▐ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MV
Approved by: SJG
Figure No. A-42

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-01	2 of 2

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Hollow Stem Auger

Sampling Method: Splitspoon

Ground Surface Elev

Depth to Water (ft BGS) 2

Start/Finish Date 5/25/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Hydrated medium bentonite chips	S-6		0				
25		S-7		0			Becomes medium dense	25
							Bottom of boring at 26.5' BGS	
30								30
35								35

Sampler Type:

○ No Recovery

Grab Sample

▌ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MV

Approved by: SJG

Figure No. A-43

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-02	1 of 2

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

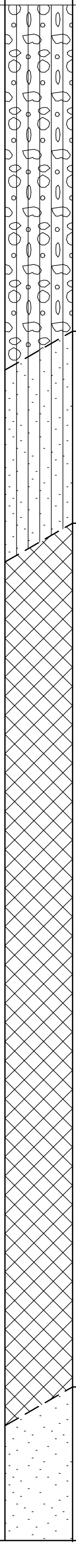
Driller/Method: Cascade Drilling / Hollow Stem Auger

Sampling Method: Splitspoon

Ground Surface Elev

Depth to Water (ft BGS) 2

Start/Finish Date 5/25/2012



Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
							ft	
	▼							
	Hydrated medium bentonite chips	S-1	GF-B-2-2.5-4	0				
							Medium dense, wet, black, silty SAND (SM); poorly graded fine sand	
5		S-2		0				5
							Becomes wood chips	
		S-3		0				
10		S-4		0				10
15		S-5		0				15
							Very loose, wet, gray, SAND (SP); trace silt, poorly graded fine to medium sand	

Sampler Type:

○ No Recovery

▌ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MV

Approved by: SJG

Figure No. A-44

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-02	2 of 2

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Hollow Stem Auger

Sampling Method: Splitspoon

Ground Surface Elev

Depth to Water (ft BGS) 2

Start/Finish Date 5/25/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Hydrated medium bentonite chips	○ S-6		0				
							Medium dense, wet, gray, SAND (SW); trace silt	
25		▌ S-7		0				25
							Bottom of boring at 26.5' BGS	
30								30
35								35

Sampler Type:

○ No Recovery

▌ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MV

Approved by: SJG

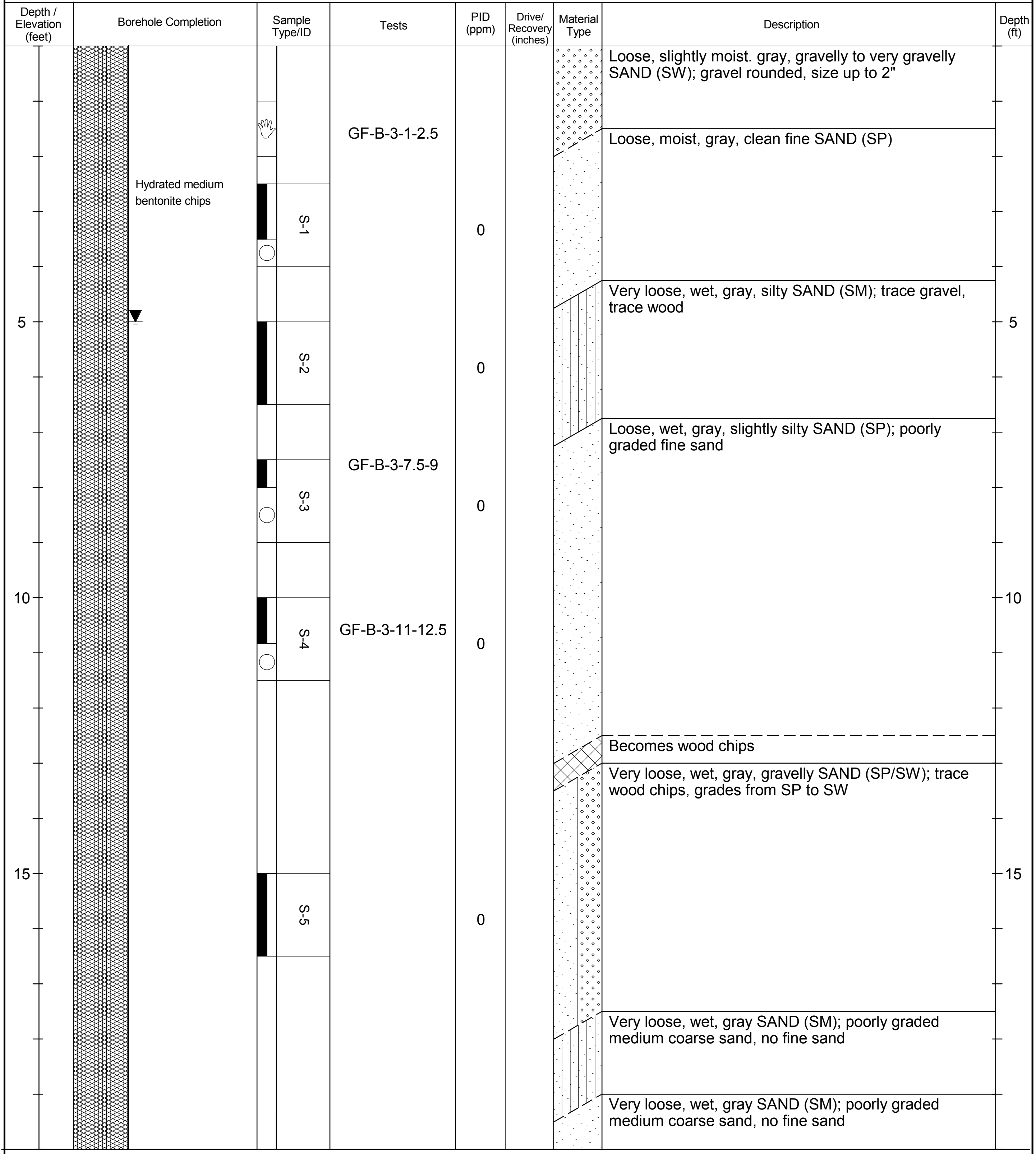
Figure No. A-45

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-03	1 of 2

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger
Sampling Method: Splitspoon
Ground Surface Elev
Depth to Water (ft BGS) 5
Start/Finish Date 5/29/2012



Sample Type/ID	Tests	PID (ppm)
Grab Sample	GF-B-3-1-2.5	
S-1		0
S-2		0
S-3	GF-B-3-7.5-9	0
S-4	GF-B-3-11-12.5	0
S-5		0

Loose, slightly moist. gray, gravelly to very gravelly SAND (SW); gravel rounded, size up to 2"

Loose, moist, gray, clean fine SAND (SP)

Very loose, wet, gray, silty SAND (SM); trace gravel, trace wood

Loose, wet, gray, slightly silty SAND (SP); poorly graded fine sand

Becomes wood chips

Very loose, wet, gray, gravelly SAND (SP/SW); trace wood chips, grades from SP to SW

Very loose, wet, gray SAND (SM); poorly graded medium coarse sand, no fine sand

Very loose, wet, gray SAND (SM); poorly graded medium coarse sand, no fine sand

Sampler Type:
○ No Recovery
Grab Sample
▌ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: GL
Approved by: SJG
Figure No. A-46

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-03	2 of 2

Project Name: Kimberly Clark-Everett Mill

Ground Surface Elev

Location: Everett, WA

Driller/Method: Cascade Drilling / Hollow Stem Auger

Depth to Water (ft BGS) 5

Sampling Method: Splitspoon

Start/Finish Date 5/29/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	▨ Hydrated medium bentonite chips	▌ S-6		0		⁚		
25	▨	▌ S-7		0		⁚	Becomes dense	25
							Bottom of boring at 26.5' BGS	
30								30
35								35

Sampler Type:

○ No Recovery

Grab Sample

▌ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: GL

Approved by: SJG

Figure No. A-47

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-04	1 of 2

Project Name: Kimberly Clark-Everett Mill

Ground Surface Elev

Location: Everett, WA

Driller/Method: Cascade Drilling / Hollow Stem Auger

Depth to Water (ft BGS) 9

Sampling Method: Splitspoon

Start/Finish Date 5/25/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
							Slightly moist, gray-brown, slightly silty, slightly sandy GRAVEL (GW)	
							Loose, moist, gray, silty SAND (SM); poorly graded fine sand	
	Hydrated medium bentonite chips	S-1	GF-B-4-2.5-4	0				
5		S-2		0				5
							Becomes very loose	
		S-3	GF-B-4-7.5-9	0			Loose, moist, gray, silty SAND (SM); poorly graded fine sand with wood chips present	
	▼							
							Very loose, wet, gray SAND (SP); trace silt, poorly graded fine to medium sand	
10		S-4		0				10
							Soft, wet, gray, sandy SILT (ML) interbedded with wet, gray, silty SAND (SM); poorly graded fine to medium sand	
15		S-5		0				15
							Very loose, wet, gray, silty SAND (SM); poorly graded fine to medium sand with wood chips present	

Sampler Type:

○ No Recovery

▮ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MV

Approved by: SJG

Figure No. A-48

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-04	2 of 2

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Hollow Stem Auger

Sampling Method: Splitspoon

Ground Surface Elev

Depth to Water (ft BGS) 9

Start/Finish Date 5/25/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Hydrated medium bentonite chips	S-6		0				
							Loose, wet, gray, SAND (SW); trace silt, well-graded fine to coarse sand	
25		S-7		0				25
							Bottom of boring at 26.5' BGS	
30								30
35								35

Sampler Type:

○ No Recovery

▮ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MV

Approved by: SJG

Figure No. A-49

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-05	1 of 2

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger
Sampling Method: Splitspoon
Ground Surface Elev
Depth to Water (ft BGS) 5
Start/Finish Date 5/29/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
							Loose, slightly moist, gray, gravelly SAND (SW)	
		✋	GF-B-5-1-2.5					
							Loose, very moist, slightly gravelly SAND (SP); trace coarse sand, poorly graded fine to medium sand	
	Hydrated medium bentonite chips							
		▮ S-1		0				
5	▼							5
		▮ ○ S-2		0			Very loose, wet, slightly gravelly SAND (SP); poorly graded medium sand	
		▮ ○ S-3	GF-B-5-7.5-9	0			Shells present, organic or slight hydrocarbon odor	
10							Trace silt, shells present	10
		▮ S-4		0				
							Becomes coarser grained, poorly graded medium to coarse sand, shells present	
15							Very loose silty SAND (SP); poorly graded fine sand, wood detritus present	15
		▮ S-5		0			Medium dense, wet, gray SAND (SP); trace organics, poorly graded medium sand, organic or slight hydrocarbon odor	

Sampler Type:

○ No Recovery
✋ Grab Sample
▮ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level
▽ Water Level (ATD)

Logged by: GL
Approved by: SJG
Figure No. A-50

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-05	2 of 2

Project Name: Kimberly Clark-Everett Mill

Ground Surface Elev

Location: Everett, WA

Driller/Method: Cascade Drilling / Hollow Stem Auger

Depth to Water (ft BGS) 5

Sampling Method: Splitspoon

Start/Finish Date 5/29/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Hydrated medium bentonite chips	S-6		0			Becomes coarse grained SAND (SP); trace shells, poorly graded medium to coarse sand, slight marine/ organic/ slight hydrocarbon odor	
25		S-7		0				25
							Bottom of boring at 26.5' BGS	
30								30
35								35

Sampler Type:

○ No Recovery

✋ Grab Sample

▌ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: GL

Approved by: SJG

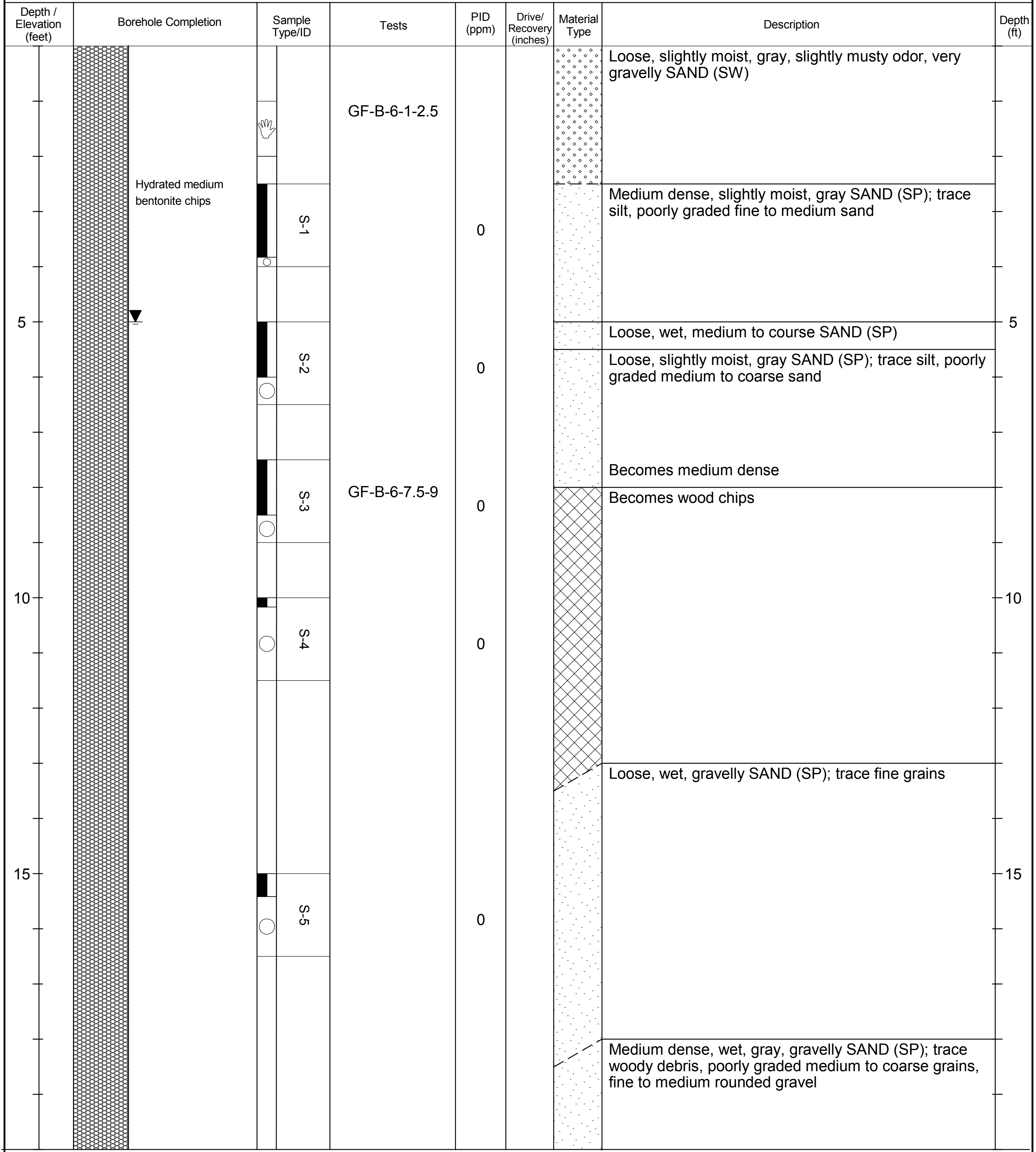
Figure No. A-51

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-06	1 of 2

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger
Sampling Method: Splitspoon
Ground Surface Elev
Depth to Water (ft BGS) 5
Start/Finish Date 5/29/2012



Depth (ft)	Sample Type/ID	Tests	PID (ppm)	Description
0				Loose, slightly moist, gray, slightly musty odor, very gravelly SAND (SW)
1	🖐	GF-B-6-1-2.5		
2.5	S-1		0	Medium dense, slightly moist, gray SAND (SP); trace silt, poorly graded fine to medium sand
5	S-2		0	Loose, wet, medium to course SAND (SP)
5.5				Loose, slightly moist, gray SAND (SP); trace silt, poorly graded medium to coarse sand Becomes medium dense
7.5	S-3	GF-B-6-7.5-9	0	
8				Becomes wood chips
10	S-4		0	
13				Loose, wet, gravelly SAND (SP); trace fine grains
15	S-5		0	
18				Medium dense, wet, gray, gravelly SAND (SP); trace woody debris, poorly graded medium to coarse grains, fine to medium rounded gravel

Sampler Type:
○ No Recovery
🖐 Grab Sample
▌ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: GL
Approved by: SJG
Figure No. A-52

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-06	2 of 2

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Hollow Stem Auger

Sampling Method: Splitspoon

Ground Surface Elev

Depth to Water (ft BGS) 5

Start/Finish Date 5/29/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	▓ Hydrated medium bentonite chips	▌ ○ S-6	GF-B-6-20-21.5	0		⠄		
25		▌ S-7		0		⠄		25
							Bottom of boring at 26.5' BGS	
30								30
35								35

Sampler Type:

○ No Recovery

☐ Grab Sample

▌ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: GL

Approved by: SJG

Figure No. A-53

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-07	1 of 2

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

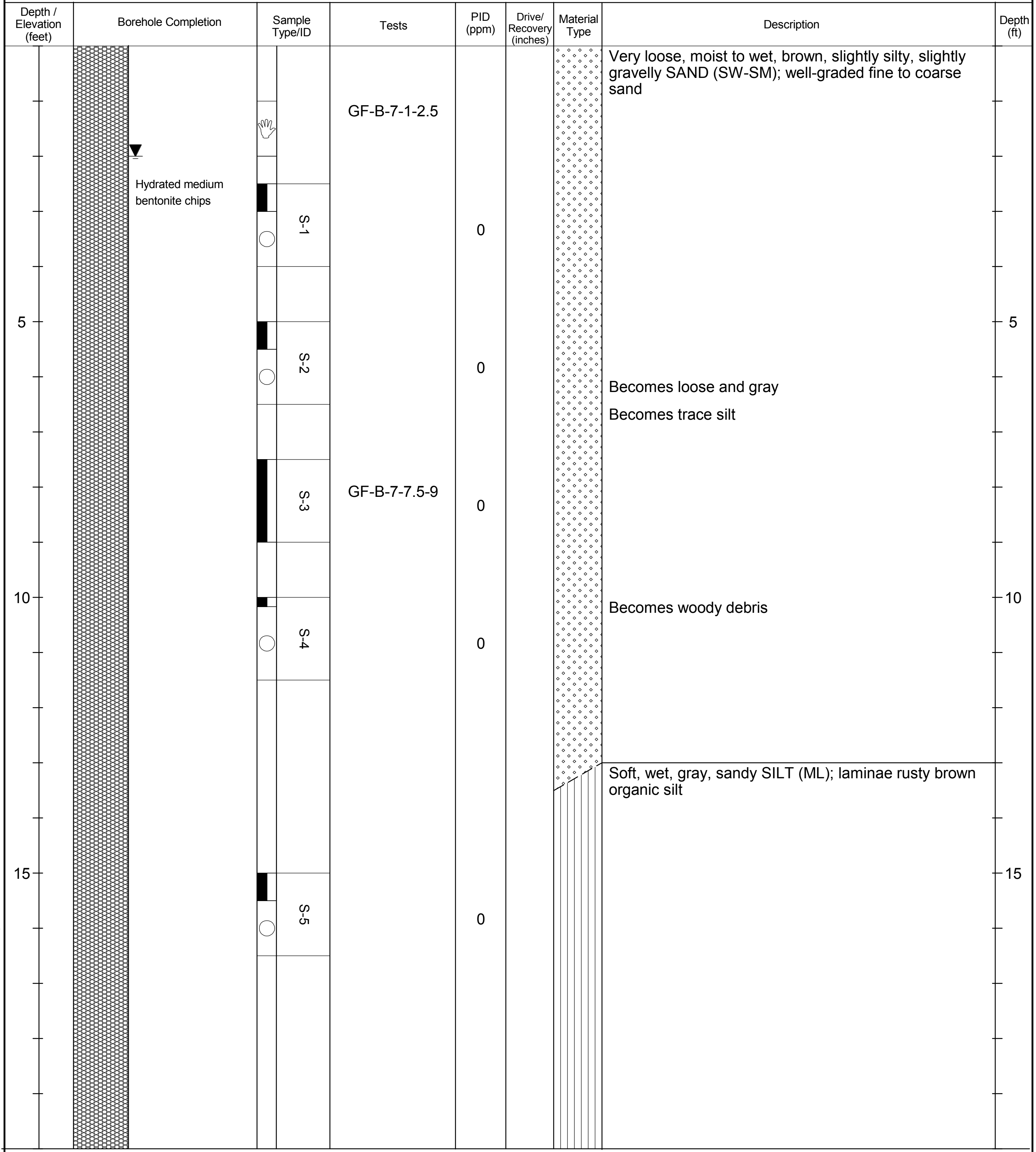
Driller/Method: Cascade Drilling / Hollow Stem Auger

Sampling Method: Splitspoon

Ground Surface Elev

Depth to Water (ft BGS) 2

Start/Finish Date 5/21/2012



Very loose, moist to wet, brown, slightly silty, slightly gravelly SAND (SW-SM); well-graded fine to coarse sand

Becomes loose and gray

Becomes trace silt

Becomes woody debris

Soft, wet, gray, sandy SILT (ML); laminae rusty brown organic silt

Sampler Type:

○ No Recovery

✋ Grab Sample

▮ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MV

Approved by: SJG

Figure No. A-54

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-07	2 of 2

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger
Sampling Method: Splitspoon
Ground Surface Elev
Depth to Water (ft BGS) 2
Start/Finish Date 5/21/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Hydrated medium bentonite chips	▌○ S-6		0			Becomes very stiff	
							Dense, wet, brown, silty SAND (SM); trace gravel, poorly graded fine to medium sand, diamict fabric present	
25		▌○ S-7		0				25
							Bottom of boring at 26.5' BGS	
30								30
35								35

Sampler Type:
○ No Recovery
Grab Sample
▌ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MV
Approved by: SJG
Figure No. A-55

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-08	1 of 2

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 10

Start/Finish Date 5/30/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
				0				
		CC-1		0			Moist, gray, gravelly, silty SAND (SM)	
			GF-B-8-1-2.5	0				
	Hydrated medium bentonite chips			0				
				0			Moist, brown, SAND (SP); poorly graded medium to coarse sand Becomes poorly graded fine sand with iron staining	
5				0				5
				0				
		CC-2	GF-B-8-7.5-9	0			Very moist, dark gray, very sandy SILT (ML) and very silty SAND (SM)	
				0			Very moist, brown SAND (SP); poorly graded fine sand Becomes medium grained sand	
		○		0			Becomes black Becomes wet, gray, and well-graded fine to coarse sand	
10	▼			0				10
				0				
		CC-3		0			Wet, gray, sandy, GRAVEL (GP); poorly graded fine gravel	
				0			Wet, gray, slightly gravelly SAND (SP); trace course grains poorly graded fine to medium sand	
		○		0			Becomes woody debris	
15				0				15
				0				
		CC-4		0				
				0				
				0				

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-56

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-08	2 of 2

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 10

Start/Finish Date 5/30/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Hydrated medium bentonite chips	CC-4		0			Becomes mostly medium grained	
				0				
				0				
				1.5			Slight hydrogen sulfide odor	
				2.7				
25				0			Bottom of boring at 25' BGS	25
30								30
35								35

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-57

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-09	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

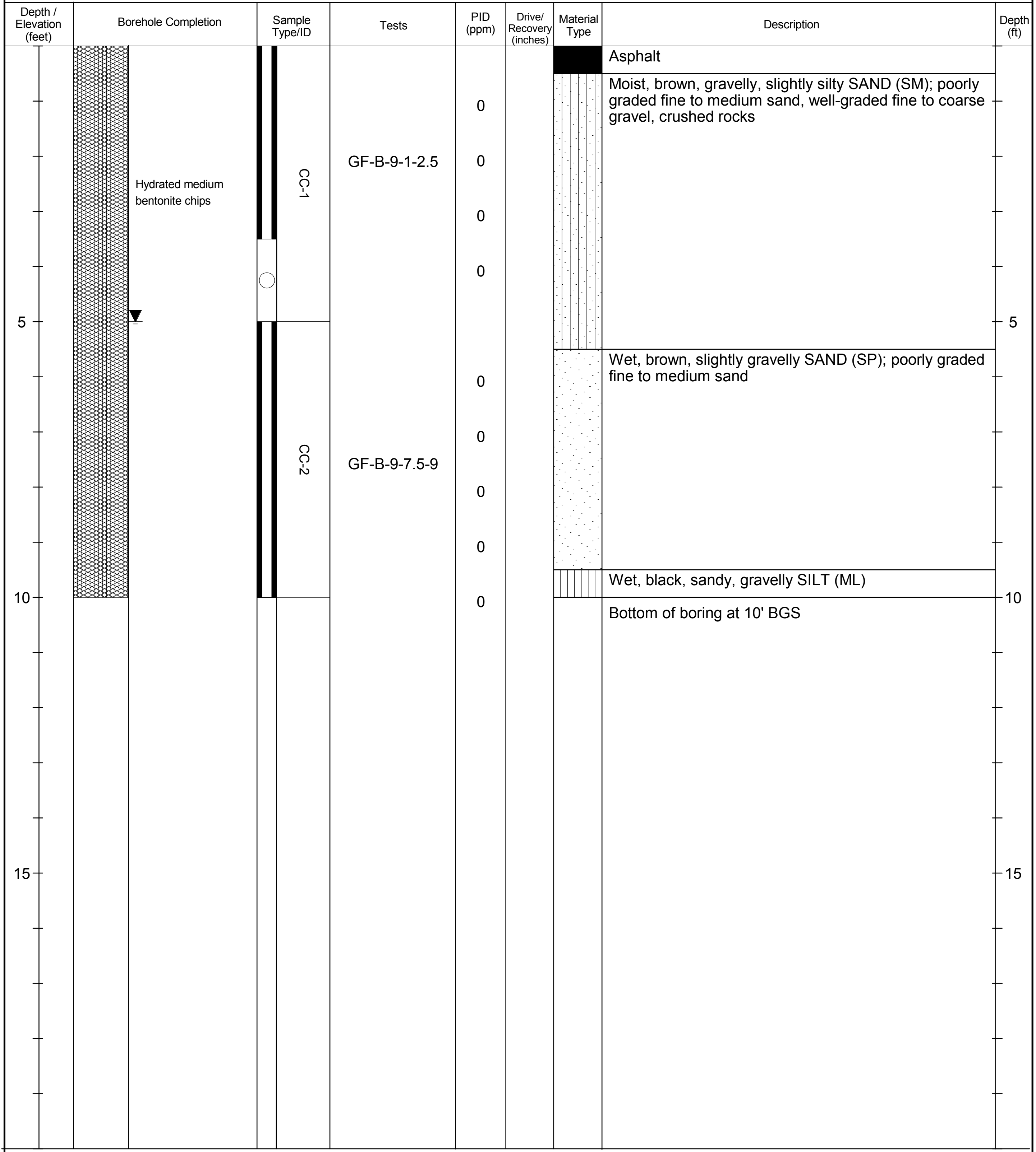
Driller/Method: Cascade Drilling / Direct Push Probe

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 5

Start/Finish Date 6/28/2012



Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
							Asphalt	
							Moist, brown, gravelly, slightly silty SAND (SM); poorly graded fine to medium sand, well-graded fine to coarse gravel, crushed rocks	
				0				
	Hydrated medium bentonite chips	CC-1	GF-B-9-1-2.5	0				
				0				
		○		0				
5	▼							5
							Wet, brown, slightly gravelly SAND (SP); poorly graded fine to medium sand	
				0				
				0				
		CC-2	GF-B-9-7.5-9					
				0				
				0				
							Wet, black, sandy, gravelly SILT (ML)	
10				0			Bottom of boring at 10' BGS	10
15								15

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET

Approved by: SJG

Figure No. A-58

_ENV PROBE LOG KIMBERLY CLARK-EVERETT.GPJ January 17, 2013

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-10	1 of 2

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger
Sampling Method: Splitspoon
Ground Surface Elev
Depth to Water (ft BGS) 6.5
Start/Finish Date 5/24/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
							Concrete	
		🖐	GF-B-10-1-2.5					
							Loose, moist, brown-gray, silty SAND (SM); poorly graded fine sand	
		▌ ○ S-1		0				
							Medium stiff, moist, brown, sandy SILT (ML)	
5	Backfilled with medium bentonite chips						Loose, moist, gray, silty SAND (SM)	5
		▌ ○ S-2		0				
	▼							
							Stiff, wet, brown, sandy SILT (ML)	
			GF-B-10-7.5-9					
		▌ ○ S-3		0			Loose, wet, gray, SAND (SP); trace silt, poorly sorted medium to coarse sand	
10		▌ ○ S-4		0				10
15		▌ ○ S-5		0			Becomes slightly gravelly and medium dense	15

Sampler Type:
○ No Recovery
🖐 Grab Sample
▌ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MV
Approved by: SJG
Figure No. A-59

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-10	2 of 2

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Hollow Stem Auger

Sampling Method: Splitspoon

Ground Surface Elev

Depth to Water (ft BGS) 6.5

Start/Finish Date 5/24/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	▨	▌ ○ S-6		0			Becomes very loose, poorly sorted fine to medium sand	
	▨						Medium dense, wet, gray, silty SAND (SM); trace coarse sand, poorly graded fine to medium sand	
25	▨	▌ ○ S-7		0				25
							Bottom of boring at 26.5' BGS	
30								30
35								35

Sampler Type:

○ No Recovery

☝ Grab Sample

▌ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MV

Approved by: SJG

Figure No. A-60

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-11	1 of 2

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

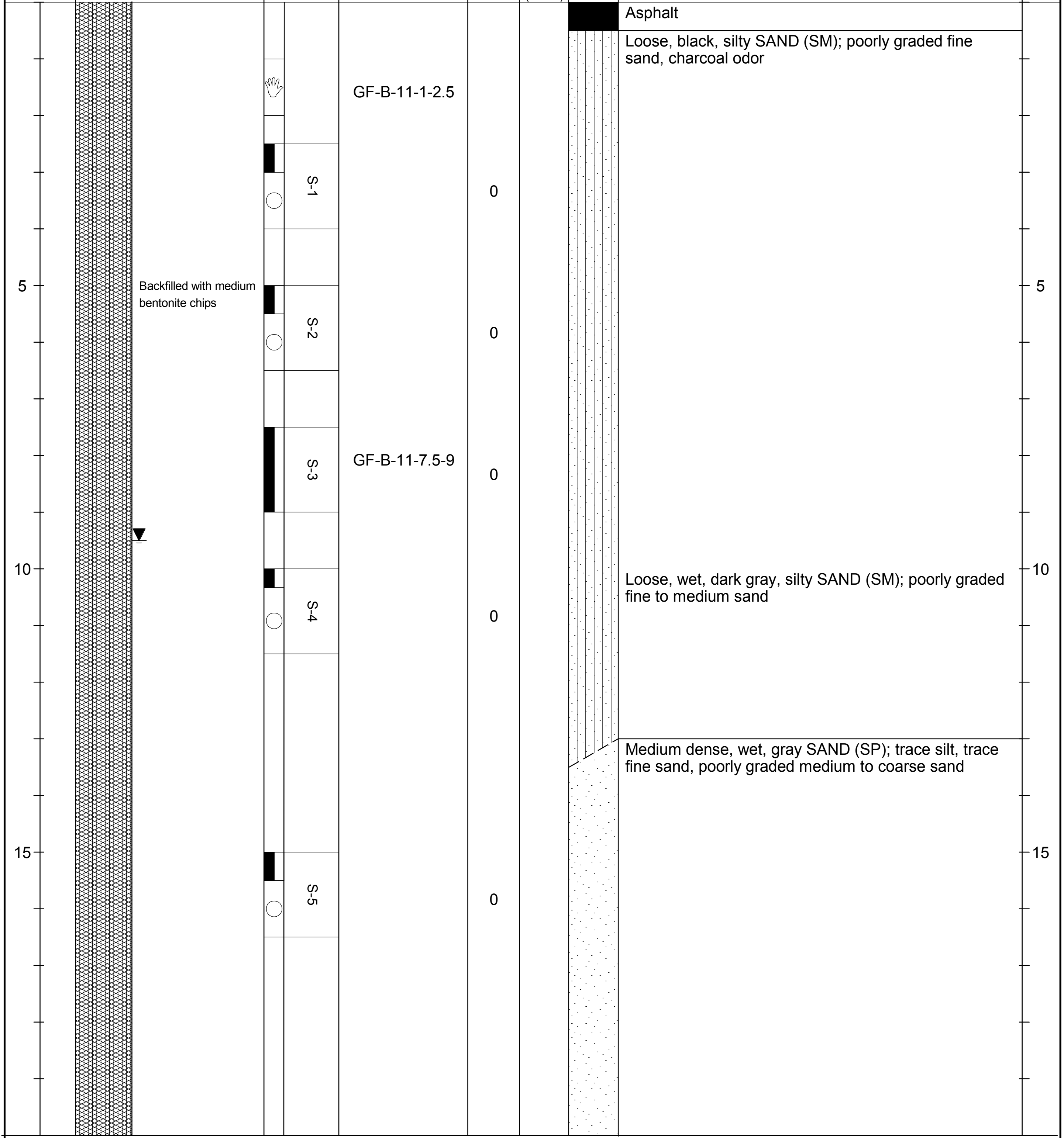
Driller/Method: Cascade Drilling / Hollow Stem Auger

Sampling Method: Splitspoon

Ground Surface Elev

Depth to Water (ft BGS) 9.5

Start/Finish Date 5/24/2012



Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
							Asphalt	
							Loose, black, silty SAND (SM); poorly graded fine sand, charcoal odor	
		✋	GF-B-11-1-2.5					
		▌○ S-1		0				
5	Backfilled with medium bentonite chips							5
		▌○ S-2		0				
		▌ S-3	GF-B-11-7.5-9	0				
	▼							
10							Loose, wet, dark gray, silty SAND (SM); poorly graded fine to medium sand	10
		▌○ S-4		0				
							Medium dense, wet, gray SAND (SP); trace silt, trace fine sand, poorly graded medium to coarse sand	
15								15
		▌○ S-5		0				

Sampler Type:

○ No Recovery

✋ Grab Sample

▌ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MV

Approved by: SJG

Figure No. A-61

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-11	2 of 2

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Hollow Stem Auger

Sampling Method: Splitspoon

Ground Surface Elev

Depth to Water (ft BGS) 9.5

Start/Finish Date 5/24/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
		▌ S-6 ○		0			Becomes trace gravel (1" thick layer of wood chips)	
25		▌ S-7 ○		0			Becomes trace silt, trace fine sand, and wood fragments	25
							Bottom of boring at 26.5' BGS	
30								30
35								35

Sampler Type:

○ No Recovery

✋ Grab Sample

▌ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MV

Approved by: SJG

Figure No. A-62

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-12	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 6

Start/Finish Date 6/28/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	▨	▌ CC-1				■	Asphalt debris	
	▨						Very moist, brown orange, mottled slightly silty gravelly SAND (SP); poorly graded fine to medium sand	
	▨		GF-B-12-1-2.5					
	▨	○		0				
5	▨ Backfilled with medium bentonite chips	▌ CC-2		0				5
	▼						Becomes wet	
	▨			0			Wet, dark gray, very sandy SILT (ML); poorly graded fine sand, rapid dilatancy	
	▨		GF-B-12-7.5-9	0				
	▨						Wood	
10				0			Bottom of boring at 10' BGS	10
15								15

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET

Approved by: SJG

Figure No. A-63

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-13	1 of 2

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger
Sampling Method: Splitspoon

Ground Surface Elev
Depth to Water (ft BGS) 3
Start/Finish Date 5/24/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
							Loose, moist, gray-brown, slightly silty, gravelly, SAND (SW); well-graded fine to coarse sand, angular gravel	
		✋	GF-B-13-1-2.5					
	▼	▌ ○ S-1		0			Becomes wet	
5	Backfilled with medium bentonite chips						Becomes trace gravel	5
		▌ ○ S-2		0				
							Loose, wet, SAND (SP); trace coarse sand, poorly graded fine to medium sand, shell fragments	
		▌ S-3		0				
							Loose, wet SAND (SW); well-graded fine to coarse sand and shell fragments	
10								10
		▌ ○ S-4	GF-B-13-10-11.5	0			Becomes trace coarse sand	
							Becomes very loose with wood chips from 12 to 13'	
		▌ ○ S-5		0				
							Very loose, wet, slightly silty SAND (SP); trace coarse sand, poorly sorted fine to medium sand, shell fragments, slight sulfide odor	
15								15
		▌ ○ S-6		0				

Sampler Type:
○ No Recovery
✋ Grab Sample
▌ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MV
Approved by: SJG
Figure No. A-64

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-13	2 of 2

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Hollow Stem Auger

Sampling Method: Splitspoon

Ground Surface Elev

Depth to Water (ft BGS) 3

Start/Finish Date 5/24/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	▨	▌ S-7		0				
	▨						Very dense, wet, gray, very silty, SAND (SM); trace coarse sand, poorly graded fine to medium sand, diamict fabric	
25	▨	▌ S-8		0				25
	▨						Bottom of boring at 25.5' BGS	
30								30
35								35

Sampler Type:

○ No Recovery

Grab Sample

▌ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MV

Approved by: SJG

Figure No. A-65

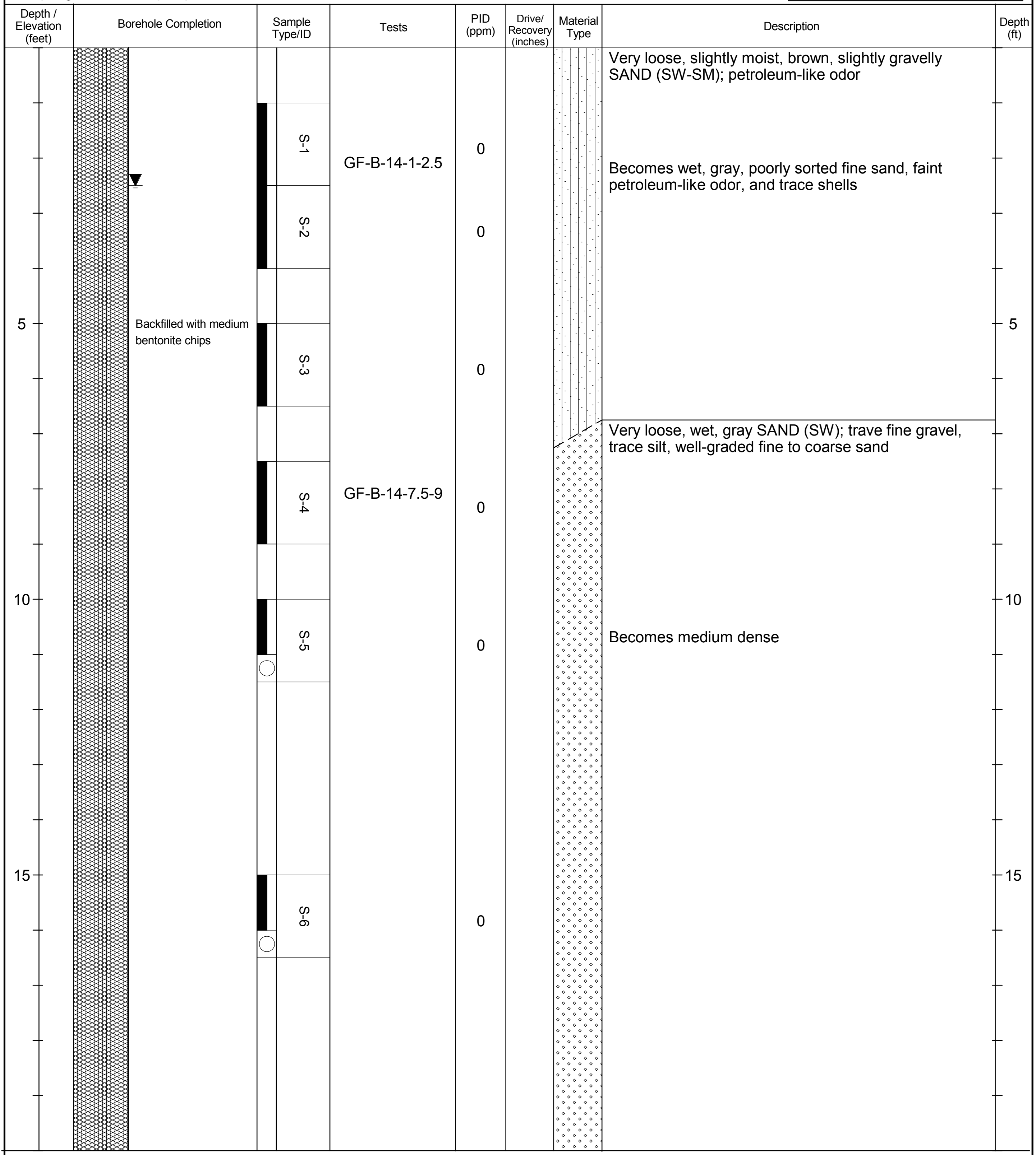
_ENV PROBE LOG KIMBERLY CLARK-EVERETT.GPJ January 17, 2013

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-14	1 of 2

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger
Sampling Method: Splitspoon
Ground Surface Elev
Depth to Water (ft BGS) 2.5
Start/Finish Date 5/23/2012



Sample Type/ID	Tests	PID (ppm)
S-1	GF-B-14-1-2.5	0
S-2		0
S-3		0
S-4	GF-B-14-7.5-9	0
S-5		0
S-6		0

Very loose, slightly moist, brown, slightly gravelly SAND (SW-SM); petroleum-like odor

Becomes wet, gray, poorly sorted fine sand, faint petroleum-like odor, and trace shells

Very loose, wet, gray SAND (SW); trave fine gravel, trace silt, well-graded fine to coarse sand

Becomes medium dense

Sampler Type:
○ No Recovery
▮ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MV
Approved by: SJG
Figure No. A-66

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-14	2 of 2

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger
Sampling Method: Splitspoon
Ground Surface Elev
Depth to Water (ft BGS) 2.5
Start/Finish Date 5/23/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
		S-7		0			Becomes dense	
							Dense, wet, gray SAND (SP); trace silt, poorly graded medium to coarse sand	
25								25
		S-8		0			0.5 inch bed organic SILT (ML); woody debris	
							Very soft, wet, brown, SILT (ML); slight hydrogen sulfide odor	
30								30
		S-9		0				
							Bottom of boring at 31.5' BGS	
35								35

Sampler Type:

○ No Recovery
▌ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level
▽ Water Level (ATD)

Logged by: MV
Approved by: SJG
Figure No. A-67

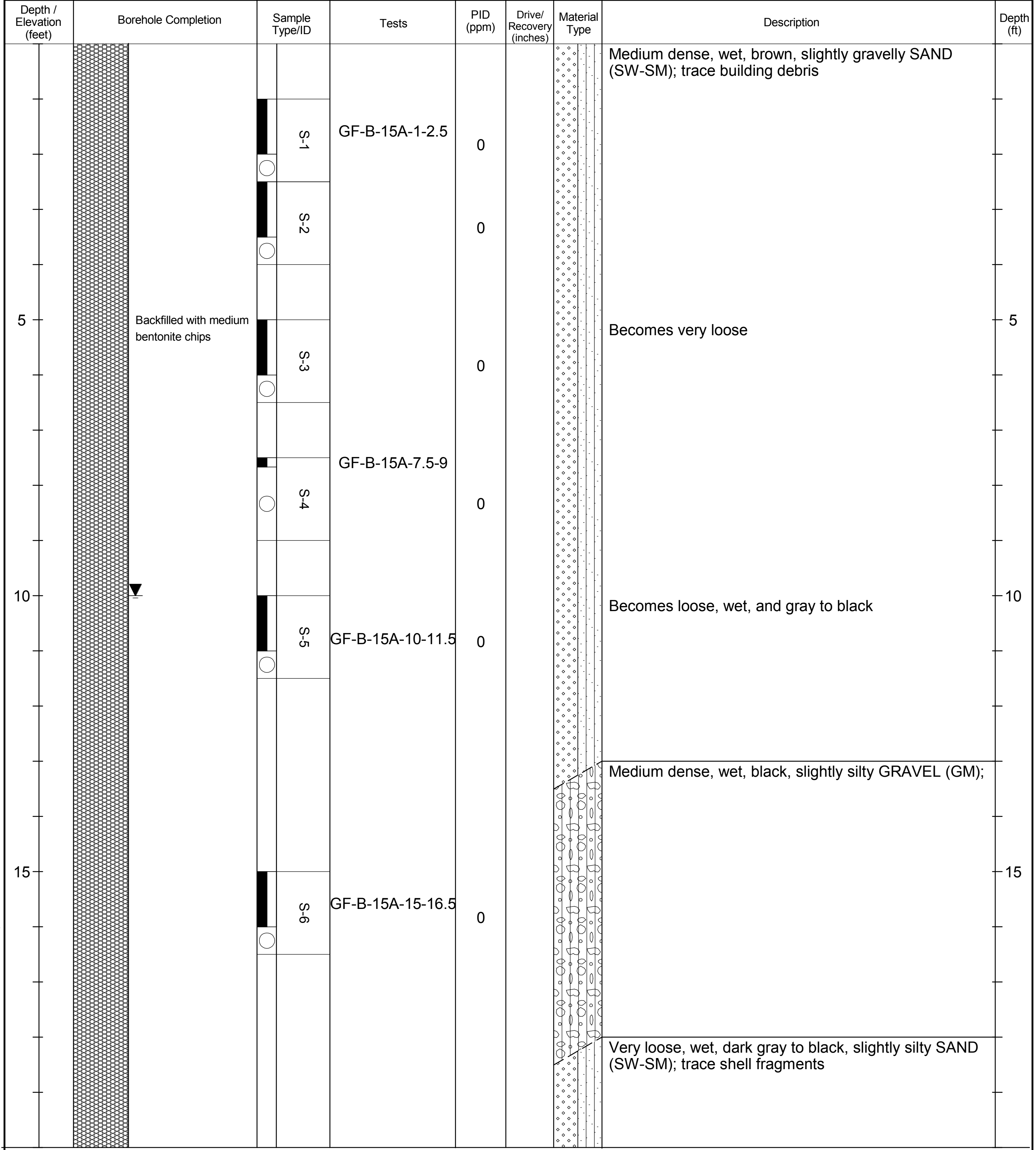
Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-15A	1 of 2

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger
Sampling Method: Splitspoon

Ground Surface Elev
Depth to Water (ft BGS) 10
Start/Finish Date 5/23/2012



Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Description	Depth (ft)
						Medium dense, wet, brown, slightly gravelly SAND (SW-SM); trace building debris	
		S-1	GF-B-15A-1-2.5	0			
		S-2		0			
5	Backfilled with medium bentonite chips					Becomes very loose	5
		S-3		0			
		S-4	GF-B-15A-7.5-9	0			
10	▼					Becomes loose, wet, and gray to black	10
		S-5	GF-B-15A-10-11.5	0			
						Medium dense, wet, black, slightly silty GRAVEL (GM);	
15							15
		S-6	GF-B-15A-15-16.5	0			
						Very loose, wet, dark gray to black, slightly silty SAND (SW-SM); trace shell fragments	

Sampler Type:
○ No Recovery
▮ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MV
Approved by: SJG
Figure No. A-68

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	GF-B-15A	2 of 2

Project Name: Kimberly Clark-Everett Mill

Ground Surface Elev

Location: Everett, WA

Driller/Method: Cascade Drilling / Hollow Stem Auger

Depth to Water (ft BGS) 10

Sampling Method: Splitspoon

Start/Finish Date 5/23/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
		S-7		0				
25		S-8	GF-B-15A-25-26.5	0			Becomes dark gray, trace gravel, well-graded fine to coarse sand	25
							Very dense, wet, gray, slightly gravelly SAND (SW); trace silt, trace shell fragments	
30		S-9		0				30
							Bottom of boring at 31.5 BGS	
35								35

Sampler Type:

○ No Recovery

▮ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MV

Approved by: SJG

Figure No. A-69

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	HB-B-01	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core
Ground Surface Elev
Depth to Water (ft BGS) 5 ATD
Start/Finish Date 9/7/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	▨ 3/8" hydrated bentonite chips	▌ CC-1				■	Asphalt	
							Concrete	
			HB-B-01-2-3				Moist, dark brown, slightly gravelly, slightly silty SAND (SP); fine to medium sand	
			HB-B-01-3-4				Moist to wet, black, gravelly SAND (SP); poorly graded fine to medium sand	
		○				☒	No recovery	
5	▽	▌ CC-2	HB-B-01-6-7				Wet, dark brown to black, slightly gravelly SAND (SP); poorly graded fine to medium sand	5
							Brick	
							Wet, black SAND (SP); trace gravel	
		○				☒	No recovery	
10							Bottom of boring at 10' BGS	10
15								15
20								20
25								25

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET/MAR
Approved by: SJG
Figure No. A-70

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	HB-B-02	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 5 ATD

Start/Finish Date 9/7/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	3/8" hydrated bentonite chips						Concrete	
				0			Void space	
		CC-1	HB-B-02-1-1.5	0			Moist, brown, slightly silty, gravelly SAND (SP-SM)	
		○				☒	No recovery	
5	▽	CC-2	HB-B-02-5-6	0			Moist, brown, gravelly SAND (SP); trace silt	5
				0			Becomes wet	
			HB-B-02-7-8	0			Becomes brown to black	
		○				☒	No recovery	
10		CC-3					Wet, dark brown to black SAND (SP); trace silt, trace gravel	10
15							Bottom of boring at 15' BGS	15
20								20
25								25

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET/MAR

Approved by: SJG

Figure No. A-71

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	HB-B-03	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core
Ground Surface Elev
Depth to Water (ft BGS) 5 ATD
Start/Finish Date 9/6/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
							Concrete	
							Void space	
	3/8" hydrated bentonite chips	CC-1	HB-B-02-1-1.5	0			Moist, brown SAND (SP); trace gravel, fine sand	
				0				
							Becomes fine to medium sand	
		○					No recovery	
5	▽	CC-2	HB-B-02-5-6	0			Wet, brown SAND (SP); fine to medium sand, trace gravel	5
							Wood 5.5' to 6'	
				0			Wet, brown SAND (SP); fine to medium sand, trace gravel	
			HB-B-02-7-8	0				
		○					No recovery	
10							Bottom of boring at 10' BGS	10
15								15
20								20
25								25

Sampler Type:
○ No Recovery
▌ Continuous Core

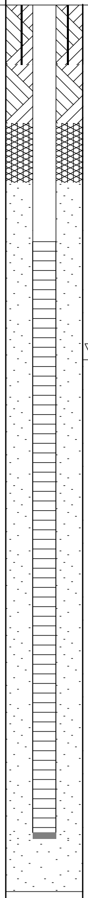
PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET/MAR
Approved by: SJG
Figure No. A-72

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	HB-MW-01	1 of 1

Project Name:	Kimberly Clark-Everett Mill	Ground Surface Elev	
Location:	Everett, WA	Top of Casing Elev.	
Driller/Method:	Cascade Drilling / Direct Push Probe-Limited Access	Depth to Water (ft BGS)	6
Sampling Method:	Continuous Core	Start/Finish Date	9/7/2012



Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
	8" flush-mount monument and thermos cap Concrete surface seal						Asphalt	
			HB-MW-01-1.5-2	0			Moist, brown, slightly gravelly, slightly silty SAND (SP-SM)	
	3/8" hydrated bentonite chips	CC-1					No recovery	
	2/12 silica sand filter pack		HB-MW-01-3-3.5					
5							Moist, brown, slightly gravelly SAND (SP); with brick debris	5
	▽		HB-MW-01-6-7	0			Wet, black, slightly silty, gravelly SAND (SP-SM); fine to medium sand	
		CC-2		0				
	2" diameter PVC pre-packed .001 slot screen						No recovery	
10							Wet, dark gray SAND (SP); fine to medium sand, trace gravel	10
				1.4				
				1.9			Wood	
		CC-3					Wet, gray, slightly gravelly SAND (SP); fine to medium sand	
				0.4				
	Threaded cap			0				
15							Bottom of boring at 15' BGS	15
20								20
25								25

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET/MAR

Approved by: SJG

Figure No. A-73

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	HW-B-01	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 6

Start/Finish Date 6/29/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Backfilled with medium bentonite chips	CC-1	HW-B-1-0-1	0.3 0			Asphalt Slightly moist, dark brown and brown mottled, slightly silty, very gravelly SAND (SP-SM); fine sand	
			HW-B-1-3-4	0			Moist, brown-orange mottled, slightly gravelly SAND (SP); fine to medium sand	
		○		0			No recovery	
5	▼	CC-2	HW-B-1-6-7	0 0 0 0			Wet, dark gray, sandy SILT (ML); trace gravel, fine sand	5
10		CC-3		0 0 0			Wet, dark gray, silty, very gravelly SAND (SM); fine to coarse gravel	10
				0 0			Wet, dark gray, slightly gravelly, slightly sandy SILT (ML); trace fibrous organics	
15				0			Bottom of boring at 15 ' BGS	15

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET

Approved by: SJG

Figure No. A-74

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	HW-B-02	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core
Ground Surface Elev
Depth to Water (ft BGS) 5
Start/Finish Date 6/29/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Description	Depth (ft)
	Backfilled with medium bentonite chips	CC-1				Wood chips	
			HW-B-2-0-1	0		Very moist, gray SAND (SW); trace gravel, fine to coarse sand	
				0			
			HW-B-2-3-4	0			
						Moist, dark brown, gravelly, sandy SILT (ML)	
		○		0		Wet, gray, slightly gravelly SAND (SW); fine to coarse sand, fine gravel	
5	▼	CC-2				Wet, dark brown, sandy SILT (ML)	5
				0			
						Wet, gray, gravelly SAND (SW); fine to coarse sand, fine gravel	
			HW-B-2-6-7	0			
						Wet, gray, gravelly, sandy SILT (ML); scattered organic- wood- debris	
				0			
				0			
						Slightly clayey	
10		CC-3					10
				0			
				0			
				0			
				0			
				0			
15				0		Bottom of boring at 15 ' BGS	15

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: SJG
Figure No. A-75

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	HW-B-03	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core
Ground Surface Elev
Depth to Water (ft BGS) 6.5 ATD
Start/Finish Date 9/6/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	▨	▌ CC-1	HW-B-3-0-1	0			Moist, dark brown, gravelly, silty SAND (SP); numerous organics	
	▨ 3/8" hydrated bentonite chips	▌ CC-2		0			Becomes gray	
	▨	▌		0				
	▨	▌	HW-B-3-3-4	0			Becomes dark gray	
	▨	▌		0			Becomes gray	
5	▨	○				☒	No recovery	5
	▨ ▽	▌ CC-3	HW-B-3-6-7				Very moist to wet, gray, slightly clayey, gravelly, sandy SILT (ML); fine sand	
	▨	▌					Wet, black, slightly silty, gravelly SAND (SP-SM)	
10	▨	○				☒	No recovery	10
							Bottom of boring at 11' BGS	
15								15
20								20
25								25

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET/MAR
Approved by: SJG
Figure No. A-76

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	HW-B-04	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 6.5 ATD

Start/Finish Date 9/6/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	3/8" hydrated bentonite chips	CC-1	HW-B-04-0-1	0			Moist, dark gray, gravelly, sandy SILT (ML); numerous organics	
				0				
				0			Wet, gray SAND (SW); poorly graded fine to coarse sand	
		CC-2		0			Pea gravel	
			HW-B-04-3.5-4				Moist, gray, slightly gravelly, sandy SILT (ML)	
				0				
5				0				5
	▽		HW-B-04-6-6.5	0			Cobbles	
		○					No recovery	
		CC-3					Moist, gray, slightly gravelly, sandy SILT (ML)	
10								10
		○					No recovery	
							Bottom of boring at 13' BGS	
15								15
20								20
25								25

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET/MAR

Approved by: SJG

Figure No. A-77

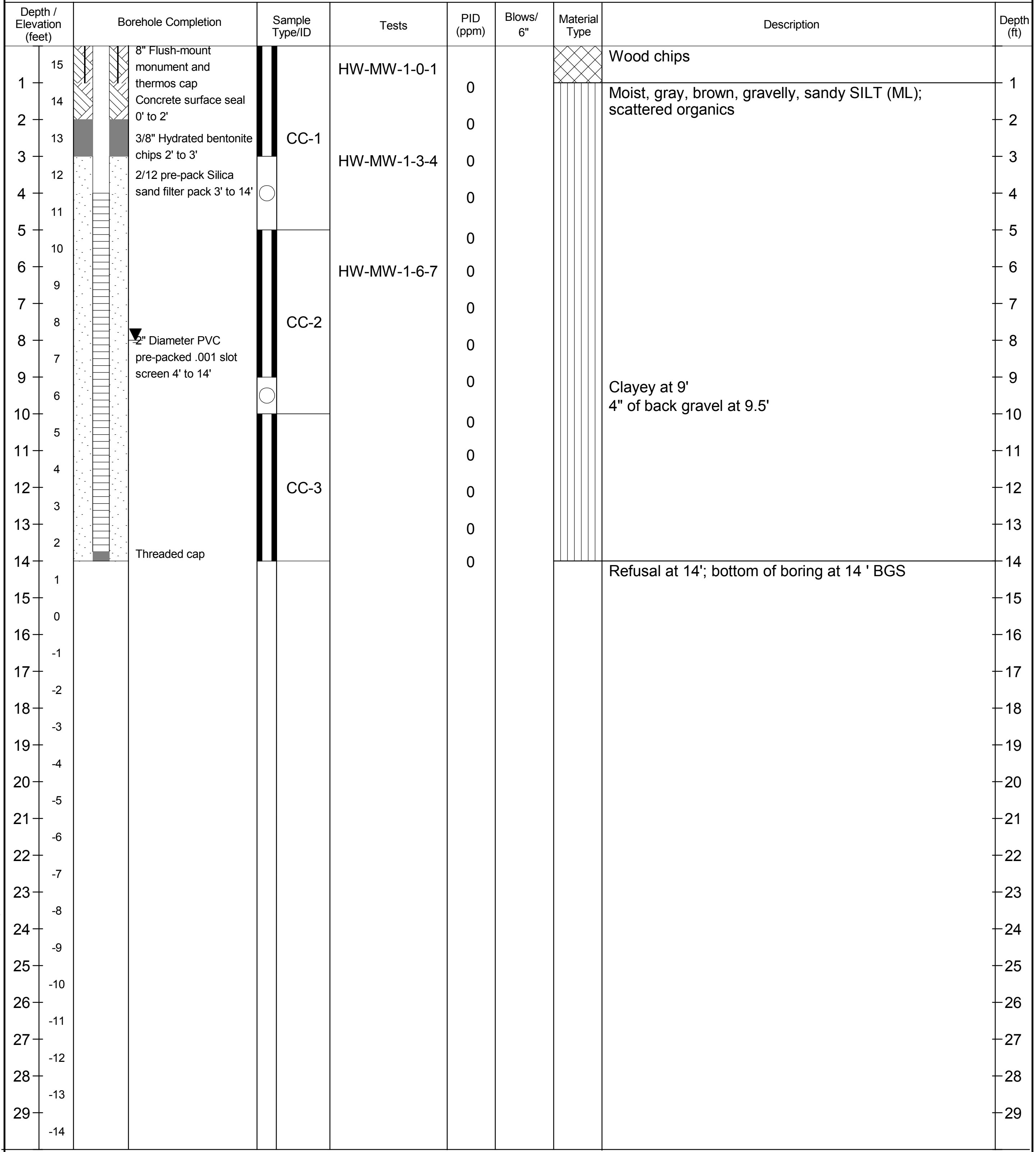
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	HW-MW-01	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core

Ground Surface Elev: 15.5
Top of Casing Elev.: 15.43
Depth to Water (ft BGS): 8
Start/Finish Date: 6/29/2012



Depth (ft)	Elevation	Sample Type/ID	Tests	PID (ppm)	Description
0	15.5	CC-1	HW-MW-1-0-1		Wood chips
1	14			0	Moist, gray, brown, gravelly, sandy SILT (ML); scattered organics
2	13			0	
3	12		HW-MW-1-3-4	0	
4	11	○		0	
5	10	CC-2		0	
6	9		HW-MW-1-6-7	0	
7	8			0	
8	7			0	
9	6	○		0	Clayey at 9' 4" of back gravel at 9.5'
10	5	CC-3		0	
11	4			0	
12	3			0	
13	2			0	
14	1			0	Refusal at 14'; bottom of boring at 14 ' BGS

Sampler Type:
○ No Recovery
▮ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: SJG
Figure No. A-78

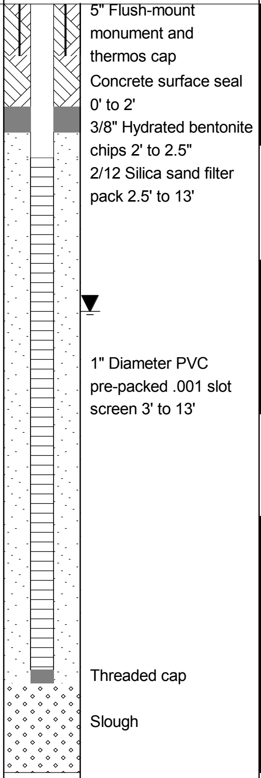
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	MW-01 (DP-15)	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core

Ground Surface Elev: 14.41
Top of Casing Elev.: 14.15
Depth to Water (ft BGS): 6
Start/Finish Date: 2/15/2012



Depth (feet)	Elevation (feet)	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Description
	14					Asphalt, gravel
1	13			0		Very moist, brown to gray, silty, sandy GRAVEL (GM); poorly graded fine-to-medium, subrounded gravel, 2" bed of charred organics at 1'
2	12	CC-1		0		Very moist, brown, gravelly SAND (SP); poorly graded fine-to-medium sand
3	11		DP-15-3-4	0		
4	10			0		Very moist, brown, very silty SAND (SM); fine sand
5	9			0		Very moist, brown SAND (SP); poorly graded fine-to-medium sand Fill debris from 4.75' to 6.5': charred wood, nails, ceramic, black and orange debris
6	8			0		
7	7	CC-2	DP-15-6.5-7.5	0		
8	6			0		Wet, gray, very sandy GRAVEL (GP); fine, rounded gravel
9	5			0		Wet, gray SAND (SP); poorly graded fine-to-medium sand
10	4			0		
11	3			0		
12	2	CC-3		0		Wet, gray, sandy SILT (ML)
13	1			0		Wet, gray SAND (SP); poorly graded fine-to-medium sand, frequent silt laminae
14	0			0		
15	-1			0		Bottom of boring at 15 ' BGS
16	-2					
17	-3					
18	-4					
19	-5					
20	-6					
21	-7					
22	-8					
23	-9					
24	-10					
25	-11					
26	-12					
27	-13					
28	-14					
29	-15					

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-79

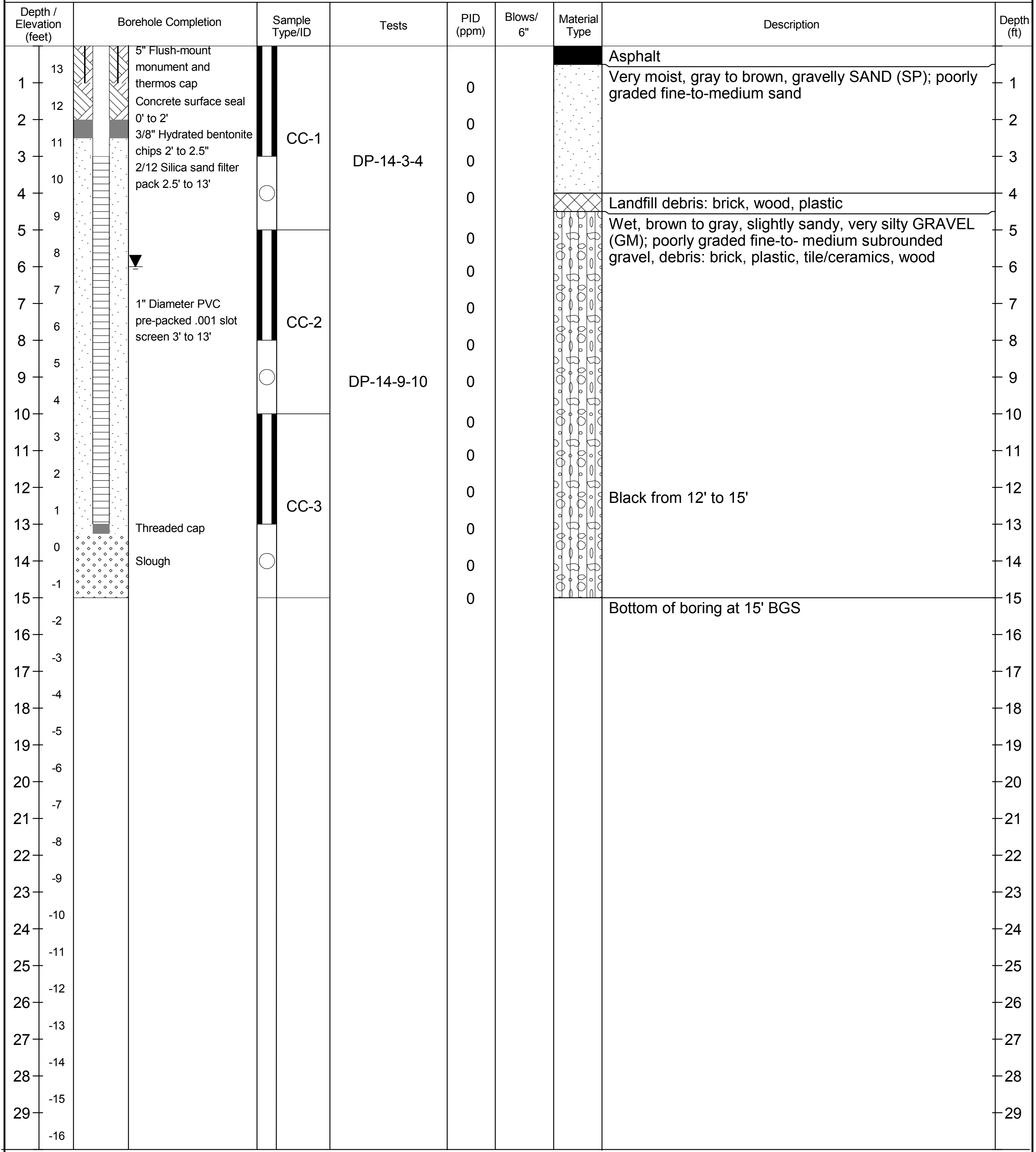
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	MW-02 (DP-14)	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core

Ground Surface Elev: 13.62
Top of Casing Elev.: 13.23
Depth to Water (ft BGS): 6
Start/Finish Date: 2/15/2012



Depth / Elevation (feet)	Elevation	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Description	Depth (ft)
						Asphalt	
1	13			0		Very moist, gray to brown, gravelly SAND (SP); poorly graded fine-to-medium sand	1
2	12			0			2
3	11	CC-1	DP-14-3-4	0			3
4	10			0		Landfill debris: brick, wood, plastic	4
5	9			0		Wet, brown to gray, slightly sandy, very silty GRAVEL (GM); poorly graded fine-to- medium subrounded gravel, debris: brick, plastic, tile/ceramics, wood	5
6	8			0			6
7	7			0			7
8	6	CC-2		0			8
9	5		DP-14-9-10	0			9
10	4			0			10
11	3			0			11
12	2			0		Black from 12' to 15'	12
13	1	CC-3		0			13
14	0			0			14
15	-1			0		Bottom of boring at 15' BGS	15
16	-2						16
17	-3						17
18	-4						18
19	-5						19
20	-6						20
21	-7						21
22	-8						22
23	-9						23
24	-10						24
25	-11						25
26	-12						26
27	-13						27
28	-14						28
29	-15						29
	-16						

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-80

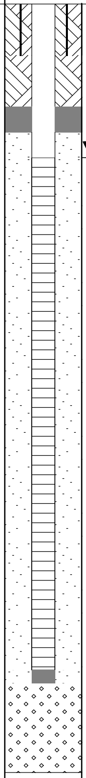
Aspect CONSULTING

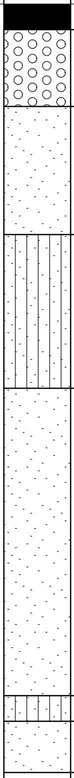
Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	MW-03 (DP-09)	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core

Ground Surface Elev 15.45
Top of Casing Elev. 15.11
Depth to Water (ft BGS) 3
Start/Finish Date 2/15/2012





Depth / Elevation (feet)		Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Description	Depth (ft)
	15	5" Flush-mount monument and thermos cap					Asphalt	
1	14				0		V. moist, gray, sandy, silty GRAVEL (GP); poorly graded fine-to-medium subrounded gravel	1
2	13	Concrete surface seal 0' to 2'			0		Wet, gray, slightly gravelly SAND (SP); poorly graded fine-to-medium sand	2
3	12	3/8" Hydrated bentonite ▼chips 2' to 2.5"	CC-1		0			3
4	11	2/12 Silica sand filter pack 2.5' to 13'		DP-9-3.5-4.5	0			4
5	10		○				Wet, dark gray, silty SAND (SM), fine sand, numerous shell fragments	5
6	9				5.4			6
7	8							7
8	7	1" Diameter PVC pre-packed .001 slot screen 3' to 13'	CC-2	DP-9-7.5-8.5			Wet, gray, SAND (SP); poorly graded fine-to-medium sand	8
9	6				25.9			9
10	5		○					10
11	4				20.3			11
12	3							12
13	2	Threaded cap	CC-3	DP-9-13-14				13
14	1	Slough			12.3		Wet, gray, silty SAND (SM); fine sand Wet, gray, slightly gravelly SAND (SP); poorly graded fine-to-medium sand	14
15	0		○				Bottom of boring at 15' BGS	15
16	-1							16
17	-2							17
18	-3							18
19	-4							19
20	-5							20
21	-6							21
22	-7							22
23	-8							23
24	-9							24
25	-10							25
26	-11							26
27	-12							27
28	-13							28
29	-14							29

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-81

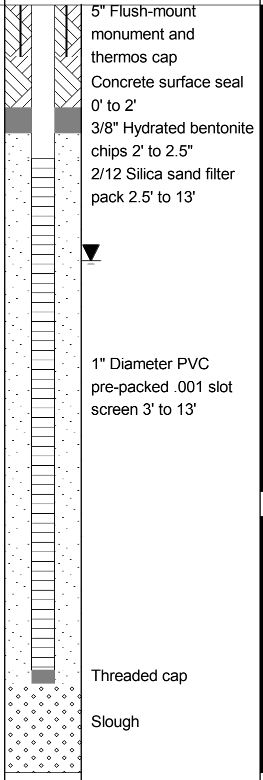
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	MW-04 (DP-07)	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core

Ground Surface Elev 15.53
Top of Casing Elev. 15.2
Depth to Water (ft BGS) 5
Start/Finish Date 2/15/2012



Depth (feet)	Elevation (feet)	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Description
						Asphalt
1	15			0		Moist, gray, slightly silty, sandy GRAVEL (GP); fine subangular gravel
2	14			0		
3	13	CC-1		0		Wet, gray, sandy SILT (ML) Moist, gray, slightly silty, sandy GRAVEL (GP); fine subangular gravel
4	12		DP-7-4-5	0		Wet, gray, sandy SILT (ML)
5	11			0.1		
6	10			0.1		
7	9		DP-7-7-8	0.1		
8	8	CC-2		0.1		
9	7			0.1		Wet, dark gray SAND (SP); poorly graded fine-to-medium sand
10	6	○		0		
11	5			0		
12	4			0		Wet, dark gray SILT (ML)
13	3	CC-3		0		Wet, dark gray to dark brown, slightly silty SAND (SP); poorly graded fine-to-medium sand, numerous organics
14	2			0		
15	1					Bottom of boring at 15' BGS
16	0					
17	-1					
18	-2					
19	-3					
20	-4					
21	-5					
22	-6					
23	-7					
24	-8					
25	-9					
26	-10					
27	-11					
28	-12					
29	-13					
	-14					

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-82

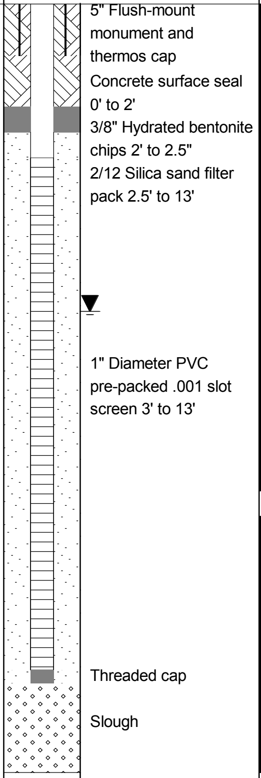
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	MW-05 (DP-16)	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core

Ground Surface Elev: 13.69
Top of Casing Elev.: 13.36
Depth to Water (ft BGS): 6
Start/Finish Date: 2/16/2012



Depth / Elevation (feet)		Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Description	Depth (ft)
						Grass over topsoil	
1	13	CC-1		0		Very moist, brown to gray, sandy SILT (ML); fine sand	1
2	12			0			2
3	11			0		Very moist, dark gray, sandy, gravelly SILT (ML)	3
4	10		DP-7-4-5	0			4
5	9	CC-2		0.1			5
6	8			0.1			6
7	7		DP-7-7-8	0.1			7
8	6			0.1			8
9	5			0.1			9
10	4	CC-3		0			10
11	3			0		Wet, organic SILT (OL); numerous wood organics	11
12	2			0			12
13	1			0		Wet, dark gray SAND (SP); poorly graded fine-to-medium sand, numerous shells and wood debris	13
14	0			0			14
15	-1					Bottom of boring at 15' BGS	15
16	-2						16
17	-3						17
18	-4						18
19	-5						19
20	-6						20
21	-7						21
22	-8						22
23	-9						23
24	-10						24
25	-11						25
26	-12						26
27	-13						27
28	-14						28
29	-15						29
	-16						

Sampler Type:
○ No Recovery
▮ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-83

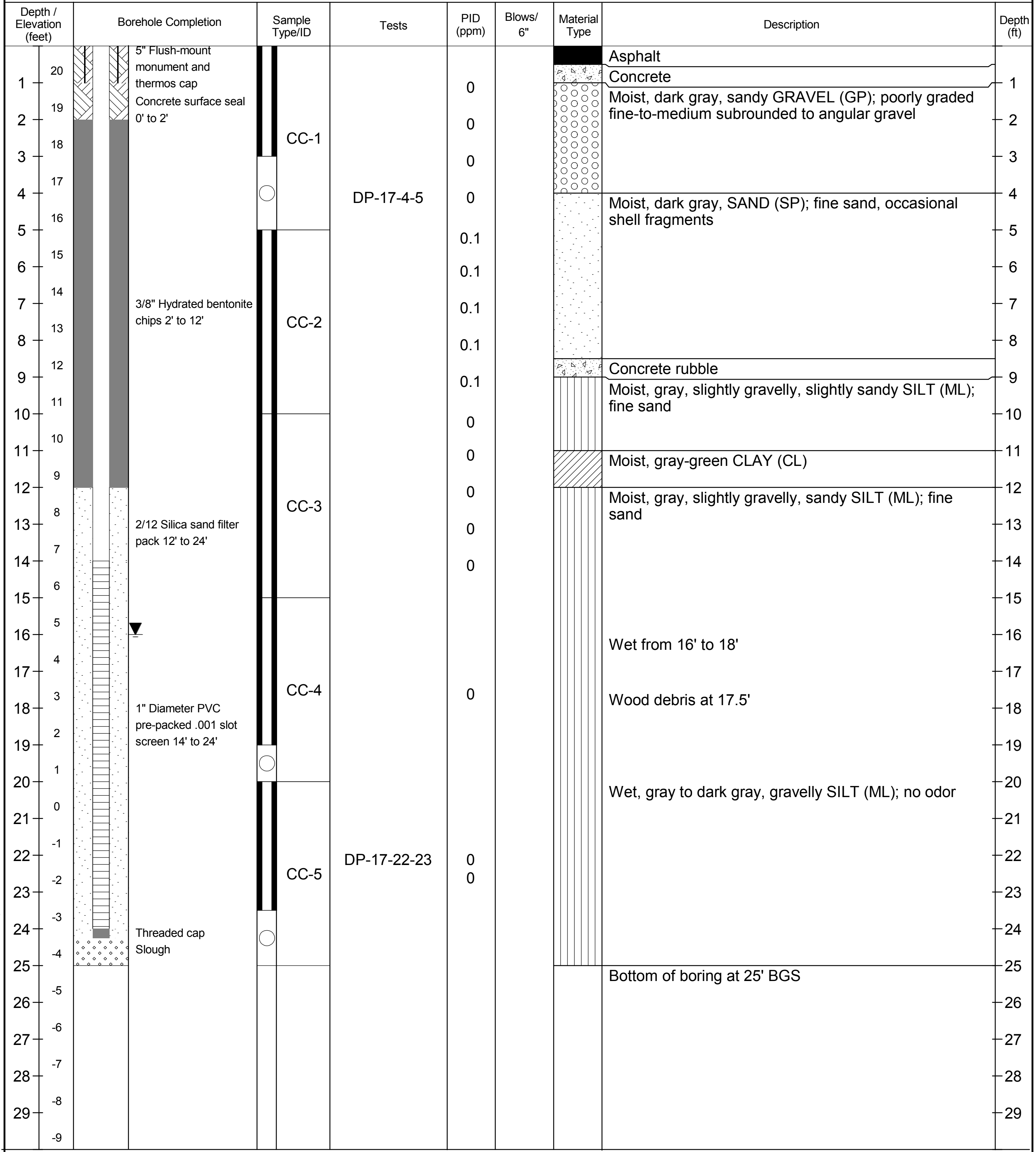
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	MW-06 (DP-17)	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core

Ground Surface Elev: 20.67
Top of Casing Elev.: 20.43
Depth to Water (ft BGS): 16
Start/Finish Date: 2/16/2012



Depth (feet)	Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Description
1	20	5" Flush-mount monument and thermos cap			0		Asphalt Concrete
2	19	Concrete surface seal 0' to 2'			0		Moist, dark gray, sandy GRAVEL (GP); poorly graded fine-to-medium subrounded to angular gravel
3	18		CC-1		0		
4	17			DP-17-4-5	0		Moist, dark gray, SAND (SP); fine sand, occasional shell fragments
5	16				0.1		
6	15				0.1		
7	14	3/8" Hydrated bentonite chips 2' to 12'	CC-2		0.1		
8	13				0.1		
9	12				0.1		Concrete rubble Moist, gray, slightly gravelly, slightly sandy SILT (ML); fine sand
10	11				0		
11	10				0		Moist, gray-green CLAY (CL)
12	9				0		Moist, gray, slightly gravelly, sandy SILT (ML); fine sand
13	8	2/12 Silica sand filter pack 12' to 24'	CC-3		0		
14	7				0		
15	6						
16	5	▼					Wet from 16' to 18'
17	4						
18	3	1" Diameter PVC pre-packed .001 slot screen 14' to 24'	CC-4		0		Wood debris at 17.5'
19	2						
20	1						Wet, gray to dark gray, gravelly SILT (ML); no odor
21	0						
22	-1			DP-17-22-23	0		
23	-2		CC-5		0		
24	-3	Threaded cap					
25	-4	Slough					Bottom of boring at 25' BGS
26	-5						
27	-6						
28	-7						
29	-8						
	-9						

Sampler Type:
○ No Recovery
▮ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-84

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	NRP-B-01	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 9

Start/Finish Date 6/1/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
		CC-1					Grass over topsoil	
	Backfilled with medium bentonite chips			0.2			Moist, brown, gravelly, very silty SAND (SM); fine sand	
				0.2				
				0.2			Moist, gray, gravelly SAND (SP); poorly graded fine-to-medium sand	
		○		0.2			Fine sand, no gravel	
5		CC-2		0.2			Poor recovery 5' to 10'	5
				0.3				
				0.3				
		○		0.3				
	▼		NRP-B-1-9-12	0.3				
10		CC-3		0.3			Wet, gray, slightly silty SAND (SP-SM)	10
				0.3				
				0.3				
				0.3				
		○		0.3				
15				0.3			Bottom of boring at 15' BGS	15
20								20

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-85

Boring Log

Aspect CONSULTING

Project Number	Boring Number	Sheet
110207	NRP-B-02	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS)

Start/Finish Date 6/1/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Backfilled with medium bentonite chips	CC-1					Asphalt	
				1.2			Moist, gray, slightly silty, sandy GRAVEL (GW); poorly graded fine-to-coarse angular gravel	
				1.2				
		○	NRP-B-2-3-4	12.7			Moist, gray SAND (SP); fine sand	
				47.8				
				61.3				
				16.8			Silt lens at 4.5'	
5		CC-2		21.5				5
				26.0			Dark gray, strong petroleum-like odor, moderate metallic/rainbow sheen	
				190.5				
				152.0				
				89.0				
			NRP-B-2-8-10	446.8				
				397.7				
		○		353.7				
				360.2				
10		CC-3		356.3				10
				464.3				
				426.8				
							Silt and wood 11.5' to 12'	
				46.5				
				7.3				
			NRP-B-2-14-15	4.6				
15				2.5			Bottom of boring at 15' BGS	15
20								20

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-86

Boring Log

Project Number	Boring Number	Sheet
110207	NRP-B-03	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

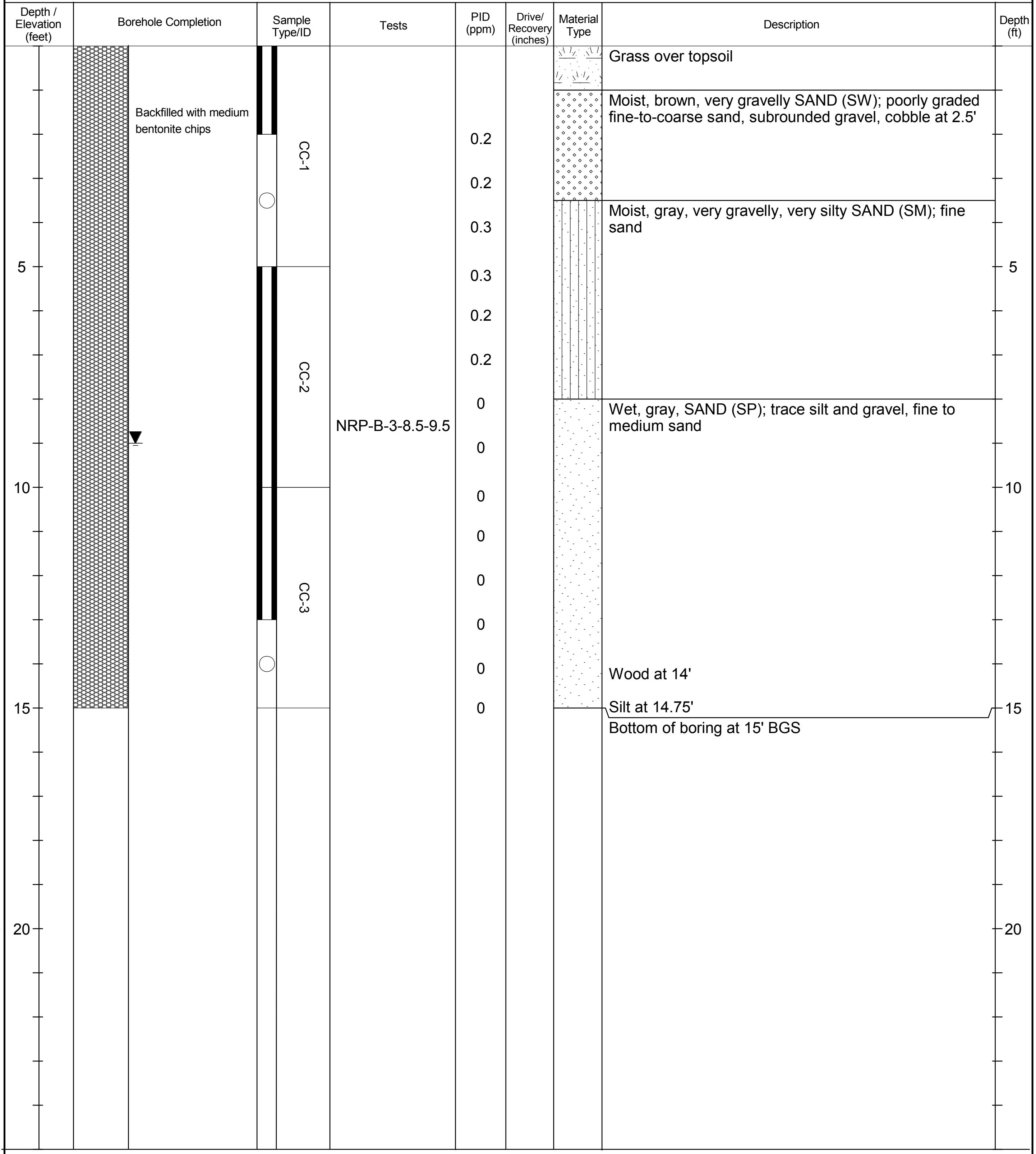
Driller/Method: Cascade Drilling / Direct Push Probe

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 9

Start/Finish Date 6/1/2012



Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
							Grass over topsoil	
	Backfilled with medium bentonite chips						Moist, brown, very gravelly SAND (SW); poorly graded fine-to-coarse sand, subrounded gravel, cobble at 2.5'	
		CC-1		0.2				
				0.2				
				0.3			Moist, gray, very gravelly, very silty SAND (SM); fine sand	
5				0.3				5
				0.2				
		CC-2		0.2				
				0			Wet, gray, SAND (SP); trace silt and gravel, fine to medium sand	
			NRP-B-3-8.5-9.5	0				
10				0				10
				0				
		CC-3		0				
				0				
				0			Wood at 14'	
15				0			Silt at 14.75' Bottom of boring at 15' BGS	15
20								20

Sampler Type:

○ No Recovery

▌▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-87

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	NRP-B-04	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

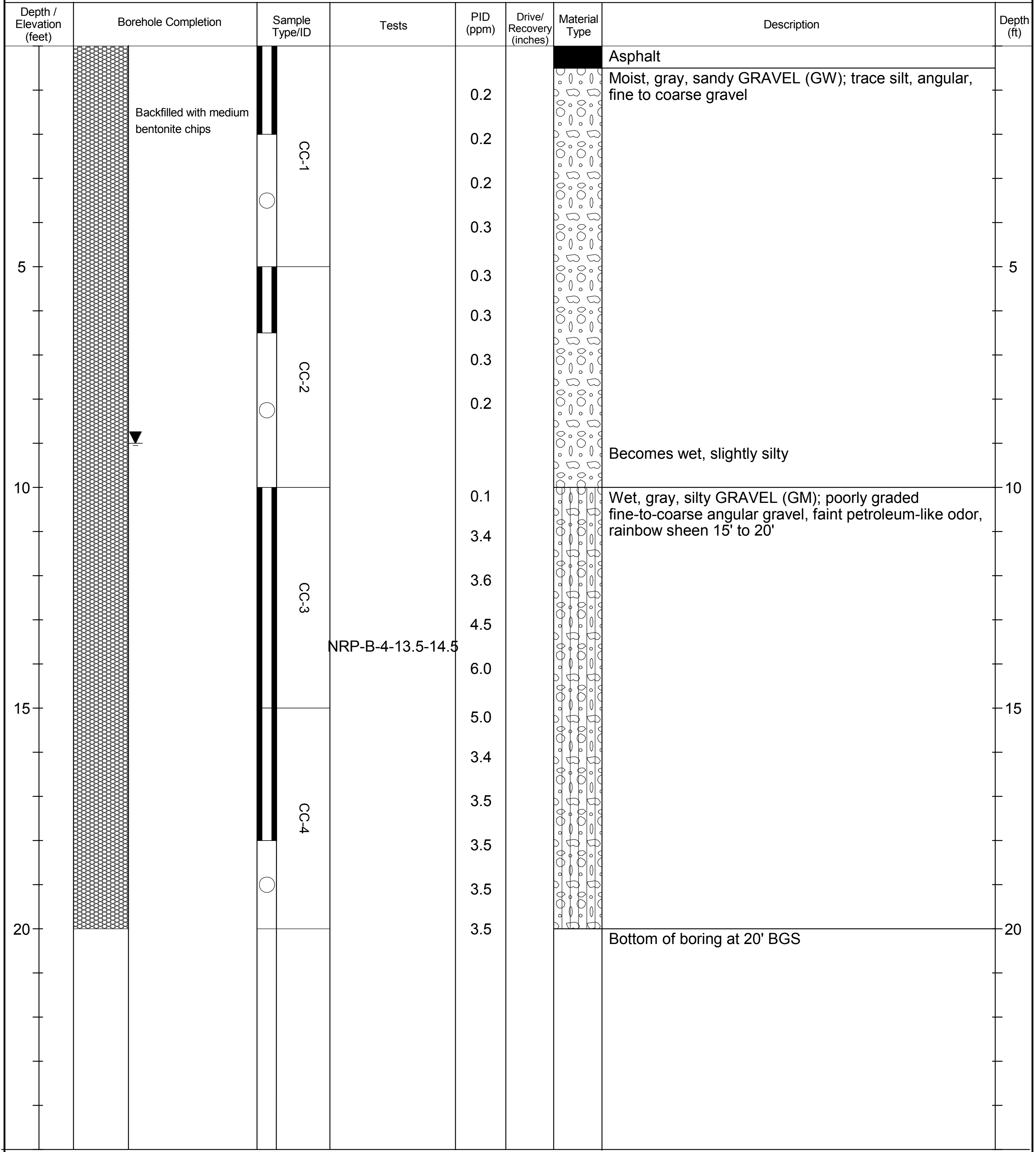
Driller/Method: Cascade Drilling / Direct Push Probe

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 9

Start/Finish Date 6/1/2012



Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-88

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	NRP-B-05	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

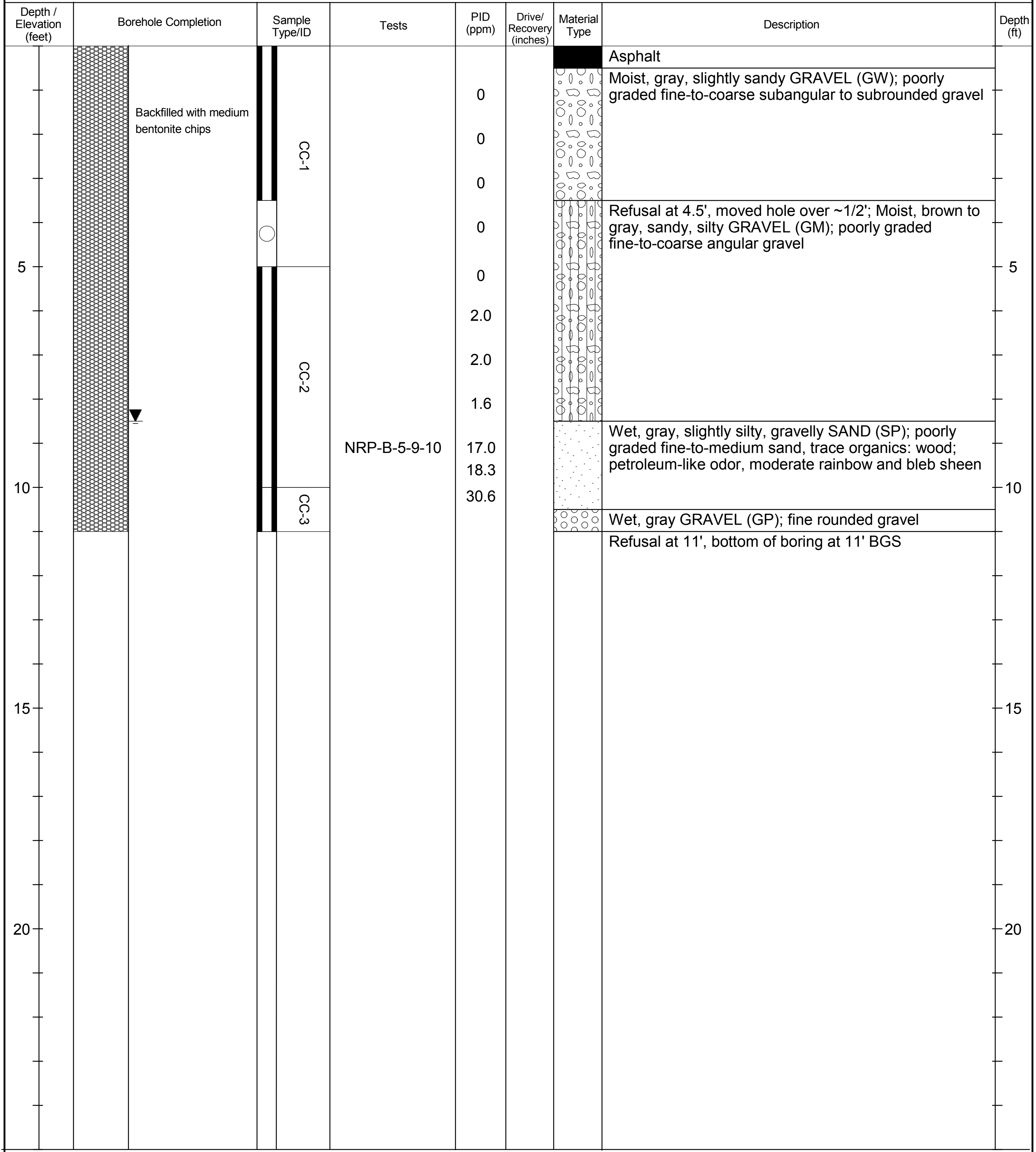
Driller/Method: Cascade Drilling / Direct Push Probe

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 8.5

Start/Finish Date 6/1/2012



Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Backfilled with medium bentonite chips	CC-1					Asphalt	
				0 0 0			Moist, gray, slightly sandy GRAVEL (GW); poorly graded fine-to-coarse subangular to subrounded gravel	
5	▼	○ CC-2		0 0 2.0 2.0 1.6			Refusal at 4.5', moved hole over ~1/2'; Moist, brown to gray, sandy, silty GRAVEL (GM); poorly graded fine-to-coarse angular gravel	5
10			NRP-B-5-9-10	17.0 18.3 30.6			Wet, gray, slightly silty, gravelly SAND (SP); poorly graded fine-to-medium sand, trace organics: wood; petroleum-like odor, moderate rainbow and bleb sheen	10
		CC-3					Wet, gray GRAVEL (GP); fine rounded gravel	
							Refusal at 11', bottom of boring at 11' BGS	
15								15
20								20

Sampler Type:

○ No Recovery

▌▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-89

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	NRP-B-06	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS)

Start/Finish Date 6/1/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Backfilled with medium bentonite chips	CC-1		0 0 0 0			Asphalt Slightly moist, gray, sandy GRAVEL (GW); poorly graded fine-to-coarse angular gravel	
							Bottom of boring at 4' BGS	
5								5
10								10
15								15
20								20

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-90

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	NRP-B-07	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 9

Start/Finish Date 6/1/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
							Asphalt, post-holed to 1' because of utilities	
							Moist, brown, silty, sandy GRAVEL (GM); fine angular gravel	
	Backfilled with medium bentonite chips			0				
				0				
		CC-1		0				
							Concrete rubble 3.25' to 4'	
		○		0			Moist, very silty, very sandy GRAVEL (GM); poorly graded fine-to-coarse angular gravel	
5				0				5
				6.7			Very moist, gray SAND (SP); poorly graded fine-to-medium sand, strong petroleum-like odor, heavy rainbow and bleb sheen	
		CC-2		10.8				
	▼		NRP-B-7-9-10	15.1 109.8			Numerous organics at 9'	
10				10.8				10
				10.7				
		CC-3		7.1				
				7.1				
		○		6.8			Wet, dark gray, very silty SAND (SM); fine sand	
15				5.0			Wet, gray, SAND (SP); fine sand, trace organics	15
				10.1				
		CC-4		12.1			Wet, dark gray, very silty SAND (SM); fine sand	
				10.1				
			NRP-B-7-19-20	10.1				
20				7.1			Wood at 19.75' Bottom of boring at 20' BGS	20

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-91

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	NRP-B-08	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 8.5

Start/Finish Date 6/1/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	▨ Backfilled with medium bentonite chips	▌ CC-1				■	Asphalt	
				0.3			Moist, gray, slightly sandy GRAVEL (GW); poorly graded fine-to-coarse angular gravel	
				0.3				
				0.3				
				0.3				
				0.8				
5		CC-2					Very moist, gray, sandy, very silty GRAVEL (GM); poorly graded fine-to-coarse angular gravel	5
				6.7			Moist, gray, sandy SILT (ML)	
				8.5				
				7.6			Wet, gray, SAND (SP); poorly graded fine-to-medium sand	
	▼		NRP-B-8-8.5-9.5	8.5				
				8.3				
							Wood at 9.5'	
10		CC-3		0				10
			NRP-B-8-11-12	0				
				0			Wet, dark gray SILT (ML)	
				0			Wet, gray, SAND (SP); poorly graded fine-to-medium sand, wood at 13'	
				0			Refusal at 13.5'; bottom of boring at 13.5' BGS	
15								15
20								20

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-92

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	NRP-B-09	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 9.5

Start/Finish Date 6/27/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
		CC-1	NRP-B-8-0-1				Asphalt	
	Backfilled with medium bentonite chips			0 0			Slightly moist, brown-gray, sandy GRAVEL (GP); crushed rock	
5		CC-2	NRP-B-8-3-4	0 0 0 0			Moist, dark gray, sandy SILT (ML); fine sand	5
	▼			0			Wood	
10				0			Wet, dark gray SAND (SP); poorly graded fine-to-medium sand	10
							Bottom of boring at 10' BGS	
15								15
20								20

Sampler Type:

○ No Recovery

▌▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET

Approved by: SJG

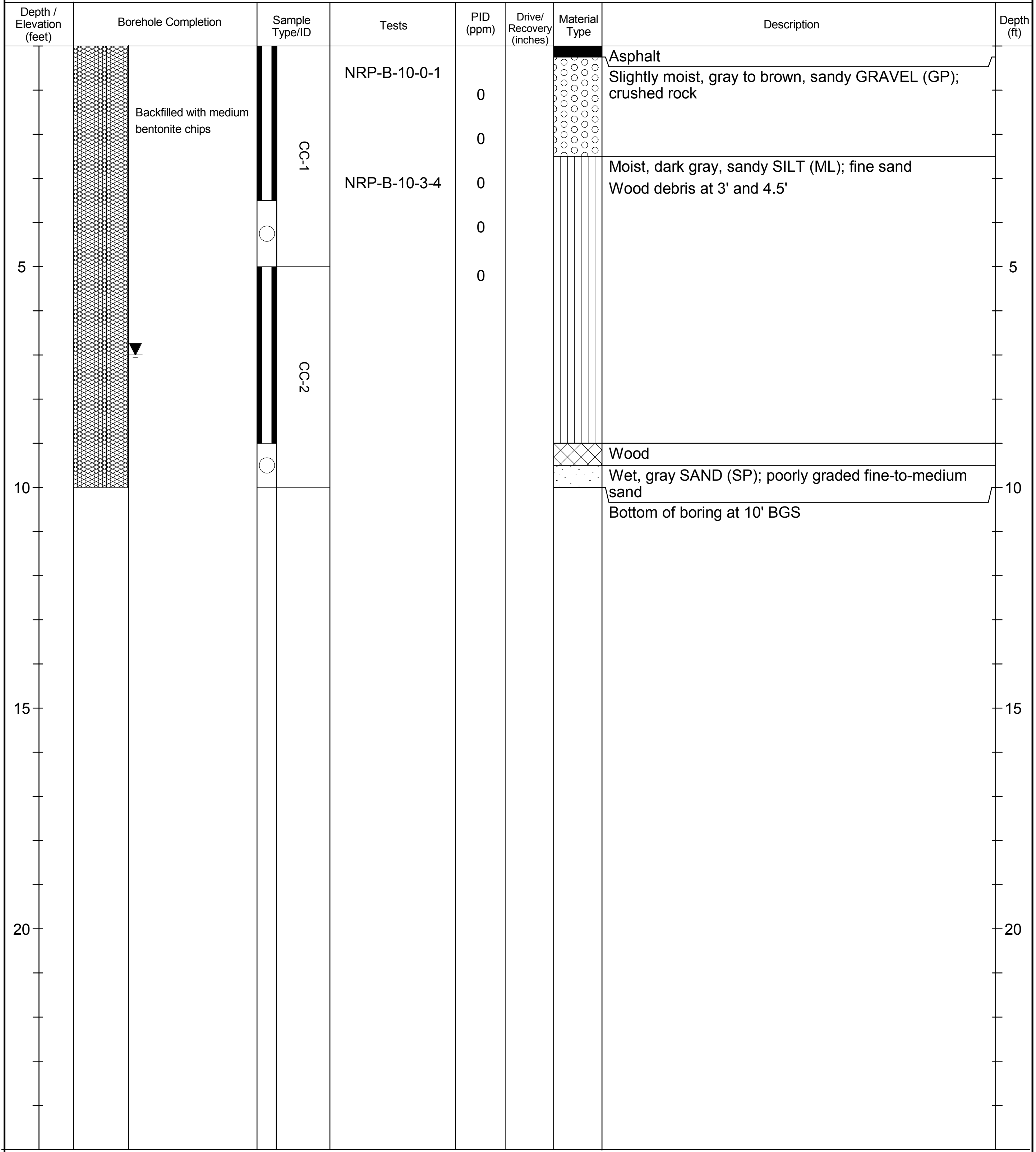
Figure No. A-93

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	NRP-B-10	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core
Ground Surface Elev
Depth to Water (ft BGS) 7
Start/Finish Date 6/27/2012



Backfilled with medium bentonite chips

Tests	PID (ppm)
NRP-B-10-0-1	0
	0
NRP-B-10-3-4	0
	0
	0

Asphalt

Slightly moist, gray to brown, sandy GRAVEL (GP); crushed rock

Moist, dark gray, sandy SILT (ML); fine sand

Wood debris at 3' and 4.5'

Wood

Wet, gray SAND (SP); poorly graded fine-to-medium sand

Bottom of boring at 10' BGS

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET

Approved by: SJG

Figure No. A-94

Boring Log

Aspect CONSULTING

Project Number	Boring Number	Sheet
110207	NRP-B-11	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core
Ground Surface Elev
Depth to Water (ft BGS) 6
Start/Finish Date 6/6/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Backfilled with medium bentonite chips	CC-1	NRP-B-11-0-1				Asphalt	
				1.5			Moist, gray, sandy, silty GRAVEL (GM); crushed rock	
			NRP-B-11-3-4	0 0			Moist, dark gray SAND (SP)	
5	▼	○ CC-2		0 0 0 0 0			Moist, gray, slightly sandy CLAY (CL)	5
				0			Wood	
10		○		0 0			Wet, gray, SAND (SP); poorly graded fine-to-medium sand	10
							Bottom of boring at 10' BGS	
15								15
20								20

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-95

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	NRP-B-12	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS)

Start/Finish Date 6/6/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Backfilled with medium bentonite chips	CC-1				■	Asphalt	
			NRP-B-12-0-1	2.0 0.5		○	Moist, gray, sandy GRAVEL (GP); crushed rock	
			NRP-B-12-3-4	0			Moist, gray, very silty SAND (SM); fine sand	
5		○ CC-2		0 0			Moist, gray, slightly sandy SILT (ML); numerous organics, wood	5
							Refusal at 7.5'; bottom of boring at 7.5' BGS	
10								10
15								15
20								20

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-96

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	NRP-B-13	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

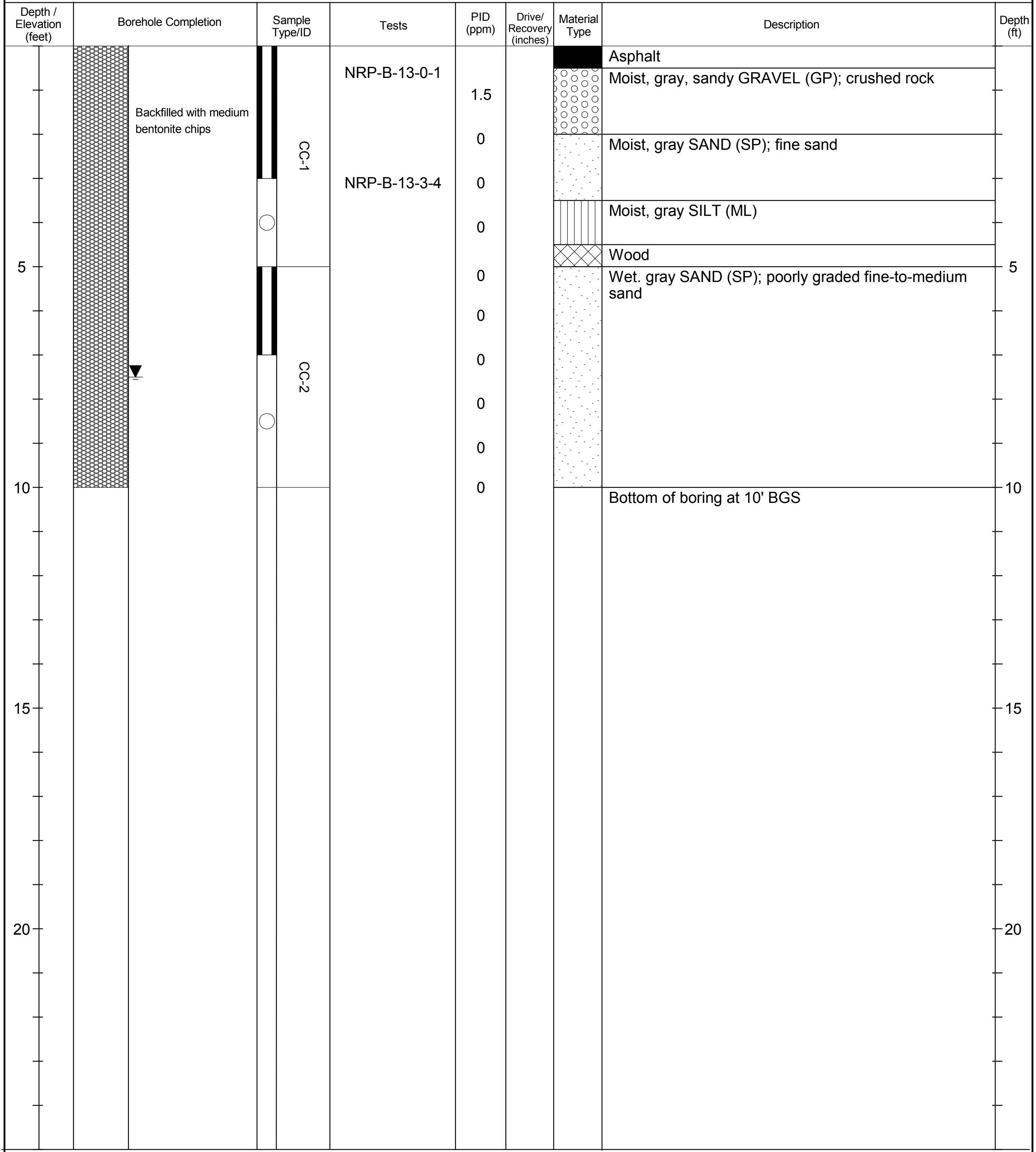
Driller/Method: Cascade Drilling / Direct Push Probe

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 7.5

Start/Finish Date 6/6/2012



Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Backfilled with medium bentonite chips	CC-1	NRP-B-13-0-1				Asphalt	
				1.5			Moist, gray, sandy GRAVEL (GP); crushed rock	
			NRP-B-13-3-4	0 0			Moist, gray SAND (SP); fine sand	
				0			Moist, gray SILT (ML)	
							Wood	
5	▼	CC-2		0 0 0 0 0			Wet. gray SAND (SP); poorly graded fine-to-medium sand	5
10				0			Bottom of boring at 10' BGS	10
15								15
20								20

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-97

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	NRP-B-14	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core
Ground Surface Elev
Depth to Water (ft BGS) 6
Start/Finish Date 6/27/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Backfilled with medium bentonite chips	▌ CC-1	NRP-B-14-0-1			■	Asphalt	
				0			Slightly moist, gray, sandy gravel (GP); crushed rock	
				0			Moist, dark gray, sandy SILT (ML)	
			NRP-B-14-3-4	0				
		○		0				
5		▌ CC-2		0				5
	▼			0			Wet, black/brown wood debris	
				0				
				0			Wet, gray SAND (SP); poorly graded fine-to-medium sand	
				0				
10				0			Bottom of boring at 10' BGS	10
15								15
20								20

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: SJG
Figure No. A-98

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	NRP-B-15	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 7

Start/Finish Date 6/6/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
0	Backfilled with medium bentonite chips	CC-1	NRP-B-15-0-1				Asphalt	
1				2.5			Moist, light gray GRAVEL (GP); crushed rock	
2				0.5				
3			NRP-B-15-3-4	0.5			Moist, dark gray, very silty SAND (SM); fine sand	
4		○		0.4				
5		CC-2		0.4				5
6				0			Wet, gray sandy SILT (ML)	
7	▼			0				
8				0				
9		○		0			Wet, dark brown PEAT (PT)	
10				0			Bottom of boring at 10' BGS	10
15								15
20								20

Sampler Type:

○ No Recovery

▌▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-99

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	NRP-B-16	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 7

Start/Finish Date 6/27/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description
0	▩	▌ CC-1				■	Asphalt, crushed rock and gravel
1	Backfilled with medium bentonite chips		NRP-B-15-0-1	2.5			
2				0.5		▥	Moist, dark gray, slightly sandy SILT (ML)
3		○	NRP-B-15-3-4	0.5			
4				0.4			
5		▌ CC-2		0.4			
6				0			2" of gravel at 6'
6.5						▨	Wet, dark gray, silty CLAY (CL)
7	▼			0			
7.5						▩	Wood
8		○		0			
9				0		⁘	Wet, gray, sand (SP); poorly graded fine-to-medium sand
10				0			Bottom of boring at 10' BGS
15							
20							

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET

Approved by: SJG

Figure No. A-100

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	NRP-B-17	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 10 ATD

Start/Finish Date 9/6/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
0	3/8" hydrated bentonite chips	CC-1					Grass over topsoil	
1				0			Moist, light brown to gray, slightly silty SAND (SW-SM); poorly graded fine to coarse sand	
2				0				
3				0				
4				0				
5		CC-2		0				5
6				0				
7				0				
8			NRP-B-17-8-9	0				
9				0				
10	▽	CC-3		0			Wet, black, silty, gravelly SAND (SM); poorly graded fine to medium sand	10
11	▽		NRP-B-17-11-12	0				
12			NRP-B-17-12-13	2.8			Slight petroleum-like odor 12' to 13'	
				1.8				
13		○					No recovery	
14							Refusal at 14' BGS	
15								15
20								20
25								25

Sampler Type:

○ No Recovery

▌▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET/MAR

Approved by: SJG

Figure No. A-101

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	NRP-B-18	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 7 ATD

Start/Finish Date 9/6/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
0	3/8" hydrated bentonite chips	CC-1					Asphalt	
1				0.3			Moist, gray GRAVEL (FILL); crushed rock with silt matrix	
2				0.4				
3				0.3			Moist, brown to dark gray SAND (SP); fine sand Thin bed silt	
4		○					No recovery	
5		CC-2		0.9			Moist, brown to dark gray SAND (SP); fine sand	5
6				1.5				
7	▽			0				
8			NRP-B-18-8-9	6.6			Becomes medium sand	
9				24.1			Becomes fine sand; numerous organics	
10		CC-3		258				10
11			NRP-B-18-11.5-12.5	6.6				
12				456			Sheen at 12'	
13				1.4				
14			NRP-B-18-14-15	0.2				
15				1.2			Bottom of boring at 15' BGS	15
20								20
25								25

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET/MAR

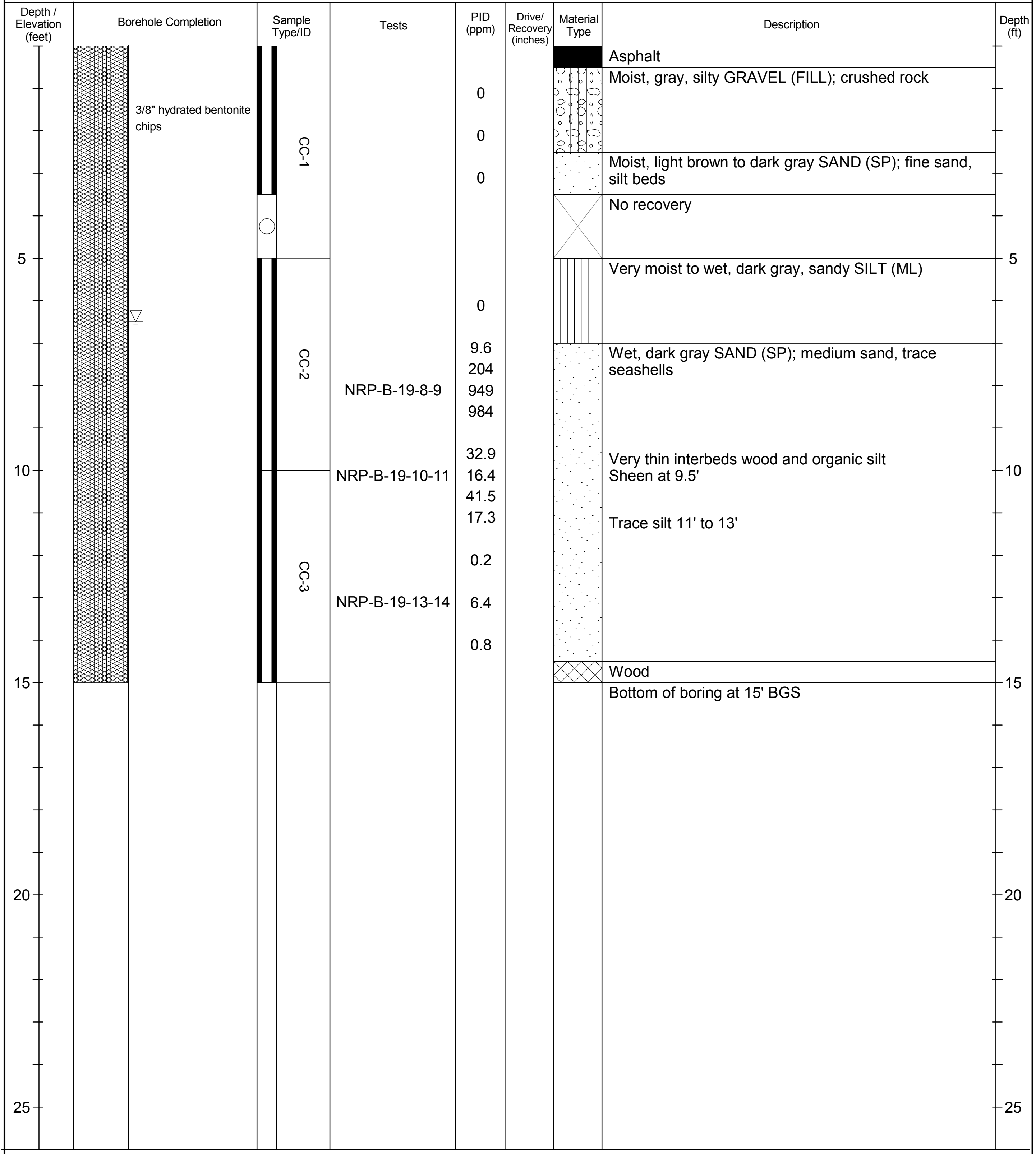
Approved by: SJG

Figure No. A-102

Boring Log

Project Number	Boring Number	Sheet
110207	NRP-B-19	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core
Ground Surface Elev
Depth to Water (ft BGS) 6.5 ATD
Start/Finish Date 9/6/2012



Depth / Elevation (feet)	Sample Type/ID	Tests	PID (ppm)	Description
	CC-1			Asphalt
			0 0	Moist, gray, silty GRAVEL (FILL); crushed rock
			0	Moist, light brown to dark gray SAND (SP); fine sand, silt beds
				No recovery
5	CC-2		0	Very moist to wet, dark gray, sandy SILT (ML)
		NRP-B-19-8-9	9.6 204 949 984	Wet, dark gray SAND (SP); medium sand, trace seashells
10	CC-3	NRP-B-19-10-11	32.9 16.4 41.5 17.3	Very thin interbeds wood and organic silt Sheen at 9.5' Trace silt 11' to 13'
		NRP-B-19-13-14	0.2 6.4 0.8	
15				Wood
				Bottom of boring at 15' BGS
20				
25				

Sampler Type:
○ No Recovery
▮ Continuous Core

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET/MAR
Approved by: SJG
Figure No. A-103

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	NRP-B-20	1 of 1

Project Name: Kimberly Clark-Everett Mill
Ground Surface Elev
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Depth to Water (ft BGS) 5 ATD
Sampling Method: Continuous Core
Start/Finish Date 9/6/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
							Asphalt	
				0			Moist, gray, very gravelly, very silty SAND (SM); fine sand	
	3/8" hydrated bentonite chips							
		CC-1		0			Moist, gray, slightly silty SAND (SP-SM); fine sand	
				0				
							Thin bed silt	
		○					No recovery	
5	▽						Wet, gray SAND (SP); poorly graded fine to medium sand, trace seashells	5
				0				
				2.8				
		CC-2		0				
			NRP-B-20-8-9	147				
				748				
				17.5				
10			NRP-B-20-10-11	25.2				10
				518				
				71.3				
		CC-3	NRP-B-20-12-13	3.7				
							Wet, dark gray, very silty SAND (SM); fine sand, numerous organics, wood	
				2.3				
							Wet, gray SAND (SP); trace organics	
				5.9				
				4.5				
15				1.8			Bottom of boring at 15' BGS	15
20								20
25								25

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET/MAR

Approved by: SJG

Figure No. A-104

Aspect CONSULTING

Boring Log

Project Number: 110207
Boring Number: NRP-B-21
Sheet: 1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core
Ground Surface Elev
Depth to Water (ft BGS): 5 ATD
Start/Finish Date: 9/7/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	3/8" hydrated bentonite chips	▌ CC-1				■	Asphalt	
				0			Moist, brown, very gravelly, very silty SAND (SM); fine sand	
				0			Moist, gray SAND (SP); poorly graded fine to medium sand	
				9.6				
				16.6				
				1.1				
		○				☒	No recovery	
5	▽	▌ CC-2		4.1			Wet, gray SAND (SP); poorly graded fine to medium sand, trace seashells	5
				0.6				
			NRP-B-21-7-8	290				
				351				
				331				
10		▌ CC-3	NRP-B-21-10.5-11.5	9.4				10
				807				
				371			Wet, dark gray SILT (ML); numerous organics, wood	
				32.2			Wet, gray SAND (SP); fine to medium sand, numerous organics and seashells, wood	
			NRP-B-21-14-15	21.5				
				15.6				
15				1.2			Bottom of boring at 15' BGS	15
20								20
25								25

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET/MAR
Approved by: SJG
Figure No. A-105

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	NRP-B-22	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 7.5 ATD

Start/Finish Date 9/6/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	3/8" hydrated bentonite chips	CC-1					Asphalt	
				0 0 0			Moist, gray, silty GRAVEL (GM); angular gravel - crushed rock	
		○					No recovery	
5	▽	CC-2	NRP-B-22-7-8	0.7 1.7 1.8			Moist, gray, silty GRAVEL (GM); angular gravel - crushed rock	5
		○					No recovery	
10		CC-3					Wet, gray, gravelly, silty SAND (SM); fine sand	10
			NRP-B-22-11-12	16.9 26.4 13.5 0			Wet, dark gray SAND (SP); fine sand, trace silt Sheen and strong petroleum-like odor 11' to 12'	
		○					No recovery	
15		CC-4	NRP-B-22-15.5-16.5				Wet, dark gray SAND (SP); fine sand, numerous organics	15
							Wood	
							Wet, dark gray SAND (SP); fine sand, numerous organics	
		○					No recovery	
20							Bottom of boring at 20' BGS	20
25								25

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET/MAR

Approved by: SJG

Figure No. A-106

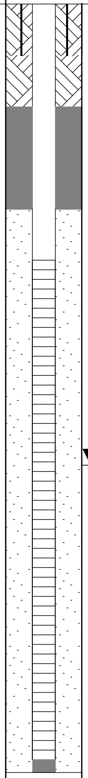
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	NRP-MW-01	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core

Ground Surface Elev 13.99
Top of Casing Elev. 13.56
Depth to Water (ft BGS) 9
Start/Finish Date 6/6/2012



Depth / Elevation (feet)		Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
		8" Flush-mount monument and thermos cap Concrete surface seal 0' to 2'						Asphalt and crushed rock	
1	13							(Refer to boring log for NRP-B-2 for PID readings)	1
2	12							Moist, gray SAND (SP); poorly graded fine-to-medium sand	2
3	11	3/8" Hydrated bentonite chips 2' to 4'	CC-1						3
4	10								4
5	9	10/20 pre-pack Silica sand filter pack 4' to 15'						Moist, gray, silty SAND (SM); fine sand	5
6	8								6
7	7		CC-2					Moist, gray SAND (SP); poorly graded fine-to-medium sand, trace organics: shells and wood, strong petroleum-like odor, sheen at 8'	7
8	6								8
9	5	▼ 2" Diameter PVC pre-packed .001 slot screen 5' to 15'							9
10	4							Wet, gray, silty SAND (SM); trace gravel medium to coarse sand, slight petroleum-like odor, slight sheen	10
11	3								11
12	2		CC-3					Wood chips at 12'	12
13	1								13
14	0							Wet, gray SAND (SP); medium sand, trace organics, trace seashell fragments	14
15	-1	Threaded cap						Bottom of boring at 15' BGS	15
16	-2								16
17	-3								17
18	-4								18
19	-5								19
20	-6								20
21	-7								21
22	-8								22
23	-9								23
24	-10								24
25	-11								25
26	-12								26
27	-13								27
28	-14								28
29	-15								29

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

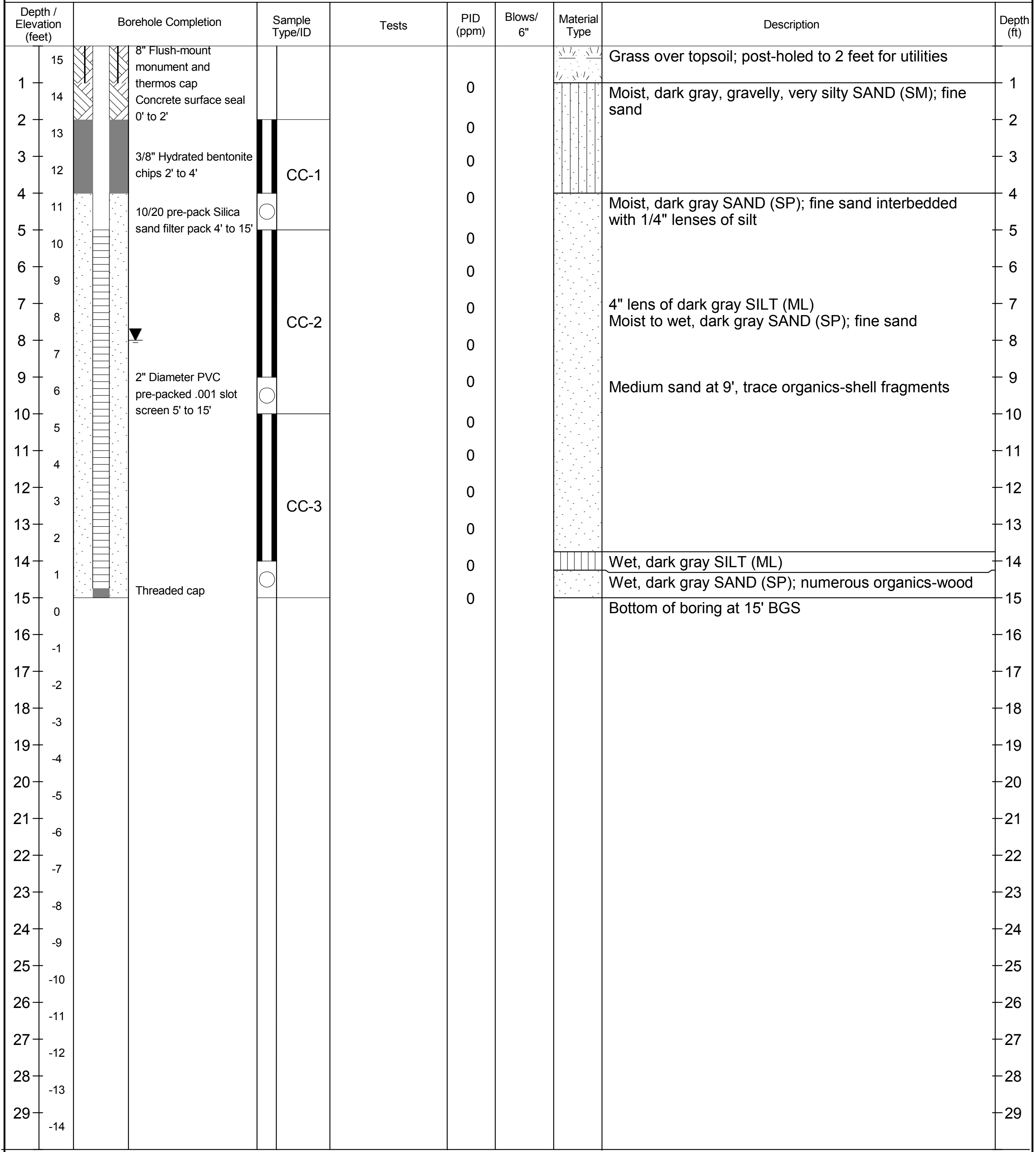
Logged by: MAR
Approved by: SJG
Figure No. A-107

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	NRP-MW-02	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core

Ground Surface Elev: 15.37
Top of Casing Elev.: 15.09
Depth to Water (ft BGS): 8
Start/Finish Date: 5/29/2012



Depth (feet)	Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Description
	15	8" Flush-mount monument and thermos cap					Grass over topsoil; post-holed to 2 feet for utilities
1	14	Concrete surface seal 0' to 2'			0		Moist, dark gray, gravelly, very silty SAND (SM); fine sand
2	13				0		
3	12	3/8" Hydrated bentonite chips 2' to 4'	CC-1		0		
4	11	10/20 pre-pack Silica sand filter pack 4' to 15'	○		0		Moist, dark gray SAND (SP); fine sand interbedded with 1/4" lenses of silt
5	10				0		
6	9				0		
7	8		CC-2		0		4" lens of dark gray SILT (ML) Moist to wet, dark gray SAND (SP); fine sand
8	7	▼			0		
9	6	2" Diameter PVC pre-packed .001 slot screen 5' to 15'	○		0		Medium sand at 9', trace organics-shell fragments
10	5				0		
11	4				0		
12	3		CC-3		0		
13	2				0		
14	1		○		0		Wet, dark gray SILT (ML) Wet, dark gray SAND (SP); numerous organics-wood
15	0	Threaded cap			0		Bottom of boring at 15' BGS
16	-1						
17	-2						
18	-3						
19	-4						
20	-5						
21	-6						
22	-7						
23	-8						
24	-9						
25	-10						
26	-11						
27	-12						
28	-13						
29	-14						

Sampler Type:
○ No Recovery
▮ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

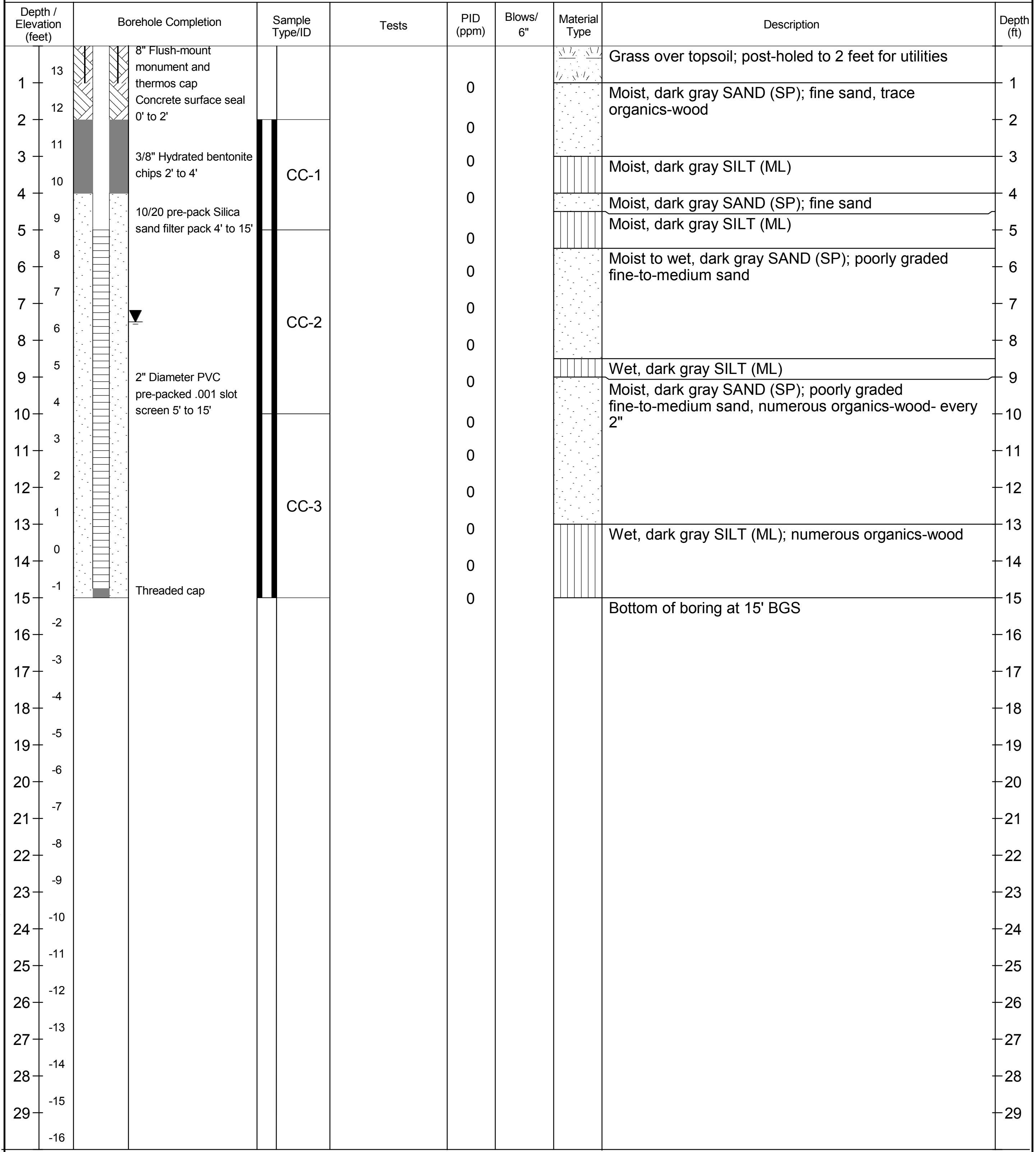
Logged by: MAR
Approved by: SJG
Figure No. A-108

Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	NRP-MW-03	1 of 1

Project Name:	Kimberly Clark-Everett Mill	Ground Surface Elev	13.67
Location:	Everett, WA	Top of Casing Elev.	13.3
Driller/Method:	Cascade Drilling / Direct Push Probe	Depth to Water (ft BGS)	7.5
Sampling Method:	Continuous Core	Start/Finish Date	5/29/2012



Grass over topsoil; post-holed to 2 feet for utilities

Moist, dark gray SAND (SP); fine sand, trace organics-wood

Moist, dark gray SILT (ML)

Moist, dark gray SAND (SP); fine sand

Moist, dark gray SILT (ML)

Moist to wet, dark gray SAND (SP); poorly graded fine-to-medium sand

Wet, dark gray SILT (ML)

Moist, dark gray SAND (SP); poorly graded fine-to-medium sand, numerous organics-wood- every 2"

Wet, dark gray SILT (ML); numerous organics-wood

Bottom of boring at 15' BGS

Sampler Type:

○ No Recovery

▮ Continuous Core

PID - Photoionization Detector

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-109

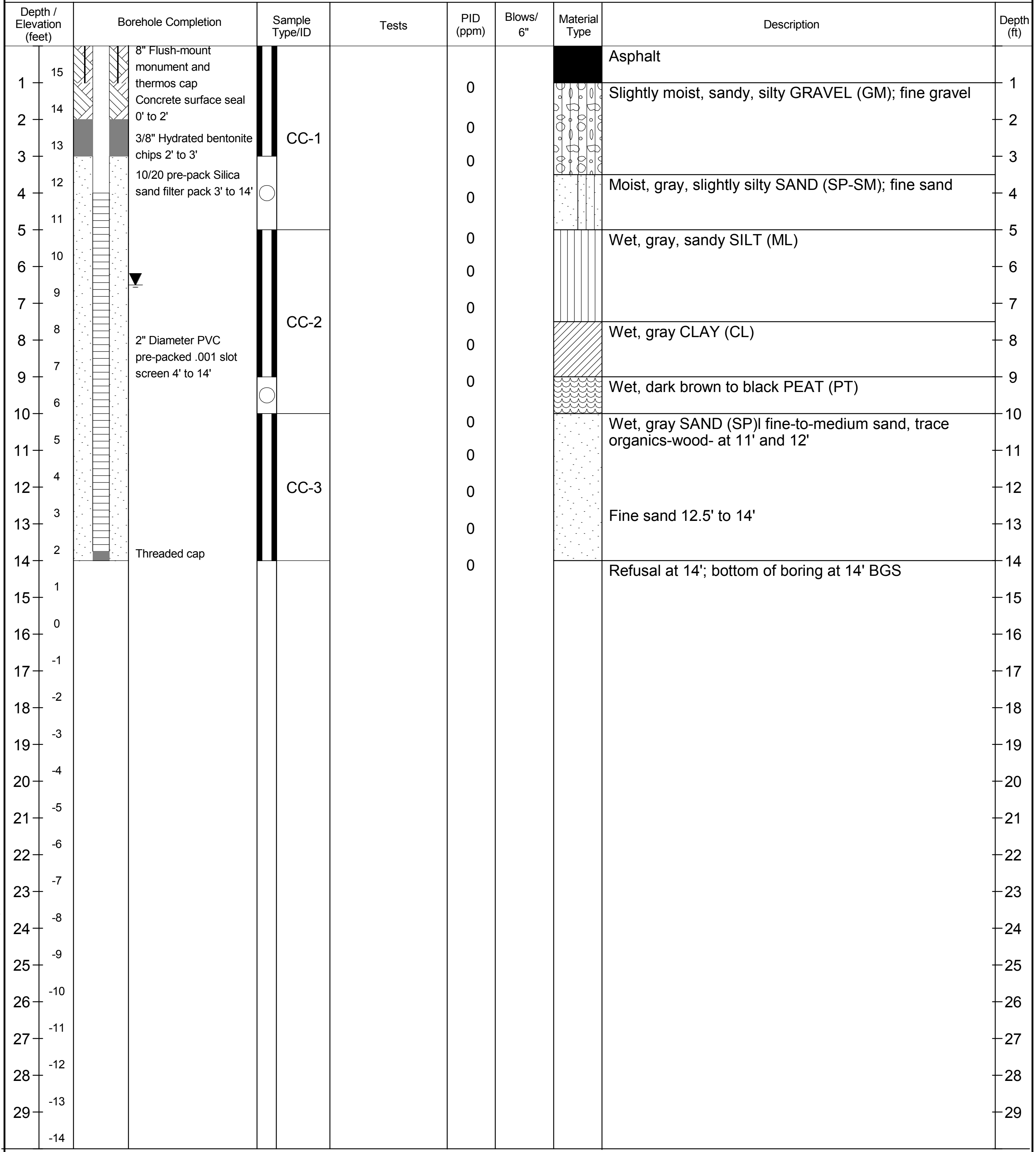
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	NRP-MW-04	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core

Ground Surface Elev: 15.7
Top of Casing Elev.: 15.39
Depth to Water (ft BGS): 6.5
Start/Finish Date: 6/6/2012



Depth (ft)	Borehole Completion	Sample Type/ID	PID (ppm)	Description
0 to 1	8" Flush-mount monument and thermos cap Concrete surface seal 0' to 2'	CC-1	0	Asphalt
1 to 3.5	3/8" Hydrated bentonite chips 2' to 3'		0 0 0	Slightly moist, sandy, silty GRAVEL (GM); fine gravel
3.5 to 5	10/20 pre-pack Silica sand filter pack 3' to 14'		0 0	Moist, gray, slightly silty SAND (SP-SM); fine sand
5 to 7.5		CC-2	0 0 0	Wet, gray, sandy SILT (ML)
7.5 to 9	2" Diameter PVC pre-packed .001 slot screen 4' to 14'		0	Wet, gray CLAY (CL)
9 to 10			0	Wet, dark brown to black PEAT (PT)
10 to 14	Threaded cap	CC-3	0 0 0 0 0	Wet, gray SAND (SP)l fine-to-medium sand, trace organics-wood- at 11' and 12' Fine sand 12.5' to 14'
14			0	Refusal at 14'; bottom of boring at 14' BGS

Depth / Elevation (feet): 1/15, 2/14, 3/13, 4/12, 5/11, 6/10, 7/9, 8/8, 9/7, 10/6, 11/5, 12/4, 13/3, 14/2, 15/1, 16/0, 17/-1, 18/-2, 19/-3, 20/-4, 21/-5, 22/-6, 23/-7, 24/-8, 25/-9, 26/-10, 27/-11, 28/-12, 29/-13, -14

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-110

Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	NRP-MW-05	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe

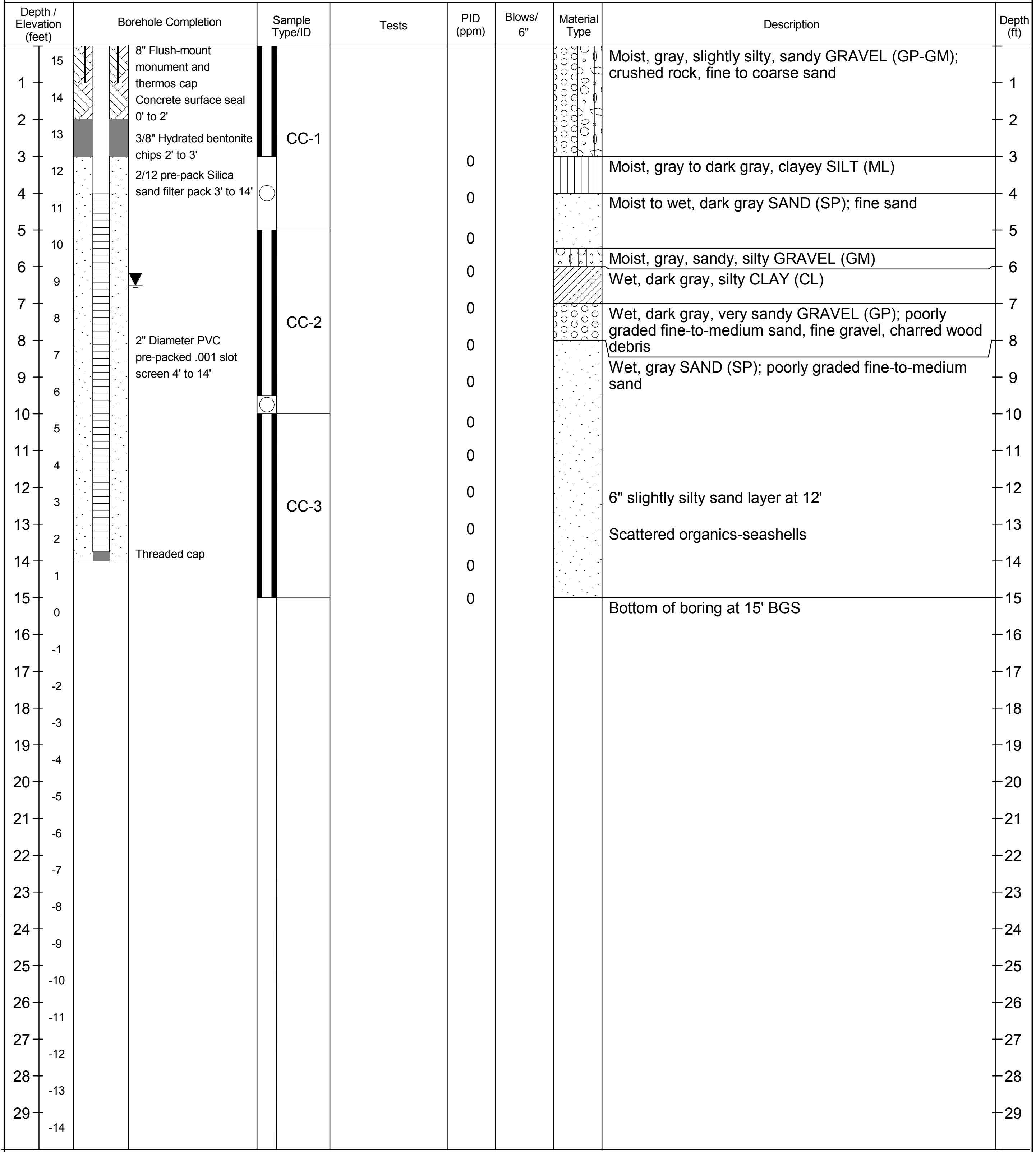
Sampling Method: Continuous Core

Ground Surface Elev: 15.39

Top of Casing Elev.: 15.14

Depth to Water (ft BGS): 6.5

Start/Finish Date: 6/27/2012



8" Flush-mount monument and thermos cap

Concrete surface seal 0' to 2'

3/8" Hydrated bentonite chips 2' to 3'

2/12 pre-pack Silica sand filter pack 3' to 14'

2" Diameter PVC pre-packed .001 slot screen 4' to 14'

Threaded cap

Depth (ft)	PID (ppm)
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0

Moist, gray, slightly silty, sandy GRAVEL (GP-GM); crushed rock, fine to coarse sand

Moist, gray to dark gray, clayey SILT (ML)

Moist to wet, dark gray SAND (SP); fine sand

Moist, gray, sandy, silty GRAVEL (GM)

Wet, dark gray, silty CLAY (CL)

Wet, dark gray, very sandy GRAVEL (GP); poorly graded fine-to-medium sand, fine gravel, charred wood debris

Wet, gray SAND (SP); poorly graded fine-to-medium sand

6" slightly silty sand layer at 12'

Scattered organics-seashells

Bottom of boring at 15' BGS

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET

Approved by: SJG

Figure No. A-111

Boring Log

Project Number	Boring Number	Sheet
110207	OMS-B-1	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Aspect / Hand Auger

Sampling Method: Continuous Grab

Ground Surface Elev

Depth to Water (ft BGS) Not encountered

Start/Finish Date 7/5/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
		✋	OMS-B-1-0-1-070512				**CONCRETE SLAB FLOOR**	
							FILL Slightly moist, brown, slightly gravelly, SAND (SP); perdominantly medium sand.	
			OMS-B-1-2-3-070512					
							Bottom of boring at 3 ft BGS. Backfilled boring with same material that was pulled from hole.	
5								5
10								10
15								15

Sampler Type:

○ No Recovery

✋ Grab Sample

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: GL

Approved by: SJG

Figure No. A-112

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	OMS-B-2	1 of 1

Project Name: Kimberly Clark-Everett Mill

Ground Surface Elev

Location: Everett, WA

Driller/Method: Aspect / Hand Auger

Depth to Water (ft BGS) Not Encountered

Sampling Method: Continuous Grab

Start/Finish Date 7/5/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
			OMS-B-2-0-1-070512			▨	**CONCRETE SLAB FLOOR**	
1		✋				░	**FILL** Slight moist, brown, slightly gravelly, SAND (SP); perdominantly medium sand; shells present; plastic debris.	1
2			OMS-B-2-2-3-070512					2
3							Bottom of boring at 3 ft BGS. Backfilled boring with same material that was pulled from hole.	3
4								4
5								5
6								6
7								7
8								8
9								9
10								10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29

Sampler Type:

○ No Recovery

✋ Grab Sample

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: GL

Approved by: SJG

Figure No. A-113

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	OMS-B-3	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Aspect / Hand Auger

Sampling Method: Continuous Grab

Ground Surface Elev

Depth to Water (ft BGS) Not Encountered

Start/Finish Date 7/5/2012-7/6/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
			OMS-B-3-1-2-070512				**CONCRETE SLAB FLOOR**	
1		✋					**FILL** Slightly moist, brown, slightly sandy GRAVEL (GP); perdominantly coarse gravel with sandy and cobbles; recycled concrete rubble.	1
2			OMS-B-3-2-3-070612					2
3							Bottom of boring at 3 ft BGS. Backfilled boring with same material that was pulled from hole.	3
4								4
5								5
6								6
7								7
8								8
9								9
10								10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29

Sampler Type:

○ No Recovery

✋ Grab Sample

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: GL

Approved by: SJG

Figure No. A-114

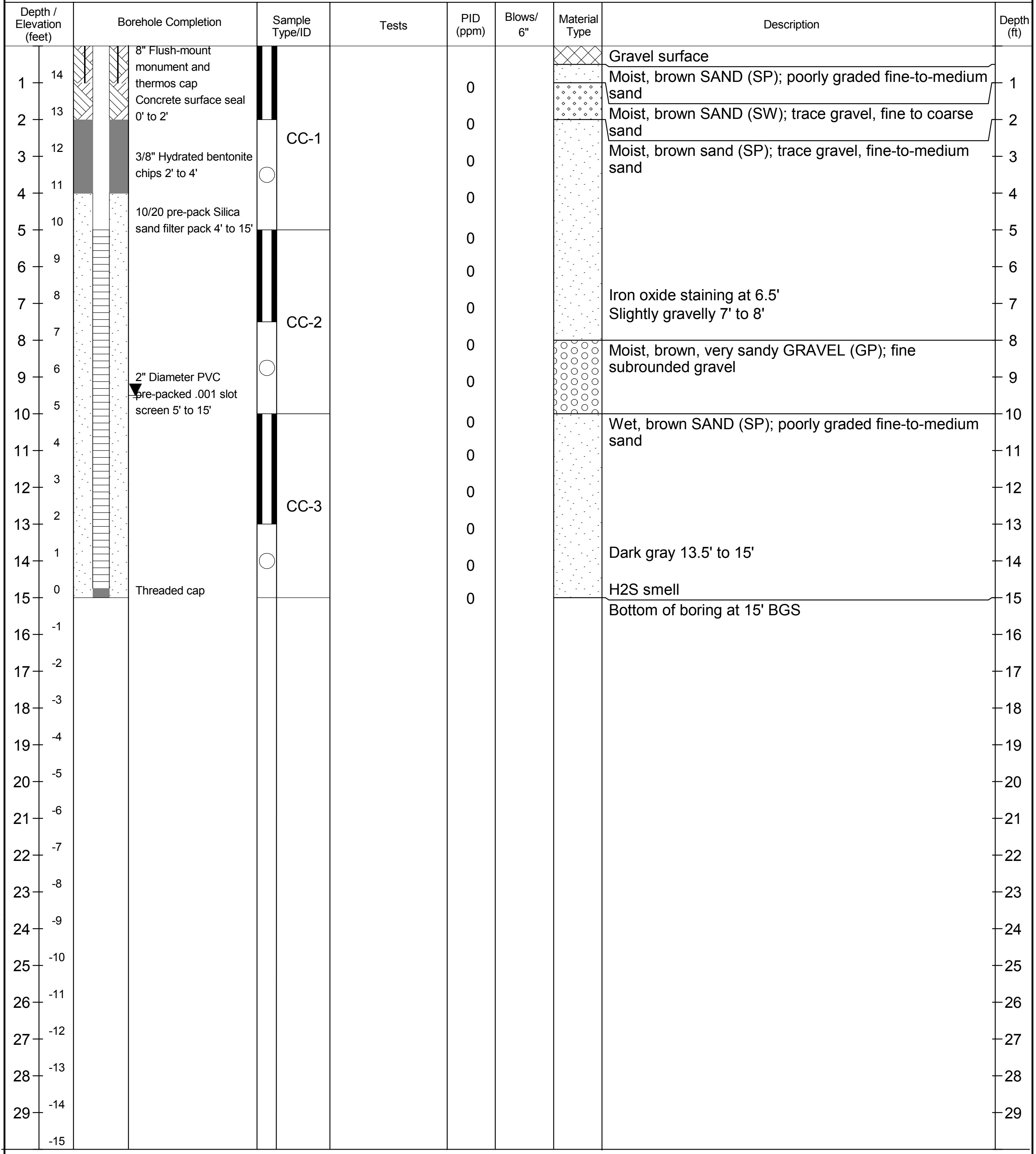
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	OMS-MW-01	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core

Ground Surface Elev: 14.77
Top of Casing Elev.: 14.68
Depth to Water (ft BGS): 9.5
Start/Finish Date: 6/4/2012



Borehole Completion:
- 8" Flush-mount monument and thermos cap
- Concrete surface seal 0' to 2'
- 3/8" Hydrated bentonite chips 2' to 4'
- 10/20 pre-pack Silica sand filter pack 4' to 15'
- 2" Diameter PVC pre-packed .001 slot screen 5' to 15'
- Threaded cap

Sample Type/ID: CC-1, CC-2, CC-3

Depth (ft)	PID (ppm)
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0

Description:

Gravel surface

Moist, brown SAND (SP); poorly graded fine-to-medium sand

Moist, brown SAND (SW); trace gravel, fine to coarse sand

Moist, brown sand (SP); trace gravel, fine-to-medium sand

Iron oxide staining at 6.5'
Slightly gravelly 7' to 8'

Moist, brown, very sandy GRAVEL (GP); fine subrounded gravel

Wet, brown SAND (SP); poorly graded fine-to-medium sand

Dark gray 13.5' to 15'

H2S smell

Bottom of boring at 15' BGS

Sampler Type:
- ○ No Recovery
- ▌ Continuous Core

PID - Photoionization Detector
- ▼ Static Water Level
- ▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-115

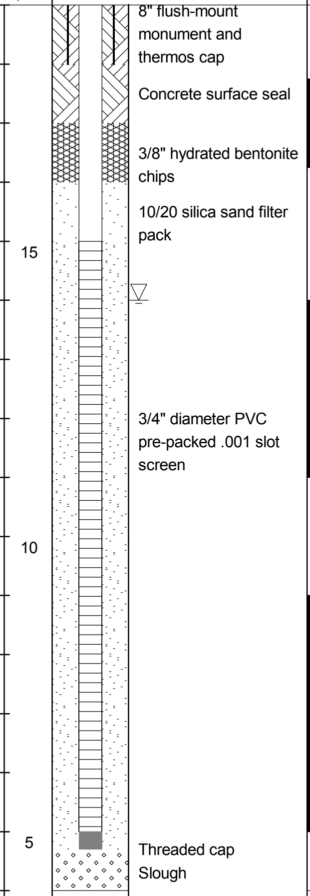
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	REC1-MW-01	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core

Ground Surface Elev: 19.18
Top of Casing Elev.: 18.87
Depth to Water (ft BGS): 5
Start/Finish Date: 9/4/2012



Depth (ft)	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Description
0					Concrete
					Void space
	CC-1 (Continuous Core)		0 0		Moist, gray, SAND (SP); poorly graded fine to medium sand
	○				No recovery
5	CC-2 (Continuous Core)	REC1-MW-1-5-6	0.3 0.2		Wet, gray, slightly silty SAND (SP-SM); poorly graded fine to medium sand, trace gravel
			0		Wet, gray, very gravelly SAND (SP); poorly graded fine to medium sand
	○				No recovery
10	CC-3 (Continuous Core)		10		Wet, gray, gravelly SAND (SP); poorly graded fine to medium sand
		REC1-MW-1-11-12 REC1-MW-1-13-14	69.5 7.6 3.6 2.7 0.8		Very moist to wet ORGANIC SILT (OL); very woody, trace gravel
	○				No recovery
15					Bottom of boring at 15'
20					
25					

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET & MAR
Approved by: SJG
Figure No. A-116

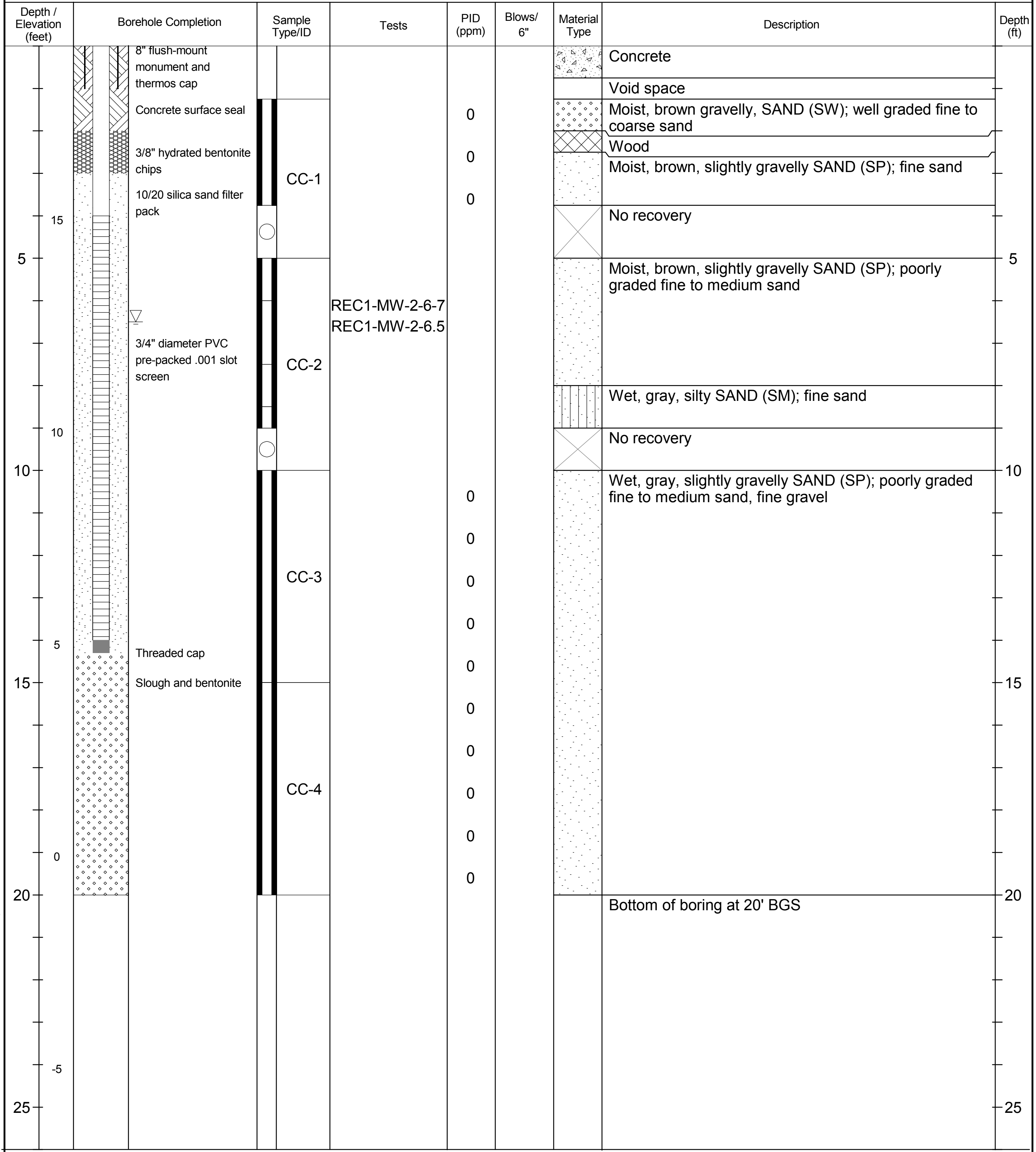
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	REC1-MW-02	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core

Ground Surface Elev: 19.1
Top of Casing Elev.: 18.85
Depth to Water (ft BGS): 6.5
Start/Finish Date: 9/4/2012



Borehole Completion:
- 8" flush-mount monument and thermos cap
- Concrete surface seal
- 3/8" hydrated bentonite chips
- 10/20 silica sand filter pack
- ▽
- 3/4" diameter PVC pre-packed .001 slot screen
- Threaded cap
- Slough and bentonite

Sample Type/ID	Tests	PID (ppm)	Description
			Concrete
			Void space
CC-1		0	Moist, brown gravelly, SAND (SW); well graded fine to coarse sand
		0	Wood
		0	Moist, brown, slightly gravelly SAND (SP); fine sand
○			No recovery
CC-2	REC1-MW-2-6-7 REC1-MW-2-6.5		Moist, brown, slightly gravelly SAND (SP); poorly graded fine to medium sand
			Wet, gray, silty SAND (SM); fine sand
○			No recovery
CC-3		0 0 0 0 0	Wet, gray, slightly gravelly SAND (SP); poorly graded fine to medium sand, fine gravel
CC-4		0 0 0 0 0	
			Bottom of boring at 20' BGS

Sampler Type:
- ○ No Recovery
- ▌ Continuous Core

PID - Photoionization Detector
- ▼ Static Water Level
- ▽ Water Level (ATD)

Logged by: AET & MAR
Approved by: SJG
Figure No. A-117

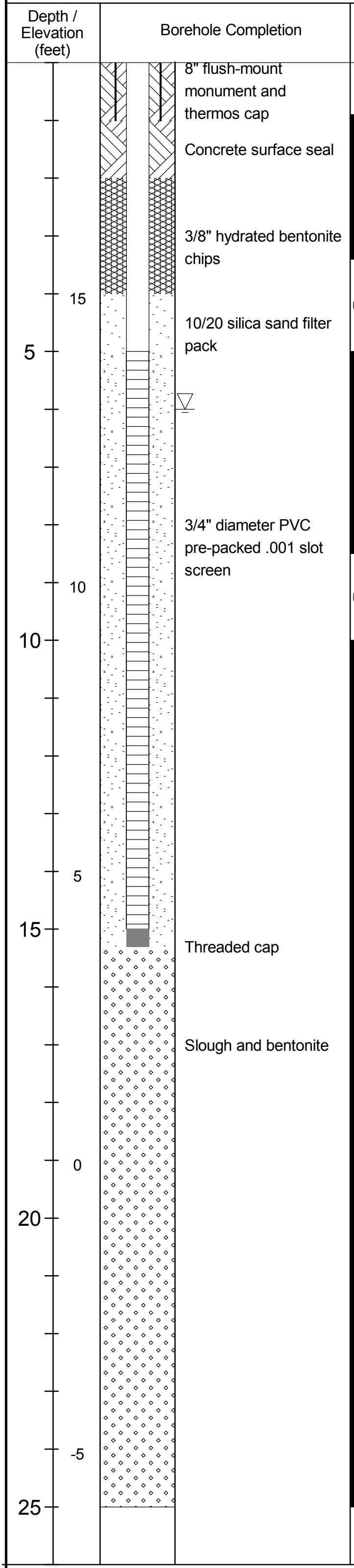
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	REC1-MW-03	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core

Ground Surface Elev 19.08
Top of Casing Elev. 18.74
Depth to Water (ft BGS) 6
Start/Finish Date 9/4/2012



Depth / Elevation (feet)	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Description	Depth (ft)
					Concrete	
					Void space	
	CC-1		0 0 0 0		Moist, brown, gravelly SAND (SP); poorly graded fine to medium sand	
	○				No recovery	
5	CC-2	REC1-MW-3-5.5-6.5			Moist, brown, slightly gravelly SAND (SP); fine sand, scattered shells	5
					Wet, gray, silty SAND (SM); fine sand	
			42.1 4.7 37.8		Wet, gray, SAND (SW); well graded fine to coarse sand, abundant shells	
	○				No recovery	
10	CC-3 CC-4	REC1-MW-3-12-13	223 1719 2434 381 29.0 1811		Wet, gray, SAND (SP); poorly graded fine to medium sand	10
			381 117		Wet, brown to gray SAND interbedded with SILT (SP/ML); thin interbeds, numerous organics in silt beds	
20	CC-5	REC1-MW-3-24-25	47.1 1.9 1.9 5.0		Wet, brown to gray, SAND (SP); poorly graded fine to medium sand, trace fine gravel	20
25			26.8		Bottom of boring at 25' BGS	25

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET & MAR
Approved by: SJG
Figure No. A-118

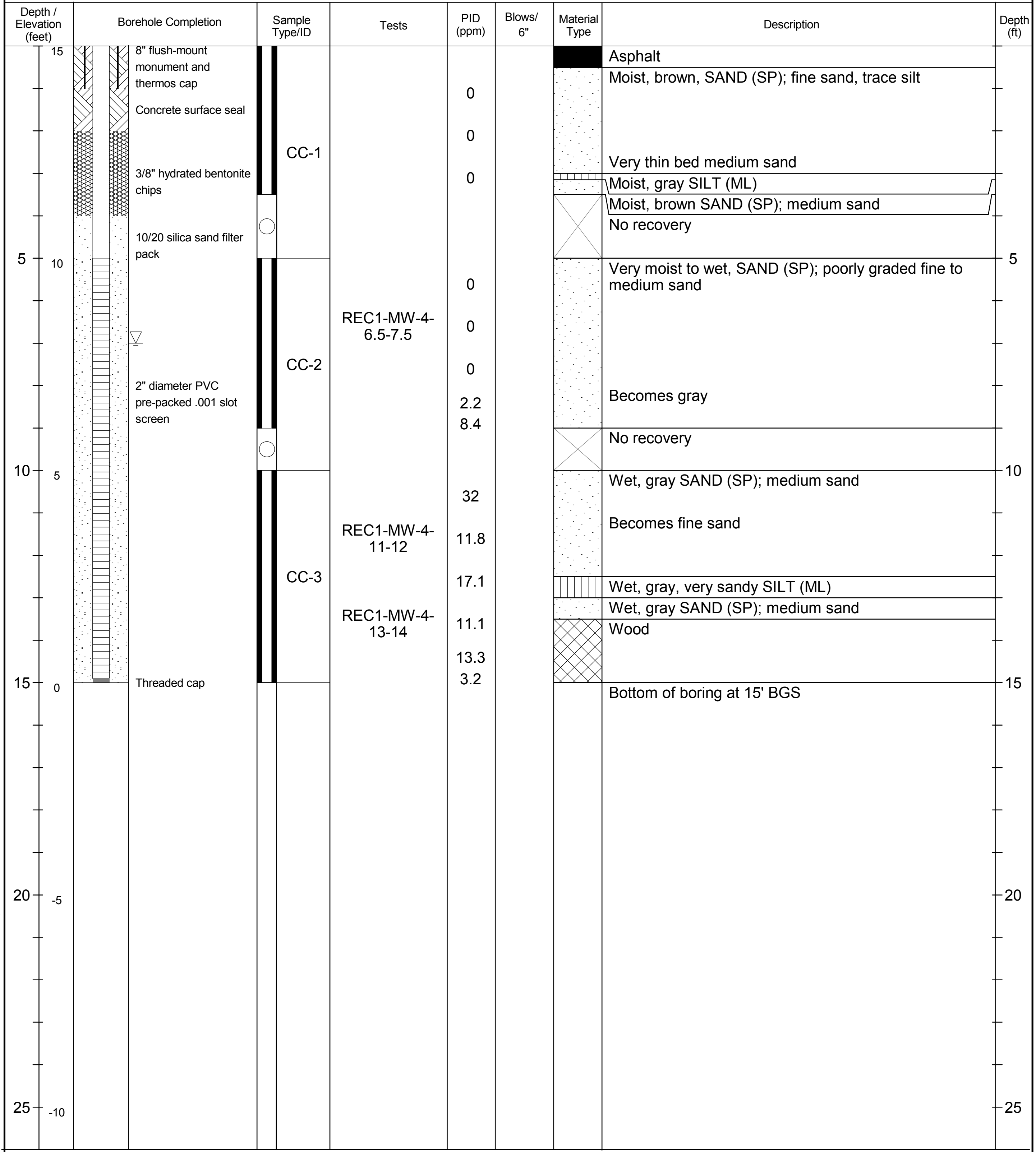
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	REC1-MW-04	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core

Ground Surface Elev: 15.12
Top of Casing Elev.: 14.81
Depth to Water (ft BGS): 7
Start/Finish Date: 9/7/2012



Depth (ft)	Sample Type/ID	Tests	PID (ppm)	Description
0				Asphalt
			0	Moist, brown, SAND (SP); fine sand, trace silt
	CC-1		0	
			0	Very thin bed medium sand
				Moist, gray SILT (ML)
				Moist, brown SAND (SP); medium sand
				No recovery
5			0	Very moist to wet, SAND (SP); poorly graded fine to medium sand
		REC1-MW-4-6.5-7.5	0	
	CC-2		0	
			2.2	Becomes gray
			8.4	
				No recovery
10			32	Wet, gray SAND (SP); medium sand
		REC1-MW-4-11-12	11.8	Becomes fine sand
	CC-3		17.1	Wet, gray, very sandy SILT (ML)
				Wet, gray SAND (SP); medium sand
		REC1-MW-4-13-14	11.1	Wood
			13.3	
15			3.2	Bottom of boring at 15' BGS

Sampler Type:
○ No Recovery
▮ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET & MAR
Approved by: SJG
Figure No. A-119

Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	REC1-MW-05	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

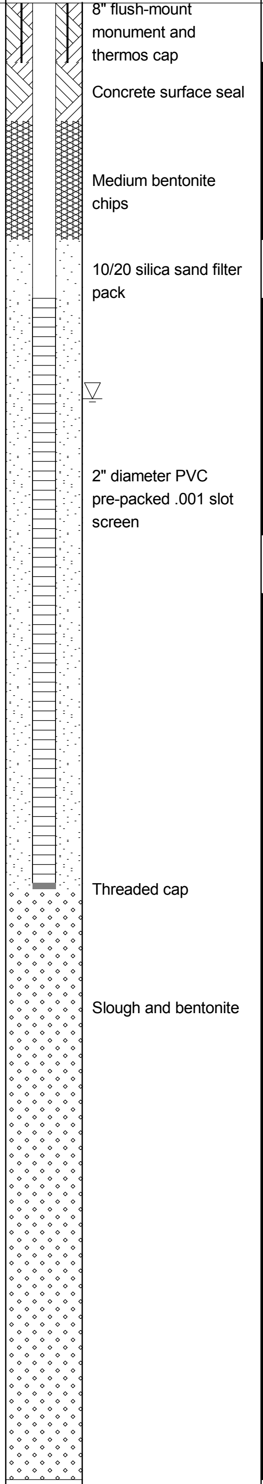
Sampling Method: Continuous Core

Ground Surface Elev

Top of Casing Elev.

Depth to Water (ft BGS) 6.7

Start/Finish Date 9/10/2012



Depth / Elevation (feet)	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
						Asphalt	
						Concrete	
	CC-1		0			Moist, brown SAND (SP); poorly graded fine to medium sand	
			0			Pocket of fine sand	
			0				
	○					No recovery	
5	CC-2		9.8			Moist, brown SAND (SP); poorly graded fine to medium sand	5
		REC1-MW-05-6.5-7.5	2.8				
			66.7				
			87.9				
			141				
	○					No recovery	
10	CC-3		24.4			Wet, dark gray, SAND (SP); fine sand, sheen and strong petroleum-like odor	10
			104				
		REC1-MW-05-12-13	112			Becomes medium sand, gravelly	
			169				
			87				
15	CC-4		10.0			Becomes fine to medium sand; trace gravel, trace silt	15
			45.7				
			17.7			Wood at 16.5'	
			13.4				
			7.0			Pocket of silt	
20	CC-5		16.0				20
			7.0				
		REC1-MW-05-22-23	3.6				
			1.8				
						Wet, brown SILT (ML)	
			26.4			Wet, gray SAND (SP); poorly graded fine to medium sand	
25			33.8			Bottom of boring at 25' BGS	25

Sampler Type:

○ No Recovery

▮ Continuous Core

PID - Photoionization Detector

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET & MAR

Approved by: SJG

Figure No. A-120

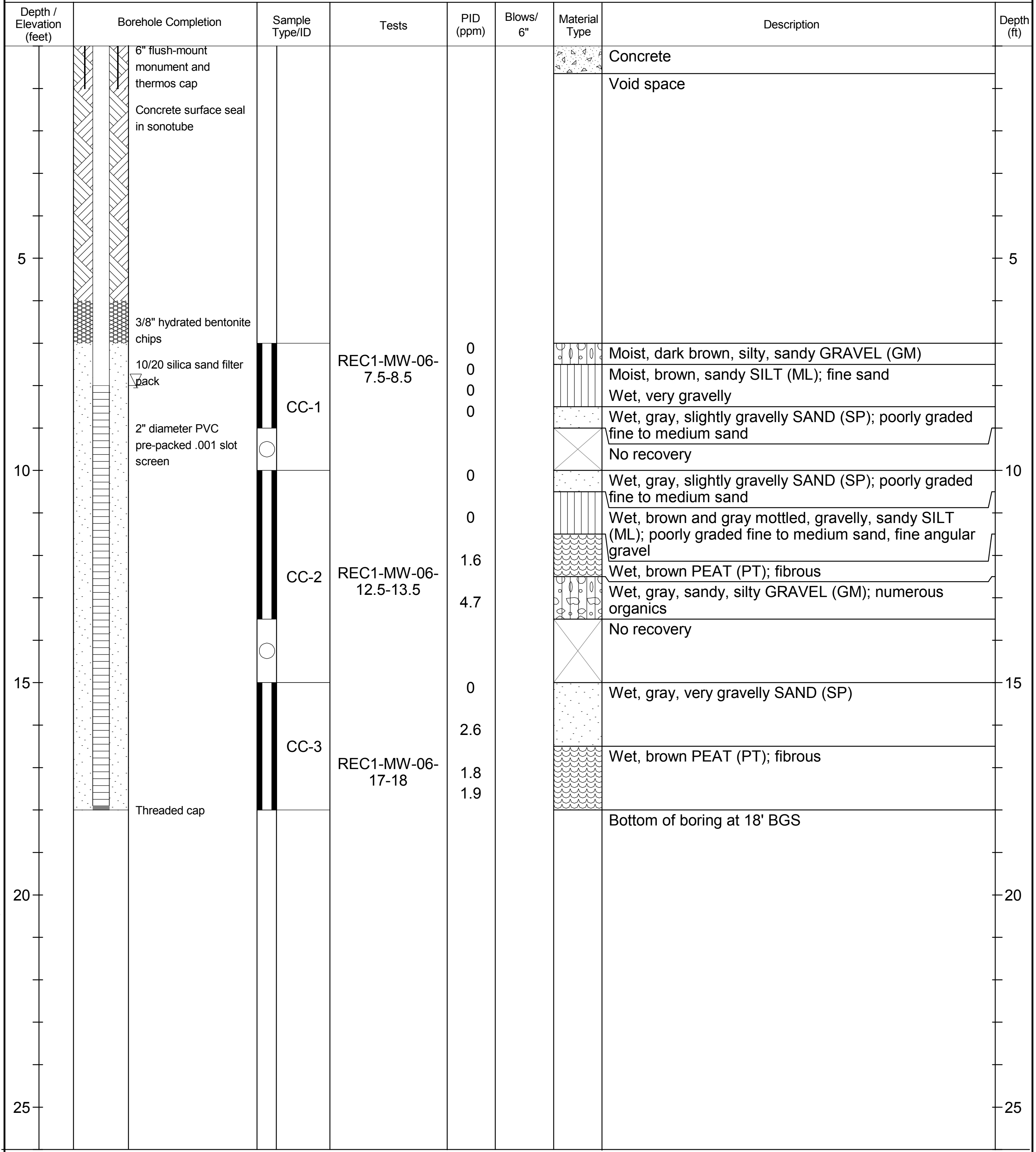
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	REC1-MW-06	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core

Ground Surface Elev
Top of Casing Elev.
Depth to Water (ft BGS) 8
Start/Finish Date 9/10/2012



Borehole Completion:

- 6" flush-mount monument and thermos cap
- Concrete surface seal in sonotube
- 3/8" hydrated bentonite chips
- 10/20 silica sand filter pack
- 2" diameter PVC pre-packed .001 slot screen
- Threaded cap

Sample Type/ID	Tests	PID (ppm)
CC-1	REC1-MW-06-7.5-8.5	0 0 0 0
CC-2	REC1-MW-06-12.5-13.5	0 0 1.6 4.7
CC-3	REC1-MW-06-17-18	0 2.6 1.8 1.9

Description:

- Concrete
- Void space
- Moist, dark brown, silty, sandy GRAVEL (GM)
- Moist, brown, sandy SILT (ML); fine sand
- Wet, very gravelly
- Wet, gray, slightly gravelly SAND (SP); poorly graded fine to medium sand
- No recovery
- Wet, gray, slightly gravelly SAND (SP); poorly graded fine to medium sand
- Wet, brown and gray mottled, gravelly, sandy SILT (ML); poorly graded fine to medium sand, fine angular gravel
- Wet, brown PEAT (PT); fibrous
- Wet, gray, sandy, silty GRAVEL (GM); numerous organics
- No recovery
- Wet, gray, very gravelly SAND (SP)
- Wet, brown PEAT (PT); fibrous
- Bottom of boring at 18' BGS

Sampler Type:
○ No Recovery
▮ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET & MAR
Approved by: SJG
Figure No. A-121

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	REC1-MW-07	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

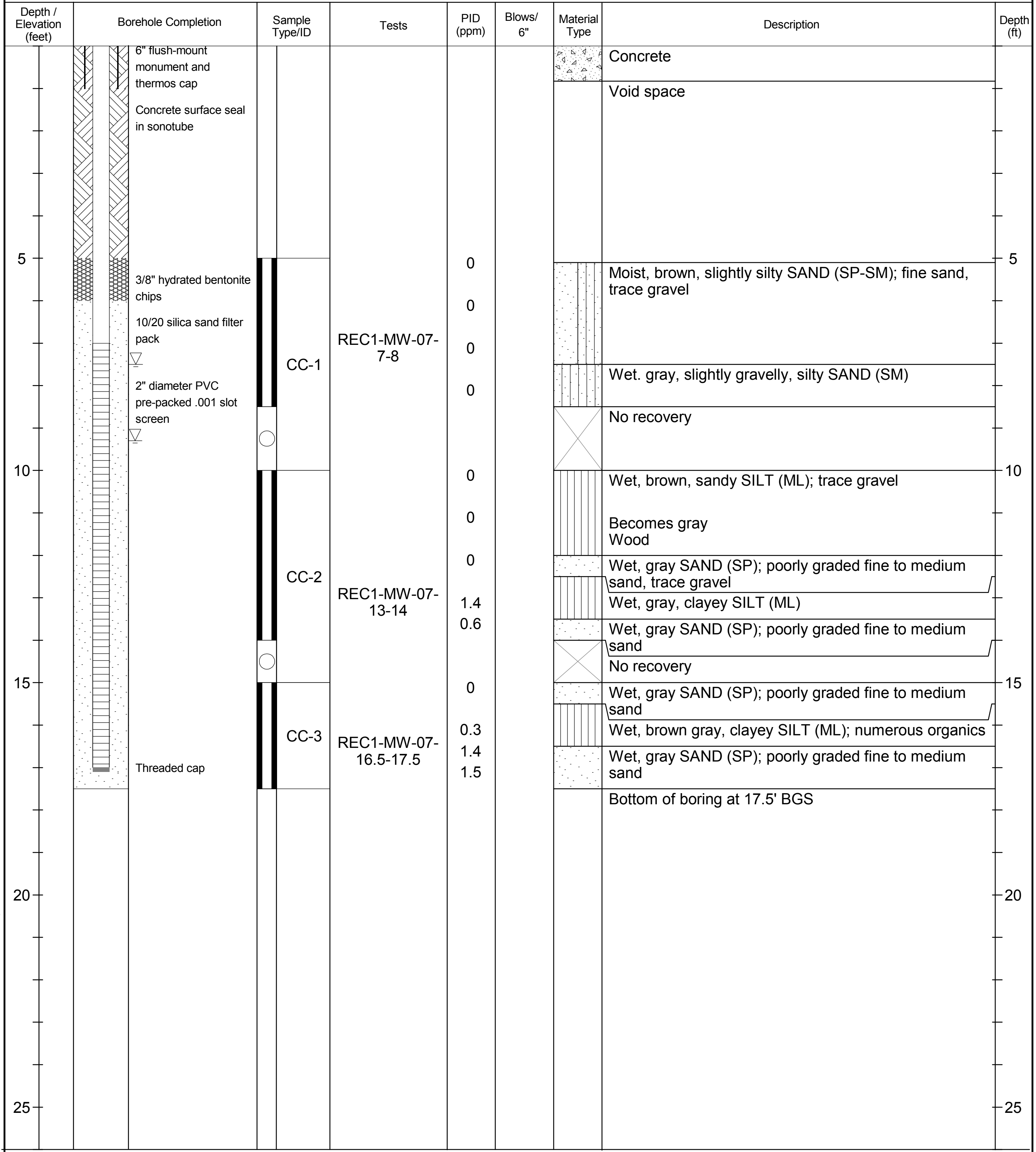
Sampling Method: Continuous Core

Ground Surface Elev

Top of Casing Elev.

Depth to Water (ft BGS) 7.5

Start/Finish Date 9/10/2012



Borehole Completion:
- 6" flush-mount monument and thermos cap
- Concrete surface seal in sonotube
- 3/8" hydrated bentonite chips
- 10/20 silica sand filter pack
- 2" diameter PVC pre-packed .001 slot screen
- Threaded cap

Depth / Elevation (feet)	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
						Concrete	
						Void space	
5	CC-1	REC1-MW-07-7-8	0 0 0			Moist, brown, slightly silty SAND (SP-SM); fine sand, trace gravel	5
			0			Wet. gray, slightly gravelly, silty SAND (SM)	
						No recovery	
10	CC-2	REC1-MW-07-13-14	0 0 0			Wet, brown, sandy SILT (ML); trace gravel Becomes gray Wood	10
						Wet, gray SAND (SP); poorly graded fine to medium sand, trace gravel	
			1.4 0.6			Wet, gray, clayey SILT (ML)	
						Wet, gray SAND (SP); poorly graded fine to medium sand	
						No recovery	
15	CC-3	REC1-MW-07-16.5-17.5	0			Wet, gray SAND (SP); poorly graded fine to medium sand	15
			0.3			Wet, brown gray, clayey SILT (ML); numerous organics	
			1.4 1.5			Wet, gray SAND (SP); poorly graded fine to medium sand	
						Bottom of boring at 17.5' BGS	
20							20
25							25

Sampler Type:
- ○ No Recovery
- ▮ Continuous Core

PID - Photoionization Detector
- ▼ Static Water Level
- ▽ Water Level (ATD)

Logged by: AET & MAR

Approved by: SJG

Figure No. A-122

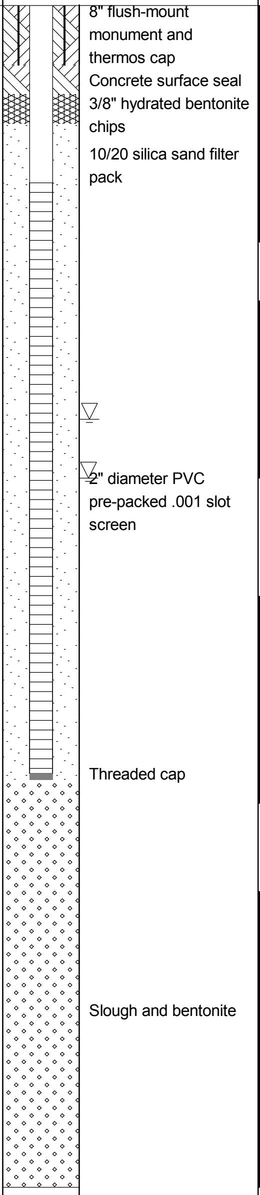
Aspect CONSULTING

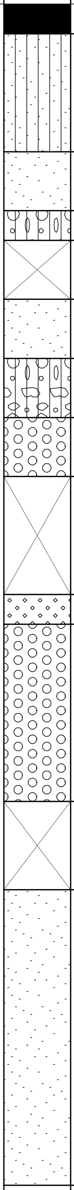
Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	REC1-MW-08	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core

Ground Surface Elev
Top of Casing Elev.
Depth to Water (ft BGS) 7
Start/Finish Date 9/4/2012





Depth / Elevation (feet)	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Description	Depth (ft)
	CC-1				Asphalt	
			0 0		Moist, brown, gravelly, silty SAND (SM); poorly graded fine to medium sand	
			0		Moist, brown SAND (SP); poorly graded fine to medium sand, brick debris, trace gravel	
			1.4		Moist, black, silty, sandy GRAVEL (GM); with cobbles, fine sand	
	○				No recovery	
5	CC-2		0		Moist, brown, gravelly SAND (SP); poorly graded fine to medium sand	5
			1.0		Moist, black, silty, sandy GRAVEL (GM); with cobbles, fine sand	
		REC1-MW-08-7-8	0		Wet, brown, sandy GRAVEL (GP)	
	○				No recovery	
10	CC-3		0		Wet, brown gray SAND (SW); poorly graded fine to coarse sand	10
			0		Wet, brown, sandy GRAVEL (GP); with cobbles	
		REC1-MW-08-12-13	3.7		Becomes black	
			0.4		Becomes red	
	○				No recovery	
15	CC-4	REC1-MW-08-15-16	0 0 0 0		Wet, gray, trace to slightly gravelly SAND (SP); poorly graded fine to medium sand	15
20					Bottom of boring at 20' BGS	20
25						25

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

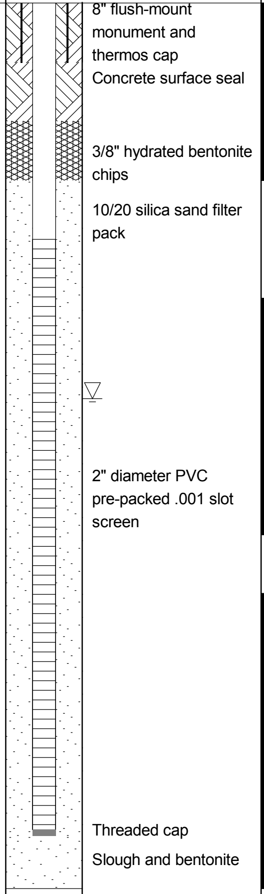
Logged by: AET & MAR
Approved by: SJG
Figure No. A-123

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	REC1-MW-09	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core

Ground Surface Elev
Top of Casing Elev.
Depth to Water (ft BGS) 6.7
Start/Finish Date 9/5/2012



Depth / Elevation (feet)	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
						Asphalt	
			0			Moist, brown, slightly silty SAND (SP-SM); fine sand	
			0			Moist, dark brown to dark gray, silty, sandy GRAVEL (GM); fine subround gravel, fill debris	
	CC-1		0			Very moist, brown, very silty SAND (SM); fine sand, trace gravel, fill debris	
						No recovery	
5			0			Very moist, dark brown, silty, very gravelly SAND (SP); fine sand, fill debris including brick	5
		REC1-MW-09-6-7	0			Becomes slightly gravelly Black 6.5' to 7' Brown at 7'	
	CC-2		0			Black 7.75'-8'	
						Wet, dark gray, gravelly SAND (SP)	
						No recovery	
10						Wet, brown, gravelly SAND (SP)	10
						Wet, gray, silty, gravelly SAND (SM); poorly graded fine to medium sand	
	CC-3					Wet, black, gravelly SAND (SP); poorly graded fine to medium sand Brown 13.5' to 14.5'	
						Wet, dark brown, gravelly, very silty SAND (SM); fine sand	
15						Bottom of boring at 15' BGS	15
20							20
25							25

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET & MAR
Approved by: SJG
Figure No. A-124

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	REC2-B-01	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-"Mini Me"
Sampling Method: Continuous Core
Ground Surface Elev
Depth to Water (ft BGS) 7.5
Start/Finish Date 6/28/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Backfilled with medium bentonite chips						Concrete	
							Void	
		CC-1		0			Moist, brown, gravelly SAND (SW); poorly graded fine-to-coarse sand, fine gravel	
				0			Moist, brown, gravelly SAND (SP); fine sand, fine gravel	
				0				
5		CC-2	REC2-B-1-5-6	0				5
				0			Moist, brown, gravelly SAND (SW); poorly graded fine-to-coarse sand, fine gravel	
			REC2-B-1-7-8	0				
	▼						Wet, dark gray SAND (SP); fine sand with scattered seashells	
				0				
			REC2-B-1-9-10	0				
10		CC-3		0			No recovery from 10' to 15'	10
15							Bottom of boring at 15' BGS	15

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: SJG
Figure No. A-125

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	REC2-B-02	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-"Mini Me"
Sampling Method: Continuous Core
Ground Surface Elev
Depth to Water (ft BGS) 6.5
Start/Finish Date 6/28/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
		▌▌					Concrete	
							Void	
	Backfilled with medium bentonite chips						Moist, brown, gravelly SAND (SW); poorly graded fine-to-coarse sand, fine gravel	
		CC-1		0				
				0				
				0				
			REC2-B-2-4.5-5.5				Moist, brown, slightly gravelly SAND (SP); fine sand, fine gravel	
5				0				5
	▼		REC2-B-2-6-7	0				
		CC-2		0				
			REC2-B-2-8-9	0				
				0				
		○						
10				0				10
				0				
		CC-3		0				
				0				
				0				
15				0			Bottom of boring at 15' BGS	15

Sampler Type:
○ No Recovery
▌▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: SJG
Figure No. A-126

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	REC2-B-03	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-"Mini Me"

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 7.5

Start/Finish Date 6/28/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Backfilled with medium bentonite chips						Concrete	
							Void	
		CC-1		0			Moist, brown, gravelly SAND (SW); poorly graded fine-to-coarse sand, fine gravel	
5		○		0 0 0			Moist, orange-brown, gravelly SAND (SP); fine sand, fine gravel	5
			REC2-B-3-5.5-6.5				Very moist, gray SAND (SW); poorly graded fine-to-coarse sand	
				0			Moist, gray-orange SILT (ML)	
	▼	CC-2	REC2-B-3-7-8	0 0			Wet, brown SAND (SW); poorly graded fine-to-coarse sand	
10		CC-3	REC2-B-3-9-10	0 0			Wet, brown gravelly SAND (SP); poorly graded fine-to-medium sand	10
15							Refusal at 11'; bottom of boring at 11' BGS	15

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET

Approved by: SJG

Figure No. A-127

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	REC2-B-04	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core
Ground Surface Elev
Depth to Water (ft BGS) 3.5
Start/Finish Date 5/23/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	▨	▌				■	Asphalt	
	Backfilled with medium bentonite chips		REC2-B-4-1.5-2.5	9.5		○	Very moist, brown to black GRAVEL (GP); fine subangular to angular gravel; slight petroleum-like odor and bleb sheen	
				11.8		⁘	Very moist, gray SAND (SP); poorly graded fine-to-medium sand	
		CC-1		1.2				
	▼						Wet at 3.5' BGS	
			REC2-B-4-4-5	1.3				
5		▌		1.2				5
				0.3				
			REC2-B-4-6.5-7.5					
				0.3			Trace gravel, fine sand from 7' to 9.5' BGS with shell fragments	
		CC-2		0.3				
				0.3				
		○						
10		▌		0.3				10
				0.3			Fine sand interbedded with medium sand; shell fragments from 11' to 13' BGS	
		CC-3		0.3				
				0.3				
		○		0.3				
15				0.3			Bottom of boring at 15' BGS	15

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-128

Boring Log

Project Number	Boring Number	Sheet
110207	REC2-B-05	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

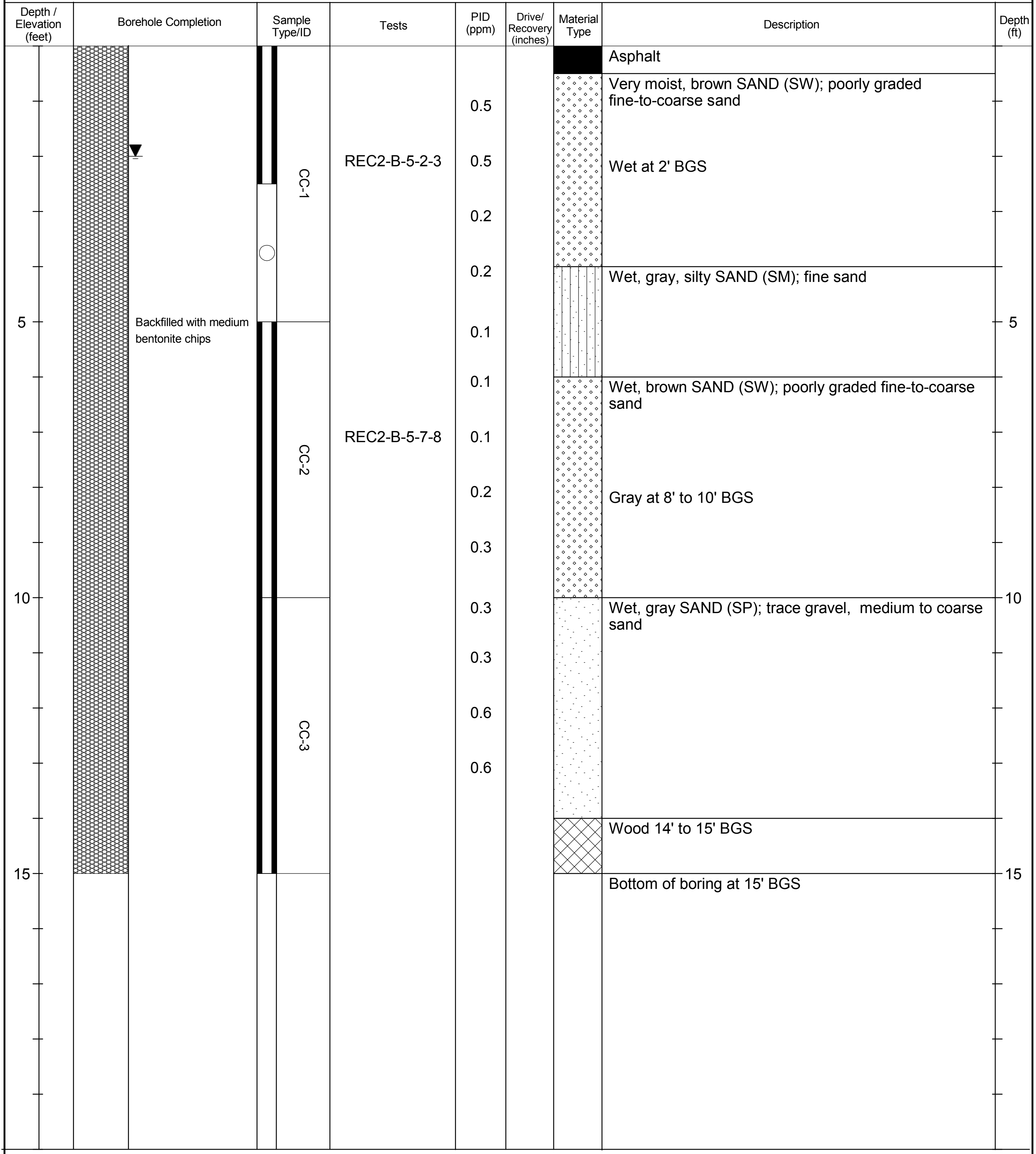
Driller/Method: Cascade Drilling / Direct Push Probe

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 2

Start/Finish Date 5/24/2012



Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
0		CC-1					Asphalt	
							Very moist, brown SAND (SW); poorly graded fine-to-coarse sand	
1				0.5				
2	▼		REC2-B-5-2-3	0.5			Wet at 2' BGS	
3		○		0.2				
4				0.2			Wet, gray, silty SAND (SM); fine sand	
5	Backfilled with medium bentonite chips	CC-2		0.1				5
6				0.1			Wet, brown SAND (SW); poorly graded fine-to-coarse sand	
7			REC2-B-5-7-8	0.1				
8				0.2			Gray at 8' to 10' BGS	
9				0.3				
10		CC-3		0.3			Wet, gray SAND (SP); trace gravel, medium to coarse sand	10
11				0.3				
12				0.6				
13				0.6				
14							Wood 14' to 15' BGS	
15							Bottom of boring at 15' BGS	15

Sampler Type:

○ No Recovery

▌▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-129

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	REC2-B-06	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-"Mini Me"
Sampling Method: Continuous Core
Ground Surface Elev
Depth to Water (ft BGS) 8.5
Start/Finish Date 6/28/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Backfilled with medium bentonite chips	▌					Concrete	
							Void	
		CC-1		0			Moist, brown, gravelly SAND (SW); poorly graded fine-to-coarse sand, fine gravel	
				0				
		○		0				
5				0				5
		CC-2	REC2-B-6-6-7	0			Moist to wet, brown SAND (SP); poorly graded fine-to-medium sand	
				0				
	▼		REC2-B-6-8-9	0				
				0			Wet, gray, sandy SILT (ML); fine sand	
		○		0				
10		CC-3	REC2-B-6-10-11				Wet, brown SAND (SP); poorly graded fine-to-medium sand	10
				0			1' vertically split wet, brown SAND (SP); poorly graded fine-to-medium sand, and wet, gray SILT (ML)	
				0			Wet, brown SAND (SP); poorly graded fine-to-medium sand	
				0				
15							Bottom of boring at 15' BGS	15

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: SJG
Figure No. A-130

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	REC2-B-07	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core
Ground Surface Elev
Depth to Water (ft BGS) 4
Start/Finish Date 5/23/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
		CC-1					Asphalt	
							Very moist, slightly silty GRAVEL (GP)	
	Backfilled with medium bentonite chips			16.8			Very moist, gray to brown SAND (SP); poorly graded fine-to-medium sand	
				1.6				
				0.8				
	▼		REC2-B-7-4-5	0.6			Wet at 4' BGS	
5		CC-2		0.6				5
				0.3				
			REC2-B-7-6.5-7.5					
				0.3			Slightly silty, gray SAND (SP); fine sand	
				0.3				
				0.3			Shell fragments 9' to 10', fine-to-medium sand	
10		CC-3		0.3				10
				0.3				
				0.3				
				0.3				
				0.3			Slightly gravelly at 14' BGS	
15				0.3			Bottom of boring at 15' BGS	15

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-131

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	REC2-B-08	1 of 1

Project Name: Kimberly Clark-Everett Mill

Ground Surface Elev

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe

Depth to Water (ft BGS) 4.5

Sampling Method: Continuous Core

Start/Finish Date 5/23/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
							Asphalt	
							Moist, brown, silty, sandy GRAVEL (GM); fine subangular gravel, slight bleb sheen	
	Backfilled with medium bentonite chips						Moist, dark gray, slightly silty, slightly gravelly SAND (SP); poorly graded fine-to-medium sand	
				2.7				
		CC-1		10.3				
			REC2-B-8-4-5	1.4				
	▼						Wet at 4.5' BGS, Faint petroleum-like odor from 4.5' to 7' BGS	
5				7.3				5
				8.0			Wet, gray SAND (SP); trace gravel, fine-to-medium sand	
		CC-2		1.5				
				0.8				
		○		0.8				
10			REC2-B-8-10-11	0.8				10
				0.3				
		CC-3		0.3				
				0.3				
		○		0.3			Wet, gray, very sandy SILT (ML)	
							Wet, brown PEAT (PT)	
15				0.3			Bottom of boring at 15' BGS	15

Sampler Type:

○ No Recovery

▌▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-132

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	REC2-B-09	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core
Ground Surface Elev
Depth to Water (ft BGS) 2
Start/Finish Date 5/24/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
		CC-1					Asphalt	
				0.4			Very moist, gravelly SAND (SW); poorly graded fine-to-coarse sand, strong petroleum-like odor, moderate to heavy bleb sheen	
				0.5				
	▼		REC2-B-9-2-3	21.3			Wet at 2' BGS	
	Backfilled with medium bentonite chips			28.0				
				30.0			Wet, gray, silty, sandy GRAVEL (GM); fine subangular gravel, strong petroleum-like odor, moderate to heavy bleb sheen, black product present in soil sample	
		○		6.0				
				7.0			Wet, gray SAND (SP); medium to coarse sand, trace gravel, strong petroleum-like odor	
5		CC-2		3.5				5
				382.2				
			REC2-B-9-6-7	101.5				
				156.5				
				9.5			Wet, gray, SAND (SP); fine sand	
			REC2-B-9-7.5-8.5					
				7.0				
				7.0				
10		CC-3		2.0				10
				1.8				
				2.0			Medium to coarse sand 12' to 14' BGS	
				1.7				
		○		1.3			Wet, gray, very sandy GRAVEL (GP); fine, subrounded gravel.	
15				2.7			Bottom of boring at 15' BGS	15

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-133

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	REC2-B-10	1 of 1

Project Name: Kimberly Clark-Everett Mill

Ground Surface Elev

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-"Mini Me"

Depth to Water (ft BGS) 7.5

Sampling Method: Continuous Core

Start/Finish Date 6/28/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
		CC-1					Void	
	Backfilled with medium bentonite chips						Concrete rubble	
				0			Slightly moist, brown, gravelly SAND (SW); poorly graded fine-to-coarse sand, fine gravel	
				0				
		○		0			Moist, brown, slightly silty, gravelly SAND (SP-SM); poorly graded fine-to-medium sand, fine gravel, fine gravel	
5		CC-2	REC2-B-10-5-6					5
			REC2-B-10-7-8	0.5			Very moist to wet, blue-gray SAND (SP); poorly graded fine-to-medium sand	
	▼							
				1.3			Very moist, dark brown, sandy SILT (ML); poorly graded fine-to-medium sand	
		○		0.6			Very moist to wet, blue-gray SAND (SP); poorly graded fine-to-medium sand	
10		CC-3	REC2-B-10-10-11	0				10
				0				
				0				
				0				
15				0			Bottom of boring at 15' BGS	15

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET

Approved by: SJG

Figure No. A-134

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	REC2-B-11	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 3

Start/Finish Date 5/24/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
							Asphalt	
							Moist, black, gravelly SAND (SP); poorly graded fine-to-medium sand, very strong petroleum-like odor, moderate to heavy rainbow and bleb sheen mix	
	Backfilled with medium bentonite chips							
				18.4				
		CC-1		46.9				
	▼		REC2-B-11-3-4	107.5			Wet, color changes to brown, fine sand, no gravel	
				179.4				
				103.8			Wet, gray SAND (SP); poorly graded fine-to-medium sand, strong petroleum-like odor, moderate metallic sheen	
				46.6				
5				43.2				5
				36.0				
				37.5				
				55.6			Slightly silty	
				296.8				
		CC-2	REC2-B-11-7.5-8.5	123.6				
				69.8			Wet, gray, gravelly SAND (SP/SW); poorly graded fine-to-coarse sand	
				42.2				
				15.6				
10				13.8				10
			REC2-B-11-11-12	1.3				
		CC-3		1.2				
				1.2				
				1.8				
15				1.2			Bottom of boring at 15' BGS	15

Sampler Type:

○ No Recovery

▌▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-135

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	REC2-B-12	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 5

Start/Finish Date 5/23/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Backfilled with medium bentonite chips	CC-1					Asphalt	
							Concrete rubble, fill debris: burlap	
				0.5				
				2.8			Moist, gray SAND (SW); trace silt, fine to coarse sand, petroleum-like odor	
				11.8			Moist, brown, silty SAND (SM); trace gravel, fine-to-medium sand, numerous organics-roots	
5	▼	CC-2	REC2-B-12-5-6	4.5			Wet, dark gray SAND (SP); poorly graded fine-to-medium sand, strong petroleum-like odor, moderate to heavy bleb sheen from 5' to 10' BGS, sticky brown to black product present	5
				28.8				
				76.8				
				108.9				
			REC2-B-12-8-9	110.1				
				466.6				
10		CC-3		84.5				10
				43.5				
				91.7			Trace gravel	
				63.7				
				42.5			Refusal at 14' BGS, moved hole ~6 inches to re-drill	
15		CC-4					Wet, dark brown to dark gray SAND (SP); trace silt and trace gravel	15
				8.0				
			REC2-B-12-17-18	1.7				
				0.8				
				0.8				
				0.8			Bottom of boring at 20' BGS	

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-136

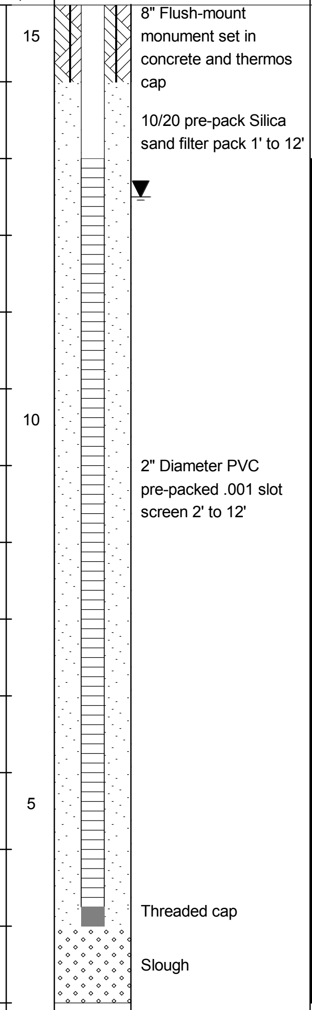
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	REC2-MW-05	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core

Ground Surface Elev: 15.4
Top of Casing Elev.: 15.05
Depth to Water (ft BGS): 2.5
Start/Finish Date: 5/29/2012



Depth / Elevation (feet)	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
15		REC2-MW-5-0-2	9.4			Post-holed to 2' for utilities Moist, dark gray to black, slightly gravelly, very silty SAND (SM); fine sand, petroleum-like odor, slight bleb sheen from 0' to 2' BGS	
			0				
		REC2-MW-5-2.5-3.5					
			0			Wet, gray, slightly silty, slightly gravelly SAND (SP); poorly graded fine-to-medium sand	
	CC-1						
			0				
5 / 10			0				5
			0				
		REC2-MW-5-7-8	0				
	CC-2						
			0			Black at 8'	
						Wet, gray SILT (ML)	
			0			Wet, dark gray, SAND (SP); fine sand	
10 / 5						Wet, gray SILT (ML)	10
			0			Wet, dark gray, slightly silty SAND (SP); fine sand	
			0				
	CC-3						
			0				
						Numerous organics (shell fragments) from 12.5' to 13' BGS	
			0			Bottom of boring at 13' BGS	
15 / 0							15

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-137

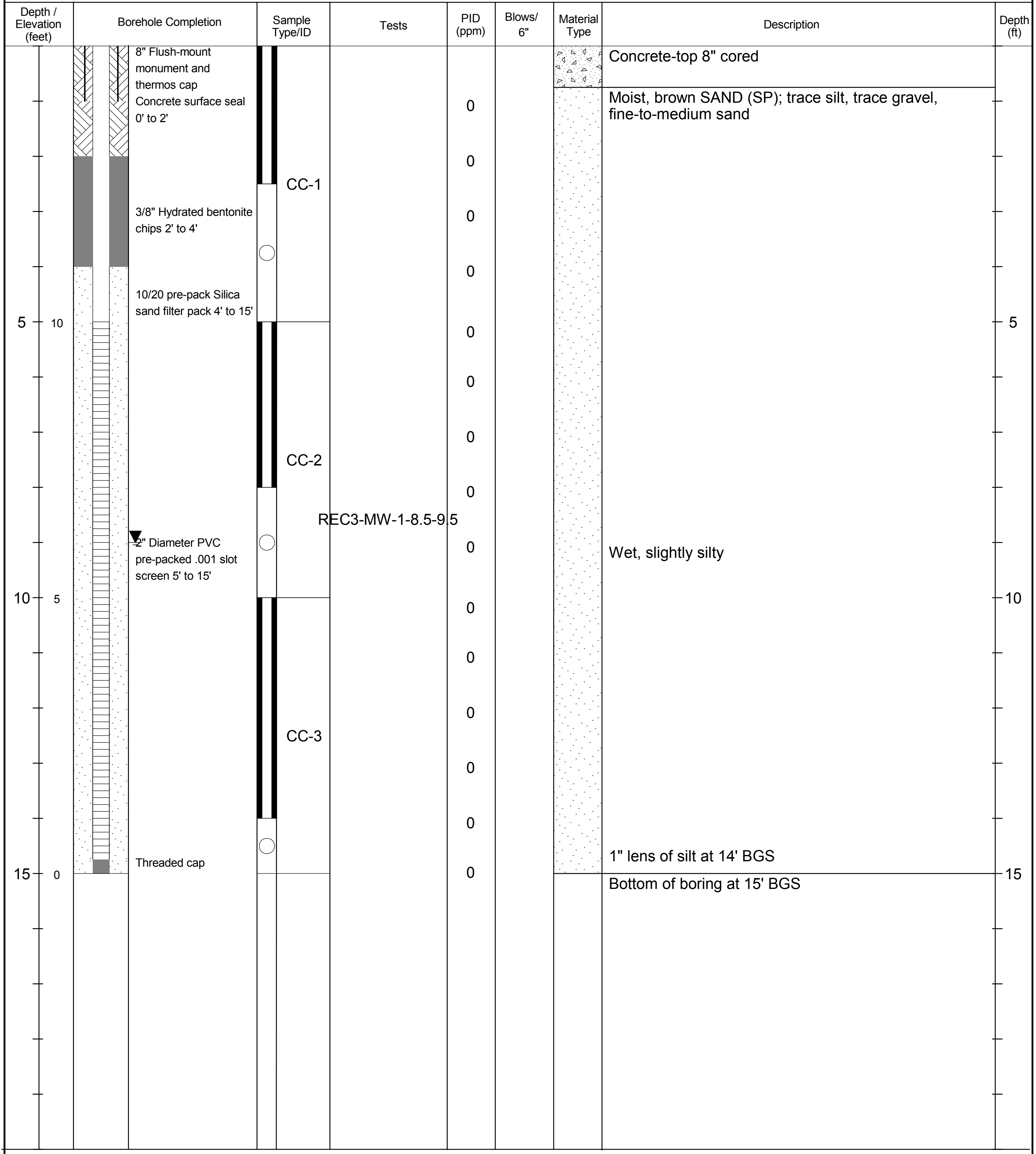
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	REC3-MW-01	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core

Ground Surface Elev: 15.02
Top of Casing Elev.: 14.43
Depth to Water (ft BGS): 9
Start/Finish Date: 6/5/2012



Depth (feet)	Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Description	Depth (ft)
0		8" Flush-mount monument and thermos cap					Concrete-top 8" cored	
1		Concrete surface seal 0' to 2'			0		Moist, brown SAND (SP); trace silt, trace gravel, fine-to-medium sand	
2			CC-1		0			
3		3/8" Hydrated bentonite chips 2' to 4'			0			
4		10/20 pre-pack Silica sand filter pack 4' to 15'			0			
5	10				0			5
6					0			
7			CC-2		0			
8				REC3-MW-1-8.5-9.5	0			
9		▼ 2" Diameter PVC pre-packed .001 slot screen 5' to 15'			0		Wet, slightly silty	
10	5				0			10
11					0			
12			CC-3		0			
13					0			
14		Threaded cap			0		1" lens of silt at 14' BGS	
15	0				0		Bottom of boring at 15' BGS	15

Sampler Type:
○ No Recovery
▮ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-138

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	REC5-HA-01	1 of 1

Project Name: Kimberly Clark-Everett Mill

Ground Surface Elev

Location: Everett, WA

Driller/Method: Aspect / Hand Auger

Depth to Water (ft BGS) Not encountered

Sampling Method: Continuous Grab

Start/Finish Date 9/5/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	▨ Backfilled with excavated material		REC5-H4-01-0-1			■	Asphalt	
		✋	REC5-H4-01-1-2			▨	Slightly moist, brown, SAND (SP); poorly graded fine to medium sand Becomes gravelly	
							Refusal at 2' BGS (concrete slab)	
5								5
10								10
15								15
20								20
25								25

Sampler Type:

○ No Recovery

✋ Grab Sample

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET/ERP

Approved by: SJG

Figure No. A-139

Boring Log

Project Number	Boring Number	Sheet
110207	REC5-HA-02	1 of 1

Project Name: Kimberly Clark-Everett Mill

Ground Surface Elev

Location: Everett, WA

Driller/Method: Aspect / Hand Auger

Depth to Water (ft BGS) Not encountered

Sampling Method: Continuous Grab

Start/Finish Date 9/5/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
0	▨ Backfilled with excavated material	✋	REC5-HA-02-0-1			■	Asphalt	0
						▒	Slightly moist, brown, slightly gravelly SAND (SP); poorly graded fine to medium sand	
			REC5-HA-02-2-3					
3							Bottom of boring at 3' BGS	3
5								5
10								10
15								15
20								20
25								25

Sampler Type:

○ No Recovery

✋ Grab Sample

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET/ERP

Approved by: SJG

Figure No. A-140

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	REC5-HA-03	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Aspect / Hand Auger
Sampling Method: Continuous Grab
Ground Surface Elev
Depth to Water (ft BGS) Not encountered
Start/Finish Date 9/5/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Backfilled with excavated material	✋	REC5-HA-03-0-1			■	Asphalt	
							Slightly moist, brown to gray, slightly silty SAND (SP-SM)	
			REC5-HA-03-2-3					
							Bottom of boring at 3' BGS	
5								5
10								10
15								15
20								20
25								25

Sampler Type:

○ No Recovery

✋ Grab Sample

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET/ERP

Approved by: SJG

Figure No. A-141

_ENV PROBE LOG KIMBERLY CLARK-EVERETT.GPJ January 17, 2013

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	REC5-HA-04	1 of 1

Project Name: Kimberly Clark-Everett Mill

Ground Surface Elev

Location: Everett, WA

Driller/Method: Aspect / Hand Auger

Depth to Water (ft BGS) Not encountered

Sampling Method: Continuous Grab

Start/Finish Date 9/5/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Backfilled with excavated material	✋	REC5-HA-04- 0-1			■	Asphalt	
			REC5-HA-04- 2-3			▨	Slightly moist, brown to gray, slightly gravelly SAND (SP)	
							Bottom of boring at 3' BGS	
5								5
10								10
15								15
20								20
25								25

Sampler Type:

○ No Recovery

✋ Grab Sample

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET/ERP

Approved by: SJG

Figure No. A-142

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	REC5-HA-05	1 of 1

Project Name: Kimberly Clark-Everett Mill

Ground Surface Elev

Location: Everett, WA

Driller/Method: Aspect / Hand Auger

Depth to Water (ft BGS) Not encountered

Sampling Method: Continuous Grab

Start/Finish Date 9/5/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	⁘ Backfilled with excavated material		REC5-HA-05-0-1			■	Asphalt	
		✋				⁘	Slightly moist, brown to gray, slightly gravelly SAND (SP)	
			REC5-HA-05-2-3					
							Bottom of boring at 3' BGS	
5								5
10								10
15								15
20								20
25								25

Sampler Type:

○ No Recovery

✋ Grab Sample

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET/ERP

Approved by: SJG

Figure No. A-143

_ENV PROBE LOG KIMBERLY CLARK-EVERETT.GPJ January 17, 2013

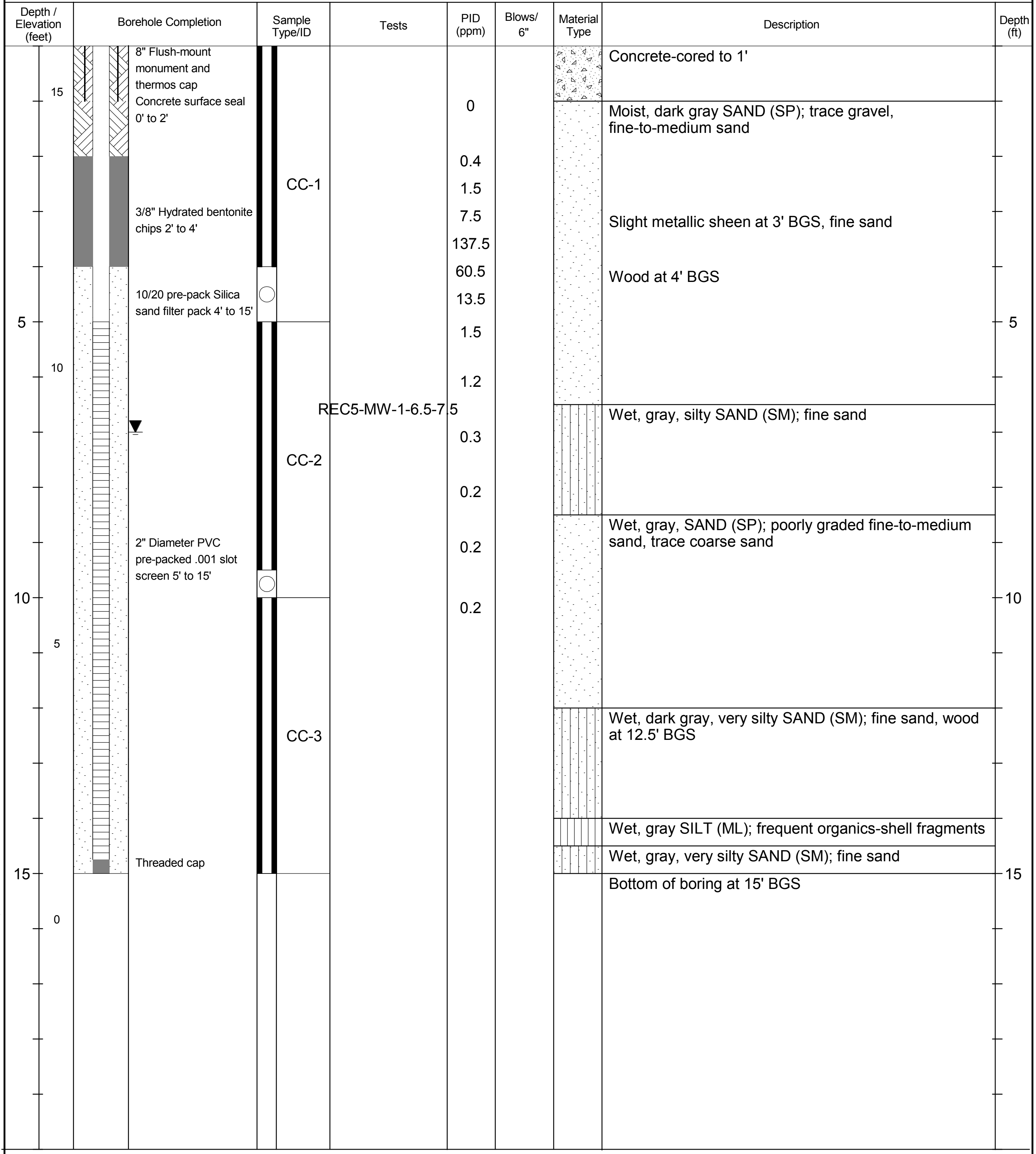
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	REC5-MW-01	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core

Ground Surface Elev: 15.83
Top of Casing Elev.: 15.49
Depth to Water (ft BGS): 7
Start/Finish Date: 6/5/2012



Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Description
				Concrete-cored to 1'
		0		Moist, dark gray SAND (SP); trace gravel, fine-to-medium sand
		0.4		
CC-1		1.5		
		7.5		Slight metallic sheen at 3' BGS, fine sand
		137.5		
		60.5		Wood at 4' BGS
		13.5		
		1.5		
		1.2		
	REC5-MW-1-6.5-7.5			Wet, gray, silty SAND (SM); fine sand
		0.3		
CC-2				
		0.2		
				Wet, gray, SAND (SP); poorly graded fine-to-medium sand, trace coarse sand
		0.2		
		0.2		
				Wet, dark gray, very silty SAND (SM); fine sand, wood at 12.5' BGS
CC-3				
				Wet, gray SILT (ML); frequent organics-shell fragments
				Wet, gray, very silty SAND (SM); fine sand
				Bottom of boring at 15' BGS

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

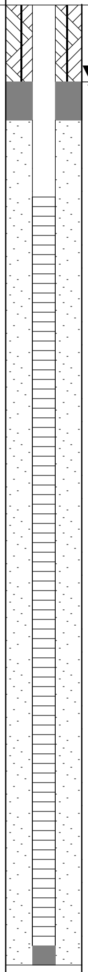
Logged by: MAR
Approved by: SJG
Figure No. A-144

Aspect
CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	REC6-MW-01	1 of 1

Project Name:	Kimberly Clark-Everett Mill	Ground Surface Elev	15.66
Location:	Everett, WA	Top of Casing Elev.	15.38
Driller/Method:	Cascade Drilling / Direct Push Probe	Depth to Water (ft BGS)	1
Sampling Method:	Continuous Core	Start/Finish Date	6/27/2012



Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
15	8" Flush-mount monument set in concrete and thermos cap	CC-1					Concrete	
	3/8" Hydrated bentonite chips 1' to 1.5' 10/20 pre-pack Silica sand filter pack 1.5' to 12.5'						Pea gravel, white liquid at bottom of pea gravel	
		○		7 1			Wet, brown, SAND (SP); poorly graded fine-to-medium sand	
							Pea gravel	
5 10	2" Diameter PVC pre-packed .001 slot screen 2.5' to 12.5'	CC-2	REC6-MW-1-6	1 55			Wet, dark gray, sandy SILT (ML); trace gravel , strong sweet odor	5
		○		20				
10 5		CC-3		50				10
	Threaded cap	○						
				50			Bottom of boring at 12.5' BGS	
15 0								15

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET

Approved by: SJG

Figure No. A-145

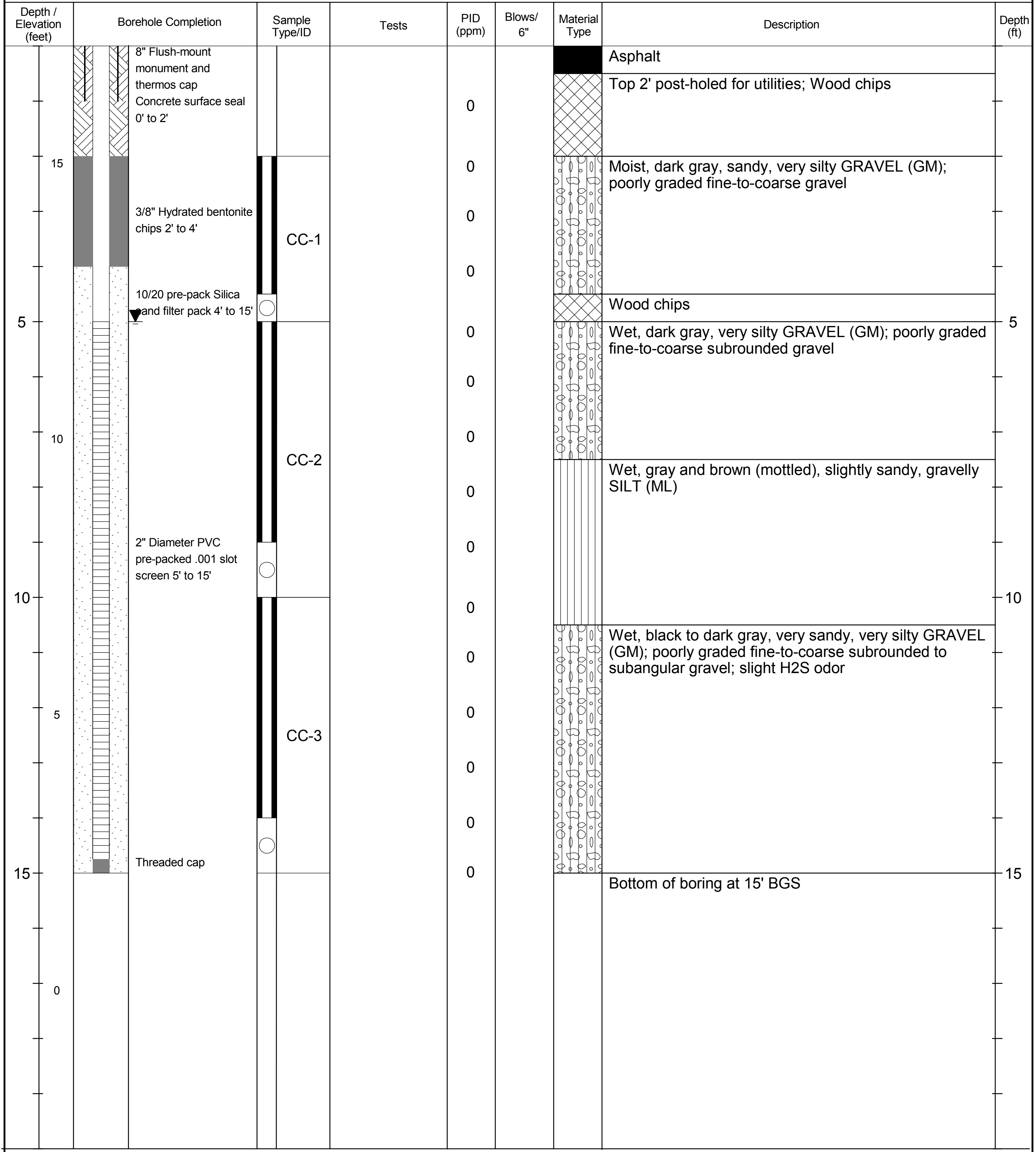
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	REC6-MW-02	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core

Ground Surface Elev: 17.12
Top of Casing Elev.: 16.67
Depth to Water (ft BGS): 5
Start/Finish Date: 5/25/2012



8" Flush-mount monument and thermos cap

Concrete surface seal 0' to 2'

3/8" Hydrated bentonite chips 2' to 4'

10/20 pre-pack Silica sand filter pack 4' to 15'

2" Diameter PVC pre-packed .001 slot screen 5' to 15'

Threaded cap

PID (ppm): 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0

Asphalt

Top 2' post-holed for utilities; Wood chips

Moist, dark gray, sandy, very silty GRAVEL (GM); poorly graded fine-to-coarse gravel

Wood chips

Wet, dark gray, very silty GRAVEL (GM); poorly graded fine-to-coarse subrounded gravel

Wet, gray and brown (mottled), slightly sandy, gravelly SILT (ML)

Wet, black to dark gray, very sandy, very silty GRAVEL (GM); poorly graded fine-to-coarse subrounded to subangular gravel; slight H2S odor

Bottom of boring at 15' BGS

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-146

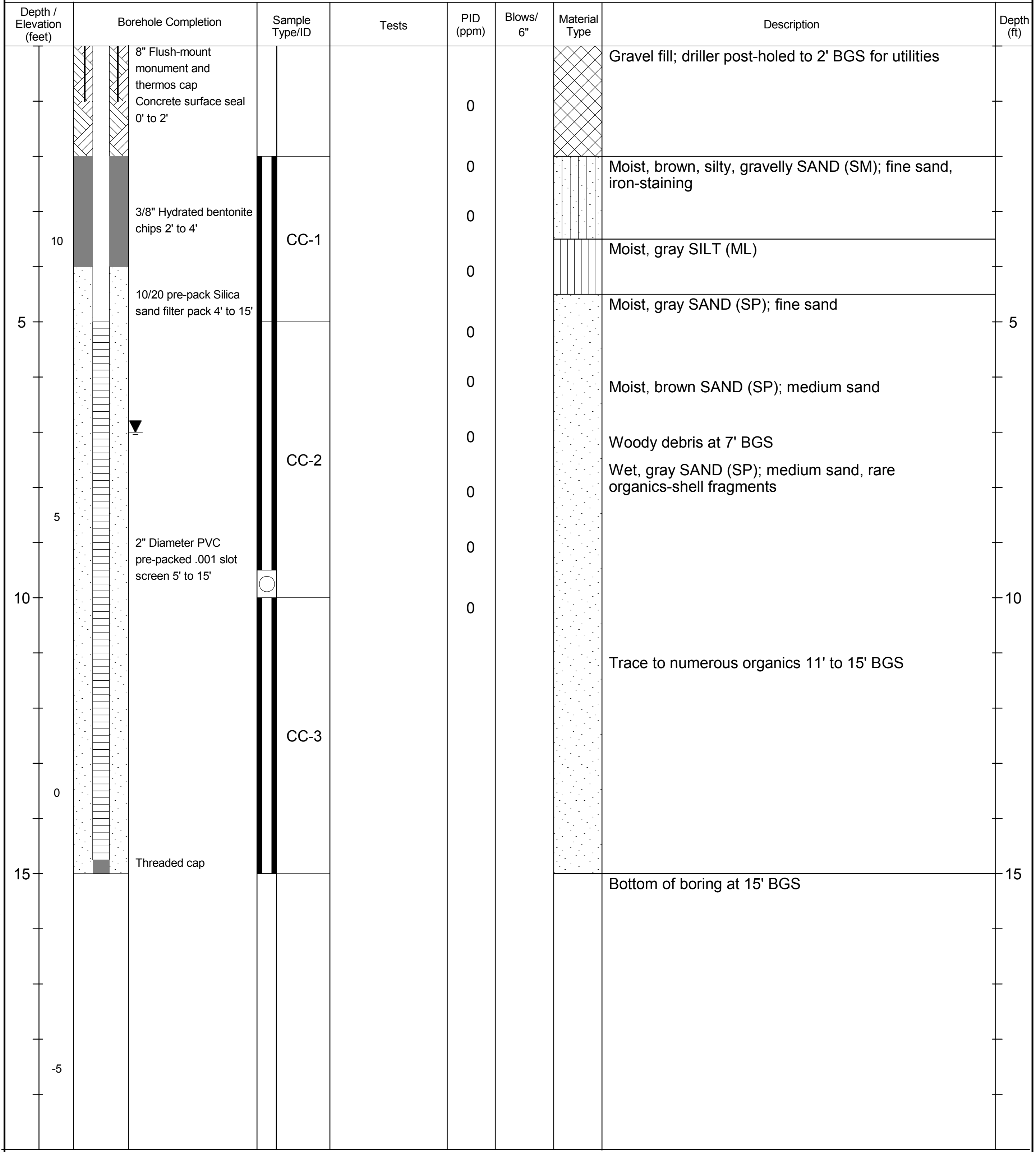
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	REC7-MW-01	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core

Ground Surface Elev 13.53
Top of Casing Elev. 13.14
Depth to Water (ft BGS) 7
Start/Finish Date 5/29/2012



8" Flush-mount monument and thermos cap
Concrete surface seal 0' to 2'
3/8" Hydrated bentonite chips 2' to 4'
10/20 pre-pack Silica sand filter pack 4' to 15'
2" Diameter PVC pre-packed .001 slot screen 5' to 15'
Threaded cap

Gravel fill; driller post-holed to 2' BGS for utilities

Moist, brown, silty, gravelly SAND (SM); fine sand, iron-staining

Moist, gray SILT (ML)

Moist, gray SAND (SP); fine sand

Moist, brown SAND (SP); medium sand

Woody debris at 7' BGS

Wet, gray SAND (SP); medium sand, rare organics-shell fragments

Trace to numerous organics 11' to 15' BGS

Bottom of boring at 15' BGS

Sampler Type:
○ No Recovery
▌▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-147

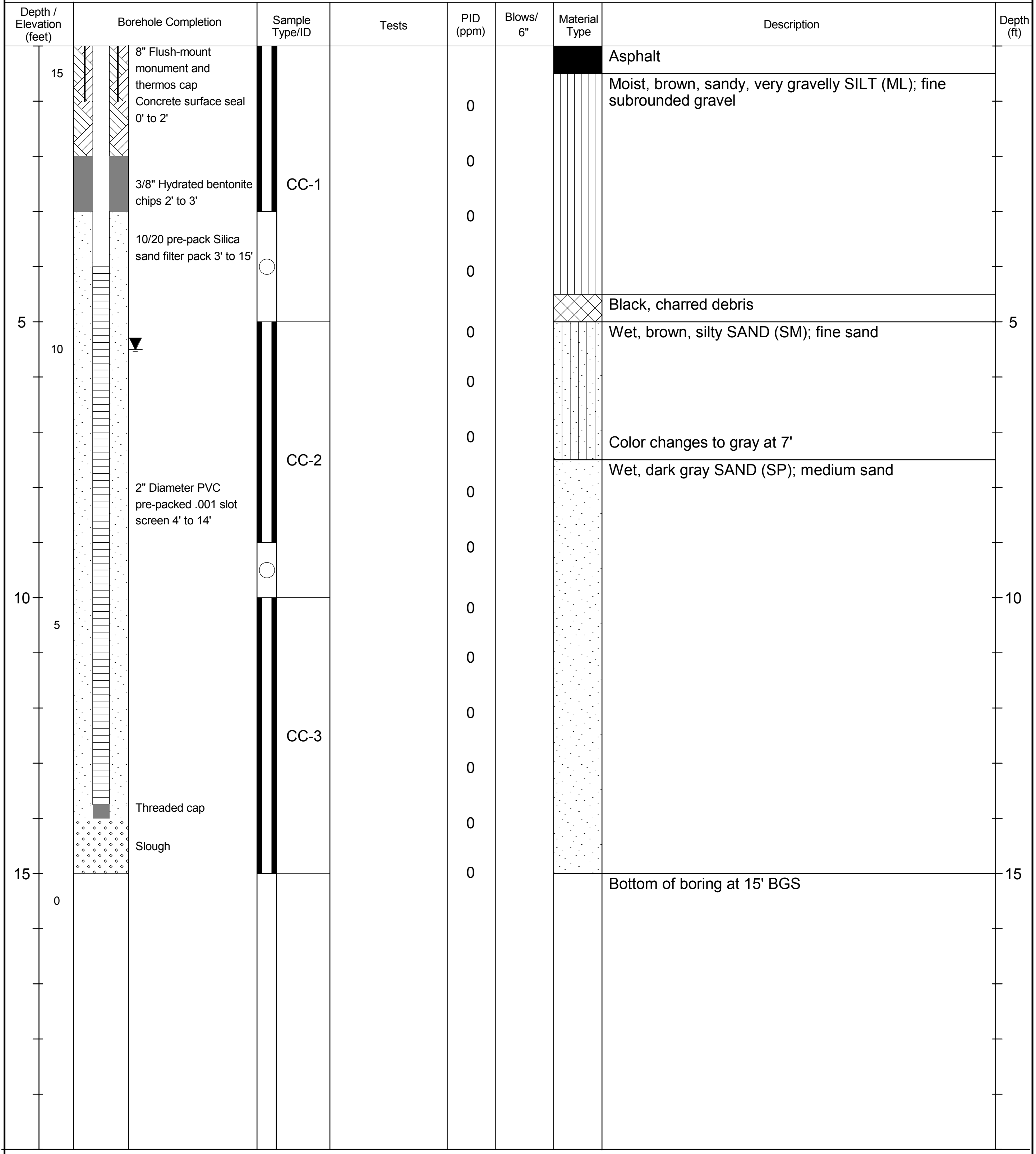
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	REC7-MW-02	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core

Ground Surface Elev 15.49
Top of Casing Elev. 15.11
Depth to Water (ft BGS) 5.5
Start/Finish Date 5/25/2012



Asphalt

Moist, brown, sandy, very gravelly SILT (ML); fine subrounded gravel

Black, charred debris

Wet, brown, silty SAND (SM); fine sand

Color changes to gray at 7'

Wet, dark gray SAND (SP); medium sand

Bottom of boring at 15' BGS

Sampler Type:

○ No Recovery

▌▌ Continuous Core

PID - Photoionization Detector

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-148

Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	REC7-MW-03	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe

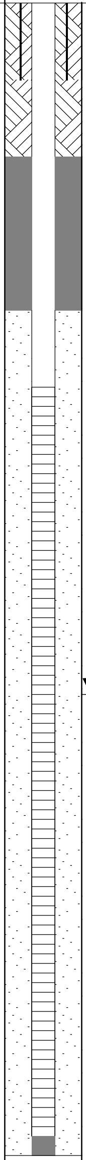
Sampling Method: Continuous Core

Ground Surface Elev 15.48

Top of Casing Elev. 14.92

Depth to Water (ft BGS) 9

Start/Finish Date 6/4/2012



Depth / Elevation (feet)		Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
	15	8" Flush-mount monument and thermos cap Concrete surface seal 0' to 2'						Post-holed to 3' for utilities	
					0				
					0				
		3/8" Hydrated bentonite chips 2' to 4'	▮ CC-1		0			Concrete rubble	
		10/20 pre-pack Silica sand filter pack 4' to 15'	○		0			Moist, brown, SILT (ML) Numerous wood organics at 4.5'	
5	10		▮		0			Concrete rubble	5
			▮		0				
			▮ CC-2		0				
			○		0			Wet, brown, silty SAND (SM); fine sand	
		▼ 2" Diameter PVC pre-packed .001 slot screen 5' to 15'			0			Wet, brown SAND (SP); fine sand 9 to 9.5', grades to medium sand from 10' to 15'	
10	5		▮		0				10
			▮		0				
			▮ CC-3		0				
			▮		0				
		Threaded cap	○		0			Gravelly at 14.5'	
15	0				0			Bottom of boring at 15' BGS	15

Sampler Type:

○ No Recovery

▮ Continuous Core

PID - Photoionization Detector

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-149

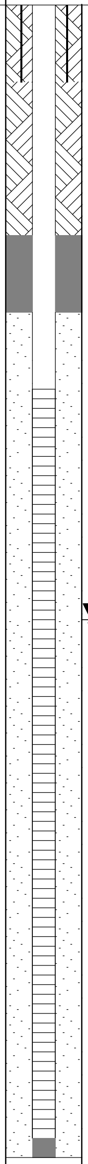
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	REC7-MW-04	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core

Ground Surface Elev: 12.92
Top of Casing Elev.: 12.69
Depth to Water (ft BGS): 8
Start/Finish Date: 5/24/2012



8" Flush-mount monument and thermos cap

Concrete surface seal 0' to 3'

3/8" Hydrated bentonite chips 3' to 4'

10/20 pre-pack Silica sand filter pack 4' to 15'

2" Diameter PVC pre-packed .001 slot screen 5' to 15'

Threaded cap

Depth / Elevation (feet)	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
	CC-1				■	Asphalt	
10			0.1 0.2 0.3			Moist, brown SAND (SP); trace gravel, fine sand; brick, concrete rubble debris	
			0.4			Moist, brown SILT(ML)	
5	CC-2		0.4			Very moist, brown to gray sandy GRAVEL (GP): trace silt and concrete rubble, coarse, subrounded to subangular gravel	5
5						Wet, brown to gray, slightly gravelly SAND (SP); medium to coarse sand	
10 0	CC-3					No recovery 10' to 15'	10
15 -5						Bottom of boring at 15' BGS	15

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-150

MONITORING WELL KIMBERLY CLARK-EVERETT.GPJ January 17, 2013

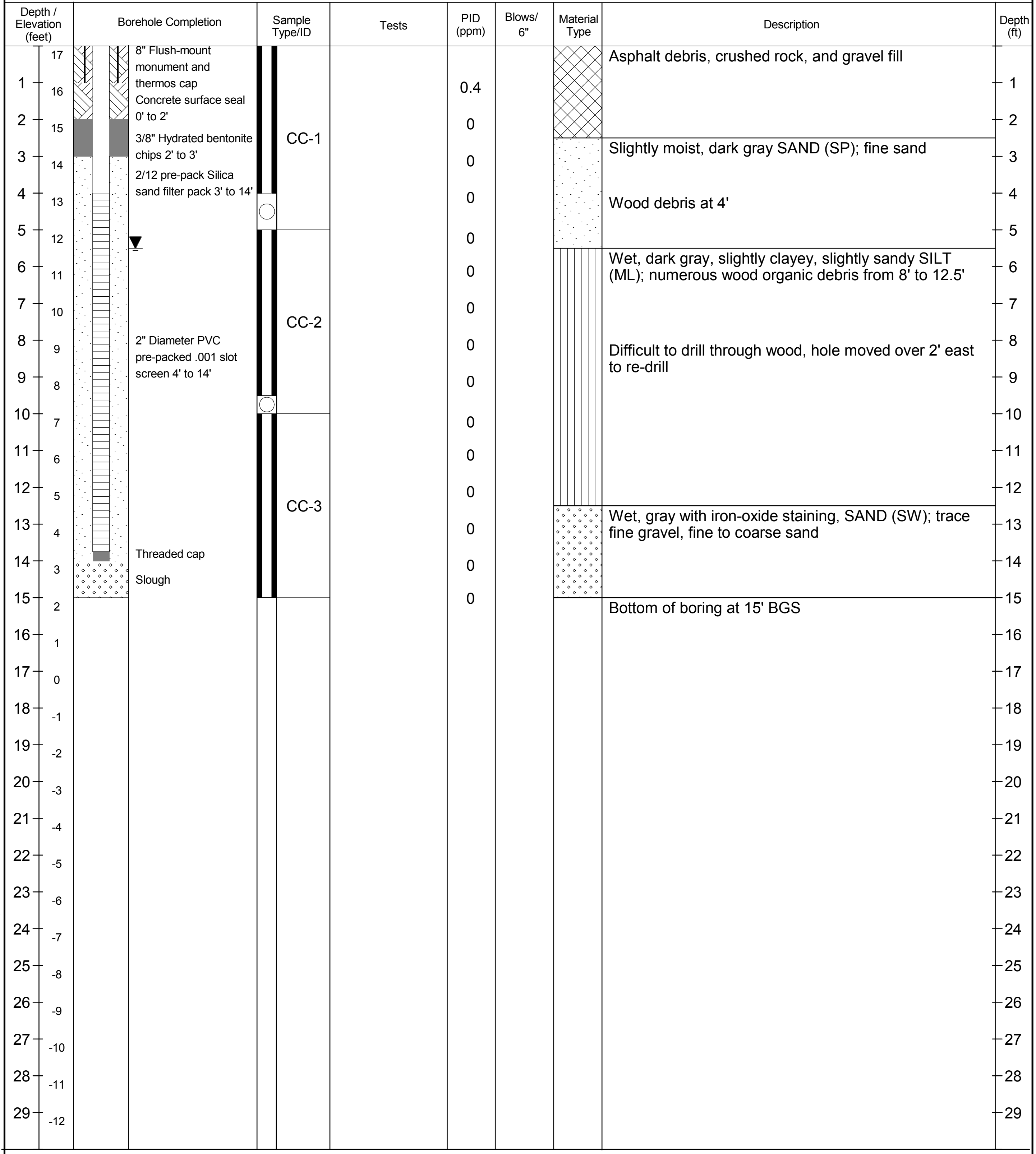
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	UG-MW-01	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core

Ground Surface Elev: 17.23
Top of Casing Elev.: 16.95
Depth to Water (ft BGS): 5.5
Start/Finish Date: 6/27/2012



Depth / Elevation (feet)		Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
	17	8" Flush-mount monument and thermos cap						Asphalt debris, crushed rock, and gravel fill	
1	16	Concrete surface seal 0' to 2'			0.4				1
2	15	3/8" Hydrated bentonite chips 2' to 3'	CC-1		0				2
3	14	2/12 pre-pack Silica sand filter pack 3' to 14'			0			Slightly moist, dark gray SAND (SP); fine sand	3
4	13		○		0			Wood debris at 4'	4
5	12	▼			0				5
6	11				0			Wet, dark gray, slightly clayey, slightly sandy SILT (ML); numerous wood organic debris from 8' to 12.5'	6
7	10		CC-2		0				7
8	9	2" Diameter PVC pre-packed .001 slot screen 4' to 14'			0			Difficult to drill through wood, hole moved over 2' east to re-drill	8
9	8		○		0				9
10	7				0				10
11	6				0				11
12	5		CC-3		0				12
13	4				0			Wet, gray with iron-oxide staining, SAND (SW); trace fine gravel, fine to coarse sand	13
14	3	Threaded cap Slough			0				14
15	2				0			Bottom of boring at 15' BGS	15
16	1								16
17	0								17
18	-1								18
19	-2								19
20	-3								20
21	-4								21
22	-5								22
23	-6								23
24	-7								24
25	-8								25
26	-9								26
27	-10								27
28	-11								28
29	-12								29

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: SJG
Figure No. A-151

Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	UG-MW-02	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core

Ground Surface Elev: 18.3
Top of Casing Elev.: 18.05
Depth to Water (ft BGS): 4
Start/Finish Date: 6/27/2012

Depth (feet)	Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Description	Depth (ft)
	18	8" Flush-mount monument and thermos cap					Concrete	
1	17	Concrete surface seal 0' to 1'			0.4		Moist, dark gray SAND (SP); brick debris	1
2	16	3/8" Hydrated bentonite chips 1' to 2'	CC-1		0			2
3	15	2/12 pre-pack Silica sand filter pack 2' to 13'			0		Moist to wet, dark gray SILT (ML); trace gravel	3
4	14	▼	○		0			4
5	13				0			5
6	12				0			6
7	11		CC-2		0			7
8	10	2" Diameter PVC pre-packed .001 slot screen 3' to 13'			0		Wet, dark, gray, slightly gravelly SAND (SW); poorly graded fine-to-coarse sand	8
9	9				0		Orange-gray color 9' to 12.5'	9
10	8							10
11	7							11
12	6		CC-3					12
13	5	Threaded cap						13
14	4	Slough					Wet, dark gray, sandy SILT (ML); fine sand	14
15	3						Bottom of boring at 15' BGS	15
16	2							16
17	1							17
18	0							18
19	-1							19
20	-2							20
21	-3							21
22	-4							22
23	-5							23
24	-6							24
25	-7							25
26	-8							26
27	-9							27
28	-10							28
29	-11							29

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: SJG
Figure No. A-152

Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	UST29-MW-01	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe

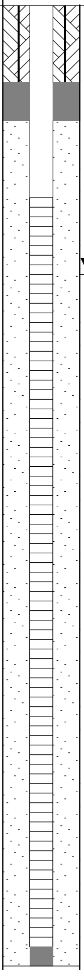
Sampling Method: Continuous Core

Ground Surface Elev 15.49

Top of Casing Elev. 15.24

Depth to Water (ft BGS) 3.5

Start/Finish Date 6/27/2012



Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
15	8" Flush-mount monument set in concrete and thermos cap						Asphalt	
	3/8" Hydrated bentonite chips 1' to 1.5'						Moist, brown, slightly silty, gravely SAND (SP-SM); poorly graded fine-to-medium sand	
	#2/12 pre-pack Silica sand filter pack 1.5' to 12.5'	CC-1		0.7			Pea gravel with white liquid at bottom of pea gravel	
	▼						Wet, brown to orange, SAND (SP); poorly graded fine-to-medium sand with a layer comprised of a plastic sheet at 3.5'	
		○		0.8			Pea gravel with white liquid 6.9' to 7'	
5 10								5
	2" Diameter PVC pre-packed .001 slot screen 2.5' to 12.5'			0.8				
		CC-2	UST29-MW-1-7-8	2700			Wet, dark gray, sandy silt (ML); trace gravel, very strong sweet odor	
			UST29-MW-1-8-9					
		○						
10 5				629				10
		CC-3		84				
	Threaded cap			105			Refusal at 12.5'; bottom of boring at 12.5' BGS	
15 0								15

Sampler Type:

○ No Recovery

▮ Continuous Core

PID - Photoionization Detector

▼ Static Water Level

▽ Water Level (ATD)

Logged by: AET

Approved by: SJG

Figure No. A-153

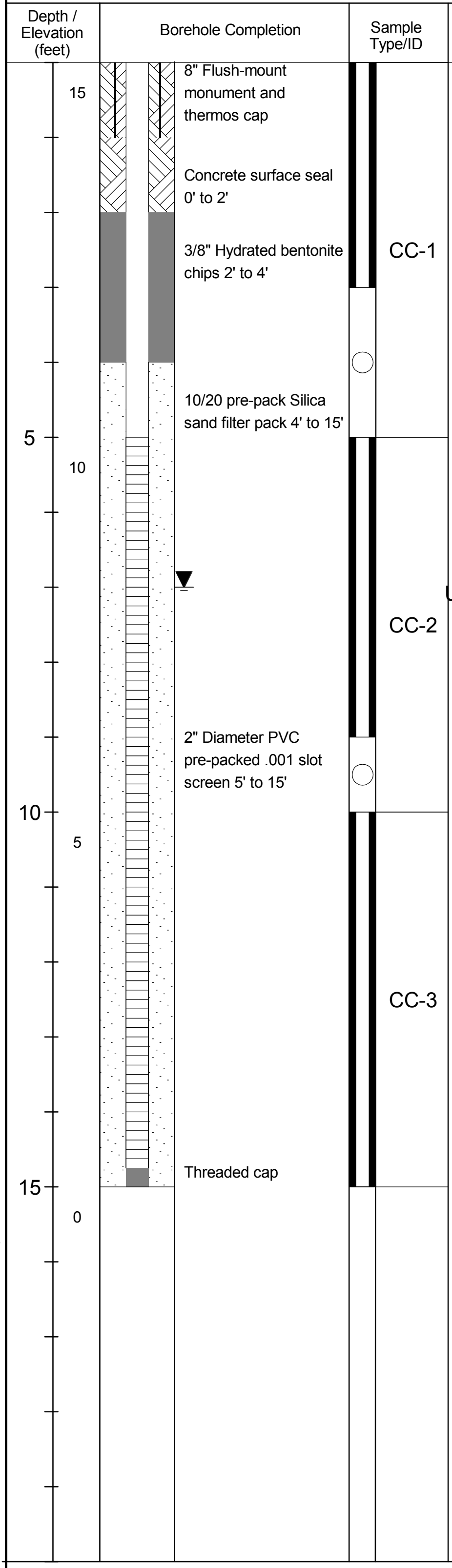
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	UST68-MW-01	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core

Ground Surface Elev: 15.4
Top of Casing Elev.: 15.12
Depth to Water (ft BGS): 7
Start/Finish Date: 5/25/2012



Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
				■	Asphalt	
		0			Moist, brown SAND (SP); trace gravel, fine sand	
		0				
CC-1		0				
		0				
		0				5
		0			Very moist, gray SILT (ML)	
					Wet, brown SAND (SP); fine sand	
	UST68-MW-1-7-8	0				
CC-2						
		0			Color changes to gray	
		0			2" layer of silt at 9'	
		0				10
		0				
CC-3		0				
		0				
		0			Wet, gray silty SAND (SM); fine sand	
		0			Bottom of boring at 15' BGS	15

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-154

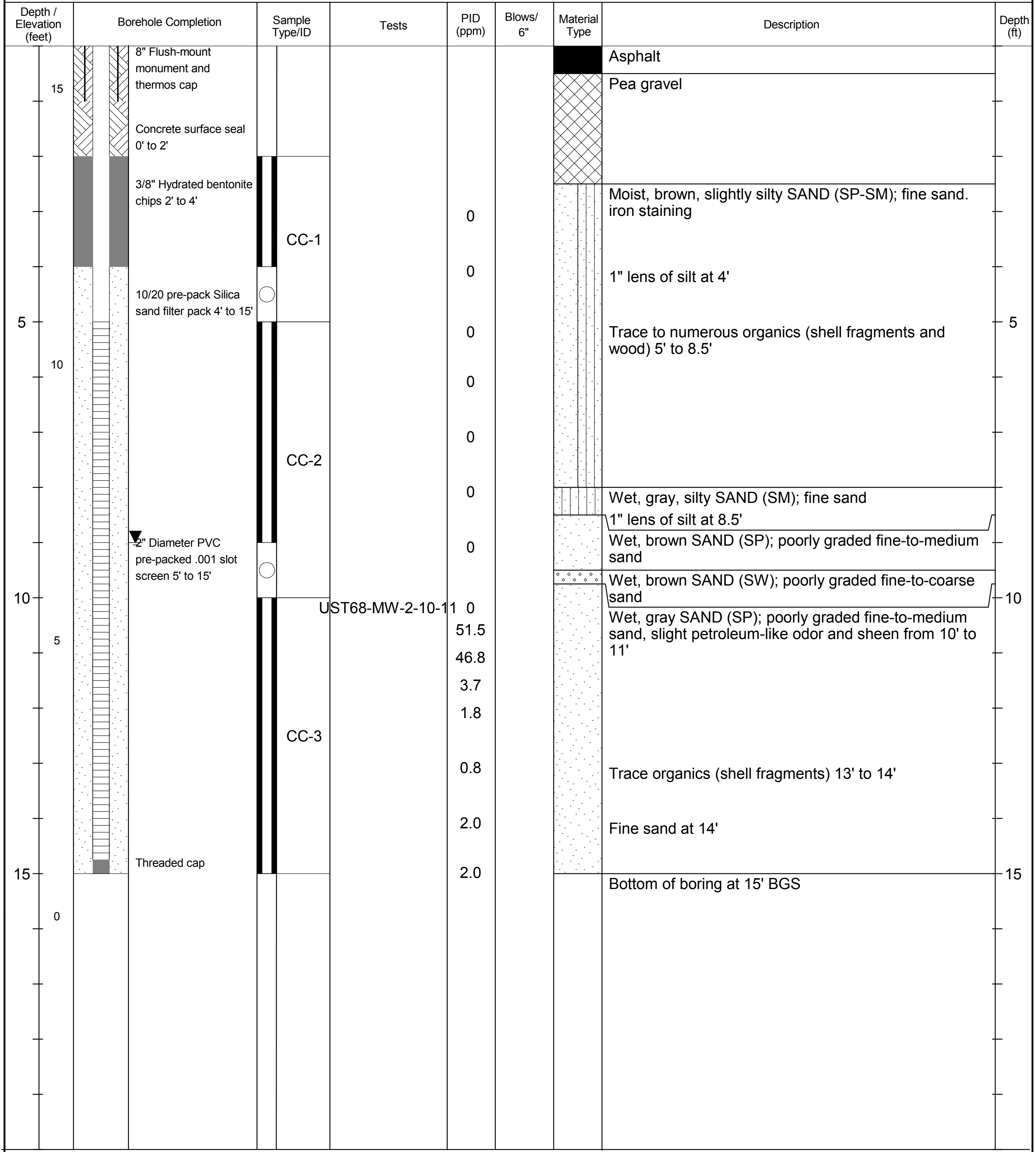
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	UST68-MW-02	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core

Ground Surface Elev: 15.77
Top of Casing Elev.: 15.33
Depth to Water (ft BGS): 9
Start/Finish Date: 5/30/2012



8" Flush-mount monument and thermos cap

Concrete surface seal 0' to 2'

3/8" Hydrated bentonite chips 2' to 4'

10/20 pre-pack Silica sand filter pack 4' to 15'

2" Diameter PVC pre-packed .001 slot screen 5' to 15'

Threaded cap

CC-1

CC-2

CC-3

UST68-MW-2-10-11

PID (ppm): 0, 0, 0, 0, 0, 0, 0, 0, 51.5, 46.8, 3.7, 1.8, 0.8, 2.0, 2.0

Asphalt

Pea gravel

Moist, brown, slightly silty SAND (SP-SM); fine sand. iron staining

1" lens of silt at 4'

Trace to numerous organics (shell fragments and wood) 5' to 8.5'

Wet, gray, silty SAND (SM); fine sand

1" lens of silt at 8.5'

Wet, brown SAND (SP); poorly graded fine-to-medium sand

Wet, brown SAND (SW); poorly graded fine-to-coarse sand

Wet, gray SAND (SP); poorly graded fine-to-medium sand, slight petroleum-like odor and sheen from 10' to 11'

Trace organics (shell fragments) 13' to 14'

Fine sand at 14'

Bottom of boring at 15' BGS

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

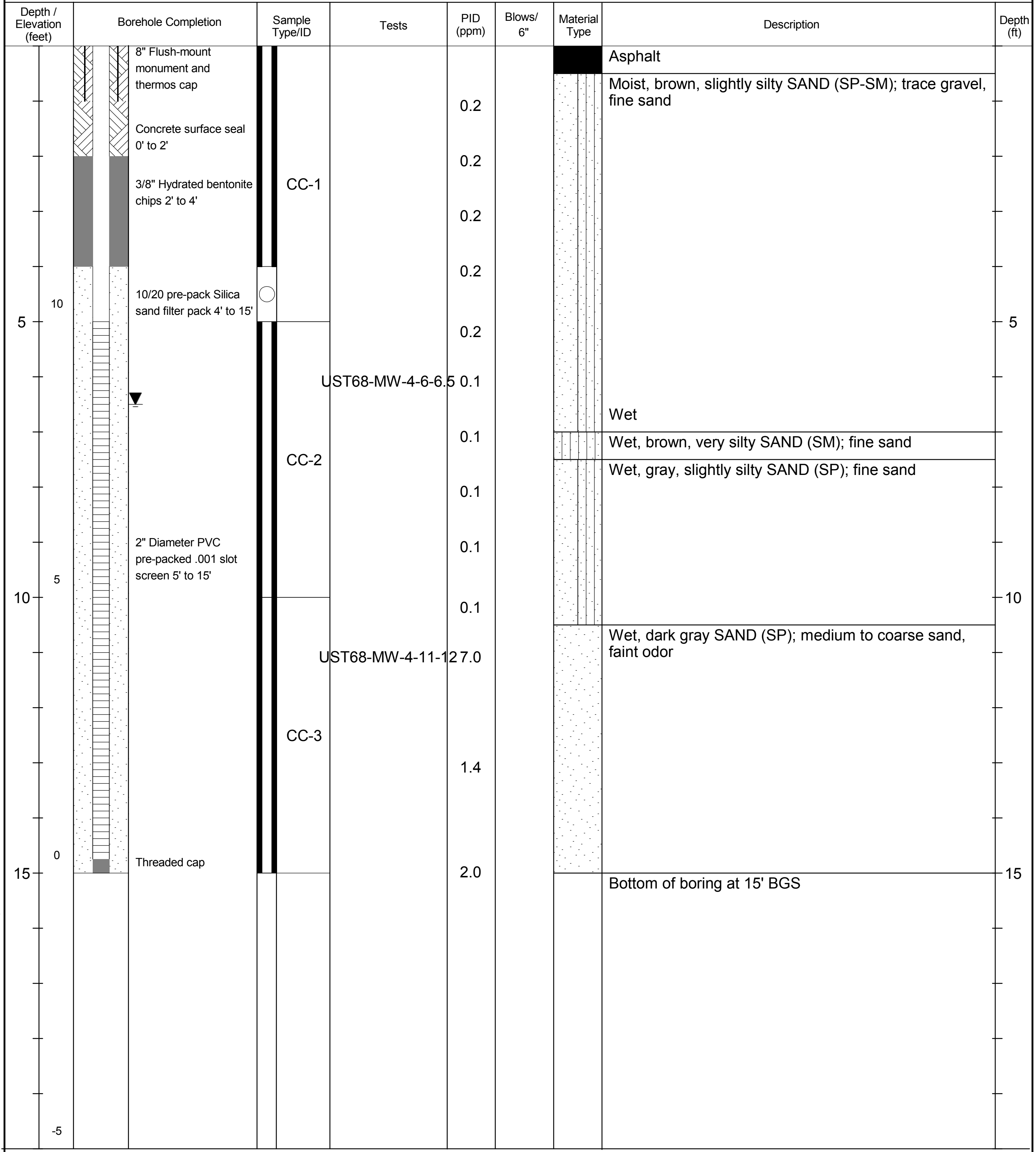
Logged by: MAR
Approved by: SJG
Figure No. A-155

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	UST68-MW-04	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core

Ground Surface Elev 14.67
Top of Casing Elev. 14.34
Depth to Water (ft BGS) 6.5
Start/Finish Date 5/24/2012



Asphalt

Moist, brown, slightly silty SAND (SP-SM); trace gravel, fine sand

Wet

Wet, brown, very silty SAND (SM); fine sand

Wet, gray, slightly silty SAND (SP); fine sand

Wet, dark gray SAND (SP); medium to coarse sand, faint odor

Bottom of boring at 15' BGS

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-156

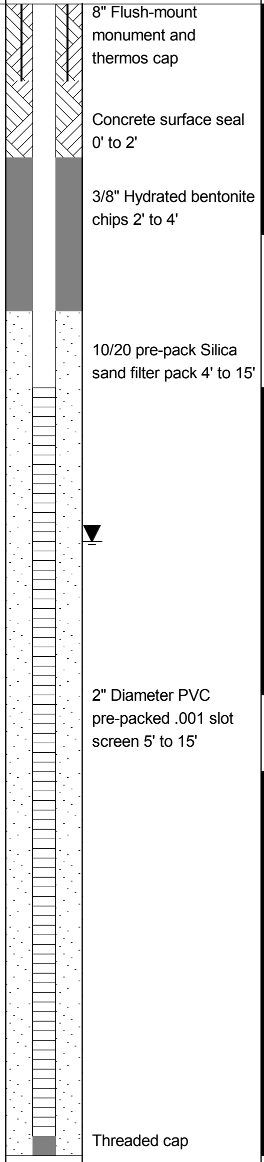
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	UST68-MW-05	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core

Ground Surface Elev: 14.57
Top of Casing Elev.: 14.12
Depth to Water (ft BGS): 7
Start/Finish Date: 5/24/2012



Depth / Elevation (feet)	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
	▐				■	Asphalt	
	▐		0.2		░	Moist, gray to brown, gravelly SAND (SP); trace fine sand, mostly medium sand	
	▐		0.2		░		
	CC-1		0.2		░		
	○		0.2		░		
10 5			0.2		░		5
	▐		0.3		░	Wet, brown to gray SAND (SP); trace fine sand, mostly medium sand	
	CC-2	UST68-MW-5-7-8	0.8		░		
	▐		0.7		░		
	○		0.7		░	Dark brown 9' to 12'	
5 10	▐		0.4		░		10
	▐	UST68-MW-5-12-13	0.4		░		
	CC-3		3.2		░	Dark gray to black in color 12' to 15', slight H2S odor	
	▐		7.2		░		
	▐		6.1		░		
0 15			0.3			Bottom of boring at 15' BGS	15
-5							

Sampler Type:
○ No Recovery
▐ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

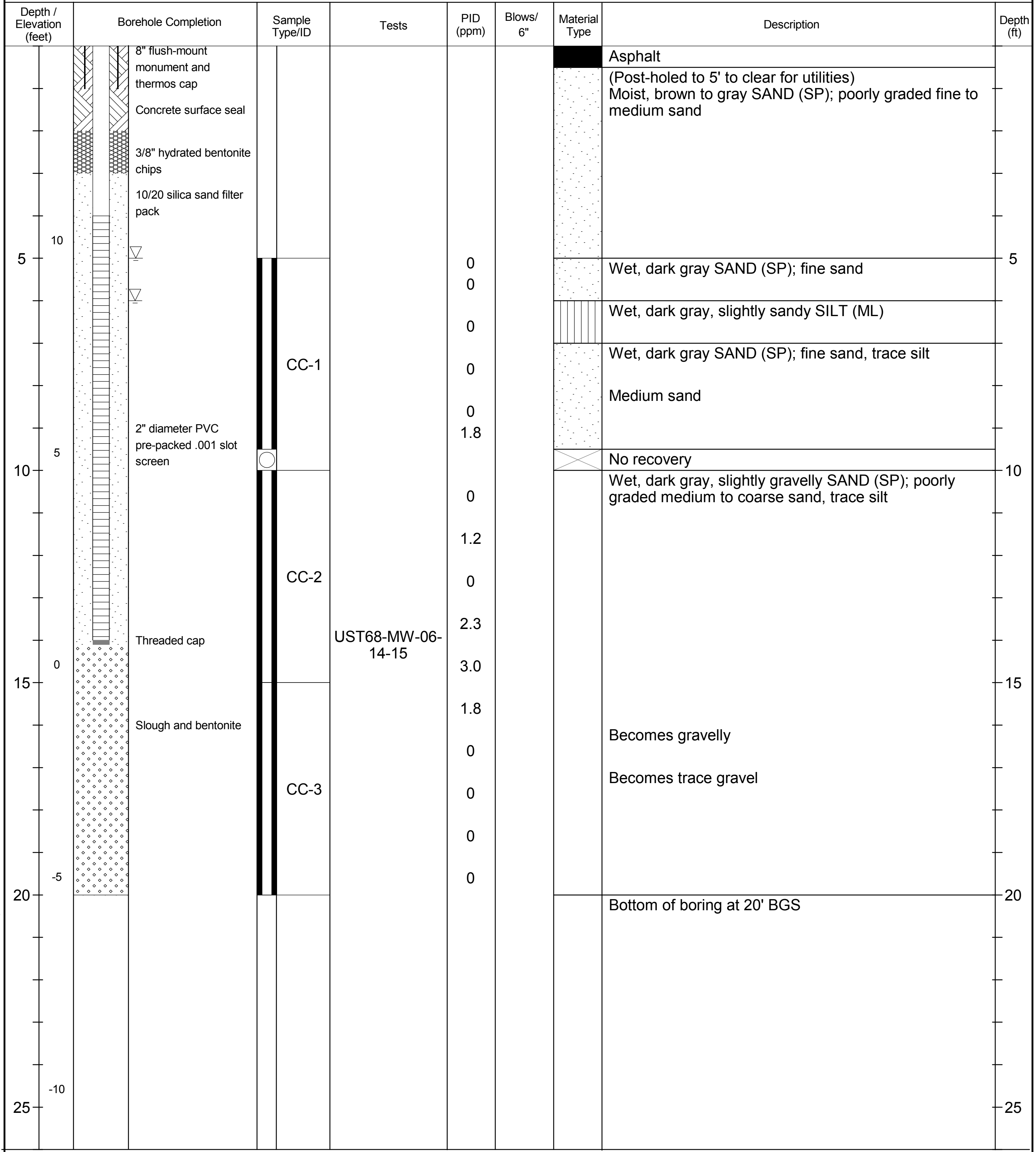
Logged by: MAR
Approved by: SJG
Figure No. A-157

Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	UST68-MW-06	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core
Ground Surface Elev: 14.57
Top of Casing Elev.:
Depth to Water (ft BGS): 5
Start/Finish Date: 9/10/2012



Depth (feet)	Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Description	Depth (ft)
		8" flush-mount monument and thermos cap					Asphalt	
		Concrete surface seal					(Post-holed to 5' to clear for utilities) Moist, brown to gray SAND (SP); poorly graded fine to medium sand	
		3/8" hydrated bentonite chips						
		10/20 silica sand filter pack						
	10							
5					0 0		Wet, dark gray SAND (SP); fine sand	5
					0		Wet, dark gray, slightly sandy SILT (ML)	
			CC-1		0		Wet, dark gray SAND (SP); fine sand, trace silt	
							Medium sand	
		2" diameter PVC pre-packed .001 slot screen			0 1.8			
	5		○				No recovery	
10					0		Wet, dark gray, slightly gravelly SAND (SP); poorly graded medium to coarse sand, trace silt	10
					1.2			
			CC-2		0			
					2.3			
		Threaded cap		UST68-MW-06-14-15				
	0				3.0			
15								15
		Slough and bentonite			1.8			
					0		Becomes gravelly	
			CC-3		0		Becomes trace gravel	
					0			
	-5				0			
20							Bottom of boring at 20' BGS	20
	-10							
25								25

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR/AET
Approved by: SJG
Figure No. A-158

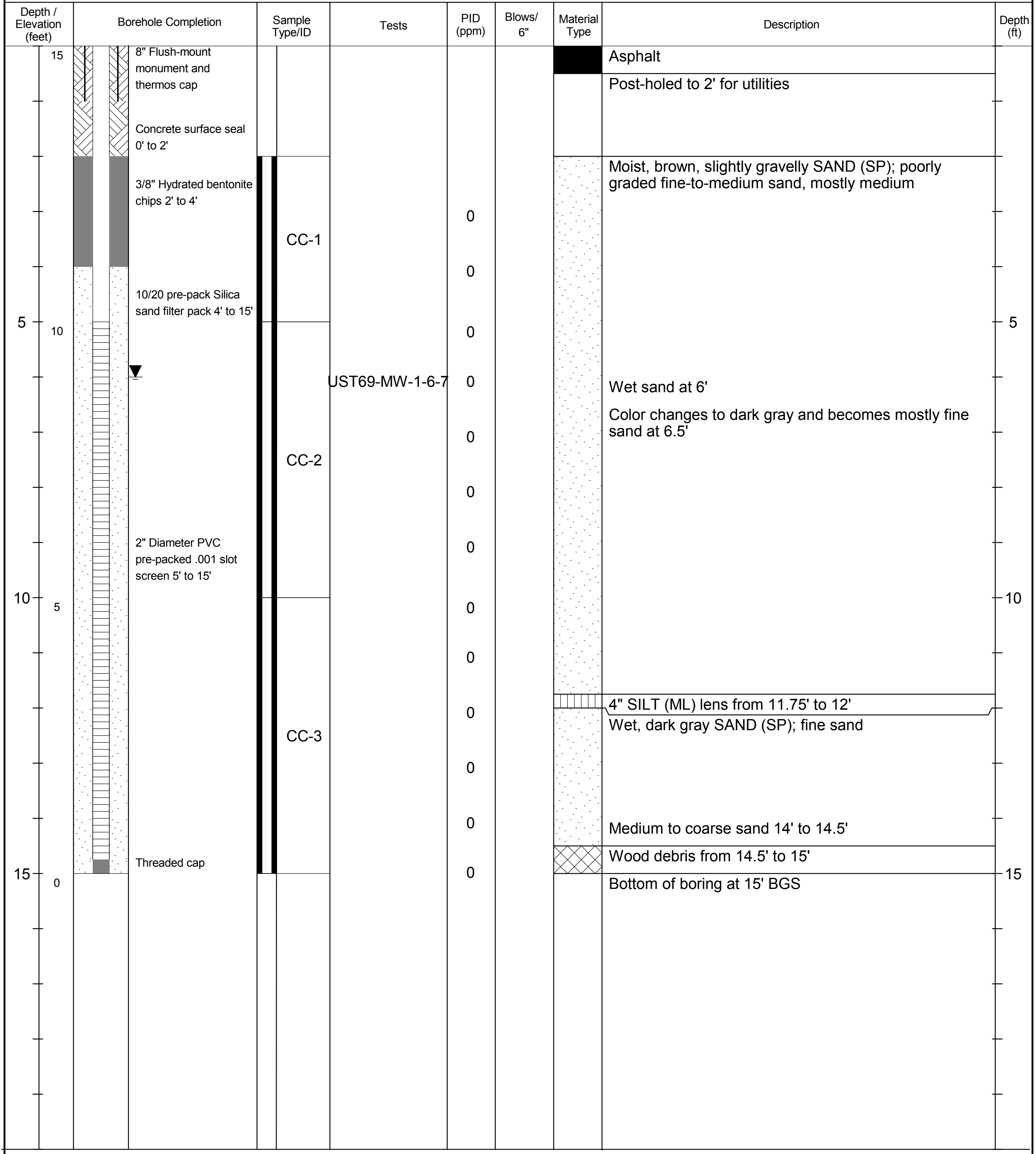
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	UST69-MW-01	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core

Ground Surface Elev: 15.16
Top of Casing Elev.: 14.88
Depth to Water (ft BGS): 6
Start/Finish Date: 5/25/2012



Depth / Elevation (feet)		Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
	15	8" Flush-mount monument and thermos cap						Asphalt	
								Post-holed to 2' for utilities	
		Concrete surface seal 0' to 2'							
		3/8" Hydrated bentonite chips 2' to 4'						Moist, brown, slightly gravelly SAND (SP); poorly graded fine-to-medium sand, mostly medium	
			CC-1		0				
		10/20 pre-pack Silica sand filter pack 4' to 15'			0				
5	10				0				5
		▼		UST69-MW-1-6-7	0			Wet sand at 6'	
								Color changes to dark gray and becomes mostly fine sand at 6.5'	
			CC-2		0				
					0				
		2" Diameter PVC pre-packed .001 slot screen 5' to 15'			0				
10	5				0				10
					0				
								4" SILT (ML) lens from 11.75' to 12'	
					0			Wet, dark gray SAND (SP); fine sand	
			CC-3		0				
					0			Medium to coarse sand 14' to 14.5'	
		Threaded cap						Wood debris from 14.5' to 15'	
15	0				0			Bottom of boring at 15' BGS	15

Sampler Type:
○ No Recovery
▌▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-159

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	UST70-B-01	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 8.5

Start/Finish Date 5/31/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
		CC-1					Wood chips-hogged fuel	
							Moist, gray, sandy, very silty GRAVEL (GM)	
				25.1			Pea gravel	
	Backfilled with medium bentonite chips							
							Moist, gray SAND (SP); poorly graded fine-to-medium sand, strong petroleum-like odor	
			UST70-B-1-3-4	95.5				
				75.1				
5		CC-2		85.9				5
				99.7			Moist, gray, slightly silty SAND (SP-SM); poorly graded fine-to-medium sand, strong petroleum-like odor from 6' to 12'	
				100.5				
				99.5				
	▼							
				25.5				
10		CC-3		25.5				10
				25.5			Slightly gravelly 11' to 12'	
				25.5				
			UST70-B-1-13.5-14.5	6.0				
				6.0				
15				4.5			Bottom of boring at 15' BGS	15

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-160

_ENV PROBE LOG KIMBERLY CLARK-EVERETT.GPJ January 17, 2013

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	UST70-B-02	1 of 1

Project Name: Kimberly Clark-Everett Mill

Ground Surface Elev

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Depth to Water (ft BGS) 9

Sampling Method: Continuous Core

Start/Finish Date 5/31/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
0	Backfilled with medium bentonite chips	CC-1				☒	Wood chips-hogged fuel	
1				0.4			Moist, brown, slightly gravelly SAND (SP)	
2				0.4				
3				0.4				
3.75		○						
4				0.4			Moist, dark brown, slightly silty SAND (SP-SM)	
5		CC-2		0.4				5
6				0.4				
7				0.4				
8				0.4			Concrete rubble	
9	▼		UST70-B-1-9-10	0.4			Wet, gray, slightly silty, gravelly SAND (SP-SM); trace coarse sand, fine-to-medium sand	
10		CC-3		0.4				10
15							Bottom of boring at 15' BGS	15

Sampler Type:

○ No Recovery

▌▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-161

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	UST70-B-03	1 of 1

Project Name: Kimberly Clark-Everett Mill

Ground Surface Elev

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Depth to Water (ft BGS) 9

Sampling Method: Continuous Core

Start/Finish Date 5/31/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Backfilled with medium bentonite chips	CC-1		1.0			Wood chips-hogged fuel	
				0.5			Moist, brown, slightly gravelly SAND (SP); poorly graded fine-to-medium sand	
				0.6				
		○		0.6			Brick rubble at 4'	
5		CC-2		0.6				5
				0.6				
				0				
			UST70-B-3-8-9	0.6				
	▼			0.5			Concrete rubble	
10		CC-3		0.5			Wet, gray, slightly silty SAND (SP-SM); poorly graded fine-to-medium sand	10
				0.5				
				0.5				
				0.5				
				0.5				
15				0.5			Bottom of boring at 15' BGS	15

Sampler Type:

○ No Recovery

▌▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-162

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	UST70-B-04	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core
Ground Surface Elev
Depth to Water (ft BGS) 8
Start/Finish Date 5/31/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Backfilled with medium bentonite chips	CC-1	UST70-B-4-0-1	245.5			Moist, gray, sandy, very silty GRAVEL (GM); fine subrounded gravel	
				15.8				
				7.8				
				1.2				
			UST70-B-4-4.5-5.5				Moist, dark gray to brown, gravelly SAND (SP); fine sand	
5				1.2				5
				1.0				
		CC-2		0.8				
	▼	○		1.0			Wet	
				1.0			Moist, dark gray to brown SAND (SP); fine sand	
10				1.0				10
				0			Wet, gray to brown, gravelly SAND (SW); poorly graded fine-to-coarse sand	
		CC-3		0				
				0				
		○		0				
15				0			Bottom of boring at 15' BGS	15

Sampler Type:
○ No Recovery
▌ Continuous Core

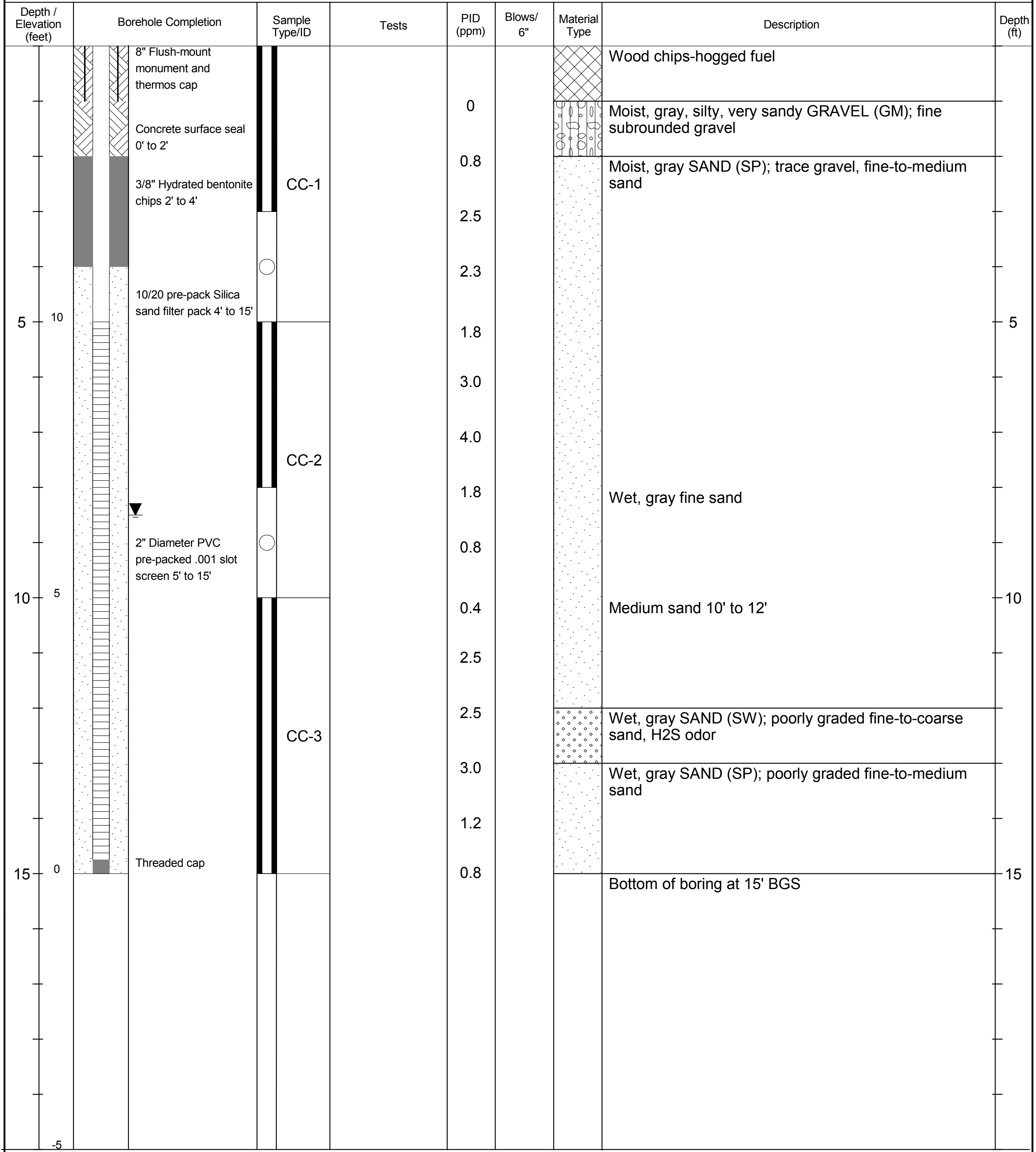
PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-163

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	UST70-MW-01	1 of 1

Project Name:	Kimberly Clark-Everett Mill	Ground Surface Elev	14.91
Location:	Everett, WA	Top of Casing Elev.	14.65
Driller/Method:	Cascade Drilling / Direct Push Probe	Depth to Water (ft BGS)	8.5
Sampling Method:	Continuous Core	Start/Finish Date	6/5/2012



Wood chips-hogged fuel

Moist, gray, silty, very sandy GRAVEL (GM); fine subrounded gravel

Moist, gray SAND (SP); trace gravel, fine-to-medium sand

Wet, gray fine sand

Medium sand 10' to 12'

Wet, gray SAND (SW); poorly graded fine-to-coarse sand, H2S odor

Wet, gray SAND (SP); poorly graded fine-to-medium sand

Bottom of boring at 15' BGS

Sampler Type:

○ No Recovery

▮ Continuous Core

PID - Photoionization Detector

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-164

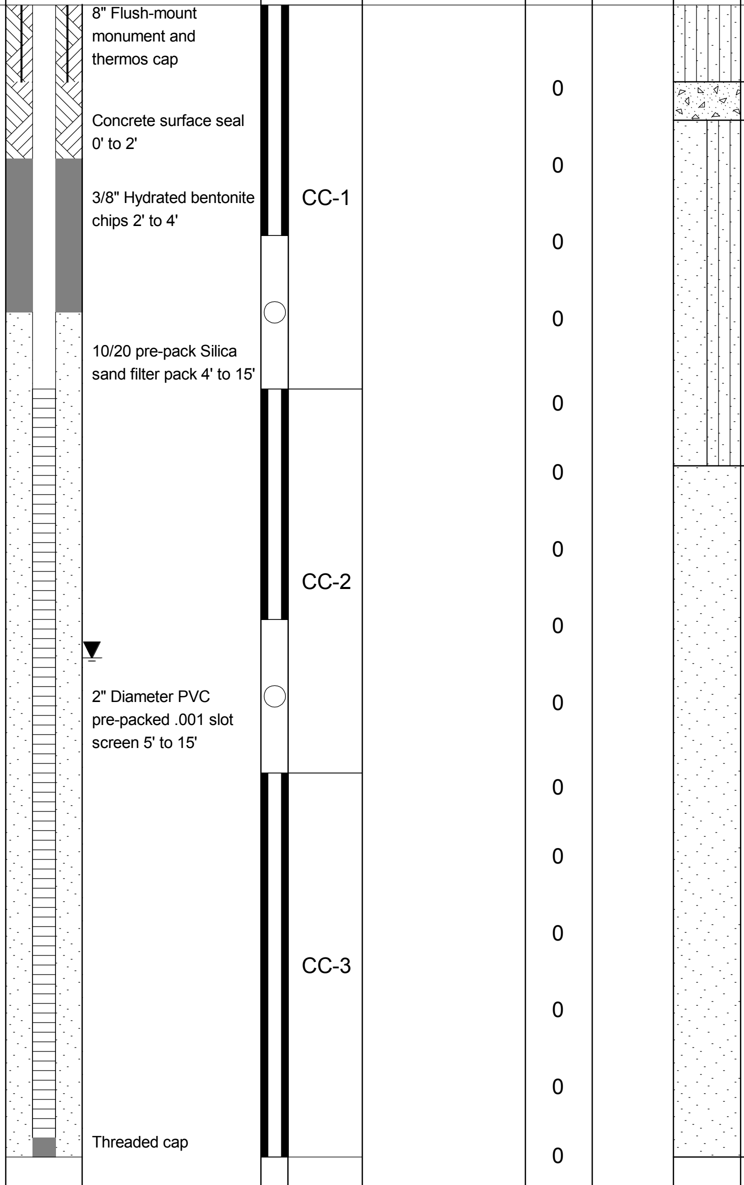
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	UST70-MW-02	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe
Sampling Method: Continuous Core

Ground Surface Elev: 14.5
Top of Casing Elev.: 14.23
Depth to Water (ft BGS): 8.5
Start/Finish Date: 6/5/2012



Depth / Elevation (feet)		Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
		8" Flush-mount monument and thermos cap						Moist, dark brown, gravelly, silty SAND (SM); fine sand	
					0			Concrete rubble	
		Concrete surface seal 0' to 2'						Moist, brown, slightly silty, slightly gravelly SAND (SP); poorly graded fine-to-medium sand	
					0				
		3/8" Hydrated bentonite chips 2' to 4'	CC-1						
					0				
			○		0			Iron staining at 4'	
	10	10/20 pre-pack Silica sand filter pack 4' to 15'							
5					0				5
					0			Moist, brown, gravelly SAND (SP); poorly graded fine-to-medium sand	
					0				
			CC-2						
					0				
		▼							
								Wet, gray sand	
		2" Diameter PVC pre-packed .001 slot screen 5' to 15'	○		0				
	5								
								1" lens of very silty sand	
10					0			Wet, gray, gravelly SAND (SP); poorly graded fine-to-medium sand	10
					0				
					0				
			CC-3						
					0				
					0				
	0								
		Threaded cap							
15					0			Bottom of boring at 15' BGS	15
	-5								

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-165

Aspect
CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	UST71-B-01	1 of 1

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS)

Start/Finish Date 5/31/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
							Wood chips-hog fuel	
	Backfilled with medium bentonite chips	CC-1		4.0				
							Moist, gray SILT (ML)	
		○		1.7			Moist, gray SAND (SP); fine sand 4' to 4.5', medium sand 4.5' to 15'	
				3.0				
5								5
				2.0				
				2.5				
				1.7				
		CC-2		1.5				
		○					Silty	
				1.5				
10								10
				1.5				
		CC-3	UST71-B-1-12-13					
				140.0				
		○		9.0				
15				5.0			Bottom of boring at 15' BGS	15

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-166

_ENV PROBE LOG KIMBERLY CLARK-EVERETT.GPJ January 17, 2013

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	UST71-B-02	1 of 1

Project Name: Kimberly Clark-Everett Mill

Ground Surface Elev

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Depth to Water (ft BGS) 5

Sampling Method: Continuous Core

Start/Finish Date 5/31/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Backfilled with medium bentonite chips	▌ CC-1					Wood chips-hogged fuel	
							Concrete rubble	
							Wood chips	
		○		2.5			Very moist, gray, sandy, very silty GRAVEL (GM); fine subrounded gravel	
5	▼	▌ CC-2		3.2				5
				16.9			Wet, gray GRAVEL (GP); coarse subrounded gravel, petroleum-like odor	
				10.5				
				11.5				
		○					Moderate rainbow sheen	
10		▌ CC-3		15.5			Wet, dark brown to black SAND (SP); numerous organics: Wood chips	10
				75			Heavy bleb sheen	
			UST71-B-2-13-14	85				
				75.0				
		○		80.0			Wet, dark gray to dark brown, silty SAND (SM); heavy sheen	
15				75.8			Bottom of boring at 15' BGS	15

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-167

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	UST71-B-03	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core
Ground Surface Elev
Depth to Water (ft BGS) 8
Start/Finish Date 5/31/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
							Wood chips-hogged fuel	
	Backfilled with medium bentonite chips							
		CC-1						
		○					Moist, gray, sandy, very silty GRAVEL (GM); fine, subrounded gravel	
				6.5				
5				7.0			Wet, gray GRAVEL (GP)	5
				9.0				
				6.0				
		CC-2						
	▼	○		6.0				
				5.0				
10				5.0				10
				52.0				
				75.0				
		CC-3						
				75.0				
				60.0			Wood chips; heavy bleb sheen, strong petroleum-like odor	
15				50				15
				53.6				
				75.3				
		CC-4						
			UST71-B-3-18-19	89.2				
			UST71-B-3-19-20	88.5				

Sampler Type:
○ No Recovery
▮ Continuous Core

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-168

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	UST71-B-04	1 of 2

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

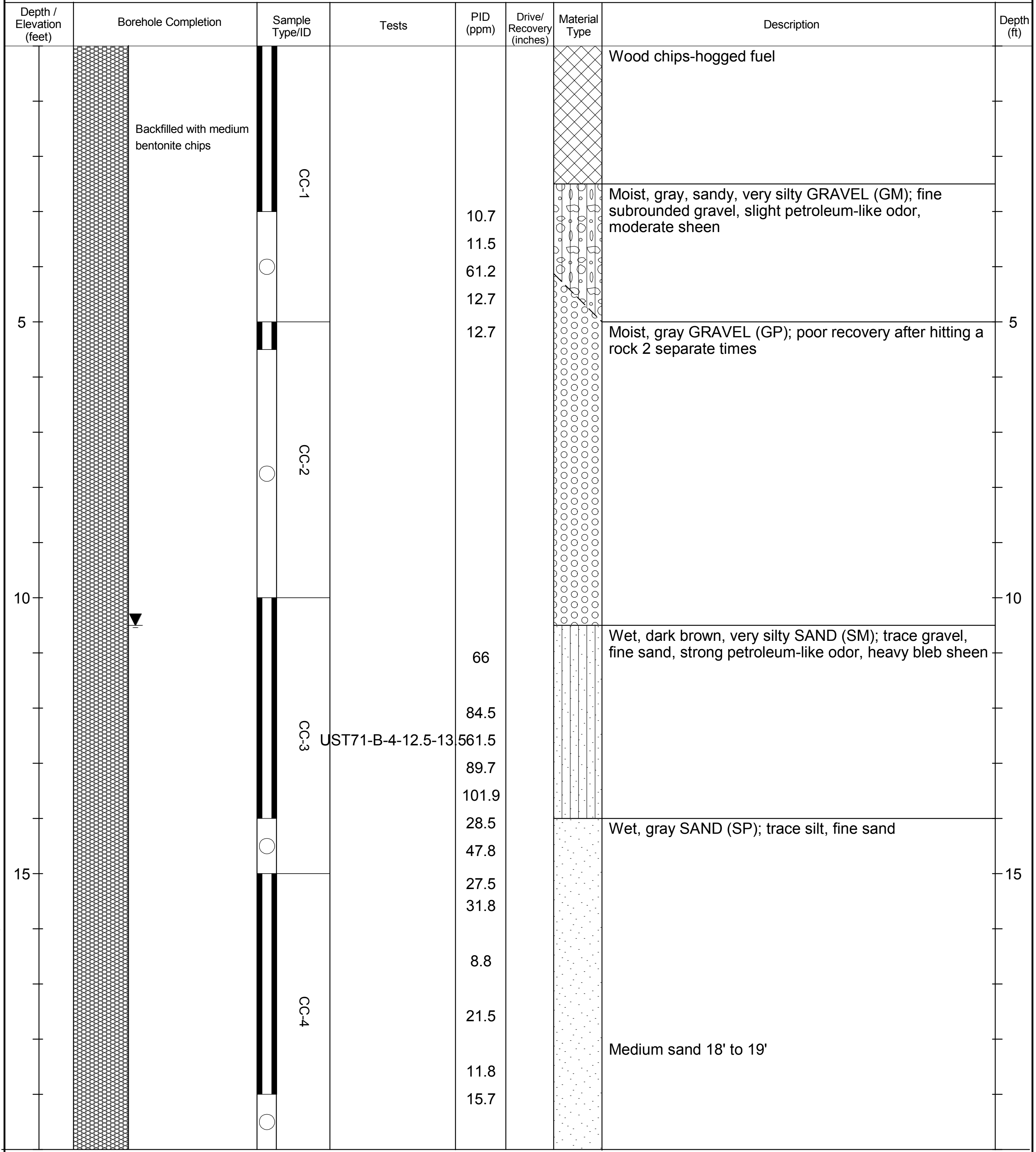
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 10.5

Start/Finish Date 5/31/2012



Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
	Backfilled with medium bentonite chips	CC-1		10.7 11.5 61.2 12.7			Wood chips-hogged fuel Moist, gray, sandy, very silty GRAVEL (GM); fine subrounded gravel, slight petroleum-like odor, moderate sheen	
5		CC-2		12.7			Moist, gray GRAVEL (GP); poor recovery after hitting a rock 2 separate times	5
10		CC-3	UST71-B-4-12.5-13.5	66 84.5 61.5 89.7 101.9 28.5 47.8			Wet, dark brown, very silty SAND (SM); trace gravel, fine sand, strong petroleum-like odor, heavy bleb sheen Wet, gray SAND (SP); trace silt, fine sand	10
15		CC-4		27.5 31.8 8.8 21.5 11.8 15.7			Medium sand 18' to 19'	15

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-169

Aspect CONSULTING

Boring Log

Project Number	Boring Number	Sheet
110207	UST71-B-04	2 of 2

Project Name: Kimberly Clark-Everett Mill

Location: Everett, WA

Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access

Sampling Method: Continuous Core

Ground Surface Elev

Depth to Water (ft BGS) 10.5

Start/Finish Date 5/31/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Drive/ Recovery (inches)	Material Type	Description	Depth (ft)
		CC-5		69.0				
				90.0				
				91.1				
				76.8				
				22.0				
				7.9				
				5.4				
25		CC-6		12.9				25
				62.7				
				25.7				
				14.7				
			UST71-B-4-28-29	29.5			Moderate metallic sheen	
				31.4				
				19.5				
30				7.8			Bottom of boring at 30' BGS	30
35								35

Sampler Type:

○ No Recovery

▌ Continuous Core

PID - Photoionization Detector (Headspace Measurement)

▼ Static Water Level

▽ Water Level (ATD)

Logged by: MAR

Approved by: SJG

Figure No. A-169

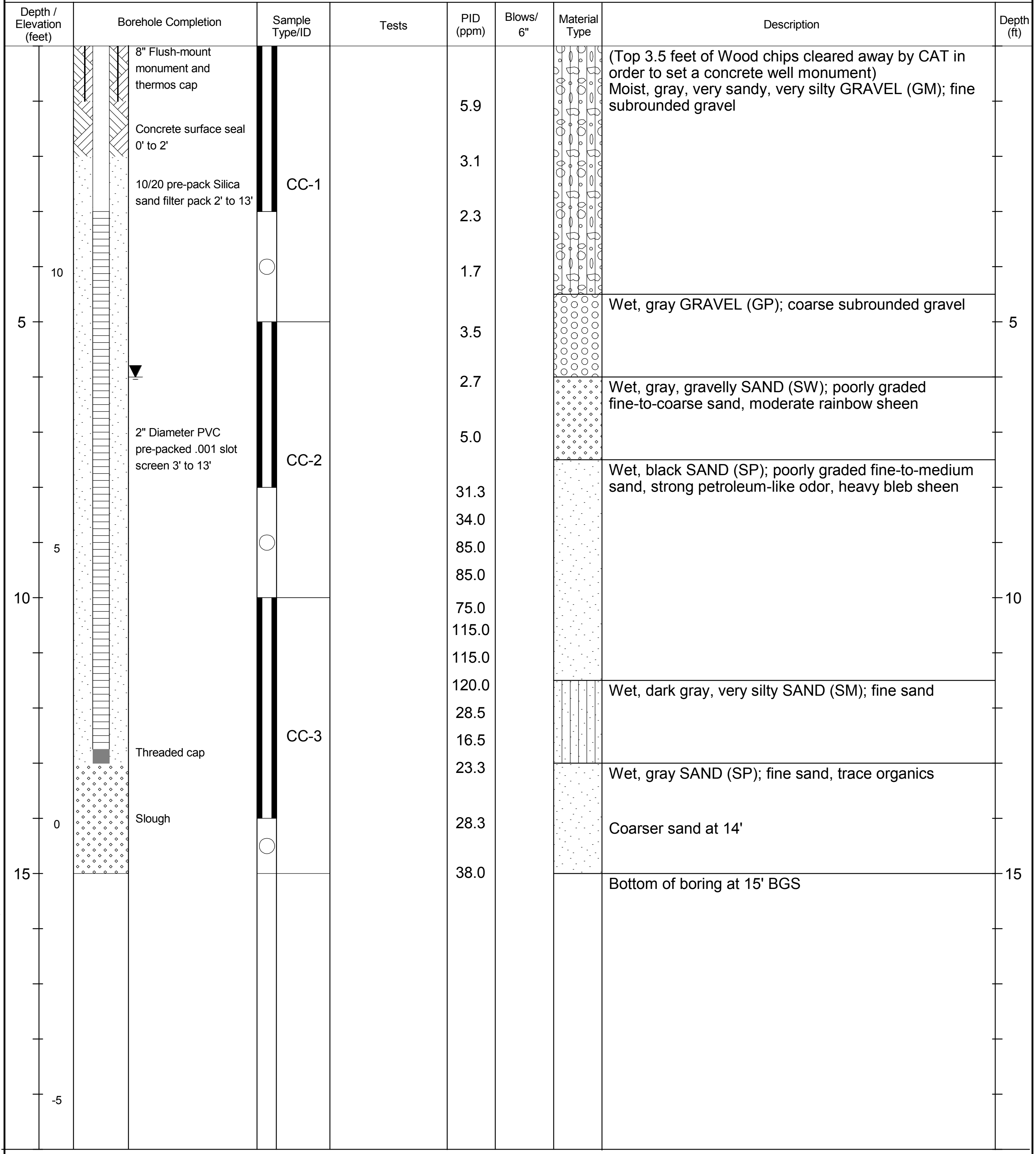
Aspect CONSULTING

Monitoring Well Construction Log

Project Number	Well Number	Sheet
110207	UST71-MW-01	1 of 1

Project Name: Kimberly Clark-Everett Mill
Location: Everett, WA
Driller/Method: Cascade Drilling / Direct Push Probe-Limited Access
Sampling Method: Continuous Core

Ground Surface Elev: 14.1
Top of Casing Elev.: 13.66
Depth to Water (ft BGS): 6
Start/Finish Date: 5/31/2012



PID (ppm): 5.9, 3.1, 2.3, 1.7, 3.5, 2.7, 5.0, 31.3, 34.0, 85.0, 85.0, 75.0, 115.0, 115.0, 120.0, 28.5, 16.5, 23.3, 28.3, 38.0

Description:

(Top 3.5 feet of Wood chips cleared away by CAT in order to set a concrete well monument)
Moist, gray, very sandy, very silty GRAVEL (GM); fine subrounded gravel

Wet, gray GRAVEL (GP); coarse subrounded gravel

Wet, gray, gravelly SAND (SW); poorly graded fine-to-coarse sand, moderate rainbow sheen

Wet, black SAND (SP); poorly graded fine-to-medium sand, strong petroleum-like odor, heavy bleb sheen

Wet, dark gray, very silty SAND (SM); fine sand

Wet, gray SAND (SP); fine sand, trace organics

Coarser sand at 14'

Bottom of boring at 15' BGS

Sampler Type:
○ No Recovery
▌ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: MAR
Approved by: SJG
Figure No. A-170

APPENDIX B

Data Validation Reports

Data Validation Report

Kimberly Clark Everett Mill Pre-RI Sampling
Bellingham, Washington

February and May 2012 Soil and Groundwater Sampling

Prepared for:

Aspect Consulting LLC
401 Second Ave South, Suite 201
Seattle, WA 98014

Prepared by:

Pyron Environmental, Inc.
3530 32nd Way, NW
Olympia, WA 98502

August 10, 2012

ACRONYMS

%R	percent recovery
BTEX	benzene, ethylbenzene, toluene, *m-, p-, & o*-xylenes
CLP	U.S. EPA Contract Laboratory Program
COC	chain-of-custody
CVAFS	Cold vapor atomic fluorescent spectrometry
EPA	U.S. Environmental Protection Agency
GC/ECD	gas chromatograph/electron capture detector
GC/FID	gas chromatograph/flame ionization detector
GC/MS	gas chromatograph/mass spectrometer
GC/PID	gas chromatograph/photo ionization detector
ICP/MS	inductively coupled plasma/ mass spectrometer
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
MS	matrix spike
MSD	matrix spike duplicate
NFGs	CLP National Functional Guidelines for Data Review (EPA 2008 – Organics; EPA 2010 – Inorganics)
PAHs	Polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
QA/QC	quality assurance/quality control
RL	reporting limit
RPD	relative percent difference
SDG	sample delivery group
SVOCs	semi-volatile organic compounds
TDS	total dissolved solids
TPH	Total petroleum hydrocarbons
TSS	total suspended solids
VOCs	Volatile organic compounds

INTRODUCTION

This report presents and discusses findings of the data validation performed on analytical data for soil and groundwater samples collected during the months of February and May in 2012 for the referenced project. The laboratory reports reviewed herein were submitted by Friedman & Bruya, Inc.

A summary (Level II) data review was performed on these laboratory reports. The review followed the procedures specified in USEPA CLP Functional Guidelines ([NFGs], EPA 2008 – Organics; EPA 2010 – Inorganics), with modifications to accommodate analytical method requirements. The numerical quality assurance/quality control (QA/QC) criteria applied to the review were based on the current performance-based control limits established by the laboratory (laboratory control limits).

The data review findings are discussed in each section pertinent to the QC parameter for each type of analysis. Qualified data with applied data qualifiers are summarized in the **Summary** section at the end of this report. Samples and the associated analyses validated herein are summarized as follows:

Field Sample ID	Laboratory Sample ID	Sampling Date	Matrix	Analysis						
				VOCs	SVOCs PAHs	PCBs	TPH-G BTEX TPH-Dx	Metals	EDB	TSS TDS
DP-1-2.5-3	202157-01	02/14/12	Soil		PAHs		X			
DP-1-5.5-6	202157-02	02/14/12	Soil		PAHs		X			
DP-2-1.5-2.5	202157-04	02/14/12	Soil				X			
DP-2-6-7	202157-05	02/14/12	Soil				X			
DP-3-4-5	202157-07	02/14/12	Soil	X	PAHs		X	Lead		
DP-3-6-7	202157-08	02/14/12	Soil		PAHs		X			
DP-4-1-2	202157-09	02/14/12	Soil				X			
DP-4-9-10	202157-10	02/14/12	Soil				X			
DP-5-7-8	202157-12	02/14/12	Soil				X			
DP-5-13-14	202157-13	02/14/12	Soil				X			
DP-6-3-4	202157-14	02/14/12	Soil				X			
DP-6-7-8	202157-15	02/14/12	Soil				X			
DP-7-4-5	202157-16	02/14/12	Soil				X			
DP-7-7-8	202157-17	02/14/12	Soil				X			
DP-8-6-7	202157-19	02/14/12	Soil				X			
DP-8-12-13	202157-20	02/14/12	Soil				X			
DP-10-3-4	202157-21	02/14/12	Soil				X			

Field Sample ID	**Laboratory Sample ID**	**Sampling Date**	**Matrix**	**Analysis**						
				VOCs	**SVOCs PAHs**	**PCBs**	**TPH-G BTEX TPH-Dx**	**Metals**	**EDB**	**TSS TDS**
DP-10-9-10	202157-22	02/14/12	Soil				X			
DP-9-7.5-8.5	202174-02	02/15/12	Soil				X			
DP-9-13-14	202174-03	02/15/12	Soil				X			
DP-15-3-4	202174-04	02/15/12	Soil				X			
DP-15-6.5-7.5	202174-05	02/15/12	Soil				X			
DP-14-3-4	202174-06	02/15/12	Soil				X			
DP-14-9-10	202174-07	02/15/12	Soil				X			
DP-13-3-4	202174-08	02/15/12	Soil				X			
DP-13-12-13	202174-09	02/15/12	Soil				X			
DP-12-6.5-7.5	202174-10	02/15/12	Soil				X			
DP-12-9-10	202174-11	02/15/12	Soil				X			
DP-11-8.5-9.5	202174-13	02/15/12	Soil				X			
DP-11-14-15	202174-14	02/15/12	Soil				X			
DP-16-6-7	202189-01	02/16/12	Soil		SVOCs	X	X	X		
DP-17-22-23	202189-03	02/16/12	Soil		SVOCs	X	X	X		
DP-18-2.5-3.5	202189-04	02/16/12	Soil		SVOCs	X	X	X		
DP-19-2.5-3.5	202189-05	02/16/12	Soil		SVOCs	X	X	X		
DP-20-2.5-3.5	202189-06	02/16/12	Soil		SVOCs	X	X	X		
DP-21-4-5	202189-07	02/16/12	Soil		SVOCs	X	X	X		
DP-22-3-4	202189-08	02/16/12	Soil		SVOCs	X	X	X		
MW-3-021712	202212-01	02/17/12	Water	X	PAHs		X	Lead	X	X
MW-4-021712	202212-02	02/17/12	Water	X	PAHs		X	Lead	X	X
MW-1-021712	202212-03	02/17/12	Water		PAHs		X	Lead		X
MW-2-021712	202212-04	02/17/12	Water		PAHs		X	Lead		X
MW-5-021712	202212-05	02/17/12	Water		X		X	X		X
MW-6-021712	202212-06	02/17/12	Water		X		X	X		X
CB-1	205382-01	05/24/12	Soil	X	SVOCs	X	X(A)	X(B)		
CB-2	205382-02	05/24/12	Soil	X	SVOCs	X	X(A)	X(B		
CB-3	205382-03	05/24/12	Soil	X	SVOCs	X	X(A)	X(B		

Notes:

(A): The sample was not analyzed for BTEX.

(B): Metals analyzed for this sample included antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc.

EDB: 1,2-Dibromoethane

Hg: Mercury; For water samples, analyses were performed on filtered aliquots and reported as “dissolved mercury”.

Metals: Arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and zinc. For water samples, metals analyses were performed on filtered aliquots and reported as "dissolved metals".
PAHs: Polycyclic aromatic hydrocarbons
PCBs: Polychlorinated biphenyls
SVOCs: Semivolatile organic compounds
TDS: Total dissolved solids
TPH-Dx: Diesel and motor oil range total petroleum hydrocarbon (TPH)
TPH-G: Gasoline range TPH; sample was also analyzed for BTEX (benzene, ethylbenzene, toluene, *m-, p-, & o*-xylenes).
TSS: Tot.al suspended solids
VOCs: Volatile organic compounds
X: The analysis was requested and performed on the sample.

The analytical parameters requested for the samples, the respective analytical methods, and the analytical laboratories are summarized below:

Parameter	Analytical Method	Analytical Laboratory
Volatile Organic Compounds (VOCs)	SW846 Method 8260C	Friedman & Bruya, Inc. Seattle, Washington
Semi-volatile Organic Compounds (SVOCs)	SW846 Method 8270D	
Polycyclic Aromatic Hydrocarbons (PAHs)	SW846 Method 8270D-SIM	
PCB Aroclors	SW846 Method 8082A	
BTEX	SW846 Method 8021B	
1,2-Dibromoethane (EDB)	SW846 Method 8011	
TPH - Gasoline Range	NWTPH-Gx	
TPH - Diesel & Motor Oil Range	NWTPH-Dx	
Metals	EPA Method 200.8	
Mercury	EPA Method 1631E	
Total Suspended Solids (TSS)	SM Method 2540D	
Total Dissolved Solids (TDS)	SM Method 2540C	Aquatic Research Inc. Seattle, Washington

Notes:

1. SW846 - *USEPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* SW-846, Third Edition, December 1996.
2. EPA Methods - *USEPA Methods for Chemical Analysis of Water and Wastes,* EPA–600/4-79-020, March 1983 Revision.
3. EPA Method 1631E - *Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry,* Office of Water, U.S. Environmental Protection Agency, August 2002, EPA-821-R-02-019.
4. SM – Standard Methods for the Examination of Water and Wastewater, American Public Health Association, 20th Edition, 1995.
5. NWTPH Methods – *Washington State Department of Ecology, Analytical Methods for Petroleum Hydrocarbons*, Publication No. ECY 97-602, June 1997.

DATA VALIDATION FINDINGS

1. VOCs by GC/MS (EPA Method SW8260C)

1.1 Sample Management and Holding Time

Samples were received in the laboratory intact and in consistence with the accompanying chain-of-custody (COC) documentation. No anomalies were identified in relation to sample preservation, handling, and transport.

Soil and water samples should be extracted (soil only) and analyzed within 14 days of collection. All samples were analyzed within the required holding time.

1.2 Method Blanks

Method blanks were prepared and analyzed as required. Target compounds were not detected at or above the reporting limits (RLs) in the method blanks.

1.3 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD were prepared and analyzed for soil and water samples as required by the method. All percent recovery (%R) and relative percent difference (RPD) values met the laboratory control criteria.

1.4 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All surrogate spike %R values were within the project control limits.

1.5 Matrix Spike (MS)

MS analyses were performed on water sample MW-4-021712. The %R values were within the laboratory control limits.

1.6 Overall Assessment of VOCs Data Usability

Based on the information submitted by the laboratory in the laboratory reports, VOCs data are acceptable for use.

2. SVOCs by GC/MS (EPA Method SW8270D)

2.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport.

Soil samples should be extracted within 14 days and water within seven days of collection. Extracts should be analyzed within 40 days of extraction. All samples were extracted and analyzed within the required holding times.

2.2 Method Blanks

Method blanks were prepared and analyzed as required. Target compounds were not detected at or above RLs in the method blanks.

2.3 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All percent recovery (%R) values were within the laboratory control limits.

2.4 Matrix Spike and Matrix Spike Duplicate (MS/MSD)

MS/MSD analyses were performed on soil sample DP-19-2.5-3.5. LCS/LCSD analyses were performed for water samples in lieu of MS/MSD (see Section 2.6). All %R and RPD values met the laboratory control criteria.

2.5 Laboratory Duplicate

Laboratory duplicate analyses were performed on soil sample DP-19-2.5-3.5. All RPD or concentration difference values met the laboratory control criteria.

2.6 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed for soil and water samples as required by the method. All %R and RPD values met the project control criteria.

2.7 Overall Assessment of SVOCs Data Usability

Based on the information submitted in the laboratory reports, SVOCs data are acceptable for use.

3. PAHs by GC/MS - SIM (EPA Method SW8270D-SIM)

3.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport, as discussed in Section 1.1.

Soil samples should be extracted within 14 days and water within seven days of collection. Extracts should be analyzed within 40 days of extraction. All samples were extracted and analyzed within the required holding times.

3.2 Method Blanks

Method blanks were prepared and analyzed as required. Target compounds were not detected at or above the MDLs in the method blanks.

3.3 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All surrogate spike %R values were either within the project control limits or at levels that had no adverse effects on data quality (*e.g.,* biased-high recovery for compounds that were not detected in samples). In some cases surrogate spike %R values were inapplicable for data evaluation because the samples contained high levels of target PAHs and requested dilution analysis; no data were qualified on this basis.

3.4 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed with each analytical batch. All %R and RPD values were either within the project control limits or the outliers had no adverse effects on data usability (*e.g.,* biased-high recovery for compounds that were not detected in samples).

3.5 Overall Assessment of PAHs Data Usability

Based on the information submitted in the laboratory reports, PAHs data are acceptable for use.

4. PCB Aroclors by GC/EDC (EPA Method SW8082A)

4.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport, as discussed in Section 1.1.

Soil samples should be extracted within 14 days of collection. Extracts should be analyzed within 40 days of extraction. All samples were extracted and analyzed within the required holding times.

4.2 Method Blanks

Method blanks were prepared and analyzed as required. PCB Aroclors were not detected at or above the RLs in the method blanks.

4.3 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All surrogate spike %R values were within the laboratory control limits.

4.4 Laboratory Duplicate

Laboratory duplicate analyses were performed on samples DP-19-2.5-3.5 and CB-2. All RPD or concentration difference values met the laboratory control criteria.

4.5 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed for soil and water samples as required by the method. All %R and RPD values were within the project control limits.

4.6 Overall Assessment of PCB Aroclors Data Usability

Sample CB-1 was re-extracted and re-analyzed for confirmative purposes. PCB Aroclors results for this sample should be reported from the initial analysis; the results from the re-analysis were to be disregarded.

Based on the information submitted in the laboratory reports, PCB Aroclor data are acceptable for use.

5. TPH-Gasoline and BTEX by GC/FID-PID (NWTPH-Gx/EPA Method SW8021B)

5.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport.

Soil and water samples should be extracted (soil samples only) and analyzed within 14 days. All samples were extracted and analyzed within the required holding times.

5.2 Method Blanks

Method blanks were prepared and analyzed as required. No target compounds were detected at or above RLs in the method blanks.

5.3 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All surrogate spike %R values were within the project control limits, outside the control limits due to matrix interference, or diluted below quantitation limits due to high analyte concentrations. No data qualifying actions were taken in these cases.

5.4 Laboratory Duplicate

Laboratory duplicate analyses were performed on soil samples DP-1-2.5-3, DP-16-6-7. Laboratory duplicate analyses for water samples were performed on a batch QC sample. The RPD or concentration difference values met the laboratory control criteria.

5.5 Laboratory Control Sample (LCS)

LCS analyses were performed as required by the method. All %R values met the laboratory control limits.

5.6 Overall Assessment of TPH-G and BTEX Data Usability

Based on the information submitted in the laboratory reports, TPH-G and BTEX data are acceptable for use.

6. TPH-Diesel & Motor Oil (Methods NWTPH-Dx)

6.1 Holding Time

Soil samples should be extracted within 14 days of collection, and extracts analyzed within 40 days of extraction. All samples were extracted and analyzed within the recommended holding time.

6.2 Method Blanks

Method blanks were prepared and analyzed as required. No target compounds were detected at or above the RLs in the method blanks.

6.3 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All surrogate spike %R values were within the project control limits, outside the control limits due to matrix interference, or diluted below quantitation limits due to high analyte concentrations. No data qualifying actions were taken in these cases.

6.4 Matrix Spike (MS) and MS Duplicate (MSD)

MS and MSD analyses were performed on sample were performed for soils on samples DP-14-3-4, DP-19-2.5-3.5. LCS/LCSD analyses were performed in lieu of MS/MSD for water samples (see Section 6.5). The %R and RPD values met the laboratory control criteria.

6.5 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS analyses were performed for soil; LCS/LCSD analyses were performed for water samples as required by the method. All %R and RPD values met the project control criteria.

6.6 Target Compound Identification

Sample extracts were cleaned up with acid and silica gel treatment to minimize the biogenic interference with target compound identification, as required by the project. The laboratory reported results as diesel #2 (C10 - C25) and motor oil (C25 - C36), as required by the method.

6.7 Overall Assessment of TPH-Diesel and Motor Oil Data Usability

Based on the information submitted in the laboratory reports, TPH-Diesel and TPH-Motor Oil data are acceptable for use.

7. Total Metals by ICP/MS and CVAFS (EPA Methods 200.8 and 1631E)

7.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport, as discussed in Section 1.1.

Soil and water samples should be analyzed within 180 days for ICP/MS metals and 28 days for mercury. Samples were analyzed within the required holding times.

7.2 Method Blanks

Method blanks were prepared and analyzed as required. Target analytes were not detected at or above the RLs in the method blanks.

7.3 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS analyses were performed for soil; LCS/LCSD analyses were performed for water samples as required by the method. All %R and RPD values met the project control criteria.

7.4 Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

MS and MSD analyses were performed on soil samples DP-16-6-7 and CB-1 for total metals (analyzed with ICP/MS) and mercury. MS analysis was performed on water sample MW-5-021712 for dissolved mercury. All %R and RPD values met the laboratory control criteria.

7.5 Internal Standards

At least three internal standards were added to all field and QC samples for ICP/MS analyses. All percent relative intensity values were within the method criteria (60 - 125%).

7.6 Overall Assessment of Metals Data Usability

Based on the information submitted in the laboratory reports, metals data are acceptable for use.

8. 1,2-Dibromoethane (EDB) by GC/ECD (EPA Method SW8011)

8.1 Sample Management and Holding Time

No anomalies were identified in relation to sample preservation, handling, and transport.

Water samples should be extracted and analyzed within 28 days of collection. All samples were analyzed within the required holding time.

8.2 Method Blank

Method blanks were prepared and analyzed at the required frequency. EDB was not detected at or above the RL in method blanks.

8.3 Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

MS and MSD analyses were not performed on a project samples. LCS/LCSD analyses were performed in lieu of MS/MSD (see Section 8.4).

8.4 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed as required by the methods. All %R and RPD values met the laboratory control criteria.

8.5 Overall Assessment of EDB Data

Based on the information submitted in the laboratory report, EDB data are acceptable for use.

9. Total Dissolved Solids (TDS) and Total Suspended Solids (TSS)

9.1 Sample Management and Holding Time

No anomalies were identified in relation to sample preservation, handling, and transport. Water samples should be analyzed within seven days of collection for TDS and TSS. All samples were analyzed within the required holding times.

9.2 Method Blanks

Method blanks were prepared and analyzed as required by the methods. TDS and TSS were not detected at or above the RLs in method blanks.

9.3 Laboratory Duplicate

Laboratory duplicate analysis was performed on sample MW6-021712. The RPD value met the laboratory control criteria.

9.4 Laboratory Control Samples (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed for TSS. The %R and RPD values were within the laboratory control limits.

9.5 Overall Assessment of TDS and TSS Data Usability

Based on the information submitted in the laboratory report, TDS and TSS data are acceptable for use.

SUMMARY

Data qualification is summarized as follows:

<table>
<tr><th>Laboratory ID</th><th>Sample ID</th><th>Analyte</th><th>Adjusted Result</th><th>Qualifier</th><th>Qualified Reason</th></tr>
<tr><td colspan="6">No data qualifiers were assigned as a result of QC outliers in these SDGs.</td></tr>
</table>

Data Qualifiers are defined as follows:

Data Qualifier	Definition
R	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
J	The analyte was detected above the reported quantitation limit, and the reported concentration was an estimated value.
U	The analyte was analyzed for, but was considered not detected at the reporting limit or reported value.
UJ	The analyte was analyzed for, and the associated quantitation limit was an estimated value.

Approved By: Mingta Lin Date: ***8/10/2012***

Mingta Lin

REFERENCES

USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review,* Office of Superfund Remediation and Technical Innovation, U.S. Environmental Protection Agency, January 2010, USEPA 540/R-10/011

USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* Office of Superfund Remediation and Technical Innovation, U.S. Environmental Protection Agency, June 2008, USEPA-540-R-08-01.

USEPA *Method 1631, Revision E: Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry,* Office of Water, U.S. Environmental Protection Agency, August 2002, EPA-821-R-02-019.

USEPA *Test Methods for Evaluating Solid Waste (SW-846). Third Edition and Revised Update IIIA.* Office of Solid Waste and Emergency Response, Washington, D.C. April 1998.

USEPA *Methods for Chemical Analysis of Water and Wastes,* EPA-600/4-79-020, March 1983 and updates.

Standard Methods for the Examination of Water and Wastewater, American Public Health Association, 20th Edition, 1995.

Ecology (Washington State Department of) *Analytical Methods for Petroleum Hydrocarbons.* Publication No. ECY 97-602. June 1997.

Data Validation Report

Port of Bellingham Former GP Mill Property RI/FS
Kimberly Clark, Washington

May and June 2012 Soil and Groundwater Sampling

Prepared for:

Aspect Consulting LLC
401 Second Ave South, Suite 201
Seattle, WA 98014

Prepared by:

Pyron Environmental, Inc.
3530 32nd Way, NW
Olympia, WA 98502

Approved By: Mingta Lin Date: ***8/21/2012***
Mingta Lin, Senior Project Chemist

ACRONYMS

%D	percent difference
%D_f	percent drift
%R	percent recovery
%RSD	percent relative standard deviation
AMU	atomic mass unit
ARI	Analytical Resources, Inc. – Tukwila, Washington
CCB	continuing calibration blank
CCC	calibration check compound
CCV	continuing calibration verification
CDD	chlorinated dibenzo-p-dioxin
CDF	chlorinated dibenzofuran
CF	calibration factor
CLP	U.S. EPA Contract Laboratory Program
COC	chain-of-custody
CVAFS	cold vapor atomic fluorescent spectrometry
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethylene
DDT	dichlorodiphenyltrichloroethane
DFTPP	decafluorotriphenylphosphine
ECD	electron capture detector
EDB	1,2-dibromoethane
EDL	estimated detection limit
EMPC	estimated maximum possible concentration
EPA	U.S. Environmental Protection Agency
FID	Flame ionization detector
GC/MS	gas chromatograph/mass spectrometer
GPC	gel permeation chromatography
HPLC	high performance liquid chromatography
HRGC	high-resolution gas chromatograph
HRMS	high-resolution mass spectrometer
ICAL	initial calibration
ICB	initial calibration blank
ICP	inductively coupled plasma
ICP/MS	inductively coupled plasma/ mass spectrometer

ICSA	ICP interference check sample solution A
ICV	initial calibration verification
IPR	initial precision and recovery
ISC	isomer specificity check
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
m/z	mass-to-charge ratio
MDL	method detection limit
MS	matrix spike
MSD	matrix spike duplicate
NFGs	CLP National Functional Guidelines for Data Review (EPA 2008 – Organics; EPA 2010 – Inorganics; EPA 2011 – Dioxins/Furans)
OPR	ongoing precision and recovery
pg/g	pictogram per gram
PCBs	polychlorinated biphenyls
PCDD	polychlorinated dibenzo-*p*-dioxin
PCDF	polychlorinated dibenzofuran
PEM	performance evaluation mixture
PSEP	Puget Sound Estuary Program
QA/QC	quality assurance/quality control
QAPP	quality assurance project plan
RF	response factor
RL	reporting limit
RPD	relative percent difference
RRT	relative retention time
S/N	signal-to-noise ratio
SAP	sampling and analysis plan
SDG	sample delivery group
SICP	selected ion current profile
SIM	selective ion monitoring
SRM	standard reference material
SVOCs	semi-volatile organic compounds
TDS	total dissolved solids
TSS	total suspended solids
TOC	total organic carbon
TS	total solids

VOCs	volatile organic compounds
WDM	window defining mixture
µg/kg	microgram per kilogram

INTRODUCTION

This report presents and discusses findings of the data validation performed on analytical data for soil samples collected during May and June 2012 for the referenced project. The laboratory reports validated herein were submitted by Friedman & Bruya, Inc. and Columbia Analytical Services, Inc. (CAS, part of ALS Group).

A level III data validation was performed on this laboratory report. The validation followed the procedures specified in USEPA CLP Functional Guidelines ([NFGs], EPA 2008 – Organics; EPA 2010 – Inorganics; EPA 2011 – Dioxins/Furans) and EPA Region 10 SOP (EPA 1996), with modifications to accommodate project and analytical method requirements. The numerical quality assurance/quality control (QA/QC) criteria applied to the validation were in accordance with those specified in the quality assurance project plans ([QAPPs], Aspect, 2009) and the current performance-based control limits established by the laboratory (laboratory control limits). Instrument calibration, frequency of QC analyses, and analytical sequence requirements were evaluated against the respective analytical methods.

Validation findings are discussed in each section pertinent to the QC parameter for each type of analysis. Qualified data with applied data qualifiers are summarized in the **Summary** section at the end of this report.

Samples and the associated analyses validated herein are summarized as follows:

				Analysis					
Field Sample ID	**Laboratory Sample ID**	**Sampling Date**	**Sample Type**	**VOCs**	**SVOCs PAHs**	**PCBs**	**TPH-G TPH-Dx**	**Metals TOC**	**Dioxins Furans**
GF-B-15A-1-2.5	205364-03	23-May-12	Soil	X	X	X	X	X	X
GF-B-15A-7.5-9	205364-04	23-May-12	Soil	X	X	X	X	Metals	
GF-B-15A-10-11.5	205364-05	23-May-12	Soil	X	X	X	X	X	
GF-B-15A-15-16.5	205364-06	23-May-12	Soil		PAHs		TPH-Dx		
GF-B-15A-25-26.5	205364-08	23-May-12	Soil		PAHs		TPH-Dx		
REC2-B-12-5-6	205364-10	23-May-12	Soil		PAHs		TPH-Dx		
REC2-B-12-8-9	205364-11	23-May-12	Soil		PAHs		TPH-Dx		
REC2-B-12-17-18	205364-12	23-May-12	Soil		PAHs		TPH-Dx		
REC2-B-8-4-5	205364-13	23-May-12	Soil		PAHs		TPH-Dx		
REC2-B-8-10-11	205364-14	23-May-12	Soil		PAHs		TPH-Dx		
REC2-B-7-4-5	205364-15	23-May-12	Soil		PAHs		TPH-Dx		
REC2-B-7-6.5-7.5	205364-16	23-May-12	Soil		PAHs		TPH-Dx		
REC2-B-4-1.5-2.5	205364-17	23-May-12	Soil		PAHs		TPH-Dx		
REC2-B-4-4-5	205364-18	23-May-12	Soil		PAHs		TPH-Dx		

Field Sample ID	Laboratory Sample ID	Sampling Date	Sample Type	Analysis					
				VOCs	**SVOCs PAHs**	**PCBs**	**TPH-G TPH-Dx**	**Metals TOC**	**Dioxins Furans**
REC2-B-4-6.5-7.5	205364-19	23-May-12	Soil		PAHs		TPH-Dx		
GF-B-14-1-2.5	205364-20	23-May-12	Soil	X	SVOCs	X	X	Metals	
GF-B-14-7.5-9	205364-21	23-May-12	Soil	X	SVOCs	X	X	X	
Trip Blank_05/23/12	205364-22	23-May-12	Water	X					
GF-B-10-1-2.5	205381-01	24-May-12	Soil	X	SVOCs	X	X	X	X
GF-B-13-1-2.5	205381-02	24-May-12	Soil	X	SVOCs	X	X	X	X
GF-B-13-10-11.5	205381-03	24-May-12	Soil	X	SVOCs	X	X	X	X
GF-B-11-1-2.5	205381-04	24-May-12	Soil	X	SVOCs	X	X	X	X
GF-B-11-7.5-9	205381-05	24-May-12	Soil	X	SVOCs	X	X	X	X
GF-B-7-1-2.5	205381-06	24-May-12	Soil	X	SVOCs	X	X	X	X
GF-B-7-7.5-9	205381-07	24-May-12	Soil	X	SVOCs		X	Metals	
GF-B-7-10-11.5	205381-08	24-May-12	Soil					TOC	X
GF-B-10-7.5-9	205381-09	24-May-12	Soil	X	SVOCs	X	X	Metals	
GF-B-10-10-11.5	205381-10	24-May-12	Soil					TOC	X
REC2-B-11-3-4	205381-11	24-May-12	Soil		PAHs		TPH-Dx		
REC2-B-11-7.5-8.5	205381-12	24-May-12	Soil		PAHs		TPH-Dx		
REC2-B-11-11-12	205381-13	24-May-12	Soil		PAHs		TPH-Dx		
REC2-B-9-2-6	205381-14	24-May-12	Soil		PAHs		TPH-Dx		
REC2-B-9-6-7	205381-15	24-May-12	Soil		PAHs		TPH-Dx		
REC2-B-9-7.5-8.5	205381-16	24-May-12	Soil		PAHs		TPH-Dx		
REC2-B-5-2-3	205381-17	24-May-12	Soil		PAHs		TPH-Dx		
REC2-B-5-7-8	205381-18	24-May-12	Soil		PAHs		TPH-Dx		
UST68-MW-4-11-12	205381-20	24-May-12	Soil	X			TPH-G		
UST68-MW-4-11-12-D	205381-21	24-May-12	Soil	X			TPH-G		
UST68-MW-5-7-8	205381-22	24-May-12	Soil	X			TPH-G		
UST68-MW-5-12-13	205381-23	24-May-12	Soil	X			TPH-G		
GF-B-2-2.5-4	205404-01	25-May-12	Soil	X	SVOCs	X	X		
GF-B-1-1-2.5	205404-02	25-May-12	Soil	X	SVOCs	X	X		
UST68-MW-1-7-8	205404-03	25-May-12	Soil	X			TPH-G		
UST69-MW-1-6-7	205404-04	25-May-12	Soil	X			TPH-G		
UST69-MW-1-6-7-D	205404-05	25-May-12	Soil	X			TPH-G		
GF-B-4-2.5-4	205404-06	25-May-12	Soil	X		X	X		
GF-B-4-7.5-9	205404-07	25-May-12	Soil	X		X	X		
GF-B-3-1-2.5	205423-01	29-May-12	Soil	X	X	X	X	X	X

Field Sample ID	Laboratory Sample ID	Sampling Date	Sample Type	Analysis					
				VOCs	SVOCs PAHs	PCBs	TPH-G TPH-Dx	Metals TOC	Dioxins Furans
GF-B-3-7.5-9	205423-02	29-May-12	Soil	X	X	X	X	Metals	
GF-B-3-11-12.5	205423-03	29-May-12	Soil	X	X	X	X	X	
GF-B-5-1-2.5	205423-04	29-May-12	Soil	X	X	X	X	X	X
GF-B-5-7.5-9	205423-05	29-May-12	Soil	X	X	X	X	X	
GF-B-6-1-2.5	205423-06	29-May-12	Soil	X	X	X	X	X	X
GF-B-6-7.5-9	205423-07	29-May-12	Soil	X	X	X	X	X	
GF-B-6-20-21.5	205423-08	29-May-12	Soil	X	X	X	X	X	
NRP-MW-2-7.5-8.5	205423-09	29-May-12	Soil	X	PAHs		X	Metals	
NRP-MW-3-6.5-7.5	205423-10	29-May-12	Soil	X	PAHs		X	Metals	
REC2-MW-5-0-2	205423-11	29-May-12	Soil		PAHs		TPH-Dx		
REC2-MW-5-2.5-3.5	205423-12	29-May-12	Soil		PAHs		TPH-Dx		
REC2-MW-5-7-8	205423-13	29-May-12	Soil		PAHs		TPH-Dx		
GF-B-8-1-2.5	205441-01	30-May-12	Soil	X	SVOCs	X	X	X	X
GF-B-8-7.5-9	205441-02	30-May-12	Soil	X	SVOCs	X	X	X	
UST68-MW-2-10-11	205441-03	30-May-12	Soil	X			TPH-G		
UST68-MW-2-10-11-D	205441-04	30-May-12	Soil	X			TPH-G		
UST71-B-1-12-13	206006-01	31-May-12	Soil	X	PAHs		TPH-Dx		
UST71-B-2-13-14	206006-02	31-May-12	Soil	X	PAHs		TPH-Dx		
UST71-B-3-18-19	206006-03	31-May-12	Soil	X	PAHs		TPH-Dx		
UST71-B-3-19-20	206006-04	31-May-12	Soil	X	PAHs		TPH-Dx		
UST71-B-4-12.5-13.5	206006-05	31-May-12	Soil	X	PAHs		TPH-Dx		
UST71-B-4-28-29	206006-06	31-May-12	Soil	X	PAHs		TPH-Dx		
UST70-B-1-3-4	206006-07	31-May-12	Soil	X	PAHs		TPH-Dx		
UST70-B-1-3-4-D	206006-08	31-May-12	Soil	X	PAHs		TPH-Dx		
UST70-B-1-13.5-14.5	206006-09	31-May-12	Soil	X	PAHs		TPH-Dx		
UST70-B-2-9-10	206006-10	31-May-12	Soil	X	PAHs		TPH-Dx		
UST70-B-3-8-9	206006-11	31-May-12	Soil	X	PAHs		TPH-Dx		
UST70-B-4-0-1	206006-12	31-May-12	Soil	X	PAHs		TPH-Dx		
UST70-B-4-4.5-5.5	206006-13	31-May-12	Soil	X	PAHs		TPH-Dx		
NRP-B-7-9-10	206022-01	01-Jun-12	Soil	X	PAHs		X	Metals	
NRP-B-7-19-20	206022-02	01-Jun-12	Soil	X	PAHs		X	Metals	
NRP-B-5-9-10	206022-03	01-Jun-12	Soil	X	PAHs		X	Metals	
NRP-B-8-8.5-9.5	206022-04	01-Jun-12	Soil	X	PAHs		X	Metals	
NRP-B-8-11-12	206022-05	01-Jun-12	Soil	X	PAHs		X	Metals	

				Analysis					
Field Sample ID	**Laboratory Sample ID**	**Sampling Date**	**Sample Type**	**VOCs**	**SVOCs PAHs**	**PCBs**	**TPH-G TPH-Dx**	**Metals TOC**	**Dioxins Furans**
NRP-B-2-8-10	206022-07	01-Jun-12	Soil	X	PAHs		X	Metals	
NRP-B-2-8-10-D	206022-08	01-Jun-12	Soil	X	PAHs		X	Metals	
NRP-B-2-14-15	206022-09	01-Jun-12	Soil	X	PAHs		X	Metals	
NRP-B-4-13.5-14.5	206022-10	01-Jun-12	Soil	X	PAHs		X	Metals	
NRP-B-1-9-12	206022-11	01-Jun-12	Soil	X	PAHs		X	Metals	
NRP-B-3-8.5-9.5	206022-12	01-Jun-12	Soil	X	PAHs		X	Metals	
RB-NRP-3-060112	206022-13	01-Jun-12	Water	X	PAHs			Metals	
REC7-MW-1-060512	206067-01	05-Jun-12	Water	X	SVOCs			Metals**	
NRP-MW-3-060512	206067-02	05-Jun-12	Water	X	X		X	Metals**	
REC7-MW-2-060512	206067-03	05-Jun-12	Water	X	SVOCs			Metals**	
NRP-MW-2-060512	206067-04	05-Jun-12	Water	X	X		X	Metals**	
REC6-MW-2-060512	206067-05	05-Jun-12	Water	X	SVOCs		TPH-G	Metals***	
MW-5-060512	206067-06	05-Jun-12	Water	X	X		X	Metals**	
MW-3-060512	206067-07	05-Jun-12	Water	X	PAHs		X	Metals*	
NRP-MW-3-060512D	206067-08	05-Jun-12	Water		SVOCs				
REC3-MW-1-8.5-9.5	206068-01	05-Jun-12	Soil	X	PAHs	X	TPH-Dx	Lead	
UST70-MW-2-8-9	206068-02	05-Jun-12	Soil	X	PAHs		TPH-Dx		
REC5-MW-1-6.5-7.5	206068-03	05-Jun-12	Soil	X				Metals	
NRP-B-11-0-1	206097-01	06-Jun-12	Soil					Metals	
NRP-B-11-3-4	206097-02	06-Jun-12	Soil					Metals	
NRP-B-12-0-1	206097-03	06-Jun-12	Soil					Metals	
NRP-B-12-3-4	206097-04	06-Jun-12	Soil					Metals	
NRP-B-13-0-1	206097-05	06-Jun-12	Soil					Metals	
NRP-B-13-3-4	206097-06	06-Jun-12	Soil					Metals	
NRP-B-15-0-1	206097-07	06-Jun-12	Soil					Metals	
NRP-B-15-3-4	206097-08	06-Jun-12	Soil					Metals	
UST68-MW-1-060612	206098-01	06-Jun-12	Water	X			TPH-G	X^	
UST68-MW-2-060612	206098-02	06-Jun-12	Water	X			TPH-G	X^	
UST68-MW-4-060612	206098-03	06-Jun-12	Water	X			TPH-G	X^	
UST68-MW-5-060612	206098-04	06-Jun-12	Water	X			TPH-G	X^	
REC7-MW-3-060612	206098-05	06-Jun-12	Water	X	SVOCs			Metals**	
REC7-MW-4-060612	206098-06	06-Jun-12	Water	X	SVOCs			Metals**	
MW-1-060612	206098-07	06-Jun-12	Water	X	X		X	Metals**	
MW-2-060612	206098-08	06-Jun-12	Water	X	X		X	Metals**	

Field Sample ID	**Laboratory Sample ID**	**Sampling Date**	**Sample Type**	**Analysis**					
				VOCs	**SVOCs PAHs**	**PCBs**	**TPH-G TPH-Dx**	**Metals TOC**	**Dioxins Furans**
OMS-MW-1-060612	206098-09	06-Jun-12	Water	X	X		X	Metals**	
MW-6-060712	206136-01	07-Jun-12	Water	X	X		X	Metals**	
REC3-MW-1-060712	206136-02	07-Jun-12	Water	X	X		TPH-G	Metals**	
UST70-MW-1-060712	206136-03	07-Jun-12	Water	X	PAHs		TPH-G		
UST71-MW-1-060712	206136-04	07-Jun-12	Water	X	PAHs		TPH-G		
UST70-MW-2-060712	206136-05	07-Jun-12	Water	X	X		TPH-G	Metals**	
MW-4-060812	206136-06	08-Jun-12	Water	X	PAHs		X	Metals*	
MW-4-060812-D	206136-07	08-Jun-12	Water	X	PAHs		X	Metals*	
UST69-MW-1-060812	206136-08	08-Jun-12	Water	X			TPH-Dx	Metals^	
UST69-MW-1-060812-D	206136-09	08-Jun-12	Water	X			TPH-Dx	X^	
REC2-MW-5-060812	206136-10	08-Jun-12	Water	X	PAHs		X	X *	
NRP-MW-1-060812	206136-11	08-Jun-12	Water	X	PAHs		X	Metals**	
NRP-MW-1-060812-D	206136-12	08-Jun-12	Water		PAHs		TPH-G	Metals^^	
REC5-MW-1-060812	206136-13	08-Jun-12	Water	X				Metals*	
REC5-MW-1-060812-D	206136-14	08-Jun-12	Water					Metals	

Notes:

* Sample was also analyzed for total suspended solids (TSS)
** Sample was also analyzed for total suspended solids (TSS), ammonia, and dissolved sulfide
*** Sample was also analyzed for TSS, ammonia, dissolved sulfide, and formaldehyde
^ Sample was also analyzed for TSS and dibromoethane (EDB)
^^ Sample was also analyzed for dissolved sulfide, and ammonia.
Metals: Antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc
PAHs - Polycyclic aromatic hydrocarbons
PCBs - Polychlorinated biphenyls
SVOCs - Semivolatile Organic Compounds
TOC – Total Organic carbon
TPH-Dx - Diesel and motor oil range total petroleum hydrocarbon
TPH-G - Gasoline range total petroleum hydrocarbon
VOCs - Volatile Organic Compounds
X - The analysis was requested and performed on the sample.

The analytical parameters requested for the samples, the respective analytical methods, and the analytical laboratories are summarized below:

Parameter	**Analytical Method**	**Analytical Laboratory**
Volatile Organic Compounds (VOCs)	SW846 Method 8260C	Friedman & Bruya, Inc. Seattle, WA
Semivolatile Organic Compounds (SVOCs)	SW846 Method 8270D	
Polycyclic Aromatic Hydrocarbons (PAHs)	SW846 Method 8270D-SIM	
PCB Aroclors	SW846 Method 8082A	
TPH - Gasoline Range	NWTPH-Gx	
TPH - Diesel & Motor Oil Range	NWTPH-Dx	
Total Metals	EPA Method 200.8	
Mercury	EPA Method 1631E	
Total Organic Carbon (TOC)	ASTM D4129-05M	Columbia Analytical Services, Inc. Kelso, WA (Part of ALS Group)
Total Suspended Solids (TSS)	SM Method 2540D	
Dissolved sulfide	SM 4500-S2-D	
1,2-Dibromoethane (EDB)	SW846 Method 8011	
Ammonia as Nitrogen	EPA Method 350.1	
Formaldehyde	SW846 Method 8315A	
Dioxins/Furans	SW846 Method 8290	Columbia Analytical Services, Inc. Houston, TX (Part of ALS Group)

Notes:

1. SW846 - *USEPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* SW-846, Third Edition, December 1996.
2. EPA Methods - *USEPA Methods for Chemical Analysis of Water and Wastes,* EPA–600/4-79-020, March 1983 Revision.
3. EPA Method 1631E - *Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry,* Office of Water, U.S. Environmental Protection Agency, August 2002, EPA-821-R-02-019.
4. ASTM – American Society of Testing and Materials
5. NWTPH Methods – *Washington State Department of Ecology, Analytical Methods for Petroleum Hydrocarbons*, Publication No. ECY 97-602, June 1997.
6. SM – Standard Methods for the Examination of Water and Wastewater, American Public Health Association, 20th Edition, 1995.

DATA VALIDATION FINDINGS

1. VOCs by GC/MS (EPA Method SW8260C)

1.1 Sample Management and Holding Time

Samples were received in the laboratory intact and in consistence with the accompanying chain-of-custody (COC) documentation. No anomalies were identified in relation to sample preservation, handling, and transport.

Soil and water samples should be extracted (soil only) and analyzed within 14 days of collection. All samples were analyzed within the required holding time.

1.2 GC/MS Instrument Performance Check

The method require that (1) gas chromatograph/mass spectrometer (GC/MS) tuning analysis be performed, using bromofluorobenzene (BFB), at the beginning of each 12-hour period prior to any analysis, and (2) specific mass ions meet the criteria provided in the method. All instrument performance checks met the requirements.

1.3 Initial Calibration (ICAL)

The method linearity criteria require that (1) if linear average RFs is chosen as the quantitation option, the percent relative standard deviation (%RSD) of response factors (RFs) be ≤20% for the analyte, (2) if least-square linear regression is chosen for quantitation, the correlation coefficient (r) be >0.995, (3) if six-point non-linear (quadratic) curve is chosen for quantitation, the coefficient of determination (r^2) be >0.99, and (4) the RF be >0.01 for poor response compounds and >0.05 for all other compounds.. All ICALs met the requirements.

An initial calibration verification (ICV) standard (second source standard) was analyzed to verify the calibration curve. Percent difference (%D) values were either within ±20%, or the exceedance had no adverse effects on data usability (*e.g.,* biased high ICV recovery for a compound not detected in samples), with the exceptions of following:

ICV ID	Compound	%D (%)	Bias	Affected Sample	Data Qualifier
GCMS9 5/23/12, 2:43	Dichlorodifluoromethane Chloromethane	26.3 22.2	Low	All soil samples in SDGs 205364 205381 205404 205423	**UJ**

ICV ID	Compound	%D (%)	Bias	Affected Sample	Data Qualifier
GCMS9 5/30/12, 15:55	Dichlorodifluoromethane	32.1	Low	All soil in SDGs 205441 206006 206068	**UJ**

1.4 Calibration Verification (CCV)

The analytical method requires that (1) continuing calibrations be analyzed at the beginning of each 12-hour analysis period prior to the analysis of method blank and samples, (2) the %D be within ±20%, and (3) the RF be >0.01 for poor response compounds and >0.05 for all other compounds.

Calibration verifications were performed at the required frequency. %D values were either within ±20%, or the exceedance had no adverse effects on data usability (*e.g.,* biased high CCV recovery for a compound not detected in samples), with the exceptions as follows:

CCV ID	Compound	%D (%)	Bias	Affected Sample	Data Qualifier
GCMS9 6/1/12, 2:55	Dichlorodifluoromethane	25.6	Low	GF-B-8-7.5-9 UST68-MW-2-10-11 UST68-MW-2-10-11D	**UJ**
GCMS4 6/1/12, 16:31	Bromomethane Chloroethane Hexachlorobutadiene	20.1 21.5 21.4	Low	UST71-B-1-12-13 UST71-B-2-13-14 UST71-B-3-18-19 UST71-B-4-12.5-13.5 UST70-B-1-3-4 UST70-B-1-3-4-D	**UJ**
GCMS4 6/5/12, 10:44	Bromomethane Chloroethane	21.8 20.6	Low	NRP-B-8-11-12	**UJ**
GCMS9 6/7/12, 17:50	Dibromochloromethane Bromoform 1,2-Dibromo-3-chloropropane	26.2 37.2 20.7	Low	UST68-MW-1-060612 UST68-MW-2-060612 UST68-MW-4-060612 UST68-MW-5-060612 REC7-MW-3-060612 REC7-MW-4-060612	**UJ**
GCMS9 6/8/12, 9:53	Methylene chloride Bromoform	24.3 23.7	Low	MW-1-060612 MW-2-060612 OMS-MW-1-060612	**UJ**
GCMS9 6/12/12, 16:33	Dichlorodifluoromethane Bromoform	21.7 34.3	Low	REC3-MW-1-060712 MW-4-060812 MW-4-060812-D	**UJ**

1.5 Blanks

Method Blanks: Method blanks were prepared and analyzed as required. Target compounds were either not detected at or above the reporting limits (RLs), or detected in the method blanks at levels that had no significant effects on data quality (*e.g.,* sample results >5x the level found in the method blank).

Trip Blanks: One trip blank was collected on 5/23/2012 and analyzed for VOCs. Target compounds were not detected at or above the RLs in this trip blank.

Equipment Rinsate Blank: One equipment rinsate blank, sample RB-NRP-3-060112, was collected on 6/1/2012 and analyzed for VOCs. Target compounds were not detected at or above the RLs in this sample.

1.6 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD were prepared and analyzed as required by the method. Percent recovery (%R) and relative percent difference (RPD) values either met the project control limits, or the outliers had no adverse effects on data usability (*e.g.,* biased high recovery for a compound not detected in samples), with the exceptions as follows:

LCS ID	Compound	%R (%)		Control Limit (%)	Associated Sample	Data Qualifier
		LCS	LCSD			
02-0880 LCS 02-0880 LCSD (SDG: 206067)	Dichlorodifluoromethane Bromoform	67 - -	68 68	70-130	REC7-MW-1-060512 NRP-MW-3-060512 REC7-MW-2-060512 NRP-MW-2-060512 REC6-MW-2-060512 MW-5-060512 MW-3-060512	**UJ**
02-0996 LCS 02-0996 LCSD	Bromoform	64	65	70-130	REC3-MW-1-060712 MW-4-060812 MW-4-060812-D	**UJ**
02-1013 LCS 02-1013 LCSD	Bromoform	- -	68		UST71-MW-1-060712 UST70-MW-2-060712 REC5-MW-1-060812	**UJ**

1.7 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All surrogate spike %R values were within the project control limits.

1.8 Matrix Spike (MS)

MS analyses were performed on samples GF-B-10-1-2.5, GF-B-1-1-2.5, NRP-MW-3-6.5-7.5, UST71-B-1-12-13, NRP-B-7-19-20, and UST68-MW-2-060612. The %R values were within the project control limits, except for the following:

SDG#	Parent Sample ID	Compound	MS %R (%)	Control Limit (%)	Data Qualifier
205381	GF-B-10-1-2.5	Dichlorodifluoromethane Chloromethane	19 47	50-150	**UJ**
205404	GF-B-1-1-2.5	Dichlorodifluoromethane	23	50-150	**UJ**
205423 205441	NRP-MW-3-6.5-7.5	Dichlorodifluoromethane Chloromethane Vinyl chloride Bromomethane Chloroethane Trichlorofluoromethane 1,1-Dichloroethene Methylene chloride trans-1,2-Dichloroethene 1,1-Dichloroethane 2,2-Dichloropropane Chloroform 1,1,1-Trichloroethane 1,1-Dichloropropene Carbon tetrachloride Benzene Trichloroethene (TCE) Tetrachloroethene (PCE) 1,2,4-Trichlorobenzene Hexachlorobutadiene 1,2,3-Trichlorobenzene	4 23 19 30 30 15 30 46 30 45 40 49 39 40 35 47 44 43 49 45 49	50-150	**UJ**
206006	NRP-B-7-19-20	Dichlorodifluoromethane	7	50-150	**UJ**

1.9 Laboratory Duplicate Analysis

Duplicate analyses were performed on sample REC7-MW-1-060512 (SDG: 206067). All RPD or concentration difference values met the laboratory control criteria.

1.10 Internal Standards

The method requires that (1) internal standard retention time be within ±30 seconds from that of the associated 12-hour calibration standard, and (2) the area counts of all internal standards be within –50% to +100% of the associated 12-hour calibration standard. All internal standards in the sample and associated QC analyses met the criteria.

1.11 Reporting Limit and Target Compound Quantitation

The sample-specific MDLs and MRLs were adjusted with sample amount extracted and MRLs were supported with adequate initial calibration concentrations. The project requirements for quantitation limits were achieved.

Vinyl acetate and 1,4-dioxane reported in samples REC6-MW-2-060512 and MW-3-060512 and the method blank associated with these samples were based on a tentatively identified compound (TIC) search against the laboratory library. The compounds were not detected in any of the samples; the MRLs reported were based on 10 times the standard MRLs for other VOCs. Vinyl acetate and 1,4-dioxane results in samples REC6-MW-2-060512 and MW-3-060512 were qualified (UJ) as estimated.

1.12 Field Duplicates

Seven sets of field duplicates were submitted for VOCs analyses. Field duplicate results for detected target compounds, RPD (or concentration difference) values, and data qualification were presented in **Appendix A**.

1.13 Overall Assessment of VOCs Data Usability

VOCs data are of known quality and acceptable for use, as qualified.

2. SVOCs by GC/MS (EPA Method SW8270D)

2.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport.

Soil samples should be extracted within 14 days and water samples within seven days of collection. Extracts should be analyzed within 40 days of extraction. All samples were extracted and analyzed within the required holding times.

2.2 GC/MS Instrument Performance Check

The method require that a GC/MS tuning analysis be performed using decafluorotriphenylphosphine (DFTPP) at the beginning of each 12-hour period prior to any analysis, and specific mass ions meet the criteria provided in the method. All instrument performance checks met the requirements.

2.3 Initial Calibration (ICAL)

The method linearity criteria require that (1) if linear average RFs is chosen as the quantitation option, the %RSD of RFs be ≤20% for the analyte, (2) if least-square linear regression is chosen for quantitation, the correlation coefficient (r) be >0.995, (3) if six-point non-linear (quadratic) curve is chosen for quantitation, the coefficient of determination (r^2) be >0.99, and (4) the RF be >0.01 for poor response compounds and >0.05 for all other compounds.. All ICALs met the requirements.

An ICV (second source) standard was analyzed to verify the calibration curve. %D values were either within ±20%, or the exceedance had no adverse effects on data usability (*e.g.,* biased high ICV recovery for a compound not detected in samples).

2.4 Calibration Verification (CCV)

The analytical method requires that (1) continuing calibrations be analyzed at the beginning of each 12-hour analysis period prior to the analysis of method blank and samples, (2) the %D be within ±20%, and (3) the RF be >0.01 for poor response compounds and >0.05 for all other compounds.

Calibration verifications were performed at the required frequency. %D values were either within ±20%, or the exceedance had no adverse effects on data usability (*e.g.,* biased high CCV recovery for a compound not detected in samples), with the exceptions as follows:

CCV ID	Compound	%D	Bias	Affected Sample	Data Qualifier
GCMS8 5/31/12, 11:33	Pyrene	36.1%	High	GF-B-14-7.5-9 GF-B-2-2.5-4	**J**

2.5 Method Blanks

Method blanks were prepared and analyzed as required. Target compounds were not detected at or above the RLs in the method blanks.

2.6 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All %R values were within the laboratory control limits.

2.7 Matrix Spike (MS) and MS Duplicate (MSD)

MS/MSD analyses were not performed for SVPCs analyses; instead, laboratory duplicates in combination with LCS/LCSD analyses were performed.

2.8 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD were prepared and analyzed as required by the method. All %R and RPD values either met the project control criteria, or the outliers had no adverse effects on data usability (*e.g.,* biased high %R or RPD value for a compound that was not detected in samples).

2.9 Laboratory Duplicate Analysis

Duplicate analyses were performed on sample GF-B-10-1-2.5 (SDG: 205381) and GF-B-8-7.5-9 (SDG: 205441). All RPD or concentration difference values met the laboratory control criteria.

2.10 Internal Standards

The method requires that (1) internal standard retention time be within ±30 seconds from that of the associated 12-hour calibration standard, and (2) the area counts of all internal standards be within –50% to +100% of the associated 12-hour calibration standard. All internal standards in the sample and associated QC analyses met the criteria, except for the following:

SDG #	Sample ID	Internal Standard	Internal Standard %R	Control Limit	Affected Compound	Data Qualifier
205423	GF-B-6-1-2.5	Perylene-d_{12}	49.4%	50-200%	Di-*n*-octyl phthalate	**UJ**

Sample GF-B-11-1-2.5 was diluted and re-analyzed with acceptable internal standard recoveries. Both results were reported and original data (undiluted) should be used for data interpretation.

2.11 Reporting Limits and Compound Quantitation

The sample-specific MDLs and reporting limits (RLs) were adjusted with sample amount extracted and moisture content. RLs were supported with adequate initial calibration concentrations and achieved the project target quantitation limits.

2.12 Field Duplicates

Samples NRP-MW-3-060512 and NRP-MW-3-060512D were field duplicates. Sample results, RPD (or concentration difference) values, and data qualification for detected compounds were summarized in **Appendix A**.

2.13 Overall Assessment of SVOCs Data Usability

SVOCs data are of known quality and acceptable for use, as qualified.

3. PAHs by GC/MS - SIM (EPA Method SW8270D-SIM)

3.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport. Soil samples should be extracted within 14 days and water should be extracted within seven days of collection. Extracts should be analyzed within 40 days of extraction. All samples were extracted and analyzed within the required holding times.

3.2 GC/MS Instrument Performance Check

DFTPP tuning was performed within each 12-hour interval. All required ion abundance ratios met the method requirements.

3.3 Initial Calibration (ICAL)

The method linearity criteria require that (1) if linear average RFs is chosen as the quantitation option, the %RSD of RFs be ≤20% for the analyte, (2) if least-square linear regression is chosen for quantitation, the correlation coefficient (r) be >0.995, (3) if six-point non-linear (quadratic) curve is chosen for quantitation, the coefficient of determination (r^2) be >0.99, and (4) the RF be >0.01 for poor response compounds and >0.05 for all other compounds.. All ICALs met the requirements.

An ICV (second source) standard was analyzed to verify the calibration curve. %D values were either within ±20%, or the exceedance had no adverse effects on data usability (*e.g.,* biased high ICV recovery for a compound not detected in samples).

3.4 Calibration Verification (CCV)

The analytical method requires that (1) continuing calibration verifications be analyzed at the beginning of each 12-hour analysis period prior to the analysis of method blank and samples, (2) the %D be within ±20%, and (3) the RF be >0.01 for poor response compounds and >0.05 for all other compounds.

Calibration verifications were performed at the required frequency. %D values were either within ±20%, or the exceedance had no adverse effects on data usability (*e.g.,* biased high CCV recovery for a compound not detected in samples).

3.5 Blanks

Method Blanks: Method blanks were prepared and analyzed as required. Target compounds were not detected at or above the RLs in the method blanks.

Equipment Rinsate Blank: One **equipment** rinsate blank, sample RB-NRP-3-060112, was collected on 6/1/2012 and analyzed for PAHs. Target compounds were not detected at or above the RLs in this sample.

3.6 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All surrogate spike %R values were either within the project control limits or at levels that had no adverse effects on data quality (*e.g.,* biased-high recovery for compounds that were not detected in samples), except qualified below. In some cases surrogate spike %R values were inapplicable for data evaluation because the samples contained high levels of target PAHs and requested dilution analysis; no data were qualified on this basis. The remaining anomalies were summarized in the following:

Sample ID	Surrogate	%R (%)	Control Limit (%)	Affected Compound	Data Qualifier
NRP-B-2-8-10D	Benzo(a)anthracene-d_{12}	162	35-159	Fluoranthene Pyrene Chrysene Indeno(1,2,3-cd)pyrene	**J**
MW-1-060612 MW-2-060612 OMS-MW-1-060612	Benzo(a)anthracene-d_{12}	29 28 31	50-129	Fluoranthene Pyrene Benz(a)anthracene Chrysene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Indeno(1,2,3-cd)pyrene Dibenzo(a,h)anthracene Benzo(g,h,i)perylene	**UJ**
REC3-MW-1-060712 UST70-MW-2-060712	Benzo(a)anthracene-d_{12}	35 45	50-129	Fluoranthene Pyrene Benz(a)anthracene Chrysene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Indeno(1,2,3-cd)pyrene Dibenzo(a,h)anthracene Benzo(g,h,i)perylene	**UJ**

3.7 Matrix Spike (MS) and MS Duplicate (MSD)

MS and MSD analyses were performed on samples REC2-B-12-17-18 (SDG: 205364), REC2-B-5-7-8 (SDG: 205381), NRP-MW-3-6.5-7.5 (SDG: 205423), UST71-B-4-28-29 (SDG: 206006), and REC3-MW-1-8.5-9.5 (SDG: 206068). The %R and RPD values met the project control criteria, except for the following:

SDG#	Parent Sample ID	Compound	MS %R	MSD %R	RPD	Control Limit	Data Qualifier
205423	NRP-MW-3-6.5-7.5	Naphthalene	37	- -	- -	44-129	**J**

Note: “- -“ indicated that the value was within the control limit.

3.8 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed as required by the method. All %R and RPD values were within the project control limits.

3.9 Internal Standards

The method requires that (1) internal standard retention time be within ±30 seconds from that of the associated 12-hour calibration standard, and (2) the area counts of all internal standards be within –50% to +100% of the associated 12-hour calibration standard. All internal standards in the sample and associated QC analyses met the criteria, except for the following:

Sample ID	Internal Standard	Internal Standard %R	Control Limit	Affected Compound	Data Qualification
UST-70-B-1-3-4	Phenanthrene-d_{10}	49.9%	50-200%	Anthracene Fluoranthene Phenanthrene	**UJ** **J** **J**

3.10 Reporting Limits and Target Compound Quantitation

The sample-specific RLs were adjusted with sample amount extracted and RLs were supported with adequate initial calibration concentrations.

3.11 Field Duplicates

Four sets of field duplicates were submitted for PAHs analyses. Field duplicate results for detected target compounds, RPD (or concentration difference) values, and data qualification were presented in **Appendix A**.

3.12 Overall Assessment of PAHs Data Usability

PAHs data are of known quality and acceptable for use, as qualified.

4. PCB Aroclors (EPA Method SW8082A)

4.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport.

Soil samples should be extracted within 14 days and water should be extracted within seven days of collection. Extracts should be analyzed within 40 days of extraction. All samples were extracted and analyzed within the required holding times.

4.2 Initial Calibration

The method requires that (1) a minimum of 5-point calibration be performed using the mixture of Aroclor 1016 and 1260, (2) a single-point calibration be performed for the other five Aroclors to establish calibration factors (CFs) and for Aroclor pattern recognition, (3) at least 3 peaks (preferably 5 peaks) must be chosen for each Aroclor for characterization, (4) the %RSD values of Aroclor 1016 and 1260 CFs must be ≤20%, and (5) if dual column analysis is chosen, both columns should meet the requirements.

All ICALs met the requirements.

4.3 Calibration Verification

CCV analyses should be performed for each 12-hour analysis sequence prior to sample analyses, and the %D be within ±20%.

Calibration verifications were performed at the required frequency. All %D values either met the control criteria or biased high for target compounds that were not detected in the associated samples.

4.4 Method Blanks

Method blanks were prepared and analyzed as required. PCB Aroclors were not detected at or above the MDLs in the method blanks.

4.5 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All surrogate spike %R values were within the laboratory control limits, except for the following:

Sample ID	Surrogate	%R	Control Limit	Affected Compound	Data Qualifier
GF-B-14-1-2.5	Tetrachloro-*m*-xylene	17%	50-150%	All PCB Aroclors	**UJ**

4.6 Matrix Spike and Matrix Spike Duplicate (MS/MSD)

MS/MSD analyses were not performed for PCB Aroclors analyses; instead, duplicate and LCS/LCSD analyses in combination were performed.

4.7 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed as required by the method. All %R and RPD values were within the project control limits.

4.8 Laboratory Duplicate Analysis

Duplicate analyses were performed on client samples REC3-MW-1-8.5-9.5 (SDG: 206068), GF-B-10-1-2.5 (SDG: 205381), GF-B-8-7.5-9 (SDG: 205441), and REC3-MW-1-8.5-9.5 (SDG: 206068). All RPD or concentration difference values met the laboratory control criteria.

4.9 Method Reporting Limits and Target Compound Quantitation

Sample-specific RLs were adjusted with sample amount extracted and moisture content. RLs were supported with adequate initial calibration concentrations and achieved the project target quantitation limits.

Aroclor 1260 was detected in sample GF-B-15A-10-11.5. Aroclor 1254 was detected in sample GF-B-8-1-2.5. The dual column RPD values were less than 40% for both detections.

4.10 Field Duplicates

Field duplicates were not submitted for PCB analyses in these SDGs.

4.11 Overall Assessment of PCB Aroclors Data Usability

PCB Aroclor data are of known quality and acceptable for use, as qualified.

5. TPH-Gasoline by GC/FID (Method NWTPH-Gx)

5.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport. Soil and water samples should be extracted (soil only) and analyzed within 14 days. All samples were extracted and analyzed within the required holding times.

5.2 Initial Calibration (ICAL)

The method linearity criteria require that (1) if linear average RFs is chosen as the quantitation option, the %RSD of RFs be <20% for the analyte, (2) if least-square linear regression is chosen for quantitation, the correlation coefficient (r) be >0.995, and (3) if six-point non-linear (quadratic) curve is chosen for quantitation, the coefficient of determination (r^2) be >0.990. Initial calibration met the criteria for all target compounds.

An ICV (second source) standard was analyzed to verify the calibration curve. %D values were within ±20%.

5.3 Calibration Verification

Continuing calibration verification (CCV) analyses were performed at the required frequency for all analytical sequences as required by the method. The %D values for all CCVs met the method criterion (±20%).

5.4 Method Blanks

Method blanks were prepared and analyzed as required. No target compounds were detected at or above the RLs in the method blanks.

5.5 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All surrogate spike %R values were within the project control limits, outside the control limits due to matrix interference, or diluted below quantitation limits due to high analyte concentrations. No data qualifying actions were taken in these cases.

5.6 Matrix Spike and Matrix Spike Duplicate

MS/MSD analyses were not performed for TPH-Gasoline analyses; instead, duplicate and LCS analyses in combination were performed.

5.7 Laboratory Control Sample (LCS)

LCS analyses were performed as required by the method. All %R values were within the laboratory control limits.

5.8 Laboratory Duplicate Analysis

Duplicate analyses were performed on samples Gf-B-13-10-11.5, GF-B-2-2.5-4, GF-B-3-1-2.5, NRP-B-8-8.5-9.5, and NRP-MW-2-060512 and several non-client samples. All RPD and concentration difference values met the laboratory control criteria.

5.9 Reporting Limits and Target Compound Quantitation

The sample-specific RLs were adjusted with sample amount extracted and supported with adequate initial calibration concentrations.

5.10 Field Duplicates

Six sets of field duplicates were submitted for TPH-Gasoline analyses. Field duplicate results for detected target compounds, RPD (or concentration difference) values, and data qualification were presented in **Appendix A**.

5.11 Overall Assessment of TPH-Gasoline Data Usability

TPH-Gasoline data are of known quality and acceptable for use.

6. TPH-Diesel & Motor Oil by GC/FID (Method NWTPH-Dx)

6.1 Holding Time

No anomalies were identified in relation to sample preservation, handling, and transport. Soil samples should be extracted within 14 days and water should be extracted within seven days of collection. Extracts should be analyzed within 40 days of extraction. All samples were extracted and analyzed within the recommended holding times.

6.2 Initial Calibration

The method requires that (1) a minimum of 5-point calibration be performed using individual petroleum product reference standards to ensure the proper identification and quantitation of petroleum hydrocarbons in samples, (2) the calibration curve include a sufficiently low standard to provide the necessary reporting limits, and (3) the linear working range of the instrument be defined.

The ICAL met the method requirements. The linearity of the ICAL curves were verified with %RSD values of RFs (%RSD ≤20%, according to EPA SW 846 Method 8000), and was acceptable for both TPH-Diesel and TPH-Motor Oil.

6.3 Calibration Verification

The method requires that (1) a mid-range check standard be analyzed prior to and after each analytical batch, and (2) the percent drift (%D) value be within ±15% of the true value.

Calibration verification was performed at required frequency. The %D values were either within the ±15% criterion or at levels that had no adverse effects on data quality (e.g., high-bias %D value where the target compound was not detected in associated sample), except for the following:

Instrument ID	Compound	%D (%)	Bias	Affected Sample	Data Qualifier
GC#1 6/1/12, 15:26	TPH-Diesel	18.5	Low	GF-B-3-1-2.5 GF-B-3-7.5-9 GF-B-3-11-12.5 GF-B-5-1-2.5 GF-B-5-7.5-9 GF-B-6-1-2.5 GF-B-6-7.5-9	**UJ** **UJ** **UJ** **J** **J** **UJ** **J**
GC#6 6/10/12, 12:18	TPH-Diesel	21.3	High	UST71-B-2-13-14 UST71-B-3-18-19 UST71-B-4-12.5-13.5 UST70-B-1-3-4	**J**
GC#6 6/10/12, 12:18	TPH-Diesel	21.3	High	UST70-B-1-3-4-D UST70-B-2-9-10	**J** **J**
GC#6 6/10/12, 14:30	TPH-Motor Oil	21.3	High	UST71-B-2-13-14 UST71-B-3-18-19 UST71-B-4-12.5-13.5	**J**
GC#4 6/11/12, 15:00 6/11/12, 21:40	TPH-Motor Oil	15.8 19.2	Low	NRP-B-2-8-10 NRP-B-2-8-10-D NRP-B-2-14-15 NRP-B-4-13.5-14.5 NRP-B-1-9-12 NRP-B-3-8.5-9.5	**J** **J** **UJ** **UJ** **UJ** **UJ**

Instrument ID	Compound	%D (%)	Bias	Affected Sample	Data Qualifier
GC#4 6/14/12, 20:58 6/15/12, 2:06	TPH-Motor Oil	15.6 16.7	Low	MW-1-060612	**UJ**
				MW-2-060612	**UJ**
				OMS-MW-1-060612	**UJ**
				MW-6-060712	**UJ**
				REC3-MW-1-060712	**UJ**
				UST70-MW-1-060712	**UJ**
				UST71-MW-1-060712	**J**
				UST70-MW-2-060712	**UJ**
				MW-4-060812	**UJ**
				MW-4-060812-D	**UJ**
				REC2-MW-5-060812	**UJ**
				NRP-MW-1-060812	**UJ**
				NRP-MW-1-060812-D	**UJ**

6.4 Method Blanks

Method blanks were prepared and analyzed as required. Target compounds were not detected at or above the RLs in the method blanks.

6.5 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All surrogate spike %R values were within the project control limits, outside the control limits due to matrix interference, or diluted below quantitation limits due to high analyte concentrations. No data qualifying actions were taken in these cases.

6.6 Matrix Spike (MS) and MS Duplicate (MSD)

MS and MSD analyses were performed at the required frequency. The %R and RPD values met the laboratory control limits.

6.7 Laboratory Control Sample (LCS)

LCS analyses were performed as required. All %R values met the project control limits.

6.8 Target Compound Identification

Sample extracts were cleaned up with acid and silica gel treatment to minimize the biogenic interference with target compound identification, as required by the project. The laboratory reported results as diesel #2 (C10 - C25) and motor oil (C25 - C36), as required by the method.

6.9 Reporting Limits and Target Compound Quantitation

The reported RLs were supported with adequate ICAL concentrations. Sample-specific RLs were adjusted to sample weight and moisture content.

Several positive TPH-Diesel and TPH-Motor Oil detections had chromatographic pattern that did not resemble the fuel standard for quantitation.

6.10 Field Duplicates

Four sets of field duplicates were submitted for TPH-Diesel and TPH-Motor Oil analyses. Field duplicate results, RPD (or concentration difference) values, and data qualification were presented in **Appendix A**.

6.11 Overall Assessment of TPH-Diesel and Motor Oil Data Usability

TPH-Diesel and TPH-Motor Oil data are of known quality and acceptable for use, as qualified.

7. Total Metals by ICP/MS and CVAFS (EPA Methods 200.8 and 1631E)

7.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport, as discussed in Section 1.1.

Soil and water samples should be analyzed within 180 days for metals and 28 days for mercury. Samples were analyzed within the required holding time.

7.2 ICP/MS Tuning

Instrument tuning was performed at the required frequency. The stability check (%RSD <5%), mass calibration (mass difference <0.1 AMU), and resolution check (peak width <1.0 AMU at 5% peak height) met the NFG and method criteria.

7.3 Initial Calibration (ICAL)

The ICP/MS method requires that (1) a blank and one calibration standard be used in establishing the analytical curve, and (2) the average of replicate exposures be reported for all standards, QC, and sample analyses.

For mercury, the method requires that (1) a blank and five calibration standards be employed to establish the analytical curve, and (2) the linearity of the calibration curve should meet the criteria of correlation coefficient ≥ 0.995.

All ICALs met the method requirements.

7.4 Calibration Verification (ICV and CCV)

Initial calibration verifications (ICVs) and continuing calibration verifications (CCVs) were analyzed at the required frequency. The %R values either met the control criteria (90 – 110% for metals, 80 – 120% for mercury) or the exceedance had no adverse effects on data usability (e.g., high-bias %D value where the target compound was not detected in associated sample), except for the following:

CCAL ID	Analyte	%R	Affected Sample	Data Qualifier
25 ppb i2-40d (3) 6/8/12, 13:59	Total Arsenic	84.4%	REC-MW-4-060612 MW-2-060612	**J**
25 ppb i2-40d (9) 6/12/12, 14:25	Dissolved Arsenic Dissolved Selenium	116.4% 77.2%	REC3-MW-1-060712	**J**

7.5 Blanks

Calibration Blanks: Initial calibration blanks (ICBs) and continuing calibration blanks (CCBs) were not analyzed after calibration verification standards. Target analytes were not detected at or above the RLs in the ICBs and CCBs.

Preparation Blanks: Preparation blanks were prepared and analyzed as required. Target analytes were not detected at or above the RLs in the preparation blanks.

Equipment Rinsate Blank: One equipment rinsate blank, sample RB-NRP-3-060112, was collected on 6/1/2012 and analyzed for metals and mercury as required. Trace amount of zinc was detected in this rinse blank at 1.43 µg/L. Zinc concentrations in the associated samples were greater than 10 times the level found in the equipment rinsate blank. No data qualification action was necessary. No other target analytes were detected at or above the RLs in this sample.

7.6 Laboratory Control Sample (LCS)

LCS analyses were performed as required by the method. All %R values were within the project control limits, or the exceedance had no adverse effects on data usability (e.g., high-bias %R value where the target compound was not detected in associated sample).

7.7 Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

MS and MSD analyses were performed on client samples GF-B-10-1-2.5 (SDG: 205381), GF-B-4-2.5-4 (SDG: 205404), GF-B-8-1-2.5 (SDG: 205441), RB-NRP-3-060112 (SDG: 206022), REC7-MW-1-060512 (SDG: 206067), REC5-MW-1-6.5-7.5 (SDG: 206068), and REC7-MW-4-060612 (SDG: 206098) for all target analytes. The %R and RPD values met the laboratory control limits, except for the following:

SDG#	Parent Sample ID	Analyte	MS %R	MSD %R	RPD	Control Limit	Affected Sample	Data Qualifier
206067	REC7-MW-1-060512	Dissolved Selenium	- -	- -	22	20	REC7-MW-1-060512 NRP-MW-3-060512 REC7-MW-2-060512 NRP-MW-2-060512 REC6-MW-2-060512 MW-5-060512 MW-3-060512	**J**
206098	REC7-MW-4-060612	Beryllium Cadmium	45 - -	46 46	- - 62	68-151 86-115	UST68-MW-1-060612 UST68-MW-2-060612 UST68-MW-4-060612 UST68-MW-5-060612 REC7-MW-3-060612 REC7-MW-4-060612 MW-1-060612 MW-2-060612 OMS-MW-1-060612	**J/UJ**

Note: "- -" indicated that the value was within the control limit.

7.8 Internal Standards

At least three internal standards were added to all field and QC samples for ICP/MS analyses. All percent relative intensity values were within the method criteria (60 - 125%), except for the following:

Sample ID	Internal Standard	%R	Control limit	Affected Analytes	Data Qualifier
REC7-MW-3-060612	Germanium Indium Holmium	40% 49% 55%	60-125%	All dissolved metals	**J/UJ**
REC7-MW-4-060612	Germanium Indium Holmium	39% 46% 52%	60-125%	All dissolved metals	**J/UJ**
MW-1-060612	Germanium Indium Holmium	41% 49% 56%	60-125%	All dissolved metals	**J/UJ**

Sample ID	Internal Standard	%R	Control limit	Affected Analytes	Data Qualifier
MW-2-060612	Germanium Indium Holmium	39% 45% 53%	60-125%	All dissolved metals	**J/UJ**
OMS-MW-1-060612	Germanium Indium Holmium	40% 46% 55%	60-125%	All dissolved metals	**J/UJ**
REC7-MW-4-060612	Germanium Indium Holmium	34% 39% 47%	60-125%	All total metals	**J/UJ**
MW-2-060612	Germanium Indium Holmium	33% 39% 49%	60-125%	All total metals	**J/UJ**
REC3-MW-1-060712	Germanium Indium Holmium	38% 40% 40%	60-125%	All dissolved metals	**J/UJ**
UST70-MW-2-060712	Germanium Indium Holmium	54% 57% 59%	60-125%	All dissolved metals	**J/UJ**

7.9 Method Reporting Limits and Analyte Quantitation

The sample-specific RLs were adjusted with sample amount extracted and supported with adequate initial calibration concentrations. The QAPP requirements for RLs were achieved.

7.10 Field Duplicates

Five sets of field duplicates were submitted for Metals analyses. Field duplicate results, RPD (or concentration difference) values, and data qualification were presented in **Appendix A**.

7.11 Overall Assessment of Metals Data Usability

Metal data are of known quality and acceptable for use, as qualified.

8. 1,2-Dibromoehtane (EDB) by GC/ECD (EPA Method SW8011A)

8.1 Holding Times

Soil and water samples should be extraction and analyzed within 28 days of collection. All samples were analyzed within the required holding time.

8.2 Initial Calibration (ICAL)

The method linearity criteria require that (1) if linear average RFs is chosen as the quantitation option, the %RSD of RFs be <20% for the analyte, (2) if least-square linear regression is chosen for quantitation, the correlation coefficient (r) be >0.995, and (3) if six-point non-linear (quadratic) curve is chosen for quantitation, the coefficient of determination (r^2) be >0.990. Initial calibration met the criteria for all target compounds.

An ICV (second source) standard was analyzed to verify the calibration curve. The %R value were within the control limits of 80 – 120%.

8.3 Continuing Calibration Verification (CCV)

Continuing calibration verification (CCV) analyses were performed at the required frequency. All %R values were within the control limits of 80 – 120%.

8.4 Method Blank

Method Blank: Method blanks were analyzed at the required frequency. EDB was not detected at or above the RL in method blanks.

8.5 Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

MS and MSD analyses were not performed on a project sample in these SDGs. EDB was not detected in samples requiring this analysis; the analytical precision and accuracy was evaluated against the LCS/LCSD results.

8.6 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed as required by the methods. All %R and RPD values were within the laboratory control limits.

8.7 Field Duplicates

One set of field duplicates was submitted for EDB analysis. EDB was not detected at or above the RL in either sample; the field precision met the project control criteria.

8.8 Reporting Limits and Target Compound Quantitation

The reported RL was supported with adequate ICAL concentrations. EDB was not detected in samples in these SDGs; a second column confirmation was therefore not required.

8.9 Overall Assessment of EDB Data

EDB data are of known quality and acceptable for use.

9. Polychlorinated Dioxins/Furans by HRGC/HRMS (EPA Method SW8290)

9.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport, as discussed in Section 1.1.

EPA SW846 Method 8290 recommends a holding time of 30 days for solid samples stored in the dark at 4°C and completely analyzed within 45 days of extraction (Section 6.4). All samples were extracted and analyzed within the recommended holding times.

9.2 HRGC/HRMS Instrument Performance Check

The method requires that (1) for mass calibration and resolution, the laboratory must provides evidence of mass spectrometer resolution > 10,000 at the beginning and end of each 12-hour analytical sequence. If mass calibration and resolution tuning are not correctly performed, interferences may degrade chlorinated dibenzo-p-dioxin and chlorinated dibenzofuran (CDD/CDF) identification and quantitation; (2) the mass spectrometer selected ion monitoring (SIM) scan descriptor switching times are determined by the analysis of the Window Defining Mixture (WDM) which contains the first and last eluting isomers in each homologue; and (3) chromatographic resolution is verified by analyzing one of two Isomer Specificity Check (ISC) solutions, depending on the Gas Chromatograph (GC) column used for analysis.

All HRGC/HRMS instrument performance checks met the criteria.

9.3 Initial Calibration (ICAL)

The method requires that (1) the chromatographic peak separation between the 2,3,7,8-TCDD peak and the 1,2,3,8-TCDD peak and between the 2,3,7,8-TCDF peak and the 2,3,4,7-TCDF peak and must be resolved with a valley of < 25%; (2) the ion abundance ratio be within a ± 15% window around the theoretical abundance ratio; (3) the retention times (RTs) of the isomers must fall within the appropriate RT windows established by the WDM analysis. In addition, the absolute RT of the internal standard $^{13}C_{12}$-1,2,3,4-TCDD must exceed 25 minutes on the DB-5 (or equivalent) column and 15 minutes on the DB-225 (or equivalent) column; (4) the instrument sensitivity (signal-to-noise [S/N] ratio) must be >10:1; (5) the percent relative standard deviation (%RSD) be <20% for native isomers and < 30% for labeled isomers; (6) all initial calibration standards (CSs) must be analyzed at the correct concentration levels; (7) initial calibrations must be performed when the contract is awarded, whenever significant instrument maintenance is performed (e.g., ion source cleaning, GC column replacement, etc.), or if calibration verification criteria are not met.

All ICALs met the method requirements.

9.4 Calibration Verification

The method requires that (1) continuing calibrations be analyzed at the beginning of each 12-hour analysis period prior to the analysis of method blank and samples, (2) the percent difference (%D) be within ±20% for native isomers and be within ±30% for labeled isomers, and (3) the ion abundance ratio, retention times, relative retention times, instrument sensitivity meet the criteria for initial calibrations.

All calibration verification analyses met the criteria.

9.5 Method Blanks

Method blanks were prepared and analyzed as required for each preparation batch. Target compounds were either not detected at or above their estimated detection limits (EDLs), or associated sample results were >5x the level found in the method blanks. Note that positive detections in method blanks were not used to assess data quality if the detection in method blanks did not meet the method ion abundance ratio requirements. No data were qualified in relation to detections in method blanks.

9.6 Laboratory Control Samples (LCS)

LCS analyses were performed as required by the method. The recovery met the method control limits for all target and labeled compounds.

9.7 Matrix Spike and Matrix Spike Duplicate (MS/MSD)

MS and MSD analyses were performed on sample GF-B-2-2.5-4. The %R and RPD values met the control limits for all spiked congeners, except that the RPD value for OCDD (52%) was outside the control criteria (20%). The OCDD result for sample GF-B-2-2.5-4 was qualified (J) as estimated.

9.8 Labeled Compounds

Nine labeled internal standards and one cleanup recovery standard were added to all samples as required by the method.

The %R values for selected internal standards and cleanup standard were less than the lower control limit of 40%. Affected sample results were qualified as follows:

Sample ID	Internal Standard	%R (%)	Affected Congener	Data Qualification
GF-B-4-2.5-4	$^{13}C_{12}$-OCDD	32	OCDD	**J**
			OCDF	**UJ**
GF-B-5-1-2.5	$^{13}C_{12}$-OCDD	29	OCDD	**J**
			OCDF	**J**
GF-B-13-10-11.5	$^{13}C_{12}$-1,2,3,6,7,8-HxCDD $^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD $^{13}C_{12}$-OCDD $^{13}C_{12}$-2,3,7,8-TCDF $^{37}Cl_4$-2,3,7,8-TCDD	39 39 32 39 39	2,3,7,8-TCDD	**UJ**
			1,2,3,7,8-PeCDD	**UJ**
			1,2,3,4,7,8-HxCDD	**UJ**
			1,2,3,6,7,8-HxCDD	**UJ**
			1,2,3,7,8,9-HxCDD	**UJ**
			1,2,3,4,6,7,8-HpCDD	None (U, IAR out)
			OCDD	**J**
			2,3,7,8-TCDF	**UJ**
			1,2,3,7,8-PeCDF	**UJ**
			2,3,47,8-PeCDF	**UJ**
			1,2,3,4,7,8-HxCDF	**UJ**
			1,2,3,6,7,8-HxCDF	**UJ**
			1,2,3,7,8,9-HxCDF	**UJ**
			2,3,4,6,7,8-HxCDF	**UJ**
			1,2,3,4,6,7,8-HpCDF	**J**
			1,2,3,4,7,8,9-HpCDF	**J**
			OCDF	**UJ**
			Total TCDD	**UJ**
			Total PeCDD	**J**
			Total HxCDD	**J**
			Total HpCDD	**UJ**
			Total TCDF	**UJ**
			Total PeCDF	**J**
			Total HxCDF	**UJ**
			Total HpCDF	**J**
GF-B-7-1-2.5	$^{13}C_{12}$-OCDD	37	OCDD	**J**
			OCDF	**J**

Note: Positive detections were flagged (J) and non-detects were flagged (UJ). In a case where the ion ratio for the detection did not meet the method criteria (IAR out), the result was not qualified herein.

9.9 Target Compound Identification

All detected target congeners were properly identified. The ion ratios for a number of detection did not meet the method criteria; these results were qualified as non-detected at their reported values, as summarized below:

Sample ID	Congener	Ion Abundance Ratio	Control Limits	Data Qualification
GF-B-15A-1-2.5	2,3,7,8-TCDD	0.51	0.65-0.89	**0.537 U**
	1,2,3,7,8-PeCDD	1.90	1.32-1.78	**0.876 U**
	1,2,3,7,8-PeCDF	2.11	1.32-1.78	**0.938 U**
	2,3,47,8-PeCDF	1.28	1.32-1.78	**1.5 U**
	1,2,3,7,8,9-HxCDF	0.75	1.05-1.43	**0.268 U**
GF-B-2-2.5-4	2,3,7,8-TCDD	0.59	0.65-0.89	**0.467 U**
	1,2,3,7,8-PeCDD	2.58	1.32-1.78	**0.831 U**
	1,2,3,4,7,8-HxCDD	1.46	1.05-1.43	**1.2 U**
	1,2,3,4,7,8,9-HpCDF	0.83	0.88-1.20	**0.444 U**
GF-B-1-1-2.5	1,2,3,4,7,8-HxCDD	1.74	1.05-1.43	**0.151 U**
	1,2,3,7,8,9-HxCDD	1.55	1.05-1.43	**0.453 U**
	2,3,7,8-TCDF	1.17	0.65-0.89	**0.519 U**
	OCDF	1.09	0.76-1.02	**1.06 U**
GF-B-3-1-2.5	1,2,3,7,8,9-HxCDD	0.78	1.05-1.43	**0.376 U**
	2,3,7,8-TCDF	1.10	0.65-0.89	**0.672 U**
	2,3,4,7,8-PeCDF	1.23	1.32-1.78	**0.248 U**
	1,2,3,4,7,8-HxCDF	1.48	1.05-1.43	**0.273 U**
	1,2,3,6,7,8-HxCDF	1.48	1.05-1.43	**0.216 U**
GF-B-5-1-2.5	2,3,7,8-TCDD	0.92	0.65-0.89	**0.687 U**
	1,2,3,4,7,8,9-HpCDF	0.68	0.88-1.20	**1.65 U**
GF-B-6-1-2.5	1,2,3,6,7,8-HxCDD	0.91	1.05-1.43	**0.419 U**
	2,3,7,8-TCDF	0.62	0.65-0.89	**0.398 U**
GF-B-8-1-2.5	1,2,3,7,8-PeCDD	1.09	1.32-1.78	**0.513 U**
	2,3,7,8-TCDF	0.94	0.65-0.89	**3.37 U**
	2,3,4,7,8-PeCDF	1.88	1.32-1.78	**1.65 U**
GF-B-10-1-1.25	2,3,7,8-TCDF (DB-225)	0.64	0.65-0.89	**0.661 U**
GF-B-13-1-2.5	2,3,7,8-TCDF	0.64	0.65-0.89	**0.739 U**
	1,2,3,7,8-PeCDF	1.06	1.32-1.78	**0.208 U**
	OCDF	0.72	0.76-1.02	**2.29 U**
GF-B-13-10-11.5	1,2,3,4,6,7,8-HpCDD	1.32	0.88-1.20	**0.587 U**
GF-B-11-1-2.5	1,2,3,4,7,8-HxCDD	1.57	1.05-1.43	**1.63 U**
	1,2,3,7,8,9-HxCDD	1.51	1.05-1.43	**3.33 U**
GF-B-7-1-2.5	1,2,3,4,7,8-HxCDF	0.72	1.05-1.43	**0.288 U**
	1,2,3,4,6,7,8-HpCDF	1.24	0.88-1.20	**0.57 U**
GF-B-7-10-11.5	1,2,3,7,8-PeCDF	1.03	1.32-1.43	**0.255 U**
	1,2,3,4,7,8-HxCDF	1.96	1.05-1.43	**0.355 U**
	2,3,7,8-TCDF	0.64	0.65-0.89	**1.21 U**
	2,3,7,8-TCDF (DB-225)	0.61	0.65-0.89	**0.401 U**

Note: 2,3,7,8-TCDF (DB-225) - the 2,3,7,8-TCDF result reported from the DB-225 column.

9.10 Reporting Limits, Estimated Detection Limits (EDLs), and Compound Quantitation

Correct internal standards, quantitation ions, and average RFs were used to quantitate target compound detections. The RLs were supported with adequate ICAL calibration concentrations. Sample-specific EDLs and MRLs were adjusted with sample weights, internal standard peak height, and noise levels as required by the method.

The following target congeners had chlorodiphenyl ether interference present in their retention time region.

Sample ID	Congener	Sample Conc.	Data Qualification
GF-B-15A-1-2.5	1,2,3,7,8-PeCDD 1,2,3,4,7,8-HxCDF	0.876 J 1.91 J	**None (U)** **J**
GF-B-2-2.5-4	1,2,3,7,8-PeCDF 1,2,3,4,7,8-HxCDF 2,3,4,6,7,8-HxCDF	1.07 J 1.63 J 2.97	**J** **J** **J**
GF-B-5-1-2.5	1,2,3,7,8-PeCDF 1,2,3,4,7,8-HxCDF	1.98 J 5.91	**J** **J**
GF-B-8-1-2.5	1,2,3,7,8-PeCDF 2,3,4,6,7,8-HxCDF	1.26 J 1.17 J	**J** **J**
GF-B-10-1-1.25	1,2,3,7,8-PeCDF	0.456 J	**J**

The 1,2,3,7,8-PeCDD result in sample GF-B-15A-1-2.5 was previously qualified as non-detect (0.876 U) due to ion abundance ratio anomaly and no additional qualification needed. All other positive detections in samples above were flagged (J).

9.11 Second Column Confirmation

Second-column confirmation is required for any sample analyzed on a DB-5 (or equivalent) column in which 2,3,7,8-TCDF is reported, or where 2,3,7,8-TCDF is reported as an Estimated Maximum Possible Concentration (EMPC) at or above the MRLs.

All positive detection of 2,3,7,8-TCDF were re-analyzed on the DB-225 column for confirmation and results reported from the second column (DB-225) should be used for data interpretation.

9.12 Overall Assessment of Polychlorinated Dioxins/Furans Data Usability

Polychlorinated dioxins and furans data were of known quality and acceptable for use as qualified.

10. Formaldehyde by HPLC/UV (EPA Method 8315A)

10.1 Sample Management and Holding Time

No anomalies were identified in relation to sample preservation, handling, and transport, as discussed in Section 1.1. Note that only one water sample, sample REC6-MW-2-060512, was analyzed for formaldehyde in these SDGs.

Water samples should be derivatized and extracted within 3 days of sample collection. All derivatized sample extracts should be analyzed within 3 days after preparation. The sample was prepared and analyzed within the required holding times.

10.2 Instrument Calibration

Initial calibration data for formaldehyde analysis were not provided in the data package.

10.3 Calibration Verification

Calibration verification data were not provided in the data package.

10.4 Method Blank

Method Blank: A method blank was prepared and analyzed in the preparation batch as required. Formaldehyde was not detected at or above the RL in method blank.

10.5 Matrix Spike (MS)

MS analyses were performed on project samples at the required frequency (one per batch or <20 samples) for sulfide, formaldehyde, and ammonia. The %R and RPD values for ammonia, formaldehyde, and sulfide were within the control limits.

10.6 Laboratory Control Samples (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed as required by the methods. The %R and RPD values were within the laboratory control limits.

10.7 Overall Assessment of Formaldehyde Data Usability

Based on the information submitted by the laboratory, the formaldehyde result for sample REC6-MW-2-060512 was acceptable for use.

11. Conventional Parameters (TOC, TSS, Ammonia, and Dissolved Sulfide)

11.1 Sample Management and Holding Time

No anomalies were identified in relation to sample preservation, handling, and transport, as discussed in Section 1.1.

Aqueous samples should be analyzed within 7 days of collection for dissolved sulfide and TSS, and 28 days for ammonia. TOC in soil samples should be anayzed within 28 days.

11.2 Instrument Calibration

The initial calibrations were established for ammonia and sulfide analyses using one blank and at least five levels of standards. The correlation coefficients (r) of the initial calibration curves were >0.995, and met the method criteria.

11.3 Calibration Verification

ICV and CCV analyses were performed for ammonia and sulfide as required by the methods. All ICV and CCV %R values were within the laboratory control limits (90 – 110%).

11.4 Blanks

Calibration Blanks: ICBs and CCBs were analyzed for ammonia and sulfide as required by the methods. No target analytes were positively reported in ICBs and CCBs at or above the MDLs.

Method Blanks: Method blanks were prepared and analyzed for TOC, TSS, ammonia, and sulfide as required by the methods. No target analytes were detected at or above the RLs in method blanks.

11.5 Laboratory Replicate Analyses

Laboratory duplicate analyses were formed on sample REC6-MW-2-060512 for sulfide and a batch QC sample for ammonia at the required frequency (one per batch or <20 samples). The RPD values were within the project control limits.

11.6 Matrix Spike (MS)

MS analyses were performed on project samples at the required frequency (one per batch or <20 samples) for TOC, sulfide, and ammonia. The %R values were within the control limits.

11.7 Laboratory Control Samples (LCS)

LCS analyses were performed as required by the methods. All LCS %R values were within the laboratory control limits.

11.8 Method Reporting Limits

The MRLs were supported with adequate initial calibration concentrations. Sample-specific RLs achieved the project requirements for quantitation limits.

11.9 Field Duplicates

Two sets of field duplicates were submitted for TSS analyses. One set of field duplicates was submitted for 1,2-dibromoethane analyses. Field duplicate results, RPD (or concentration difference) values, and data qualification were presented in **Appendix A**.

11.10 Overall Assessment of Conventional Parameters Data Usability

Data are of known quality and acceptable for use.

SUMMARY

Data qualification is summarized as follows:

Laboratory ID	Sample ID	Analyte	Qualifier	Qualified Reason
205364-03 205364-04 205364-05 205364-20 205364-21	GF-B-15A-1-2.5 GF-B-15A-7.5-9 GF-B-15A-10-11.5 GF-B-14-1-2.5 GF-B-14-7.5-9	Dichlorodifluoromethane Chloromethane	**UJ**	ICV %D values outside the control limit - low bias
205364-21	GF-B-14-7.5-9	Pyrene	**J**	CCV %D value > 20% - high bias
205364-20	GF-B-14-1-2.5	Aroclor 1016 Aroclor 1221 Aroclor 1232 Aroclor 1242 Aroclor 1248 Aroclor 1254 Aroclor 1260	**UJ**	TCMX surrogate recovery low
205364-03	GF-B-15A-1-2.5	1,2,3,4,7,8-HxCDF	**J**	Chlorodiphenyl ether interference present
205381-01 205381-02 205381-03 205381-04 205381-05 205381-06 205381-07 205381-09 205381-20 205381-21 205381-22 205381-23	GF-B-10-1-2.5 GF-B-13-1-2.5 GF-B-13-10-11.5 GF-B-11-1-2.5 GF-B-11-7.5-9 GF-B-7-1-2.5 GF-B-7-7.5-9 GF-B-10-7.5-9 UST68-MW-4-11-12 UST68-MW-4-11-12-D UST68-MW-5-7-8 UST68-MW-5-12-13	Dichlorodifluoromethane Chloromethane	**UJ**	ICV %D values outside the control limit - low bias
205381-01	GF-B-10-1-1-2.5	1,2,3,7,8-PeCDF	**J**	Chlorodiphenyl ether interference present
205381-03	GF-B-13-10-11.5	All Dioxins and Furans Data, except 1,2,3,4,6,7,8-HpCDD	**J/UJ**	Internal standards and cleanup standard recoveries low.
205381-06	GF-B-7-1-2.5	OCDD OCDF	**J**	Internal standard recovery anomaly
205404-01	GF-B-2-2.5-4	Chloromethane Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
		Pyrene	**J**	CCV %D value > 20% - high bias
205404-02	GF-B-1-1-2.5	Chloromethane Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
205404-03	UST68-MW-1-7-8	Chloromethane Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
205404-04	UST69-MW-1-6-7	Chloromethane Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias

Laboratory ID	Sample ID	Analyte	Qualifier	Qualified Reason
205404-05	UST69-MW-1-6-7-D	Chloromethane Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
205404-06	GF-B-4-2.5-4	Chloromethane Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
205404-07	GF-B-4-7.5-9	Chloromethane Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
205404-01	GF-B-2-2.5-4	OCDD	**J**	MS/MSD RPD value outside the control limit
		1,2,3,7,8-PeCDF 1,2,3,4,7,8-HxCDF 2,3,4,6,7,8-HxCDF	**J**	Chlorodiphenyl ether interference present
205404-06	GF-B-4-2.5-4	OCDD OCDF	**J** **UJ**	Internal standard recoveries anomalies
205423-01	GF-B-3-1-2.5	Chloromethane Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
205423-02	GF-B-3-7.5-9	Chloromethane Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
205423-03	GF-B-3-11-12.5	Chloromethane Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
205423-04	GF-B-5-1-2.5	Chloromethane Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
205423-05	GF-B-5-7.5-9	Chloromethane Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
205423-06	GF-B-6-1-2.5	Chloromethane Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
		Di-n-octyl phthalate	**UJ**	Internal standard recovery anomaly
205423-07	GF-B-6-7.5-9	Chloromethane Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
205423-08	GF-B-6-20-21.5	Chloromethane Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
205423-09	NRP-MW-2-7.5-8.5	Chloromethane Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
205423-10	NRP-MW-3-6.5-7.5	1,1,1-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,1-Dichloropropene 1,2,3-Trichlorobenzene	**UJ**	MS recoveries anomalies - Low bias

Laboratory ID	Sample ID	Analyte	Qualifier	Qualified Reason
205423-10	NRP-MW-3-6.5-7.5	1,2,4-Trichlorobenzene 2,2-Dichloropropane Benzene Bromomethane Carbon tetrachloride Chloroethane Chloroform Hexachlorobutadiene Methylene chloride Tetrachloroethene (PCE) trans-1,2-Dichloroethene Trichloroethene (TCE) Trichlorofluoromethane Vinyl chloride	**UJ**	MS recoveries anomalies - Low bias
		Naphthalene	**J**	MS recovery anomaly - Low bias
205423-10	NRP-MW-3-6.5-7.5	Chloromethane Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
205423-11	REC2-MW-5-0-2	Benzo(g,h,i)perylene Indeno(1,2,3-cd)pyrene	**J**	Concentration exceeded the valid calibration range
205423-01	GF-B-3-1-2.5	Diesel Range Hydrocarbons	**UJ**	CCV %D value outside the control limit - low bias
205423-02	GF-B-3-7.5-9		**UJ**	
205423-03	GF-B-3-11-12.5		**UJ**	
205423-04	GF-B-5-1-2.5		**J**	
205423-05	GF-B-5-7.5-9		**J**	
205423-06	GF-B-6-1-2.5		**UJ**	
205423-07	GF-B-6-7.5-9		**J**	
205423-04	GF-B-5-1-2.5	OCDD OCDF	**J**	Internal standard recoveries anomalies
		1,2,3,7,8-PeCDF 1,2,3,4,7,8-HxCDF	**J**	chlorodiphenyl ether interference present
205441-02	GF-B-8-7.5-9	Dichlorodifluoromethane	**UJ**	CCV %D value outside the control limit - low bias
205441-03	UST68-MW-2-10-11	Dichlorodifluoromethane	**UJ**	CCV %D value outside the control limit - low bias
205441-04	UST68-MW-2-10-11-D	Dichlorodifluoromethane	**UJ**	CCV %D value outside the control limit - low bias
205441-01	GF-B-8-1-2.5	1,2,3,7,8-PeCDF 2,3,4,6,7,8-HxCDF	**J**	Chlorodiphenyl ether interference present
206006-01	UST71-B-1-12-13	Bromomethane	**UJ**	CCV %D value outside the control limit - low bias
		Chloroethane		
		Hexachlorobutadiene		
		Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
206006-02	UST71-B-2-13-14	Bromomethane Chloroethane Hexachlorobutadiene	**UJ**	CCV %D value outside the control limit - low bias
		Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias

Laboratory ID	Sample ID	Analyte	Qualifier	Qualified Reason
206006-03	UST71-B-3-18-19	Bromomethane Chloroethane Hexachlorobutadiene	**UJ**	CCV %D value outside the control limit - low bias
		Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
206006-04	UST71-B-3-19-20	Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
206006-05	UST71-B-4-12.5-13.5	Bromomethane Chloroethane Hexachlorobutadiene	**UJ**	ICV %D value outside the control limit - low bias
		Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
206006-06	UST71-B-4-28-29	Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
206006-07	UST70-B-1-3-4	Bromomethane Chloroethane Hexachlorobutadiene	**UJ**	CCV %D value outside the control limit - low bias
		Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
206006-08	UST70-B-1-3-4-D	Bromomethane Chloroethane Hexachlorobutadiene	**UJ**	CCV %D value outside the control limit - low bias
		Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
206006-09	UST70-B-1-13.5-14.5	Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
206006-10	UST70-B-2-9-10	Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
206006-11	UST70-B-3-8-9	Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
206006-12	UST70-B-4-0-1	Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
206006-13	UST70-B-4-4.5-5.5	Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
206006-02	UST71-B-2-13-14	Diesel Range Hydrocarbons Lube Oil Range Hydrocarbons	**J**	CCV %D value outside the control limit - High bias
206006-03	UST71-B-3-18-19	Diesel Range Hydrocarbons Lube Oil Range Hydrocarbons	**J**	CCV %D value outside the control limit - High bias
206006-05	UST71-B-4-12.5-13.5	Diesel Range Hydrocarbons Lube Oil Range Hydrocarbons	**J**	CCV %D value outside the control limit - High bias
206006-07	UST70-B-1-3-4	Diesel Range Hydrocarbons	**J**	CCV %D value outside the control limit - High bias & Field duplicate imprecision
206006-08	UST70-B-1-3-4-D	Diesel Range Hydrocarbons		
206006-10	UST70-B-2-9-10	Diesel Range Hydrocarbons	**J**	CCV %D value outside the control limit - High bias
206022-01	NRP-B-7-9-10	Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias

Laboratory ID	Sample ID	Analyte	Qualifier	Qualified Reason
206022-02	NRP-B-7-19-20	Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
206022-03	NRP-B-5-9-10	Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
206022-04	NRP-B-8-8.5-9.5	Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
206022-05	NRP-B-8-11-12	Bromomethane Chloroethane	**UJ**	CCV %D value outside the control limit - low bias
		Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
206022-07	NRP-B-2-8-10	Gasoline Range Hydrocarbons	**J**	Field Duplicate Imprecision
		Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
206022-08	NRP-B-2-8-10-D	Gasoline Range Hydrocarbons	**J**	Field Duplicate Imprecision
		Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
		Chrysene Fluoranthene Indeno(1,2,3-cd)pyrene Pyrene	**J**	Surrogate recovery anomaly - High bias
206022-09	NRP-B-2-14-15	Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
206022-10	NRP-B-4-13.5-14.5	Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
206022-11	NRP-B-1-9-12	Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
		Phenanthrene	**J**	Concentration exceeded the valid instrument calibration range
206022-12	NRP-B-3-8.5-9.5	Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
206022-07	NRP-B-2-8-10	Lube Oil Range Hydrocarbons	**UJ**	CCV %D value outside the control limit - low bias
206022-07	NRP-B-2-8-10	Gasoline Range Hydrocarbons	**J**	Field Duplicate Imprecision
206022-08	NRP-B-2-8-10-D	Lube Oil Range Hydrocarbons	**UJ**	CCV %D value outside the control limit - low bias
206022-08	NRP-B-2-8-10-D	Gasoline Range Hydrocarbons	**J**	Field Duplicate Imprecision
206022-09	NRP-B-2-14-15	Lube Oil Range Hydrocarbons	**UJ**	CCV %D value outside the control limit - low bias
206022-10	NRP-B-4-13.5-14.5	Lube Oil Range Hydrocarbons	**UJ**	CCV %D value outside the control limit - low bias
206022-11	NRP-B-1-9-12	Lube Oil Range Hydrocarbons	**UJ**	CCV %D value outside the control limit - low bias
206022-12	NRP-B-3-8.5-9.5	Lube Oil Range Hydrocarbons	**UJ**	CCV %D value outside the control limit - low bias
206067-01	REC7-MW-1-060512	Selenium	**J**	MS/MSD RPD value greater than the control limit

Laboratory ID	Sample ID	Analyte	Qualifier	Qualified Reason
		Bromoform Dichlorodifluoromethane	**UJ**	LCS and LCSD recovery anomalies - Low bias
206067-02	NRP-MW-3-060512	Selenium	**J**	MS/MSD RPD value greater than the control limit
		Bromoform Dichlorodifluoromethane	**UJ**	LCS and LCSD recovery anomalies - Low bias
206067-03	REC7-MW-2-060512	Bromoform Dichlorodifluoromethane	**UJ**	LCS and LCSD recovery anomalies - Low bias
206067-04	NRP-MW-2-060512	Selenium	**J**	MS/MSD RPD value greater than the control limit
		Bromoform Dichlorodifluoromethane	**UJ**	LCS and LCSD recovery anomalies - Low bias
206067-05	REC6-MW-2-060512	Selenium	**J**	MS/MSD RPD value greater than the control limit
		1,4-Dioxane Vinyl acetate	**R**	No initial and continuing calibration data
		Bromoform Dichlorodifluoromethane	**UJ**	LCS and LCSD recovery anomalies - Low bias
206067-06	MW-5-060512	Selenium	**J**	MS/MSD RPD value greater than the control limit
		Bromoform Dichlorodifluoromethane	**UJ**	LCS and LCSD recovery anomalies - Low bias
206067-07	MW-3-060512	1,4-Dioxane Vinyl acetate	**UJ**	Reported MRL based on TIC search
		Bromoform Dichlorodifluoromethane	**UJ**	LCS and LCSD recovery anomalies - Low bias
		Acenaphthene Fluorene	**J**	Concentration exceeded the valid calibration range
206068-01	REC3-MW-1-8.5-9.5	Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
206068-02	UST70-MW-2-8-9	Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
206068-03	REC5-MW-1-6.5-7.5	Dichlorodifluoromethane	**UJ**	ICV %D value outside the control limit - low bias
206098-07	MW-1-060612	All dissolved metals	**J/UJ**	Internal standard recovery anomalies - Low bias
206098-08	MW-2-060612	All dissolved metals	**J/UJ**	Internal standard recovery anomalies - Low bias
206098-09	OMS-MW-1-060612	All dissolved metals	**J/UJ**	Internal standard recovery anomalies - Low bias
206098-05	REC7-MW-3-060612	All dissolved metals	**J/UJ**	Internal standard recovery anomalies - Low bias
206098-06	REC7-MW-4-060612	All dissolved metals	**J/UJ**	Internal standard recovery anomalies - Low bias
206098-08	MW-2-060612	All total metals	**J/UJ**	Internal standard recovery anomalies - Low bias
206098-06	REC7-MW-4-060612	All total metals	**J/UJ**	Internal standard recovery anomalies - Low bias

Laboratory ID	Sample ID	Analyte	Qualifier	Qualified Reason
206098-07	MW-1-060612	Bromoform Methylene chloride	**UJ**	CCV %D value outside the control limit - low bias
206098-08	MW-2-060612	Bromoform Methylene chloride	**UJ**	CCV %D value outside the control limit - low bias
206098-09	OMS-MW-1-060612	Bromoform Methylene chloride	**UJ**	CCV %D value outside the control limit - low bias
206098-05	REC7-MW-3-060612	1,2-Dibromo-3-chloropropane Bromoform Dibromochloromethane	**UJ**	CCV %D value outside the control limit - low bias
206098-06	REC7-MW-4-060612	1,2-Dibromo-3-chloropropane Bromoform Dibromochloromethane	**UJ**	CCV %D value outside the control limit - low bias
206098-01	UST68-MW-1-060612	1,2-Dibromo-3-chloropropane Bromoform Dibromochloromethane	**UJ**	CCV %D value outside the control limit - low bias
206098-02	UST68-MW-2-060612	1,2-Dibromo-3-chloropropane Bromoform Dibromochloromethane	**UJ**	CCV %D value outside the control limit - low bias
206098-03	UST68-MW-4-060612	1,2-Dibromo-3-chloropropane Bromoform Dibromochloromethane	**UJ**	CCV %D value outside the control limit - low bias
206098-04	UST68-MW-5-060612	1,2-Dibromo-3-chloropropane Bromoform Dibromochloromethane	**UJ**	CCV %D value outside the control limit - low bias
206098-07	MW-1-060612	Benz(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(g,h,i)perylene Benzo(k)fluoranthene Chrysene Dibenzo(a,h)anthracene Fluoranthene Indeno(1,2,3-cd)pyrene Pyrene	**UJ**	Surrogate recovery anomalies - Low bias
206098-08	MW-2-060612	Benz(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(g,h,i)perylene Benzo(k)fluoranthene Chrysene	**UJ**	Surrogate recovery anomalies - Low bias
206098-08	MW-2-060612	Dibenzo(a,h)anthracene Fluoranthene Indeno(1,2,3-cd)pyrene Pyrene	**UJ**	Surrogate recovery anomalies - Low bias

Laboratory ID	Sample ID	Analyte	Qualifier	Qualified Reason
206098-09	OMS-MW-1-060612	Benz(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(g,h,i)perylene Benzo(k)fluoranthene Chrysene Dibenzo(a,h)anthracene Fluoranthene Indeno(1,2,3-cd)pyrene Pyrene	**UJ**	Surrogate recovery anomalies - Low bias
206098-07	MW-1-060612	Lube Oil Range Hydrocarbons	**UJ**	CCV %D value outside the control limit - low bias
206098-08	MW-2-060612	Lube Oil Range Hydrocarbons	**UJ**	CCV %D value outside the control limit - low bias
206098-09	OMS-MW-1-060612	Lube Oil Range Hydrocarbons	**UJ**	CCV %D value outside the control limit - low bias
206136-02	REC3-MW-1-060712	Antimony Arsenic Chromium Copper Nickel Selenium Zinc	**J**	Internal standard recovery anomalies - Low bias
206136-02	REC3-MW-1-060712	Beryllium Cadmium Lead	**UJ**	Internal standard recovery anomalies - Low bias
206136-02	REC3-MW-1-060712	Silver Thallium	**UJ**	Internal standard recovery anomalies - Low bias
206136-02	REC3-MW-1-060712	Bromoform	**UJ**	CCV %D value outside the control limit - low bias
206136-02	REC3-MW-1-060712	Benz(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(g,h,i)perylene Benzo(k)fluoranthene Chrysene Dibenzo(a,h)anthracene Fluoranthene Indeno(1,2,3-cd)pyrene Pyrene	**UJ**	Surrogate recovery anomalies - Low bias
206136-04	UST71-MW-1-060712	Bromoform	**UJ**	LCS and LCSD recovery anomalies - Low bias
206136-04	UST71-MW-1-060712	Acenaphthene Anthracene Fluorene Phenanthrene Pyrene	**J**	Concentration exceeded the valid calibration range

Laboratory ID	Sample ID	Analyte	Qualifier	Qualified Reason
206136-05	UST70-MW-2-060712	Antimony Arsenic Beryllium Cadmium Chromium Copper Lead Nickel Selenium Silver Thallium Zinc	**J/UJ**	Internal standard recovery anomalies - Low bias
206136-05	UST70-MW-2-060712	Bromoform	**UJ**	LCS and LCSD recovery anomalies - Low bias
206136-05	UST70-MW-2-060712	Benz(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(g,h,i)perylene Benzo(k)fluoranthene Chrysene Dibenzo(a,h)anthracene Fluoranthene Indeno(1,2,3-cd)pyrene Pyrene	**UJ**	Surrogate recovery anomalies - Low bias
206136-06	MW-4-060812	Lube Oil Range Hydrocarbons	**UJ**	CCV %D value outside the control limit - low bias
206136-07	MW-4-060812-D	Lube Oil Range Hydrocarbons	**UJ**	CCV %D value outside the control limit - low bias
206136-01	MW-6-060712	Lube Oil Range Hydrocarbons	**UJ**	CCV %D value outside the control limit - low bias
206136-11	NRP-MW-1-060812	Lube Oil Range Hydrocarbons	**UJ**	CCV %D value outside the control limit - low bias
206136-12	NRP-MW-1-060812-D	Lube Oil Range Hydrocarbons	**UJ**	CCV %D value outside the control limit - low bias
206136-10	REC2-MW-5-060812	Lube Oil Range Hydrocarbons	**UJ**	CCV %D value outside the control limit - low bias
206136-02	REC3-MW-1-060712	Lube Oil Range Hydrocarbons	**UJ**	CCV %D value outside the control limit - low bias
206136-03	UST70-MW-1-060712	Lube Oil Range Hydrocarbons	**UJ**	CCV %D value outside the control limit - low bias
206136-05	UST70-MW-2-060712	Lube Oil Range Hydrocarbons	**UJ**	CCV %D value outside the control limit - low bias
206136-04	UST71-MW-1-060712	Lube Oil Range Hydrocarbons	**J**	CCV %D value outside the control limit - low bias
206136-06	MW-4-060812	Lead	**J**	Field duplicate imprecision
206136-06	MW-4-060812	Bromoform	**UJ**	CCV %D value outside the control limit - low bias
206136-06	MW-4-060812	Naphthalene	**J**	Concentration exceeded the valid calibration range

Laboratory ID	Sample ID	Analyte	Qualifier	Qualified Reason
206136-07	MW-4-060812-D	Lead	**J**	Field duplicate imprecision
206136-07	MW-4-060812-D	Bromoform	**UJ**	CCV %D value outside the control limit - low bias
206136-07	MW-4-060812-D	Naphthalene	**J**	Concentration exceeded the valid calibration range
206136-10	REC2-MW-5-060812	Acenaphthene	**J**	Concentration exceeded the valid calibration range
206136-13	REC5-MW-1-060812	Mercury	**J**	Field duplicate imprecision
206136-13	REC5-MW-1-060812	Copper	**J**	Field duplicate imprecision
206136-13	REC5-MW-1-060812	Lead	**J**	Field duplicate imprecision
206136-13	REC5-MW-1-060812	Zinc	**J**	Field duplicate imprecision
206136-13	REC5-MW-1-060812	Bromoform	**UJ**	LCS and LCSD recovery anomalies - Low bias
206136-14	REC5-MW-1-060812-D	Mercury	**J**	Field duplicate imprecision
206136-14	REC5-MW-1-060812-D	Copper	**J**	Field duplicate imprecision
206136-14	REC5-MW-1-060812-D	Lead	**J**	Field duplicate imprecision
206136-14	REC5-MW-1-060812-D	Zinc	**J**	Field duplicate imprecision

Data affected by ion abundance ratio anomalies are qualified and results adjusted as follows:

SDG #	Sample ID	Compound	Original Result	Adjusted Result	Unit	Report Section
205364	GF-B-15A-1-2.5	2,3,7,8-TCDD	0.537 J	**0.537 U**	ng/kg	**9.9**
205364	GF-B-15A-1-2.5	1,2,3,7,8-PeCDD	0.876 J	**0.876 U**	ng/kg	**9.9**
205364	GF-B-15A-1-2.5	1,2,3,7,8-PeCDF	0.938 J	**0.938 U**	ng/kg	**9.9**
205364	GF-B-15A-1-2.5	2,3,4,7,8-PeCDF	1.5 J	**1.5 U**	ng/kg	**9.9**
205364	GF-B-15A-1-2.5	1,2,3,7,8,9-HxCDF	0.268 J	**0.268 U**	ng/kg	**9.9**
205381	GF-B-10-1-1-2.5	2,3,7,8-TCDF (DB-225)	0.661 J	**0.661 U**	ng/kg	**9.9**
205381	GF-B-13-1-2.5	2,3,7,8-TCDF	0.739 J	**0.739 U**	ng/kg	**9.9**
205381	GF-B-13-1-2.5	1,2,3,7,8-PeCDF	0.208 J	**0.208 U**	ng/kg	**9.9**
205381	GF-B-13-1-2.5	OCDF	2.29 J	**2.29 U**	ng/kg	**9.9**
205381	GF-B-13-10-11.5	1,2,3,4,6,7,8-HpCDD	0.587 J	**0.587 U**	ng/kg	**9.9**
205381	GF-B-11-1-2.5	1,2,3,4,7,8-HxCDD	1.63 J	**1.63 U**	ng/kg	**9.9**
205381	GF-B-11-1-2.5	1,2,3,7,8,9-HxCDD	3.33	**3.33 U**	ng/kg	**9.9**
205381	GF-B-7-1-2.5	1,2,3,4,7,8-HxCDF	0.228 J	**0.288 U**	ng/kg	**9.9**
205381	GF-B-7-1-2.5	1,2,3,4,6,7,8-HpCDF	0.57 J	**0.57 U**	ng/kg	**9.9**

SDG #	Sample ID	Compound	Original Result	Adjusted Result	Unit	Report Section
205381	GF-B-7-10-11.5	1,2,3,7,8-PeCDF	0.255 J	**0.255 U**	ng/kg	**9.9**
205381	GF-B-7-10-11.5	1,2,3,4,7,8-HxCDF	0.355 J	**0.355 U**	ng/kg	**9.9**
205381	GF-B-7-10-11.5	2,3,7,8-TCDF	1.21	**1.21 U**	ng/kg	**9.9**
205381	GF-B-7-10-11.5	2,3,7,8-TCDF (DB-225)	0.401 J	**0.401 U**	ng/kg	**9.9**
205404	GF-B-2-2.5-4	2,3,7,8-TCDD	0.467 J	**0.467 U**	ng/kg	**9.9**
205404	GF-B-2-2.5-4	1,2,3,7,8-PeCDD	0.831 J	**0.831 U**	ng/kg	**9.9**
205404	GF-B-2-2.5-4	1,2,3,4,7,8-HxCDD	1.2 J	**1.2 U**	ng/kg	**9.9**
205404	GF-B-2-2.5-4	1,2,3,4,7,8,9-HpCDF	0.444 J	**0.444 U**	ng/kg	**9.9**
205404	GF-B-1-1-2.5	1,2,3,4,7,8-HxCDD	0.151 J	**0.151 U**	ng/kg	**9.9**
205404	GF-B-1-1-2.5	1,2,3,7,8,9-HxCDD	0.453 J	**0.453 U**	ng/kg	**9.9**
205404	GF-B-1-1-2.5	2,3,7,8-TCDF	0.519 J	**0.519 U**	ng/kg	**9.9**
205404	GF-B-1-1-2.5	OCDF	1.06 J	**1.06 U**	ng/kg	**9.9**
205423	GF-B-3-1-2.5	1,2,3,7,8,9-HxCDD	0.376 J	**0.376 U**	ng/kg	**9.9**
205423	GF-B-3-1-2.5	2,3,7,8-TCDF	0.672 J	**0.672 U**	ng/kg	**9.9**
205423	GF-B-3-1-2.5	2,3,4,7,8-PeCDF	0.248 J	**0.248 U**	ng/kg	**9.9**
205423	GF-B-3-1-2.5	1,2,3,4,7,8-HxCDF	0.273 J	**0.273 U**	ng/kg	**9.9**
205423	GF-B-3-1-2.5	1,2,3,6,7,8-HxCDF	0.216 J	**0.216 U**	ng/kg	**9.9**
205423	GF-B-5-1-2.5	2,3,7,8-TCDD	0.687 J	**0.687 U**	ng/kg	**9.9**
205423	GF-B-5-1-2.5	1,2,3,4,7,8,9-HpCDF	1.65 J	**1.65 U**	ng/kg	**9.9**
205423	GF-B-6-1-2.5	1,2,3,6,7,8-HxCDD	0.419 J	**0.419 U**	ng/kg	**9.9**
205423	GF-B-6-1-2.5	2,3,7,8-TCDF	0.398 J	**0.398 U**	ng/kg	**9.9**
205441	GF-B-8-1-2.5	1,2,3,7,8-PeCDD	0.513 J	**0.513 U**	ng/kg	**9.9**
205441	GF-B-8-1-2.5	2,3,7,8-TCDF	3.37	**3.37 U**	ng/kg	**9.9**
205441	GF-B-8-1-2.5	2,3,4,7,8-PeCDF	1.65 J	**1.65 U**	ng/kg	**9.9**

Data Qualifiers are defined as follows:

Data Qualifier	Definition
R	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
J	The analyte was detected above the reported quantitation limit, and the reported concentration was an estimated value.
U	The analyte was analyzed for, but was considered not detected at the reporting limit or reported value.
UJ	The analyte was analyzed for, and the associated quantitation limit was an estimated value.

REFERENCES

USEPA *Contract Laboratory Program National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review,* Office of Superfund Remediation and Technical Innovation, U.S. Environmental Protection Agency, September 2011, USEPA 540/R-11/016

USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review,* Office of Superfund Remediation and Technical Innovation, U.S. Environmental Protection Agency, January 2010, USEPA 540/R-10/011

USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* Office of Superfund Remediation and Technical Innovation, U.S. Environmental Protection Agency, June 2008, USEPA-540-R-08-01.

USEPA *Method 1631, Revision E: Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry, Office of Water, U.S. Environmental Protection Agency, August 2002, EPA-821-R-02-019.*

USEPA *Test Methods for Evaluating Solid Waste (SW-846). Third Edition and Revised Update IIIA.* Office of Solid Waste and Emergency Response, Washington, D.C. April 1998.

USEPA *Region 10 Standard Operating Procedure for the Validation of Polychlorinated Dibenzo-p-Dioxin (PCDD) and Polychlorinated Dibenzofuran (PCDF) Data*, January 1996.

USEPA *Methods for Chemical Analysis of Water and Wastes,* EPA-600/4-79-020, March 1983 and updates.

Standard Methods for the Examination of Water and Wastewater, American Public Health Association, 20th Edition, 1995.

Ecology (Washington State Department of). 1997. *Analytical Methods for Petroleum Hydrocarbons.* Publication No. ECY 97-602. June 1997.

PSEP *Recommended Guidelines for Measuring Organic Compounds in Puget Sound Water, Sediment and Tissue Samples,* Puget Sound Water Quality Authority, April 1997.

Aspect Consulting, LLC. *Quality Assurance Project Plan, Port of Bellingham Former GP Mill Property RI/FS,* Seattle, Washington. September, 2009.

APPENDIX A

The precision criterion (≤ 35%) was applied to evaluating the relative percent difference (RPD) values of field duplicate results greater than five times the RL (5xRL). For results less than 5xMRL, an advisory criterion of 2xRL was applied to evaluating the concentration differences. The RPD and concentration difference values for detected analytes and data qualification are presented as follows:

SDG No.	Sample ID		Analyte	Unit	RL	Result		RPD	Conc. Difference	Data Qualifier
	Parent Sample	**Field Duplicate**				**Parent Sample**	**Field Duplicate**			
206006	UST70-B-1-3-4	UST70-B-1-3-4-D	1,2,4-Trimethylbenzene	mg/kg	0.05	0.076	0.088		0.012	
206006	UST70-B-1-3-4	UST70-B-1-3-4-D	Naphthalene	mg/kg	0.05	0.67	0.66	1.5%		
206006	UST70-B-1-3-4	UST70-B-1-3-4-D	n-Propylbenzene	mg/kg	0.05	0.06	0.067		0.007	
206006	UST70-B-1-3-4	UST70-B-1-3-4-D	p-Isopropyltoluene	mg/kg	0.05	0.14	0.16		0.02	
206006	UST70-B-1-3-4	UST70-B-1-3-4-D	sec-Butylbenzene	mg/kg	0.05	0.13	0.14		0.01	
206136	MW-4-060812	MW-4-060812-D	Naphthalene	µg/L	1	43	44	2.3%		
206006	UST70-B-1-3-4	UST70-B-1-3-4-D	Acenaphthene	mg/kg	0.01	0.18	0.40	**76%**		**J**
206006	UST70-B-1-3-4	UST70-B-1-3-4-D	Chrysene	mg/kg	0.01	0.017	0.033		0.016	
206006	UST70-B-1-3-4	UST70-B-1-3-4-D	Fluoranthene	mg/kg	0.01	0.037	0.01 U		**0.027**	**J/UJ**
206006	UST70-B-1-3-4	UST70-B-1-3-4-D	Fluorene	mg/kg	0.01	0.33	0.18	**59%**		**J**
206006	UST70-B-1-3-4	UST70-B-1-3-4-D	Naphthalene	mg/kg	0.01	0.083	0.18	**74%**		**J**
206006	UST70-B-1-3-4	UST70-B-1-3-4-D	Phenanthrene	mg/kg	0.01	0.47	0.31	**41%**		**J**
206006	UST70-B-1-3-4	UST70-B-1-3-4-D	Pyrene	mg/kg	0.01	0.047	0.085		**0.038**	**J**
206006	UST70-B-1-3-4	UST70-B-1-3-4-D	Acenaphthene	mg/kg	0.1	0.24	0.15		0.09	
206006	UST70-B-1-3-4	UST70-B-1-3-4-D	Fluorene	mg/kg	0.1	0.36	0.21		0.15	
206006	UST70-B-1-3-4	UST70-B-1-3-4-D	Naphthalene	mg/kg	0.1	0.1 U	0.21		0.11	
206006	UST70-B-1-3-4	UST70-B-1-3-4-D	Phenanthrene	mg/kg	0.1	0.4	0.22		0.18	
206006	UST70-B-1-3-4	UST70-B-1-3-4-D	Pyrene	mg/kg	0.1	0.1 U	0.11		0.01	
206022	NRP-B-2-8-10	NRP-B-2-8-10-D	Acenaphthene	mg/kg	0.01	0.045	0.048		0.003	
206022	NRP-B-2-8-10	NRP-B-2-8-10-D	Chrysene	mg/kg	0.01	0.011	0.012		0.001	

SDG No.	Sample ID		Analyte	Unit	RL	Result		RPD	Conc. Difference	Data Qualifier
	Parent Sample	Field Duplicate				Parent Sample	Field Duplicate			
206022	NRP-B-2-8-10	NRP-B-2-8-10-D	Fluoranthene	mg/kg	0.01	0.042	0.035		0.007	
206022	NRP-B-2-8-10	NRP-B-2-8-10-D	Fluorene	mg/kg	0.01	0.038	0.034		0.004	
206022	NRP-B-2-8-10	NRP-B-2-8-10-D	Indeno(1,2,3-cd)pyrene	mg/kg	0.01	0.01 U	0.011		0.001	
206022	NRP-B-2-8-10	NRP-B-2-8-10-D	Naphthalene	mg/kg	0.01	0.043	0.052		0.009	
206022	NRP-B-2-8-10	NRP-B-2-8-10-D	Phenanthrene	mg/kg	0.01	0.044	0.039		0.005	
206022	NRP-B-2-8-10	NRP-B-2-8-10-D	Pyrene	mg/kg	0.01	0.042	0.039		0.003	
206136	MW-4-060812	MW-4-060812-D	Acenaphthene	µg/L	0.05	1	0.97	3.0%		
206136	MW-4-060812	MW-4-060812-D	Benz(a)anthracene	µg/L	0.01	0.011	0.011		0.000	
206136	MW-4-060812	MW-4-060812-D	Benzo(a)pyrene	µg/L	0.01	0.017	0.019		0.002	
206136	MW-4-060812	MW-4-060812-D	Chrysene	µg/L	0.01	0.032	0.035		0.003	
206136	MW-4-060812	MW-4-060812-D	Fluorene	µg/L	0.05	0.35	0.28	22.2%		
206136	MW-4-060812	MW-4-060812-D	Naphthalene	µg/L	0.05	23	18	24.4%		
206136	MW-4-060812	MW-4-060812-D	Phenanthrene	µg/L	0.05	0.15	0.13		0.020	
206136	MW-4-060812	MW-4-060812-D	Pyrene	µg/L	0.05	0.061	0.06		0.001	
206136	MW-4-060812	MW-4-060812-D	Naphthalene	µg/L	5	23	19		4.0	
206136	NRP-MW-1-060812	NRP-MW-1-060812-D	Acenaphthene	µg/L	0.05	0.2	0.19		0.01	
206136	NRP-MW-1-060812	NRP-MW-1-060812-D	Fluorene	µg/L	0.05	0.089	0.084		0.005	
206136	NRP-MW-1-060812	NRP-MW-1-060812-D	Phenanthrene	µg/L	0.05	0.17	0.17		0.00	
205441	UST68-MW-2-10-11	UST68-MW-2-10-11-D	TPH-Gx	mg/kg	2	4.9	2		2.9	
206022	NRP-B-2-8-10	NRP-B-2-8-10-D	TPH-Gx	mg/kg	20	4400	220	**181%**		**J**
206006	UST70-B-1-3-4	UST70-B-1-3-4-D	TPH-Diesel	mg/kg	50	12000	8300	**36.5%**		**J**
206006	UST70-B-1-3-4	UST70-B-1-3-4-D	TPH - Motor Oil	mg/kg	250	330	250 U		80.0	
206022	NRP-B-2-8-10	NRP-B-2-8-10-D	TPH-Diesel	mg/kg	50	780	920	16.5%		
206022	NRP-B-2-8-10	NRP-B-2-8-10-D	TPH - Motor Oil	mg/kg	250	1600	1900	17.1%		
206136	MW-4-060812	MW-4-060812-D	TPH-Diesel	µg/L	50	150	89		61.0	
205404	UST69-MW-1-6-7	UST69-MW-1-6-7-D	Lead	mg/kg	1	2.91	2.1		0.8	
206022	NRP-B-2-8-10	NRP-B-2-8-10-D	Arsenic	mg/kg	1	4.14	5.07		0.9	

	Sample ID					Result				
SDG No.	Parent Sample	Field Duplicate	Analyte	Unit	RL	Parent Sample	Field Duplicate	RPD	Conc. Difference	Data Qualifier
206022	NRP-B-2-8-10	NRP-B-2-8-10-D	Chromium	mg/kg	1	13	12.9	0.8%		
206022	NRP-B-2-8-10	NRP-B-2-8-10-D	Copper	mg/kg	1	11.4	12.6	10.0%		
206022	NRP-B-2-8-10	NRP-B-2-8-10-D	Lead	mg/kg	1	3.95	2.56		1.4	
206022	NRP-B-2-8-10	NRP-B-2-8-10-D	Nickel	mg/kg	1	23.3	26	11.0%		
206022	NRP-B-2-8-10	NRP-B-2-8-10-D	Zinc	mg/kg	1	37.6	39.2	4.2%		
206136	MW-4-060812	MW-4-060812-D	Dissolved Lead	µg/L	1	14.3	5.56	**88.0%**		**J**
206136	MW-4-060812	MW-4-060812-D	Total Lead	µg/L	1	23.1	24.3	5.1%		
206136	NRP-MW-1-060812	NRP-MW-1-060812-D	Arsenic - Dissolved	µg/L	1	1.6	1.51		0.1	
206136	NRP-MW-1-060812	NRP-MW-1-060812-D	Chromium - Dissolved	µg/L	1	1.13	1.04		0.1	
206136	NRP-MW-1-060812	NRP-MW-1-060812-D	Copper - Dissolved	µg/L	1	1 U	1.92		0.9	
206136	NRP-MW-1-060812	NRP-MW-1-060812-D	Nickel - Dissolved	µg/L	1	3.2	2.94		0.3	
206136	NRP-MW-1-060812	NRP-MW-1-060812-D	Selenium - Dissolved	µg/L	1	3.61	3.12		0.5	
206136	NRP-MW-1-060812	NRP-MW-1-060812-D	Zinc - Dissolved	µg/L	1	2.01	1 U		1.01	
206136	REC5-MW-1-060812	REC5-MW-1-060812-D	Antimony - Dissolved	µg/L	1	3.96	8.95		5.0	
206136	REC5-MW-1-060812	REC5-MW-1-060812-D	Arsenic - Dissolved	µg/L	1	201	235	15.6%		
206136	REC5-MW-1-060812	REC5-MW-1-060812-D	Cadmium - Dissolved	µg/L	1	1 U	3.87		2.9	
206136	REC5-MW-1-060812	REC5-MW-1-060812-D	Chromium - Dissolved	µg/L	1	52	72.7	33.2%		
206136	REC5-MW-1-060812	REC5-MW-1-060812-D	Copper - Dissolved	µg/L	1	44.9	167	**115.2%**		**J**
206136	REC5-MW-1-060812	REC5-MW-1-060812-D	Lead - Dissolved	µg/L	1	37.3	174	**129.4%**		**J**
206136	REC5-MW-1-060812	REC5-MW-1-060812-D	Nickel - Dissolved	µg/L	1	3.37	10.8		7.4	
206136	REC5-MW-1-060812	REC5-MW-1-060812-D	Selenium - Dissolved	µg/L	1	1 U	1.11		0.1	
206136	REC5-MW-1-060812	REC5-MW-1-060812-D	Zinc - Dissolved	µg/L	1	42.3	203	**131.0%**		**J**
206136	REC5-MW-1-060812	REC5-MW-1-060812-D	Antimony - Total	µg/L	1	9.02	9.86	8.9%		
206136	REC5-MW-1-060812	REC5-MW-1-060812-D	Arsenic - Total	µg/L	1	218	236	7.9%		
206136	REC5-MW-1-060812	REC5-MW-1-060812-D	Cadmium - Total	µg/L	1	5.22	5.26	0.8%		
206136	REC5-MW-1-060812	REC5-MW-1-060812-D	Chromium - Total	µg/L	1	83.8	84.8	1.2%		
206136	REC5-MW-1-060812	REC5-MW-1-060812-D	Copper - Total	µg/L	1	226	225	0.4%		

SDG No.	Sample ID		Analyte	Unit	RL	Result		RPD	Conc. Difference	Data Qualifier
	Parent Sample	Field Duplicate				Parent Sample	Field Duplicate			
206136	REC5-MW-1-060812	REC5-MW-1-060812-D	Lead - Total	µg/L	1	234	242	3.4%		
206136	REC5-MW-1-060812	REC5-MW-1-060812-D	Nickel - Total	µg/L	1	14.8	14.7	0.7%		
206136	REC5-MW-1-060812	REC5-MW-1-060812-D	Selenium - Total	µg/L	1	1.51	1.68		0.2	
206136	REC5-MW-1-060812	REC5-MW-1-060812-D	Zinc - Total	µg/L	1	274	274	0.0%		
206136	REC5-MW-1-060812	REC5-MW-1-060812-D	Mercury - Dissolved	µg/L	0.1	0.12	0.41		**0.3**	**J**
206136	REC5-MW-1-060812	REC5-MW-1-060812-D	Mercury - Total	µg/L	0.1	0.57	0.55	3.6%		
206136	MW-4-060812	MW-4-060812-D	Total Suspended Solids	mg/L	10	10	12		2.0	

Note:

mg/kg – milligram per kilogram
µg/kg – microgram per kilogram
Conc. Difference – Concentration difference between the parent sample and the field duplicate
MRL – Method reporting limit
ND – Not detected at or above the method detection limit
RPD – Relative percent difference
U – The analyte was not detected at or above the reported value.

Data Validation Report

Port of Bellingham Former GP Mill Property RI/FS
Kimberly Clark, Washington

Round 2 Soil and Groundwater Sampling
(Batch 2 Data)

Prepared for:

Aspect Consulting LLC
401 Second Ave South, Suite 201
Seattle, WA 98014

Prepared by:

Pyron Environmental, Inc.
3530 32nd Way, NW
Olympia, WA 98502

Approved By: Mingta Lin
Mingta Lin, Senior Project Chemist

Date*:* ***10/22/2012***

ACRONYMS

%D	percent difference
%D$_f$	percent drift
%R	percent recovery
%RSD	percent relative standard deviation
AMU	atomic mass unit
CCB	continuing calibration blank
CCC	calibration check compound
CCV	continuing calibration verification
CDD	chlorinated dibenzo-p-dioxin
CDF	chlorinated dibenzofuran
CF	calibration factor
CLP	U.S. EPA Contract Laboratory Program
COC	chain-of-custody
CVAFS	cold vapor atomic fluorescent spectrometry
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethylene
DDT	dichlorodiphenyltrichloroethane
DFTPP	decafluorotriphenylphosphine
ECD	electron capture detector
EDB	1,2-dibromoethane
EDL	estimated detection limit
EMPC	estimated maximum possible concentration
EPA	U.S. Environmental Protection Agency
FID	Flame ionization detector
GC/MS	gas chromatograph/mass spectrometer
GPC	gel permeation chromatography
HPLC	high performance liquid chromatography
HRGC	high-resolution gas chromatograph
HRMS	high-resolution mass spectrometer
ICAL	initial calibration
ICB	initial calibration blank
ICP	inductively coupled plasma
ICP/MS	inductively coupled plasma/ mass spectrometer
ICSA	ICP interference check sample solution A

ICV	initial calibration verification
IPR	initial precision and recovery
ISC	isomer specificity check
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
m/z	mass-to-charge ratio
MDL	method detection limit
µg/kg	microgram per kilogram
µg/L	microgram per liter
mg/kg	milligram per kilogram
mg/L	Milligram per liter
MS	matrix spike
MSD	matrix spike duplicate
NFGs	CLP National Functional Guidelines for Data Review (EPA 2008 – Organics; EPA 2010 – Inorganics; EPA 2011 – Dioxins/Furans)
OPR	ongoing precision and recovery
pg/g	pictogram per gram
PCBs	polychlorinated biphenyls
PCDD	polychlorinated dibenzo-*p*-dioxin
PCDF	polychlorinated dibenzofuran
PEM	performance evaluation mixture
PSEP	Puget Sound Estuary Program
QA/QC	quality assurance/quality control
QAPP	quality assurance project plan
RF	response factor
RL	reporting limit
RPD	relative percent difference
RRT	relative retention time
S/N	signal-to-noise ratio
SAP	sampling and analysis plan
SDG	sample delivery group
SICP	selected ion current profile
SIM	selective ion monitoring
SRM	standard reference material
SVOCs	semi-volatile organic compounds
TSS	total suspended solids

TOC	total organic carbon
VOCs	volatile organic compounds
WDM	window defining mixture

INTRODUCTION

This report presents and discusses findings of the data validation performed on analytical data for soil samples collected during June and July 2012 for the referenced project. The laboratory reports validated herein were submitted by Friedman & Bruya, Inc. and Columbia Analytical Services, Inc. (CAS, part of ALS Group).

A level III data validation was performed on this laboratory report. The validation followed the procedures specified in USEPA CLP Functional Guidelines ([NFGs], EPA 2008 – Organics; EPA 2010 – Inorganics; EPA 2011 – Dioxins/Furans) and EPA Region 10 SOP (EPA 1996), with modifications to accommodate project and analytical method requirements. The numerical quality assurance/quality control (QA/QC) criteria applied to the validation were in accordance with those specified in the quality assurance project plans ([QAPPs], Aspect, 2009) and the current performance-based control limits established by the laboratory (laboratory control limits). Instrument calibration, frequency of QC analyses, and analytical sequence requirements were evaluated against the respective analytical methods.

Validation findings are discussed in each section pertinent to the QC parameter for each type of analysis. Qualified data with applied data qualifiers are summarized in the **Summary** section at the end of this report.

Samples and the associated analyses validated herein are summarized as follows:

				Analysis					
Field Sample ID	**Laboratory Sample ID**	**Sample Date**	**Sample Type**	**VOCs**	**SVOCs PAHs**	**PCBs**	**TPH-G TPH-Dx**	**Metals**	**Miscellaneous**
NRP-B-16-0-1	206410-01	6/27/12	Soil					X	
NRP-B-16-3-4	206410-02	6/27/12	Soil					X	
NRP-B-14-0-1	206410-03	6/27/12	Soil					X	
NRP-B-14-3-4	206410-04	6/27/12	Soil					X	
NRP-B-9-0-1	206410-05	6/27/12	Soil					X	
NRP-B-9-3-4	206410-06	6/27/12	Soil					X	
NRP-B-10-0-1	206410-07	6/27/12	Soil					X	
NRP-B-10-3-4	206410-08	6/27/12	Soil					X	
REC6-MW-1-6	206410-09	6/28/12	Soil	X			TPH-G		
REC6-MW-1-6-D	206410-10	6/27/12	Soil	X			TPH-G		
UST29-MW-1-7-8	206410-11	6/27/12	Soil	X			X		
UST29-MW-1-7-8-D	206410-12	6/27/12	Soil	X			TPH-Dx		
UST29-MW-1-8-9	206410-13	6/27/12	Soil		PAHs				
UST29-MW-1-8-9-D	206410-14	6/27/12	Soil		PAHs				

Field Sample ID	Laboratory Sample ID	Sample Date	Sample Type	Analysis					
				VOCs	SVOCs PAHs	PCBs	TPH-G TPH-Dx	Metals	Miscellaneous
REC2-B-10-5-6	206410-15	6/28/12	Soil		PAHs		TPH-Dx		
REC2-B-10-7-8	206410-16	6/28/12	Soil		PAHs		TPH-Dx		
REC2-B-10-10-11	206410-17	6/28/12	Soil		PAHs		TPH-Dx		
REC2-B-10-7-8-D	206410-18	6/28/12	Soil		PAHs		TPH-Dx		
REC2-B-6-6-7	206410-19	6/28/12	Soil		PAHs		TPH-Dx		
REC2-B-6-8-9	206410-20	6/28/12	Soil		PAHs		TPH-Dx		
REC2-B-6-10-11	206410-21	6/28/12	Soil		PAHs		TPH-Dx		
REC2-B-3-5.5-6.5	206410-22	6/28/12	Soil		PAHs		TPH-Dx		
REC2-B-3-7-8	206410-23	6/28/12	Soil		PAHs		TPH-Dx		
REC2-B-3-9-10	206410-24	6/28/12	Soil		PAHs		TPH-Dx		
REC2-B-2-4.5-5.5	206410-25	6/28/12	Soil		PAHs		TPH-Dx		
REC2-B-2-6-7	206410-26	6/28/12	Soil		PAHs		TPH-Dx		
REC2-B-2-8-9	206410-27	6/28/12	Soil		PAHs		TPH-Dx		
REC2-B-1-5-6	206410-28	6/28/12	Soil		PAHs		TPH-Dx		
REC2-B-1-7-8	206410-29	6/28/12	Soil		PAHs		TPH-Dx		
REC2-B-1-9-10	206410-30	6/28/12	Soil		PAHs		TPH-Dx		
GF-B-9-1-2.5	206410-31	6/28/12	Soil	X	SVOCs	X	X	X	
GF-B-9-2.5-3.5	206410-32	6/28/12	Soil						Dioxin/TOC
GF-B-9-2.5-3.5-D	206410-33	6/28/12	Soil						Dioxin/TOC
GF-B-9-7.5-9	206410-34	6/28/12	Soil	X	SVOCs	X	X	X	TOC
GF-B-9-7.5-9D	206410-35	6/28/12	Soil		SVOCs	X			
GF-B-12-1-2.5	206410-36	6/28/12	Soil	X	X	X	X	X	Dioxins/TOC
GF-B-12-7.5-9	206410-37	6/28/12	Soil	X	X	X	X	X	TOC
AP-MW-1-1-2	206446-01	6/29/12	Soil					X	pH
AP-MW-1-1-2-D	206446-02	6/29/12	Soil					X	pH
AP-MW-1-6-7	206446-03	6/29/12	Soil					X	pH
AP-MW-1-6-7-D	206446-04	6/29/12	Soil					X	
HW-MW-1-0-1	206446-05	6/29/12	Soil	X	SVOCs	X		X	
HW-MW-1-3-4	206446-06	6/29/12	Soil	X	SVOCs	X		X	
HW-MW-1-6-7	206446-07	6/29/12	Soil	X	SVOCs	X		X	
HW-B-2-0-1	206446-08	6/29/12	Soil	X	SVOCs	X		X	
HW-B-2-3-4	206446-09	6/29/12	Soil	X	SVOCs	X		X	
HW-B-2-6-7	206446-10	6/29/12	Soil	X	SVOCs	X		X	
HW-B-1-0-1	206446-11	6/29/12	Soil	X	SVOCs	X	TPH-Dx	X	

				Analysis					
Field Sample ID	**Laboratory Sample ID**	**Sample Date**	**Sample Type**	**VOCs**	**SVOCs PAHs**	**PCBs**	**TPH-G TPH-Dx**	**Metals**	**Miscellaneous**
HW-B-1-3-4	206446-12	6/29/12	Soil	X	SVOCs	X		X	
HW-B-1-6-7	206446-13	6/29/12	Soil	X	SVOCs	X		X	
UST29-MW-1-070212	207033-01	7/2/12	Water	X	PAHs		X		TSS
UST29-MW-1-070212D	207033-02	7/2/12	Water		PAHs		TPH-Dx		TSS
REC6-MW-1-070212	207033-03	7/2/12	Water	X			TPH-G		TSS
REC6-MW-1-070212D	207033-04	7/2/12	Water	X			TPH-G		TSS
CMS-MW-1-070212	207033-05	7/2/12	Water	X	PAHs		X	X (T)	TSS
HW-MW-1-070212	207033-06	7/2/12	Water		PAHs			X (T)	
HW-MW-1-070312	207033-07	7/3/12	Water	X				X (D)	TSS
CMS-MW-1-070312	207033-08	7/3/12	Water					X (D)	
UG-MW-2-070312	207033-09	7/3/12	Water					X (D)	TSS
NRP-MW-5-070312	207033-10	7/3/12	Water					X (T,D)	
NRP-MW-4-070312	207033-11	7/3/12	Water					X (T,D)	TSS
AP-MW-1-070312-D	207033-12	7/3/12	Water					X (T,D)	
AP-MW-1-070312	207033-13	7/3/12	Water					X (T,D)	TSS
UG-MW-1-070312	207039-01	7/3/12	Water					X (T,D)	TSS
OMS-B-1-0-1-070512	207068-01	7/5/12	Soil	X	PAHs	X	X	X	
OMS-B-1-2-3-070512	207068-02	7/5/12	Soil	X	PAHs	X	X	X	
OMS-B-2-0-1-070512	207068-03	7/5/12	Soil	X	PAHs	X	X	X	
OMS-B-2-2-3-070512	207068-04	7/5/12	Soil	X	PAHs	X	X	X	
OMS-B-3-0-1-070512	207068-05	7/5/12	Soil	X	PAHs	X	X	X	
Boiler-B-1-1-2-070512	207068-06	7/5/12	Soil	X	SVOCs			X	Dioxin
Boiler-B-2-1-2-070512	207068-07	7/5/12	Soil	X	SVOCs			X	Dioxin
Boiler-B-3-1-2-070512	207068-08	7/5/12	Soil	X	SVOCs		TPH-Dx	X	Dioxin
Boiler-B-4-1-1.5-070612	207068-09	7/6/12	Soil	X	SVOCs			X	Dioxin
Boiler-B-5-1-1.5-070612	207068-10	7/6/12	Soil	X	SVOCs			X	Dioxin
OMS-B-3-2-3-070612	207068-11	7/6/12	Soil	X	PAHs	X	X	X	
CMS-B-1-0-122-070612	207085-01	7/6/12	Soil	X	PAHs	X	X	X	
CMS-B-1-2-3-070612	207085-02	7/6/12	Soil	X	PAHs	X	X	X	
CMS-B-2-0-1-070612	207085-03	7/6/12	Soil	X	PAHs	X	X	X	
CMS-B-2-2-3-070612	207085-04	7/6/12	Soil	X	PAHs	X	X	X	
CMS-B-3-0-1-070612	207085-05	7/6/12	Soil	X	PAHs	X	X	X	
CMS-B-3-2-3-070612	207085-06	7/6/12	Soil	X	PAHs	X	X	X	
REC7-MW-1-060512	K1205474-001	6/5/12	Water						AS

Field Sample ID	Laboratory Sample ID	Sample Date	Sample Type	Analysis					
				VOCs	**SVOCs PAHs**	**PCBs**	**TPH-G TPH-Dx**	**Metals**	**Miscellaneous**
NRP-MW-3-060512	K1205474-002	6/5/12	Water						AS
REC7-MW-2-060512	K1205474-003	6/5/12	Water						AS
NRP-MW-2-060512	K1205474-004	6/5/12	Water						AS
REC6-MW-2-060512	K1205474-005	6/5/12	Water						ASF
MW-5-060512	K1205474-006	6/5/12	Water						AS
REC7-MW-3-060612	K1205560-001	6/6/12	Water					X (D)	AS
REC7-MW-4-060612	K1205560-002	6/6/12	Water					X (T,D)	AS
MW-1-060612	K1205560-003	6/6/12	Water					X (D)	AS
MW-2-060612	K1205560-004	6/6/12	Water					X (T,D)	AS
OMS-MW-1-060612	K1205560-005	6/6/12	Water					X (D)	AS
MW-6-060712	K1205623-001	6/7/12	Water						AS
REC3-MW-1-060712	K1205623-002	6/7/12	Water					X (D)	AS
UST70-MW-2-060712	K1205623-003	6/7/12	Water					X (D)	AS
NRP-MW-1-060812	K1205623-004	6/8/12	Water						AS
NRP-MW-1-060812-D	K1205623-005	6/8/12	Water						AS
REC6-MW-1-070612	K1206542-001	7/6/12	Water						F
REC6-MW-1-070612-D	K1206542-002	7/6/12	Water						F
GF-B-15A-1-2.5	E1200626-002	5/23/12	Soil						Dioxin
GF-B-2-2.5-4	E1200652-001	5/25/12	Soil						Dioxin
GF-B-1-1-2.5	E1200652-002	5/25/12	Soil						Dioxin
GF-B-4-2.5-4	E1200652-003	5/25/12	Soil						Dioxin
Boiler-B-3-1-2-070512	E1201140-001	7/5/12	Soil						Dioxin

Notes:

Laboratory sample ID prefixed with "K" was a laboratory identity assigned by CAS-ALS in Kelso, Washington. Metals analyses performed by CAS-ALS included a reductive precipitation procedure for sample preparation. Selenium was analyzed with SW846 Method 7742 - a borohydride reduction atomic absorption method. Mercury was not included (analyzed by F&BI and reported separately in previous SDGs).

Laboratory sample ID prefixed with "E" was a laboratory identity assigned by CAS-ALS in Houston, Texas.

A - Ammonia
D – Dissolved metals
Dioxin - Polychlorinated dioxins and furans
F – Formaldehyde
Metals: Antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc
PAHs - Polycyclic aromatic hydrocarbons
PCBs - Polychlorinated biphenyls
S – Dissolved sulfide
SVOCs - Semivolatile Organic Compounds
T – Total metals

TOC – Total Organic carbon
TSS - Total suspended solids
TPH-Dx - Diesel and motor oil range total petroleum hydrocarbon
TPH-G - Gasoline range total petroleum hydrocarbon
VOCs - Volatile Organic Compounds
X - The analysis was requested and performed on the sample.

The analytical parameters requested for the samples, the respective analytical methods, and the analytical laboratories are summarized below:

Parameter	**Analytical Method**	**Analytical Laboratory**
Volatile Organic Compounds (VOCs)	SW846 Method 8260C	Friedman & Bruya, Inc. Seattle, WA
Semivolatile Organic Compounds (SVOCs)	SW846 Method 8270D	
Polycyclic Aromatic Hydrocarbons (PAHs)	SW846 Method 8270D-SIM	
PCB Aroclors	SW846 Method 8082A	
TPH - Gasoline Range	NWTPH-Gx	
TPH - Diesel & Motor Oil Range	NWTPH-Dx	
Total Metals	EPA Method 200.8	
Mercury	EPA Method 1631E	
pH	SW846 Method 9045D	
Total Organic Carbon (TOC)	ASTM D4129-05M	Columbia Analytical Services, Inc. Kelso, WA (Part of ALS Group)
Total Suspended Solids (TSS)	SM Method 2540D	
Dissolved Sulfide	SM 4500-S2-D	
Selenium	SW846 Method 7742	
Ammonia as Nitrogen	EPA Method 350.1	
Formaldehyde	SW846 Method 8315A	
Dioxins/Furans	SW846 Method 8290	Columbia Analytical Services, Inc. Houston, TX (Part of ALS Group)

Notes:

1. SW846 - *USEPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* SW-846, Third Edition, December 1996.
2. EPA Methods - *USEPA Methods for Chemical Analysis of Water and Wastes,* EPA–600/4-79-020, March 1983 Revision.
3. EPA Method 1631E - *Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry,* Office of Water, U.S. Environmental Protection Agency, August 2002, EPA-821-R-02-019.
4. ASTM – American Society of Testing and Materials
5. NWTPH Methods – *Washington State Department of Ecology, Analytical Methods for Petroleum Hydrocarbons*, Publication No. ECY 97-602, June 1997.
6. SM – Standard Methods for the Examination of Water and Wastewater, American Public Health Association, 20th Edition, 1995.

DATA VALIDATION FINDINGS

1. VOCs by GC/MS (EPA Method SW8260C)

1.1 Sample Management and Holding Time

Samples were received in the laboratory intact and in consistence with the accompanying chain-of-custody (COC) documentation. No anomalies were identified in relation to sample preservation, handling, and transport.

Soil samples should be preserved at the time of collection. Soil and water samples should be analyzed within 14 days of collection. All samples were analyzed within the required holding times.

1.2 GC/MS Instrument Performance Check

The method require that (1) gas chromatograph/mass spectrometer (GC/MS) tuning analysis be performed, using bromofluorobenzene (BFB), at the beginning of each 12-hour period prior to any analysis, and (2) specific mass ions meet the criteria provided in the method. All instrument performance checks met the requirements.

1.3 Initial Calibration (ICAL)

The ICAL criteria require that (1) if linear average RFs is chosen as the quantitation option, at least five standards at different concentrations should be analyzed and the percent relative standard deviation (%RSD) of response factors (RFs) be ≤20% for the analyte, (2) if least-square linear regression is chosen for quantitation, the correlation coefficient (r) be >0.995, (3) if six-point non-linear (quadratic) curve is chosen for quantitation, the coefficient of determination (r^2) be >0.99, and (4) the RF be >0.01 for poor response compounds and >0.05 for all other compounds.. All ICALs met the requirements.

An initial calibration verification (ICV) standard (second source standard) was analyzed to verify the calibration curve. Percent difference (%D) values were either within ±20%, or the exceedance had no adverse effects on data usability (*e.g.,* biased high ICV recovery for a compound not detected in samples).

1.4 Calibration Verification (CCV)

The CCV criteria requires that (1) continuing calibrations be analyzed at the beginning of each 12-hour analysis period prior to the analysis of method blank and samples, (2) the %D be within ±20%, and (3) the RF be >0.01 for poor response compounds and >0.05 for all other compounds.

Calibration verifications were performed at the required frequency. %D values were either within ±20%, or the exceedance had no adverse effects on data usability (*e.g.,* biased high CCV recovery for a compound not detected in samples).

1.5 Method Blanks

Method blanks were prepared and analyzed as required. Target compounds were not detected at or above the reporting limits (RLs).

1.6 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD were prepared and analyzed as required by the method. Percent recovery (%R) and relative percent difference (RPD) values either met the project control limits, or the outliers had no adverse effects on data usability (*e.g.,* biased high recovery for a compound not detected in samples.

1.7 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All surrogate spike %R values were within the project control limits.

1.8 Matrix Spike (MS)

MS analyses were performed on samples GF-B-12-1-2.5, OMS-B-1-0-1-070512, and CMS-B-1-2-3-070612. The %R values were within the project control limits, except for the following:

SDG#	Parent Sample ID	Compound	MS %R (%)	Control Limit (%)	Data Qualifier
206410	GF-B-12-1-2.5	1,1,1-Trichloroethane	44	50-150	**UJ**
		1,1-Dichloroethane	48		
		Chloroethane	43		
		Trichlorofluoromethane	24		
		1,1-Dichloroethene	38		
		1,1-Dichloropropene	43		
		2,2-Dichloropropane	35		
		cis-1,2-Dichloroethene	49		
		Bromomethane	43		
		trans-1,2-Dichloroethene	47		
		Chloromethane	31		
		Tetrachloroethene	49		
206410	GF-B-12-1-2.5	Dichlorodifluoromethane	6	50-150	**R**
207068	OMS-B-1-0-1-070512	Dichlorodifluoromethane	13	50-150	**UJ**
		Trichlorofluoromethane	49		
		Vinyl chloride	45		
		Chloromethane	47		

SDG#	Parent Sample ID	Compound	MS %R (%)	Control Limit (%)	Data Qualifier
207085	CMS-B-1-2-3-070612	Dichlorodifluoromethane	5	50-150	**R**

1.9 Internal Standards

The method requires that (1) internal standard retention time be within ±30 seconds from that of the associated 12-hour calibration standard, and (2) the area counts of all internal standards be within –50% to +100% of the associated 12-hour calibration standard. All internal standards in the sample and associated QC analyses met the criteria.

1.10 Reporting Limit and Target Compound Quantitation

RLs were supported with adequate initial calibration concentrations. In cases where target compound concentrations exceeded ICAL calibration ranges, proper dilution analyses were performed for definitive quantitation of the compounds. Only affected compounds were to be reported from dilution analyses.

Vinyl acetate and 1,4-dioxane were reported in selected samples and the method blanks associated with these samples. These compounds were subjected to the tentative identification search (TIC) in the instrument library and were not detected in these samples. The reported MRLs for these compounds were based on 10 times the standard MRLs for other VOCs. Vinyl acetate and 1,4-dioxane results in these samples were qualified (UJ) as estimated.

Naphthalene, 1,2,4-trichlorobenzene, 1,2-dichlioriobenzene, 1,3-dichlorobenzene, and 1,4-dichliorobenzene were also reported from SVOCs analysis (Method 8270D). These compounds were to be reported from the SVOCs analysis, in favor of the lower detection limits, for samples analyzed by both methods except samples Boiler-B-3-1-2-070512 and HW-B-1-0-1 due to their excessive dilution for the SVOCs analysis.

1.11 Field Duplicates

Three sets of field duplicates were submitted for VOCs analyses. Field duplicate results for detected target compounds, RPD (or concentration difference) values, and data qualification were presented in **Appendix A**.

1.12 Overall Assessment of VOCs Data Usability

VOCs data are of known quality and acceptable for use, as qualified.

2. SVOCs by GC/MS (EPA Method SW8270D)

2.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport.

Soil samples should be extracted within 14 days and water samples within seven days of collection. Extracts should be analyzed within 40 days of extraction. All samples were extracted and analyzed within the required holding times.

2.2 GC/MS Instrument Performance Check

The method require that a GC/MS tuning analysis be performed using decafluorotriphenylphosphine (DFTPP) at the beginning of each 12-hour period prior to any analysis, and specific mass ions meet the criteria provided in the method. All instrument performance checks met the requirements.

2.3 Initial Calibration (ICAL)

The ICAL criteria require that (1) if linear average RFs is chosen as the quantitation option, at least five standards at different concentrations should be analyzed and the %RSD of RFs be ≤20% for the analyte, (2) if least-square linear regression is chosen for quantitation, the correlation coefficient (r) be >0.995, (3) if six-point non-linear (quadratic) curve is chosen for quantitation, the coefficient of determination (r^2) be >0.99, and (4) the RF be >0.01 for poor response compounds and >0.05 for all other compounds.. All ICALs met the requirements.

An ICV standard (second source standard) was analyzed to verify the calibration curve. %D values were either within ±20%, or the exceedance had no adverse effects on data usability (*e.g.,* biased high ICV recovery for a compound not detected in samples).

2.4 Calibration Verification (CCV)

The CCV criteria require that (1) continuing calibrations be analyzed at the beginning of each 12-hour analysis period prior to the analysis of method blank and samples, (2) the %D be within ±20%, and (3) the RF be >0.01 for poor response compounds and >0.05 for all other compounds.

Calibration verifications were performed at the required frequency. %D values were either within ±20%, or the exceedance had no adverse effects on data usability (*e.g.,* biased high CCV recovery for a compound not detected in samples), with the exceptions as follows:

SDG	CCV ID	Compound	%D	Bias	Affected Sample	Data Qualifier
206410	GCMS8 7/6/12, 18:55	Pyrene	-32.6%	High	GF-B-9-7.5-9D	**J**
206446	GCMS8 7/9/12, 7:53	Pyrene	-32.6%	High	HW-B-2-3-4 HW-MW-1-0-1 HW-MW-1-3-4 HW-MW-1-6-7	**J**

2.5 Method Blanks

Method blanks were prepared and analyzed as required. Target compounds were not detected at or above the RLs in the method blanks.

2.6 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All %R values were within the laboratory control limits.

2.7 Matrix Spike (MS) and MS Duplicate (MSD)

MS/MSD analyses were not performed for SVOCs analyses; instead, laboratory duplicates in combination with LCS/LCSD analyses were performed.

2.8 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD were prepared and analyzed as required by the method. All %R and RPD values either met the laboratory control criteria, or the outliers had no adverse effects on data usability (*e.g.,* biased high %R or RPD value for a compound that was not detected in samples), except for the following:

SDG	Compound	%R (%)		Control Limit (%)	RPD (%)	Control Limit (%)	Affected Sample	Data Qualifier
		LCSD	LCSD					
206410	Pyrene	86	126	58-120	38	20	GF-B-9-1-2.5 GF-B-9-7.5-9 GF-B-9-7.5-9D	**J**
206446	Pyrene	86	126	58-120	38	20	HW-B-1-6-7 HW-B-2-3-4 HW-B-2-6-7 HW-MW-1-0-1 HW-MW-1-3-4 HW-MW-1-6-7	**J**

2.9 Laboratory Duplicate Analysis

Duplicate analyses were performed on sample GF-B-12-7.5-9 (SDG: 206410) and Boiler-B-5-1-1.5-070612 (SDG: 207068). All RPD or concentration difference values met the laboratory control criteria.

2.10 Internal Standards

The method requires that (1) internal standard retention time be within ±30 seconds from that of the associated 12-hour calibration standard, and (2) the area counts of all internal standards be within –50% to +100% of the associated 12-hour calibration standard. All internal standards in the sample and associated QC analyses met the criteria, except for the following:

Sample ID	**Internal Standard**	**Internal Standard %R**	**Control Limit**	**Affected Compound**	**Data Qualifier**
HW-B-1-0-1	Perylene-d_{12}	40.3%	50-200%	Indeno(1,2,3-cd)pyrene Di-n-octyl phthalate Benzo(a)pyrene Benzo(b)fluoranthene Dibenzo(a,h)anthracene Benzo(g,h,i)perylene Benzo(k)fluoranthene	**UJ**
HW-B-1-6-7	Phenanthrene-d_{12}	48.4%	50-200%	N-Nitrosodiphenylamine 4-Nitroaniline 4,6-Dinitro-2-methylphenol 4-Bromophenyl phenyl ether Hexachlorobenzene Pentachlorophenol Phenanthrene Anthracene Carbazole Di-*n*-butyl phthalate Fluoranthene	**UJ** **UJ** **UJ** **UJ** **UJ** **UJ** **J** **UJ** **UJ** **UJ** **J**
Boiler-B-4-1-1.5-070612	Perylene-d_{12}	212%	50-200%	Benzo(b)fluoranthene	**J**

2.11 Reporting Limits and Compound Quantitation

Sample-specific RLs were supported with adequate initial calibration concentrations. Samples Boiler-B-3-1-2-070512 and HW-B-1-0-1 required a 1:100 dilution due to the high levels of target and non-target compounds in these samples; the RLs were raised accordingly.

Selected samples were also analyzed for PAHs with Method 8270D-SIM. PAHs results for these samples were to be reported from the Method 8270D-SIM analysis, in favor of the lower detection limits.

2.12 Field Duplicates

Samples GF-B-9-7.5-9 and GF-B-9-7.5-9D were field duplicates. SVOCs were not detected at or above the RLs in either sample. The field precision met the project advisory criteria.

2.13 Overall Assessment of SVOCs Data Usability

SVOCs data are of known quality and acceptable for use, as qualified.

3. PAHs by GC/MS - SIM (EPA Method SW8270D-SIM)

3.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport. Soil samples should be extracted within 14 days and water within seven days of collection. Extracts should be analyzed within 40 days of extraction. All samples were extracted and analyzed within the required holding times.

3.2 GC/MS Instrument Performance Check

DFTPP tuning was performed within each 12-hour interval. All required ion abundance ratios met the method requirements.

3.3 Initial Calibration (ICAL)

The ICAL criteria require that (1) if linear average RFs is chosen as the quantitation option, at least five standards at different concentrations should be analyzed and the %RSD of RFs be ≤20% for the analyte, (2) if least-square linear regression is chosen for quantitation, the correlation coefficient (r) be >0.995, (3) if six-point non-linear (quadratic) curve is chosen for quantitation, the coefficient of determination (r^2) be >0.99, and (4) the RF be >0.01 for poor response compounds and >0.05 for all other compounds.. All ICALs met the requirements.

An ICV standard (second source standard) was analyzed to verify the calibration curve. %D values were either within ±20%, or the exceedance had no adverse effects on data usability (*e.g.,* biased high ICV recovery for a compound not detected in samples).

3.4 Calibration Verification (CCV)

The analytical method requires that (1) continuing calibration verifications be analyzed at the beginning of each 12-hour analysis period prior to the analysis of method blank and samples, (2) the %D be within ±20%, and (3) the RF be >0.05 for all compounds.

Calibration verifications were performed at the required frequency. %D values were either within ±20%, or the exceedance had no adverse effects on data usability (*e.g.,* biased high CCV recovery for a compound not detected in samples).

3.5 Method Blanks

Method blanks were prepared and analyzed as required. Target compounds were not detected at or above the RLs in the method blanks.

3.6 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All surrogate spike %R values were either within the project control limits or at levels that had no adverse effects on data quality (*e.g.,* biased-high recovery for compounds that were not detected in samples), except qualified below. In some cases surrogate spike %R values were inapplicable for data evaluation because the samples contained high levels of target PAHs and requested dilution analysis; no data were qualified on this basis. The remaining anomalies were summarized in the following:

Sample ID	Surrogate	%R (%)	Control Limit (%)	Affected Compound	Data Qualifier
REC2-B-10-5-6	Anthracene-d_{10} Benzo(a)anthracene-d_{12}	0 162	50-150 35-159	All PAHs	**J/UJ**

3.7 Matrix Spike (MS)

MS analyses were performed on samples GF-B-12-7.5-9 (SDG: 206410), REC2-B-10-10-11 (SDG: 206410), OMS-B-2-2-3-070512 (SDG: 207068). The %R values met the project control criteria.

3.8 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed as required by the method. All %R and RPD values were within the project control limits.

3.9 Internal Standards

The method requires that (1) internal standard retention time be within ±30 seconds from that of the associated 12-hour calibration standard, and (2) the area counts of all internal standards be within –50% to +100% of the associated 12-hour calibration standard. All internal standards in the sample and associated QC analyses met the criteria. The recovery for one of the surrogates, phenanthrene-d_{10}, in sample OMS-B-3-2-3-070612 (SDG: 207068) was less than the lower control limit. The sample was diluted and re-analyzed with acceptable internal standard recovery. Compounds associated with phenanthrene-d_{10} were to be reported from the dilution analysis for this sample.

3.10 Reporting Limits and Target Compound Quantitation

Sample-specific RLs were supported with adequate initial calibration concentrations.

3.11 Field Duplicates

Three sets of field duplicates were submitted for PAHs analyses. Field duplicate results for detected target compounds, RPD (or concentration difference) values, and data qualification were presented in **Appendix A**.

3.12 Overall Assessment of PAHs Data Usability

PAHs data are of known quality and acceptable for use, as qualified.

4. PCB Aroclors (EPA Method SW8082A)

4.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport. Soil samples should be extracted within 14 days of collection and extracts analyzed within 40 days of extraction. All samples were extracted and analyzed within the required holding times.

4.2 Initial Calibration

The method requires that (1) a minimum of 5-point calibration be performed using the mixture of Aroclor 1016 and 1260, (2) a single-point calibration be performed for the other five Aroclors to establish calibration factors (CFs) and for Aroclor pattern recognition, (3) at least 3 peaks (preferably 5 peaks) must be chosen for each Aroclor for characterization, (4) the %RSD values of Aroclor 1016 and 1260 CFs must be ≤20%, and (5) if dual column analysis is chosen, both columns should meet the requirements. All ICALs met the requirements.

4.3 Calibration Verification

CCV analyses should be performed for each 12-hour analysis sequence prior to sample analyses, and the %D be within ±20%.

Calibration verifications were performed at the required frequency. All %D values either met the control criteria or biased high for target compounds that were not detected in the associated samples.

4.4 Method Blanks

Method blanks were prepared and analyzed as required. PCB Aroclors were not detected at or above the MDLs in the method blanks.

4.5 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All surrogate spike %R values were within the laboratory control limits.

4.6 Matrix Spike and Matrix Spike Duplicate (MS/MSD)

MS/MSD analyses were not performed for PCB Aroclors analyses; instead, duplicate and LCS/LCSD analyses in combination were performed.

4.7 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed as required by the method. All %R and RPD values were within the project control limits.

4.8 Laboratory Duplicate Analysis

Duplicate analyses were performed on samples HW-B-2-0-1 (SDG: 206448) and OMS-B-1-0-1-070512 (SDG: 207068), and REC3-MW-1-8.5-9.5 (SDG: 206068). All RPD or concentration difference values met the laboratory control criteria.

4.9 Method Reporting Limits and Target Compound Quantitation

Sample-specific RLs were supported with adequate initial calibration concentrations and achieved the project target quantitation limits.

Aroclor 1254 and Aroclor 1260 were detected in four samples in SDG 207085. The dual column RPD values were less than 40% for both detections.

4.10 Field Duplicates

Samples GF-B-9-7.5-9 and GF-B-9-7.5-9D were field duplicates. PCB Aroclors were not detected at or above the RLs in either sample. The field precision met the project advisory criteria.

4.11 Overall Assessment of PCB Aroclors Data Usability

PCB Aroclor data are of known quality and acceptable for use.

5. TPH-Gasoline by GC/FID (Method NWTPH-Gx)

5.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport.

Soil samples should be preserved at the time of collection. Soil and water samples should be analyzed within 14 days of collection. All samples were analyzed within the required holding times.

5.2 Initial Calibration (ICAL)

The method linearity criteria require that (1) if linear average RFs is chosen as the quantitation option, the %RSD of RFs be <20% for the analyte, (2) if least-square linear regression is chosen for quantitation, the correlation coefficient (r) be >0.995, and (3) if six-point non-linear (quadratic) curve is chosen for quantitation, the coefficient of determination (r^2) be >0.990. Initial calibration met the criteria for all target compounds.

An ICV (second source) standard was analyzed to verify the calibration curve. %D values were within ±20%.

5.3 Calibration Verification

Continuing calibration verification (CCV) analyses were performed at the required frequency for all analytical sequences as required by the method. The %D values for all CCVs met the method criterion (±20%).

5.4 Method Blanks

Method blanks were prepared and analyzed as required. No target compounds were detected at or above the RLs in the method blanks.

5.5 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All surrogate spike %R values were within the project control limits, outside the control limits due to matrix interference, or diluted below quantitation limits due to high analyte concentrations. No data qualifying actions were taken in these cases.

5.6 Matrix Spike and Matrix Spike Duplicate

MS/MSD analyses were not performed for TPH-Gasoline analyses; instead, duplicate and LCS analyses in combination were performed.

5.7 Laboratory Control Sample (LCS)

LCS analyses were performed as required by the method. All %R values were within the laboratory control limits.

5.8 Laboratory Duplicate Analysis

Duplicate analyses were performed on batch QC samples. All RPD and concentration difference values met the laboratory control criteria.

5.9 Reporting Limits and Target Compound Quantitation

Sample-specific RLs were supported with adequate initial calibration concentrations.

5.10 Field Duplicates

Two sets (one for soil and one for water) of field duplicates were submitted for TPH-Gasoline analysis. Field duplicate results, RPD (or concentration difference) values, and data qualification were presented in **Appendix A**.

5.11 Overall Assessment of TPH-Gasoline Data Usability

TPH-Gasoline data are of known quality and acceptable for use.

6. TPH-Diesel & Motor Oil by GC/FID (Method NWTPH-Dx)

6.1 Holding Time

No anomalies were identified in relation to sample preservation, handling, and transport. Soil samples should be extracted within 14 days and water should be extracted within seven days of collection. Extracts should be analyzed within 40 days of extraction. All samples were extracted and analyzed within the recommended holding times, except that sample Boiler-B-3-1-2-070512 was extracted six days past the required holding time. TPH-Diesel and TPH-Motor Oil results for this sample were qualified (J) as estimated.

6.2 Initial Calibration

The method requires that (1) a minimum of 5-point calibration be performed using individual petroleum product reference standards to ensure the proper identification and quantitation of petroleum hydrocarbons in samples, (2) the calibration curve include a sufficiently low standard to provide the necessary reporting limits, and (3) the linear working range of the instrument be defined.

The ICAL met the method requirements. The linearity of the ICAL curves were verified with %RSD values of RFs (%RSD ≤20%, according to EPA SW 846 Method 8000), and was acceptable for both TPH-Diesel and TPH-Motor Oil.

6.3 Calibration Verification

The method requires that (1) a mid-range check standard be analyzed prior to and after each analytical batch, and (2) the percent drift (%D) value be within ±15% of the true value.

Calibration verification was performed at required frequency. The %D values were either within the ±15% criterion or at levels that had no adverse effects on data quality (e.g., high-bias %D value where the target compound was not detected in associated sample).

6.4 Method Blanks

Method blanks were prepared and analyzed as required. Target compounds were not detected at or above the RLs in the method blanks.

6.5 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All surrogate spike %R values were within the project control limits, outside the control limits due to matrix interference, or diluted below quantitation limits due to high petroleum hydrocarbon concentrations. No data qualifying actions were taken in these cases.

6.6 Matrix Spike (MS) and MS Duplicate (MSD)

MS and MSD analyses were performed on samples GF-B-9-1-2.5 (SDG: 206410), and CMS-B-1-0-1-070612 (SDG: 207085). The %R and RPD values met the laboratory control criteria.

6.7 Laboratory Control Sample (LCS)

LCS analyses were performed as required. All %R values met the project control limits.

6.8 Target Compound Identification

Selected sample extracts were cleaned up with acid and silica gel treatment to minimize the biogenic interference with target compound identification, as required by the project. The laboratory reported results as diesel #2 (C10 - C25) and motor oil (C25 - C36), as required by the method.

The TPH-Diesel reported in sample CMS-B-2-2-3-070612 did not match chromatographic patterns with those of the calibration standards.

6.9 Reporting Limits and Target Compound Quantitation

The reported RLs were supported with adequate ICAL concentrations.

6.10 Field Duplicates

Three sets of field duplicates were submitted for TPH-Diesel and TPH-Motor Oil analyses. Field duplicate results, RPD (or concentration difference) values, and data qualification were presented in **Appendix A**.

6.11 Overall Assessment of TPH-Diesel and Motor Oil Data Usability

TPH-Diesel and TPH-Motor Oil data are of known quality and acceptable for use, as qualified.

7. Total Metals by ICP/MS and CVAFS (EPA Methods 200.8 and 1631E)

7.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport, as discussed in Section 1.1.

Soil and water samples should be analyzed within 180 days for metals and 28 days for mercury. Samples were analyzed within the required holding time.

7.2 ICP/MS Tuning

Instrument tuning was performed at the required frequency. The stability check (%RSD <5%), mass calibration (mass difference <0.1 AMU), and resolution check (peak width <1.0 AMU at 5% peak height) met the NFG and method criteria.

7.3 Initial Calibration (ICAL)

The ICP/MS method requires that (1) a blank and one calibration standard be used in establishing the analytical curve, and (2) the average of replicate exposures be reported for all standards, QC, and sample analyses.

For mercury, the method requires that (1) a blank and five calibration standards be employed to establish the analytical curve, and (2) the linearity of the calibration curve should meet the criteria of correlation coefficient ≥ 0.995.

All ICALs met the method requirements.

7.4 Calibration Verification (ICV and CCV)

Initial calibration verifications (ICVs) and continuing calibration verifications (CCVs) were analyzed at the required frequency. The %R values either met the control criteria (90 – 110% for metals, 80 – 120% for mercury) or the exceedance had no adverse effects on data usability (e.g., high-bias %D value where the target compound was not detected in associated sample), except for the following:

CCAL ID	**Analyte**	**%R**	**Affected Sample**	**Data Qualifier**
7/9/12, 16:42:54	Mercury	128%	Boiler-B-2-1-2-070512	**J**

7.5 Blanks

Calibration Blanks: Initial calibration blanks (ICBs) and continuing calibration blanks (CCBs) were not analyzed after calibration verification standards. Target analytes were either not detected at or above the RLs in the ICBs and CCBs, or sample results affected by the ICB/CCB detections were qualified as results of detections in preparation blanks.

Preparation Blanks: Preparation blanks were prepared and analyzed as required. Target analytes were either not detected at or above the RLs in the preparation blanks, or sample results were greater than 10X the detection in the associated blank, except for the following:

Blank ID	Analyte	Detection In Blank	Affected Sample	Original Result	Adjusted Result	Unit
K1205623-MB	Dissolved Beryllium	0.0005 J	REC3-MW-1-060712 UST70-MW-2-060712	0.0012 J 0.0014 J	0.02 U 0.02 U	**µg/L**
K1205623-MB	Dissolved Thallium	0.005 J	REC3-MW-1-060712 UST70-MW-2-060712	0.007 J 0.014 J	0.02 U 0.02 U	**µg/L**
K1205560-MB	Dissolved Beryllium	0.0005 J	MW-2-060612 MW-2-060612 OMS-MW-1-060612 REC7-MW-3-060612 REC7-MW-4-060612 REC7-MW-4-060612	0.0005 J 0.0023 J 0.0012 J 0.0009 J 0.0090 J 0.0005 J	0.02 U 0.02 U 0.02 U 0.02 U 0.02 U 0.02 U	**µg/L**
K1205560-MB	Total Thallium	0.005 J	REC7-MW-4-060612 MW-2-060612	0.008 J 0.004 J	0.02 U 0.02 U	**µg/L**
K1205560-MB	Dissolved Thallium	0.005 J	MW-1-060612 MW-2-060612 OMS-MW-1-060612 REC7-MW-3-060612 REC7-MW-4-060612	0.005 J 0.005 J 0.026 0.006 J 0.012 J	0.02 U 0.02 U 0.026 J 0.02 U 0.02 U	**µg/L**

7.6 Laboratory Control Sample (LCS)

LCS analyses were performed as required by the method. All %R values were within the project control limits, or the exceedance had no adverse effects on data usability (e.g., high-bias %R value where the target compound was not detected in associated sample).

7.7 Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

MS and MSD analyses were performed on project samples at the adequate frequency (>5% of field sample). The %R and RPD values met the laboratory control limits, except for the following:

SDG#	Parent Sample ID	Analyte	MS %R	Control Limit	RPD	Control Limit	Affected Sample	Data Qualifier
206410	NRP-B-16-0-1	Chromium Nickel	148 130	63-120 54-125	54 50	20	GF-B-12-1-2.5 GF-B-12-7.5-9 GF-B-9-1-2.5 GF-B-9-7.5-9 NRP-B-10-0-1 NRP-B-10-3-4 NRP-B-14-0-1 NRP-B-14-3-4 NRP-B-16-0-1 NRP-B-16-3-4 NRP-B-9-0-1 NRP-B-9-3-4	**J**
207068	OMS-B-1-0-1-070512	Nickel	- -	- -	23	20	Boiler-B-1-1-2-070512 Boiler-B-2-1-2-070512 Boiler-B-3-1-2-070512 Boiler-B-4-1-1.5-070612 Boiler-B-5-1-1.5-070612 OMS-B-1-0-1-070512 OMS-B-1-2-3-070512 OMS-B-2-0-1-070512 OMS-B-2-2-3-070512 OMS-B-3-0-1-070512 OMS-B-3-2-3-070612	**J**
207085	CMS-B-2-0-1-070612	Chromium	- -	- -	23	20	CMS-B-1-0-1-070612 CMS-B-1-2-3-070612 CMS-B-2-0-1-070612 CMS-B-2-2-3-070612 CMS-B-3-0-1-070612 CMS-B-3-2-3-070612	**J**
207085	CMS-B-2-0-1-070612	Lead	178 89	64-139	67	20	CMS-B-1-0-1-070612 CMS-B-1-2-3-070612 CMS-B-2-0-1-070612 CMS-B-2-2-3-070612 CMS-B-3-0-1-070612 CMS-B-3-2-3-070612	**J**

Note: "- -" indicated that the value was within the control limit.

7.8 Internal Standards

At least three internal standards were added to all field and QC samples for ICP/MS analyses. All percent relative intensity values were within the method criteria (60 - 125%).

7.9 Method Reporting Limits and Analyte Quantitation

Sample-specific RLs were supported with adequate initial calibration concentrations.

7.10 Field Duplicates

Three sets of field duplicates were submitted for Metals analyses. Field duplicate results, RPD (or concentration difference) values, and data qualification were presented in **Appendix A**.

7.11 Overall Assessment of Metals Data Usability

Metal data are of known quality and acceptable for use, as qualified.

8. Polychlorinated Dioxins/Furans by HRGC/HRMS (EPA Method SW8290)

8.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport, as discussed in Section 1.1.

EPA SW846 Method 8290 recommends a holding time of 30 days for solid samples stored in the dark at 4°C and completely analyzed within 45 days of extraction. All samples were extracted and analyzed within the recommended holding times.

8.2 HRGC/HRMS Instrument Performance Check

The method requires that (1) for mass calibration and resolution, the laboratory must provides evidence of mass spectrometer resolution > 10,000 at the beginning and end of each 12-hour analytical sequence. If mass calibration and resolution tuning are not correctly performed, interferences may degrade chlorinated dibenzo-*p*-dioxin and chlorinated dibenzofuran (CDD/CDF) identification and quantitation; (2) the mass spectrometer selected ion monitoring (SIM) scan descriptor switching times are determined by the analysis of the Window Defining Mixture (WDM) which contains the first and last eluting isomers in each homologue; and (3) chromatographic resolution is verified by analyzing one of two Isomer Specificity Check (ISC) solutions, depending on the Gas Chromatograph (GC) column used for analysis. All HRGC/HRMS instrument performance checks met the criteria.

8.3 Initial Calibration (ICAL)

The method requires that (1) the chromatographic peak separation between the 2,3,7,8-TCDD peak and the 1,2,3,8-TCDD peak and between the 2,3,7,8-TCDF peak and the 2,3,4,7-TCDF peak and must be resolved with a valley of < 25%; (2) the ion abundance ratio be within a ± 15% window around the theoretical abundance ratio; (3) the retention times (RTs) of the isomers must fall within the appropriate RT windows established by the WDM analysis. In addition, the absolute RT of the internal standard $^{13}C_{12}$-1,2,3,4-TCDD must exceed 25 minutes on the DB-5 (or equivalent) column and 15 minutes on the DB-225 (or equivalent) column; (4) the instrument sensitivity (signal-to-noise [S/N] ratio) must be >10:1; (5) the percent relative standard deviation (%RSD) be <20% for native isomers and < 30% for labeled isomers; (6) all initial calibration standards (CSs) must be analyzed at the correct concentration levels; (7) initial calibrations must be performed when the contract is awarded, whenever significant instrument maintenance is performed (e.g., ion source cleaning, GC column replacement, etc.), or if calibration verification criteria are not met. All ICALs met the method requirements.

8.4 Calibration Verification

The method requires that (1) continuing calibrations be analyzed at the beginning of each 12-hour analysis period prior to the analysis of method blank and samples, (2) the percent difference (%D) be within ±20% for native isomers and be within ±30% for labeled isomers, and (3) the ion abundance ratio, retention times, relative retention times, instrument sensitivity meet the criteria for initial calibrations. All calibration verification analyses met the criteria.

8.5 Method Blanks

Method blanks were prepared and analyzed as required for each preparation batch. Selected target compounds were detected in method blanks. Sample results less than 5x the level found in the associated method blank were qualified (U) as non-detects at the reported values. Qualified data were summarized in **SUAMMRY** section at the end of this report.

8.6 Laboratory Control Samples (LCS)

LCS analyses were performed as required by the method. The recovery met the method control limits for all target and labeled compounds.

8.7 Matrix Spike and Matrix Spike Duplicate (MS/MSD)

MS and MSD analyses were performed on sample GF-B-2-2.5-4. The %R and RPD values met the control limits for all spiked congeners, except that the RPD value for OCDD (52%) was outside the control criteria (20%). The OCDD result for sample GF-B-2-2.5-4 was qualified (J) as estimated.

8.8 Labeled Compounds

Nine labeled internal standards and one cleanup recovery standard were added to all samples as required by the method.

The %R values for selected internal standards and cleanup standard were less than the lower control limit of 40%. Affected sample results were qualified as follows:

Sample ID	Internal Standard	%R (%)	Affected Congener	Data Qualifier
Boiler-B-3-1-2-070512	$^{13}C_{12}$-OCDD $^{13}C_{12}$-1,2,3,4,7,8-HxCDF $^{13}C_{12}$-2,3,4,6,7,8-HxCDF $^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	27 34 31 37	OCDD OCDF 1,2,3,4,7,8-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF	**J** **J** **UJ** **UJ** **J**
GF-B-4-2.5-4	$^{13}C_{12}$-OCDD	32	OCDD OCDF	**J** **UJ**

8.9 Target Compound Identification

All detected target congeners were properly identified. The ion ratios for a number of detection did not meet the method criteria; these results were qualified as non-detected at their reported values, as summarized as follows:

Laboratory ID	Sample ID	Congener	Ion Ratio	Control Limit	Data Qualifier
E1200626-002	GF-B-15A-1-2.5	1,2,3,7,8,9-HxCDF	0.75	1.05-1.43	**U**
E1200626-002	GF-B-15A-1-2.5	1,2,3,7,8-PeCDD	1	1.32-1.78	**U**
E1200626-002	GF-B-15A-1-2.5	1,2,3,7,8-PeCDF	1.9	1.32-1.78	**U**
E1200626-002	GF-B-15A-1-2.5	2,3,4,7,8-PeCDF	1.28	1.32-1.78	**U**
E1200626-002	GF-B-15A-1-2.5	2,3,7,8-TCDD	51	0.65-0.89	**U**
E1200650-001	GF-B-14-1-2.5	1,2,3,6,7,8-HxCDF	1.44	1.05-1.43	**U**
E1200650-001	GF-B-14-1-2.5	1,2,3,7,8,9-HxCDD	1.48	1.05-1.43	**U**
E1200652-001	GF-B-2-2.5-4	1,2,3,4,7,8,9-HpCDF	0.83	0.88-1.20	**U**
E1200652-001	GF-B-2-2.5-4	1,2,3,4,7,8-HxCDD	1.46	1.05-1.43	**U**
E1200652-001	GF-B-2-2.5-4	1,2,3,7,8-PeCDD	2.58	1.32-1.78	**U**
E1200652-001	GF-B-2-2.5-4	2,3,7,8-TCDD	0.59	0.65-0.89	**U**
E1200652-002	GF-B-1-1-2.5	1,2,3,4,7,8-HxCDD	1.74	1.05-1.43	**U**
E1200652-002	GF-B-1-1-2.5	1,2,3,7,8,9-HxCDD	1.55	1.05-1.43	**U**
E1200652-002	GF-B-1-1-2.5	OCDF	1.09	0.76-1.02	**U**
E1200868-001	GF-B-9-2.5-3.5	1,2,3,4,7,8-HxCDF	1.02	1.05-1.43	**U**
E1200868-001	GF-B-9-2.5-3.5	2,3,4,6,7,8-HxCDF	0.91	1.05-1.43	**U**
E1200868-002	GF-B-9-2.5-3.5-D	1,2,3,4,7,8,9-HpCDF	0.79	0.88-1.20	**U**
E1200868-002	GF-B-9-2.5-3.5-D	1,2,3,4,7,8-HxCDD	0.98	1.05-1.43	**U**

Laboratory ID	Sample ID	Congener	Ion Ratio	Control Limit	Data Qualifier
E1200868-002	GF-B-9-2.5-3.5-D	1,2,3,6,7,8-HxCDF	1.59	1.05-1.43	**U**
E1200868-002	GF-B-9-2.5-3.5-D	1,2,3,7,8,9-HxCDD	0.86	1.05-1.43	**U**
E1200868-002	GF-B-9-2.5-3.5-D	1,2,3,7,8-PeCDD	1.3	1.32-1.78	**U**
E1200868-002	GF-B-9-2.5-3.5-D	1,2,3,7,8-PeCDF	1.29	1.32-1.78	**U**
E1200868-003	GF-B-12-1-2.5	1,2,3,6,7,8-HxCDF	1.48	1.05-1.43	**U**
E1200868-003	GF-B-12-1-2.5	2,3,4,7,8-PeCDF	1.18	1.32-1.78	**U**
E1200868-004	Boiler-B-1-1-2-070512	2,3,7,8-TCDD	0.46	0.65-0.89	**U**
E1200868-005	Boiler-B-2-1-2-070512	1,2,3,7,8-PeCDD	1.22	1.32-1.78	**U**
E1200868-007	Boiler-B-4-1-1.5-070512	1,2,3,7,8,9-HxCDF	1.46	1.05-1.43	**U**
E1200868-008	Boiler-B-5-1-1.5-070512	1,2,3,4,7,8,9-HpCDF	1.32	0.88-1.20	**U**
E1200868-008	Boiler-B-5-1-1.5-070512	1,2,3,7,8,9-HxCDD	0.93	1.05-1.43	**U**
E1201140-001	Boiler-B-3-1-2-070512	1,2,3,7,8,9-HxCDD	1.47	1.05-1.43	**U**
E1201140-001	Boiler-B-3-1-2-070512	2,3,7,8-TCDF	0.94	0.65-0.89	**U**

8.10 Reporting Limits, Estimated Detection Limits (EDLs), and Compound Quantitation

Correct internal standards, quantitation ions, and average RFs were used to quantitate target compound detections. The RLs were supported with adequate ICAL calibration concentrations. Sample-specific EDLs and RLs were adjusted with sample weights, internal standard peak height, and noise levels as required by the method.

Selected target congeners in a number of samples had chlorodiphenyl ether interference present in their retention time region. The affected results were qualified (J) as estimated.

8.11 Second Column Confirmation

All positive detection of 2,3,7,8-TCDF were re-analyzed on the DB-225 column for confirmation and results reported from the second column (DB-225) should be used for data interpretation.

8.12 Field Duplicates

Samples GF-B-9-2.5-3.5 and GF-B-9-2.5-3.5-D were field duplicates submitted for dioxins/furans analysis. Field duplicate results, RPD (or concentration difference) values, and data qualification were presented in **Appendix A**.

8.13 Overall Assessment of Polychlorinated Dioxins/Furans Data Usability

Polychlorinated dioxins and furans data were of known quality and acceptable for use as qualified.

9. Formaldehyde by HPLC/UV (EPA Method 8315A)

9.1 Sample Management and Holding Time

No anomalies were identified in relation to sample preservation, handling, and transport, as discussed in Section 1.1.

Water samples should be derivatized and extracted within 3 days of sample collection. All derivatized sample extracts should be analyzed within 3 days after preparation. The sample was prepared and analyzed within the required holding times.

9.2 Instrument Calibration

The method linearity criteria require that (1) if linear average RFs is chosen as the quantitation option, the %RSD of RFs be <15% for the analyte, (2) if least-square linear regression is chosen for quantitation, the correlation coefficient (r) be >0.995, and (3) if six-point non-linear (quadratic) curve is chosen for quantitation, the coefficient of determination (r^2) be >0.990. Initial calibration met the criteria for all target compounds.

An ICV (second source) standard was analyzed to verify the calibration curve. %D values were within ±20%.

9.3 Calibration Verification

Continuing calibration verification (CCV) analyses were performed at the required frequency for all analytical sequences as required by the method. The %D values for all CCVs met the method criterion (±20%).

9.4 Method Blanks

A method blank was prepared and analyzed in each preparation batch as required. Formaldehyde was not detected at or above the RL in method blanks.

9.5 Matrix Spike (MS) and MS Duplicate (MSD)

MS and MSD analyses were performed on samples REC6-MW-1-070612-D and REC6-MW-2-060512. The %R and RPD values met the laboratory control criteria, except that the RPD value (56%) was outside the control criterion (40%) in the MS/MSD performed on REC6-MW-1-070612-D. The formaldehyde result for sample REC6-MW-1-070612-D was qualified (J) as estimated.

9.6 Laboratory Control Samples (LCS)

LCS analyses were performed as required by the methods. The %R values were within the laboratory control limits.

9.7 Field Duplicates

Samples REC6-MW-1-070612 and REC6-MW-1-070612-D were field duplicates submitted for formaldehyde analysis. Field duplicate results, concentration difference value, and data qualification were presented in **Appendix A**.

9.8 Overall Assessment of Formaldehyde Data Usability

Formaldehyde data are of known quality and acceptable for use as qualified.

10. Conventional Parameters (TOC, TSS, pH, Ammonia, and Dissolved Sulfide)

10.1 Sample Management and Holding Time

No anomalies were identified in relation to sample preservation, handling, and transport, as discussed in Section 1.1.

Water samples should be analyzed within 7 days of collection for dissolved sulfide and TSS, and 28 days for ammonia. TOC in soil samples should be analyzed within 28 days.

10.2 Instrument Calibration

The initial calibrations were established for ammonia and sulfide analyses using one blank and at least five levels of standards. The correlation coefficients (r) of the initial calibration curves were >0.995, and met the method criteria.

10.3 Calibration Verification

ICV and CCV analyses were performed for ammonia and sulfide as required by the methods. All ICV and CCV %R values were within the laboratory control limits (90 – 110%).

10.4 Blanks

Calibration Blanks: ICBs and CCBs were analyzed for ammonia and sulfide as required by the methods. No target analytes were positively reported in ICBs and CCBs at or above the MDLs.

Method Blanks: Method blanks were prepared and analyzed for TOC, TSS, ammonia, and sulfide as required by the methods. No target analytes were detected at or above the RLs in method blanks, except for the following:

Blank ID	Analyte	Detection In Blank	Affected Sample	Original Result	Adjusted Result	Unit
K1205623-MB	Ammonia	0.023 J	REC3-MW-1-060712	0.041 J	0.05 U	**µg/L**

10.5 Laboratory Replicate Analyses

Laboratory duplicate analyses were formed on samples REC7-MW-1-060512, REC7-MW-3-060612 for sulfide, sample GF-B-12-7.5-9 for TOC, batch QC samples for ammonia and pH. The RPD (or concentration difference) values were within the project control limits.

10.6 Matrix Spike (MS) and MS Duplicate (MSD)

MS and MSD analyses were performed on sample REC7-MW-3-060612 for sulfide. The %R and RPD values met the laboratory control criteria.

10.7 Laboratory Control Samples (LCS)

LCS analyses were performed as required by the methods fort ammonia, sulfide, TOC, and pH analysis. All LCS %R values were within the laboratory control limits. LCS/LCSD analyses were performed for TSS; the %R and RPD values met the laboratory control criteria.

10.8 Method Reporting Limits

The MRLs were supported with adequate initial calibration concentrations.

10.9 Field Duplicates

Two sets of field duplicates were submitted for TSS analyses. One set of field duplicates was submitted for TOC, TSS, pH, and ammonia analyses. Field duplicate results, RPD (or concentration difference) values, and data qualification were presented in **Appendix A**.

10.10 Overall Assessment of Conventional Parameters Data Usability

Conventional parameters data are of known quality and acceptable for use.

SUMMARY

Table I. Data Affected by QC Anomalies:

Laboratory ID	Sample ID	Analyte	Qualifier	Qualified Reason
207068-07	Boiler-B-2-1-2-070512	Mercury	**J**	Closing OPR %R >120% (high bias)
206410-01	NRP-B-16-0-1	Chromium (Total)	**J**	MS %R > UCL and RPD >20%
206410-01	NRP-B-16-0-1	Nickel	**J**	MS %R > UCL and RPD >20%
206410-02	NRP-B-16-3-4	Chromium (Total)	**J**	MS %R > UCL and RPD >20%
206410-02	NRP-B-16-3-4	Nickel	**J**	MS %R > UCL and RPD >20%
206410-03	NRP-B-14-0-1	Chromium (Total)	**J**	MS %R > UCL and RPD >20%
206410-03	NRP-B-14-0-1	Nickel	**J**	MS %R > UCL and RPD >20%
206410-04	NRP-B-14-3-4	Chromium (Total)	**J**	MS %R > UCL and RPD >20%
206410-04	NRP-B-14-3-4	Nickel	**J**	MS %R > UCL and RPD >20%
206410-05	NRP-B-9-0-1	Chromium (Total)	**J**	MS %R > UCL and RPD >20%
206410-05	NRP-B-9-0-1	Nickel	**J**	MS %R > UCL and RPD >20%
206410-06	NRP-B-9-3-4	Chromium (Total)	**J**	MS %R > UCL and RPD >20%
206410-06	NRP-B-9-3-4	Nickel	**J**	MS %R > UCL and RPD >20%
206410-07	NRP-B-10-0-1	Chromium (Total)	**J**	MS %R > UCL and RPD >20%
206410-07	NRP-B-10-0-1	Nickel	**J**	MS %R > UCL and RPD >20%
206410-08	NRP-B-10-3-4	Chromium (Total)	**J**	MS %R > UCL and RPD >20%
206410-08	NRP-B-10-3-4	Nickel	**J**	MS %R > UCL and RPD >20%
206410-31	GF-B-9-1-2.5	Chromium (Total)	**J**	MS %R > UCL and RPD >20%
206410-31	GF-B-9-1-2.5	Nickel	**J**	MS %R > UCL and RPD >20%
206410-34	GF-B-9-7.5-9	Chromium (Total)	**J**	MS %R > UCL and RPD >20%
206410-34	GF-B-9-7.5-9	Nickel	**J**	MS %R > UCL and RPD >20%
206410-36	GF-B-12-1-2.5	Chromium (Total)	**J**	MS %R > UCL and RPD >20%
206410-36	GF-B-12-1-2.5	Nickel	**J**	MS %R > UCL and RPD >20%
206410-37	GF-B-12-7.5-9	Chromium (Total)	**J**	MS %R > UCL and RPD >20%
206410-37	GF-B-12-7.5-9	Nickel	**J**	MS %R > UCL and RPD >20%
206446-03	AP-MW-1-6-7	Arsenic	**J**	Field duplicate analysis concentration difference was > 2RL
206446-03	AP-MW-1-6-7	Copper	**J**	Field duplicate analysis RPD >35%
206446-04	AP-MW-1-6-7-D	Arsenic	**J**	Field duplicate analysis concentration difference was > 2RL
206446-04	AP-MW-1-6-7-D	Copper	**J**	Field duplicate analysis RPD >35%
207068-01	OMS-B-1-0-1-070512	Nickel	**J**	MS/MSD RPD value was >20%
207068-02	OMS-B-1-2-3-070512	Nickel	**J**	MS/MSD RPD value was >20%
207068-03	OMS-B-2-0-1-070512	Nickel	**J**	MS/MSD RPD value was >20%
207068-04	OMS-B-2-2-3-070512	Nickel	**J**	MS/MSD RPD value was >20%
207068-05	OMS-B-3-0-1-070512	Nickel	**J**	MS/MSD RPD value was >20%

Laboratory ID	**Sample ID**	**Analyte**	**Qualifier**	**Qualified Reason**
207068-06	Boiler-B-1-1-2-070512	Nickel	**J**	MS/MSD RPD value was >20%
207068-07	Boiler-B-2-1-2-070512	Nickel	**J**	MS/MSD RPD value was >20%
207068-08	Boiler-B-3-1-2-070512	Nickel	**J**	MS/MSD RPD value was >20%
207068-09	Boiler-B-4-1-1.5-070612	Nickel	**J**	MS/MSD RPD value was >20%
207068-10	Boiler-B-5-1-1.5-070612	Nickel	**J**	MS/MSD RPD value was >20%
207068-11	OMS-B-3-2-3-070612	Nickel	**J**	MS/MSD RPD value was >20%
207085-01	CMS-B-1-0-1-070612	Chromium (Total)	**J**	MS/MSD RPD value was >20%
207085-01	CMS-B-1-0-1-070612	Lead	**J**	MS %R > UCL and RPD >20%
207085-02	CMS-B-1-2-3-070612	Chromium (Total)	**J**	MS/MSD RPD value was >20%
207085-02	CMS-B-1-2-3-070612	Lead	**J**	MS %R > UCL and RPD >20%
207085-03	CMS-B-2-0-1-070612	Chromium (Total)	**J**	MS/MSD RPD value was >20%
207085-03	CMS-B-2-0-1-070612	Lead	**J**	MS %R > UCL and RPD >20%
207085-04	CMS-B-2-2-3-070612	Chromium (Total)	**J**	MS/MSD RPD value was >20%
207085-04	CMS-B-2-2-3-070612	Lead	**J**	MS %R > UCL and RPD >20%
207085-05	CMS-B-3-0-1-070612	Chromium (Total)	**J**	MS/MSD RPD value was >20%
207085-05	CMS-B-3-0-1-070612	Lead	**J**	MS %R > UCL and RPD >20%
207085-06	CMS-B-3-2-3-070612	Chromium (Total)	**J**	MS/MSD RPD value was >20%
207085-06	CMS-B-3-2-3-070612	Lead	**J**	MS %R > UCL and RPD >20%
206410-16	REC2-B-10-7-8	Diesel Range Hydrocarbons	**J**	Field duplicate analysis RPD >35%
206410-16	REC2-B-10-7-8	Oil Range Hydrocarbons	**J**	Field duplicate analysis RPD >35%
206410-18	REC2-B-10-7-8-D	Diesel Range Hydrocarbons	**J**	Field duplicate analysis RPD >35%
206410-18	REC2-B-10-7-8-D	Oil Range Hydrocarbons	**J**	Field duplicate analysis RPD >35%
207068-08	Boiler-B-3-1-2-070512	Diesel Range Hydrocarbons	**J**	Extraction was performed past required holding time
207068-08	Boiler-B-3-1-2-070512	Oil Range Hydrocarbons	**J**	Extraction was performed past required holding time
206410-09	REC6-MW-1-6	1,4-Dioxane	**UJ**	RL based on TIC search
206410-09	REC6-MW-1-6	Naphthalene	**J**	Field duplcate analysis RPD >35%
206410-09	REC6-MW-1-6	Vinyl acetate	**UJ**	RL based on TIC search
206410-10	REC6-MW-1-6-D	1,4-Dioxane	**UJ**	RL based on TIC search
206410-10	REC6-MW-1-6-D	Naphthalene	**J**	Field duplcate analysis RPD >35%
206410-10	REC6-MW-1-6-D	Vinyl acetate	**UJ**	RL based on TIC search
206410-37	GF-B-12-7.5-9	1,1,1-Trichloroethane	**UJ**	MS %R value was <LCL (low bias)
206410-37	GF-B-12-7.5-9	1,1-Dichloroethane	**UJ**	MS %R value was <LCL (low bias)
206410-37	GF-B-12-7.5-9	1,1-Dichloroethene	**UJ**	MS %R value was <LCL (low bias)
206410-37	GF-B-12-7.5-9	1,1-Dichloropropene	**UJ**	MS %R value was <LCL (low bias)

Laboratory ID	Sample ID	Analyte	Qualifier	Qualified Reason
206410-37	GF-B-12-7.5-9	2,2-Dichloropropane	**UJ**	MS %R value was <LCL (low bias)
206410-37	GF-B-12-7.5-9	Benzene	**UJ**	MS %R value was <LCL (low bias)
206410-37	GF-B-12-7.5-9	Bromomethane	**UJ**	MS %R value was <LCL (low bias)
206410-37	GF-B-12-7.5-9	Carbon tetrachloride	**R**	MS%R value <10%
206410-37	GF-B-12-7.5-9	Chloroethane	**UJ**	MS %R value was <LCL (low bias)
206410-37	GF-B-12-7.5-9	Chloromethane	**UJ**	MS %R value was <LCL (low bias)
206410-37	GF-B-12-7.5-9	cis-1,2-Dichloroethene	**UJ**	MS %R value was <LCL (low bias)
206410-37	GF-B-12-7.5-9	Dichlorodifluoromethane	**UJ**	MS %R value was <LCL (low bias)
206410-37	GF-B-12-7.5-9	Tetrachloroethene	**UJ**	MS %R value was <LCL (low bias)
206410-37	GF-B-12-7.5-9	trans-1,2-Dichloroethene	**UJ**	MS %R value was <LCL (low bias)
206410-37	GF-B-12-7.5-9	Trichloroethene	**UJ**	MS %R value was <LCL (low bias)
206410-37	GF-B-12-7.5-9	Trichlorofluoromethane	**UJ**	MS %R value was <LCL (low bias)
206410-37	GF-B-12-7.5-9	Vinyl chloride	**UJ**	MS %R value was <LCL (low bias)
207033-03	REC6-MW-1-070212	1,4-Dioxane	**UJ**	Reporting limit was based on TIC search
207033-03	REC6-MW-1-070212	Vinyl acetate	**UJ**	Reporting limit was based on TIC search
207033-04	REC6-MW-1-070212D	1,4-Dioxane	**UJ**	RL based on TIC search
207033-04	REC6-MW-1-070212D	Vinyl acetate	**UJ**	RL based on TIC search
207068-01	OMS-B-1-0-1-070512	Chloromethane	**UJ**	MS %R value was <LCL (low bias)
207068-01	OMS-B-1-0-1-070512	Dichlorodifluoromethane	**UJ**	MS %R value was <LCL (low bias)
207068-01	OMS-B-1-0-1-070512	Trichlorofluoromethane	**UJ**	MS %R value was <LCL (low bias)
207068-01	OMS-B-1-0-1-070512	Vinyl chloride	**UJ**	MS %R value was <LCL (low bias)
207085-02	CMS-B-1-2-3-070612	Dichlorodifluoromethane	**R**	MS %R value <10%.
206410-31	GF-B-9-1-2.5	Pyrene	**J**	LCS/LCSD RPD value was >20%
206410-34	GF-B-9-7.5-9	Pyrene	**J**	LCS/LCSD RPD value was >20%
206410-35	GF-B-9-7.5-9D	Pyrene	**J**	CCV recovery biased high (%D <-20%); LCS/LCSD RPD value was >20% (Low precision)
206446-05	HW-MW-1-0-1	Pyrene	**J**	CCV %D value was <-20% (high bias); LCD %R (high bias) and LCS/LCSD RPD values outside control criteria
206446-06	HW-MW-1-3-4	Pyrene	**J**	CCV %D value was <-20% (high bias); LCD %R (high bias) and LCS/LCSD RPD values outside control criteria
206446-07	HW-MW-1-6-7	Pyrene	**J**	CCV %D value was <-20% (high bias); LCD %R (high bias) and LCS/LCSD RPD values outside control criteria
206446-09	HW-B-2-3-4	Pyrene	**J**	CCV %D value was <-20% (high bias); LCD %R (high bias) and LCS/LCSD RPD values outside control criteria
206446-10	HW-B-2-6-7	Pyrene	**J**	LCD %R and LCS/LCSD RPD values outside control criteria
206446-11	HW-B-1-0-1	Benzo(a)pyrene	**UJ**	Internal standard recovery biased low

Laboratory ID	**Sample ID**	**Analyte**	**Qualifier**	**Qualified Reason**
206446-11	HW-B-1-0-1	Benzo(b)fluoranthene	**UJ**	Internal standard recovery biased low
206446-11	HW-B-1-0-1	Benzo(g,h,i)perylene	**UJ**	Internal standard recovery biased low
206446-11	HW-B-1-0-1	Benzo(k)fluoranthene	**UJ**	Internal standard recovery biased low
206446-11	HW-B-1-0-1	Dibenzo(a,h)anthracene	**UJ**	Internal standard recovery biased low
206446-11	HW-B-1-0-1	Di-n-octyl phthalate	**UJ**	Internal standard recovery biased low
206446-11	HW-B-1-0-1	Indeno(1,2,3-cd)pyrene	**UJ**	Internal standard recovery biased low
206446-13	HW-B-1-6-7	4,6-Dinitro-2-methylphenol	**UJ**	Internal standard recovery biased low
206446-13	HW-B-1-6-7	4-Bromophenyl phenyl ether	**UJ**	Internal standard recovery biased low
206446-13	HW-B-1-6-7	4-Nitroaniline	**UJ**	Internal standard recovery biased low
206446-13	HW-B-1-6-7	Anthracene	**UJ**	Internal standard recovery biased low
206446-13	HW-B-1-6-7	Carbazole	**UJ**	Internal standard recovery biased low
206446-13	HW-B-1-6-7	Di-n-butyl phthalate	**UJ**	Internal standard recovery biased low
206446-13	HW-B-1-6-7	Fluoranthene	**J**	Internal standard recovery biased low
206446-13	HW-B-1-6-7	Hexachlorobenzene	**UJ**	Internal standard recovery biased low
206446-13	HW-B-1-6-7	N-Nitrosodiphenylamine	**UJ**	Internal standard recovery biased low
206446-13	HW-B-1-6-7	Pentachlorophenol	**UJ**	Internal standard recovery biased low
206446-13	HW-B-1-6-7	Phenanthrene	**J**	Internal standard recovery biased low
206446-13	HW-B-1-6-7	Pyrene	**J**	LCD %R and LCS/LCSD RPD values outside control criteria
207068-09	Boiler-B-4-1-1.5-070612	Benzo(b)fluoranthene	**J**	Internal standard recovery biased high
206410-13	UST29-MW-1-8-9	Fluoranthene	**J**	Field duplicate analysis concentration difference was > 2RL
206410-14	UST29-MW-1-8-9-D	Fluoranthene	**J**	Field duplicate analysis concentration difference was > 2RL
206410-15	REC2-B-10-5-6	Acenaphthene	**UJ**	Low surrogate recovery
206410-15	REC2-B-10-5-6	Acenaphthylene	**UJ**	Low surrogate recovery
206410-15	REC2-B-10-5-6	Anthracene	**UJ**	Low surrogate recovery
206410-15	REC2-B-10-5-6	Benz(a)anthracene	**UJ**	Low surrogate recovery
206410-15	REC2-B-10-5-6	Benzo(a)pyrene	**J**	Low surrogate recovery
206410-15	REC2-B-10-5-6	Benzo(b)fluoranthene	**J**	Low surrogate recovery
206410-15	REC2-B-10-5-6	Benzo(g,h,i)perylene	**J**	Low surrogate recovery
206410-15	REC2-B-10-5-6	Benzo(k)fluoranthene	**UJ**	Low surrogate recovery
206410-15	REC2-B-10-5-6	Chrysene	**J**	Low surrogate recovery
206410-15	REC2-B-10-5-6	Dibenzo(a,h)anthracene	**UJ**	Low surrogate recovery
206410-15	REC2-B-10-5-6	Fluoranthene	**UJ**	Low surrogate recovery
206410-15	REC2-B-10-5-6	Fluorene	**UJ**	Low surrogate recovery
206410-15	REC2-B-10-5-6	Indeno(1,2,3-cd)pyrene	**UJ**	Low surrogate recovery
206410-15	REC2-B-10-5-6	Naphthalene	**UJ**	Low surrogate recovery
206410-15	REC2-B-10-5-6	Phenanthrene	**UJ**	Low surrogate recovery

Laboratory ID	Sample ID	Analyte	Qualifier	Qualified Reason
206410-15	REC2-B-10-5-6	Pyrene	**J**	Low surrogate recovery
206410-15	REC2-B-10-5-6	Total cPAHs TEQ	**J**	Low surrogate recovery
K1206542-002	REC6-MW-1-070612-D	Formaldehyde	**J**	MS/MSD RPD value was >30%
E1200626-002	GF-B-15A-1-2.5	1,2,3,4,7,8-HxCDF	**J**	Chlorobiphenyl ether interference was present
E1200626-002	GF-B-15A-1-2.5	1,2,3,7,8,9-HxCDF	**U**	Ion abundance ratio did not meet method requirement
E1200626-002	GF-B-15A-1-2.5	1,2,3,7,8-PeCDD	**U**	Ion abundance ratio did not meet method requirement
E1200626-002	GF-B-15A-1-2.5	1,2,3,7,8-PeCDF	**U**	Ion abundance ratio did not meet method requirement
E1200626-002	GF-B-15A-1-2.5	2,3,4,7,8-PeCDF	**U**	Ion abundance ratio did not meet method requirement
E1200626-002	GF-B-15A-1-2.5	2,3,7,8-TCDD	**U**	Ion abundance ratio did not meet method requirement
E1200650	GF-B-14-1-2.5	1,2,3,4,7,8-HxCDF	**J**	Chlorodiphenyl ether interference was present
E1200650	GF-B-14-1-2.5	1,2,3,6,7,8-HxCDF	**U**	Ion abundance ratio did not meet method requirement
E1200650	GF-B-14-1-2.5	1,2,3,7,8,9-HxCDD	**U**	Ion abundance ratio did not meet method requirement
E1200650	GF-B-14-1-2.5	1,2,3,7,8-PeCDF	**J**	Chlorodiphenyl ether interference
E1200650	GF-B-14-1-2.5	2,3,4,6,7,8-HxCDF	**J**	Chlorodiphenyl ether
E1200650	GF-B-14-1-2.5	OCDD	**J**	Labeled compound recovery biased low
E1200650	GF-B-14-1-2.5	OCDF	**J**	Labeled compound recovery biased low
E1200652-001	GF-B-2-2.5-4	1,2,3,4,7,8,9-HpCDF	**U**	Ion abundance ratio did not meet method requirement
E1200652-001	GF-B-2-2.5-4	1,2,3,4,7,8-HxCDD	**U**	Ion abundance ratio did not meet method requirement
E1200652-001	GF-B-2-2.5-4	1,2,3,4,7,8-HxCDF	**J**	Chlorobiphneyl ether interference
E1200652-001	GF-B-2-2.5-4	1,2,3,7,8-PeCDD	**U**	Ion abundance ratio did not meet method requirement
E1200652-001	GF-B-2-2.5-4	1,2,3,7,8-PeCDF	**J**	Chlorobiphneyl ether interference
E1200652-001	GF-B-2-2.5-4	2,3,4,6,7,8-HxCDF	**J**	Chlorobiphneyl ether interference
E1200652-001	GF-B-2-2.5-4	2,3,7,8-TCDD	**U**	Ion abundance ratio did not meet method requirement
E1200652-001	GF-B-2-2.5-4	OCDD	**J**	MS/MSD RPD value was >20%
E1200652-002	GF-B-1-1-2.5	1,2,3,4,7,8-HxCDD	**U**	Ion abundance ratio did not meet method requirement
E1200652-002	GF-B-1-1-2.5	1,2,3,7,8,9-HxCDD	**U**	Ion abundance ratio did not meet method requirement
E1200652-002	GF-B-1-1-2.5	OCDF	**U**	Ion abundance ratio did not meet method requirement
E1200652-003	GF-B-4-2.5-4	OCDD	**J**	Labeled compound recovery biased low
E1200652-003	GF-B-4-2.5-4	OCDF	**UJ**	Labeled compound recovery biased low

Laboratory ID	Sample ID	Analyte	Qualifier	Qualified Reason
E1200868	Boiler-B-5-1-1.5-070512	1,2,3,4,7,8,9-HpCDF	**U**	Ion abundance ratio did not meet method requirement
E1200868	GF-B-9-2.5-3.5-D	1,2,3,4,7,8,9-HpCDF	**U**	Ion abundance ratio did not meet method requirement
E1200868	GF-B-9-2.5-3.5-D	1,2,3,4,7,8-HxCDD	**U**	Ion abundance ratio did not meet method requirement
E1200868	Boiler-B-1-1-2-070512	1,2,3,4,7,8-HxCDF	**J**	Chlorobiphenyl ether interference
E1200868	Boiler-B-2-1-2-070512	1,2,3,4,7,8-HxCDF	**J**	Chlorobiphenyl ether interference
E1200868	Boiler-B-4-1-1.5-070512	1,2,3,4,7,8-HxCDF	**J**	Chlorobiphenyl ether interference
E1200868	GF-B-9-2.5-3.5	1,2,3,4,7,8-HxCDF	**U**	Ion abundance ratio did not meet method requirement
E1200868	GF-B-9-2.5-3.5-D	1,2,3,4,7,8-HxCDF	**J**	Chlorobiphenyl ether interference
E1200868	Boiler-B-5-1-1.5-070512	1,2,3,4,7,8-HxCDF	**U**	Ion abundance ratio did not meet method requirement
E1200868	GF-B-12-1-2.5	1,2,3,4,7,8-HxCDF	**U**	Ion abundance ratio did not meet method requirement
E1200868	GF-B-12-1-2.5	1,2,3,6,7,8-HxCDF	**U**	Ion abundance ratio did not meet method requirement
E1200868	GF-B-9-2.5-3.5-D	1,2,3,6,7,8-HxCDF	**U**	Ion abundance ratio did not meet method requirement
E1200868	Boiler-B-5-1-1.5-070512	1,2,3,7,8,9-HxCDD	**U**	Ion abundance ratio did not meet method requirement
E1200868	GF-B-9-2.5-3.5-D	1,2,3,7,8,9-HxCDD	**U**	Ion abundance ratio did not meet method requirement
E1200868	Boiler-B-2-1-2-070512	1,2,3,7,8,9-HxCDF	**J**	Chlorobiphenyl ether interference
E1200868	Boiler-B-4-1-1.5-070512	1,2,3,7,8,9-HxCDF	**U**	Ion abundance ratio did not meet method requirement
E1200868	Boiler-B-2-1-2-070512	1,2,3,7,8-PeCDD	**U**	Ion abundance ratio did not meet method requirement
E1200868	GF-B-9-2.5-3.5-D	1,2,3,7,8-PeCDD	**U**	Ion abundance ratio did not meet method requirement
E1200868	Boiler-B-1-1-2-070512	1,2,3,7,8-PeCDF	**J**	Chlorobiphenyl ether interference
E1200868	Boiler-B-2-1-2-070512	1,2,3,7,8-PeCDF	**J**	Chlorobiphenyl ether interference
E1200868	Boiler-B-4-1-1.5-070512	1,2,3,7,8-PeCDF	**J**	Chlorobiphenyl ether interference
E1200868	GF-B-9-2.5-3.5-D	1,2,3,7,8-PeCDF	**U**	Ion abundance ratio did not meet method requirement
E1200868	Boiler-B-1-1-2-070512	2,3,4,6,7,8-HxCDF	**J**	Chlorobiphenyl ether interference was present
E1200868	Boiler-B-4-1-1.5-070512	2,3,4,6,7,8-HxCDF	**J**	Chlorobiphenyl ether interference

Laboratory ID	Sample ID	Analyte	Qualifier	Qualified Reason
E1200868	GF-B-9-2.5-3.5	2,3,4,6,7,8-HxCDF	**U**	Ion abundance ratio did not meet method requirement
E1200868	Boiler-B-2-1-2-070512	2,3,4,7,8-PeCDF	**J**	Chlorobiphenyl ether interference
E1200868	Boiler-B-4-1-1.5-070512	2,3,4,7,8-PeCDF	**J**	Chlorobiphenyl ether interference was present
E1200868	GF-B-12-1-2.5	2,3,4,7,8-PeCDF	**U**	Ion abundance ratio did not meet method requirement
E1200868	Boiler-B-1-1-2-070512	2,3,7,8-TCDD	**U**	Ion abundance ratio did not meet method requirement
E1200868	GF-B-9-2.5-3.5	OCDD	**J**	Field duplicate analysis concentration difference >2RL
E1200868	GF-B-9-2.5-3.5-D	OCDD	**J**	Field duplicate analysis concentration difference >2RL
E1200868	Boiler-B-1-1-2-070512	OCDF	**J**	Chlorobiphenyl ether interference
E1200868	Boiler-B-2-1-2-070512	OCDF	**J**	Chlorobiphenyl ether interference
E1200868	GF-B-9-2.5-3.5	Total HpCDD	**J**	Field duplicate analysis concentration difference >2RL
E1200868	GF-B-9-2.5-3.5-D	Total HpCDD	**J**	Field duplicate analysis concentration difference >2RL
E1200868	GF-B-9-2.5-3.5	Total HxCDD	**J**	Field duplicate analysis concentration difference >2RL
E1200868	GF-B-9-2.5-3.5-D	Total HxCDD	**J**	Field duplicate analysis concentration difference >2RL
E1200868	GF-B-9-2.5-3.5	Total PeCDD	**J**	Field duplicate analysis concentration difference >2RL
E1200868	GF-B-9-2.5-3.5-D	Total PeCDD	**J**	Field duplicate analysis concentration difference >2RL
E1200868	GF-B-9-2.5-3.5	Total TCDD	**J**	Field duplicate analysis concentration difference >2RL
E1200868	GF-B-9-2.5-3.5-D	Total TCDD	**J**	Field duplicate analysis concentration difference >2RL
E1201140-001	Boiler-B-3-1-2-070512	1,2,3,4,6,7,8-HpCDF	**J**	Labeled compound recovery biased low
E1201140-001	Boiler-B-3-1-2-070512	1,2,3,4,7,8-HxCDF	**UJ**	Labeled compound recovery biased low
E1201140-001	Boiler-B-3-1-2-070512	1,2,3,7,8,9-HxCDD	**U**	Ion abundance ratio did not meet method requirement
E1201140-001	Boiler-B-3-1-2-070512	2,3,4,6,7,8-HxCDF	**UJ**	Labeled compound recovery biased low
E1201140-001	Boiler-B-3-1-2-070512	OCDD	**J**	Labeled compound recovery biased low
E1201140-001	Boiler-B-3-1-2-070512	OCDF	**J**	Labeled compound recovery biased low

Table II. Data Affected by Detections in Method Blank

SDG #	Sample ID	Compound	Original Result	Adjusted Result	Unit	Report Section
206098_CASK	MW-2-060612	Dissolved Beryllium	0.0023 J	**0.02 U**	µg/L	**7.4**
206098_CASK	OMS-MW-1-060612	Dissolved Beryllium	0.0012 J	**0.02 U**	µg/L	**7.4**
206098_CASK	REC7-MW-3-060612	Dissolved Beryllium	0.0009 J	**0.02 U**	µg/L	**7.4**
206098_CASK	REC7-MW-4-060612	Dissolved Beryllium	0.009 J	**0.02 U**	µg/L	**7.4**
206098_CASK	MW-1-060612	Dissolved Thallium	0.005 J	**0.02 U**	µg/L	**7.4**
206098_CASK	MW-2-060612	Dissolved Thallium	0.005 J	**0.02 U**	µg/L	**7.4**
206098_CASK	REC7-MW-3-060612	Dissolved Thallium	0.006 J	**0.02 U**	µg/L	**7.4**
206098_CASK	REC7-MW-4-060612	Dissolved Thallium	0.012 J	**0.02 U**	µg/L	**7.4**
206098_CASK	OMS-MW-1-060612	Dissolved Thallium	0.026	**0.026J**	µg/L	**7.4**
206098_CASK	MW-2-060612	Total Beryllium	0.0005 J	**0.02 U**	µg/L	**7.4**
206098_CASK	REC7-MW-4-060612	Total Beryllium	0.0005 J	**0.02 U**	µg/L	**7.4**
206098_CASK	MW-2-060612	Total Thallium	0.004 J	**0.02 U**	µg/L	**7.4**
206098_CASK	REC7-MW-4-060612	Total Thallium	0.008 J	**0.02 U**	µg/L	**7.4**
206136_CASK	REC3-MW-1-060712	Dissolved Beryllium	0.0012 J	**0.02 U**	µg/L	**7.4**
206136_CASK	UST70-MW-2-060712	Dissolved Beryllium	0.0014 J	**0.02 U**	µg/L	**7.4**
206136_CASK	REC3-MW-1-060712	Dissolved Thallium	0.007 J	**0.02 U**	µg/L	**7.4**
206136_CASK	UST70-MW-2-060712	Dissolved Thallium	0.014 J	**0.02 U**	µg/L	**7.4**
E1200868	Boiler-B-5-1-1.5-070512	1,2,3,4,7,8-HxCDF	0.212 J	**0.212 U**	*n*g/kg	**8.5**
E1200868	GF-B-12-1-2.5	1,2,3,4,7,8-HxCDF	0.247 J	**0.247 U**	*n*g/kg	**8.5**
E1200868	GF-B-12-1-2.5	2,3,4,6,7,8-HxCDF	0.195 J	**0.195 U**	*n*g/kg	**8.5**
E1200868	GF-B-9-2.5-3.5	2,3,4,6,7,8-HxCDF	0.0998 J	**0.0998 U**	*n*g/kg	**8.5**
206136_CASK	REC3-MW-1-060712	Ammonia as Nitrogen	0.041 J	**0.05 U**	mg/L	**10.4**

Table III. Data Qualifiers are defined as follows:

Data Qualifier	Definition
R	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
J	The analyte was detected above the reported quantitation limit, and the reported concentration was an estimated value.
U	The analyte was analyzed for, but was considered not detected at the reporting limit or reported value.
UJ	The analyte was analyzed for, and the associated quantitation limit was an estimated value.

REFERENCES

USEPA *Contract Laboratory Program National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review,* Office of Superfund Remediation and Technical Innovation, U.S. Environmental Protection Agency, September 2011, USEPA 540/R-11/016

USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review,* Office of Superfund Remediation and Technical Innovation, U.S. Environmental Protection Agency, January 2010, USEPA 540/R-10/011

USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* Office of Superfund Remediation and Technical Innovation, U.S. Environmental Protection Agency, June 2008, USEPA-540-R-08-01.

USEPA *Method 1631, Revision E: Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry, Office of Water, U.S. Environmental Protection Agency, August 2002, EPA-821-R-02-019.*

USEPA *Test Methods for Evaluating Solid Waste (SW-846). Third Edition and Revised Update IIIA.* Office of Solid Waste and Emergency Response, Washington, D.C. April 1998.

USEPA *Region 10 Standard Operating Procedure for the Validation of Polychlorinated Dibenzo-p-Dioxin (PCDD) and Polychlorinated Dibenzofuran (PCDF) Data*, January 1996.

USEPA *Methods for Chemical Analysis of Water and Wastes,* EPA-600/4-79-020, March 1983 and updates.

Standard Methods for the Examination of Water and Wastewater, American Public Health Association, 20th Edition, 1995.

Ecology (Washington State Department of). 1997. *Analytical Methods for Petroleum Hydrocarbons.* Publication No. ECY 97-602. June 1997.

PSEP *Recommended Guidelines for Measuring Organic Compounds in Puget Sound Water, Sediment and Tissue Samples,* Puget Sound Water Quality Authority, April 1997.

Aspect Consulting, LLC. *Quality Assurance Project Plan, Port of Bellingham Former GP Mill Property RI/FS,* Seattle, Washington. September, 2009.

Appendix A

Field duplicate RPD is indicative of field and laboratory precision and sample homogeneity in combination. The CLP National Functional Guidelines or *Work Plan* do not specify criteria for field duplicate evaluation. An advisory criterion of 35% was applied to evaluating the RPD values of field duplicate results that are ≥5xRL. For results that are <5xRL, an advisory criterion of ±2RL was applied to evaluating the concentration differences. The RPD (or concentration difference as applicable) values and data qualification for detected compounds in field duplicates are presented as follows:

Analyte	Units	RL	Parent & Field Duplicate Sample Result				RPD	Delta	Data Qualifier
			AP-MW-1-070312		**AP-MW-1-070312-D**				
Arsenic, Dissolved	µg/L	1	1.2		1.22			0.02	
Arsenic, Total	µg/L	1	1	U	1.11			0.11	
Nickel, Dissolved	µg/L	1	1.85		2.04			0.19	
Nickel, Total	µg/L	1	1.8		2.02			0.22	
Zinc, Dissolved	µg/L	1	1.39		1.74			0.35	
Zinc, Total	µg/L	1	1.68		1.82			0.14	
			AP-MW-1-1-2		**AP-MW-1-1-2-D**				
Antimony	mg/kg	1	1	U	1	U		0	
Arsenic	mg/kg	1	4.86		4.62			0.24	
Beryllium	mg/kg	1	1	U	1	U		0	
Cadmium	mg/kg	1	1	U	1	U		0	
Chromium	mg/kg	1	11.6		11		5%		
Copper	mg/kg	1	11.8		9.5		22%		
Lead	mg/kg	1	2.42		2.89			0.47	
Mercury	mg/kg	0.1	0.1	U	0.1	U		0	
Nickel	mg/kg	1	19		18.6		2%		
Selenium	mg/kg	1	1	U	1	U		0	
Silver	mg/kg	1	1	U	1	U		0	
Thallium	mg/kg	1	1	U	1	U		0	
Zinc	mg/kg	1	21.9		21.5		2%		
pH	units	0.1	7.44		7.45		0%		
			AP-MW-1-6-7		**AP-MW-1-6-7-D**				
Antimony	mg/kg	1	1	U	1	U		0	
Arsenic	mg/kg	1	5.72		2.57			3.15	**J/J**
Beryllium	mg/kg	1	1	U	1	U		0	
Cadmium	mg/kg	1	1	U	1	U		0	
Chromium	mg/kg	1	18.3		14.6		22%		

Analyte	Units	RL	Parent & Field Duplicate Sample Result				RPD	Delta	Data Qualifier
Copper	mg/kg	1	17.2		12		36%		**J/J**
Lead	mg/kg	1	2.52		2.13			0.39	
Mercury	mg/kg	0.1	0.1	U	0.1	U		0	
Nickel	mg/kg	1	28.7		20.6		33%		
Selenium	mg/kg	1	1	U	1	U		0	
Silver	mg/kg	1	1	U	1	U		0	
Thallium	mg/kg	1	1	U	1	U		0	
Zinc	mg/kg	1	32.2		27.2		17%		
			GF-B-9-2.5-3.5		**GF-B-9-2.5-3.5-D**				
1,2,3,4,6,7,8-HpCDD	*pg/g*	2.56	3.73	B	8.01	B		4.28	
1,2,3,4,6,7,8-HpCDF	*pg/g*	2.56	0.72	BJ	1.22	BJ		0.5	
1,2,3,4,7,8,9-HpCDF	*pg/g*	2.56	2.56	U	0.0979	JK		0.098	
1,2,3,4,7,8-HxCDD	*pg/g*	2.56	0.107	J	0.186	JK		0.079	
1,2,3,4,7,8-HxCDF	*pg/g*	2.56	0.169	BJK	0.36	BJ		0.191	
1,2,3,6,7,8-HxCDD	*pg/g*	2.56	0.27	J	0.443	J		0.173	
1,2,3,6,7,8-HxCDF	*pg/g*	2.56	0.0983	J	0.167	JK		0.069	
1,2,3,7,8,9-HxCDD	*pg/g*	2.56	0.232	J	0.255	JK		0.023	
1,2,3,7,8,9-HxCDF	*pg/g*	2.56	2.56	U	2.15	U		0	
1,2,3,7,8-PeCDD	*pg/g*	2.56	2.56	U	0.175	JK		0.175	
1,2,3,7,8-PeCDF	*pg/g*	2.56	2.56	U	0.193	JK		0.193	
2,3,4,6,7,8-HxCDF	*pg/g*	2.56	0.0998	BJK	0.219	BJ		0.119	
2,3,4,7,8-PeCDF	*pg/g*	2.56	2.56	U	0.264	J		2.296	
2,3,7,8-TCDD	*pg/g*	1.02	1.02	U	0.86	U		0	
2,3,7,8-TCDF	*pg/g*	1.02	1.02	U	0.86	U		0	
OCDD	*pg/g*	5.11	19	B	139	B		120	**J/J**
OCDF	*pg/g*	5.11	1.51	BJ	4.24	BJ		2.73	
Total HpCDD	*pg/g*	2.56	8.28		16.8			8.52	**J/J**
Total HpCDF	*pg/g*	2.56	2.1	J	3.1			1	
Total HxCDD	*pg/g*	2.56	8.76		16.2			7.44	**J/J**
Total HxCDF	*pg/g*	2.56	1.16	J	1.89			0.73	
Total PeCDD	*pg/g*	2.56	4.69		10.7	J		6.01	**J/J**
Total PeCDF	*pg/g*	2.56	0.446	J	3.38			2.934	
Total TCDD	*pg/g*	1.02	3.88		10			6.12	**J/J**
Total TCDF	*pg/g*	1.02	1.02	U	1.03			1.03	
			GF-B-9-7.5-9		**GF-B-9-7.5-9-D**				
Pyrene	mg/kg	0.06	0.03		0.03			0	

Analyte	**Units**	**RL**	**Parent & Field Duplicate Sample Result**				**RPD**	**Delta**	**Data Qualifier**
			NRP-MW-1-060812		**NRP-MW-1-060812D**				
Ammonia	mg/L	0.05	3.26		3.26		0%		
Dissolved Sulfide	mg/L	0.05	0.05	U	0.05	U		0	
			REC2-B-10-7-8		**REC2-B-10-7-8-D**				
TPH-Motor Oil	mg/kg	250	3100		1800		53%		**J/J**
TPH-Diesel	mg/kg	50	990		540		59%		**J/J**
Acenaphthene	mg/kg	0.1	0.1	U	0.1	UJ		0	
Acenaphthylene	mg/kg	0.1	0.1	U	0.1	UJ		0	
Anthracene	mg/kg	0.1	0.1	U	0.1	UJ		0	
Benz(a)anthracene	mg/kg	0.1	0.1	U	0.1	UJ		0	
Benzo(a)pyrene	mg/kg	0.1	0.26		0.26	J		0	
Benzo(b)fluoranthene	mg/kg	0.1	0.1	U	0.11	J		0.01	
Benzo(g,h,i)perylene	mg/kg	0.1	0.54		0.41	J		0.13	
Benzo(k)fluoranthene	mg/kg	0.1	0.1	U	0.1	UJ		0	
Chrysene	mg/kg	0.1	0.31		0.21	J		0.1	
Dibenzo(a,h)anthracene	mg/kg	0.1	0.1	U	0.1	UJ		0	
Fluoranthene	mg/kg	0.1	0.1	U	0.1	UJ		0	
Fluorene	mg/kg	0.1	0.1	U	0.1	UJ		0	
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.25		0.2	J		0.05	
Naphthalene	mg/kg	0.1	0.1	U	0.1	U		0	
Phenanthrene	mg/kg	0.1	0.1	U	0.1	UJ		0	
Pyrene	mg/kg	0.1	0.14		0.27	J		0.13	
			REC6-MW-1-070212		**REC6-MW-1070212D**				
TPH-Gasoline	µg/L	2000	24000		25000	4%			
1,2,4-Trimethylbenzene	µg/L	1	9.3		8.9	4%			
1,3,5-Trimethylbenzene	µg/L	1	4.3		4.2		0.1		
Acetone	µg/L	10	14		14		0		
Ethylbenzene	µg/L	100	2000		2000	0%			
Isopropylbenzene	µg/L	1	14		13	7%			
m,p-Xylenes	µg/L	200	6900		6900	0%			
Naphthalene	µg/L	1	1.7		1.4		0.3		
n-Propylbenzene	µg/L	1	7.7		7.4	4%			
o-Xylene	µg/L	100	1600		1600	0%			
Toluene	µg/L	1	18		17	6%			
			REC6-MW-1-070612		**REC6-MW-1-070612D**				
Formaldehyde	µg/L	100	30	J	29	J		1	

Analyte	**Units**	**RL**	**Parent & Field Duplicate Sample Result**				**RPD**	**Delta**	**Data Qualifier**
			REC6-MW-1-6		**REC6-MW-1-6-D**				
TPH-Gasoline	mg/kg	200	9700		7900		20%		
1,2,4-Trimethylbenzene	mg/kg	0.05	9.3		9.5		2%		
1,2-Dichlorobenzene	mg/kg	0.05	0.4		0.42		5%		
1,3,5-Trimethylbenzene	mg/kg	0.05	5.1		4.6		10%		
1,3,5-Trimethylbenzene	mg/kg	2.5	5.5		4.5			1	
Ethylbenzene	mg/kg	25	630		660		5%		
Isopropylbenzene	mg/kg	0.05	9.6		7.9		19%		
m,p-Xylenes	mg/kg	50	1800		2300		24%		
Naphthalene	mg/kg	0.05	0.9		1.3		36%		**J/J**
n-Propylbenzene	mg/kg	0.05	7.6		6.9		10%		
o-Xylene	mg/kg	2.5	450		500		11%		
p-Isopropyltoluene	mg/kg	0.05	0.33		0.29		13%		
sec-Butylbenzene	mg/kg	0.05	0.27		0.22		20%		
Toluene	mg/kg	0.05	1.6		2.2		32%		
			UST29-MW-1-070212		**UST29-MW-1-070212D**				
TPH-Motor Oil	µg/L	500	500	U	500	U		0	
TPH_Diesel	µg/L	100	100	U	100	U		0	
Total Suspended Solids	mg/L	10	10	U	10	U		0	
Acenaphthene	µg/L	0.05	0.18		0.19		5%		
Acenaphthylene	µg/L	0.05	0.05	U	0.05	U		0	
Anthracene	µg/L	0.05	0.059		0.065			0.006	
Benz(a)anthracene	µg/L	0.01	0.036		0.042			0.006	
Benzo(a)pyrene	µg/L	0.01	0.018		0.023			0.005	
Benzo(b)fluoranthene	µg/L	0.01	0.026		0.033			0.007	
Benzo(k)fluoranthene	µg/L	0.01	0.01	U	0.011			0.001	
Chrysene	µg/L	0.01	0.037		0.041			0.004	
Fluoranthene	µg/L	0.05	0.19		0.22			0.03	
Fluorene	µg/L	0.05	0.085		0.09			0.005	
Indeno(1,2,3-cd)pyrene	µg/L	0.01	0.01	U	0.011			0.001	
Naphthalene	µg/L	0.05	0.064		0.065			0.001	
Phenanthrene	µg/L	0.05	0.29		0.31			0.02	
Pyrene	µg/L	0.05	0.16		0.18			0.02	
			UST29-MW-1-7-8		**UST29-MW-1-7-8-D**				
TPH-Motor Oil	mg/kg	250	920		990		7%		
TPH-Diesel	mg/kg	50	1700		1500		13%		

Analyte	**Units**	**RL**	**Parent & Field Duplicate Sample Result**				**RPD**	**Delta**	**Data Qualifier**
Ethylbenzene	mg/kg	0.05	0.056		0.05	U		0.056	
Isopropylbenzene	mg/kg	0.05	1.1		1		10%		
m,p-Xylenes	mg/kg	0.1	0.18		0.12			0.06	
Naphthalene	mg/kg	0.05	0.2		0.19		5%		
n-Propylbenzene	mg/kg	0.05	0.83		0.76		9%		
			UST29-MW-1-8-9		**UST29-MW-1-8-9-D**				
Anthracene	mg/kg	10	10	U	12			2	
Benz(a)anthracene	mg/kg	10	18		30			12	
Benzo(a)pyrene	mg/kg	10	12		24			12	
Benzo(b)fluoranthene	mg/kg	10	15		30			15	
Benzo(g,h,i)perylene	mg/kg	10	10	U	12			12	
Benzo(k)fluoranthene	mg/kg	10	10	U	12			12	
Chrysene	mg/kg	10	20		34			14	
Fluoranthene	mg/kg	10	37		58			21	**J/J**
Indeno(1,2,3-cd)pyrene	mg/kg	10	10	U	15			15	
Phenanthrene	mg/kg	10	25		37			12	
Pyrene	mg/kg	10	32		49			17	

Notes:

B – The anakyte was also detected in the associated blank.
Delta – Concentration difference between the parent sample and its field duplicate
J – The reported value for the analyte was an estimated value.
K – The ion ratio for this detection did not meet the method requirement.
mg/kg – milligram per kilogram
mg/L – milligram per liter
*p*g/g – pictogram per gram
RL – Reporting limit
RPD – Relative percent difference
U – The analyte was not detected at or above the reporting limit.
μg/L – microgram per liter

Data Validation Report

Port of Bellingham Former GP Mill Property RI/FS
Kimberly Clark, Washington

Round 3 Soil and Groundwater Sampling

Prepared for:

Aspect Consulting LLC
401 Second Ave South, Suite 201
Seattle, WA 98014

Prepared by:

Pyron Environmental, Inc.
3530 32nd Way, NW
Olympia, WA 98502

Approved By: Mingta Lin Date*:* ***12/23/2012***
Mingta Lin, Senior Project Chemist

ACRONYMS

%D	percent difference
%D_f	percent drift
%R	percent recovery
%RSD	percent relative standard deviation
AMU	atomic mass unit
CCB	continuing calibration blank
CCC	calibration check compound
CCV	continuing calibration verification
CF	calibration factor
CLP	U.S. EPA Contract Laboratory Program
COC	chain-of-custody
CVAFS	cold vapor atomic fluorescent spectrometry
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethylene
DDT	dichlorodiphenyltrichloroethane
DFTPP	decafluorotriphenylphosphine
ECD	electron capture detector
EDB	1,2-dibromoethane
EPA	U.S. Environmental Protection Agency
FID	Flame ionization detector
GC/MS	gas chromatograph/mass spectrometer
GFAA	graphite furnace atomic absorption spectrometer
GPC	gel permeation chromatography
HPLC	high performance liquid chromatography
ICAL	initial calibration
ICB	initial calibration blank
ICP/MS	inductively coupled plasma/ mass spectrometer
ICSA	ICP interference check sample solution A
ICV	initial calibration verification
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
MDL	method detection limit
µg/kg	microgram per kilogram
µg/L	microgram per liter

mg/kg	milligram per kilogram
mg/L	Milligram per liter
MS	matrix spike
MSD	matrix spike duplicate
NFGs	CLP National Functional Guidelines for Data Review (EPA 2008 – Organics; EPA 2010 – Inorganics)
OPR	ongoing precision and recovery
PCBs	polychlorinated biphenyls
QA/QC	quality assurance/quality control
QAPP	quality assurance project plan
RF	response factor
RL	reporting limit
RPD	relative percent difference
RRT	relative retention time
SDG	sample delivery group
SIM	selective ion monitoring
SVOCs	semi-volatile organic compounds
TSS	total suspended solids
VOCs	volatile organic compounds

INTRODUCTION

This report presents and discusses findings of the data validation performed on analytical data for soil samples collected during August and September 2012 for the referenced project. The laboratory reports validated herein were submitted by Friedman & Bruya, Inc. and Columbia Analytical Services, Inc. (CAS, part of ALS Group) in Kelso, Washington.

A level III data validation was performed on this laboratory report. The validation followed the procedures specified in USEPA CLP Functional Guidelines ([NFGs], EPA 2008 – Organics; EPA 2010 – Inorganics), with modifications to accommodate project and analytical method requirements. The numerical quality assurance/quality control (QA/QC) criteria applied to the validation were in accordance with those specified in the quality assurance project plans ([QAPPs], Aspect, 2009) and the current performance-based control limits established by the laboratory (laboratory control limits). Instrument calibration, frequency of QC analyses, and analytical sequence requirements were evaluated against the respective analytical methods.

Validation findings are discussed in each section pertinent to the QC parameter for each type of analysis. Qualified data with applied data qualifiers are summarized in the **Summary** section at the end of this report.

Samples and the associated analyses validated herein are summarized as follows:

Field Sample ID	Laboratory Sample ID	Sample Date	Sample Type	Analysis					
				VOCs	SVOCs PAHs	PCBs	TPH-G TPH-Dx	Metals	Miscellaneous
MW-1-082712	208375-01	8/27/12	Water	X	X		X	X(T)	TSS
MW-2-082712	208375-02	8/27/12	Water	X	X		X	X(T,D)	TSS
MW-4-082712	208375-03	8/27/12	Water	X	PAHs		X	Pb(T,D)	TSS
MW-3-082712	208375-04	8/27/12	Water	X	PAHs		X		TSS
MW-4-082712-D	208375-05	8/27/12	Water	X	PAHs		X	Pb(T,D)	TSS
UST68-MW-1-082712	208375-06	8/27/12	Water	X			TPH-G		EDB,TSS
UST68-MW-2-082712	208375-07	8/27/12	Water	X			TPH-G		EDB,TSS
REC2-MW-5-082712	208375-08	8/27/12	Water	X	PAHs		X		TSS
UST68-MW-4-082712	208375-09	8/27/12	Water	X			TPH-G		EDB,TSS
OMS-MW-1-082812	208404-01	8/28/12	Water	X	X		X	X(D)	TSS
REC7-MW-3-082812	208404-02	8/28/12	Water	X	SVOCs			X(D)	TSS
UST68-MW-5-082812	208404-03	8/28/12	Water	X			TPH-G		EDB,TSS
REC7-MW-4-082812	208404-04	8/28/12	Water	X	SVOCs		X	X(T,D)	TSS
HW-MW-1-082812	208404-05	8/28/12	Water	X	PAHs		X	X(D)	TSS
REC6-MW-1-082812	208404-06	8/28/12	Water	X			X		

				Analysis					
Field Sample ID	**Laboratory Sample ID**	**Sample Date**	**Sample Type**	**VOCs**	**SVOCs PAHs**	**PCBs**	**TPH-G TPH-Dx**	**Metals**	**Miscellaneous**
REC6-MW-1-082812-D	208404-07	8/28/12	Water	X					
UST29-MW-1-082812	208404-08	8/28/12	Water	X	PAHs		X		TSS
UST29-MW-1-082812-D	208404-09	8/28/12	Water				TPH-Dx		
UST69-MW-1-082812	208404-10	8/28/12	Water	X			TPH-G	Pb(T,D)	EDB,TSS
UST69-MW-1-082812-D	208404-11	8/28/12	Water	X			TPH-G		EDB,TSS
UST70-MW-1-082912	208426-01	8/29/12	Water		PAHs		TPH-Dx		TSS
REC3-MW-1-082912	208426-02	8/29/12	Water	X	X		TPH-Dx	X(D)	TSS
UST70-MW-2-082912	208426-03	8/29/12	Water	X	X		TPH-Dx	X(D)	TSS
MW-6-082912	208426-04	8/29/12	Water	X	X		X	X(T,D)	TSS
UG-MW-2-082912	208426-05	8/29/12	Water	X				X(D)	
CMS-MW-1-082912	208426-06	8/29/12	Water	X	PAHs		X	X(T,D)	
REC5-MW-1-082912	208426-07	8/29/12	Water	X				X(T,D)	
UST71-MW-1-082912	208426-08	8/29/12	Water	X	PAHs		TPH-Dx		
REC5-MW-1-082912-D	208426-09	8/29/12	Water					X(T,D)	
UG-MW-1-083012	208463-01	8/30/12	Water					X(T,D)	TSS
REC6-MW-2-083012	208463-02	8/30/12	Water	X	SVOCs		X	X(D)	TSS
REC7-MW-2-083012	208463-04	8/30/12	Water	X	SVOCs			X(T,D)	TSS
NRP-MW-3-083012	208463-05	8/30/12	Water	X	X		X	X(D)	TSS
REC7-MW-1-083012	208463-06	8/30/12	Water	X	SVOCs			X(D)	TSS
NRP-MW-5-083012	208463-07	8/30/12	Water					X(T,D)	TSS
NRP-MW-4-083012	208463-08	8/30/12	Water					X(T,D)	TSS
AP-MW-1-083112	208491-01	8/31/12	Water					X(T,D)	TSS
MW-5-083112	208491-02	8/31/12	Water	X	X		X	X(D)	TSS
NRP-MW-2-083112	208491-03	8/31/12	Water	X	X		X	X(D)	TSS
NRP-MW-1-083112	208491-04	8/31/12	Water	X	PAHs		X	X(D)	TSS
NRP-MW-1-083112-D	208491-05	8/31/12	Water					X(D)	
REC1-MW-2-6-7	209028-01	9/4/12	Soil	X	PAHs		X		
REC1-MW-3-5.5-6.5	209028-02	9/4/12	Soil	X	PAHs		X		
REC1-MW-3-12-13	209028-03	9/4/12	Soil	X	PAHs		X		
REC1-MW-3-12-13-D	209028-04	9/4/12	Soil				TPH-Dx		
REC1-MW-3-24-25	209028-05	9/4/12	Soil	X	PAHs		X		
REC1-MW-1-5-6	209028-06	9/4/12	Soil	X	PAHs		X		
REC1-MW-1-11-12	209028-07	9/4/12	Soil	X	PAHs		X		
REC1-MW-1-13-14	209028-08	9/4/12	Soil	X	PAHs		X		

				Analysis					
Field Sample ID	**Laboratory Sample ID**	**Sample Date**	**Sample Type**	**VOCs**	**SVOCs PAHs**	**PCBs**	**TPH-G TPH-Dx**	**Metals**	**Miscellaneous**
REC1-MW-1-11-12-D	209028-09	9/4/12	Soil		PAHs				
REC1-MW-8-7-8	209028-10	9/4/12	Soil	X	PAHs		X		
REC1-MW-8-12-13	209028-11	9/4/12	Soil	X	PAHs		X		
REC1-MW-8-15-16	209028-12	9/4/12	Soil	X	PAHs		X		
REC1-MW-9-6-7	209066-01	9/5/12	Soil		PAHs		X		
GF11-B-3-0-1	209066-02	9/5/12	Soil	X				Pb	
GF11-B-3-2-3	209066-03	9/5/12	Soil					Pb	
GF11-B-3-5-6	209066-04	9/5/12	Soil					Pb	
GF11-B-1-0-1	209066-06	9/5/12	Soil					Pb	
GF11-B-1-2-3	209066-07	9/5/12	Soil					Pb	
GF11-B-1-2-3-D	209066-08	9/5/12	Soil					Pb	
GF11-B-1-5-6	209066-09	9/5/12	Soil					Pb	
GF11-B-2-0-1	209066-11	9/5/12	Soil					Pb	
GF11-B-2-2-3	209066-12	9/5/12	Soil					Pb	
GF11-B-2-5-6	209066-13	9/5/12	Soil					Pb	
GF11-B-2-7-8	209066-14	9/5/12	Soil					Pb	
Boiler-B-3A-1-2	209066-15	9/5/12	Soil		PAHs		TPH-Dx	X	
Boiler-B-3A-4-5	209066-16	9/5/12	Soil		PAHs		TPH-Dx	X	
Boiler-B-3A-6.5-7.5	209066-17	9/5/12	Soil		PAHs		TPH-Dx	X	
Boiler-MW-1-10-11	209066-20	9/5/12	Soil		PAHs		TPH-Dx	X	
Boiler-MW-1-12-13	209066-21	9/5/12	Soil		PAHs		TPH-Dx	X	
Boiler-MW-1-16-17	209066-22	9/5/12	Soil		PAHs		TPH-Dx	X	
Boiler-B-3B-1-2	209066-23	9/5/12	Soil		PAHs		TPH-Dx	X	
Boiler-B-3B-4-5	209066-24	9/5/12	Soil		PAHs		TPH-Dx	X	
DA-B-1-1-2	209066-25	9/5/12	Soil		PAHs		TPH-Dx		
DA-B-1-5-6	209066-26	9/5/12	Soil		PAHs		TPH-Dx		
DA-B-1-7-8	209066-27	9/5/12	Soil		PAHs		TPH-Dx		
Boiler-HA-2A-1-1	209066-28	9/5/12	Soil		PAHs		TPH-Dx	As, Pb	
Boiler-HA-2A-2-3	209066-29	9/5/12	Soil		PAHs		TPH-Dx	As, Pb	
Boiler-HA-2C-0-1	209066-30	9/5/12	Soil		PAHs		TPH-Dx	As, Pb	
Boiler-HA-2C-2-3	209066-31	9/5/12	Soil		PAHs		TPH-Dx	As, Pb	
Boiler-HA-2B-0-1	209066-32	9/5/12	Soil		PAHs		TPH-Dx	As, Pb	
Boiler-HA-2B-0-1-D	209066-33	9/5/12	Soil					As, Pb	
REC5-HA-1-0-1	209066-34	9/5/12	Soil					X	

				Analysis					
Field Sample ID	**Laboratory Sample ID**	**Sample Date**	**Sample Type**	**VOCs**	**SVOCs PAHs**	**PCBs**	**TPH-G TPH-Dx**	**Metals**	**Miscellaneous**
REC5-HA-1-0-1-D	209066-35	9/5/12	Soil					X	
REC5-HA-1-2	209066-36	9/5/12	Soil					X	
REC5-HA-2-0-1	209066-37	9/5/12	Soil					X	
REC5-HA-2-2-3	209066-38	9/5/12	Soil					X	
REC5-HA-3-0-1	209066-39	9/5/12	Soil					X	
REC5-HA-3-2-3	209066-40	9/5/12	Soil					X	
REC5-HA-4-0-1	209066-41	9/5/12	Soil					X	
REC5-HA-4-0-1-D	209066-42	9/5/12	Soil					X	
REC5-HA-4-2-3	209066-43	9/5/12	Soil					X	
REC5-HA-5-0-1	209066-44	9/5/12	Soil					X	
REC5-HA-5-2-3	209066-45	9/5/12	Soil					X	
GF9-B-1-4-4.5	209066-46	9/6/12	Soil		PAHs		TPH-Dx		
GF9-B-1-5-6	209066-47	9/6/12	Soil		PAHs		TPH-Dx		
GF9-B-1-8-9	209066-48	9/6/12	Soil		PAHs		TPH-Dx		
GF9-MW-1-5.5-6.5	209066-50	9/6/12	Soil		PAHs		TPH-Dx		
GF9-MW-1-5.5-6.5-D	209066-51	9/6/12	Soil		PAHs		TPH-Dx		
GF9-MW-1-10-11	209066-52	9/6/12	Soil		PAHs		TPH-Dx		
GF9-MW-1-13-14	209066-53	9/6/12	Soil		PAHs		TPH-Dx		
GF9-B-2-3-3.5	209066-54	9/6/12	Soil		PAHs		TPH-Dx		
GF9-B-2-6-7	209066-55	9/6/12	Soil		PAHs		TPH-Dx		
GF9-B-2-9-9.5	209066-56	9/6/12	Soil		PAHs		TPH-Dx		
HW-B-3-0-1	209066-57	9/6/12	Soil					As, Pb	
HW-B-3-3-4	209066-58	9/6/12	Soil					As, Pb	
HW-B-3-6-7	209066-59	9/6/12	Soil					As, Pb	
HW-B-4-0-1	209066-61	9/6/12	Soil					As, Pb	
HW-B-4-3.5-4	209066-62	9/6/12	Soil					As, Pb	
HW-B-4-6-6.5	209066-63	9/6/12	Soil					As, Pb	
NRP-B-17-8-9	209066-65	9/6/12	Soil	X	PAHs		X		
NRP-B-17-8-9-D	209066-66	9/6/12	Soil				TPH-G		
NRP-B-17-11-12	209066-67	9/6/12	Soil	X	PAHs		X		
NRP-B-17-12-13	209066-68	9/6/12	Soil	X	PAHs		X		
NRP-B-22-7-8	209066-69	9/6/12	Soil	X	PAHs		X		
NRP-B-22-11-12	209066-70	9/6/12	Soil	X	PAHs		X		
NRP-B-22-11-12-D	209066-71	9/6/12	Soil	X	PAHs		X		

Field Sample ID	**Laboratory Sample ID**	**Sample Date**	**Sample Type**	**Analysis**					
				VOCs	**SVOCs PAHs**	**PCBs**	**TPH-G TPH-Dx**	**Metals**	**Miscellaneous**
NRP-B-22-15.5-16.5	209066-72	9/6/12	Soil	X	PAHs		X		
NRP-B-18-8-9	209066-73	9/6/12	Soil	X	PAHs		X		
NRP-B-18-11.5-12.5	209066-74	9/6/12	Soil	X	PAHs		X		
NRP-B-18-11.5-12.5-D	209066-75	9/6/12	Soil	X	PAHs		X		
NRP-B-18-14-15	209066-76	9/6/12	Soil	X	PAHs		X		
NRP-B-19-8-9	209066-77	9/6/12	Soil	X	PAHs		X		
NRP-B-19-10-11	209066-78	9/6/12	Soil	X	PAHs		X		
NRP-B-19-13-14	209066-79	9/6/12	Soil	X	PAHs		X		
HB-B-3-1-2	209066-80	9/6/12	Soil	X	PAHs	X	TPH-Dx	X	
HB-B-3-3-4	209066-81	9/6/12	Soil	X	PAHs		TPH-Dx	X	
HB-B-3-6-7	209066-82	9/6/12	Soil	X	PAHs		TPH-Dx	X	
NRP-B-21-7-8	209095-01	9/7/12	Soil	X	PAHs		X		
NRP-B-21-10.5-11.5	209095-02	9/7/12	Soil	X	PAHs		X		
NRP-B-21-14-15	209095-03	9/7/12	Soil	X	PAHs		X		
NRP-B-20-8-9	209095-04	9/7/12	Soil	X	PAHs		X		
NRP-B-20-10-11	209095-05	9/7/12	Soil	X	PAHs		X		
NRP-B-20-12-13	209095-06	9/7/12	Soil	X	PAHs		X		
HB-B-1-2-3	209095-07	9/7/12	Soil	X	SVOCs	X	TPH-Dx	X	
HB-B-1-2-3-D	209095-08	9/7/12	Soil	X	SVOCs		TPH-Dx	X	
HB-B-1-3-4	209095-09	9/7/12	Soil	X	SVOCs		TPH-Dx	X	
HB-B-1-6-7	209095-10	9/7/12	Soil	X	SVOCs		TPH-Dx	X	
HB-MW-1-1.5-2	209095-11	9/7/12	Soil	X	SVOCs	X	TPH-Dx	X	
HB-MW-1-1.5-2-D	209095-12	9/7/12	Soil		SVOCs				
HB-MW-1-3-3.5	209095-13	9/7/12	Soil	X	SVOCs		TPH-Dx	X	
HB-MW-1-6-7	209095-14	9/7/12	Soil	X	SVOCs		TPH-Dx	X	
DA-MW-1-1-2	209095-15	9/7/12	Soil	X	PAHs		TPH-Dx		
DA-MW-1-5-6	209095-16	9/7/12	Soil	X	PAHs		TPH-Dx		
DA-MW-1-7-8	209095-17	9/7/12	Soil	X	PAHs		TPH-Dx		
REC1-MW-4-6.5-7.5	209095-18	9/7/12	Soil	X	PAHs		X		
REC1-MW-4-11-12	209095-19	9/7/12	Soil	X	PAHs		X		
REC1-MW-4-13-14	209095-20	9/7/12	Soil	X	PAHs		X		
HB-B-2-1-1.5	209095-21	9/7/12	Soil	X	SVOCs	X	TPH-Dx	X	
HB-B-2-5-6	209095-22	9/7/12	Soil	X	SVOCs		TPH-Dx	X	
HB-B-2-6-7	209095-23	9/7/12	Soil	X	SVOCs		TPH-Dx	X	

Field Sample ID	Laboratory Sample ID	Sample Date	Sample Type	Analysis					
				VOCs	SVOCs PAHs	PCBs	TPH-G TPH-Dx	Metals	Miscellaneous
REC1-MW-7-7-8	209130-01	9/10/12	Soil	X	PAHs		X		
REC1-MW-7-13-14	209130-02	9/10/12	Soil	X	PAHs		X		
REC1-MW-7-16.5-17.5	209130-03	9/10/12	Soil	X	PAHs		X		
REC1-MW-6-7.5-8.5	209130-04	9/10/12	Soil	X	PAHs		X		
REC1-MW-6-12.5-13.5	209130-05	9/10/12	Soil	X	PAHs		X		
REC1-MW-6-17-18	209130-06	9/10/12	Soil	X	PAHs		X		
REC1-MW-5-6.5-7.5	209130-07	9/10/12	Soil	X	PAHs		X		
REC1-MW-5-12-13	209130-08	9/10/12	Soil	X	PAHs		X		
REC1-MW-5-22-23	209130-09	9/10/12	Soil	X	PAHs		X		
UST68-MW-6-14-15	209130-10	9/10/12	Soil	X			TPH-G		
UST68-MW-6-14-15-D	209130-11	9/10/12	Soil	X					
REC1-MW-9-091312	209213-01	9/13/12	Water	X	X		X		TSS
REC1-MW-8-091312	209213-03	9/13/12	Water	X	PAHs		X		TSS
REC1-MW-6-091312	209213-04	9/13/12	Water	X	PAHs		X		TSS
REC1-MW-5-091312	209213-05	9/13/12	Water	X	PAHs		X		TSS
REC1-MW-4-091312	209213-06	9/13/12	Water	X	PAHs		X		TSS
REC1-MW-7-091312	209213-07	9/13/12	Water	X	PAHs		X		TSS
REC1-MW-3-091312	209213-08	9/13/12	Water	X	PAHs		X		TSS
REC1-MW-3-091312-D	209213-09	9/13/12	Water	X			TPH-G		TSS
REC1-MW-1-091312	209213-10	9/13/12	Water	X	PAHs		X		TSS
REC1-MW-2-091312	209213-11	9/13/12	Water	X	PAHs		X		TSS
UST68-MW-6-091312	209213-12	9/13/12	Water	X			TPH-G		TSS
DA-MW-1-091312	209213-13	9/13/12	Water		PAHs		TPH-Dx		TSS
DA-MW-1-091312-D	209213-14	9/13/12	Water		PAHs		TPH-Dx		TSS
Boiler-MW-1-091412	209220-01	9/14/12	Water		PAHs		TPH-Dx	X(D)	TSS
HB-MW-1-091412	209220-02	9/14/12	Water	X	X		TPH-Dx	X(D)	TSS
GF9-MW-1-091412	209220-03	9/14/12	Water		PAHs		TPH-Dx		
Boiler-MW-1-091412-D	209220-04	9/14/12	Water					X(D)	
HB-MW-1-091412-D	209220-05	9/14/12	Water		SVOCs				
MW-1-082712	K1208528-001	8/27/12	Water						NS
MW-2-082712	K1208528-002	8/27/12	Water						NS
OMS-MW-1-082812	K1208593-001	8/28/12	Water					X(D)	NS
REC7-MW-3-082812	K1208593-002	8/28/12	Water					X(D)	NS
REC7-MW-4-082812	K1208593-003	8/28/12	Water					X(D,T)	NS

				Analysis					
Field Sample ID	**Laboratory Sample ID**	**Sample Date**	**Sample Type**	**VOCs**	**SVOCs PAHs**	**PCBs**	**TPH-G TPH-Dx**	**Metals**	**Miscellaneous**
REC6-MW-1-082812	K1208593-005	8/28/12	Water						F
REC6-MW-1-082812-D	K1208593-006	8/28/12	Water						F
REC3-MW-1-082912	K1208657-001	8/29/12	Water					X(D)	NS
UST70-MW-2-082912	K1208657-002	8/29/12	Water					X(D)	NS
MW-6-082912	K1208657-003	8/29/12	Water						NS
REC6-MW-2-083012	K1208721-002	8/30/12	Water						FNS
REC6-MW-2-083012-D	K1208721-003	8/30/12	Water						NS
REC7-MW-2-083012	K1208721-004	8/30/12	Water						NS
NRP-MW-3-083012	K1208721-005	8/30/12	Water						NS
REC7-MW-1-083012	K1208721-006	8/30/12	Water						NS
MW-5-083112	K1208771-002	8/31/12	Water						NS
NRP-MW-2-083112	K1208771-003	8/31/12	Water						NS
MW-1-082712	K1209191-001	8/27/12	Water					X(D)	
MW-2-082712	K1209191-002	8/27/12	Water					X(D,T)	
REC1-MW-9-091312	K1209267-001	9/13/12	Water						TSS, NS
REC1-MW-9-091312-D	K1209267-002	9/13/12	Water						NS
GF9-MW-1-091412	K1209268-004	9/14/12	Water						TSS

Notes:

Laboratory sample ID prefixed with “K” was a laboratory identity assigned by CAS-ALS in Kelso, Washington. Metals analyses performed by CAS-ALS included a reductive precipitation procedure for sample preparation. Selenium was analyzed with SW846 Method 7742 - a borohydride reduction atomic absorption method. Mercury was not included (analyzed by F&BI and reported separately in previous SDGs).

As - Arsenic
D – Dissolved metals
EDB - 1,2-dibromoethane
F – Formaldehyde
Metals: Antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc
N – Ammonia as Nitrogen
PAHs - Polycyclic aromatic hydrocarbons
Pb - Lead
PCBs - Polychlorinated biphenyls
S – Dissolved sulfide
SVOCs - Semivolatile Organic Compounds
T – Total metals
TSS - Total suspended solids
TPH-Dx - Diesel and motor oil range total petroleum hydrocarbon
TPH-G - Gasoline range total petroleum hydrocarbon
VOCs - Volatile Organic Compounds
X - The analysis was requested and performed on the sample.

The analytical parameters requested for the samples, the respective analytical methods, and the analytical laboratories are summarized below:

Parameter	**Analytical Method**	**Analytical Laboratory**
Volatile Organic Compounds (VOCs)	SW846 Method 8260C	Friedman & Bruya, Inc. (F&BI) Seattle, WA
Semi-volatile Organic Compounds (SVOCs)	SW846 Method 8270D	
Polycyclic Aromatic Hydrocarbons (PAHs)	SW846 Method 8270D-SIM	
PCB Aroclors	SW846 Method 8082A	
TPH - Gasoline Range	NWTPH-Gx	
TPH - Diesel & Motor Oil Range	NWTPH-Dx	
1,2-Dibromothenae (EDB)	SW846 Method 8011A	
Total Metals	EPA Method 200.8	
Mercury	EPA Method 1631E	
Total Suspended Solids (TSS)	SM Method 2540D	Columbia Analytical Services, Inc. Kelso, WA (Part of ALS Group)
Dissolved Sulfide	SM 4500-S2-D	
Metals (for brackish water samples)	EPA Method 200.8	
Selenium (for brackish water samples)	SW846 Method 7742	
Ammonia as Nitrogen	EPA Method 350.1	
Formaldehyde	SW846 Method 8315A	

Notes:

1. SW846 - *USEPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* SW-846, Third Edition, December 1996.
2. EPA Methods - *USEPA Methods for Chemical Analysis of Water and Wastes,* EPA–600/4-79-020, March 1983 Revision.
3. EPA Method 1631E - *Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry,* Office of Water, U.S. Environmental Protection Agency, August 2002, EPA-821-R-02-019.
4. ASTM – American Society of Testing and Materials
5. NWTPH Methods – *Washington State Department of Ecology, Analytical Methods for Petroleum Hydrocarbons*, Publication No. ECY 97-602, June 1997.
6. SM – Standard Methods for the Examination of Water and Wastewater, American Public Health Association, 20th Edition, 1995.

DATA VALIDATION FINDINGS

1. VOCs by GC/MS (EPA Method SW8260C)

1.1 Sample Management and Holding Time

Samples were received in the laboratory intact and in consistence with the accompanying chain-of-custody (COC) documentation. In some cases where cooler temperature was outside the 4±2ºC criteria; samples were hand-delivered to the laboratory the same day of collection. The cooler temperature exceedance had no significant effects on data quality. No other anomalies were identified in relation to sample preservation, handling, and transport.

Soil samples should be preserved at the time of collection. Soil and water samples should be analyzed within 14 days of collection. All samples were analyzed within the required holding times.

Sample REC1-MW-5-6.5-7.5 was not preserved immediately upon collection as required by the method. Target compounds were not detected in this sample at or above their reporting limits. Since the analysis was performed in a relatively short holding time (3 days) of collection, rather than rejected, VOCs results for this sample were qualified (UJ) as estimated.

1.2 GC/MS Instrument Performance Check

The method require that (1) gas chromatograph/mass spectrometer (GC/MS) tuning analysis be performed, using bromofluorobenzene (BFB), at the beginning of each 12-hour period prior to any analysis, and (2) specific mass ions meet the criteria provided in the method. All instrument performance checks met the requirements.

1.3 Initial Calibration (ICAL)

The ICAL criteria require that (1) if linear average RFs is chosen as the quantitation option, at least five standards at different concentrations should be analyzed and the percent relative standard deviation (%RSD) of response factors (RFs) be ≤20% for the analyte, (2) if least-square linear regression is chosen for quantitation, the correlation coefficient (r) be >0.995, (3) if six-point non-linear (quadratic) curve is chosen for quantitation, the coefficient of determination (r^2) be >0.99, and (4) the RF be >0.01 for poor response compounds and >0.05 for all other compounds.. ICALs either met the requirements or the outliers had no adverse effects on data usability (*e.g.,* %RSD >15% for a compound not detected in samples).

An initial calibration verification (ICV) standard (second source standard) was analyzed to verify the calibration curve. Percent difference (%D) values were either within ±20%, or the exceedance had no adverse effects on data usability (*e.g.,* biased high ICV recovery for a compound not detected in samples).

1.4 Calibration Verification (CCV)

The CCV criteria requires that (1) continuing calibrations be analyzed at the beginning of each 12-hour analysis period prior to the analysis of method blank and samples, (2) the %D be within ±20%, and (3) the RF be >0.01 for poor response compounds and >0.05 for all other compounds.

Calibration verifications either met the requirements, or the exceedance had no adverse effects on data usability (*e.g.,* biased high CCV recovery for a compound not detected in samples), except for the following:

SDG	CCV ID	Compound	%D	Bias	Affected Sample	Data Qualifier
208463	GCMS9 090414.D	Bromoform	20.4%	Low	NRP-MW-3-083012 REC6-MW-2-083012 REC7-MW-1-083012 REC7-MW-2-083012	**UJ**
208491	GCMS9 090414.D	Bromoform	20.4%	Low	NRP-MW-1-083112 NRP-MW-2-083112	**UJ**

1.5 Method Blanks

Method blanks were prepared and analyzed as required. Target compounds were not detected at or above the reporting limits (RLs).

1.6 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD were prepared and analyzed as required by the method. Percent recovery (%R) and relative percent difference (RPD) values either met the project control limits, or the outliers had no adverse effects on data usability (*e.g.,* biased high recovery for a compound not detected in samples).

1.7 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All surrogate spike %R values were within the project control limits.

1.8 Matrix Spike (MS)

MS analyses were performed on project and batch QC samples at the proper frequency (≥5% of the samples analyzed for VOCs). All %R values were within the project control limits, except for the following:

SDG#	Parent Sample ID	Compound	MS %R (%)	Control Limit (%)	Data Qualifier
209028	REC1-MW-1-13-14	Dichlorodifluoromethane	9	10-60	**R**
209066	NRP-B-19-13-14	Dichlorodifluoromethane	9	10-60	**R**
209095	NRP-B-20-12-13	Dichlorodifluoromethane	8	10-60	**R**

1.9 Internal Standards

The method requires that (1) internal standard retention time be within ±30 seconds from that of the associated 12-hour calibration standard, and (2) the area counts of all internal standards be within –50% to +100% of the associated 12-hour calibration standard. All internal standards in the sample and associated QC analyses met the criteria.

1.10 Reporting Limit and Target Compound Quantitation

RLs were supported with adequate initial calibration concentrations. In cases where target compound concentrations exceeded ICAL calibration ranges, proper dilution analyses were performed for definitive quantitation of the compounds. Only affected compounds were to be reported from dilution analyses. The RLs were raised due to high moisture content in samples REC1-MW-7-13-14, REC1-MW-6-12.5-13.5 and REC1-MW-6-17-18.

Vinyl acetate and 1,4-dioxane were reported in selected samples and the method blanks associated with these samples. These compounds were subjected to the tentative identification search (TIC) in the instrument library and were not detected in these samples. The reported MRLs for these compounds were based on 10 times the standard MRLs for other VOCs; vinyl acetate and 1,4-dioxane results in these samples were qualified (UJ) as estimated.

Naphthalene, 1,2,4-trichlorobenzene, 1,2-dichlioriobenzene, 1,3-dichlorobenzene, and 1,4-dichliorobenzene were also reported from SVOCs analysis (Method 8270D). These compounds were to be reported from the SVOCs analysis, in favor of the lower detection limits.

1.11 Field Duplicates

Eight sets of field duplicates were submitted for VOCs analyses. Field duplicate results for detected target compounds, RPD (or concentration difference) values, and data qualification were presented in **Appendix A**.

1.12 Overall Assessment of VOCs Data Usability

VOCs data are of known quality and acceptable for use, as qualified.

2. SVOCs by GC/MS (EPA Method SW8270D)

2.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport as discussed in Section 1.1.

Soil samples should be extracted within 14 days and water samples within seven days of collection. Extracts should be analyzed within 40 days of extraction. All samples were extracted and analyzed within the required holding times.

2.2 GC/MS Instrument Performance Check

The method require that a GC/MS tuning analysis be performed using decafluorotriphenylphosphine (DFTPP) at the beginning of each 12-hour period prior to any analysis, and specific mass ions meet the criteria provided in the method. All instrument performance checks met the requirements.

2.3 Initial Calibration (ICAL)

The ICAL criteria require that (1) if linear average RFs is chosen as the quantitation option, at least five standards at different concentrations should be analyzed and the %RSD of RFs be ≤20% for the analyte, (2) if least-square linear regression is chosen for quantitation, the correlation coefficient (r) be >0.995, (3) if six-point non-linear (quadratic) curve is chosen for quantitation, the coefficient of determination (r^2) be >0.99, and (4) the RF be >0.01 for poor response compounds and >0.05 for all other compounds.. All ICALs met the requirements.

An ICV standard (second source standard) was analyzed to verify the calibration curve. %D values were either within ±20%, or the exceedance had no adverse effects on data usability (*e.g.,* biased high ICV recovery for a compound not detected in samples).

2.4 Calibration Verification (CCV)

The CCV criteria require that (1) continuing calibrations be analyzed at the beginning of each 12-hour analysis period prior to the analysis of method blank and samples, (2) the %D be within ±20%, and (3) the RF be >0.01 for poor response compounds and >0.05 for all other compounds.

Calibration verifications were performed at the required frequency. %D values were either within ±20%, or the exceedance had no adverse effects on data usability (*e.g.,* biased high CCV recovery for a compound not detected in samples), with the exceptions as follows:

SDG	CCV ID	Compound	%D	Bias	Affected Sample	Data Qualifier
209213	GCMS8 9/17/12, 18:31	*bis*(2-Chloroisopropyl)ether	27.6%	Low	REC1-MW-9-091312	**UJ**
209220	GCMS8 9/19/12, 18:57	*bis*(2-Chloroisopropyl)ether	26.7%	Low	HB-MW-1-091412 HB-MW-1-091412-D	**UJ**
209095	GCMS8 9/21/12, 1:26	*bis*(2-Chloroisopropyl)ether	30.7%	Low	HB-B-1-2-3 HB-B-1-3-4 HB-B-1-6-7 HB-B-2-1-1.5 HB-MW-1-1.5-2 HB-MW-1-6-7	**UJ**
209095	GCMS8 9/22/12, 12:21	*bis*(2-Chloroisopropyl)ether Benzoic Acid	29.7% 31.6%	Low	HB-B-1-2-3 HB-B-2-5-6 HB-B-2-6-7 HB-MW-1-1.5-2-D HB-MW-1-3-3.5	**UJ**

2.5 Method Blanks

Method blanks were prepared and analyzed as required. Target compounds were not detected at or above the RLs in the method blanks, except for the following:

SDG	Method Blank ID	Compound	MB Conc.	Affected Sample	Result	Data Qualifier	Unit
208426	083116.D	Diethyl phthalate	2	REC3-MW-1-082912 MW-6-082912	1 1	**U**	**µg/L**

2.6 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All %R values were within the laboratory control limits.

2.7 Matrix Spike (MS) and MS Duplicate (MSD)

MS/MSD analyses were not performed for SVOCs analyses; instead, laboratory duplicates in combination with LCS/LCSD analyses were performed.

2.8 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD were prepared and analyzed as required by the method. All %R and RPD values either met the laboratory control criteria, or the outliers had no adverse effects on data usability (*e.g.,* biased high %R or RPD value for a compound that was not detected in samples).

2.9 Laboratory Duplicate Analysis

Duplicate analyses were performed on project and batch QC samples at the proper frequency. All RPD or concentration difference values either met the laboratory control criteria or the outlier had no adverse effects on data usability (*e.g.,* high RPD value for a compound that was not detected in samples).

2.10 Internal Standards

The method requires that (1) internal standard retention time be within ±30 seconds from that of the associated 12-hour calibration standard, and (2) the area counts of all internal standards be within –50% to +100% of the associated 12-hour calibration standard. All internal standards in the sample and associated QC analyses met the criteria, except for the following:

Sample ID	Internal Standard	Sample Response Area	CCV Response Area	Affected Compound	Data Qualifier
HB-MW-1-091412	Perylene-d_{12}	1211792	2573250	Di-n-octyl phthalate	**UJ**
HB-MW-1-1.5-2	Perylene-d_{12}	3240706	1272460	Di-n-octyl phthalate Benzo(g,h,i)perylene Indeno(1,2,3-cd)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Dibenzo(a,h)anthracene	**J/UJ**

Note: J/UJ - Detects were qualified (J) and non-detects qualified (UJ) as estimated.

2.11 Reporting Limits and Compound Quantitation

Sample-specific RLs were supported with adequate initial calibration concentrations.

2.12 Field Duplicates

Three sets of field duplicates were submitted for SVOCs analyses. SVOCs were not detected at or above the RLs in these samples. The field precision met the project advisory criteria.

2.13 Overall Assessment of SVOCs Data Usability

SVOCs data are of known quality and acceptable for use, as qualified.

3. PAHs by GC/MS - SIM (EPA Method SW8270D-SIM)

3.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport as discussed in Section 1.1.

Soil samples should be extracted within 14 days and water within seven days of collection. Extracts should be analyzed within 40 days of extraction. All samples were extracted and analyzed within the required holding times.

3.2 GC/MS Instrument Performance Check

DFTPP tuning was performed within each 12-hour interval. All required ion abundance ratios met the method requirements.

3.3 Initial Calibration (ICAL)

The ICAL criteria require that (1) if linear average RFs is chosen as the quantitation option, at least five standards at different concentrations should be analyzed and the %RSD of RFs be ≤20% for the analyte, (2) if least-square linear regression is chosen for quantitation, the correlation coefficient (r) be >0.995, (3) if six-point non-linear (quadratic) curve is chosen for quantitation, the coefficient of determination (r^2) be >0.99, and (4) the RF be >0.01 for poor response compounds and >0.05 for all other compounds.. All ICALs met the requirements.

An ICV standard (second source standard) was analyzed to verify the calibration curve. %D values were either within ±20%, or the exceedance had no adverse effects on data usability (*e.g.,* biased high ICV recovery for a compound not detected in samples).

3.4 Calibration Verification (CCV)

The analytical method requires that (1) continuing calibration verifications be analyzed at the beginning of each 12-hour analysis period prior to the analysis of method blank and samples, (2) the %D be within ±20%, and (3) the RF be >0.05 for all compounds.

Calibration verifications were performed at the required frequency. %D values were either within ±20%, or the exceedance had no adverse effects on data usability (*e.g.,* biased high CCV recovery for a compound not detected in samples), except for the following:

SDG	CCV ID	Compound	%D	Bias	Affected Sample	Data Qualifier
209066	GCMS6 9/17/12, 17:07	Indeno(1,2,3-cd)pyrene	-21.1%	High	Boiler-B-3B-4-5 Boiler-HA-2A-1-1 Boiler-HA-2B-0-1 Boiler-HA-2C-0-1 Boiler-HA-2C-2-3 DA-B-1-1-2 DA-B-1-5-6 GF9-B-1-5-6 GF9-MW-1-5.5-6.5	**J**
	GCMS6 9/18/12, 06:36	Indeno(1,2,3-cd)pyrene	-28.9%	High	HB-MW-1-091412 HB-MW-1-091412-D	**J**
	GCMS6 9/20/12, 08:23	Indeno(1,2,3-cd)pyrene	-23.4%	High	Boiler-B-3B-1-2	**J**

3.5 Method Blanks

Method blanks were prepared and analyzed as required. Target compounds were not detected at or above the RLs in the method blanks.

3.6 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All surrogate spike %R values were either within the project control limits or at levels that had no adverse effects on data quality (*e.g.,* biased-high recovery for compounds that were not detected in samples). In some cases surrogate spike %R values were inapplicable for data evaluation because the samples contained high levels of target PAHs and requested dilution analysis; no data were qualified on this basis.

3.7 Matrix Spike (MS)

MS analyses were performed on project and batch QC samples at the proper frequency (≥5% of samples analyzed). All %R values met the project control criteria.

3.8 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed as required by the method. All %R and RPD values were within the project control limits, except for the followings:

SDG	Compound	%R (%)		Control Limit (%)	RPD (%)	Control Limit (%)	Affected Sample	Data Qualifier
		LCS	LCSD					
209095	Pyrene	70	101	53-127	36	20	DA-MW-1-1-2 DA-MW-1-5-6 DA-MW-1-7-8 NRP-B-20-10-11 NRP-B-20-12-13 NRP-B-20-8-9 NRP-B-21-10.5-11.5 NRP-B-21-10.5-11.5 NRP-B-21-14-15 NRP-B-21-14-15 NRP-B-21-7-8 REC1-MW-4-13-14	**J**

3.9 Internal Standards

The method requires that (1) internal standard retention time be within ±30 seconds from that of the associated 12-hour calibration standard, and (2) the area counts of all internal standards be within –50% to +100% of the associated 12-hour calibration standard. All internal standards in the sample and associated QC analyses met the criteria, except for the following:

Sample ID	Internal Standard	Sample Response Area	CCV Response Area	Affected Compound	Data Qualifier
MW-3-082712	Naphthalene-d_8 Acenaphthene-d_{10} Phenathrene-d_{10}	98016 65771 153429	294570 171030 332651	Anthracene Fluoranthene Acenaphthylene Phenanthrene Naphthalene	**J/UJ**
MW-4-082712-D	Acenaphthene-d_{10} Phenathrene-d_{10}	75513 130845 140038 124609	171030 332651 347968 312407	Anthracene Pyrene Benzo(g,h,i)perylene Indeno(1,2,3-cd)pyrene Benzo(b)fluoranthene Fluoranthene Benzo(k)fluoranthene Acenaphthylene Chrysene Benzo(a)pyrene Dibenzo(a,h)anthracene Benz(a)anthracene Phenanthrene Fluorene	**J/UJ**

Sample ID	Internal Standard	Sample Response Area	CCV Response Area	Affected Compound	Data Qualifier
UST70-MW-1-082912	Naphthalene-d_8 Acenaphthene-d_{10} Phenathrene-d_{10} Chrysene-d_{12} Perylene-d_{12}	118684 69262 120353 133135 114386	338572 201523 384080 415076 374705	Anthracene Pyrene Benzo(g,h,i)perylene Indeno(1,2,3-cd)pyrene Benzo(b)fluoranthene Fluoranthene Benzo(k)fluoranthene Acenaphthylene Chrysene Benzo(a)pyrene Dibenzo(a,h)anthracene Benz(a)anthracene Phenanthrene Fluorene	**J/UJ**
UST70-MW-2-082912	Perylene-d_{12}	181904	374705	Benzo(g,h,i)perylene Indeno(1,2,3-cd)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Dibenzo(a,h)anthracene	**UJ**
REC1-MW-1-11-12	Phenathrene-d_{10} Chrysene-d_{12} Perylene-d_{12}	92498 96793 74918	203426 218914 194120	Anthracene Pyrene Benzo(g,h,i)perylene Indeno(1,2,3-cd)pyrene Benzo(b)fluoranthene Fluoranthene Benzo(k)fluoranthene Chrysene Benzo(a)pyrene Dibenzo(a,h)anthracene Benz(a)anthracene Phenanthrene	**J/UJ**
Boiler-B-3B-1-2	Naphthalene-d_8 Acenaphthene-d_{10} Phenathrene-d_{10} Chrysene-d_{12} Perylene-d_{12}	188883 101749 169299 191793 147796	443209 268607 469450 599290 532720	All PAHs	**J/UJ**
GF9-B-1-8-9	Perylene-d_{12}	330998	743007	Benzo(g,h,i)perylene Indeno(1,2,3-cd)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Dibenzo(a,h)anthracene	**DNR**

Sample ID	Internal Standard	Sample Response Area	CCV Response Area	Affected Compound	Data Qualifier
GF9-B-2-9-9.5	Chrysene-d_{12} Perylene-d_{12}	506260 411669	1094720 1022080	Pyrene Benzo(g,h,i)perylene Indeno(1,2,3-cd)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Chrysene Benzo(a)pyrene Dibenzo(a,h)anthracene Benz(a)anthracene	**J**
NRP-B-22-15.5-16.5	Perylene-d_{12}	243887	532720	Benzo(g,h,i)perylene Indeno(1,2,3-cd)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Dibenzo(a,h)anthracene	**J/UJ**
NRP-B-21-7-8	Naphthalene-d_8 Acenaphthene-d_{10} Chrysene-d_{12} Perylene-d_{12}	158966 104051 181809 69260	334853 211718 494677 423012	Pyrene Benzo(g,h,i)perylene Indeno(1,2,3-cd)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Acenaphthylene Chrysene Benzo(a)pyrene Dibenzo(a,h)anthracene Benz(a)anthracene Naphthalene	**J/UJ**
NRP-B-21-10.5-11.5	Perylene-d_{12}	180124	423012	Benzo(g,h,i)perylene Indeno(1,2,3-cd)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Dibenzo(a,h)anthracene	**J/UJ**
NRP-B-21-14-15	Perylene-d_{12}	164652	423012	Benzo(g,h,i)perylene Indeno(1,2,3-cd)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Dibenzo(a,h)anthracene	**J/UJ**
NRP-B-20-8-9	Chrysene-d_{12} Perylene-d_{12}	192247 136582	494677 423012	Pyrene Benzo(g,h,i)perylene Indeno(1,2,3-cd)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Chrysene Benzo(a)pyrene Dibenzo(a,h)anthracene Benz(a)anthracene	**J/UJ**

Sample ID	Internal Standard	Sample Response Area	CCV Response Area	Affected Compound	Data Qualifier
REC1-MW-5-6.5-7.5	Phenathrene-d_{10} Chrysene-d_{12} Perylene-d_{12}	231873 264580 267595	621241 784967 709542	Anthracene Pyrene Benzo(g,h,i)perylene Indeno(1,2,3-cd)pyrene Benzo(b)fluoranthene Fluoranthene Benzo(k)fluoranthene Chrysene Benzo(a)pyrene Dibenzo(a,h)anthracene Benz(a)anthracene Phenanthrene	**J/UJ**
REC1-MW-5-12-13	Acenaphthene-d_{10} Phenathrene-d_{10} Chrysene-d_{12}	138910 235974 355318	337807 621241 784967	Anthracene Pyrene Fluoranthene Chrysene Benz(a)anthracene	**J/UJ**

Note: J/UJ - Detects were qualified (J) and non-detects qualified (UJ) as estimated.

Internal standard recovery in samples CMS-MW-1-082912, UST71-MW-1-082912, MW-5-083112 biased low and severe matrix interference was observed on these analyses. PAHs results for these samples were to be reported from the dilution analyses.

3.10 Reporting Limits and Target Compound Quantitation

Sample-specific RLs were supported with adequate initial calibration concentrations. The RLs were raised due to high moisture content in samples REC1-MW-7-13-14, REC1-MW-6-12.5-13.5 and REC1-MW-6-17-18.

3.11 Field Duplicates

Six sets of field duplicates were submitted for PAHs analyses. Field duplicate results for detected target compounds, RPD (or concentration difference) values, and data qualification were presented in **Appendix A**.

3.12 Overall Assessment of PAHs Data Usability

PAHs data are of known quality and acceptable for use, as qualified.

4. PCB Aroclors (EPA Method SW8082A)

4.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport as discussed in Section 1.1.

Soil samples should be extracted within 14 days of collection and extracts analyzed within 40 days of extraction. All samples were extracted and analyzed within the required holding times.

4.2 Initial Calibration

The method requires that (1) a minimum of 5-point calibration be performed using the mixture of Aroclor 1016 and 1260, (2) a single-point calibration be performed for the other five Aroclors to establish calibration factors (CFs) and for Aroclor pattern recognition, (3) at least 3 peaks (preferably 5 peaks) must be chosen for each Aroclor for characterization, (4) the %RSD values of Aroclor 1016 and 1260 CFs must be ≤20%, and (5) if dual column analysis is chosen, both columns should meet the requirements. All ICALs met the requirements.

4.3 Calibration Verification

CCV analyses should be performed for each 12-hour analysis sequence prior to sample analyses, and the %D be within ±20%.

Calibration verifications were performed at the required frequency. All %D values either met the control criteria or biased high for target compounds that were not detected in the associated samples.

4.4 Method Blanks

Method blanks were prepared and analyzed as required. PCB Aroclors were not detected at or above the MDLs in the method blanks.

4.5 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All surrogate spike %R values were within the laboratory control limits.

4.6 Matrix Spike and Matrix Spike Duplicate (MS/MSD)

MS/MSD analyses were not performed for PCB Aroclors analyses; instead, duplicate and LCS/LCSD analyses in combination were performed.

4.7 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed as required by the method. All %R and RPD values were within the project control limits.

4.8 Laboratory Duplicate Analysis

Duplicate analyses were performed on project and batch QC samples at the proper frequency. All RPD or concentration difference values met the laboratory control criteria.

4.9 Method Reporting Limits and Target Compound Quantitation

Sample-specific RLs were supported with adequate initial calibration concentrations and achieved the project target quantitation limits.

4.10 Field Duplicates

Field duplicates were not submitted for PCB Aroclors analysis.

4.11 Overall Assessment of PCB Aroclors Data Usability

PCB Aroclor data are of known quality and acceptable for use.

5. TPH-Gasoline by GC/FID (Method NWTPH-Gx)

5.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport as discussed in Section 1.1.

Soil samples should be preserved at the time of collection. Soil and water samples should be analyzed within 14 days of collection. All samples were analyzed within the required holding times.

Sample REC1-MW-5-6.5-7.5 was not preserved immediately upon collection as required by the method. TPH-Gasoline was not detected in this sample at or above their reporting limits. Since the analysis was performed in a relatively short holding time (3 days) of collection, rather than rejected, TPH-Gasoline result for this sample was qualified (UJ) as estimated.

5.2 Initial Calibration (ICAL)

The method linearity criteria require that (1) if linear average RFs is chosen as the quantitation option, the %RSD of RFs be <20% for the analyte, (2) if least-square linear regression is chosen for quantitation, the correlation coefficient (r) be >0.995, and (3) if six-point non-linear (quadratic) curve is chosen for quantitation, the coefficient of determination (r^2) be >0.990. Initial calibration met the criteria for all target compounds.

An ICV (second source) standard was analyzed to verify the calibration curve. %D values were within ±20%.

5.3 Calibration Verification

Continuing calibration verification (CCV) analyses were performed at the required frequency for all analytical sequences as required by the method. The %D values for all CCVs met the method criterion (±20%).

5.4 Method Blanks

Method blanks were prepared and analyzed as required. No target compounds were detected at or above the RLs in the method blanks.

5.5 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All surrogate spike %R values were within the project control limits, outside the control limits due to matrix interference, or diluted below quantitation limits due to high analyte concentrations. No data qualifying actions were taken in these cases.

5.6 Matrix Spike and Matrix Spike Duplicate

MS/MSD analyses were not performed for TPH-Gasoline analyses; instead, duplicate and LCS analyses in combination were performed.

5.7 Laboratory Control Sample (LCS)

LCS analyses were performed as required by the method. All %R values were within the laboratory control limits.

5.8 Laboratory Duplicate Analysis

Duplicate analyses were performed on project and batch QC samples at the proper frequency. All RPD and concentration difference values met the laboratory control criteria.

5.9 Reporting Limits and Target Compound Quantitation

Sample-specific RLs were supported with adequate initial calibration concentrations.

5.10 Field Duplicates

Seven sets of field duplicates were submitted for TPH-Gasoline analysis. Field duplicate results, RPD (or concentration difference) values, and data qualification for detected TPH-Gasoline were presented in **Appendix A**.

5.11 Overall Assessment of TPH-Gasoline Data Usability

TPH-Gasoline data are of known quality and acceptable for use, as qualified.

6. TPH-Diesel & Motor Oil by GC/FID (Method NWTPH-Dx)

6.1 Holding Time

No anomalies were identified in relation to sample preservation, handling, and transport as discussed in Section 1.1.

Soil samples should be extracted within 14 days and water should be extracted within seven days of collection. Extracts should be analyzed within 40 days of extraction. All samples were extracted and analyzed within the recommended holding times.

6.2 Initial Calibration

The method linearity criteria require that (1) if linear average RFs is chosen as the quantitation option, the %RSD of RFs be <20% for the analyte, (2) if least-square linear regression is chosen for quantitation, the correlation coefficient (r) be >0.995, and (3) if six-point non-linear (quadratic) curve is chosen for quantitation, the coefficient of determination (r^2) be >0.990. Initial calibration met the criteria for all target compounds.

An ICV (second source) standard was analyzed to verify the calibration curve. %D values were within ±20%.

6.3 Calibration Verification

The method requires that (1) a mid-range check standard be analyzed prior to and after each analytical batch, and (2) the percent drift (%D) value be within ±20% of the true value.

Calibration verification was performed at required frequency. The %D values were either within the ±20% criterion or at levels that had no adverse effects on data quality (e.g., high-bias %D value where the target compound was not detected in associated sample).

6.4 Method Blanks

Method blanks were prepared and analyzed as required. Target compounds were not detected at or above the RLs in the method blanks.

6.5 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All surrogate spike %R values were within the project control limits, outside the control limits due to matrix interference, or diluted below quantitation limits due to high petroleum hydrocarbon concentrations. No data qualifying actions were taken in these cases.

6.6 Matrix Spike (MS) and MS Duplicate (MSD)

MS and MSD analyses were performed on project and batch QC samples at the proper frequency. The %R and RPD values met the laboratory control criteria.

6.7 Laboratory Control Sample (LCS)

LCS analyses were performed as required. All %R values met the project control limits.

6.8 Target Compound Identification

Selected sample extracts were cleaned up with acid and silica gel treatment to minimize the biogenic interference with target compound identification, as required by the project. The laboratory reported results as diesel #2 (C10 - C25) and motor oil (C25 - C36), as required by the method.

6.9 Reporting Limits and Target Compound Quantitation

The reported RLs were supported with adequate ICAL concentrations.

6.10 Field Duplicates

Eight sets of field duplicates were submitted for TPH-Diesel and TPH-Motor Oil analyses. Field duplicate results, RPD (or concentration difference) values, and data qualification for detected TPH-Diesel or Motor Oil were presented in **Appendix A**.

6.11 Overall Assessment of TPH-Diesel and Motor Oil Data Usability

TPH-Diesel and TPH-Motor Oil data are of known quality and acceptable for use, as qualified.

7. Total Metals by ICP/MS and CVAFS (EPA Methods 200.8 and 1631E)

7.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport, as discussed in Section 1.1.

Soil and water samples should be analyzed within 180 days for metals and 28 days for mercury. Samples were analyzed within the required holding times.

7.2 ICP/MS Tuning

Instrument tuning was performed at the required frequency. The stability check (%RSD <5%), mass calibration (mass difference <0.1 AMU), and resolution check (peak width <1.0 AMU at 5% peak height) met the NFG and method criteria.

7.3 Initial Calibration (ICAL)

The ICP/MS method requires that (1) a blank and one calibration standard be used in establishing the analytical curve, and (2) the average of replicate exposures be reported for all standards, QC, and sample analyses.

The CVAFS and GFAA methods require that (1) a blank and five calibration standards be employed to establish the analytical curve, (2) the linearity of the calibration curve should meet the criteria of correlation coefficient ≥ 0.995 for linear regression, and (3) the %RSD <21% if average response factor approach is employed.

All ICALs met the method requirements.

7.4 Calibration Verification (ICV and CCV)

Initial calibration verifications (ICVs) and continuing calibration verifications (CCVs) for ICP/MS and GFAA and ongoing precision recovery (OPR) were analyzed at the required frequency. The %R values either met the control criteria (90 – 110% for metals, 79 – 123% for mercury) or the exceedance had no adverse effects on data usability (e.g., high-bias %D value where the target compound was not detected in associated sample), except for the following:

SDG	CCAL ID	Analyte	%R	Affected Sample	Data Qualifier
208463	9/5/12, 12:27	Arsenic	87.8%	NRP-MW-4-083012 NRP-MW-5-083012 REC7-MW-2-083012	**UJ**
208491	9/5/12, 12:27	Arsenic	87.8%	AP-MW-1-083112	**UJ**
209066	9/14/12, 11:47	Beryllium	87.0%	Boiler-B-3A-1-2 Boiler-B-3A-4-5 Boiler-B-3A-6.5-7.5 Boiler-B-3B-1-2 Boiler-B-3B-4-5 Boiler-MW-1-10-11 Boiler-MW-1-12-13 Boiler-MW-1-16-17 REC5-HA-1-0-1	**UJ**

7.5 Blanks

Calibration Blanks: Initial calibration blanks (ICBs) and continuing calibration blanks (CCBs) were not analyzed after calibration verification standards. Target analytes were either not detected at or above the RLs in the ICBs and CCBs, or sample results affected by the ICB/CCB detections were qualified as results of detections in preparation blanks.

Preparation Blanks: Preparation blanks were prepared and analyzed as required. Target analytes were either not detected at or above the RLs in the preparation blanks, or sample results were greater than 10X the detection in the associated blank, except for the following:

Blank ID	Analyte	Detection In Blank	Affected Sample	Original Result	Adjusted Result	Unit
i2-562mb	Dissolved Zinc	0.838	HW-MW-1-082812	2.07	**2.07 J**	**µg/L**
i2-565mb	Total Zinc	0.947	CMS-MW-1-082912	1.87	**1.87 J**	**µg/L**

Blank ID	Analyte	Detection In Blank	Affected Sample	Original Result	Adjusted Result	Unit
i2-575mb	Total Zinc	0.999 J	NRP-MW-4-083012 NRP-MW-5-083012 REC7-MW-2-083012 UG-MW-1-083012	4.53 2.70 1.82 3.36	**4.53 J** **2.70 J** **1.82 J** **3.36 J**	**µg/L**
i2-590mb	Dissolved Zinc	0.546 J	NRP-MW-2-083112	2.45	**2.45 J**	**µg/L**
K1208593-MB	Dissolved Beryllium	0.0012 J	OMS-MW-1-082812 REC7-MW-3-082812 REC7-MW-4-082812	0.0034 J 0.0005 J 0.0012 J	**0.0222 U** **0.0222 U** **0.0222 U**	**µg/L**
K1208593-MB	Total Beryllium	0.0012 J	REC7-MW-4-082812	0.0086 J	**0.0250 U**	**µg/L**
K1208593-MB	Dissolved Lead	0.017 J	OMS-MW-1-082812 REC7-MW-3-082812	0.058 0.060	**0.058 J** **0.060 J**	**µg/L**
K1208593-MB	Dissolved Thallium	0.003 J	OMS-MW-1-082812 REC7-MW-3-082812 REC7-MW-4-082812	0.004 J 0.016 J 0.012 J	**0.0222 U** **0.0222 U** **0.0222 U**	**µg/L**
K1208593-MB	Total Thallium	0.003 J	REC7-MW-4-082812	0.019 J	**0.0250 U**	**µg/L**
K1208657-MB	Dissolved Beryllium	0.0012 J	REC3-MW-1-082912 UST70-MW-2-082912	0.0018 J 0.0018 J	**0.05 U** **0.05 U**	**µg/L**
K1208657-MB	Dissolved Lead	0.017 J	REC3-MW-1-082912 UST70-MW-2-082912	0.047 J 0.035 J	**0.05 U** **0.05 U**	**µg/L**
K1208657-MB	Dissolved Thallium	0.003 J	UST70-MW-2-082912	0.03 J	**0.05 U**	**µg/L**
K1209191-MB	Dissolved Beryllium	0.0012 J	MW-1-082712	0.0023 J	**0.05 U**	**µg/L**
K1209191-MB	Total Beryllium	0.0012 J	MW-2-082712	0.0016 J	**0.0222 U**	**µg/L**
K1209191-MB	Dissolved Silver	0.020 J	MW-1-082712	0.031 J	**0.05 U**	**µg/L**
K1209191-MB	Total Silver	0.020 J	MW-2-082712	0.005 J	**0.0222 U**	**µg/L**
K1209191-MB	Dissolved Thallium	0.003 J	MW-1-082712	0.012 J	**0.05 U**	**µg/L**

7.6 Laboratory Control Sample (LCS)

LCS analyses were performed as required by the method. All %R values were within the project control limits, or the exceedance had no adverse effects on data usability (e.g., high-bias %R value where the target compound was not detected in associated sample).

7.7 Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

MS and MSD analyses were performed on project and batch QC samples at the adequate frequency (>5% of field sample). The %R and RPD values met the laboratory control limits.

7.8 Internal Standards

At least three internal standards were added to all field and QC samples for ICP/MS analyses. All percent relative intensity values were within the method criteria (60 - 125%), except that the %R value for germanium in sample Boiler-B-3B-1-2 (132%) was outside the upper control limit. All associated analytes were reported from the dilution analysis (internal standard recovery acceptable), except beryllium. The beryllium result was to be reported from the initial analysis and qualified (UJ) as estimated.

7.9 Method Reporting Limits and Analyte Quantitation

Sample-specific RLs were supported with adequate initial calibration concentrations.

7.10 Field Duplicates

Eight sets of field duplicates were submitted for Metals analyses. Field duplicate results, RPD (or concentration difference) values, and data qualification for detected analytes were presented in **Appendix A**.

7.11 Overall Assessment of Metals Data Usability

Metal data are of known quality and acceptable for use, as qualified.

8. Formaldehyde by HPLC/UV (EPA Method 8315A)

8.1 Sample Management and Holding Time

No anomalies were identified in relation to sample preservation, handling, and transport, as discussed in Section 1.1.

Water samples should be derivatized and extracted within 3 days of sample collection. All derivatized sample extracts should be analyzed within 3 days after preparation. The sample was prepared and analyzed within the required holding times, except that sample REC6-MW-2-083012 was extracted four days past the required holding time. The formaldehyde result for this sample was qualified (UJ) as estimated.

8.2 Instrument Calibration

The method linearity criteria require that (1) if linear average RFs is chosen as the quantitation option, the %RSD of RFs be <15% for the analyte, (2) if least-square linear regression is chosen for quantitation, the correlation coefficient (r) be >0.995, and (3) if six-point non-linear (quadratic) curve is chosen for quantitation, the coefficient of determination (r^2) be >0.990. Initial calibration met the criteria for all target compounds.

An ICV (second source) standard was analyzed to verify the calibration curve. %D values were within ±20%.

8.3 Calibration Verification

CCV analyses were performed at the required frequency for all analytical sequences as required by the method. The %D values for all CCVs met the method criterion (±20%).

8.4 Method Blanks

A method blank was prepared and analyzed in each preparation batch as required. Formaldehyde was not detected at or above the RL in method blanks.

8.5 Matrix Spike (MS) and MS Duplicate (MSD)

MS and MSD analyses were performed on project and batch QC samples at the proper frequency. The %R and RPD values met the laboratory control criteria.

8.6 Laboratory Control Samples (LCS)

LCS analyses were performed as required by the methods. The %R values were within the laboratory control limits.

8.7 Field Duplicates

Samples REC6-MW-1-082812 and REC6-MW-1-082812-D were field duplicates submitted for formaldehyde analysis. Formaldehyde was not detected in either sample; the field precision met the advisory criteria.

8.8 Overall Assessment of Formaldehyde Data Usability

Formaldehyde data are of known quality and acceptable for use, as qualified.

9. Conventional Parameters (TSS, Ammonia, and Dissolved Sulfide)

9.1 Sample Management and Holding Time

No anomalies were identified in relation to sample preservation, handling, and transport, as discussed in Section 1.1.

Water samples should be analyzed within 7 days of collection for dissolved sulfide and TSS, and 28 days for ammonia.

9.2 Instrument Calibration

The initial calibrations were established for ammonia and sulfide analyses using one blank and at least five levels of standards. The correlation coefficients (r) of the initial calibration curves were >0.995, and met the method criteria.

9.3 Calibration Verification

ICV and CCV analyses were performed for ammonia and sulfide as required by the methods. All ICV and CCV %R values were within the laboratory control limits (90 – 110%).

9.4 Blanks

Calibration Blanks: ICBs and CCBs were analyzed for ammonia and sulfide as required by the methods. No target analytes were positively reported in ICBs and CCBs at or above the MDLs.

Method Blanks: Method blanks were prepared and analyzed for TOC, TSS, ammonia, and sulfide as required by the methods. No target analytes were detected at or above the RLs in method blanks.

9.5 Laboratory Replicate Analyses

Laboratory duplicate analyses were formed on samples REC3-MW-1-082912 for ammonia and sulfide, REC7-MW-3-082812 for sulfide. The RPD (or concentration difference) values were within the project control limits.

9.6 Matrix Spike (MS) and MS Duplicate (MSD)

MS and MSD analyses were performed on sample REC3-MW-1-082912 for ammonia and sulfide REC7-MW-3-082812 for sulfide. The %R and RPD values met the laboratory control criteria.

9.7 Laboratory Control Samples (LCS)

LCS analyses were performed as required by the methods fort ammonia and sulfide analysis. All LCS %R values were within the laboratory control limits. LCS/LCSD analyses were performed for TSS; the %R and RPD values met the laboratory control criteria.

9.8 Method Reporting Limits

The MRLs were supported with adequate initial calibration concentrations.

9.9 Field Duplicates

Two sets of field duplicates were submitted for ammonia and sulfide analyses. Four sets of field duplicates were submitted for TSS analyses. Field duplicate results, RPD (or concentration difference) values, and data qualification for detected analytes were presented in **Appendix A**.

9.10 Overall Assessment of Conventional Parameters Data Usability

Conventional parameters data are of known quality and acceptable for use.

10. 1,2-Dibromoehtane (EDB) by GC/ECD (EPA Method SW8011A)

10.1 Holding Times

Water samples should be extraction and analyzed within 28 days of collection. All samples were analyzed within the required holding time.

10.2 Initial Calibration (ICAL)

The method linearity criteria require that (1) if linear average RFs is chosen as the quantitation option, the %RSD of RFs be <20% for the analyte, (2) if least-square linear regression is chosen for quantitation, the correlation coefficient (r) be >0.995, and (3) if six-point non-linear (quadratic) curve is chosen for quantitation, the coefficient of determination (r^2) be >0.990. Initial calibration met the criteria for all target compounds.

An ICV (second source) standard was analyzed to verify the calibration curve. The %R value were within the control limits of 80 – 120%.

10.3 Continuing Calibration Verification (CCV)

Continuing calibration verification (CCV) analyses were performed at the required frequency. All %R values were within the control limits of 80 – 120%.

10.4 Method Blank

Method Blank: Method blanks were analyzed at the required frequency. EDB was not detected at or above the RL in method blanks.

10.5 Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

MS and MSD analyses were not performed on a project sample in these SDGs. EDB was not detected in samples requiring this analysis; the analytical precision and accuracy was evaluated against the LCS/LCSD results.

10.6 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed as required by the methods. All %R and RPD values were within the laboratory control limits.

10.7 Field Duplicates

One set of field duplicates was submitted for EDB analysis. EDB was not detected at or above the RL in either sample; the field precision met the project control criteria.

10.8 Reporting Limits and Target Compound Quantitation

The reported RL was supported with adequate ICAL concentrations. EDB was not detected in samples in these SDGs; a second column confirmation was therefore not required.

10.9 Overall Assessment of EDB Data Usability

EDB data are of known quality and acceptable for use.

SUMMARY

Table I. Data Affected by QC Anomalies:

Laboratory ID	Sample ID	Analyte	Qualifier	Qualified Reason
K1208721-002	REC6-MW-2-083012	Diss. Sulfide	**J**	Field duplicate RPD >35%.
K1208721-003	REC6-MW-2-083012-D	Diss. Sulfide	**J**	Field duplicate RPD >35%.
208426-07	REC5-MW-1-082912	Diss. Antimony	**J**	Field duplicate concentration difference >2xRL.
208426-07	REC5-MW-1-082912	Diss. Zinc	**J**	Field duplicate concentration difference >2xRL.
208426-07	REC5-MW-1-082912	Diss. Lead	**J**	Field duplicate RPD >35%.
208426-07	REC5-MW-1-082912	Diss. Copper	**J**	Field duplicate RPD >35%.
208426-07	REC5-MW-1-082912	Total Zinc	**J**	Field duplicate RPD >35%.
208426-09	REC5-MW-1-082912-D	Diss. Antimony	**J**	Field duplicate concentration difference >2xRL.
208426-09	REC5-MW-1-082912-D	Diss. Zinc	**J**	Field duplicate concentration difference >2xRL.
208426-09	REC5-MW-1-082912-D	Diss. Lead	**J**	Field duplicate RPD >35%.
208426-09	REC5-MW-1-082912-D	Diss. Copper	**J**	Field duplicate RPD >35%.
208426-09	REC5-MW-1-082912-D	Total Zinc	**J**	Field duplicate RPD >35%.
208463-04	REC7-MW-2-083012	Total Arsenic	**UJ**	CCV recovery biased low.
208463-07	NRP-MW-5-083012	Total Arsenic	**UJ**	CCV recovery biased low.
208463-08	NRP-MW-4-083012	Total Arsenic	**UJ**	CCV recovery biased low.
208491-01	AP-MW-1-083112	Total Arsenic	**UJ**	CCV recovery biased low.
209066-15	Boiler-B-3A-1-2	Beryllium	**UJ**	CCV recovery <90%.
209066-16	Boiler-B-3A-4-5	Beryllium	**UJ**	CCV recovery <90%.
209066-17	Boiler-B-3A-6.5-7.5	Beryllium	**UJ**	CCV recovery <90%.
209066-20	Boiler-MW-1-10-11	Beryllium	**UJ**	CCV recovery <90%.
209066-21	Boiler-MW-1-12-13	Beryllium	**UJ**	CCV recovery <90%.
209066-22	Boiler-MW-1-16-17	Beryllium	**UJ**	CCV recovery <90%.
209066-23	Boiler-B-3B-1-2	Beryllium	**UJ**	CCV recovery <90%; internal standard recovery biased high.
209066-24	Boiler-B-3B-4-5	Beryllium	**UJ**	CCV recovery <90%.
209066-34	REC5-HA-1-0-1	Beryllium	**UJ**	CCV recovery <90%.
209066-41	REC5-HA-4-0-1	Nickel	**J**	Field duplicate RPD >35%.
209066-42	REC5-HA-4-0-1-D	Nickel	**J**	Field duplicate RPD >35%.
209066-70	NRP-B-22-11-12	TPH-Diesel	**J**	Field duplicate RPD >35%.
209066-70	NRP-B-22-11-12	TPH-Motor Oil	**J**	Field duplicate RPD >35%.
209066-71	NRP-B-22-11-12-D	TPH-Diesel	**J**	Field duplicate RPD >35%.
209066-71	NRP-B-22-11-12-D	TPH-Motor Oil	**J**	Field duplicate RPD >35%.
209066-70	NRP-B-22-11-12	TPH-Gasoline	**J**	Field duplicate RPD >35%.
209066-71	NRP-B-22-11-12-D	TPH-Gasoline	**J**	Field duplicate RPD >35%.

Laboratory ID	Sample ID	Analyte	Qualifier	Qualified Reason
209066-74	NRP-B-18-11.5-12.5	TPH-Gasoline	**J**	Field duplicate RPD >35%.
209066-75	NRP-B-18-11.5-12.5-D	TPH-Gasoline	**J**	Field duplicate RPD >35%.
209130-07	REC1-MW-5-6.5-7.5	TPH-Gasoline	**UJ**	Sample was not collected into preserved container.
208404-06	REC6-MW-1-082812	Vinyl acetate	**UJ**	Reported MRL based on TIC search
208404-06	REC6-MW-1-082812	1,4-Dioxane	**UJ**	Reported MRL based on TIC search
208404-07	REC6-MW-1-082812-D	Vinyl acetate	**UJ**	Reported MRL based on TIC search
208404-07	REC6-MW-1-082812-D	1,4-Dioxane	**UJ**	Reported MRL based on TIC search
208404-08	UST29-MW-1-082812	Vinyl acetate	**UJ**	Reported MRL based on TIC search
208404-08	UST29-MW-1-082812	1,4-Dioxane	**UJ**	Reported MRL based on TIC search
208463-02	REC6-MW-2-083012	Bromoform	**UJ**	CCV recovery biased low.
208463-02	REC6-MW-2-083012	Vinyl acetate	**UJ**	Reported MRL based on TIC search
208463-02	REC6-MW-2-083012	1,4-Dioxane	**UJ**	Reported MRL based on TIC search
208463-04	REC7-MW-2-083012	Bromoform	**UJ**	CCV recovery biased low.
208463-05	NRP-MW-3-083012	Bromoform	**UJ**	CCV recovery biased low.
208463-06	REC7-MW-1-083012	Bromoform	**UJ**	CCV recovery biased low.
208491-03	NRP-MW-2-083112	Bromoform	**UJ**	CCV recovery biased low.
208491-04	NRP-MW-1-083112	Bromoform	**UJ**	CCV recovery biased low.
209028-08	REC1-MW-1-13-14	Dichlorodifluoromethane	**R**	MS %R <10%.
209066-70	NRP-B-22-11-12	Ethylbenzene	**J**	Field duplicate RPD >35%.
209066-70	NRP-B-22-11-12	n-Propylbenzene	**J**	Field duplicate RPD >35%.
209066-70	NRP-B-22-11-12	sec-Butylbenzene	**J**	Field duplicate RPD >35%.
209066-70	NRP-B-22-11-12	Naphthalene	**J**	Field duplicate RPD >35%.
209066-70	NRP-B-22-11-12	tert-Butylbenzene	**J**	Field duplicate RPD >35%.
209066-70	NRP-B-22-11-12	Isopropylbenzene	**J**	Field duplicate RPD >35%.
209066-70	NRP-B-22-11-12	p-Isopropyltoluene	**J**	Field duplicate RPD >35%.
209066-71	NRP-B-22-11-12-D	Ethylbenzene	**J**	Field duplicate RPD >35%.
209066-71	NRP-B-22-11-12-D	n-Propylbenzene	**J**	Field duplicate RPD >35%.
209066-71	NRP-B-22-11-12-D	sec-Butylbenzene	**J**	Field duplicate RPD >35%.
209066-71	NRP-B-22-11-12-D	Naphthalene	**J**	Field duplicate RPD >35%.
209066-71	NRP-B-22-11-12-D	tert-Butylbenzene	**J**	Field duplicate RPD >35%.
209066-71	NRP-B-22-11-12-D	Isopropylbenzene	**J**	Field duplicate RPD >35%.
209066-71	NRP-B-22-11-12-D	p-Isopropyltoluene	**J**	Field duplicate RPD >35%.
209066-79	NRP-B-19-13-14	Dichlorodifluoromethane	**R**	MS %R <10%.
209095-06	NRP-B-20-12-13	Dichlorodifluoromethane	**R**	MS %R <10%.
209130-07	REC1-MW-5-6.5-7.5	VOCs	**UJ**	Sample was not collected into preserved container.
209130-10	UST68-MW-6-14-15	n-Propylbenzene	**J**	Field duplicate concentration difference >2xRL.
209130-11	UST68-MW-6-14-15-D	n-Propylbenzene	**UJ**	Field duplicate concentration difference >2xRL.

Laboratory ID	Sample ID	Analyte	Qualifier	Qualified Reason
209095-07	HB-B-1-2-3	Bis(2-chloro-1-methylethyl) ether	**UJ**	CCV recovery biased low.
209095-07	HB-B-1-2-3	Benzoic acid	**UJ**	CCV recovery biased low.
209095-08	HB-B-1-2-3-D	Bis(2-chloro-1-methylethyl) ether	**UJ**	CCV recovery biased low.
209095-09	HB-B-1-3-4	Bis(2-chloro-1-methylethyl) ether	**UJ**	CCV recovery biased low.
209095-10	HB-B-1-6-7	Bis(2-chloroimethylethyl) ether	**UJ**	CCV recovery biased low.
209095-11	HB-MW-1-1.5-2	Bis(2-chloro-1-methylethyl) ether	**UJ**	CCV recovery biased low.
209095-12	HB-MW-1-1.5-2-D	Bis(2-chloro-1-methylethyl) ether	**UJ**	CCV recovery biased low.
209095-12	HB-MW-1-1.5-2-D	Benzoic acid	**UJ**	CCV recovery biased low.
209095-12	HB-MW-1-1.5-2-D	Di-n-octyl phthalate	**UJ**	Internal standard recovery biased low.
209095-12	HB-MW-1-1.5-2-D	Benzo(g,h,i)perylene	**J**	Internal standard recovery biased low.
209095-12	HB-MW-1-1.5-2-D	Indeno(1,2,3-cd)pyrene	**J**	Internal standard recovery biased low.
209095-12	HB-MW-1-1.5-2-D	Benzo(b)fluoranthene	**J**	Internal standard recovery biased low.
209095-12	HB-MW-1-1.5-2-D	Benzo(k)fluoranthene	**UJ**	Internal standard recovery biased low.
209095-12	HB-MW-1-1.5-2-D	Benzo(a)pyrene	**J**	Internal standard recovery biased low.
209095-12	HB-MW-1-1.5-2-D	Dibenzo(a,h)anthracene	**UJ**	Internal standard recovery biased low.
209095-13	HB-MW-1-3-3.5	Bis(2-chloro-1-methylethyl) ether	**UJ**	CCV recovery biased low.
209095-13	HB-MW-1-3-3.5	Benzoic acid	**UJ**	CCV recovery biased low.
209095-14	HB-MW-1-6-7	Bis(2-chloro-1-methylethyl) ether	**UJ**	CCV recovery biased low.
209095-21	HB-B-2-1-1.5	Bis(2-chloro-1-methylethyl) ether	**UJ**	CCV recovery biased low.
209095-22	HB-B-2-5-6	Bis(2-chloro-1-methylethyl) ether	**UJ**	CCV recovery biased low.
209095-22	HB-B-2-5-6	Benzoic acid	**UJ**	CCV recovery biased low.
209095-23	HB-B-2-6-7	Bis(2-chloro-1-methylethyl) ether	**UJ**	CCV recovery biased low.
209095-23	HB-B-2-6-7	Benzoic acid	**UJ**	CCV recovery biased low.
209213-01	REC1-MW-9-091312	Bis(2-chloro-1-methylethyl) ether	**UJ**	CCV recovery biased low.
209220-02	HB-MW-1-091412	Bis(2-chloro-1-methylethyl) ether	**UJ**	CCV recovery biased low.
209220-02	HB-MW-1-091412	Di-n-octyl phthalate	**UJ**	Internal standard recovery biased low.
209220-02	HB-MW-1-091412	4-Nitrophenol	**UJ**	MS/MSD %R <LCL.
209220-02	HB-MW-1-091412	Phenol	**UJ**	MS/MSD %R <LCL.
209220-02	HB-MW-1-091412	Benzoic acid	**UJ**	MS/MSD and LCS/LCSD %R <LCL.
209220-05	HB-MW-1-091412-D	Bis(2-chloro-1-methylethyl) ether	**UJ**	CCV recovery biased low.
209220-05	HB-MW-1-091412-D	Benzoic acid	**UJ**	LCS/LCSD %R <LCL.

Laboratory ID	Sample ID	Analyte	Qualifier	Qualified Reason
208375-03	MW-4-082712	Fluorene	**J**	Field duplicate RPD value >35%.
208375-03	MW-4-082712	Naphthalene	**J**	Field duplicate RPD value >35%.
208375-04	MW-3-082712	Anthracene	**J**	Internal standard recovery biased low.
208375-04	MW-3-082712	Pyrene	**J**	Internal standard recovery biased low.
208375-04	MW-3-082712	Benzo(g,h,i)perylene	**UJ**	Internal standard recovery biased low.
208375-04	MW-3-082712	Fluoranthene	**J**	Internal standard recovery biased low.
208375-04	MW-3-082712	Acenaphthylene	**UJ**	Internal standard recovery biased low.
208375-04	MW-3-082712	Phenanthrene	**J**	Internal standard recovery biased low.
208375-04	MW-3-082712	Naphthalene	**UJ**	Internal standard recovery biased low.
208375-05	MW-4-082712-D	Naphthalene	**J**	Field duplicate RPD value >35%.
208375-05	MW-4-082712-D	Fluorene	**J**	Field duplicate RPD value >35%; internal standard recovery biased low.
208375-05	MW-4-082712-D	Anthracene	**J**	Internal standard recovery biased low.
208375-05	MW-4-082712-D	Pyrene	**J**	Internal standard recovery biased low.
208375-05	MW-4-082712-D	Benzo(g,h,i)perylene	**UJ**	Internal standard recovery biased low.
208375-05	MW-4-082712-D	Indeno(1,2,3-cd)pyrene	**UJ**	Internal standard recovery biased low.
208375-05	MW-4-082712-D	Benzo(b)fluoranthene	**UJ**	Internal standard recovery biased low.
208375-05	MW-4-082712-D	Fluoranthene	**UJ**	Internal standard recovery biased low.
208375-05	MW-4-082712-D	Benzo(k)fluoranthene	**UJ**	Internal standard recovery biased low.
208375-05	MW-4-082712-D	Acenaphthylene	**UJ**	Internal standard recovery biased low.
208375-05	MW-4-082712-D	Chrysene	**J**	Internal standard recovery biased low.
208375-05	MW-4-082712-D	Benzo(a)pyrene	**UJ**	Internal standard recovery biased low.
208375-05	MW-4-082712-D	Dibenzo(a,h)anthracene	**UJ**	Internal standard recovery biased low.
208375-05	MW-4-082712-D	Benz(a)anthracene	**UJ**	Internal standard recovery biased low.
208375-05	MW-4-082712-D	Phenanthrene	**J**	Internal standard recovery biased low.
208426-01	UST70-MW-1-082912	Anthracene	**UJ**	Internal standard recovery biased low.
208426-01	UST70-MW-1-082912	Pyrene	**J**	Internal standard recovery biased low.
208426-01	UST70-MW-1-082912	Benzo(g,h,i)perylene	**UJ**	Internal standard recovery biased low.
208426-01	UST70-MW-1-082912	Indeno(1,2,3-cd)pyrene	**UJ**	Internal standard recovery biased low.
208426-01	UST70-MW-1-082912	Benzo(b)fluoranthene	**UJ**	Internal standard recovery biased low.
208426-01	UST70-MW-1-082912	Fluoranthene	**J**	Internal standard recovery biased low.
208426-01	UST70-MW-1-082912	Benzo(k)fluoranthene	**UJ**	Internal standard recovery biased low.
208426-01	UST70-MW-1-082912	Acenaphthylene	**UJ**	Internal standard recovery biased low.
208426-01	UST70-MW-1-082912	Chrysene	**J**	Internal standard recovery biased low.
208426-01	UST70-MW-1-082912	Benzo(a)pyrene	**UJ**	Internal standard recovery biased low.
208426-01	UST70-MW-1-082912	Dibenzo(a,h)anthracene	**UJ**	Internal standard recovery biased low.
208426-01	UST70-MW-1-082912	Benz(a)anthracene	**J**	Internal standard recovery biased low.
208426-01	UST70-MW-1-082912	Phenanthrene	**J**	Internal standard recovery biased low.
208426-01	UST70-MW-1-082912	Fluorene	**J**	Internal standard recovery biased low.
208426-03	UST70-MW-2-082912	Benzo(g,h,i)perylene	**UJ**	Internal standard recovery biased low.

Laboratory ID	Sample ID	Analyte	Qualifier	Qualified Reason
208426-03	UST70-MW-2-082912	Indeno(1,2,3-cd)pyrene	**UJ**	Internal standard recovery biased low.
208426-03	UST70-MW-2-082912	Benzo(b)fluoranthene	**UJ**	Internal standard recovery biased low.
208426-03	UST70-MW-2-082912	Benzo(k)fluoranthene	**UJ**	Internal standard recovery biased low.
208426-03	UST70-MW-2-082912	Benzo(a)pyrene	**UJ**	Internal standard recovery biased low.
208426-03	UST70-MW-2-082912	Dibenzo(a,h)anthracene	**UJ**	Internal standard recovery biased low.
209028-07	REC1-MW-1-11-12	Pyrene	**J**	Field duplicate RPD >35%.
209028-07	REC1-MW-1-11-12	Acenaphthene	**J**	Field duplicate RPD >35%.
209028-07	REC1-MW-1-11-12	Phenanthrene	**J**	Field duplicate RPD >35%.
209028-07	REC1-MW-1-11-12	Fluorene	**J**	Field duplicate RPD >35%.
209028-07	REC1-MW-1-11-12	Anthracene	**UJ**	Internal standard recovery biased low.
209028-07	REC1-MW-1-11-12	Benzo(g,h,i)perylene	**UJ**	Internal standard recovery biased low.
209028-07	REC1-MW-1-11-12	Indeno(1,2,3-cd)pyrene	**UJ**	Internal standard recovery biased low.
209028-07	REC1-MW-1-11-12	Benzo(b)fluoranthene	**UJ**	Internal standard recovery biased low.
209028-07	REC1-MW-1-11-12	Fluoranthene	**J**	Internal standard recovery biased low.
209028-07	REC1-MW-1-11-12	Benzo(k)fluoranthene	**UJ**	Internal standard recovery biased low.
209028-07	REC1-MW-1-11-12	Chrysene	**UJ**	Internal standard recovery biased low.
209028-07	REC1-MW-1-11-12	Benzo(a)pyrene	**UJ**	Internal standard recovery biased low.
209028-07	REC1-MW-1-11-12	Dibenzo(a,h)anthracene	**UJ**	Internal standard recovery biased low.
209028-07	REC1-MW-1-11-12	Benz(a)anthracene	**UJ**	Internal standard recovery biased low.
209028-09	REC1-MW-1-11-12-D	Pyrene	**J**	Field duplicate RPD >35%.
209028-09	REC1-MW-1-11-12-D	Acenaphthene	**J**	Field duplicate RPD >35%.
209028-09	REC1-MW-1-11-12-D	Phenanthrene	**J**	Field duplicate RPD >35%.
209028-09	REC1-MW-1-11-12-D	Fluorene	**J**	Field duplicate RPD >35%.
209066-23	Boiler-B-3B-1-2	Indeno(1,2,3-cd)pyrene	**J**	CCV recovery biased high; internal standard recovery biased low.
209066-23	Boiler-B-3B-1-2	Anthracene	**J**	Internal standard recovery biased low.
209066-23	Boiler-B-3B-1-2	Pyrene	**J**	Internal standard recovery biased low.
209066-23	Boiler-B-3B-1-2	Benzo(g,h,i)perylene	**J**	Internal standard recovery biased low.
209066-23	Boiler-B-3B-1-2	Benzo(b)fluoranthene	**J**	Internal standard recovery biased low.
209066-23	Boiler-B-3B-1-2	Fluoranthene	**J**	Internal standard recovery biased low.
209066-23	Boiler-B-3B-1-2	Benzo(k)fluoranthene	**J**	Internal standard recovery biased low.
209066-23	Boiler-B-3B-1-2	Acenaphthylene	**UJ**	Internal standard recovery biased low.
209066-23	Boiler-B-3B-1-2	Chrysene	**J**	Internal standard recovery biased low.
209066-23	Boiler-B-3B-1-2	Benzo(a)pyrene	**J**	Internal standard recovery biased low.
209066-23	Boiler-B-3B-1-2	Dibenzo(a,h)anthracene	**UJ**	Internal standard recovery biased low.
209066-23	Boiler-B-3B-1-2	Benz(a)anthracene	**J**	Internal standard recovery biased low.
209066-23	Boiler-B-3B-1-2	Acenaphthene	**UJ**	Internal standard recovery biased low.
209066-23	Boiler-B-3B-1-2	Phenanthrene	**J**	Internal standard recovery biased low.
209066-23	Boiler-B-3B-1-2	Fluorene	**UJ**	Internal standard recovery biased low.
209066-23	Boiler-B-3B-1-2	Naphthalene	**J**	Internal standard recovery biased low.

Laboratory ID	Sample ID	Analyte	Qualifier	Qualified Reason
209066-23	Boiler-B-3B-1-2	Total cPAHs TEQ	**J**	Internal standard recovery biased low.
209066-24	Boiler-B-3B-4-5	Indeno(1,2,3-cd)pyrene	**J**	CCV recovery biased high.
209066-25	DA-B-1-1-2	Indeno(1,2,3-cd)pyrene	**J**	CCV recovery biased high.
209066-26	DA-B-1-5-6	Indeno(1,2,3-cd)pyrene	**J**	CCV recovery biased high.
209066-28	Boiler-HA-2A-1-1	Indeno(1,2,3-cd)pyrene	**J**	CCV recovery biased high.
209066-30	Boiler-HA-2C-0-1	Indeno(1,2,3-cd)pyrene	**J**	CCV recovery biased high.
209066-31	Boiler-HA-2C-2-3	Indeno(1,2,3-cd)pyrene	**J**	CCV recovery biased high.
209066-32	Boiler-HA-2B-0-1	Indeno(1,2,3-cd)pyrene	**J**	CCV recovery biased high.
209066-47	GF9-B-1-5-6	Indeno(1,2,3-cd)pyrene	**J**	CCV recovery biased high.
209066-50	GF9-MW-1-5.5-6.5	Indeno(1,2,3-cd)pyrene	**J**	CCV recovery biased high.
209066-55	GF9-B-2-6-7	Indeno(1,2,3-cd)pyrene	**J**	CCV recovery biased high.
209066-56	GF9-B-2-9-9.5	Indeno(1,2,3-cd)pyrene	**J**	CCV recovery biased high; internal standard recovery biased low.
209066-56	GF9-B-2-9-9.5	Pyrene	**J**	Internal standard recovery biased low.
209066-56	GF9-B-2-9-9.5	Benzo(g,h,i)perylene	**J**	Internal standard recovery biased low.
209066-56	GF9-B-2-9-9.5	Benzo(b)fluoranthene	**J**	Internal standard recovery biased low.
209066-56	GF9-B-2-9-9.5	Benzo(k)fluoranthene	**J**	Internal standard recovery biased low.
209066-56	GF9-B-2-9-9.5	Chrysene	**J**	Internal standard recovery biased low.
209066-56	GF9-B-2-9-9.5	Benzo(a)pyrene	**J**	Internal standard recovery biased low.
209066-56	GF9-B-2-9-9.5	Dibenzo(a,h)anthracene	**J**	Internal standard recovery biased low.
209066-56	GF9-B-2-9-9.5	Benz(a)anthracene	**J**	Internal standard recovery biased low.
209066-70	NRP-B-22-11-12	Naphthalene	**J**	Field duplicate RPD >35%.
209066-71	NRP-B-22-11-12-D	Naphthalene	**J**	Field duplicate RPD >35%.
209066-72	NRP-B-22-15.5-16.5	Benzo(g,h,i)perylene	**J**	Internal standard recovery biased low.
209066-72	NRP-B-22-15.5-16.5	Indeno(1,2,3-cd)pyrene	**J**	Internal standard recovery biased low.
209066-72	NRP-B-22-15.5-16.5	Benzo(b)fluoranthene	**J**	Internal standard recovery biased low.
209066-72	NRP-B-22-15.5-16.5	Benzo(k)fluoranthene	**UJ**	Internal standard recovery biased low.
209066-72	NRP-B-22-15.5-16.5	Benzo(a)pyrene	**J**	Internal standard recovery biased low.
209066-72	NRP-B-22-15.5-16.5	Dibenzo(a,h)anthracene	**UJ**	Internal standard recovery biased low.
209066-74	NRP-B-18-11.5-12.5	Pyrene	**J**	Field duplicate concentration difference >2xRL.
209066-74	NRP-B-18-11.5-12.5	Fluoranthene	**J**	Field duplicate concentration difference >2xRL.
209066-74	NRP-B-18-11.5-12.5	Acenaphthene	**J**	Field duplicate concentration difference >2xRL.
209066-74	NRP-B-18-11.5-12.5	Phenanthrene	**J**	Field duplicate concentration difference >2xRL.
209066-74	NRP-B-18-11.5-12.5	Fluorene	**J**	Field duplicate concentration difference >2xRL.
209066-74	NRP-B-18-11.5-12.5	Naphthalene	**J**	Field duplicate concentration difference >2xRL.
209066-75	NRP-B-18-11.5-12.5-D	Pyrene	**UJ**	Field duplicate concentration difference >2xRL.

Laboratory ID	Sample ID	Analyte	Qualifier	Qualified Reason
209066-75	NRP-B-18-11.5-12.5-D	Fluoranthene	**UJ**	Field duplicate concentration difference >2xRL.
209066-75	NRP-B-18-11.5-12.5-D	Acenaphthene	**UJ**	Field duplicate concentration difference >2xRL.
209066-75	NRP-B-18-11.5-12.5-D	Phenanthrene	**UJ**	Field duplicate concentration difference >2xRL.
209066-75	NRP-B-18-11.5-12.5-D	Fluorene	**UJ**	Field duplicate concentration difference >2xRL.
209066-75	NRP-B-18-11.5-12.5-D	Naphthalene	**UJ**	Field duplicate concentration difference >2xRL.
209095-01	NRP-B-21-7-8	Benzo(g,h,i)perylene	**J**	Internal standard recovery biased low.
209095-01	NRP-B-21-7-8	Indeno(1,2,3-cd)pyrene	**J**	Internal standard recovery biased low.
209095-01	NRP-B-21-7-8	Benzo(b)fluoranthene	**J**	Internal standard recovery biased low.
209095-01	NRP-B-21-7-8	Benzo(k)fluoranthene	**J**	Internal standard recovery biased low.
209095-01	NRP-B-21-7-8	Acenaphthylene	**J**	Internal standard recovery biased low.
209095-01	NRP-B-21-7-8	Chrysene	**J**	Internal standard recovery biased low.
209095-01	NRP-B-21-7-8	Benzo(a)pyrene	**J**	Internal standard recovery biased low.
209095-01	NRP-B-21-7-8	Dibenzo(a,h)anthracene	**UJ**	Internal standard recovery biased low.
209095-01	NRP-B-21-7-8	Benz(a)anthracene	**J**	Internal standard recovery biased low.
209095-01	NRP-B-21-7-8	Naphthalene	**J**	Internal standard recovery biased low.
209095-01	NRP-B-21-7-8	Pyrene	**J**	LCS/LCSD RPD >20%; internal standard recovery biased low.
209095-02	NRP-B-21-10.5-11.5	Benzo(g,h,i)perylene	**J**	Internal standard recovery biased low.
209095-02	NRP-B-21-10.5-11.5	Indeno(1,2,3-cd)pyrene	**J**	Internal standard recovery biased low.
209095-02	NRP-B-21-10.5-11.5	Benzo(b)fluoranthene	**J**	Internal standard recovery biased low.
209095-02	NRP-B-21-10.5-11.5	Benzo(k)fluoranthene	**J**	Internal standard recovery biased low.
209095-02	NRP-B-21-10.5-11.5	Benzo(a)pyrene	**J**	Internal standard recovery biased low.
209095-02	NRP-B-21-10.5-11.5	Dibenzo(a,h)anthracene	**UJ**	Internal standard recovery biased low.
209095-02	NRP-B-21-10.5-11.5	Pyrene	**J**	LCS/LCSD RPD >20%.
209095-03	NRP-B-21-14-15	Benzo(g,h,i)perylene	**J**	Internal standard recovery biased low.
209095-03	NRP-B-21-14-15	Indeno(1,2,3-cd)pyrene	**J**	Internal standard recovery biased low.
209095-03	NRP-B-21-14-15	Benzo(b)fluoranthene	**J**	Internal standard recovery biased low.
209095-03	NRP-B-21-14-15	Benzo(k)fluoranthene	**UJ**	Internal standard recovery biased low.
209095-03	NRP-B-21-14-15	Benzo(a)pyrene	**J**	Internal standard recovery biased low.
209095-03	NRP-B-21-14-15	Dibenzo(a,h)anthracene	**UJ**	Internal standard recovery biased low.
209095-03	NRP-B-21-14-15	Pyrene	**J**	LCS/LCSD RPD >20%.
209095-04	NRP-B-20-8-9	Benzo(g,h,i)perylene	**UJ**	Internal standard recovery biased low.
209095-04	NRP-B-20-8-9	Indeno(1,2,3-cd)pyrene	**UJ**	Internal standard recovery biased low.
209095-04	NRP-B-20-8-9	Benzo(b)fluoranthene	**J**	Internal standard recovery biased low.
209095-04	NRP-B-20-8-9	Benzo(k)fluoranthene	**UJ**	Internal standard recovery biased low.
209095-04	NRP-B-20-8-9	Chrysene	**J**	Internal standard recovery biased low.
209095-04	NRP-B-20-8-9	Benzo(a)pyrene	**J**	Internal standard recovery biased low.

Laboratory ID	**Sample ID**	**Analyte**	**Qualifier**	**Qualified Reason**
209095-04	NRP-B-20-8-9	Dibenzo(a,h)anthracene	**UJ**	Internal standard recovery biased low.
209095-04	NRP-B-20-8-9	Benz(a)anthracene	**J**	Internal standard recovery biased low.
209095-04	NRP-B-20-8-9	Pyrene	**J**	LCS/LCSD RPD >20%; internal standard recovery biased low.
209095-05	NRP-B-20-10-11	Pyrene	**J**	LCS/LCSD RPD >20%.
209095-06	NRP-B-20-12-13	Pyrene	**J**	LCS/LCSD RPD >20%.
209095-15	DA-MW-1-1-2	Pyrene	**J**	LCS/LCSD RPD >20%.
209095-16	DA-MW-1-5-6	Pyrene	**J**	LCS/LCSD RPD >20%.
209095-17	DA-MW-1-7-8	Pyrene	**J**	LCS/LCSD RPD >20%.
209095-20	REC1-MW-4-13-14	Pyrene	**J**	LCS/LCSD RPD >20%.
209130-07	REC1-MW-5-6.5-7.5	Anthracene	**UJ**	Internal standard recovery biased low.
209130-07	REC1-MW-5-6.5-7.5	Pyrene	**J**	Internal standard recovery biased low.
209130-07	REC1-MW-5-6.5-7.5	Benzo(g,h,i)perylene	**J**	Internal standard recovery biased low.
209130-07	REC1-MW-5-6.5-7.5	Indeno(1,2,3-cd)pyrene	**J**	Internal standard recovery biased low.
209130-07	REC1-MW-5-6.5-7.5	Benzo(b)fluoranthene	**UJ**	Internal standard recovery biased low.
209130-07	REC1-MW-5-6.5-7.5	Fluoranthene	**J**	Internal standard recovery biased low.
209130-07	REC1-MW-5-6.5-7.5	Benzo(k)fluoranthene	**UJ**	Internal standard recovery biased low.
209130-07	REC1-MW-5-6.5-7.5	Chrysene	**UJ**	Internal standard recovery biased low.
209130-07	REC1-MW-5-6.5-7.5	Benzo(a)pyrene	**UJ**	Internal standard recovery biased low.
209130-07	REC1-MW-5-6.5-7.5	Dibenzo(a,h)anthracene	**UJ**	Internal standard recovery biased low.
209130-07	REC1-MW-5-6.5-7.5	Benz(a)anthracene	**UJ**	Internal standard recovery biased low.
209130-07	REC1-MW-5-6.5-7.5	Phenanthrene	**UJ**	Internal standard recovery biased low.
209130-08	REC1-MW-5-12-13	Anthracene	**UJ**	Internal standard recovery biased low.
209130-08	REC1-MW-5-12-13	Pyrene	**J**	Internal standard recovery biased low.
209130-08	REC1-MW-5-12-13	Fluoranthene	**J**	Internal standard recovery biased low.
209130-08	REC1-MW-5-12-13	Chrysene	**J**	Internal standard recovery biased low.
209130-08	REC1-MW-5-12-13	Benz(a)anthracene	**J**	Internal standard recovery biased low.
K1208721-002	REC6-MW-2-083012	Formaldehyde	**UJ**	Extraction was performed past required holding time.

Table II. Data Affected by Detections in Method Blank

Sample ID	Compound	Original Result	Adjusted Result	Unit	Report Section
REC3-MW-1-082912 MW-6-082912	Diethyl phthalate	1 1	**1 U** **1 U**	µg/L	**2.5**
NRP-MW-4-083012 NRP-MW-5-083012 REC7-MW-2-083012 UG-MW-1-083012	Total Zinc	4.53 2.70 1.82 3.36	**4.53 J** **2.70 J** **1.82 J** **3.36 J**	µg/L	**7.4**
NRP-MW-2-083112	Dissolved Zinc	2.45	**2.45 J**	µg/L	**7.4**
OMS-MW-1-082812 REC7-MW-3-082812 REC7-MW-4-082812	Dissolved Beryllium	0.0034 J 0.0005 J 0.0012 J	**0.0222 U** **0.0222 U** **0.0222 U**	µg/L	**7.4**
REC7-MW-4-082812	Total Beryllium	0.0086 J	**0.0250 U**	µg/L	**7.4**
OMS-MW-1-082812 REC7-MW-3-082812	Dissolved Lead	0.058 0.060	**0.058 J** **0.060 J**	µg/L	**7.4**
OMS-MW-1-082812 REC7-MW-3-082812 REC7-MW-4-082812	Dissolved Thallium	0.004 J 0.016 J 0.012 J	**0.0222 U** **0.0222 U** **0.0222 U**	µg/L	**7.4**
REC7-MW-4-082812	Total Thallium	0.019 J	**0.0250 U**	µg/L	**7.4**
REC3-MW-1-082912 UST70-MW-2-082912	Dissolved Beryllium	0.0018 J 0.0018 J	**0.05 U** **0.05 U**	µg/L	**7.4**
REC3-MW-1-082912 UST70-MW-2-082912	Dissolved Lead	0.047 J 0.035 J	**0.05 U** **0.05 U**	µg/L	**7.4**
UST70-MW-2-082912	Dissolved Thallium	0.03 J	**0.05 U**	µg/L	**7.4**
MW-1-082712	Dissolved Beryllium	0.0023 J	**0.05 U**	µg/L	**7.4**
MW-2-082712	Total Beryllium	0.0016 J	**0.0222 U**	µg/L	**7.4**
MW-1-082712	Dissolved Silver	0.031 J	**0.05 U**	µg/L	**7.4**
MW-2-082712	Total Silver	0.005 J	**0.0222 U**	µg/L	**7.4**
MW-1-082712	Dissolved Thallium	0.012 J	**0.05 U**	µg/L	**7.4**

Table III. Data Qualifiers are defined as follows:

Data Qualifier	Definition
DNR	Do not report; the result should be reported from an alternative analysis.
J	The analyte was detected above the reported quantitation limit, and the reported concentration was an estimated value.
R	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
U	The analyte was analyzed for, but was considered not detected at the reporting limit or reported value.
UJ	The analyte was analyzed for, and the associated quantitation limit was an estimated value.

REFERENCES

USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review,* Office of Superfund Remediation and Technical Innovation, U.S. Environmental Protection Agency, January 2010, USEPA 540/R-10/011

USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* Office of Superfund Remediation and Technical Innovation, U.S. Environmental Protection Agency, June 2008, USEPA-540-R-08-01.

USEPA *Method 1631, Revision E: Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry, Office of Water, U.S. Environmental Protection Agency, August 2002, EPA-821-R-02-019.*

USEPA *Test Methods for Evaluating Solid Waste (SW-846). Third Edition and Revised Update IIIA.* Office of Solid Waste and Emergency Response, Washington, D.C. April 1998.

USEPA *Methods for Chemical Analysis of Water and Wastes,* EPA-600/4-79-020, March 1983 and updates.

Standard Methods for the Examination of Water and Wastewater, American Public Health Association, 20th Edition, 1995.

Ecology (Washington State Department of). 1997. *Analytical Methods for Petroleum Hydrocarbons.* Publication No. ECY 97-602. June 1997.

PSEP *Recommended Guidelines for Measuring Organic Compounds in Puget Sound Water, Sediment and Tissue Samples,* Puget Sound Water Quality Authority, April 1997.

Aspect Consulting, LLC. *Quality Assurance Project Plan, Port of Bellingham Former GP Mill Property RI/FS,* Seattle, Washington. September, 2009.

Appendix A

Field duplicate RPD is indicative of field and laboratory precision and sample homogeneity in combination. The CLP National Functional Guidelines or *Work Plan* do not specify criteria for field duplicate evaluation. An advisory criterion of 35% was applied to evaluating the RPD values of field duplicate results that are ≥5xRL. For results that are <5xRL, an advisory criterion of ±2RL was applied to evaluating the concentration differences. The RPD (or concentration difference as applicable) values and data qualification for detected compounds in field duplicates are presented as follows:

Analyte	Units	RL	Parent & Field Duplicate Sample Result		RPD	Delta	Data Qualifier
			Boiler-HA-2B-0-1	**Boiler-HA-2B-0-1-D**			
Lead	mg/kg	1	1590	1780	11%	-	
Arsenic	mg/kg	1	14.5	20.3	33%	-	
			Boiler-MW-1-091412	**Boiler-MW-1-091412-D**			
Diss Lead	µg/L	1	4.42	4.86	-	0.44	
Diss. Nickel	µg/L	1	1.94	2.09	-	0.15	
Diss. Antimony	µg/L	1	1.78	1.79	-	0.01	
Diss. Arsenic	µg/L	1	2.02	2.03	-	0.01	
Diss. Chromium	µg/L	1	11.3	11.9	5%	-	
Diss. Copper	µg/L	1	17.1	17.2	1%	-	
Diss. Zinc	µg/L	1	2.64	2.95	-	0.31	
			DA-MW-1-091312	**DA-MW-1-091312-D**			
Anthracene	µg/L	0.05	0.11	0.11	-	0	
Pyrene	µg/L	0.05	0.6	0.6	0%	-	
Benzo(b)fluoranthene	µg/L	0.01	0.016	0.013	-	0.003	
Fluoranthene	µg/L	0.05	0.7	0.74	6%	-	
Chrysene	µg/L	0.01	0.042	0.04	-	0.002	
Benzo(a)pyrene	µg/L	0.01	0.01	0.01	-	0	
Benz(a)anthracene	µg/L	0.01	0.055	0.053	4%	-	
Acenaphthene	µg/L	0.5	7	8	13%	-	
Phenanthrene	µg/L	0.05	0.69	0.7	1%	-	
Fluorene	µg/L	0.05	1.2	1.2	0%	-	
Naphthalene	µg/L	0.05	0.33	0.38	14%	-	
			GF11-B-1-2-3	**GF11-B-1-2-3-D**			
Lead	mg/kg	1	43.9	31	34%	-	
			HB-B-1-2-3	**HB-B-1-2-3-D**			
Mercury	mg/kg	0.1	0.13	0.13	0%	-	
Lead	mg/kg	1	119	99.1	18%	-	

Analyte	**Units**	**RL**	**Parent & Field Duplicate Sample Result**		**RPD**	**Delta**	**Data Qualifier**
Nickel	mg/kg	1	19.6	21	7%	-	
Silver	mg/kg	1	ND	ND	-	-	
Thallium	mg/kg	1	ND	ND	-	-	
Antimony	mg/kg	1	1.28	1.62	-	0.34	
Arsenic	mg/kg	1	7.3	7.1	3%	-	
Beryllium	mg/kg	1	ND	ND	-	-	
Cadmium	mg/kg	1	ND	ND	-	-	
Chromium	mg/kg	1	10.1	10.4	3%	-	
Copper	mg/kg	1	34.7	41.4	18%	-	
Zinc	mg/kg	1	82.6	96.9	16%	-	
Pyrene	mg/kg	0.03	0.16	0.13	21%	0.03	
Benzo(g,h,i)perylene	mg/kg	0.03	0.059	0.058	-	0.001	
Indeno(1,2,3-cd)pyrene	mg/kg	0.03	0.055	0.05	-	0.005	
Benzo(b)fluoranthene	mg/kg	0.03	0.096	0.085	-	0.011	
Fluoranthene	mg/kg	0.03	0.13	0.11	17%	-	
Benzo(k)fluoranthene	mg/kg	0.03	0.037	0.03	-	0.007	
Chrysene	mg/kg	0.03	0.086	0.074	15%	-	
Benzo(a)pyrene	mg/kg	0.03	0.081	0.07	-	0.011	
Benz(a)anthracene	mg/kg	0.03	0.071	0.06	-	0.011	
Phenanthrene	mg/kg	0.03	0.075	0.07	-	0.005	
			HB-MW-1-1.5-2	**HB-MW-1-1.5-2-D**			
Benz(a)anthracene	mg/kg	0.03	0.053	0.063	-	0.01	
Benzo(a)pyrene	mg/kg	0.03	0.069	0.08	-	0.011	
Benzo(b)fluoranthene	mg/kg	0.03	0.073	0.091	-	0.018	
Benzo(g,h,i)perylene	mg/kg	0.03	0.054	0.069	-	0.015	
Chrysene	mg/kg	0.03	0.073	0.089	-	0.016	
Fluoranthene	mg/kg	0.03	0.06	0.083	-	0.023	
Indeno(1,2,3-cd)pyrene	mg/kg	0.03	0.04	0.052	-	0.012	
Phenanthrene	mg/kg	0.03	0.033	0.043	-	0.01	
Pyrene	mg/kg	0.03	0.096	0.11	-	0.014	
			MW-4-082712	**MW-4-082712-D**			
Total Lead	µg/L	1	11.7	12.1	3%	-	
TPH-Diesel	µg/L	50	190	210	-	20	
Naphthalene	µg/L	1	130	130	0%	-	
Anthracene	µg/L	0.05	0.087	0.065	-	0.022	
Pyrene	µg/L	0.05	0.062	0.051	-	0.011	

Analyte	**Units**	**RL**	**Parent & Field Duplicate Sample Result**		**RPD**	**Delta**	**Data Qualifier**
Fluoranthene	µg/L	0.05	0.063	ND	-	0.063	
Chrysene	µg/L	0.01	0.013	0.012	-	0.001	
Acenaphthene	µg/L	0.5	6	4.2	35%	-	
Phenanthrene	µg/L	0.5	2.4	1.7	34%	-	
Fluorene	µg/L	0.5	3.3	2.3	36%	-	**J/J**
Naphthalene	µg/L	5	63	41	42%	-	**J/J**
			NRP-B-18-11.5-12.5	**NRP-B-18-11.5-12.5-D**			
TPH-Diesel	mg/kg	50	ND	78	-	78	**UJ/J**
TPH-Gasoline	mg/kg	2	12	310	185%	-	**J/J**
Pyrene	mg/kg	0.01	0.021	ND	-	0.021	**J/UJ**
Fluoranthene	mg/kg	0.01	0.021	ND	-	0.021	**J/UJ**
Acenaphthene	mg/kg	0.01	0.085	ND	-	0.085	**J/UJ**
Phenanthrene	mg/kg	0.01	0.034	ND	-	0.034	**J/UJ**
Fluorene	mg/kg	0.01	0.077	ND	-	0.077	**J/UJ**
Naphthalene	mg/kg	0.01	0.26	ND	-	0.26	**J/UJ**
			NRP-B-22-11-12	**NRP-B-22-11-12-D**			
TPH-Diesel	mg/kg	50	14000	22000	44%	-	**J/J**
TPH-Motor Oil	mg/kg	250	7500	11000	38%	-	**J/J**
TPH-Gasoline	mg/kg	10	230	120	63%	-	**J/J**
Ethylbenzene	mg/kg	0.05	0.5	0.74	39%	-	**J/J**
n-Propylbenzene	mg/kg	0.05	0.5	0.89	56%	-	**J/J**
sec-Butylbenzene	mg/kg	0.05	0.27	0.56	70%	-	**J/J**
m,p-Xylenes	mg/kg	0.1	0.12	0.18	-	0.06	
Naphthalene	mg/kg	0.05	0.39	0.7	57%	-	**J/J**
o-Xylene	mg/kg	0.05	0.052	0.086	-	0.034	
1,2,4-Trimethylbenzene	mg/kg	0.05	0.07	0.12	-	0.05	
tert-Butylbenzene	mg/kg	0.05	0.37	0.7	62%	-	**J/J**
Isopropylbenzene	mg/kg	0.05	0.41	0.72	55%	-	**J/J**
p-Isopropyltoluene	mg/kg	0.05	0.33	0.65	65%	-	**J/J**
Total Xylenes	mg/kg	0.07	0.172	0.266	-	0.094	
Anthracene	mg/kg	1	10	11	10%	-	
Pyrene	mg/kg	1	19	20	5%	-	
Benzo(g,h,i)perylene	mg/kg	1	1.7	1.8	6%	0.1	
Benzo(b)fluoranthene	mg/kg	1	1.8	1.9	-	0.1	
Fluoranthene	mg/kg	1	3.7	3.7	-	0	
Acenaphthylene	mg/kg	1	3	3.8	-	0.8	

Analyte	**Units**	**RL**	**Parent & Field Duplicate Sample Result**		**RPD**	**Delta**	**Data Qualifier**
Chrysene	mg/kg	1	12	13	8%	-	
Benzo(a)pyrene	mg/kg	1	3.6	3.6	-	0	
Benz(a)anthracene	mg/kg	1	6.8	5.8	16%	-	
Acenaphthene	mg/kg	1	12	13	8%	-	
Phenanthrene	mg/kg	1	51	55	8%	-	
Fluorene	mg/kg	1	18	19	5%	-	
Naphthalene	mg/kg	1	5.5	2.8	-	2.7	**J/J**
			NRP-MW-1-083112	**NRP-MW-1-083112-D**			
Diss. Nickel	µg/L	1	4.47	4.88	-	0.41	
Diss. Arsenic	µg/L	1	1.1	1.13	-	0.03	
Diss. Selenium	µg/L	1	3.37	3.51	-	0.14	
			REC5-MW-1-082912	**REC5-MW-1-082912-D**			
Diss. Antimony	µg/L	1	3.65	2.3	-	1.35	**J/J**
Diss. Arsenic	µg/L	1	202	173	15%	-	
Diss. Chromium	µg/L	1	19.6	18.5	6%	-	
Diss. Copper	µg/L	1	12.8	4.29	100%	-	**J/J**
Diss. Lead	µg/L	1	12.2	2.08	142%	-	**J/J**
Diss. Nickel	µg/L	1	2.5	2.49	-	0.01	
Diss. Selenium	µg/L	1	2.62	2.23	-	0.39	
Diss. Zinc	µg/L	1	7.73	4.49	-	3.24	**J/J**
Total Antimony	µg/L	1	5.94	6.02	1%	-	
Total Arsenic	µg/L	1	213	204	4%	-	
Total Chromium	µg/L	1	26.7	26.3	2%	-	
Total Copper	µg/L	1	62.2	63	1%	-	
Total Lead	µg/L	1	88.7	88.5	0%	-	
Total Mercury	µg/L	0.1	0.16	0.17	-	0.01	
Total Nickel	µg/L	1	4.69	4.05	-	0.64	
Total Selenium	µg/L	1	1.58	1.35	-	0.23	
Total Zinc	µg/L	1	42.6	66.8	44%	-	**J/J**
			REC6-MW-1-082812	**REC6-MW-1-082812-D**			
1,2,4-Trimethylbenzene	µg/L	1	2.5	2.2	-	0.3	
1,3,5-Trimethylbenzene	µg/L	1	1.4	1.2	-	0.2	
Isopropylbenzene	µg/L	1	6.2	5.3	16%	-	
n-Propylbenzene	µg/L	1	3.7	3.2	-	0.5	
Toluene	µg/L	1	8	7	13%	-	
Ethylbenzene	µg/L	10	850	790	7%	-	

Analyte	**Units**	**RL**	**Parent & Field Duplicate Sample Result**		**RPD**	**Delta**	**Data Qualifier**
m,p-Xylenes	µg/L	200	3100	2900	7%	-	
o-Xylene	µg/L	10	670	620	8%	-	
Total Xylenes	µg/L	105	3770	3520	7%	-	
			REC6-MW-2-083012	**REC6-MW-2-083012-D**			
Ammonia as Nitrogen	mg/L	0.25	8.15	8.3	2%	-	
Sulfide	mg/L	0.05	0.906	0.551	49%	-	**J/J**
			REC1-MW-1-11-12	**REC1-MW-1-11-12-D**			
Pyrene	mg/kg	0.01	0.087	0.018	131%		**J/J**
Fluoranthene	mg/kg	0.01	0.02	ND		0.02	
Acenaphthene	mg/kg	0.01	0.17	0.048	112%		**J/J**
Phenanthrene	mg/kg	0.01	0.76	0.28	92%		**J/J**
Fluorene	mg/kg	0.01	0.35	0.079	126%		**J/J**
			REC1-MW-3-12-13	**REC1-MW-3-12-13-D**			
TPH-Diesel	mg/kg	50	2600	2800	7%		
			REC5-HA-4-0-1	**REC5-HA-4-0-1-D**			
Lead	mg/kg	1	6.9	6.84	1%		
Nickel	mg/kg	1	22.7	39.6	54%		**J/J**
Arsenic	mg/kg	1	2.23	2.42		0.19	
Chromium	mg/kg	1	10.6	11.3	6%		
Copper	mg/kg	1	6.89	7.44	8%		
Zinc	mg/kg	1	14.2	17.8	23%		
			UST68-MW-6-14-15	**UST68-MW-6-14-15-D**			
n-Propylbenzene	mg/kg	0.05	0.31	ND		0.31	**J/UJ**
sec-Butylbenzene	mg/kg	0.05	0.068	ND		0.068	
Isopropylbenzene	mg/kg	0.05	0.068	ND		0.068	
			REC1-MW-9-091312	**REC1-MW-9-091312-D**			
Ammonia as Nitrogen	mg/L	0.05	0.249	0.236		0.013	

Notes:

Delta – Concentration difference between the parent sample and its field duplicate
mg/kg – milligram per kilogram
mg/L – milligram per liter
ND – The analyte was not detected at or above the RL.
RL – Reporting limit
RPD – Relative percent difference
µg/L – microgram per liter