



***Revised Annual 2021 Groundwater
Monitoring and LNAPL Removal Report
Terminal 4 Slip 3 Upland Facility
Portland, Oregon
ECSI No. 272***

**Prepared for:
Port of Portland**

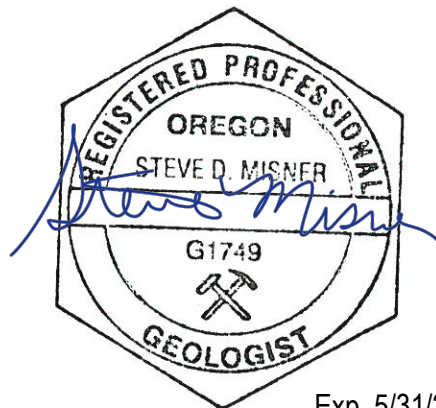
**April 13, 2022
1007-23**



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Exp. 5/31/2022

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Senior Associate

A blue ink handwritten signature, likely belonging to Herb Clough, written on a light blue background.

Herb Clough, P.E.
Principal Engineer

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1.0 Introduction

This annual report (Report) describes the results of groundwater monitoring and light non-aqueous phase liquid (LNAPL) monitoring and removal at the Terminal 4 Slip 3 Upland Facility (the Facility; see Figure 1) during 2021. This work was completed in accordance with the *LNAPL Removal, Groundwater Monitoring, and Contingency Plan* (Monitoring Plan; BBL/Ash Creek/Newfields, 2005b) and the *Site Closure Evaluation and Recommendation – Groundwater* (Ash Creek, 2009). The monitoring activities are part of a required remedial action for the Facility defined in the *Record of Decision* (ROD; Oregon Department of Environmental Quality [DEQ], 2003) and the *Explanation of Significant Difference* (DEQ, 2004). The Monitoring Plan was prepared pursuant to Attachment C (Scope of Work [SOW]) Item II.I of the *Consent Judgment* (Circuit Court of Oregon, 2004) between the DEQ and the Port of Portland (Port).

1.1 Scope

The specific tasks that are described in this Report include:

- Conducted annual groundwater sampling in December 2021 per the modified list of monitoring wells presented in the *Second Semi-Annual 2012 Groundwater Monitoring and LNAPL Removal Report* (dated February 11, 2013). Following review of the *Annual 2015 Groundwater Monitoring and LNAPL Removal Report* (dated February 16, 2016), DEQ and the United States Environmental Protection Agency (EPA) concurred that removal of well BE-3 from the scope for future annual groundwater monitoring events was appropriate (email correspondence dated March 22, 2016). In addition, monitoring well HC-12D was added to the annual sampling program as this well is screened entirely within the alluvial aquifer. The current monitoring well network sampled on an annual basis consists of BE-1, BE-5, HC-5 and HC-12D. The annual monitoring event also included collection of groundwater levels for estimating hydraulic gradients and groundwater samples for chemical analysis.
- Following review of the *Annual 2020 Groundwater Monitoring and LNAPL Removal Report* (dated February 10, 2021), DEQ Comments on *Annual 2020 Groundwater Monitoring and LNAPL Removal Report* (dated February 25, 2021), and Port Response to DEQ Comments (dated March 31, 2021), the monthly LNAPL monitoring, and recovery program were terminated. LNAPL monitoring was still conducted on a monthly basis in January and February 2021 until the amended scope was finalized in March 2021. Also following review of the *Annual 2020 Groundwater Monitoring and LNAPL Removal Report* (Apex, 2021) and associated regulatory responses, the Port agreed to conduct quarterly LNAPL gauging and removal events for well HC-5 through December 2021 or collect a groundwater sample in the absence of LNAPL. The data collected is submitted through the quarterly progress reports and this report provides evaluation of the data.

The Port submitted the *Revised Annual 2020 Groundwater Monitoring and LNAPL Removal Report* (dated March 31, 2021) that reflects the monitoring program changes described above.

1.2 Report Organization

The report text provides background information on the Facility (Section 2), a summary of field activities and methods (Section 3), the results of the LNAPL removal program (Section 4), and the results of the groundwater monitoring program (Section 5). Supporting information is provided in the tables, figures, and appendices. Appendix A presents the field and quality assurance/quality control (QA/QC) procedures; field notes from the groundwater monitoring event are also included in Appendix A. Appendix B contains the data QA/QC review and analytical laboratory report. Historical data tables are available in Appendix C. LNAPL thickness and removal volume trend plots are included in Appendix D. Appendix E contains chemical concentration versus time plots. Appendix F contains chemical concentration trend plots for data collected in the past four years.

2.0 Background

2.1 Facility Location and Description

The Facility is part of the Port Marine Terminal 4 located at 11040 North Lombard Street in Portland, Oregon (Figure 1). Terminal 4 encompasses about 260 acres along the eastern bank of the Willamette River, near river mile 5. Figure 2 provides a Site vicinity plan showing the boundaries of the Facility in relation to surrounding properties and general site layout. The Facility is generally bounded on the north by Terminal 4 Slip 1 (T4S1), on the west by the Willamette River, on the south by the Toyota Automobile Receiving Area, and on the east by the former Union Pacific Railroad (UPRR) tank farm facility.

The Facility is generally flat at an average elevation of about 35 feet above mean sea level (MSL) relative to the National Geodetic Vertical Datum (NGVD 29). The river water elevation is typically less than 10 feet above MSL and is subject to a mean tidal range of about 2 feet (Hart Crowser, 2000). Immediately east of the Facility, the ground surface rises at about a 15-percent grade to an elevation of about 100 feet.

2.2 Geology

Lithologic logs and geologic cross-sections indicate that the Facility is underlain by approximately 10 to 30 feet of sandy fill. The sandy fill has been described as fine- to medium-grained sand with some coarse sand and fine gravel, and relatively few fines (BBL/Ash Creek/Newfields, 2006; Hart Crowser, 2000). The sandy fill is underlain by alluvium. A laterally continuous layer of silt makes up the top of the alluvium. The silt varies in thickness from approximately 2 to 5 feet or more. This silt layer appears to be hummocky with a general slope towards the river; the silt layer rises sharply to the surface beyond the eastern boundary of the Facility and a “mound” in the silt is present in the northwestern portion of the Facility. Below the silt layer, the alluvium is comprised of layers of silt, sandy silt, silty sand, and sand, which do not appear to be laterally continuous for significant distances.

2.3 Hydrogeology

Depth to shallow groundwater in the central portion of the Facility generally ranges between 12 to 24 feet below ground surface (bgs) (BBL/Ash Creek/Newfields, 2006). Potentiometric maps from periodic water level measurements collected indicate a general site-wide gradient towards the river (BBL/Ash Creek/Newfields, 2006). However, gradients are highly variable in the center portion of the Facility, often indicating groundwater flow directions away from the river or to the north or south.

Older wells installed at the Facility (designated by “MW”) are screened within both the sandy fill and the alluvial unit (Century West, 1994). Groundwater levels drop below the sandy fill in many of these wells during the dry season and times when river levels are low (Hart Crowser, 2000). Groundwater levels measured in shallow wells screened only within the sandy fill (e.g., HC-16 and HC-23) are several feet higher than in adjacent MW wells, suggesting the silty layer at the top of the alluvial unit acts to separate two groundwater zones: one above and one below the silt layer. The upper groundwater zone is “perched” on the silt layer.

2.4 Remedial Action Status

The *Consent Judgment* requires remedial action at the Facility consisting of the following elements:

- 1) Excavation of soil Hot Spots;
- 2) Manual recovery of LNAPL from groundwater wells;
- 3) Excavation of riverbank soils;
- 4) Capping of certain surface soil containing polycyclic aromatic hydrocarbons (PAHs);
- 5) Implementation of a Contaminated Media Management Plan (CMMP);
- 6) Source control actions to address pencil pitch in surface soils; and
- 7) Compliance monitoring.

This Report presents the status of ongoing Items 2 and 7. Item 1 was completed in 2009. Item 3 was completed in 2004 and is identified as the “BEBRA”. In fall 2008, the Head of Slip 3 cap was installed, a portion of which overlays the BEBRA. The BEBRA fill and Head of Slip 3 cap each contain an organoclay layer that adsorbs petroleum hydrocarbons. Those organoclay layers are downgradient of the BEBRA monitoring wells. Item 4 will be completed in a future action in association with site development. The CMMP (Item 5) was approved by DEQ as in interim document on March 26, 2019. The Contaminated Media Management Plan (CMMP) will be updated as phases of upland and riverbank work are completed. The document will continue to be called interim until all aspects of the remedy have been completed. A portion of Item 6 (Head of Slip 3 source control measure) was completed in 2009. The remainder of Item 6 (riverbank and South Slip Bank source control measures) will be addressed in a future action.

3.0 Field Activities

3.1 LNAPL Monitoring Program

The SOW of the *Consent Judgment* (Circuit Court of Oregon, 2004) requires periodic removal of LNAPL from existing wells. During 2021, LNAPL monitoring and removal events were performed on January 20, 2021, February 24, 2021, April 7, 2021 (HC-5 only), July 8, 2021 (HC-5 only), December 22, 2021 (annual sampling event), and January 6, 2022. The annual LNAPL monitoring event was originally scheduled for the last week of December 2021 but was postponed due to inclement weather and was completed on January 6, 2022. The following describes the results of the LNAPL monitoring and removal program for 2021. A more detailed description of the procedures used is provided in Appendix A.

During the LNAPL monitoring events, LNAPL was removed from wells MW-19 and MW-20 by manually draining the skimmers and reinstalling the skimmers in the wells (after adjusting the cables to account for changes in water table elevation). If additional LNAPL was present in the wells following skimmer removal (i.e., if the volume of LNAPL encountered in the well was larger than the storage capacity of the skimmer), the LNAPL was manually removed using a peristaltic pump or by hand bailing before the skimmer was reinstalled. Additionally, LNAPL was manually removed from wells HC-5, HC-10, and BE-4 using a peristaltic pump or by hand bailing as necessary during the LNAPL monitoring events.

The Slip is also inspected for the presence of sheen in the area of the BEBRA during each LNAPL monitoring event. Notes regarding the presence or absence of sheen in the area of the BEBRA are recorded in the field notes (Appendix A).

The purge water and LNAPL mixture from the gauging events is collected in a Department of Transportation (DOT)-approved 55-gallon drum for temporary storage at the facility. The drum and contents are recycled off-site on an as-needed basis.

3.2 Groundwater Monitoring Activities

The following sections describe the gauging and groundwater monitoring events conducted in December 2021 and January 2022 at the Site. Please refer to Appendix A for a detailed discussion of the field and sampling procedures.

3.2.1 Groundwater Level Measurements

Depths to groundwater and LNAPL (if present) were measured in wells HC-5, HC-10, HC-19, HC-21, HC-23, HC-24, MW-19, MW-20, BE-1, BE-4, BE-5, and HC-12D on January 6, 2022. Water levels were measured for the purpose of determining groundwater elevations and gradients using an electronic interface probe. Measured depths to groundwater and estimated groundwater elevations are summarized in Table 1.

Groundwater elevations are shown on Figure 4. Monitoring well BE-3 was inaccessible because the padlock was jammed and could not be removed with a standard bolt cutter. The padlock will be removed using more robust equipment and replaced during the next mobilization to the Site.

3.2.2 Groundwater Sampling

Annual Monitoring. The annual groundwater monitoring program consists of collection of groundwater samples from wells BE-1, BE-5, HC-5, and HC-12D. The annual 2021 groundwater monitoring event was conducted on December 22, 2021. During the groundwater monitoring event, LNAPL was detected in well HC-5 which resulted in not sampling the well.

Quarterly Monitoring. Groundwater samples were collected from well HC-5 on April 7, 2021 and July 8, 2021. As mentioned above, a sample was not collected from well HC-5 during the annual 2021 groundwater monitoring event due to the presence of LNAPL.

Purging. After depths to groundwater were measured, the wells were purged using a peristaltic pump and low-flow purging techniques. Based on observations made during previous sampling events, monitoring wells BE-1 and BE-5 (one-inch diameter casing and screen) dewater and recharge very slowly so the groundwater samples are collected from these wells without purging prior to sample collection.

Sample Collection. After purging was completed and field parameters stabilized (with the exception of wells BE-1 and BE-5), groundwater samples were collected. Groundwater samples were submitted under chain-of-custody (COC) protocols to Apex Laboratories in Tigard, Oregon for chemical analyses. Samples were collected and handled in accordance with the procedures presented in Appendix A.

Waste Disposal. The purge water generated during the annual groundwater monitoring event is combined with the LNAPL DOT-approved 55-gallon drum for temporary storage at the facility. The drum and contents are recycled off-site on an as-needed basis.

4.0 LNAPL Monitoring Results and Evaluation

4.1 LNAPL Monitoring and Removal

Monitoring and removal of LNAPL was conducted as described in Section 3.1. Table 2 summarizes the LNAPL recovery from January 2021 through January 2022 (referred to herein as the 2021 monitoring year). Figure 3 presents the total LNAPL recovery by well. Trend plots of LNAPL thickness and recovery versus time and cumulative LNAPL recovery are included in Appendix D.

Approximately 3.87 gallons of LNAPL were removed from the regularly monitored wells during the 2021 monitoring year. Individual LNAPL recovered from wells were: 1.5 gallons from MW-19, 1.65 gallons from MW-20, 0.42 gallons from HC-10, and 0.3 gallons from HC-5. LNAPL was not observed in wells HC-12D, HC-19, HC-21, HC-23, HC-24, BE-1, BE-4 or BE-5 during the 2021 monitoring year.

No sheen was observed on the water within Slip 3 during any of the 2021 monitoring year events. LNAPL has not been observed in the wells installed within the BEBRA area (*i.e.*, wells BE-1, BE-3, and BE-5), or were observed but at a quantity too small to recover (*i.e.*, well BE-4).

4.2 Evaluation of LNAPL Results

The *Site Closure Evaluation and Recommendation – Groundwater* (Ash Creek, 2009) specified that LNAPL monitoring/removal will continue as long as the total recovery rate is greater than 50 gallons per year. After the total recovery rate falls below 50 gallons per year, individual wells will continue in the LNAPL monitoring/removal program until: (1) the trend in recovery rate is downward; or (2) the recovery rate is less than 5 gallons per year.

The total recovery rate during the 2021 monitoring events was less than 50 gallons per year. To evaluate the ancillary requirements of the monitoring/removal program, the recovery rate trend for individual wells were statistically evaluated as described below.

Mann-Kendall. To evaluate the trends in concentrations or LNAPL recovery in monitoring wells, a Mann-Kendall statistical evaluation was completed on each data set (in accordance with Air Force Center for Environmental Excellence [AFCEE] Long-Term Monitoring Optimization guidance; AFCEE, 2006). The Mann-Kendall test is a non-parametric statistical procedure for analyzing trends in evenly spaced data over time for data sets of sufficient size (typically considered to be at least 7 sample points). The Mann-Kendall statistic (S) is used to characterize trends in the data. Positive values indicate an increase in concentrations over time, whereas negative values indicate a decrease in concentrations over time. The strength of the trend is proportional to the magnitude of the Mann-Kendall Statistic (*i.e.*, large magnitudes indicate a strong trend). A confidence in the trend is calculated (using the Kendall probability table) and the confidence level is used together with the Mann-Kendall statistic to define the trend based on the following table:

Mann-Kendall Statistic	Confidence in Trend	Defined Concentration Trend
> 0	> 95%	Increasing Trend
> 0	90% - 95%	Probably Increasing Trend
> 0	< 90%	No Trend
≤ 0	< 90% and COV ≥ 1	No Trend
≤ 0	< 90% and COV < 1	Stable
< 0	90% - 95%	Probably Decreasing Trend
< 0	> 95%	Decreasing Trend

S = Mann-Kendall Statistic

COV = Coefficient of Variation (Ratio of the standard deviation to the mean)

A Mann-Kendall statistical evaluation was completed on the annual LNAPL recovery data from wells HC-10, BE-4, MW-19, and MW-20, (as described above). The results of the Mann-Kendall analysis for wells HC-10 and BE-4 show no statistically significant concentration trend for LNAPL recovery. The statistical analysis suggests that LNAPL recovery from wells MW-19 and MW-20 is decreasing (MW-19 changed from no trend in the 2020 Annual Groundwater Monitoring Report). There is insufficient data to evaluate trends in well HC-5.

Well	Mann-Kendall Statistic	Confidence in Trend	Coefficient of Variation	Concentration Trend
HC-10	4	14.5	0.82	NO TREND
BE-4	-1	0	1.90	NO TREND
MW-19	-40	98	1.48	DECREASING
MW-20	-40	98	0.96	DECREASING
HC-5	--	--	--	Insufficient Data

4.3 Summary of LNAPL Results

A summary of the LNAPL recovery data and results from the Mann-Kendall statistical evaluation are presented below by well:

- **HC-10.** LNAPL was observed in well HC-10 at a maximum thickness of 0.42 feet during the monitoring period. A total of 0.42 gallons of LNAPL were recovered from this monitoring well during the 2021 monitoring period. No trend was identified for the annual recovery rate.
- **BE-4.** LNAPL was not observed in well BE-4 during the monitoring period and no LNAPL was recovered during 2021. No trend was identified for the annual recovery rate.

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- **MW-19.** LNAPL was observed in well MW-19 at a maximum thickness of 0.87 feet during the monitoring period. A total of 1.5 gallons of LNAPL were recovered from this well during the 2021 monitoring period. The annual recovery rate trend is decreasing.
 - **MW-20.** LNAPL was observed in well MW-20 at a maximum thickness of 0.73 feet during the monitoring period. A total of 1.65 gallons of LNAPL were recovered from this well during the 2021 monitoring period. The annual recovery rate trend for well MW-20 is decreasing.
 - **HC-5.** LNAPL was observed in well HC-5 at a maximum thickness of 0.04 feet during the monitoring period. A total of 0.3 gallons of LNAPL were recovered from this well during the 2021 monitoring period. No trend was identified for the annual recovery rate due to insufficient data.

The total annual LNAPL recovery was 3.87 gallons during the 2021 monitoring period and the recovery rate was below 5 gallons for all wells in the program. The LNAPL recovery trend plots in Appendix D show that there has been a significant reduction in the volume of LNAPL recovered annually since 2010, and the recovery rate during the last 4 years has trended downward. No monitored wells displayed statistically increasing trends in LNAPL recovery.

5.0 Groundwater Monitoring Results and Evaluation

The following sections present the analytical results of the 2021 groundwater monitoring event and provide a statistical evaluation of the data.

5.1 Chemical Analytical Results

Groundwater samples were analyzed for diesel- and heavy-oil-(residual)-range petroleum hydrocarbons (TPH-Dx) using Northwest Total Petroleum Hydrocarbons (NWTPH-Dx) with silica gel cleanup (EPA Method 3630M) and for PAHs using EPA Method 8270E. Monitoring and analysis was performed consistent with the Monitoring Plan, with the exception that the PAH analysis on the groundwater samples collected during the annual monitoring event were inadvertently not analyzed using selective ion monitoring (SIM) methods resulting in slightly higher detection limits.

The groundwater analytical results are summarized in Table 3. The data quality review and complete laboratory reports are included in Appendix B. The analytical results were screened against the ROD Compliance Criteria, which are provided with the data in Table 3. Figure 5 presents the TPH-Dx results for each sampled well. Historical data tables are included in Appendix C. Plots of chemical concentrations versus time for selected chemicals and wells are included in Appendix E. Results for BE-5 are plotted together with BE-2.

BEBRA Wells (BE-1 and BE-5). Monitoring results for the BEBRA wells were consistent with historical ranges. PAH analytes were not detected above laboratory reporting limits in well BE-1. Diesel-range hydrocarbons in well BE-1 were detected at a concentration of 139 µg/L, which is below the ROD Compliance Criteria (1,000 µg/L). Residual-range hydrocarbons were not detected above the laboratory reporting limit.

PAH analytes in well BE-5 were not detected or detected below ROD Compliance Criteria, with the exception of BAP. BAP was detected at a concentration of 0.0276 µg/L, which exceeds the ROD Compliance Criteria of 0.014 µg/L. Concentrations of BAP in well BE-5 have historically exceeded ROD Compliance Criteria and have decreased by approximately 96 percent since the 2020 annual groundwater monitoring event. BAA was detected in well BE-5 at a concentration of 0.0170 µg/L, which is below the ROD Compliance Criteria of 0.027 µg/L. BAA concentrations in well BE-5 exceeded the ROD Compliance Criteria during the previous two annual groundwater monitoring events. Diesel-range and residual-range hydrocarbons were not detected above laboratory reporting limits in well BE-5.

HC-5. Monitoring results for well HC-5 were consistent with historical ranges. Diesel-range TPH were detected at concentrations of 7,890 µg/L and 14,000 µg/L (for the April 7th and July 8th monitoring events, respectively), which exceeds the ROD Compliance Criteria (1,000 µg/L). The concentrations have decreased by approximately 96 and 94 percent, respectively, since the 2020 annual groundwater monitoring event (216,000 µg/L). Residual-range TPH were not detected. PAH analytes were either not detected or were detected at concentrations below ROD Compliance Criteria during both monitoring events. A groundwater sample was not collected during the December 2021 sampling event because of the presence of LNAPL in the well.

HC-12D. Monitoring results for well HC-12D were consistent with historical ranges. Diesel and residual range hydrocarbons were not detected or were detected at concentrations below the ROD Compliance Criteria. Acenaphthene was detected in the groundwater sample collected from well HC-12D but at concentrations below ROD Compliance Criteria.

5.2 Evaluation of Annual Groundwater Results

The ROD Compliance Criteria concentrations for the Site, presented with the analytical data in Table 3, were developed for the location where groundwater exits the BEBRA organoclay layer into the Willamette River (point of compliance). The BEBRA sentinel wells (BE-1 and BE-5) are monitored to provide an assessment of site conditions adjacent to the point of compliance. Well BE-5 was installed in 2009 to replace BE-2, which was destroyed during construction of the Head of Slip 3 cap. The analytical modeling results for data from BE-2 indicated that the data are likely biased high and suggest that chemical concentrations in BE-2 were likely at or below concentrations that meet compliance levels at the point of compliance (POC; Ash Creek, 2009). The compliance criteria for the BEBRA sentinel wells are as follows:

- 1) Contaminants of concern are below compliance levels for two successive rounds of monitoring; or

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- 2) If detected above compliance levels in Table 3, concentrations of BAA and BAP are each less than 1 µg/L (a conservative sentinel well equivalent compliance level determined from modeling; Ash Creek, 2009) and a downward trend is established for four successive rounds of sampling.

Statistical analysis was performed on the compliance wells (BE-1 and BE-5) and south slip well (HC-5) for evaluation with the ROD Compliance Criteria. Descriptions of the static methods and results are presented in the subsections below.

5.2.1 BEBRA Wells

Well BE-1 contained TPH-Dx concentrations below compliance levels during this monitoring event but exceeded compliance concentrations during the previous monitoring event (December 2020). Concentrations of BAA and BAP have been below compliance criteria since 2007. TPH-Dx in well BE-1 will be carried through for statistical analysis.

Well BE-5 contained TPH-Dx concentrations below compliance levels during this monitoring event and has been consistently below compliance levels since May 2019. BAA was not detected above compliance criteria during this monitoring event but exceeded compliance criteria during the previous event (December 2020). BAP was detected at a concentration that exceeded compliance criteria during this monitoring event. Both BAA and BAP were detected at concentrations below 1 µg/L. Therefore, BAP and BAA concentrations in well BE-5 will be carried through for statistical evaluation.

Mann-Kendall. The statistical analysis of BAA and BAP in well BE-5 was conducted using the historical data from June 2005 (September 2009 for well BE-5) through December 2021. Statistical analysis of TPH-Dx in well BE-1 used the same data timeframes as BAA and BAP mentioned above, with the exception of using results from a resampling event from January 2019 in place of the December 2018 data. The results of the Mann-Kendall analysis for wells BE-1 and BE-5 are summarized in the table below.

Well	Constituent	Number of samples	Number of Detects	Number of ND	Mann-Kendall Statistic	Confidence in Trend	Coefficient of Variation	Concentration Trend
BE-1	TPH-Dx	37	23	14	39	38	1.47	NO TREND
BE-5	BAA	19	12	7	-51	92	0.90	PROBABLY DECREASING
	BAP	19	14	5	-51	92	0.99	PROBABLY DECREASING

Non-detect (ND) = The concentration has been estimated to be one-half the reporting limit for the analyte.

The results show diesel range hydrocarbon concentration results of the Mann-Kendall analysis for well BE-1 show no statistically significant trend. Concentration trends for BAA and BAP in well BE-5 have changed since the 2020 Groundwater Monitoring Report from stable to probably decreasing.

Regression. The ROD Compliance Criteria requires the evaluation of data trends from the last four sampling events. If the data set is abridged to the last four years (December 2018 through December 2021), the Mann-Kendall evaluation cannot be completed due to an insufficient number of data points. Straight-line regressions through this four-year data set (as calculated by the Excel regression function; Appendix F) indicates a flat to negative slope for TPH-Dx in BE-1 (an exponential trend line has been utilized to perform the straight-line regression). However, due to the high variability in TPH-dx data in BE-1, there is some uncertainty in the slope of the regression line. Regressions for concentrations of BAA and BAP in BE-5 indicate positive slopes. BAA and BAP data results from the December 2020 monitoring event were the highest concentrations observed in recent monitoring events. These elevated analyte concentrations observed during that monitoring event have skewed the regression trends toward a positive slope for BAA and BAP in well BE-5.

5.2.2 South Slip Compliance Wells

Mann-Kendall. A Mann-Kendall statistical evaluation could not be completed on the data collected from well HC-5 due to the insufficient number of data points and the two-year period in which data was not collected for the well; one of the assumptions of the Mann-Kendall test is evenly spaced data per time and the data gap between February 2018 and December 2020 violates the condition.

Regression. A straight-line regression for the last four years of the available data set (December 2017 through December 2021) is presented in Appendix F. The graph indicates a positive slope in the data (a vertical logarithmic scale was used due to the magnitude of the TPH concentrations observed in well HC-5 during the plotted time period, and an exponential trend line has been utilized to perform the straight-line regression). The observed positive trend slope and elevated TPH concentration is largely due to the higher concentration observed in the groundwater sample collected in 2020. However, the TPH concentrations in the groundwater samples collected during 2021 are within the range of recent samples other than 2020.

5.3 Summary of Annual Results

Based on the chemical results and statistical evaluation, a summary of the ROD Compliance Criteria by well is presented below:

- BE-5
 - BAP was detected at a concentration that exceeds compliance levels during the last three rounds of monitoring (December 2019, 2020, and 2021). The concentration of BAA was

-
- below compliance levels but exceeded compliance criteria during the previous monitoring event (December 2020);
- Concentrations of BAA and BAP were each less than 1 µg/L;
 - Mann-Kendall statistical evaluations indicated probably decreasing concentration trends for BAA and BAP; and
 - Straight-line regressions on the four most current rounds of sampling indicated an upward trend for BAA and BAP.
- BE-1
 - Diesel-range TPH was not detected above compliance levels during the 2021 monitoring event but exceeded compliance levels during the previous monitoring event (December 2020);
 - Mann-Kendall statistical evaluations indicated no concentration trends for TPH; and
 - BAA and BAP were not detected above compliance levels during the 2021 monitoring event and have not exceeded compliance levels since 2007.
 - HC-5
 - Diesel-range TPH was detected at concentrations above compliance levels during the most recent monitoring events (December 2020, April 2021, and July 2021);
 - Straight-line regressions on the four most current rounds of sampling indicated an upward trend for TPH, primarily resulting from the higher than typical concentration in the sample collected in 2020; and
 - Concentrations of BAA and BAP were not detected in the samples collected since 2020. However, the laboratory reporting limits were raised due to sample dilution (LNAPL was present in the well in December 2021, so a groundwater sample was not collected).

6.0 Conclusions and Recommendations

LNAPL Monitoring and Removal. LNAPL monitoring and removal was conducted on wells MW-19, MW-20, HC-10, BE-4, and HC-5 on January 20, 2021, February 24, 2021, and January 6, 2022. In addition, well HC-5 was monitored on April 7, 2021, July 8, 2021, and December 22, 2021. The total 2021 LNAPL removal volume was 3.87-gallons; this volume is below the 50-gallon a year criterion for the tenth consecutive year. The total LNAPL recovery from individual wells did not exceed 5 gallons per year. MW-20 had the highest recovery at 1.65 gallons. Statical evaluation of LNAPL recovery rates from wells in the LNAPL monitoring program did not indicate a significant trend, with the exception of wells MW-19 and MW-20 which had a decreasing trend. Despite several of the wells showing no statistical trend, all monitoring wells in the LNAPL

monitoring program meet the specifications in the *Site Closure Evaluation and Recommendations - Groundwater* report (Ash Creek, 2009) to be removed from the monitoring program, i.e.:

- Total recovery rate is less than 50 gallons per year;
- After the total recovery rate falls below 50 gallons per year, individual wells will continue in the LNAPL monitoring/removal program until: (1) the trend in recovery rate is downward; or (2) the recovery rate is less than 5 gallons per year.

Based on the successful fulfillment of these requirements, LNAPL monitoring is no longer required. The Port plans on continuing the monitoring program on an annual basis (to be conducted coincident with the Annual Groundwater Monitoring Event).

2021 Groundwater Monitoring. The 2021 annual groundwater sampling event occurred on December 22, 2021. The results for the BEBRA compliance wells, BE-1 and BE-5 showed the concentration of BAP in well BE-5 exceeded the ROD Compliance Criterion. BAA in well BE-5 was below ROD Compliance Criterion but was detected above the compliance level during the previous monitoring event (December 2020). All other analytes were either not detected or were detected at concentrations below ROD Compliance Criteria.

Analyte concentration trends for BAA and BAP in well BE-5 (using data from the last four years) were upward, however, prior to the December 2020 event, the trends were downward and have been influenced by elevated concentrations observed in the December 2020 event. The concentration trend for TPH-Dx in well BE-1 is flat to decreasing, with some uncertainty in the slope due to high variability in the dataset. Mann-Kendall statistical tests of the entire data set resulted in no statistically significant trend for TPH-Dx in wells BE-1 and probably decreasing concentration trends for BAA and BAP in well BE-5.

LNAPL was observed in South Slip compliance well HC-5 during the annual groundwater monitoring event and was not sampled. Well HC-5 was monitored in the second and third quarter 2021 and no LNAPL was observed. The presence of LNAPL in well HC-5 may be seasonal, possibly related to a high-groundwater table. During the second and third quarters of 2021, a groundwater sample was collected from HC-5 and results show the concentration of TPH-Dx has significantly decreased since it was sampled in December 2020 (by approximately 96 and 94 percent, respectively), but the concentration was still above the ROD Compliance Criterion.

The *Site Closure Evaluation and Recommendation – Groundwater* (Ash Creek, 2009) specified the groundwater sampling program in the BEBRA area will be terminated when all of the following are achieved:

- 1) LNAPL removal has been terminated;
- 2) Concentrations of chemicals analyzed are below compliance levels at the POC in the BEBRA wells (as discussed in Section 4.4) for a continuous period of at least one year;

-
- 3) There is no sheen or LNAPL at the POC; and
 - 4) Concentration trends in monitoring wells are stable or declining for a continuous period of at least three years.

The items above have been achieved, with the exception of the following:

- The concentration of BAP in well BE-5 exceeded the ROD Compliance Criterion;
- The concentration of TPH-D in HC-5 exceeded the ROD Compliance Criterion; and
- Diesel-range hydrocarbon concentration trends in the BEBRA wells and HC-5 show no statistical trend according to the Mann-Kendall test.

These wells will require continued monitoring until a declining trend or stable conditions are present. The requirements have been met to terminate the LNAPL Monitoring/Removal program (Item 1). When all four of the conditions are met, the Port will recommend termination of the program and proper abandonment of the remaining “MW” wells (*i.e.*, wells screened across the sandy fill and alluvial units), which includes wells MW-19, and MW-20.

Recommendations for Additional Monitoring. Because the ROD Compliance Criteria have not been achieved, the Port recommends that the groundwater sampling continue. Additionally, groundwater sampling will be expanded to address additional data gaps related to Slip 3 groundwater received by EPA through the in-water cleanup for the Portland Harbor Superfund Site on the draft *Sufficiency Assessment Report* (Anchor QEA, Geosyntec, Apex, 2021). EPA identified groundwater samples have not been analyzed for C10-C12 aliphatic hydrocarbons; and presence of petroleum hydrocarbons may create reducing conditions that are conducive to mobilizing naturally occurring metals. Therefore, 2022 groundwater monitoring will consist of the following:

- Groundwater samples will be collected from monitoring wells BE-1, BE-5, HC-2, HC-5, HC-6S and HC-12D on a quarterly bases in 2022 and analyzed for TPH-Dx, C10-C12 aliphatic hydrocarbons, PAHs, and metals (As, Cd, Cr, Cu, Pb, Mn, Hg, Zn and V). C10-12 aliphatic hydrocarbons and metals are from Table 17 in the Portland Harbor Record of Decision.
- Additional recommendations will be provided, if necessary, based on the results of the quarterly groundwater monitoring and on-going in-water pre-remedial design investigations in Slip 3.

7.0 References

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- DEQ, 2004. *Explanation of Significant Difference, Port of Portland Terminal 4 Slip 3 Upland Facility*. September 1, 2004.
- Hart Crowser, 2000. *Remedial Investigation Report, Terminal 4 Slip 3 Upland, Port of Portland, Portland, Oregon*. January 21, 2000.
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Table 1
2021 Groundwater and LNAPL Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID (Casing Elevation)	Date	Initial Measurements (feet)				LNAPL Removal (gallons)		Final LNAPL Thickness (feet)
		Depth to Water	Depth to Product	LNAPL Thickness	Groundwater Elevation *	Discrete Event	Cumulative	
MW-19 (30.73)	20-Jan-2021	14.40	NP	0.00	16.33	NA	243.87	0.00
	24-Feb-2021	13.94	NP	0.00	16.79	NA	243.87	0.00
	6-Jan-2022	14.79	13.92	0.87	16.71	1.50	245.37	0.06
MW-20 (30.73)	20-Jan-2021	16.90	16.32	0.58	14.35	0.35	263.79	0.02
	24-Feb-2021	16.03	15.94	0.09	14.78	0.10	263.89	0.00
	6-Jan-2022	16.01	15.28	0.73	15.37	1.20	265.09	0.03
HC-5 (32.10)	20-Jan-2021	17.97	NP	0.00	14.13	NA	0.60	0.00
	24-Feb-2021	16.64	NP	0.00	15.46	NA	0.60	0.00
	7-Apr-2021	18.60	NP	0.00	13.50	NA	0.60	0.00
	22-Dec-2021	17.81	17.77	0.04	14.33	0.31	0.91	0.00
	6-Jan-2022	17.72	NP	0.00	14.38	NA	0.91	0.00
HC-10 (29.30)	20-Jan-2021	15.99	15.57	0.42	13.68	0.07	46.64	0.00
	24-Feb-2021	14.98	14.92	0.06	14.37	0.10	46.74	0.00
	6-Jan-2022	13.32	12.91	0.41	16.34	0.25	46.99	0.22
HC-12D (29.32)	22-Dec-2021	15.98	NPS	0.00	13.34	NA	0.00	0.00
	6-Jan-2022	14.82	NP	0.00	14.50	NA	0.00	0.00
HC-19 (33.05)	6-Jan-2022	15.08	NP	0.00	17.97	NA	0.00	0.00
HC-21 (31.95)	6-Jan-2022	14.74	NP	0.00	17.21	NA	0.00	0.00
HC-23 (32.74)	6-Jan-2022	13.77	NP	0.00	18.97	NA	0.70	0.00
HC-24 (30.04)	6-Jan-2022	11.09	NP	0.00	18.95	NA	0.00	0.00

Please see notes at end of table.

Table 1
2021 Groundwater and LNAPL Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID (Casing Elevation)	Date	Initial Measurements (feet)				LNAPL Removal (gallons)		Final LNAPL Thickness (feet)
		Depth to Water	Depth to Product	LNAPL Thickness	Groundwater Elevation *	Discrete Event	Cumulative	
BE-1 (19.75)	22-Dec-2021	6.15	NP	0.00	13.60	NA	0.00	0.00
	6-Jan-2022	7.37	NP	0.00	12.38	NA	0.00	0.00
BE-4 (31.16)	20-Jan-2021	14.92	NPS	0.00	16.24	NA	12.76	0.00
	24-Feb-2021	14.03	NP	0.00	17.13	NA	12.76	0.00
	6-Jan-2022	14.48	NP	0.00	16.68	NA	12.76	0.00
BE-5 (21.12)	22-Dec-2021	8.37	NP	0.00	12.75	NA	0.00	0.00
	6-Jan-2022	7.39	NP	0.00	13.73	NA	0.00	0.00

Notes:

1. LNAPL = Light non-aqueous phase liquid
2. Passive LNAPL skimmers were installed in wells MW-19 and MW-20 in June 2006; water level measurements were discontinued.
3. NP = No measurable LNAPL at the time of the monitoring event.
3. NPS = Hydrocarbon sheen observed but no measurable LNAPL at the time of the monitoring event.
4. * Phreatic Elevation = (Casing Elevation - Depth to Water) + S_g * (Product Thickness). S_g = 0.89
5. -- = Not measured or not applicable.
6. NA = Not Applicable. LNAPL removal not required based on initial product thickness measurement.

Table 2
2021 LNAPL Recovery
Terminal 4 Slip 3 Upland Facility
Port of Portland

Wells	MW-15	MW-17	MW-19	MW-20	HC-10	BE-4	HC-5	
Date	LNAPL Removed (gallons)							Total
2005 Total	Data for individual wells not shown							24
2006 Total	Data for individual wells not shown							61
2007 Total	Data for individual wells not shown							100
2008 Total	Data for individual wells not shown							71
2009 Total	2.59	2.34	2.84	2.53	0.15	0.24	--	10.69
2010 Total	4.53	15.48	61.80	41.40	2.38	2.60	--	155.69
2011 Total	0.30	10.55	13.05	16.50	3.25	0.65	--	50.69
2012 Total	1.13	7.80	7.66	23.14	1.50	0.00	--	41.22
2013 Total	2.75	5.30	6.95	9.05	1.75	0.20	--	26.00
2014 Total	1.25	0.20	12.35	8.25	0.20	0.00	--	22.25
2015 Total	n/a	6.50	18.10	15.95	6.15	n/a	--	46.70
2016 Total	n/a	n/a	8.55	7.40	5.55	0.70	--	22.20
2017 Total	n/a	n/a	3.00	12.50	6.45	0.00	--	21.95
2018 Total	n/a	n/a	4.00	8.25	4.15	0.50	0.60	17.50
2019 Total	n/a	n/a	2.10	2.77	2.40	0.00	2.27	9.54
2020 Total	n/a	n/a	0.20	1.31	1.12	0.00	0.00	2.63
1/20/2021	n/a	n/a	0.00	0.35	0.07	0.00	0.00	0.42
2/24/2021	n/a	n/a	0.00	0.10	0.10	0.00	0.00	0.20
4/7/2021	n/a	n/a	n/a	n/a	n/a	n/a	0.00	0.00
12/22/2021	n/a	n/a	n/a	n/a	n/a	n/a	0.30	0.30
1/6/2022	n/a	n/a	1.50	1.20	0.25	0.00	0.00	2.95
2021 Total	n/a	n/a	1.50	1.65	0.42	0.00	0.30	3.87

Notes:

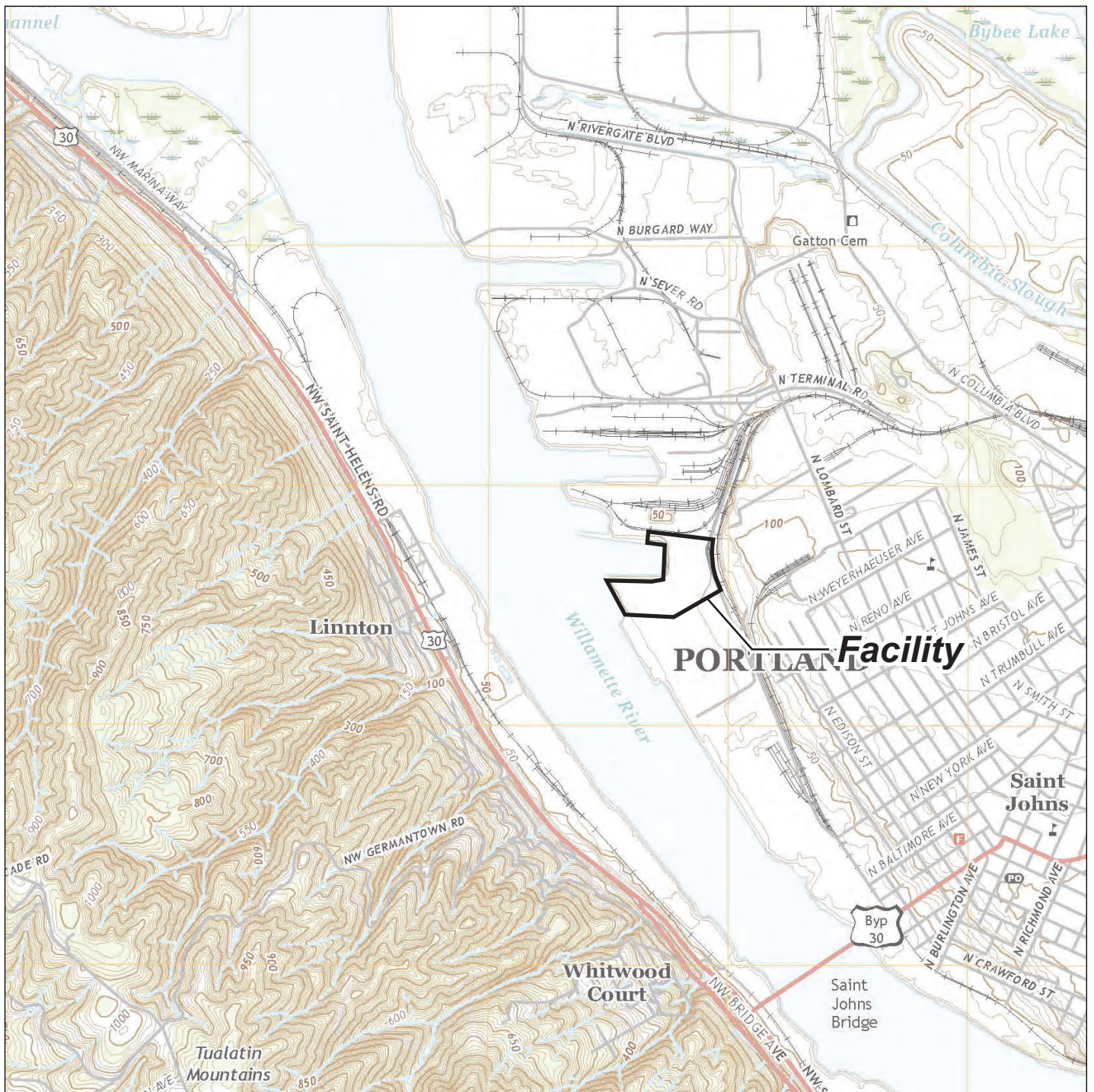
1. The current (2019) LNAPL recovery program includes wells MW-19, MW-20, HC-5, HC-10, and BE-4.
If LNAPL is present at a thickness that is practical for recovery (greater than 0.1 foot), the LNAPL is removed.
2. n/a = not available
3. Wells MW-15 and MW-17 were abandoned in May 2015.

Table 3
2021 Groundwater Analytical Results
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	TPH		PAHs															
		Diesel-Range	Residual-Range	Acenaph- thene	Acenaph- thylene	Anthracene	Benzo(a)- anthracene	Benzo(a)- pyrene	Benzo(b)- fluoranthene	Benzo(g,h,i)- perylene	Benzo(k)- fluoranthene	Chrysene	Dibenzo(a,h)- anthracene	Fluoranthene	Fluorene	Indeno(1,2,3- cd)pyrene	Naphthalene	Phenanthrene	Pyrene
		Concentration in µg/L																	
South Slip 3 Area																			
HC-5	4/7/2021 7/8/2021	7,890 14,000	<220 <215	<0.610 UJ 0.871	<0.134 UJ <0.105	<0.366 UJ <0.0952	<0.0488 UJ <0.0381	<0.0244 UJ <0.0190	<0.0244 UJ <0.0190	<0.0244 UJ <0.0190	<0.0244 UJ <0.0190	<0.0976 UJ <0.0571	<0.0244 UJ <0.0190	0.119 J- 2.45	1.36 J- 2.45	<0.0244 UJ <0.0190	<0.0976 UJ <0.133	<0.159 UJ <0.114	0.202 J- <0.171
BEBRA Area																			
BE-1	12/22/2021	139 J	<189	<0.0743	<0.0743	<0.149	<0.0372	<0.0372	<0.0372	<0.0743	<0.0372	<0.0372	<0.0372	<0.0743	<0.0743	<0.0372	<0.149	<0.149	<0.0743
BE-5	12/22/2021	<93.5	<187	<0.0184	<0.0184	<0.0184	0.0170 J	0.0276 J+	0.0258	0.0207 J	0.00966 J	0.0124 J	<0.00920	0.0184 J+	<0.0184	0.0147 J	<0.0368	<0.0368	<0.0184
HC-12D	12/22/2021	170 J	<189	0.417	<0.0739	<0.0739	<0.0369	<0.0369	<0.0369	<0.0739	<0.0369	<0.0369	<0.0369	<0.0739	<0.462	<0.0369	<0.296	<0.296	<0.0739
ROD Compliance Criteria		1,000	1,000	520	--	--	0.027	0.014	--	--	--	--	--	6.16	3.9	--	620	6.3	--

Notes:

- = Data not available or sample not analyzed for listed analyte.
- Boldface** data represents detected analyte concentrations exceeding compliance criteria; note, this is provided for information purposes only.
- ROD compliance criteria is for groundwater discharge at the Slip or river and is not applicable to monitoring well data.
- J = Result is an estimated value.
- J+ = Result is an estimated value that may be biased high.
- J- = Result is an estimated value that may be biased low.
- UJ = The not detected result is estimated. The reporting limit may be inaccurate or imprecise.
- PAHs = Polycyclic aromatic hydrocarbons.
- TPH = Total petroleum hydrocarbons.
- µg/L = Micrograms per liter.



Note: Base map prepared from USGS 7.5-minute quadrangle of Linnton, OR, dated 2020 as provided by USGS.gov.

0 2,000 4,000
Approximate Scale in Feet



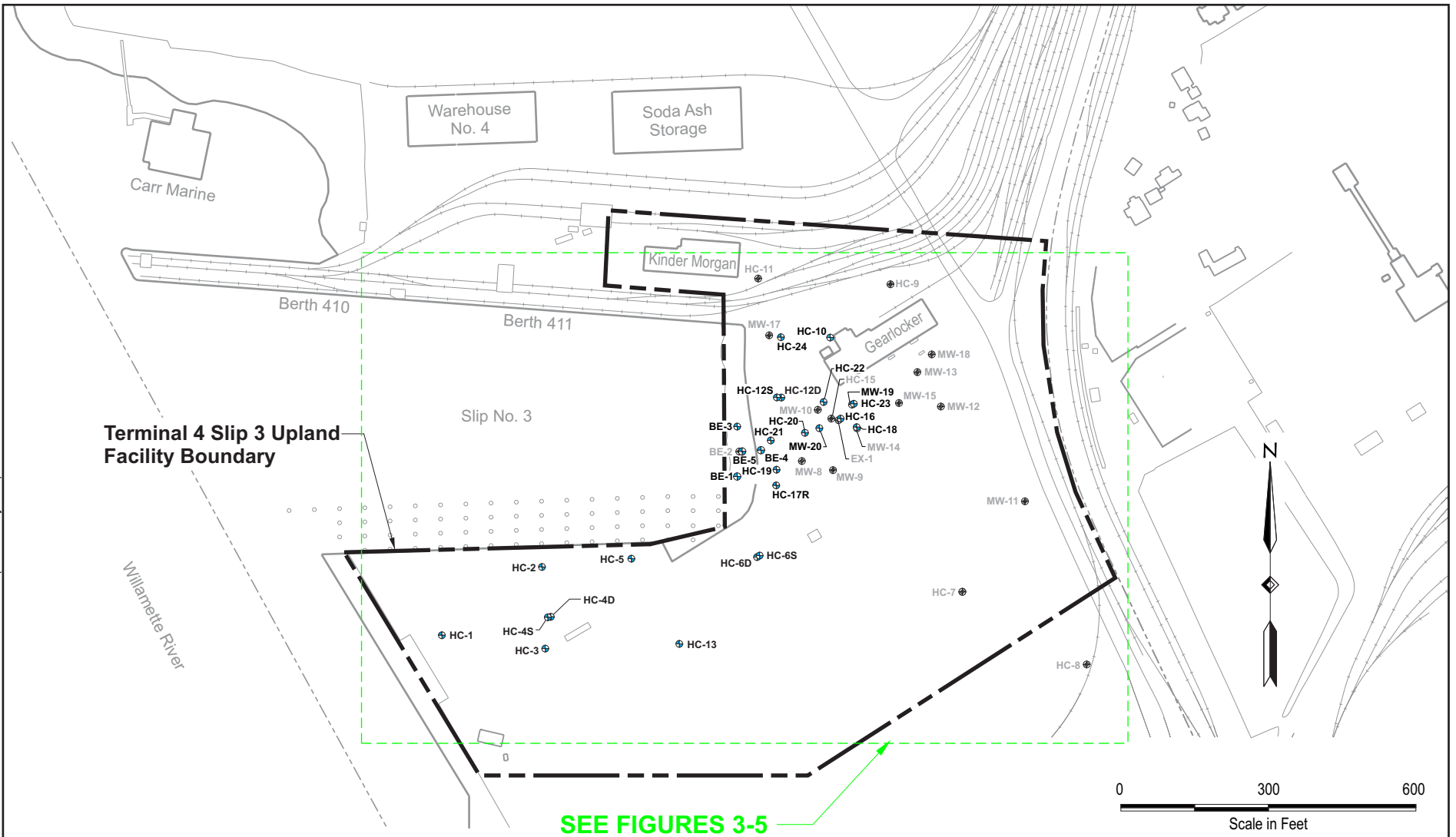
Facility Location Map

Annual 2021 Groundwater Monitoring Report
Terminal 4 Slip 3 Upland Facility
Portland, Oregon

APEX Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number: 320001007-23
Drawn: JP
Approved: MM
April 2022

Figure
1



Legend:

- HC-1 ● Monitoring Well Location
- HC-8 ● Abandoned Monitoring Well Location
- BE-2 ● Destroyed Monitoring Well Location (9/2008)

Site Vicinity Plan

Annual 2021 Groundwater Monitoring Report
Terminal 4 Slip 3 Upland Facility
Portland, Oregon



Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:
320001007-23

Drawn:
JP

Approved:
MM

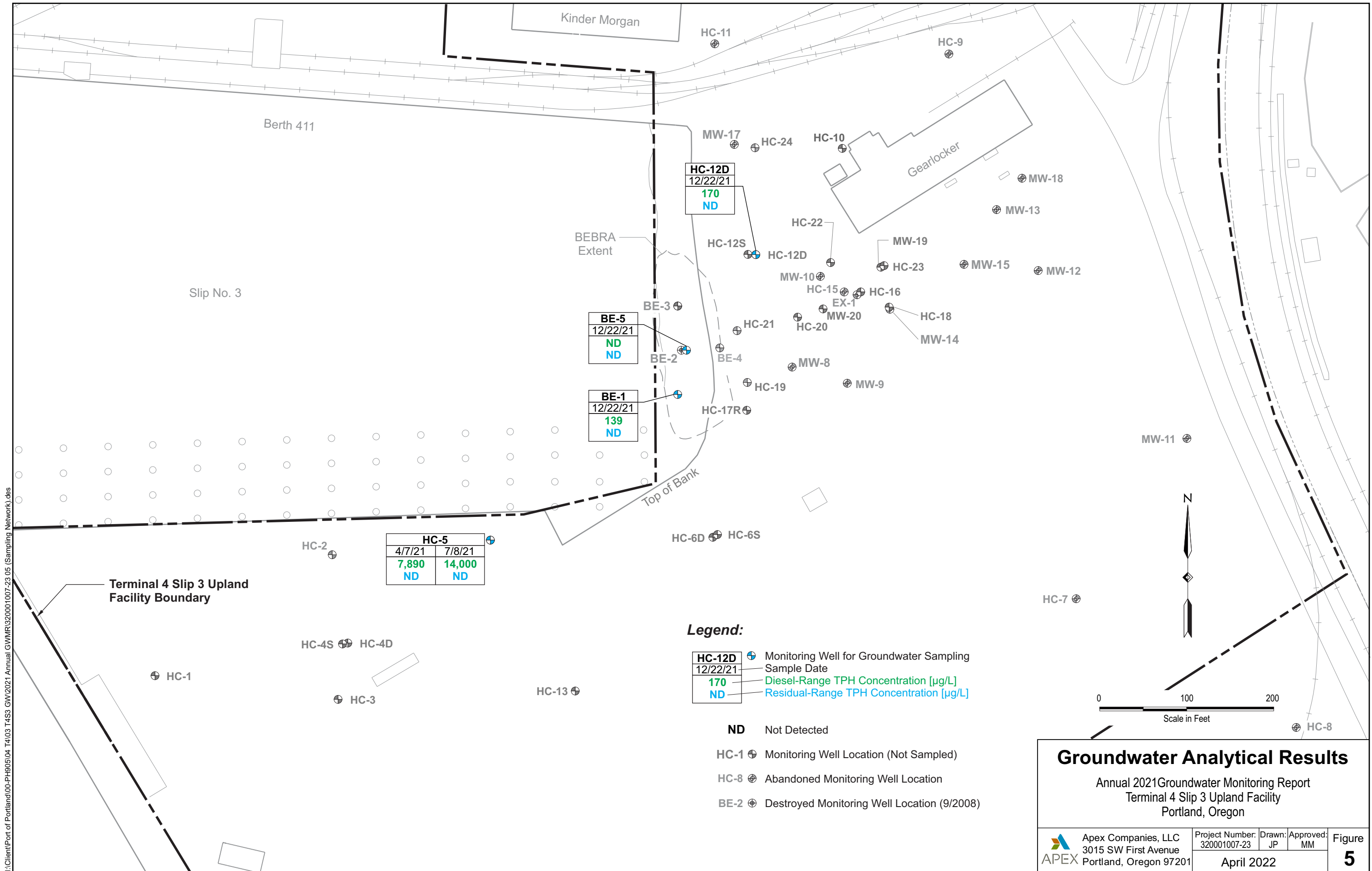
April 2022

Figure
2

I:\Client\Port of Portland\00-PH90504 T403 T4S3 GW2021 Annual GWMR\32000100723 03 (LNAPL Network).des



I:\Client\Port of Portland\00-PH90504 T403 T4S3 GW2021 Annual GWMR\32000100723 05 (Sampling Network).des



Appendix A

Field and Quality Assurance/Quality Control Procedures

Introduction

The Port of Portland (Port) is required to conduct groundwater and light non-aqueous phase liquid (LNAPL) monitoring in association with the remedial action at the Terminal 4 Slip 3 Upland Facility (the Facility), as outlined in the *Record of Decision* (ROD; Department of Environmental Quality [DEQ], 2003), *Explanation of Significant Difference* (DEQ, 2004), and *Consent Judgment* (Circuit Court of Oregon, 2004). The specific implementation of the remedial action is described in the *Remedial Design/Remedial Action Work Plan* (RD/RA Work Plan; Hart Crowser, 2004), as amended (Port, 2004). The monitoring program is described in the *LNAPL Removal, Groundwater Monitoring, and Construction Plan* (Monitoring Plan; BBL/Ash Creek/Newfields, 2005) and the *Site Closure Evaluation and Recommendation – Groundwater* (Ash Creek, 2009). This appendix describes the field sampling procedures and quality assurance/quality control (QA/QC) procedures used during the monitoring and LNAPL removal events.

Field and Sampling Procedures

The scope of work (SOW) includes measuring water elevations, performing groundwater monitoring, and removing LNAPL from selected monitoring wells. The field and sampling procedures include the following:

- Measurement of water levels in monitoring wells;
- Collection of groundwater samples from monitoring wells;
- Removal of LNAPL from monitoring wells;
- Sample management (e.g., containers, storage, and shipment);
- Decontamination procedures; and
- Handling of investigation-derived waste (IDW).

Measurement of Water Levels in Monitoring Wells

Water levels in the wells were measured and recorded for the purpose of determining the groundwater gradient and elevations. The wells were first opened and the water levels allowed to equilibrate before the measurements were taken. Measurements were made to the nearest 0.01 foot using an electronic water probe.

Collection of Groundwater Samples from Monitoring Wells

Groundwater monitoring consisted of collecting groundwater samples and measuring groundwater field parameters. Field sampling sheets are included in this appendix.

Appendix A – Field and QA/QC Procedures

After groundwater levels were measured, the selected wells were purged using a peristaltic pump and low-flow purging techniques. Wells with measurable thicknesses of LNAPL were not sampled. Purging of the sampled wells was considered complete when the water quality parameters (pH, temperature, and specific conductance) stabilized within 10 percent of the previous readings. BEBRA wells are not purged due to limited water volume. During purging, the purge water characteristics (e.g., color, turbidity, sheens) and purge volumes were documented. After purging was completed, the wells were sampled. Groundwater samples were collected using a low-flow peristaltic pump and disposable tubing. Purge water was placed in labeled drums pending disposal.

Equipment Cleaning. Clean tubing was used for the peristaltic pump for each collected groundwater sample to prevent cross-contamination. Other groundwater sampling equipment (such as the water level probe) was cleaned prior to use in the first well and after each subsequent well.

LNAPL Monitoring and Removal from Monitoring Wells

Monitoring and removal of LNAPL is conducted on select wells. During each monitoring event, water and product levels were measured in the wells included in the LNAPL program. Each well is monitored for the presence of LNAPL with a product interface probe. Depths to both water and product (if present) were measured and recorded. LNAPL is removed from each monitoring well that is observed to have more than 0.1 foot of accumulated LNAPL. If a removable quantity of LNAPL (>0.1 foot) is observed in any well during the annual monitoring event, then it is added to the list of regularly monitored wells for the next event. The LNAPL was removed with passive skimmers in wells MW-19 and MW-20.

Passive Skimmer Product Removal. After June 9, 2006, passive product skimmers (Keck 4-4L passive recovery canisters) have been used to collect and remove product from wells MW-19 and MW-20. The passive skimmers are maintained so that the water/LNAPL interface is within the 2-foot intake screen of the skimmer. The skimmers are manually removed from the well, drained (through the drain valve), and reinstalled in the well. If residual LNAPL remains in the well after the removal of the skimmer (i.e., the volume of LNAPL in the well was larger than the storage capacity of the skimmer), then the remaining LNAPL is removed as described below. The depth to water is measured in the well and the length of the cable support for each skimmer is adjusted as necessary to reinstall in the wells.

Manual Product Removal. For wells with more than 0.1 foot of measured LNAPL, the product removal process generally involves removing product with a bailer or by using the suction hose of a pump being lowered into the well together with the interface probe (attached to the hose so that the interface point of the probe coincides with the opening of the hose) to allow the operator to judge the depth of the suction hose relative to the oil/water interface and manipulate the depth of the hose so that the floating product is preferentially extracted.

Appendix A – Field and QA/QC Procedures

Sample Management

Pre-cleaned, certified sample containers were provided by the contract analytical laboratory. A sample label was affixed to each sample container and was marked with a unique sample number, date of collection, project number, and sampler's initials. Chain of custody (COC) was maintained and documented at all times. Sample custody seals and packing materials for filled sample containers were provided by the analytical laboratory. The filled, labeled, sealed containers were placed in a cooler on ice and carefully packed to eliminate the possibility of container breakage.

Samples were packaged by the field personnel and transported as low-concentration environmental samples. Shipments were accompanied by the COC form identifying the contents. The original form accompanied the shipment; copies were retained by the sampler for the sampling office records.

Decontamination Procedures

Personnel Decontamination. The Health and Safety Plan (HASP) for the Facility identifies the appropriate level of protection for the type of work and expected field conditions involved in this project. In general, clothing and other protective equipment can be removed from the investigation area. Field personnel should thoroughly wash their hands and faces at the end of each day and before taking any work breaks.

Sampling Equipment Decontamination. To prevent cross-contamination between sampling events, clean, dedicated sampling equipment (e.g., groundwater sampling tubing) was used for each sampling event and was discarded after use. Cleaning of non-disposable items consisted of washing in a detergent (Alconox®) solution, rinsing with tap water, followed by a deionized (DI) water rinse.

Handling of Investigation-Derived Waste

IDW was generated from LNAPL removal and well sampling activities. The IDW generated included LNAPL, purge water, decontamination water, and discarded personal protective supplies. LNAPL, purge water, and decontamination water were placed in DOT-approved drums pending off-site disposal/recycling. Used personal protective equipment (PPE) and trash were collected and disposed of in a waste receptacle.

Appendix A – Field and QA/QC Procedures

References

- Ash Creek, 2009. *Site Closure Evaluation and Recommendation – Groundwater, Terminal 4 Slip 3 Upland Facility*. May 14, 2009.
- BBL/Ash Creek/Newfields, 2005. *LNAPL Removal, Groundwater Monitoring, and Construction Plan*. June 2005.
- Circuit Court of Oregon, Multnomah County, 2004. *Consent Judgment – State of Oregon v. Port of Portland*. October 7, 2004.
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- DEQ, 2004. *Explanation of Significant Difference, Port of Portland Terminal 4 Slip 3 Upland Facility*. September 1, 2004.
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1/20/21 T453 Product Purge 7

ID	DTP	DTW	PT	Purge
BE-4	—	14.92	sheen	no purge
MW-20	16.32	16.90	0.58	Purge 1 gal
	16.62	16.64	0.02	0.3 gal of product.
MW-19	—	14.40	—	no purge
HC-10	15.57	15.99	0.42	Purge 1 gal
	—	15.80	—	0.07 gal of product.
HC-5	—	17.97	—	no purge

MW-20 - .75 gal water in skimmer
250 ml product in skimmer

MW-19 ~ 1 gal water in skimmer
no product

* NO sheen on River

Scale: 1 square = _____

Rite in the Rain

2/24/21

T4S3 LNAPL Purge

ID	DTP	DTW	PT	Purge
BE-4	-	14.03	-	No purge
MW-20	15.94	16.03	0.09	remove 0.1 gal LNAPL
MW-19	-	13.94	-	No purge
HC-10	14.92	14.98	0.06	remove 0.1 gal LNAPL
HC-5	-	16.64	-	No purge

* No sheen on river

Scale: 1 square = _____

4/7/21

T4 S3

<u>ID</u>	<u>DTP</u>	<u>DTW</u>	<u>PT</u>	<u>Purge</u>
HC-5	-	18.60	-	

* No sheen on river

1130 - collect sample @ HC-5 for TPH-Dx + PAHs
1150 - collect IDW sample for VOCs + Total Metals
1200 - Apex off site

Scale: 1 square = _____

Rite in the Rain

WELL MONITORING DATA SHEET

	Well I.D.	HC-5	Job Number:	
	Client:	POP	Date:	7/8/21
	Project:	T4S3	Sampler:	M. Enos
	Weather:	cloudy, 60's	Time In/Out:	

WELL DATA

Well Depth:		Well Diameter:	2"	Water Height	
Depth to Water:	19.57	Screened Interval:		x Multiplier	
Water Column Length:		Depth to Free Product:		x Casing Volumes	
Purge Volume:		Free Product Thickness:		= Purge Volume	
Water Height Multipliers (gal)		1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters

PURGING DATA

Purge Method:		pen			Pump Intake Depth:					Comments	
Sampling Method:		"			Tubing Type:						
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
0943			19.68	0.5	5.63	17.3	521	4.16	-258.2	NM	AC
0946			19.93	1	5.68	17.3	515	2.66	-272.6	1	AC
0949			20.19	1	5.82	17.3	513	1.22	-298.7	1	AC
0952			20.31	1	5.86	17.2	509	1.15	-299.9	1	AC
0955			20.40	1	5.88	17.2	518	1.11	-302.1	1	AC
0958			20.51	1	5.91	17.2	523	1.07	-299.1	1	AC
1001				1	5.92	17.2	525	1.04	-297.8	1	AC
1004				1	5.93	17.2	529	0.98	-296.4	1	AC

Clarity: VC = very cloudy, CI = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	HC-5	Sampling Flow Rate	0.5 L/min	Analytical Laboratory:	Apex	
Sample Time:	1005	Final Depth to Water:		Did Well Dewater?		
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2/1L AMB	NONE HCl	TPH + Dx	yes no			
2/1L AMB	NONE	PAHs	yes no			
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

Time In/Out:

[illegible]

Shear / 0.312 and LNASL removed

1-24-22

WELL MONITORING DATA SHEET



Well I.D.	HC-120	Job Number:	1007-23
Client:	DEQ	Date:	12/22/21
Project:	Terminal 4 slip 3	Sampler:	FS
Weather:	Rain	Time In/Out:	

WELL DATA

Well Depth:	29.80	Well Diameter:	2"	Water Height	
Depth to Water:	15.98	Screened Interval:		x Multiplier	
Water Column Length:		Depth to Free Product:		x Casing Volumes	
Purge Volume:		Free Product Thickness:		= Purge Volume	
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:		Perc			Pump Intake Depth:		MS			Comments	
Sampling Method:		LF			Tubing Type:		LOPE				
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (b/c)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	← Stabilization Criteria
1110			16.22		6.97	13.2	284.2	3.85	194.1		
1113			16.24		6.77	14.8	297.8	1.47	174.8		
1116			16.24		6.62	14.8	832	0.29	120.0		
1119			16.24		6.67	14.7	1006	0.26	87.4		
1122			16.24		6.70	14.6	1028	0.19	73.1		
1125			16.24		6.71	14.6	1043	0.18	60.3		

Clarity: VC = very cloudy, CI = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	HC-120	Sampling Flow Rate		Analytical Laboratory:		
Sample Time:	1130	Final Depth to Water:	16.11	Did Well Dewater?		
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

1-24-22

Client: **DEQ**

Project:	Terminale Slip 3
----------	------------------

Weather:	rain
----------	------

Job Number:	1007-23
-------------	---------

Date: 12/22/21

Sampler:	FR
----------	----

Time In/Out:

Well Depth:	12.36	Well Diameter:	1"	Water Height	
Depth to Water:	8.37	Screened Interval:		x Multiplier	
Water Column Length:		Depth to Free Product:		x Casing Volumes	
Purge Volume:		Free Product Thickness:		= Purge Volume	
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

[illegible]

SAMPLING DATA

Sample ID: BE-5

Sampling Flow Rate

Analytical Laboratory:

Sample Time: 1333

Final Depth to Water: 9.63

Did Well Dewater?

Did Well Dewater?	yes
-------------------	-----

Containers/Type

Preservative

Analysis/Method

Field Filtered

Filter Size

MS/MSD

Duplicate ID

yes no

yes no

yes no

yes no

yes no

yes no

COMMENTS

well served only at 1247

1-24-22



Well I.D.	QE-1	Job Number:	1007-23
Client:	DEQ	Date:	12/22/21
Project:	Terminal 4 slip 3	Sampler:	FS
Weather:	Rain	Time In/Out:	

Well Depth:	9.63	Well Diameter:	1"	Water Height	
Depth to Water:	6.15	Screened Interval:		x Multiplier	
Water Column Length:		Depth to Free Product:		x Casing Volumes	
Purge Volume:		Free Product Thickness:		= Purge Volume	
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

[illegible]

SAMPLING DATA

[illegible]

well saturated at 1405

1-24-22

Frug

TASS
1/6/2022
PRODUCT PURGE

Scale: 1 square =

ID	DTP	DTW	PT	PURGE / NOTES
NW-20	15.28	16.01	0.73	0.2-gal (sum), 1-gal (bail)
Final →	15.46	15.43	0.03	
NW-19	13.92	14.79	0.87	0-gal (sum), 1.5-gal (bail)
(Final)	14.05	14.11	0.06	
HC-10	13.32	12.91	0.42	0.25-gal (bailer)
(Final)	12.84	12.62	0.22	
HC-5	—	17.72	—	—
HC-12D	—	14.82	—	STEEN
HC-21	—	14.74	—	—
HC-23	—	13.77	—	STEEN
HC-24	—	11.09	—	—
HC-19	—	15.08	—	—

OVER →

T453 PRODUCT PURGE CONT.

1/6/2022

ID	DTP	DTW	PT	PURGE / NOTES
BE-1*	-	7.37	-	-
BE-3	-	-	-	UNABLE TO ACCESS
BE-4	-	14.48	-	SHEEN
BE-5*	-	7.39	-	-

* GAUGED 1/7/2022

NO SHEEN ON RIVER

DRUM LOG	DRUM SIZE	START DATE
1 Diesel / WATER PRODUCT	2/5 th Full	3/19/2020
2 " "	Full	10/16/2018
3 Purge / Decan WATER	Full	9/27/2020
4 " "	1/2 Full	10/14/2020

Appendix B

Data QA/QC Review and Analytical Laboratory Reports

1.0 Introduction

This appendix documents the results of a quality assurance (QA) review of the analytical data for groundwater samples collected during the 2021 groundwater sampling at Terminal 4 Slip 3 Upland Facility. All analyses were performed by Apex Laboratories of Tigard, Oregon. Apex Laboratories is ORELAP certified (ID OR100062) for PAHs by 8270E and diesel/residual range organics with silica gel cleanup by NWTPH-Dx. A copy of the analytical laboratory report summary is included in this appendix, referenced in Table 1 as follows.

Table 1: Analytical Laboratory Reports

Report	Report Date	Sampling Event
A1D0429	January 26, 2022	April 2021 Groundwater Sampling
A1G0235	July 22, 2021	July 2021 Groundwater Sampling
A1L0933	January 26, 2022	December 2021 Groundwater Sampling

2.0 Data Validation

The QA review outlines the applicable quality control criteria utilized during the data review process, as well as any deviations from those criteria. Examination and validation of the laboratory summary reports include:

- Analytical preparation and quantitation methods
- Analytical method holding times
- Sample handling
- Chain of custody handling
- Detection and reporting limits
- Method blank detections
- Laboratory control samples and surrogates to assess accuracy
- Laboratory control sample duplicates to assess precision.

The QA review did not include a review of raw data.

2.1 Data Qualifiers

Any data that is found to have possible bias or error were qualified and flagged. The flags used in the data table are below.

Table 2: Qualifier Flags

Appendix B – Data QA/QC Review

J	Result is estimated.
J+	Result is estimated and may be biased high.
J-	Result is estimated and may be biased low.
UJ	The not detected result is estimated. The reporting limit may be inaccurate or imprecise.

3.0 Analytical Methods

Chemical analyses on the collected water samples consisted of the following:

- Diesel and residual range organics with silica gel cleanup by Method NWTPH-Dx; and
- Polycyclic aromatic hydrocarbons (PAHs) by U.S. Environmental Protection Agency (EPA) Method 8270E SIM (quarterly groundwater samples)
- PAHs by EPA Method 8270E (annual groundwater samples)

Quality Assurance Objectives and Review

The general QA objectives for this project were to develop and implement procedures for obtaining and evaluating data of a quality that is suitable for comparison to regulatory compliance criteria. To collect such information, analytical data must have an appropriate degree of accuracy and reproducibility, samples collected must be representative of actual field conditions, and samples must be collected and analyzed using unbroken chain-of-custody (COC) procedures.

Reporting limits and analytical results were compared to action levels for each parameter in the media of concern. Precision, accuracy, representativeness, completeness, and comparability parameters used to indicate data quality are defined below.

Reporting Limits. Detection and reporting limits are set by the laboratory and are based on instrumentation abilities, sample matrix, and suggested detection limits set by the EPA or the Oregon Department of Environmental Quality (DEQ). Method detection limits (MDLs) were generally consistent with industry standards and were below the relevant *Record of Decision* (ROD) cleanup standards except for benzo(a)pyrene (BAP) and benzo(a)anthracene (BAA) for wells HC-5, BE-1, and HC-12D. Results were reported to MDLs and detections between the MDL and reporting limit (RL) were 'J' flagged as estimated values.

Appendix B – Data QA/QC Review

Holding Times. Samples were extracted and analyzed within method holding times.

Sampling Containers and Preservation. Samples were collected in amber glass containers provided by the laboratory and were immediately chilled with ice. Samples to be analyzed for diesel and residual range organics were preserved with hydrochloric acid (HCl). Samples were received by the laboratory in good condition and below 6 degrees Celsius.

Precision. Precision measures the reproducibility of data under a given set of conditions. Specifically, it is a quantitative measure of the variability of a group of measurements compared to their average values.

Analytical precision is measured through a batch laboratory control sample and laboratory control sample duplicate (LCS and LCSD, respectively). Analytical precision is quantitatively expressed as the relative percent difference (RPD) between the same analytes for the LCS and LCSD. The RPD for all LCS and LCSDs were within control limits.

Sampling precision is measured through field duplicates. The field duplicate results are compared to the initial result to assess variability in the sample matrix and bias due to sampling procedures. A field duplicate is usually collected during the annual sampling event in December but was not collected during the 2021 event. However, for the December 2021 sampling event detected concentrations for diesel and residual range organics and PAHs were less than five times the reporting limit. Results that are less than five times the reporting limit are not controlled for precision due to increased instrument error as results approach the reporting limit. Therefore, the December 2021 results are accepted for precision based on RPDs calculated using analytical batch LCS and LCSDs.

Accuracy. Accuracy is the measure of error between the reported test results and the true sample concentration. “Perfect” accuracy is 100 percent recovery. True sample concentration is never known due to analytical limitations, variability, and error. Consequently, accuracy is inferred from the recovery data from spiked samples. The laboratory performed sufficient spike samples of a similar matrix (*i.e.*, water) to allow the computation of the accuracy.

The laboratory was assessed for accuracy through the laboratory control sample and the laboratory control sample duplicate. Each LCS/LCSD contained analyte-free water, was spiked with a known concentration of analyte and expressed as a percent recovery. Those recoveries have certain limits as established by the method or laboratory capabilities. LCS and LCSD percent recoveries were within control limits with the following exceptions.

- For the December 2021 groundwater sampling event, the recoveries of fluoranthene and pyrene were above the upper control limit. The fluoranthene detection for well BE-5 may be biased high and is ‘J+’ flagged. Pyrene was not detected in the associated samples and results are not flagged.

Appendix B – Data QA/QC Review

Sample extraction/preparation and instrumentation accuracy is evaluated through surrogate recoveries. A surrogate has similar properties to the analytes of interest but is not included on the analyte list. The surrogate is spiked into samples at a known concentration at the beginning of the extraction or preparation process and is analyzed on instrumentation with the sample. A percent recovery is then calculated from the actual concentration of the surrogate and the result from the instrument. Surrogate recoveries were generally within control limits with the following exception.

- For PAH analysis of groundwater collected from HC-5 in April 2021, the surrogate p-terphenyl-d14 was recovered below the lower control limit. Not detected results are 'UJ' flagged and detected results are 'J-' as estimated values with a potential low bias.
- For PAH analysis of groundwater collected from HC-12D and BE-1 in December 2021, the surrogate benzo(a)pyrene-d12 was recovered above the upper control limit. However, PAHs associated with the surrogate benzo(a)pyrene-d12 were not detected and a high bias is not applicable to these results.

Bias. The laboratory is required to run method blanks per the methods used for analysis. The method blank can determine if there is any contamination within the laboratory preparation or analytical procedure.

Benzo(a)pyrene was detected at the detection limit for the December 2021 method blank from analytical batch 21L0977. Groundwater samples collected from HC-12D and BE-1 were not detected for benzo(a)pyrene and laboratory contamination is not suspected for these samples. However, benzo(a)pyrene was detected in sample BE-5 at a concentration that is less than ten times the method blank concentration. This result may have been significantly influenced by laboratory contamination and the result for benzo(a)pyrene for BE-5 is 'J+' flagged as an estimated value that may be biased high.

Conclusion. In conclusion, QA objectives were met, and results are acceptable for use.



ANALYTICAL REPORT

AMENDED REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Wednesday, January 26, 2022

Steve Misner
Apex Companies, LLC
3015 SW First Avenue
Portland, OR 97201

RE: A1D0429 - POP T4 - Slip 3 GW - 1007-22

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A1D0429, which was received by the laboratory on 4/12/2021 at 1:55:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1	3.1 degC
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This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darrell Auvil, Client Services Manager

**ANALYTICAL REPORT**

AMENDED REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue

Portland, OR 97201

Project: **POP T4 - Slip 3 GW**Project Number: **1007-22**

Project Manager: Steve Misner

Report ID:**A1D0429 - 01 26 22 1517****ANALYTICAL REPORT FOR SAMPLES****SAMPLE INFORMATION**

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HC-5	A1D0429-01	Water	04/07/21 11:30	04/12/21 13:55

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ANALYTICAL REPORT

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Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue

Portland, OR 97201

Project: POP T4 - Slip 3 GW

Project Number: 1007-22

Project Manager: Steve Misner

Report ID:

A1D0429 - 01 26 22 1517

ANALYTICAL CASE NARRATIVE

Work Order: A1D0429

Amended Report Revision 1:

Reporting the Method Detection Limits (MDL)-

This report supersedes all previous reports.

The final report has been amended to report all data to the method detection limits (MDLs).

Darrell Auvil

Project Manager

1/26/2022

Apex Laboratories

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

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Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue

Portland, OR 97201

Project: **POP T4 - Slip 3 GW**Project Number: **1007-22**Project Manager: **Steve Misner****Report ID:****A1D0429 - 01 26 22 1517**

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
HC-5 (A1D0429-01)		Matrix: Water			Batch: 1040591			
Diesel	7.89	0.110	0.220	mg/L	1	04/17/21 01:02	NWTPH-Dx/SG	
Oil	ND	0.220	0.440	mg/L	1	04/17/21 01:02	NWTPH-Dx/SG	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 106 %</i>	<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/17/21 01:02</i>	<i>NWTPH-Dx/SG</i>		

Apex Laboratories

Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

AMENDED REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue
Portland, OR 97201Project: **POP T4 - Slip 3 GW**Project Number: **1007-22**Project Manager: **Steve Misner**

Report ID:

A1D0429 - 01 26 22 1517

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (SIM)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
HC-5 (A1D0429-01RE1)		Matrix: Water			Batch: 1040481			
Acenaphthene	ND	0.610	0.610	ug/L	1	04/14/21 15:27	EPA 8270E SIM	R-02
Acenaphthylene	ND	0.134	0.134	ug/L	1	04/14/21 15:27	EPA 8270E SIM	R-02
Anthracene	ND	0.366	0.366	ug/L	1	04/14/21 15:27	EPA 8270E SIM	R-02
Benz(a)anthracene	ND	0.0488	0.0488	ug/L	1	04/14/21 15:27	EPA 8270E SIM	
Benzo(a)pyrene	ND	0.0244	0.0488	ug/L	1	04/14/21 15:27	EPA 8270E SIM	
Benzo(b)fluoranthene	ND	0.0244	0.0488	ug/L	1	04/14/21 15:27	EPA 8270E SIM	
Benzo(k)fluoranthene	ND	0.0244	0.0488	ug/L	1	04/14/21 15:27	EPA 8270E SIM	
Benzo(g,h,i)perylene	ND	0.0244	0.0488	ug/L	1	04/14/21 15:27	EPA 8270E SIM	
Chrysene	ND	0.0976	0.0976	ug/L	1	04/14/21 15:27	EPA 8270E SIM	R-02
Dibenz(a,h)anthracene	ND	0.0244	0.0488	ug/L	1	04/14/21 15:27	EPA 8270E SIM	
Fluoranthene	0.119	0.0244	0.0488	ug/L	1	04/14/21 15:27	EPA 8270E SIM	
Fluorene	1.36	0.0244	0.0488	ug/L	1	04/14/21 15:27	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	ND	0.0244	0.0488	ug/L	1	04/14/21 15:27	EPA 8270E SIM	
Naphthalene	ND	0.0976	0.0976	ug/L	1	04/14/21 15:27	EPA 8270E SIM	
Phenanthrene	ND	0.159	0.159	ug/L	1	04/14/21 15:27	EPA 8270E SIM	R-02
Pyrene	0.202	0.0244	0.0488	ug/L	1	04/14/21 15:27	EPA 8270E SIM	M-02
Surrogate: 2-Fluorobiphenyl (Surr)		Recovery: 85 %		Limits: 44-120 %	1	04/14/21 15:27	EPA 8270E SIM	
p-Terphenyl-d14 (Surr)		46 %		50-134 %	1	04/14/21 15:27	EPA 8270E SIM	S-03

Apex Laboratories

Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

AMENDED REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Apex Companies, LLC
3015 SW First Avenue
Portland, OR 97201

Project: **POP T4 - Slip 3 GW**
Project Number: **1007-22**
Project Manager: **Steve Misner**

Report ID:
A1D0429 - 01 26 22 1517

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes	
Batch 1040591 - EPA 3510C (Fuels/Acid Ext.) w/Silica Gel + Acid						Water							
Blank (1040591-BLK1)			Prepared: 04/16/21 11:27 Analyzed: 04/17/21 00:01										
NWTPH-Dx/SG													
Diesel	ND	0.100	0.200	mg/L	1	---	---	---	---	---	---		
Oil	ND	0.200	0.400	mg/L	1	---	---	---	---	---	---		
Surr: o-Terphenyl (Surr)		Recovery: 106 %		Limits: 50-150 %		Dilution: 1x							
LCS (1040591-BS1)			Prepared: 04/16/21 11:27 Analyzed: 04/17/21 00:21										
NWTPH-Dx/SG													
Diesel	1.12	0.100	0.200	mg/L	1	1.25	---	90	59-115%	---	---		
Surr: o-Terphenyl (Surr)		Recovery: 106 %		Limits: 50-150 %		Dilution: 1x							
LCS Dup (1040591-BSD1)			Prepared: 04/16/21 11:27 Analyzed: 04/17/21 00:41										Q-19
NWTPH-Dx/SG													
Diesel	1.07	0.100	0.200	mg/L	1	1.25	---	86	59-115%	5	30%		
Surr: o-Terphenyl (Surr)		Recovery: 107 %		Limits: 50-150 %		Dilution: 1x							

Apex Laboratories

Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

AMENDED REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue

Portland, OR 97201

Project: **POP T4 - Slip 3 GW**Project Number: **1007-22**Project Manager: **Steve Misner****Report ID:****A1D0429 - 01 26 22 1517**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (SIM)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1040481 - EPA 3510C (Acid Extraction)						Water						
Blank (1040481-BLK1)			Prepared: 04/14/21 10:00 Analyzed: 04/14/21 13:21									
EPA 8270E SIM												
Acenaphthene	ND	0.0200	0.0400	ug/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	0.0200	0.0400	ug/L	1	---	---	---	---	---	---	
Anthracene	ND	0.0200	0.0400	ug/L	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	0.0200	0.0400	ug/L	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	0.0200	0.0400	ug/L	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	0.0200	0.0400	ug/L	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	0.0200	0.0400	ug/L	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	0.0200	0.0400	ug/L	1	---	---	---	---	---	---	
Chrysene	ND	0.0200	0.0400	ug/L	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	0.0200	0.0400	ug/L	1	---	---	---	---	---	---	
Fluoranthene	ND	0.0200	0.0400	ug/L	1	---	---	---	---	---	---	
Fluorene	ND	0.0200	0.0400	ug/L	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	0.0200	0.0400	ug/L	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	0.0400	0.0800	ug/L	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	0.0400	0.0800	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	0.0400	0.0800	ug/L	1	---	---	---	---	---	---	
Phenanthrene	ND	0.0200	0.0400	ug/L	1	---	---	---	---	---	---	
Pyrene	ND	0.0200	0.0400	ug/L	1	---	---	---	---	---	---	
Dibenzofuran	ND	0.0200	0.0400	ug/L	1	---	---	---	---	---	---	
Surr: 2-Fluorobiphenyl (Surr)		Recovery: 88 %		Limits: 44-120 %		Dilution: 1x						
p-Terphenyl-d14 (Surr)		84 %		50-134 %		"						

LCS (1040481-BS1)

Prepared: 04/14/21 10:00 Analyzed: 04/14/21 13:46

EPA 8270E SIM												
Acenaphthene	6.94	0.0200	0.0400	ug/L	1	8.00	---	87	47-122%	---	---	
Acenaphthylene	7.27	0.0200	0.0400	ug/L	1	8.00	---	91	41-130%	---	---	
Anthracene	6.99	0.0200	0.0400	ug/L	1	8.00	---	87	57-123%	---	---	
Benz(a)anthracene	7.11	0.0200	0.0400	ug/L	1	8.00	---	89	58-125%	---	---	
Benzo(a)pyrene	7.04	0.0200	0.0400	ug/L	1	8.00	---	88	54-128%	---	---	
Benzo(b)fluoranthene	6.37	0.0200	0.0400	ug/L	1	8.00	---	80	53-131%	---	---	
Benzo(k)fluoranthene	6.62	0.0200	0.0400	ug/L	1	8.00	---	83	57-129%	---	---	
Benzo(g,h,i)perylene	6.75	0.0200	0.0400	ug/L	1	8.00	---	84	50-134%	---	---	
Chrysene	7.25	0.0200	0.0400	ug/L	1	8.00	---	91	59-123%	---	---	

Apex Laboratories

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

AMENDED REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue

Portland, OR 97201

Project: **POP T4 - Slip 3 GW**Project Number: **1007-22**Project Manager: **Steve Misner****Report ID:****A1D0429 - 01 26 22 1517**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (SIM)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1040481 - EPA 3510C (Acid Extraction)						Water						
LCS (1040481-BS1)			Prepared: 04/14/21 10:00		Analyzed: 04/14/21 13:46							
Dibenz(a,h)anthracene	7.57	0.0200	0.0400	ug/L	1	8.00	---	95	51-134%	---	---	
Fluoranthene	6.14	0.0200	0.0400	ug/L	1	8.00	---	77	57-128%	---	---	
Fluorene	6.50	0.0200	0.0400	ug/L	1	8.00	---	81	52-124%	---	---	
Indeno(1,2,3-cd)pyrene	6.70	0.0200	0.0400	ug/L	1	8.00	---	84	52-134%	---	---	
1-Methylnaphthalene	6.12	0.0400	0.0800	ug/L	1	8.00	---	77	41-120%	---	---	
2-Methylnaphthalene	6.19	0.0400	0.0800	ug/L	1	8.00	---	77	40-121%	---	---	
Naphthalene	6.02	0.0400	0.0800	ug/L	1	8.00	---	75	40-121%	---	---	
Phenanthrene	6.92	0.0200	0.0400	ug/L	1	8.00	---	87	59-120%	---	---	
Pyrene	6.08	0.0200	0.0400	ug/L	1	8.00	---	76	57-126%	---	---	
Dibenzofuran	6.64	0.0200	0.0400	ug/L	1	8.00	---	83	53-120%	---	---	
Surr: 2-Fluorobiphenyl (Surr)												
		Recovery: 87 %		Limits: 44-120 %		Dilution: 1x						
p-Terphenyl-d14 (Surr)		78 %		50-134 %		"						

LCS Dup (1040481-BSD1)			Prepared: 04/14/21 10:00 Analyzed: 04/14/21 14:11							Q-19	
EPA 8270E SIM											
Acenaphthene	7.11	0.0200	0.0400	ug/L	1	8.00	---	89	47-122%	2	30%
Acenaphthylene	7.40	0.0200	0.0400	ug/L	1	8.00	---	92	41-130%	2	30%
Anthracene	7.15	0.0200	0.0400	ug/L	1	8.00	---	89	57-123%	2	30%
Benz(a)anthracene	7.41	0.0200	0.0400	ug/L	1	8.00	---	93	58-125%	4	30%
Benzo(a)pyrene	7.25	0.0200	0.0400	ug/L	1	8.00	---	91	54-128%	3	30%
Benzo(b)fluoranthene	6.53	0.0200	0.0400	ug/L	1	8.00	---	82	53-131%	2	30%
Benzo(k)fluoranthene	6.87	0.0200	0.0400	ug/L	1	8.00	---	86	57-129%	4	30%
Benzo(g,h,i)perylene	6.86	0.0200	0.0400	ug/L	1	8.00	---	86	50-134%	2	30%
Chrysene	7.43	0.0200	0.0400	ug/L	1	8.00	---	93	59-123%	2	30%
Dibenz(a,h)anthracene	7.74	0.0200	0.0400	ug/L	1	8.00	---	97	51-134%	2	30%
Fluoranthene	6.38	0.0200	0.0400	ug/L	1	8.00	---	80	57-128%	4	30%
Fluorene	6.78	0.0200	0.0400	ug/L	1	8.00	---	85	52-124%	4	30%
Indeno(1,2,3-cd)pyrene	6.82	0.0200	0.0400	ug/L	1	8.00	---	85	52-134%	2	30%
1-Methylnaphthalene	6.31	0.0400	0.0800	ug/L	1	8.00	---	79	41-120%	3	30%
2-Methylnaphthalene	6.32	0.0400	0.0800	ug/L	1	8.00	---	79	40-121%	2	30%
Naphthalene	6.05	0.0400	0.0800	ug/L	1	8.00	---	76	40-121%	0.5	30%
Phenanthrene	7.14	0.0200	0.0400	ug/L	1	8.00	---	89	59-120%	3	30%
Pyrene	6.32	0.0200	0.0400	ug/L	1	8.00	---	79	57-126%	4	30%
Dibenzofuran	6.83	0.0200	0.0400	ug/L	1	8.00	---	85	53-120%	3	30%

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Darrell Auvil, Client Services Manager

**ANALYTICAL REPORT****AMENDED REPORT****Apex Laboratories, LLC**

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue

Portland, OR 97201

Project: **POP T4 - Slip 3 GW**Project Number: **1007-22**Project Manager: **Steve Misner****Report ID:****A1D0429 - 01 26 22 1517****QUALITY CONTROL (QC) SAMPLE RESULTS****Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (SIM)**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1040481 - EPA 3510C (Acid Extraction)						Water						
LCS Dup (1040481-BSD1)		Prepared: 04/14/21 10:00 Analyzed: 04/14/21 14:11										Q-19
Surr: 2-Fluorobiphenyl (Surr)			Recovery: 88 %	Limits: 44-120 %		Dilution: 1x						
p-Terphenyl-d14 (Surr)			81 %	50-134 %		"						

Apex Laboratories

Darrell Auvil, Client Services Manager

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**ANALYTICAL REPORT****AMENDED REPORT****Apex Laboratories, LLC****6700 S.W. Sandburg Street****Tigard, OR 97223****503-718-2323****ORELAP ID: OR100062****Apex Companies, LLC****3015 SW First Avenue****Portland, OR 97201**Project: **POP T4 - Slip 3 GW**Project Number: **1007-22**Project Manager: **Steve Misner****Report ID:****A1D0429 - 01 26 22 1517****SAMPLE PREPARATION INFORMATION****Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup****Prep: EPA 3510C (Fuels/Acid Ext.) w/Silica Gel + Acid**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1040591							
A1D0429-01	Water	NWTPH-Dx/SG	04/07/21 11:30	04/16/21 11:27	910mL/5mL	1000mL/5mL	1.10

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (SIM)**Prep: EPA 3510C (Acid Extraction)**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1040481							
A1D0429-01RE1	Water	EPA 8270E SIM	04/07/21 11:30	04/14/21 10:00	820mL/2mL	1000mL/2mL	1.22

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

AMENDED REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue

Portland, OR 97201

Project: POP T4 - Slip 3 GW

Project Number: 1007-22

Project Manager: Steve Misner

Report ID:

A1D0429 - 01 26 22 1517

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

- M-02** Due to matrix interference, this analyte cannot be accurately quantified. The reported result is estimated.
- Q-19** Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
- R-02** The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
- S-03** Sample re-extract, or the analysis of an associated Batch QC sample, confirms surrogate failure due to sample matrix effect.

Apex Laboratories

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Darrell Auvil, Client Services Manager

**ANALYTICAL REPORT****AMENDED REPORT****Apex Laboratories, LLC**

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue

Portland, OR 97201

Project: **POP T4 - Slip 3 GW**Project Number: **1007-22**Project Manager: **Steve Misner****Report ID:****A1D0429 - 01 26 22 1517****REPORTING NOTES AND CONVENTIONS:****Abbreviations:**

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).

If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.

The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.

"dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")

See Percent Solids section for details of dry weight analysis.

"wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).

-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.

-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.

For further details, please request a copy of this document.

Apex Laboratories

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Darrell Auvil, Client Services Manager

**ANALYTICAL REPORT****AMENDED REPORT****Apex Laboratories, LLC**

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue

Portland, OR 97201

Project: **POP T4 - Slip 3 GW**Project Number: **1007-22**Project Manager: **Steve Misner****Report ID:****A1D0429 - 01 26 22 1517****REPORTING NOTES AND CONVENTIONS (Cont.):****Blanks (Cont.):**

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:**Mixed Matrix Samples:****Water Samples:**

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

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Darrell Auvil, Client Services Manager

**ANALYTICAL REPORT**

AMENDED REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue

Portland, OR 97201

Project: **POP T4 - Slip 3 GW**Project Number: **1007-22**Project Manager: **Steve Misner****Report ID:****A1D0429 - 01 26 22 1517****LABORATORY ACCREDITATION INFORMATION****ORELAP Certification ID: OR100062 (Primary Accreditation)** -**EPA ID: OR01039**

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation
<u>All reported analytes are included in Apex Laboratories' current ORELAP scope.</u>					

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.

Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provided by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

AMENDED REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue

Portland, OR 97201

Project: POP T4 - Slip 3 GWProject Number: 1007-22Project Manager: Steve Misner

Report ID:

A1D0429 - 01 26 22 1517

APEX LABS COOLER RECEIPT FORM

Client: Apex Cos Element WO#: A1 D0429Project/Project #: Port of Portland- T4 S3 LNAPL / 1007-22

Delivery Info:

Date/time received: 4/12/21 @ 1355 By: [Signature]Delivered by: Apex ☒ Client ☒ ESS ☐ FedEx ☐ UPS ☐ Swift ☐ Senvoy ☐ SDS ☐ Other ☐Cooler Inspection Date/time inspected: 4/12/21 @ 1355 By: [Signature]Chain of Custody included? Yes ☒ No ☐ Custody seals? Yes ☐ No ☒Signed/dated by client? Yes ☒ No ☐Signed/dated by Apex? Yes ☒ No ☐

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	<u>3.1</u>						

Received on ice? (Y/N) YTemp. blanks? (Y/N) NIce type: (Gel/Real/Other) realCondition: goodCooler out of temp? (Y/N) ☒ Possible reason why: _____Green dots applied to out of temperature samples? Yes ☒ No ☐Out of temperature samples form initiated? Yes ☒ No ☐Sample Inspection: Date/time inspected: 4/12/21 @ 14:50 By: [Signature]All samples intact? Yes ☒ No ☐ Comments: _____Bottle labels/COCs agree? Yes ☒ No ☐ Comments: _____COC/container discrepancies form initiated? Yes ☐ No ☒Containers/volumes received appropriate for analysis? Yes ☒ No ☐ Comments: _____Do VOA vials have visible headspace? Yes ☐ No ☐ NA ☒

Comments: _____

Water samples: pH checked: Yes ☒ No ☐ NA ☐ pH appropriate? Yes ☒ No ☐ NA ☐

Comments: _____

Additional information: _____

Labeled by: [Signature] Witness: [Signature] Cooler Inspected by: [Signature]

Apex Laboratories

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Darrell Auvil, Client Services Manager

Page 16 of 16



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Thursday, July 22, 2021

Steve Misner
Apex Companies, LLC
3015 SW First Avenue
Portland, OR 97201

RE: A1G0235 - POP T4 - Slip 3 GW - 1007-22

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A1G0235, which was received by the laboratory on 7/8/2021 at 11:20:00AM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1	2.1 degC
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This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



Apex Laboratories

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue
Portland, OR 97201

Project: POP T4 - Slip 3 GW

Project Number: 1007-22

Project Manager: Steve Misner

Report ID:

A1G0235 - 07 22 21 0741

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HC-5	A1G0235-01	Water	07/08/21 10:05	07/08/21 11:20

Apex Laboratories

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Darrell Auvil, Client Services Manager

**ANALYTICAL REPORT****Apex Laboratories, LLC**6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC3015 SW First Avenue
Portland, OR 97201Project: **POP T4 - Slip 3 GW**Project Number: **1007-22**Project Manager: **Steve Misner****Report ID:****A1G0235 - 07 22 21 0741****ANALYTICAL SAMPLE RESULTS****Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
HC-5 (A1G0235-01)		Matrix: Water			Batch: 1070530			
Diesel	14.0	0.108	0.215	mg/L	1	07/16/21 20:20	NWTPH-Dx/SG	
Oil	ND	0.215	0.430	mg/L	1	07/16/21 20:20	NWTPH-Dx/SG	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 102 %</i>	<i>Limits: 50-150 %</i>	<i>1</i>	<i>07/16/21 20:20</i>	<i>NWTPH-Dx/SG</i>		

Apex Laboratories

Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue
Portland, OR 97201Project: **POP T4 - Slip 3 GW**Project Number: **1007-22**Project Manager: **Steve Misner**

Report ID:

A1G0235 - 07 22 21 0741

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
HC-5 (A1G0235-01)		Matrix: Water			Batch: 1070417			
Acenaphthene	0.871	0.0190	0.0381	ug/L	1	07/14/21 20:17	EPA 8270E SIM	
Acenaphthylene	ND	0.105	0.105	ug/L	1	07/14/21 20:17	EPA 8270E SIM	R-02
Anthracene	ND	0.0952	0.0952	ug/L	1	07/14/21 20:17	EPA 8270E SIM	R-02
Benz(a)anthracene	ND	0.0381	0.0381	ug/L	1	07/14/21 20:17	EPA 8270E SIM	
Benzo(a)pyrene	ND	0.0190	0.0381	ug/L	1	07/14/21 20:17	EPA 8270E SIM	
Benzo(b)fluoranthene	ND	0.0190	0.0381	ug/L	1	07/14/21 20:17	EPA 8270E SIM	
Benzo(k)fluoranthene	ND	0.0190	0.0381	ug/L	1	07/14/21 20:17	EPA 8270E SIM	
Benzo(g,h,i)perylene	ND	0.0190	0.0381	ug/L	1	07/14/21 20:17	EPA 8270E SIM	
Chrysene	ND	0.0571	0.0571	ug/L	1	07/14/21 20:17	EPA 8270E SIM	R-02
Dibenz(a,h)anthracene	ND	0.0190	0.0381	ug/L	1	07/14/21 20:17	EPA 8270E SIM	
Fluoranthene	ND	0.0952	0.0952	ug/L	1	07/14/21 20:17	EPA 8270E SIM	R-02
Fluorene	2.45	0.0190	0.0381	ug/L	1	07/14/21 20:17	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	ND	0.0190	0.0381	ug/L	1	07/14/21 20:17	EPA 8270E SIM	
1-Methylnaphthalene	ND	0.133	0.133	ug/L	1	07/14/21 20:17	EPA 8270E SIM	R-02
2-Methylnaphthalene	ND	0.0381	0.0762	ug/L	1	07/14/21 20:17	EPA 8270E SIM	R-02
Naphthalene	ND	0.133	0.133	ug/L	1	07/14/21 20:17	EPA 8270E SIM	R-02
Phenanthrene	ND	0.114	0.114	ug/L	1	07/14/21 20:17	EPA 8270E SIM	R-02
Pyrene	ND	0.171	0.171	ug/L	1	07/14/21 20:17	EPA 8270E SIM	R-02
Dibenzofuran	ND	0.143	0.143	ug/L	1	07/14/21 20:17	EPA 8270E SIM	R-02
Surrogate: 2-Fluorobiphenyl (Surr)		Recovery: 74 %		Limits: 44-120 %	1	07/14/21 20:17	EPA 8270E SIM	
p-Terphenyl-d14 (Surr)		89 %		50-134 %	1	07/14/21 20:17	EPA 8270E SIM	

Apex Laboratories

Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue
Portland, OR 97201Project: **POP T4 - Slip 3 GW**Project Number: **1007-22**Project Manager: **Steve Misner**

Report ID:

A1G0235 - 07 22 21 0741

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1070530 - EPA 3510C (Fuels/Acid Ext.) w/Silica Gel + Acid						Water						
Blank (1070530-BLK1)			Prepared: 07/16/21 12:27 Analyzed: 07/16/21 19:12									
NWTPH-Dx/SG												
Diesel	ND	0.100	0.200	mg/L	1	---	---	---	---	---	---	
Oil	ND	0.200	0.400	mg/L	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		Recovery: 121 %		Limits: 50-150 %		Dilution: 1x						
LCS (1070530-BS1)			Prepared: 07/16/21 12:27 Analyzed: 07/16/21 19:35									
NWTPH-Dx/SG												
Diesel	1.16	0.100	0.200	mg/L	1	1.25	---	93	36-132%	---	---	
Surr: o-Terphenyl (Surr)		Recovery: 102 %		Limits: 50-150 %		Dilution: 1x						
LCS Dup (1070530-BSD1)			Prepared: 07/16/21 12:27 Analyzed: 07/16/21 19:58									
NWTPH-Dx/SG												
Diesel	1.21	0.100	0.200	mg/L	1	1.25	---	97	36-132%	4	30%	
Surr: o-Terphenyl (Surr)		Recovery: 102 %		Limits: 50-150 %		Dilution: 1x						

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503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue

Portland, OR 97201

Project: **POP T4 - Slip 3 GW**Project Number: **1007-22**Project Manager: **Steve Misner****Report ID:****A1G0235 - 07 22 21 0741**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E SIM

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1070417 - EPA 3510C (Acid Extraction)						Water						
Blank (1070417-BLK1)			Prepared: 07/14/21 09:53 Analyzed: 07/14/21 18:36									
EPA 8270E SIM												
Acenaphthene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Anthracene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Chrysene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Fluoranthene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Fluorene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	0.0182	0.0364	ug/L	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	0.0182	0.0364	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	0.0182	0.0364	ug/L	1	---	---	---	---	---	---	
Phenanthrene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Pyrene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Dibenzofuran	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Surr: 2-Fluorobiphenyl (Surr)		Recovery: 52 %		Limits: 44-120 %		Dilution: 1x						
p-Terphenyl-d14 (Surr)		101 %		50-134 %		"						

LCS (1070417-BS1)

Prepared: 07/14/21 09:53 Analyzed: 07/14/21 19:01

EPA 8270E SIM												
Acenaphthene	2.79	0.0100	0.0200	ug/L	1	4.00	---	70	47-122%	---	---	
Acenaphthylene	2.88	0.0100	0.0200	ug/L	1	4.00	---	72	41-130%	---	---	
Anthracene	3.09	0.0100	0.0200	ug/L	1	4.00	---	77	57-123%	---	---	
Benz(a)anthracene	3.32	0.0100	0.0200	ug/L	1	4.00	---	83	58-125%	---	---	
Benzo(a)pyrene	3.52	0.0100	0.0200	ug/L	1	4.00	---	88	54-128%	---	---	
Benzo(b)fluoranthene	3.73	0.0100	0.0200	ug/L	1	4.00	---	93	53-131%	---	---	
Benzo(k)fluoranthene	3.84	0.0100	0.0200	ug/L	1	4.00	---	96	57-129%	---	---	
Benzo(g,h,i)perylene	3.20	0.0100	0.0200	ug/L	1	4.00	---	80	50-134%	---	---	
Chrysene	3.41	0.0100	0.0200	ug/L	1	4.00	---	85	59-123%	---	---	

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

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503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue
Portland, OR 97201Project: **POP T4 - Slip 3 GW**Project Number: **1007-22**Project Manager: **Steve Misner**

Report ID:

A1G0235 - 07 22 21 0741

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E SIM

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1070417 - EPA 3510C (Acid Extraction)						Water						
LCS (1070417-BS1)			Prepared: 07/14/21 09:53		Analyzed: 07/14/21 19:01							
Dibenz(a,h)anthracene	3.43	0.0100	0.0200	ug/L	1	4.00	---	86	51-134%	---	---	
Fluoranthene	3.11	0.0100	0.0200	ug/L	1	4.00	---	78	57-128%	---	---	
Fluorene	2.89	0.0100	0.0200	ug/L	1	4.00	---	72	52-124%	---	---	
Indeno(1,2,3-cd)pyrene	3.18	0.0100	0.0200	ug/L	1	4.00	---	79	52-134%	---	---	
1-Methylnaphthalene	2.60	0.0200	0.0400	ug/L	1	4.00	---	65	41-120%	---	---	
2-Methylnaphthalene	2.52	0.0200	0.0400	ug/L	1	4.00	---	63	40-121%	---	---	
Naphthalene	2.46	0.0200	0.0400	ug/L	1	4.00	---	62	40-121%	---	---	
Phenanthrene	3.13	0.0100	0.0200	ug/L	1	4.00	---	78	59-120%	---	---	
Pyrene	2.96	0.0100	0.0200	ug/L	1	4.00	---	74	57-126%	---	---	
Dibenzofuran	2.90	0.0100	0.0200	ug/L	1	4.00	---	73	53-120%	---	---	
Surr: 2-Fluorobiphenyl (Surr)		Recovery: 71 %		Limits: 44-120 %		Dilution: 1x						
p-Terphenyl-d14 (Surr)		97 %		50-134 %		"						

LCS Dup (1070417-BSD1)			Prepared: 07/14/21 09:53 Analyzed: 07/14/21 19:27									Q-19
EPA 8270E SIM												
Acenaphthene	2.70	0.0100	0.0200	ug/L	1	4.00	---	68	47-122%	3	30%	
Acenaphthylene	2.82	0.0100	0.0200	ug/L	1	4.00	---	71	41-130%	2	30%	
Anthracene	2.98	0.0100	0.0200	ug/L	1	4.00	---	74	57-123%	4	30%	
Benz(a)anthracene	3.24	0.0100	0.0200	ug/L	1	4.00	---	81	58-125%	2	30%	
Benzo(a)pyrene	3.46	0.0100	0.0200	ug/L	1	4.00	---	86	54-128%	2	30%	
Benzo(b)fluoranthene	3.65	0.0100	0.0200	ug/L	1	4.00	---	91	53-131%	2	30%	
Benzo(k)fluoranthene	3.79	0.0100	0.0200	ug/L	1	4.00	---	95	57-129%	1	30%	
Benzo(g,h,i)perylene	3.10	0.0100	0.0200	ug/L	1	4.00	---	77	50-134%	3	30%	
Chrysene	3.35	0.0100	0.0200	ug/L	1	4.00	---	84	59-123%	2	30%	
Dibenz(a,h)anthracene	3.38	0.0100	0.0200	ug/L	1	4.00	---	84	51-134%	2	30%	
Fluoranthene	2.93	0.0100	0.0200	ug/L	1	4.00	---	73	57-128%	6	30%	
Fluorene	2.79	0.0100	0.0200	ug/L	1	4.00	---	70	52-124%	3	30%	
Indeno(1,2,3-cd)pyrene	3.16	0.0100	0.0200	ug/L	1	4.00	---	79	52-134%	0.7	30%	
1-Methylnaphthalene	2.57	0.0200	0.0400	ug/L	1	4.00	---	64	41-120%	1	30%	
2-Methylnaphthalene	2.52	0.0200	0.0400	ug/L	1	4.00	---	63	40-121%	0.006	30%	
Naphthalene	2.46	0.0200	0.0400	ug/L	1	4.00	---	61	40-121%	0.2	30%	
Phenanthrene	3.01	0.0100	0.0200	ug/L	1	4.00	---	75	59-120%	4	30%	
Pyrene	2.87	0.0100	0.0200	ug/L	1	4.00	---	72	57-126%	3	30%	
Dibenzofuran	2.78	0.0100	0.0200	ug/L	1	4.00	---	70	53-120%	4	30%	

Apex Laboratories

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Darrell Auvil, Client Services Manager

**ANALYTICAL REPORT****Apex Laboratories, LLC**6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC3015 SW First Avenue
Portland, OR 97201Project: **POP T4 - Slip 3 GW**Project Number: **1007-22**Project Manager: **Steve Misner****Report ID:****A1G0235 - 07 22 21 0741****QUALITY CONTROL (QC) SAMPLE RESULTS****Polyaromatic Hydrocarbons (PAHs) by EPA 8270E SIM**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1070417 - EPA 3510C (Acid Extraction)						Water						
LCS Dup (1070417-BSD1)			Prepared: 07/14/21 09:53 Analyzed: 07/14/21 19:27								Q-19	
Surr: 2-Fluorobiphenyl (Surr)			Recovery: 69 %	Limits: 44-120 %		Dilution: 1x						
p-Terphenyl-d14 (Surr)			93 %	50-134 %								

Apex Laboratories

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ORELAP ID: OR100062

Apex Companies, LLC3015 SW First Avenue
Portland, OR 97201Project: **POP T4 - Slip 3 GW**Project Number: **1007-22**Project Manager: **Steve Misner****Report ID:****A1G0235 - 07 22 21 0741****SAMPLE PREPARATION INFORMATION****Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup**

Prep: EPA 3510C (Fuels/Acid Ext.) w/Silica Gel + Acid

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 1070530</u>							
A1G0235-01	Water	NWTPH-Dx/SG	07/08/21 10:05	07/16/21 12:27	930mL/5mL	1000mL/5mL	1.08

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E SIM

Prep: EPA 3510C (Acid Extraction)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 1070417</u>							
A1G0235-01	Water	EPA 8270E SIM	07/08/21 10:05	07/14/21 09:54	1050mL/2mL	1000mL/2mL	0.95

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Apex Companies, LLC

3015 SW First Avenue
Portland, OR 97201

Project: POP T4 - Slip 3 GW

Project Number: 1007-22

Project Manager: Steve Misner

Report ID:

A1G0235 - 07 22 21 0741

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

- Q-19** Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
- R-02** The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.

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Project Number: **1007-22**
Project Manager: **Steve Misner**

Report ID:
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REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.
ND Analyte NOT DETECTED at or above the detection or reporting limit.
NR Result Not Reported
RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.

"dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.
"wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.
" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

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Project Number: **1007-22**

Project Manager: **Steve Misner**

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REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

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ANALYTICAL REPORT

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Apex Companies, LLC
3015 SW First Avenue
Portland, OR 97201

Project: **POP T4 - Slip 3 GW**
Project Number: **1007-22**
Project Manager: **Steve Misner**

Report ID:
A1G0235 - 07 22 21 0741

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) -

EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation
<u>All reported analytes are included in Apex Laboratories' current ORELAP scope.</u>					

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provided by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

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Project: POP T4 - Slip 3 GWProject Number: 1007-22Project Manager: Steve Misner

Report ID:

A1G0235 - 07 22 21 0741

APEX LABS COOLER RECEIPT FORM

Client: Apex Cos. Element WO#: A1 G0235Project/Project #: Port of Portland - T4 S3 / 1007-22

Delivery Info:

Date/time received: 7/8/21 @ 11:20 By: MSDelivered by: Apex ☒ Client ☒ ESS ☐ FedEx ☐ UPS ☐ Swift ☐ Senvoy ☐ SDS ☐ Other ☐Cooler Inspection Date/time inspected: 7/8/21 @ 11:20 By: MSChain of Custody included? Yes ☒ No ☐ Custody seals? Yes ☐ No ☒Signed/dated by client? Yes ☒ No ☐Signed/dated by Apex? Yes ☒ No ☐

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	<u>2.1</u>						
Received on ice? (Y/N)	<u>Y</u>						
Temp. blanks? (Y/N)	<u>Y</u>						
Ice type: (Gel/Real/Other)	<u>Real</u>						
Condition:	<u>Good</u>						

Cooler out of temp? (Y/N) ☒ Possible reason why: _____Green dots applied to out of temperature samples? Yes ☒ No ☐Out of temperature samples form initiated? Yes ☒ No ☐Sample Inspection: Date/time inspected: 7/8/21 @ 1807 By: HASAll samples intact? Yes ☒ No ☐ Comments: _____Bottle labels/COCs agree? Yes ☒ No ☐ Comments: _____COC/container discrepancies form initiated? Yes ☐ No ☒Containers/volumes received appropriate for analysis? Yes ☒ No ☐ Comments: _____Do VOA vials have visible headspace? Yes ☐ No ☐ NA ☒

Comments: _____

Water samples: pH checked: Yes ☒ No ☐ NA ☐ pH appropriate? Yes ☒ No ☐ NA ☐

Comments: _____

Additional information:

Labeled by:

HAS

Witness:

THM

Cooler Inspected by:

HAS

Apex Laboratories

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Darrell Auvil, Client Services Manager

Page 15 of 15



ANALYTICAL REPORT

AMENDED REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Wednesday, January 26, 2022

Steve Misner

Apex Companies, LLC

3015 SW First Avenue

Portland, OR 97201

RE: A1L0933 - POP T4 - Slip 3 GW - 1007-23

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A1L0933, which was received by the laboratory on 12/23/2021 at 11:10:00AM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1

0.6 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



Apex Laboratories

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6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue

Portland, OR 97201

Project: **POP T4 - Slip 3 GW**Project Number: **1007-23**

Project Manager: Steve Misner

Report ID:

A1L0933 - 01 26 22 1519

ANALYTICAL REPORT FOR SAMPLES**SAMPLE INFORMATION**

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HC-12D	A1L0933-01	Water	12/22/21 11:30	12/23/21 11:10
BE-1	A1L0933-02	Water	12/22/21 16:00	12/23/21 11:10
BE-5	A1L0933-03	Water	12/22/21 13:33	12/23/21 11:10

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A1L0933 - 01 26 22 1519

ANALYTICAL CASE NARRATIVE

Work Order: A1L0933

Amended Report Revision 1:

Reporting the Method Detection Limits (MDL)-

This report supersedes all previous reports.

The final report has been amended to report all data to the method detection limits (MDLs).

Darrell Auvil

Project Manager

1/26/2022

Apex Laboratories

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ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue

Portland, OR 97201

Project: **POP T4 - Slip 3 GW**Project Number: **1007-23**Project Manager: **Steve Misner****Report ID:****A1L0933 - 01 26 22 1519**

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
HC-12D (A1L0933-01)		Matrix: Water			Batch: 22A0095			
Diesel	0.170	0.0943	0.189	mg/L	1	01/05/22 22:57	NWTPH-Dx/SG	J
Oil	ND	0.189	0.377	mg/L	1	01/05/22 22:57	NWTPH-Dx/SG	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 105 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>01/05/22 22:57</i>	<i>NWTPH-Dx/SG</i>	
BE-1 (A1L0933-02)		Matrix: Water			Batch: 22A0095			
Diesel	0.139	0.0943	0.189	mg/L	1	01/05/22 23:17	NWTPH-Dx/SG	J
Oil	ND	0.189	0.377	mg/L	1	01/05/22 23:17	NWTPH-Dx/SG	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 96 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>01/05/22 23:17</i>	<i>NWTPH-Dx/SG</i>	
BE-5 (A1L0933-03)		Matrix: Water			Batch: 22A0095			
Diesel	ND	0.0935	0.187	mg/L	1	01/05/22 23:37	NWTPH-Dx/SG	
Oil	ND	0.187	0.374	mg/L	1	01/05/22 23:37	NWTPH-Dx/SG	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 101 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>01/05/22 23:37</i>	<i>NWTPH-Dx/SG</i>	

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Portland, OR 97201Project: **POP T4 - Slip 3 GW**Project Number: **1007-23**Project Manager: **Steve Misner**

Report ID:

A1L0933 - 01 26 22 1519

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (Large Volume Injection)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
HC-12D (A1L0933-01RE1)		Matrix: Water			Batch: 21L0977			
Acenaphthene	0.417	0.0739	0.148	ug/L	4	01/03/22 15:23	EPA 8270E LVI	
Acenaphthylene	ND	0.0739	0.148	ug/L	4	01/03/22 15:23	EPA 8270E LVI	
Anthracene	ND	0.0739	0.148	ug/L	4	01/03/22 15:23	EPA 8270E LVI	
Benz(a)anthracene	ND	0.0369	0.0739	ug/L	4	01/03/22 15:23	EPA 8270E LVI	
Benzo(a)pyrene	ND	0.0369	0.0739	ug/L	4	01/03/22 15:23	EPA 8270E LVI	
Benzo(b)fluoranthene	ND	0.0369	0.0739	ug/L	4	01/03/22 15:23	EPA 8270E LVI	
Benzo(k)fluoranthene	ND	0.0369	0.0739	ug/L	4	01/03/22 15:23	EPA 8270E LVI	
Benzo(g,h,i)perylene	ND	0.0739	0.148	ug/L	4	01/03/22 15:23	EPA 8270E LVI	
Chrysene	ND	0.0369	0.0739	ug/L	4	01/03/22 15:23	EPA 8270E LVI	
Dibenz(a,h)anthracene	ND	0.0369	0.0739	ug/L	4	01/03/22 15:23	EPA 8270E LVI	
Fluoranthene	ND	0.0739	0.148	ug/L	4	01/03/22 15:23	EPA 8270E LVI	
Fluorene	ND	0.462	0.462	ug/L	4	01/03/22 15:23	EPA 8270E LVI	R-02
Indeno(1,2,3-cd)pyrene	ND	0.0369	0.0739	ug/L	4	01/03/22 15:23	EPA 8270E LVI	
1-Methylnaphthalene	ND	0.148	0.296	ug/L	4	01/03/22 15:23	EPA 8270E LVI	
2-Methylnaphthalene	ND	0.148	0.296	ug/L	4	01/03/22 15:23	EPA 8270E LVI	
Naphthalene	ND	0.296	0.296	ug/L	4	01/03/22 15:23	EPA 8270E LVI	
Phenanthrene	ND	0.296	0.296	ug/L	4	01/03/22 15:23	EPA 8270E LVI	
Pyrene	ND	0.0739	0.148	ug/L	4	01/03/22 15:23	EPA 8270E LVI	
Carbazole	ND	0.148	0.148	ug/L	4	01/03/22 15:23	EPA 8270E LVI	
Dibenzofuran	ND	0.0739	0.148	ug/L	4	01/03/22 15:23	EPA 8270E LVI	
Surrogate: Acenaphthylene-d8 (Surr)		Recovery: 97 %		Limits: 80-120 %	4	01/03/22 15:23	EPA 8270E LVI	S-05
Benzo(a)pyrene-d12 (Surr)		148 %		76-139 %	4	01/03/22 15:23	EPA 8270E LVI	S-05

BE-1 (A1L0933-02RE1)

Matrix: Water

Batch: 21L0977

R-04

Acenaphthene	ND	0.0743	0.149	ug/L	4	01/03/22 15:55	EPA 8270E LVI
Acenaphthylene	ND	0.0743	0.149	ug/L	4	01/03/22 15:55	EPA 8270E LVI
Anthracene	ND	0.149	0.149	ug/L	4	01/03/22 15:55	EPA 8270E LVI
Benz(a)anthracene	ND	0.0372	0.0743	ug/L	4	01/03/22 15:55	EPA 8270E LVI
Benzo(a)pyrene	ND	0.0372	0.0743	ug/L	4	01/03/22 15:55	EPA 8270E LVI
Benzo(b)fluoranthene	ND	0.0372	0.0743	ug/L	4	01/03/22 15:55	EPA 8270E LVI
Benzo(k)fluoranthene	ND	0.0372	0.0743	ug/L	4	01/03/22 15:55	EPA 8270E LVI
Benzo(g,h,i)perylene	ND	0.0743	0.149	ug/L	4	01/03/22 15:55	EPA 8270E LVI
Chrysene	ND	0.0372	0.0743	ug/L	4	01/03/22 15:55	EPA 8270E LVI

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Darrell Auvil, Client Services Manager



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AMENDED REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue
Portland, OR 97201Project: **POP T4 - Slip 3 GW**Project Number: **1007-23**Project Manager: **Steve Misner**

Report ID:

A1L0933 - 01 26 22 1519

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (Large Volume Injection)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
BE-1 (A1L0933-02RE1)		Matrix: Water			Batch: 21L0977		R-04	
Dibenz(a,h)anthracene	ND	0.0372	0.0743	ug/L	4	01/03/22 15:55	EPA 8270E LVI	
Fluoranthene	ND	0.0743	0.149	ug/L	4	01/03/22 15:55	EPA 8270E LVI	
Fluorene	ND	0.0743	0.149	ug/L	4	01/03/22 15:55	EPA 8270E LVI	
Indeno(1,2,3-cd)pyrene	ND	0.0372	0.0743	ug/L	4	01/03/22 15:55	EPA 8270E LVI	
1-Methylnaphthalene	ND	0.149	0.297	ug/L	4	01/03/22 15:55	EPA 8270E LVI	
2-Methylnaphthalene	ND	0.149	0.297	ug/L	4	01/03/22 15:55	EPA 8270E LVI	
Naphthalene	ND	0.149	0.297	ug/L	4	01/03/22 15:55	EPA 8270E LVI	
Phenanthrene	ND	0.149	0.297	ug/L	4	01/03/22 15:55	EPA 8270E LVI	
Pyrene	ND	0.0743	0.149	ug/L	4	01/03/22 15:55	EPA 8270E LVI	
Carbazole	ND	0.0743	0.149	ug/L	4	01/03/22 15:55	EPA 8270E LVI	
Dibenzofuran	ND	0.0743	0.149	ug/L	4	01/03/22 15:55	EPA 8270E LVI	
Surrogate: Acenaphthylene-d8 (Surr)		Recovery: 98 %		Limits: 80-120 %	4	01/03/22 15:55	EPA 8270E LVI	S-05
Benzo(a)pyrene-d12 (Surr)		144 %		76-139 %	4	01/03/22 15:55	EPA 8270E LVI	S-05
BE-5 (A1L0933-03RE1)		Matrix: Water			Batch: 21L0977			
Acenaphthene	ND	0.0184	0.0368	ug/L	1	01/03/22 16:28	EPA 8270E LVI	
Acenaphthylene	ND	0.0184	0.0368	ug/L	1	01/03/22 16:28	EPA 8270E LVI	
Anthracene	ND	0.0184	0.0368	ug/L	1	01/03/22 16:28	EPA 8270E LVI	
Benz(a)anthracene	0.0170	0.00920	0.0184	ug/L	1	01/03/22 16:28	EPA 8270E LVI	J
Benzo(a)pyrene	0.0276	0.00920	0.0184	ug/L	1	01/03/22 16:28	EPA 8270E LVI	B-02
Benzo(b)fluoranthene	0.0258	0.00920	0.0184	ug/L	1	01/03/22 16:28	EPA 8270E LVI	
Benzo(k)fluoranthene	0.00966	0.00920	0.0184	ug/L	1	01/03/22 16:28	EPA 8270E LVI	J
Benzo(g,h,i)perylene	0.0207	0.0184	0.0368	ug/L	1	01/03/22 16:28	EPA 8270E LVI	J
Chrysene	0.0124	0.00920	0.0184	ug/L	1	01/03/22 16:28	EPA 8270E LVI	J
Dibenz(a,h)anthracene	ND	0.00920	0.0184	ug/L	1	01/03/22 16:28	EPA 8270E LVI	
Fluoranthene	0.0184	0.0184	0.0368	ug/L	1	01/03/22 16:28	EPA 8270E LVI	J
Fluorene	ND	0.0184	0.0368	ug/L	1	01/03/22 16:28	EPA 8270E LVI	
Indeno(1,2,3-cd)pyrene	0.0147	0.00920	0.0184	ug/L	1	01/03/22 16:28	EPA 8270E LVI	J
1-Methylnaphthalene	ND	0.0368	0.0736	ug/L	1	01/03/22 16:28	EPA 8270E LVI	
2-Methylnaphthalene	ND	0.0368	0.0736	ug/L	1	01/03/22 16:28	EPA 8270E LVI	
Naphthalene	ND	0.0368	0.0736	ug/L	1	01/03/22 16:28	EPA 8270E LVI	
Phenanthrene	ND	0.0368	0.0736	ug/L	1	01/03/22 16:28	EPA 8270E LVI	
Pyrene	ND	0.0184	0.0368	ug/L	1	01/03/22 16:28	EPA 8270E LVI	

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ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue

Portland, OR 97201

Project: **POP T4 - Slip 3 GW**Project Number: **1007-23**Project Manager: **Steve Misner****Report ID:****A1L0933 - 01 26 22 1519**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (Large Volume Injection)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
BE-5 (A1L0933-03RE1)		Matrix: Water			Batch: 21L0977			
Carbazole	ND	0.0184	0.0368	ug/L	1	01/03/22 16:28	EPA 8270E LVI	
Dibenzofuran	ND	0.0184	0.0368	ug/L	1	01/03/22 16:28	EPA 8270E LVI	
<i>Surrogate: Acenaphthylene-d8 (Surr)</i>		<i>Recovery:</i>	<i>102 %</i>	<i>Limits:</i>	<i>80-120 %</i>	<i>1</i>	<i>01/03/22 16:28</i>	<i>EPA 8270E LVI</i>
<i>Benzo(a)pyrene-d12 (Surr)</i>			<i>117 %</i>		<i>76-139 %</i>	<i>1</i>	<i>01/03/22 16:28</i>	<i>EPA 8270E LVI</i>

Apex Laboratories

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Project: **POP T4 - Slip 3 GW**Project Number: **1007-23**Project Manager: **Steve Misner****Report ID:****A1L0933 - 01 26 22 1519**

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22A0095 - EPA 3510C (Fuels/Acid Ext.) w/Silica Gel + Acid							Water					
Blank (22A0095-BLK1)			Prepared: 01/05/22 07:25 Analyzed: 01/05/22 21:56									
<u>NWTPH-Dx/SG</u>												
Diesel	ND	0.0909	0.182	mg/L	1	---	---	---	---	---	---	
Oil	ND	0.182	0.364	mg/L	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		Recovery: 103 %		Limits: 50-150 %		Dilution: 1x						
LCS (22A0095-BS1)			Prepared: 01/05/22 07:25 Analyzed: 01/05/22 22:16									
<u>NWTPH-Dx/SG</u>												
Diesel	1.18	0.100	0.200	mg/L	1	1.25	---	94	36-132%	---	---	
Surr: o-Terphenyl (Surr)		Recovery: 105 %		Limits: 50-150 %		Dilution: 1x						
LCS Dup (22A0095-BSD1)			Prepared: 01/05/22 07:25 Analyzed: 01/05/22 22:36									
<u>NWTPH-Dx/SG</u>												
Diesel	1.14	0.100	0.200	mg/L	1	1.25	---	91	36-132%	3	30%	
Surr: o-Terphenyl (Surr)		Recovery: 106 %		Limits: 50-150 %		Dilution: 1x						

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QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (Large Volume Injection)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 21L0977 - EPA 3511 (Bottle Extraction)						Water						
Blank (21L0977-BLK1)			Prepared: 12/28/21 11:54		Analyzed: 12/28/21 19:50							
EPA 8270E LVI												
Acenaphthene	ND	0.0160	0.0320	ug/L	1	---	---	---	---	---	---	B-02, J
Acenaphthylene	ND	0.0160	0.0320	ug/L	1	---	---	---	---	---	---	
Anthracene	ND	0.0160	0.0320	ug/L	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	0.00800	0.0160	ug/L	1	---	---	---	---	---	---	
Benzo(a)pyrene	0.00800	0.00800	0.0160	ug/L	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	0.00800	0.0160	ug/L	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	0.00800	0.0160	ug/L	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	0.0160	0.0320	ug/L	1	---	---	---	---	---	---	
Chrysene	ND	0.00800	0.0160	ug/L	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	0.00800	0.0160	ug/L	1	---	---	---	---	---	---	
Fluoranthene	ND	0.0160	0.0320	ug/L	1	---	---	---	---	---	---	
Fluorene	ND	0.0160	0.0320	ug/L	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	0.00800	0.0160	ug/L	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	0.0320	0.0640	ug/L	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	0.0320	0.0640	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	0.0320	0.0640	ug/L	1	---	---	---	---	---	---	
Phenanthrene	ND	0.0320	0.0640	ug/L	1	---	---	---	---	---	---	
Pyrene	ND	0.0160	0.0320	ug/L	1	---	---	---	---	---	---	
Carbazole	ND	0.0160	0.0320	ug/L	1	---	---	---	---	---	---	
Dibenzofuran	ND	0.0160	0.0320	ug/L	1	---	---	---	---	---	---	
Surr: Acenaphthylene-d8 (Surr)		Recovery: 88 %		Limits: 80-120 %		Dilution: 1x						
Benzo(a)pyrene-d12 (Surr)		93 %		76-139 %		"						

LCS (21L0977-BS1)

Prepared: 12/28/21 11:54 Analyzed: 12/28/21 20:22

EPA 8270E LVI												
Acenaphthene	1.62	0.0160	0.0320	ug/L	1	1.60	---	101	80-120%	---	---	
Acenaphthylene	1.88	0.0160	0.0320	ug/L	1	1.60	---	118	80-120%	---	---	
Anthracene	1.83	0.0160	0.0320	ug/L	1	1.60	---	114	80-120%	---	---	
Benz(a)anthracene	1.79	0.00800	0.0160	ug/L	1	1.60	---	112	80-120%	---	---	
Benzo(a)pyrene	1.86	0.00800	0.0160	ug/L	1	1.60	---	116	80-120%	---	---	B-02
Benzo(b)fluoranthene	1.73	0.00800	0.0160	ug/L	1	1.60	---	108	80-120%	---	---	
Benzo(k)fluoranthene	1.74	0.00800	0.0160	ug/L	1	1.60	---	109	80-120%	---	---	
Benzo(g,h,i)perylene	1.62	0.0160	0.0320	ug/L	1	1.60	---	101	80-122%	---	---	

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

AMENDED REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue

Portland, OR 97201

Project: **POP T4 - Slip 3 GW**Project Number: **1007-23**Project Manager: **Steve Misner**

Report ID:

A1L0933 - 01 26 22 1519

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (Large Volume Injection)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 21L0977 - EPA 3511 (Bottle Extraction)						Water						
LCS (21L0977-BS1)			Prepared: 12/28/21 11:54		Analyzed: 12/28/21 20:22							
Chrysene	1.61	0.00800	0.0160	ug/L	1	1.60	---	101	80-120%	---	---	Q-29
Dibenz(a,h)anthracene	1.58	0.00800	0.0160	ug/L	1	1.60	---	99	80-120%	---	---	
Fluoranthene	2.00	0.0160	0.0320	ug/L	1	1.60	---	125	80-120%	---	---	
Fluorene	1.76	0.0160	0.0320	ug/L	1	1.60	---	110	75-120%	---	---	
Indeno(1,2,3-cd)pyrene	1.63	0.00800	0.0160	ug/L	1	1.60	---	102	80-120%	---	---	
1-Methylnaphthalene	1.40	0.0320	0.0640	ug/L	1	1.60	---	88	77-123%	---	---	Q-29
2-Methylnaphthalene	1.46	0.0320	0.0640	ug/L	1	1.60	---	91	79-120%	---	---	
Naphthalene	1.55	0.0320	0.0640	ug/L	1	1.60	---	97	80-120%	---	---	
Phenanthrene	1.57	0.0320	0.0640	ug/L	1	1.60	---	98	80-120%	---	---	
Pyrene	2.00	0.0160	0.0320	ug/L	1	1.60	---	125	80-120%	---	---	
Carbazole	1.92	0.0160	0.0320	ug/L	1	1.60	---	120	74-121%	---	---	
Dibenzofuran	1.72	0.0160	0.0320	ug/L	1	1.60	---	108	78-120%	---	---	
Surr: Acenaphthylene-d8 (Surr)		Recovery: 92 %		Limits: 80-120 %		Dilution: 1x						
Benzo(a)pyrene-d12 (Surr)		107 %		76-139 %		"						

LCS Dup (21L0977-BS1)				Prepared: 12/28/21 11:54 Analyzed: 12/28/21 20:54								Q-19	
EPA 8270E LVI													
Acenaphthene	1.63	0.0160	0.0320	ug/L	1	1.60	---	102	80-120%	0.7	30%	B-02	
Acenaphthylene	1.88	0.0160	0.0320	ug/L	1	1.60	---	118	80-120%	0.2	30%		
Anthracene	1.83	0.0160	0.0320	ug/L	1	1.60	---	114	80-120%	0.1	30%		
Benz(a)anthracene	1.79	0.00800	0.0160	ug/L	1	1.60	---	112	80-120%	0.3	30%		
Benzo(a)pyrene	1.85	0.00800	0.0160	ug/L	1	1.60	---	115	80-120%	0.6	30%		
Benzo(b)fluoranthene	1.78	0.00800	0.0160	ug/L	1	1.60	---	111	80-120%	2	30%		
Benzo(k)fluoranthene	1.74	0.00800	0.0160	ug/L	1	1.60	---	109	80-120%	0.4	30%		
Benzo(g,h,i)perylene	1.78	0.0160	0.0320	ug/L	1	1.60	---	111	80-122%	9	30%		
Chrysene	1.62	0.00800	0.0160	ug/L	1	1.60	---	101	80-120%	0.6	30%	Q-29	
Dibenz(a,h)anthracene	1.60	0.00800	0.0160	ug/L	1	1.60	---	100	80-120%	0.9	30%		
Fluoranthene	2.03	0.0160	0.0320	ug/L	1	1.60	---	127	80-120%	1	30%		
Fluorene	1.64	0.0160	0.0320	ug/L	1	1.60	---	102	75-120%	7	30%		
Indeno(1,2,3-cd)pyrene	1.69	0.00800	0.0160	ug/L	1	1.60	---	106	80-120%	4	30%		
1-Methylnaphthalene	1.40	0.0320	0.0640	ug/L	1	1.60	---	87	77-123%	0.5	30%		
2-Methylnaphthalene	1.37	0.0320	0.0640	ug/L	1	1.60	---	86	79-120%	6	30%		
Naphthalene	1.55	0.0320	0.0640	ug/L	1	1.60	---	97	80-120%	0.08	30%		
Phenanthrene	1.59	0.0320	0.0640	ug/L	1	1.60	---	99	80-120%	2	30%		

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

AMENDED REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue

Portland, OR 97201

Project: POP T4 - Slip 3 GW

Project Number: 1007-23

Project Manager: Steve Misner

Report ID:

A1L0933 - 01 26 22 1519

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (Large Volume Injection)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 21L0977 - EPA 3511 (Bottle Extraction)						Water						
LCS Dup (21L0977-BSD1)			Prepared: 12/28/21 11:54 Analyzed: 12/28/21 20:54								Q-19	
Pyrene	2.05	0.0160	0.0320	ug/L	1	1.60	---	128	80-120%	2	30%	Q-29
Carbazole	1.88	0.0160	0.0320	ug/L	1	1.60	---	118	74-121%	2	30%	
Dibenzofuran	1.59	0.0160	0.0320	ug/L	1	1.60	---	100	78-120%	8	30%	
Surr: Acenaphthylene-d8 (Surr)		Recovery: 92 %		Limits: 80-120 %		Dilution: 1x						
Benzo(a)pyrene-d12 (Surr)		106 %		76-139 %		"						

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Darrell Auvil, Client Services Manager

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**ANALYTICAL REPORT****AMENDED REPORT****Apex Laboratories, LLC****6700 S.W. Sandburg Street****Tigard, OR 97223****503-718-2323****ORELAP ID: OR100062****Apex Companies, LLC****3015 SW First Avenue****Portland, OR 97201**Project: **POP T4 - Slip 3 GW**Project Number: **1007-23**Project Manager: **Steve Misner****Report ID:****A1L0933 - 01 26 22 1519****SAMPLE PREPARATION INFORMATION****Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup****Prep: EPA 3510C (Fuels/Acid Ext.) w/Silica Gel + Acid**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22A0095							
A1L0933-01	Water	NWTPH-Dx/SG	12/22/21 11:30	01/05/22 07:25	1060mL/5mL	1000mL/5mL	0.94
A1L0933-02	Water	NWTPH-Dx/SG	12/22/21 16:00	01/05/22 07:25	1060mL/5mL	1000mL/5mL	0.94
A1L0933-03	Water	NWTPH-Dx/SG	12/22/21 13:33	01/05/22 07:25	1070mL/5mL	1000mL/5mL	0.94

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (Large Volume Injection)**Prep: EPA 3511 (Bottle Extraction)**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 21L0977							
A1L0933-01RE1	Water	EPA 8270E LVI	12/22/21 11:30	12/28/21 11:54	108.27mL/5mL	125mL/5mL	1.15
A1L0933-02RE1	Water	EPA 8270E LVI	12/22/21 16:00	12/28/21 11:54	107.6mL/5mL	125mL/5mL	1.16
A1L0933-03RE1	Water	EPA 8270E LVI	12/22/21 13:33	12/28/21 11:54	108.67mL/5mL	125mL/5mL	1.15

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Portland, OR 97201

Project: POP T4 - Slip 3 GW

Project Number: 1007-23

Project Manager: Steve Misner

Report ID:

A1L0933 - 01 26 22 1519

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

- B-02** Analyte detected in an associated blank at a level between one-half the MRL and the MRL. (See Notes and Conventions below.)
- J** Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
- Q-19** Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
- Q-29** Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
- R-02** The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
- R-04** Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.
- S-05** Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.

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Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

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3015 SW First Avenue

Portland, OR 97201

Project: **POP T4 - Slip 3 GW**Project Number: **1007-23**Project Manager: **Steve Misner****Report ID:****A1L0933 - 01 26 22 1519****REPORTING NOTES AND CONVENTIONS:****Abbreviations:**

DET Analyte DETECTED at or above the detection or reporting limit.
ND Analyte NOT DETECTED at or above the detection or reporting limit.
NR Result Not Reported
RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).

If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.

The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.

"dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")

See Percent Solids section for details of dry weight analysis.

"wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).

-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.

-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.

For further details, please request a copy of this document.

Apex Laboratories

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Darrell Auvil, Client Services Manager

**ANALYTICAL REPORT****AMENDED REPORT****Apex Laboratories, LLC**

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue

Portland, OR 97201

Project: **POP T4 - Slip 3 GW**Project Number: **1007-23**Project Manager: **Steve Misner****Report ID:****A1L0933 - 01 26 22 1519****REPORTING NOTES AND CONVENTIONS (Cont.):****Blanks (Cont.):**

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:**Mixed Matrix Samples:****Water Samples:**

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

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Darrell Auvil, Client Services Manager

**ANALYTICAL REPORT****AMENDED REPORT****Apex Laboratories, LLC**

6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: OR100062

Apex Companies, LLC
3015 SW First Avenue
Portland, OR 97201

Project: **POP T4 - Slip 3 GW**
Project Number: **1007-23**
Project Manager: **Steve Misner**

Report ID:
A1L0933 - 01 26 22 1519

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) -

EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation
<u>All reported analytes are included in Apex Laboratories' current ORELAP scope.</u>					

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provided by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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ANALYTICAL REPORT

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Project: **POP T4 - Slip 3 GW**Project Number: **1007-23**Project Manager: **Steve Misner**

Report ID:

A1L0933 - 01 26 22 1519

APEX LABS		CHAIN OF CUSTODY		Lab # <u>A1L0933</u> of <u> </u> COC <u> </u>	
Company: <u>Apex Laboratories, LLC</u>		Project Mgr: <u>Steve Misner</u>		Project Name: <u>POP T4 - Slip 3 GW</u>	
Address: <u>3015 SW First Ave, Portland, OR</u>		Phone: <u>503-924-4704</u>		Email: <u>Steve.Misner@apexlabs.com</u>	
Sampled by: <u>Franklin Sullivan</u>		Project #: <u>1007-23</u>		PO # <u> </u>	
ANALYSIS REQUEST					
Site Location:	OR WA CA	LAB ID #	DATE	TIME	MATRIX
AK ID <u> </u>					
SAMPLE ID					
HC-12-0			12-22-21	1130	
BE-1			1600		
BE-5			1333		
# OF CONTAINERS					
NWTPH-HCID					
NWTPH-DXV SW (C-10)					
NWTPH-GX					
8260 BTEX					
8260 HAPs VOCs					
8260 RBDM VOCs					
8260 Halo VOCs					
8260 VOCs Full List					
8270 SIM PAHs					
8270 Semi-Vols Full List					
8082 PCBs					
8081 Pest					
RCRA Metals (8)					
Priority Metals (13)					
Al, Sb, As, Ba, Be, Bi, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mn, Mg, Ni, Mo, Ni, K, Se, Ag, Na, Ti, V, Zn					
TOTAL DISS. TCLP					
TCLP Metals (8)					
Archive					

SPECIAL INSTRUCTIONS:			
Normal Turn Around Time (TAT) = 10 Business Days			
TAT Requested (circle)			
1 Day	2 Day	3 Day	Other: <u>Standard</u>
4 DAY	5 DAY		
SAMPLES ARE HELD FOR 30 DAYS			
RELINQUISHED BY:		RECEIVED BY:	
Signature: <u>[Signature]</u>		Signature: <u>[Signature]</u>	
Date: <u>12-22-21</u>		Date: <u>12/23/21</u>	
Printed Name: <u>Franklin Sullivan</u>		Printed Name: <u>Eric Doyle</u>	
Time: <u>1613</u>		Time: <u>1110</u>	
Company: <u>Apex Laboratories, LLC</u>		Company: <u>APEX LABS</u>	

Apex Laboratories

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Darrell Auvel, Client Services Manager



ANALYTICAL REPORT

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Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Apex Companies, LLC

3015 SW First Avenue

Portland, OR 97201

Project: POP T4 - Slip 3 GWProject Number: 1007-23Project Manager: Steve Misner

Report ID:

A1L0933 - 01 26 22 1519

APEX LABS COOLER RECEIPT FORM

Client: Apex Companies LLC Element WO#: A1 10933Project/Project #: Terminal 4 Slip 3 GW sampling 1007-23

Delivery Info:

Date/time received: 12/23/21 @ 1110 By: ETDelivered by: Apex ☒ Client ☐ ESS ☐ FedEx ☐ UPS ☐ Swift ☐ Senvoy ☐ SDS ☐ Other ☐Cooler Inspection Date/time inspected: 12/23/21 @ 1310 By: ETChain of Custody included? Yes ☒ No ☐ Custody seals? Yes ☐ No ☒Signed/dated by client? Yes ☒ No ☐Signed/dated by Apex? Yes ☒ No ☐

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	<u>0.6</u>						
Received on ice? (Y/N)	<u>Y</u>						
Temp. blanks? (Y/N)	<u>Y</u>						
Ice type: (Gel/Real/Other)	<u>Real</u>						
Condition:	<u>Good</u>						

Cooler out of temp? (Y/N) (N) Possible reason why: _____Green dots applied to out of temperature samples? Yes ☒ No ☐Out of temperature samples form initiated? Yes ☒ No ☐Sample Inspection: Date/time inspected: 12/23/21 @ 1530 By: hAll samples intact? Yes ☒ No ☐ Comments: _____Bottle labels/COCs agree? Yes ☒ No ☐ Comments: _____COC/container discrepancies form initiated? Yes ☐ No ☒Containers/volumes received appropriate for analysis? Yes ☒ No ☐ Comments: _____Do VOA vials have visible headspace? Yes ☐ No ☐ NA ☒

Comments: _____

Water samples: pH checked: Yes ☒ No ☐ NA ☐ pH appropriate? Yes ☒ No ☐ NA ☐

Comments: _____

Additional information: _____

Labeled by: h Witness: HAS Cooler Inspected by: h

Apex Laboratories

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Darrell Auvil, Client Services Manager

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Appendix C

Historical Data Tables

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
MW-1	27-Aug-2003	29.93	22.35	21.69	0.66	8.17	0.50	0.50	0.04
MW-1	3-Sep-2003	29.93	21.98	21.81	0.17	8.10	0.25	0.75	0.00
MW-1	11-Sep-2003	29.93	21.84	21.82	0.02	8.11	0.01	0.76	0.00
MW-1	17-Sep-2003	29.93	22.00	21.92	0.08	8.00	0.01	0.77	0.00
MW-1	30-Sep-2003	29.93	21.88	21.81	0.07	8.11	0.01	0.78	0.01
MW-1	14-Oct-2003	29.93	21.03	21.00	0.03	8.93	0.01	0.79	0.01
MW-1	29-Oct-2003	29.93	21.93	21.85	0.08	8.07	0.25	1.04	0.00
MW-1	13-Nov-2003	29.93	21.95	21.93	0.02	8.00	0.01	1.05	0.00
MW-1	26-Nov-2003	29.93	21.84	21.83	0.01	8.10	0.01	1.06	0.00
MW-1	24-Dec-2003	29.93	21.05	21.04	0.01	8.89	0.01	1.07	0.01
MW-1	21-Jan-2004	29.93	20.92	20.89	0.03	9.04	0.01	1.08	0.01
MW-1	25-Feb-2004	29.93	21.39	20.57	0.82	9.27	0.50	1.58	0.01
MW-1	10-Mar-2004	29.93	21.22	20.91	0.31	8.99	0.15	1.73	0.01
MW-1	24-Mar-2004	29.93	21.45	20.90	0.55	8.97	0.30	2.03	0.01
Well Abandoned									
MW-2	27-Aug-2003	30.05	19.73	19.17	0.56	10.82	0.50	0.50	0.02
MW-2	3-Sep-2003	30.05	19.41	19.29	0.12	10.75	0.10	0.60	0.01
MW-2	11-Sep-2003	30.05	19.44	19.38	0.06	10.66	0.10	0.70	0.01
MW-2	17-Sep-2003	30.05	19.59	19.49	0.10	10.55	0.10	0.80	0.02
MW-2	30-Sep-2003	30.05	19.46	19.38	0.08	10.66	0.10	0.90	0.01
MW-2	14-Oct-2003	30.05	19.71	19.56	0.15	10.47	0.10	1.00	0.01
MW-2	29-Oct-2003	30.05	19.69	19.55	0.14	10.48	0.25	1.25	0.00
MW-2	13-Nov-2003	30.05	19.65	19.63	0.02	10.42	0.01	1.26	0.00
MW-2	26-Nov-2003	30.05	19.51	19.50	0.01	10.55	0.01	1.27	0.00
MW-2	24-Dec-2003	30.05	18.47	18.34	0.13	11.70	0.01	1.28	0.02
MW-2	30-Dec-2003	30.05	18.50	18.40	0.10	11.64	0.10	1.38	0.03
Well Abandoned									
MW-3	9-Jan-2004	30.05	18.30	17.95	0.35	12.06	0.10	0.10	0.01
MW-3	15-Jan-2004	30.05	18.19	17.88	0.31	12.14	0.10	0.20	0.01
MW-3	21-Jan-2004	30.05	18.10	17.95	0.15	12.08	0.10	0.30	0.01
MW-3	29-Jan-2004	30.05	18.20	17.70	0.50	12.30	0.20	0.50	0.01
MW-3	3-Feb-2004	30.05	18.20	17.71	0.49	12.29	0.20	0.70	0.01
MW-3	12-Feb-2004	30.05	18.34	17.81	0.53	12.18	0.30	1.00	0.02
MW-3	18-Feb-2004	30.05	18.30	17.84	0.46	12.16	0.30	1.30	0.00
MW-3	25-Feb-2004	30.05	17.98	17.85	0.13	12.19	0.10	1.40	0.00
MW-3	3-Mar-2004	30.05	18.10	18.00	0.10	12.04	0.01	1.41	0.00
MW-3	10-Mar-2004	30.05	18.15	18.03	0.12	12.01	0.03	1.44	0.00
MW-3	18-Mar-2004	30.05	18.45	18.12	0.33	11.89	0.20	1.64	0.01
MW-3	24-Mar-2004	30.05	18.60	18.15	0.45	11.85	0.25	1.89	0.01
MW-3	1-Apr-2004	30.05	18.55	18.00	0.55	11.99	0.30	2.19	0.01
MW-3	27-Aug-2003	30.09	20.85	20.82	0.03	9.27	0.01	2.20	0.00
MW-3	3-Sep-2003	30.09	20.91	20.89	0.02	9.20	0.01	2.21	0.01
MW-3	11-Sep-2003	30.09	20.94	20.92	0.02	9.17	0.01	2.22	0.01
MW-3	17-Sep-2003	30.09	21.04	21.00	0.04	9.09	0.01	2.23	0.01
MW-3	30-Sep-2003	30.09	19.89	19.85	0.04	10.24	0.01	2.24	0.01
MW-3	14-Oct-2003	30.09	21.95	21.83	0.12	8.25	0.01	2.25	0.01
MW-3	29-Oct-2003	30.09	21.02	21.00	0.02	9.09	0.01	2.26	0.00
MW-3	13-Nov-2003	30.09	21.07	21.06	0.01	9.03	0.01	2.27	0.00
MW-3	26-Nov-2003	30.09	21.00	20.99	0.01	9.10	0.01	2.28	0.00
MW-3	24-Dec-2003	30.09	19.85	19.84	0.01	10.25	0.01	2.29	0.00
MW-3	21-Jan-2004	30.09	19.32	19.28	0.04	10.81	0.01	2.30	0.01
MW-3	25-Feb-2004	30.09	19.15	19.13	0.02	10.96	0.00	2.30	0.02
MW-3	24-Mar-2004	30.09	19.86	19.80	0.06	10.28	0.00	2.30	0.06
Well Abandoned									
MW-8	27-Aug-2003	31.13	20.38	--	0.00	10.75	0.00	0.00	0.00
MW-8	3-Sep-2003	31.13	20.45	--	0.00	10.68	0.00	0.00	0.00
MW-8	11-Sep-2003	31.13	Not Accessible						
MW-8	17-Sep-2003	31.13	Not Accessible						
MW-8	30-Sep-2003	31.13	Not Accessible						
MW-8	14-Oct-2003	31.13	Not Accessible						
MW-8	29-Oct-2003	31.13	Not Accessible						
MW-8	13-Nov-2003	31.13	21.15	--	0.00	9.98	0.00	0.00	0.00
MW-8	26-Nov-2003	31.13	21.05	--	0.00	10.08	0.00	0.00	0.00
MW-8	24-Dec-2003	31.13	19.18	--	0.00	11.95	0.00	0.00	0.00
MW-8	21-Jan-2004	31.13	18.70	--	0.00	12.43	0.00	0.00	0.00
MW-8	25-Feb-2004	31.13	15.69	--	0.00	15.44	0.00	0.00	0.00
MW-8	24-Mar-2004	31.13	16.66	--	0.00	14.47	0.00	0.00	0.00
MW-8	14-Jan-2005	31.13	20.60	--	0.00	10.53	0.00	0.00	0.00
MW-8	28-Jan-2005	31.13	20.25	20.23	0.02	10.90	0.00	0.00	0.02
MW-8	25-Feb-2005	31.13	20.52	--	0.00	10.61	0.00	0.00	0.00
MW-8	25-Mar-2005	31.13	20.88	20.88	0.00	10.25	0.00	0.00	0.00
MW-8	30-Apr-2005	31.13	20.20	--	0.00	10.93	0.00	0.00	0.00

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
MW-8	31-May-2005	31.13	19.40	--	0.00	11.73	0.00	0.00	0.00
MW-8	24-Jun-2005	31.13	19.67	--	0.00	11.46	0.00	0.00	0.00
MW-8	29-Jul-2005	31.13	20.22	--	0.00	10.91	0.00	0.00	0.00
MW-8	26-Aug-2005	31.13	20.67	--	0.00	10.46	0.00	0.00	0.00
MW-8	24-Sep-2005	31.13	21.10	--	0.00	10.03	0.00	0.00	0.00
MW-8	21-Oct-2005	31.13	21.25	--	0.00	9.88	0.00	0.00	0.00
MW-8	28-Nov-2005	31.13	20.89	--	0.00	10.24	0.00	0.00	0.00
MW-8	3-Jan-2006	31.13	17.45	--	0.00	13.68	0.00	0.00	0.00
MW-8	17-Feb-2006	31.13	15.35	--	0.00	15.78	0.00	0.00	0.00
MW-8	19-Sep-2006	31.13	21.06	--	0.00	10.07	0.00	0.00	0.00
MW-8	13-Dec-2006	31.13	18.73	--	0.00	12.40	0.00	0.00	0.00
MW-8	29-Mar-2007	31.13	15.71	--	0.00	15.42	0.00	0.00	0.00
MW-8	27-Jun-2007	31.13	19.26	--	0.00	11.87	0.00	0.00	0.00
MW-8	18-Sep-2007	31.13	20.99	--	0.00	10.14	0.00	0.00	0.00
MW-8	6-Dec-2007	31.13	--	--	--	--	--	0.00	--
MW-8	10-Mar-2008	31.13	17.19	17.19	0.00	13.94	0.00	0.00	0.00
MW-8	12-Jun-2008	31.13	16.92	--	0.00	14.21	0.00	0.00	0.00
MW-8	8-Sep-2008	31.13	20.53	--	0.00	10.60	0.00	0.00	0.00
MW-8	29-Dec-2008	31.13	Unable to Gauge; Under Large Puddle of Water						
MW-8	10-Mar-2009	31.13	19.70	--	0.00	11.43	0.00	0.00	0.00
MW-8	4-Jun-2009	31.13	18.41	--	0.00	12.72	0.00	0.00	0.00
MW-8	9-Sep-2009	31.13	21.05	--	0.00	10.08	0.00	0.00	0.00
MW-8	15-Dec-2009	31.13	Unable to Gauge; Under Large Puddle of Water						
MW-8	11-Mar-2010	31.13	18.83	--	0.00	12.30	0.00	0.00	0.00
MW-8	8-Jun-2010	31.13	15.71	--	0.00	15.42	0.00	0.00	0.00
MW-8	16-Sep-2010	31.13	20.28	20.27	0.01	10.86	0.00	0.00	0.00
MW-8	15-Dec-2010	31.13	15.59	--	0.00	15.54	0.00	0.00	0.00
MW-8	9-Jun-2011	31.13	14.84	--	0.00	16.29	0.00	0.00	0.00
MW-8	1-Dec-2011	31.13	20.06	--	0.00	11.07	0.00	0.00	0.00
MW-8	11-Jun-2012	31.13	15.62	--	0.00	15.51	0.00	0.00	0.00
MW-8	19-Dec-2012	31.13	15.42	--	0.00	15.71	0.00	0.00	0.00
MW-8	17-Dec-2013	31.13	20.73	--	0.00	10.40	0.00	0.00	0.00
MW-8	11-Dec-2014	31.13	19.59	--	0.00	11.54	0.00	0.00	0.00
Well Abandoned May 14, 2015									
MW-10	27-Aug-2003	30.18	18.72	18.68	0.04	11.50	0.01	0.01	0.04
MW-10	3-Sep-2003	30.18	18.83	18.75	0.08	11.42	0.01	0.02	0.02
MW-10	11-Sep-2003	30.18	19.12	19.04	0.08	11.13	0.01	0.03	0.01
MW-10	17-Sep-2003	30.18	19.22	19.15	0.07	11.02	0.01	0.04	0.01
MW-10	30-Sep-2003	30.18	19.18	19.12	0.06	11.05	0.01	0.05	0.01
MW-10	14-Oct-2003	30.18	19.77	19.71	0.06	10.46	0.01	0.06	0.01
MW-10	29-Oct-2003	30.18	19.37	19.31	0.06	10.86	0.01	0.07	0.00
MW-10	13-Nov-2003	30.18	19.35	19.32	0.03	10.86	0.01	0.08	0.00
MW-10	26-Nov-2003	30.18	19.20	19.19	0.01	10.99	0.01	0.09	0.00
MW-10	24-Dec-2003	30.18	16.38	--	0.00	13.80	0.00	0.09	0.00
MW-10	21-Jan-2004	30.18	16.04	--	0.00	14.14	0.00	0.09	0.00
MW-10	25-Feb-2004	30.18	14.18	--	0.00	16.00	0.00	0.09	0.00
MW-10	24-Mar-2004	30.18	14.35	--	0.00	15.83	0.00	0.09	0.00
Well Abandoned									
MW-13	27-Aug-2003	31.49	18.74	--	0.00	12.75	0.00	0.09	0.00
MW-13	3-Sep-2003	31.49	18.79	--	0.00	12.70	0.00	0.09	0.00
MW-13	11-Sep-2003	31.49	19.18	--	0.00	12.31	0.00	0.09	0.00
MW-13	17-Sep-2003	31.49	19.25	--	0.00	12.24	0.00	0.09	0.00
MW-13	30-Sep-2003	31.49	19.01	--	0.00	12.48	0.00	0.09	0.00
MW-13	14-Oct-2003	31.49	19.52	--	0.00	11.97	0.00	0.09	0.00
MW-13	29-Oct-2003	31.49	19.40	--	0.00	12.09	0.00	0.09	0.00
MW-13	13-Nov-2003	31.49	19.65	--	0.00	11.84	0.00	0.09	0.00
MW-13	26-Nov-2003	31.49	19.50	--	0.00	11.99	0.00	0.09	0.00
MW-13	24-Dec-2003	31.49	17.97	--	0.00	13.52	0.00	0.09	0.00
MW-13	21-Jan-2004	31.49	17.47	--	0.00	14.02	0.00	0.09	0.00
MW-13	25-Feb-2004	31.49	14.61	--	0.00	16.88	0.00	0.09	0.00
MW-13	24-Mar-2004	31.49	15.91	--	0.00	15.58	0.00	0.09	0.00
Well Abandoned									
MW-14	27-Aug-2003	31.32	22.23	17.36	4.87	13.42	0.25	0.25	0.10
MW-14	3-Sep-2003	31.32	21.05	19.99	1.06	11.21	0.10	0.35	0.20
MW-14	11-Sep-2003	31.32	21.31	20.21	1.10	10.99	0.01	0.36	0.10
MW-14	17-Sep-2003	31.32	21.42	20.33	1.09	10.87	1.00	1.36	0.11
MW-14	30-Sep-2003	31.32	23.11	19.71	3.40	11.24	1.50	2.86	0.19
MW-14	14-Oct-2003	31.32	23.01	19.70	3.31	11.26	1.50	4.36	0.14
MW-14	29-Oct-2003	31.32	20.60	20.58	0.02	10.74	0.01	4.37	0.00
MW-14	13-Nov-2003	31.32	20.79	20.73	0.06	10.58	0.10	4.47	0.00
MW-14	26-Nov-2003	31.32	20.46	20.15	0.31	11.14	0.10	4.57	0.02
MW-14	10-Dec-2003	31.32	20.51	20.42	0.09	10.89	0.10	4.67	0.01

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
MW-14	24-Dec-2003	31.32	19.05	--	0.00	12.27	0.00	4.67	0.00
MW-14	21-Jan-2004	31.32	17.20	17.19	0.01	14.13	0.01	4.68	0.00
MW-14	25-Feb-2004	31.32	15.51	15.47	0.04	15.85	0.00	4.68	0.04
MW-14	24-Mar-2004	31.32	14.97	14.90	0.07	16.41	0.00	4.68	0.07
MW-14	14-Jan-2005	31.32	21.60	20.00	1.60	11.14	0.01	4.69	1.60
MW-14	21-Jan-2005	31.32	--	--	--	--	0.00	4.69	--
MW-14	28-Jan-2005	31.32	20.27	19.00	1.27	12.18	0.01	4.70	0.00
MW-14	4-Feb-2005	31.32	--	19.55	--	--	0.01	4.71	0.00
MW-14	11-Feb-2005	31.32	19.62	19.61	0.01	11.71	0.01	4.72	0.01
MW-14	18-Feb-2005	31.32	19.64	19.64	0.00	11.68	0.01	4.73	0.00
MW-14	25-Feb-2005	31.32	20.03	20.03	0.00	11.29	0.01	4.74	0.00
MW-14	25-Mar-2005	31.32	20.32	20.32	0.00	11.00	0.00	4.74	0.00
MW-14	30-Apr-2005	31.32	--	--	--	--	0.00	4.74	--
MW-14	13-May-2005	31.32	19.25	--	0.00	12.07	0.00	4.74	0.00
MW-14	31-May-2005	31.32	18.80	18.80	0.00	12.52	0.00	4.74	0.00
MW-14	24-Jun-2005	31.32	18.75	18.70	0.05	12.61	0.00	4.74	0.00
MW-14	29-Jul-2005	31.32	19.92	--	0.00	11.40	0.00	4.74	0.00
MW-14	26-Aug-2005	31.32	--	--	--	--	0.00	4.74	--
MW-14	24-Sep-2005	31.32	20.52	--	0.00	10.80	0.00	4.74	0.00
MW-14	21-Oct-2005	31.32	20.70	--	0.00	10.62	0.00	4.74	0.00
MW-14	28-Nov-2005	31.32	20.20	--	0.00	11.12	0.00	4.74	0.00
MW-14	3-Jan-2006	31.32	17.98	--	0.00	13.34	0.00	4.74	0.00
MW-14	17-Feb-2006	31.32	--	15.65	--	--	0.00	4.74	--
MW-14	19-Sep-2006	31.32	20.43	--	0.00	10.89	0.00	4.74	0.00
MW-14	13-Dec-2006	31.32	18.38	--	0.00	12.94	0.00	4.74	0.00
MW-14	29-Mar-2007	31.32	17.03	17.01	0.02	14.31	0.00	4.74	0.02
MW-14	27-Jun-2007	31.32	19.28	18.90	0.38	12.38	2.50	7.24	0.01
MW-14	18-Sep-2007	31.32	20.46	20.41	0.05	10.90	0.00	7.24	0.05
MW-14	6-Dec-2007	31.32	15.75	15.75	0.00	15.57	0.00	7.24	0.00
MW-14	10-Mar-2008	31.32	17.55	17.55	0.00	13.77	0.00	7.24	0.02
MW-14	12-Jun-2008	31.32	15.85	15.80	0.05	15.51	0.00	7.24	0.05
MW-14	8-Sep-2008	31.32	Well inadvertently not gauged during groundwater monitoring event.						
MW-14	29-Dec-2008	31.32	13.51	13.50	0.01	17.82	0.00	7.24	0.01
MW-14	10-Mar-2009	31.32	19.02	19.01	0.01	12.31	0.00	7.24	0.01
MW-14	4-Jun-2009	31.32	18.26	18.26	0.00	13.06	0.00	7.24	0.00
MW-14	9-Sep-2009	31.32	20.61	20.60	0.00	10.71	0.00	7.24	0.01
MW-14	15-Dec-2009	31.32	Unable to Gauge; Under Large Puddle of Water						
MW-14	11-Mar-2010	31.32	18.08	NP	0.00	13.24	0.00	7.24	0.00
MW-14	8-Jun-2010	31.32	17.07	NP	0.00	14.25	0.00	7.24	0.00
MW-14	16-Sep-2010	31.32	19.63	NP	0.00	11.69	0.00	7.24	0.00
MW-14	13-Dec-2010	31.32	15.16	NP	0.00	16.16	0.00	7.24	0.00
MW-14	9-Jun-2011	31.32	14.99	NP	0.00	16.33	0.00	7.24	0.00
MW-14	1-Dec-2011	31.32	19.68	NP	0.00	11.64	0.00	7.24	0.00
MW-14	11-Jun-2012	31.32	16.48	NP	0.00	14.84	0.00	7.24	0.00
MW-14	19-Dec-2012	31.32	11.89	11.89	0.00	19.43	0.00	7.24	0.00
MW-14	17-Dec-2013	31.32	20.14	NP	0.00	11.18	0.00	7.24	0.00
MW-14	11-Dec-2014	31.32	17.38	NP	0.00	13.94	0.00	7.24	0.00
Well Abandoned May 14, 2015									
MW-15	27-Aug-2003	31.57	19.83	16.23	3.60	14.94	0.00	0.00	0.00
MW-15	3-Sep-2003	31.57	17.16	16.41	0.75	15.08	0.50	0.50	0.04
MW-15	11-Sep-2003	31.57	16.98	16.63	0.35	14.90	0.10	0.60	0.02
MW-15	17-Sep-2003	31.57	17.07	16.77	0.30	14.77	0.30	0.90	0.02
MW-15	30-Sep-2003	31.57	17.00	16.71	0.29	14.83	0.40	1.30	0.03
MW-15	14-Oct-2003	31.57	17.74	17.31	0.43	14.21	0.30	1.60	0.02
MW-15	29-Oct-2003	31.57	17.98	17.50	0.48	14.02	0.50	2.10	0.01
MW-15	13-Nov-2003	31.57	18.42	18.13	0.29	13.41	0.10	2.20	0.00
MW-15	19-Nov-2003	31.57	18.10	17.92	0.18	13.63	0.20	2.40	0.02
MW-15	26-Nov-2003	31.57	18.07	17.88	0.19	13.67	0.10	2.50	0.00
MW-15	3-Dec-2003	31.57	17.19	17.12	0.07	14.44	0.01	2.51	0.02
MW-15	10-Dec-2003	31.57	18.20	18.10	0.10	13.46	0.10	2.61	0.01
MW-15	24-Dec-2003	31.57	15.74	15.59	0.15	15.96	0.01	2.62	0.02
MW-15	9-Jan-2004	31.57	15.86	15.66	0.20	15.89	0.10	2.72	0.00
MW-15	21-Jan-2004	31.57	15.30	15.22	0.08	16.34	0.01	2.73	0.01
MW-15	3-Feb-2004	31.57	15.69	15.60	0.09	15.96	0.00	2.73	0.09
MW-15	18-Feb-2004	31.57	14.56	14.53	0.03	17.04	0.00	2.73	0.03
MW-15	25-Feb-2004	31.57	14.11	14.10	0.01	17.47	0.00	2.73	0.01
MW-15	24-Mar-2004	31.57	14.72	NP	0.00	16.85	0.00	2.73	0.00
MW-15	14-Jan-2005	31.57	18.25	17.50	0.75	13.99	0.10	2.83	0.10
MW-15	21-Jan-2005	31.57	17.70	17.15	0.55	14.36	0.50	3.33	0.10
MW-15	28-Jan-2005	31.57	17.39	17.17	0.22	14.38	0.05	3.38	0.06
MW-15	4-Feb-2005	31.57	17.38	17.21	0.17	14.34	0.15	3.53	0.01
MW-15	11-Feb-2005	31.57	17.20	17.09	0.11	14.47	0.05	3.58	0.09

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
MW-15	18-Feb-2005	31.57	17.23	17.11	0.12	14.45	0.05	3.63	0.04
MW-15	25-Feb-2005	31.57	17.42	17.35	0.07	14.21	0.00	3.63	0.07
MW-15	4-Mar-2005	31.57	17.61	17.51	0.10	14.05	0.20	3.83	0.01
MW-15	11-Mar-2005	31.57	17.55	17.53	0.02	14.04	0.00	3.83	0.02
MW-15	25-Mar-2005	31.57	18.05	17.99	0.06	13.57	0.00	3.83	0.06
MW-15	14-Apr-2005	31.57	17.22	17.14	0.08	14.42	0.00	3.83	0.08
MW-15	30-Apr-2005	31.57	17.00	16.84	0.16	14.71	0.25	4.08	0.01
MW-15	13-May-2005	31.57	16.61	16.54	0.07	15.02	0.00	4.08	0.07
MW-15	31-May-2005	31.57	16.38	16.30	0.08	15.26	0.00	4.08	0.08
MW-15	24-Jun-2005	31.57	16.50	16.29	0.21	15.26	0.25	4.33	0.01
MW-15	8-Jul-2005	31.57	16.51	16.40	0.11	15.16	0.25	4.58	0.00
MW-15	15-Jul-2005	31.57	16.51	16.45	0.06	15.11	0.00	4.58	0.06
MW-15	29-Jul-2005	31.57	16.79	16.72	0.07	14.84	0.00	4.58	0.07
MW-15	26-Aug-2005	31.57	17.43	17.39	0.04	14.18	0.00	4.58	0.04
MW-15	24-Sep-2005	31.57	18.05	17.96	0.09	13.60	0.00	4.58	0.09
MW-15	21-Oct-2005	31.57	18.58	18.50	0.08	13.06	0.00	4.58	0.08
MW-15	28-Nov-2005	31.57	17.65	17.45	0.20	14.10	0.05	4.63	0.00
MW-15	14-Dec-2005	31.57	17.19	17.10	0.09	14.46	0.00	4.63	0.09
MW-15	3-Jan-2006	31.57	16.15	15.98	0.17	15.57	0.50	5.13	0.03
MW-15	17-Jan-2006	31.57	15.19	15.10	0.09	16.46	0.00	5.13	0.09
MW-15	23-Jan-2006	31.57	15.01	14.95	0.06	16.61	0.00	5.13	0.06
MW-15	17-Feb-2006	31.57	14.35	14.30	0.05	17.26	0.00	5.13	0.05
MW-15	19-Sep-2006	31.57	18.61	18.01	0.60	13.49	1.30	6.43	0.01
MW-15	13-Dec-2006	31.57	16.30	15.87	0.43	15.65	1.00	7.43	0.00
MW-15	29-Mar-2007	31.57	15.57	15.22	0.35	16.31	0.25	7.68	0.01
MW-15	27-Jun-2007	31.57	16.56	16.14	0.42	15.38	2.00	9.68	0.01
MW-15	18-Sep-2007	31.57	18.26	18.25	0.01	13.32	0.00	9.68	0.01
MW-15	6-Dec-2007	31.57	17.76	17.48	0.28	14.06	0.30	9.98	0.00
MW-15	10-Mar-2008	31.57	15.86	15.35	0.51	16.16	0.00	9.98	0.51
MW-15	14-Mar-2008	31.57	15.56	15.15	0.41	16.37	0.75	10.73	0.01
MW-15	13-Jun-2008	31.57	16.28	15.73	0.55	15.78	0.66	11.39	0.00
MW-15	8-Sep-2008	31.57	17.67	17.66	0.01	13.91	0.26	11.65	0.00
MW-15	29-Dec-2008	31.57	Unable to Gauge; Under Large Puddle of Water						
MW-15	10-Mar-2009	31.57	16.35	16.29	0.06	15.27	0.00	11.65	0.06
MW-15	4-Jun-2009	31.57	17.14	16.18	0.96	15.28	0.00	11.65	0.00
MW-15	13-Jul-2009	31.57	19.06	18.02	1.04	13.44	1.50	13.15	0.02
MW-15	10-Aug-2009	31.57	17.92	17.63	0.29	13.91	0.25	13.40	0.01
MW-15	9-Sep-2009	31.57	18.48	18.35	0.13	13.21	0.20	13.60	0.00
MW-15	15-Oct-2009	31.57	19.34	19.29	0.05	12.27	0.00	13.60	0.05
MW-15	18-Nov-2009	31.57	18.7	18.66	0.04	12.91	0.00	13.60	0.04
MW-15	15-Dec-2009	31.57	18.45	17.83	0.62	13.67	0.64	14.24	0.00
MW-15	13-Jan-2010	31.57	16.65	16.24	0.41	15.28	0.33	14.57	0.00
MW-15	21-Jan-2010	31.57	16.21	15.91	0.30	15.63	0.30	14.87	0.00
MW-15	26-Jan-2010	31.57	16.06	15.91	0.15	15.64	0.30	15.17	0.00
MW-15	5-Feb-2010	31.57	15.92	15.83	0.09	15.73	0.00	15.17	0.09
MW-15	2-Mar-2010	31.57	16.17	15.90	0.27	15.64	0.30	15.47	0.00
MW-15	12-Mar-2010	31.57	15.81	15.67	0.14	15.88	0.30	15.77	0.01
MW-15	25-Mar-2010	31.57	15.70	15.65	0.05	15.91	0.00	15.77	0.05
MW-15	2-Apr-2010	31.57	15.89	15.84	0.05	15.72	0.00	15.77	0.05
MW-15	9-Apr-2010	31.57	15.57	15.57	0.00	16.00	0.00	15.77	0.00
MW-15	16-Apr-2010	31.57	15.72	15.52	0.20	16.03	0.50	16.27	0.00
MW-15	23-Apr-2010	31.57	15.94	15.85	0.09	15.71	0.00	16.27	0.09
MW-15	4-May-2010	31.57	15.89	15.83	0.06	15.73	0.00	16.27	0.06
MW-15	8-Jun-2010	31.57	15.61	15.55	0.06	16.01	0.00	16.27	0.06
MW-15	9-Jul-2010	31.57	15.78	15.53	0.25	16.01	0.25	16.52	0.01
MW-15	23-Jul-2010	31.57	15.85	15.76	0.09	15.80	0.00	16.52	0.09
MW-15	6-Aug-2010	31.57	16.19	15.92	0.27	15.62	0.25	16.77	0.00
MW-15	19-Aug-2010	31.57	16.23	16.15	0.08	15.41	0.00	16.77	0.08
MW-15	27-Aug-2010	31.57	16.40	16.22	0.18	15.33	0.25	17.02	0.07
MW-15	17-Sep-2010	31.57	16.74	16.62	0.12	14.94	0.25	17.27	0.00
MW-15	8-Oct-2010	31.57	17.30	17.23	0.07	14.33	0.00	17.27	0.07
MW-15	11-Nov-2010	31.57	17.19	17.10	0.09	14.46	0.00	17.27	0.09
MW-15	15-Dec-2010	31.57	15.85	15.64	0.21	15.91	0.50	17.77	0.04
MW-15	21-Dec-2010	31.57	15.60	15.47	0.13	16.09	0.50	18.27	0.02
MW-15	30-Dec-2010	31.57	15.45	15.32	0.13	16.24	0.50	18.77	0.02
MW-15	6-Jan-2011	31.57	15.23	15.19	0.04	16.38	0.05	18.82	0.01
MW-15	13-Jan-2011	31.57	14.66	14.62	0.04	16.95	0.00	18.82	0.04
MW-15	19-Jan-2011	31.57	14.99	14.94	0.05	16.62	0.00	18.82	0.05
MW-15	28-Jan-2011	31.57	14.76	14.72	0.04	16.85	0.00	18.82	0.04
MW-15	9-Feb-2011	31.57	15.05	14.98	0.07	16.58	0.00	18.82	0.07
MW-15	23-Feb-2011	31.57	15.14	15.05	0.09	16.51	0.00	18.82	0.09
MW-15	9-Mar-2011	31.57	14.42	14.40	0.02	17.17	0.00	18.82	0.02
MW-15	29-Mar-2011	31.57	14.46	14.43	0.03	17.14	0.00	18.82	0.03

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
MW-15	21-Apr-2011	31.57	14.16	14.15	0.01	17.42	0.00	18.82	0.01
MW-15	6-May-2011	31.57	14.19	14.18	0.01	17.39	0.00	18.82	0.01
MW-15	9-Jun-2011	31.57	14.45	14.45	0.00	17.12	0.00	18.82	0.00
MW-15	7-Jul-2011	31.57	14.80	14.75	0.05	16.81	0.00	18.82	0.05
MW-15	3-Aug-2011	31.57	15.28	15.21	0.07	16.35	0.00	18.82	0.07
MW-15	8-Sep-2011	31.57	16.03	15.98	0.05	15.58	0.00	18.82	0.05
MW-15	3-Oct-2011	31.57	16.45	16.13	0.32	15.40	0.25	19.07	0.01
MW-15	10-Nov-2011	31.57	17.11	17.02	0.09	14.54	0.00	19.07	0.09
MW-15	1-Dec-2011	31.57	16.57	16.56	0.01	15.01	0.00	19.07	0.01
MW-15	16-Jan-2012	31.57	16.88	16.88	0.00	14.69	0.00	19.07	0.00
MW-15	25-Jan-2012	31.57	16.22	16.13	0.09	15.43	0.00	19.07	0.09
MW-15	3-Mar-2012	31.57	16.06	15.98	0.08	15.58	0.00	19.07	0.08
MW-15	14-Mar-2012	31.57	Well under large puddle.						
MW-15	22-Mar-2012	31.57	15.53	15.46	0.07	16.10	0.00	19.07	0.07
MW-15	29-Mar-2012	31.57	Well under large puddle.						
MW-15	5-Apr-2012	31.57	15.38	15.11	0.27	16.43	0.13	19.20	0.00
MW-15	13-Apr-2012	31.57	15.15	15.05	0.10	16.51	0.00	19.20	0.10
MW-15	23-Apr-2012	31.57	15.01	15.00	0.01	16.57	0.00	19.20	0.01
MW-15	14-May-2012	31.57	15.15	14.90	0.25	16.64	0.25	19.45	0.01
MW-15	25-May-2012	31.57	15.03	15.02	0.01	16.55	0.00	19.45	0.01
MW-15	12-Jun-2012	31.57	15.11	15.10	0.01	16.47	0.00	19.45	0.01
MW-15	3-Jul-2012	31.57	15.26	15.21	0.05	16.35	0.00	19.45	0.05
MW-15	23-Aug-2012	31.57	16.04	15.95	0.09	15.61	0.00	19.45	0.09
MW-15	24-Sep-2012	31.57	16.95	16.50	0.45	15.02	0.50	19.95	0.02
MW-15	8-Oct-2012	31.57	17.16	16.95	0.21	14.60	0.25	20.20	0.00
MW-15	14-Nov-2012	31.57	17.14	17.08	0.06	14.48	0.00	20.20	0.06
MW-15	19-Dec-2012	31.57	Well under large puddle.						
MW-15	4-Jan-2013	31.57	15.22	15.04	0.18	16.51	0.2	20.40	0.01
MW-15	18-Jan-2013	31.57	15.32	15.18	0.14	16.37	0.75	21.15	0.01
MW-15	31-Jan-2013	31.57	15.48	15.37	0.11	16.19	0.1	21.25	0.01
MW-15	6-Mar-2013	31.57	15.78	15.60	0.18	15.95	0.5	21.75	0.01
MW-15	3-Apr-2013	31.57	15.15	15.13	0.02	16.44	0.00	21.75	0.02
MW-15	6-May-2013	31.57	16.4	16.38	0.02	15.19	0.00	21.75	0.02
MW-15	12-Jun-2013	31.57	16.26	16.23	0.03	15.34	0.00	21.75	0.03
MW-15	16-Jul-2013	31.57	16.88	16.65	0.23	14.89	0.40	22.15	0.02
MW-15	26-Aug-2013	31.57	18.35	18.10	0.25	13.44	0.80	22.95	0.00
MW-15	25-Sep-2013	31.57	18.65	18.60	0.05	12.96	0.00	22.95	0.05
MW-15	31-Oct-2013	31.57	18.4	18.26	0.14	13.29	0.00	22.95	0.05
MW-15	27-Nov-2013	31.57	18.45	18.40	0.05	13.16	0.00	22.95	0.05
MW-15	17-Dec-2013	31.57	18.57	18.52	0.05	13.04	0.00	22.95	0.05
MW-15	11-Dec-2014	31.57	17.65	16.5	1.15	14.94	1.25	24.20	0.00
Well Abandoned May 14, 2015									
MW-16	27-Aug-2003	31.24	18.43	18.21	0.22	13.01	0.25	0.25	0.00
MW-16	3-Sep-2003	31.24	18.21	18.20	0.01	13.04	0.01	0.26	0.01
MW-16	11-Sep-2003	31.24	18.28	18.27	0.01	12.97	0.01	0.27	0.00
MW-16	17-Sep-2003	31.24	18.31	18.30	0.01	12.94	0.01	0.28	0.00
MW-16	30-Sep-2003	31.24	18.23	18.21	0.02	13.03	0.01	0.29	0.00
MW-16	14-Oct-2003	31.24	18.31	NP	0.00	12.93	0.00	0.29	0.00
MW-16	29-Oct-2003	31.24	18.34	18.32	0.02	12.92	0.01	0.30	0.00
MW-16	13-Nov-2003	31.24	18.37	18.36	0.01	12.88	0.01	0.31	0.00
MW-16	26-Nov-2003	31.24	18.23	18.20	0.03	13.04	0.01	0.32	0.00
MW-16	24-Dec-2003	31.24	17.41	--	0.00	13.83	0.00	0.32	0.00
MW-16	21-Jan-2004	31.24	17.04	17.03	0.01	14.21	0.01	0.33	0.00
MW-16	25-Feb-2004	31.24	17.08	17.07	0.01	14.17	0.00	0.33	0.01
MW-16	24-Mar-2004	31.24	18.61	18.60	0.01	12.64	0.00	0.33	0.01
Well Abandoned									
MW-17	27-Aug-2003	28.40	18.00	17.48	0.52	10.86	0.50	0.50	0.01
MW-17	3-Sep-2003	28.40	17.85	17.61	0.24	10.76	0.10	0.60	0.01
MW-17	11-Sep-2003	28.40	18.07	17.98	0.09	10.41	0.01	0.61	0.00
MW-17	17-Sep-2003	28.40	18.20	18.05	0.15	10.33	0.01	0.62	0.00
MW-17	30-Sep-2003	28.40	18.18	18.00	0.18	10.38	0.01	0.63	0.00
MW-17	14-Oct-2003	28.40	18.60	18.52	0.08	9.87	0.01	0.64	0.01
MW-17	29-Oct-2003	28.40	18.56	18.51	0.05	9.88	0.01	0.65	0.00
MW-17	13-Nov-2003	28.40	18.74	18.71	0.03	9.69	0.01	0.66	0.01
MW-17	26-Nov-2003	28.40	18.68	18.66	0.02	9.74	0.01	0.67	0.01
MW-17	24-Dec-2003	28.40	17.31	17.29	0.02	11.11	0.01	0.68	0.01
MW-17	21-Jan-2004	28.40	15.68	--	0.00	12.72	0.00	0.68	0.00
MW-17	25-Feb-2004	28.40	16.30	14.17	2.13	14.00	1.50	2.18	0.01
MW-17	10-Mar-2004	28.40	15.80	14.85	0.95	13.45	0.15	2.33	0.01
MW-17	24-Mar-2004	28.40	15.12	15.03	0.09	13.36	0.00	2.33	0.09
MW-17	14-Jan-2005	28.40	19.50	17.75	1.75	10.46	0.10	2.43	0.35
MW-17	21-Jan-2005	28.40	18.55	17.75	0.80	10.56	1.10	3.53	0.10

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
MW-17	28-Jan-2005	28.40	18.01	17.78	0.23	10.59	0.20	3.73	0.05
MW-17	4-Feb-2005	28.40	18.02	17.86	0.16	10.52	0.15	3.88	0.07
MW-17	11-Feb-2005	28.40	17.81	17.68	0.13	10.71	0.05	3.93	0.07
MW-17	18-Feb-2005	28.40	17.86	17.74	0.12	10.65	0.05	3.98	0.05
MW-17	25-Feb-2005	28.40	17.99	17.91	0.08	10.48	0.00	3.98	0.08
MW-17	4-Mar-2005	28.40	18.15	18.05	0.10	10.34	0.15	4.13	0.03
MW-17	11-Mar-2005	28.40	18.03	18.00	0.03	10.40	0.00	4.13	0.03
MW-17	25-Mar-2005	28.40	18.33	18.26	0.07	10.13	0.00	4.13	0.07
MW-17	14-Apr-2005	28.40	17.82	17.74	0.08	10.65	0.00	4.13	0.08
MW-17	30-Apr-2005	28.40	17.54	17.46	0.08	10.93	0.00	4.13	0.08
MW-17	31-May-2005	28.40	16.74	16.66	0.08	11.73	0.00	4.13	0.08
MW-17	24-Jun-2005	28.40	16.85	16.78	0.07	11.61	0.00	4.13	0.07
MW-17	29-Jul-2005	28.40	17.52	17.42	0.10	10.97	0.00	4.13	0.10
MW-17	26-Aug-2005	28.40	17.97	17.90	0.07	10.49	0.00	4.13	0.07
MW-17	24-Sep-2005	28.40	18.56	18.50	0.06	9.89	0.00	4.13	0.06
MW-17	21-Oct-2005	28.40	18.90	18.82	0.08	9.57	0.00	4.13	0.08
MW-17	28-Nov-2005	28.40	18.40	18.30	0.10	10.09	0.00	4.13	0.10
MW-17	3-Jan-2006	28.40	16.10	16.01	0.09	12.38	0.00	4.13	0.09
MW-17	17-Feb-2006	28.40	15.22	13.65	1.57	14.58	1.50	5.63	0.05
MW-17	3-Mar-2006	28.40	14.79	13.90	0.89	14.40	0.75	6.38	0.05
MW-17	19-Sep-2006	28.40	18.86	18.18	0.68	10.15	0.80	7.18	0.05
MW-17	13-Dec-2006	28.40	17.11	15.34	1.77	12.87	1.60	8.78	0.03
MW-17	29-Mar-2007	28.40	17.56	13.66	3.90	14.31	4.00	12.78	0.05
MW-17	3-May-2007	28.40	16.10	14.74	1.36	13.51	7.50	20.28	0.05
MW-17	15-May-2007	28.40	15.50	14.75	0.75	13.57	2.00	22.28	0.02
MW-17	25-May-2007	28.40	15.35	14.79	0.56	13.55	1.00	23.28	0.05
MW-17	4-Jun-2007	28.40	15.90	15.53	0.37	12.83	0.75	24.03	0.10
MW-17	13-Jun-2007	28.40	16.11	15.77	0.34	12.59	0.50	24.53	0.04
MW-17	19-Jun-2007	28.40	16.02	15.84	0.18	12.54	0.25	24.78	0.05
MW-17	27-Jun-2007	28.40	16.47	16.31	0.16	12.07	1.00	25.78	0.04
MW-17	9-Jul-2007	28.40	16.75	16.66	0.09	11.73	0.00	25.78	0.09
MW-17	25-Jul-2007	28.40	17.01	16.87	0.14	11.51	0.10	25.88	0.10
MW-17	9-Aug-2007	28.40	17.42	17.24	0.18	11.14	0.15	26.03	0.10
MW-17	22-Aug-2007	28.40	17.66	17.57	0.09	10.82	0.00	26.03	0.09
MW-17	7-Sep-2007	28.40	17.97	17.90	0.07	10.49	0.00	26.03	0.07
MW-17	14-Sep-2007	28.40	17.84	17.70	0.14	10.68	0.50	26.53	0.01
MW-17	18-Sep-2007	28.40	18.23	18.19	0.04	10.21	0.00	26.53	0.04
MW-17	4-Oct-2007	28.40	18.50	18.46	0.04	9.94	0.00	26.53	0.04
MW-17	11-Oct-2007	28.40	18.55	18.51	0.04	9.89	0.00	26.53	0.04
MW-17	24-Oct-2007	28.40	18.65	18.60	0.05	9.79	0.00	26.53	0.05
MW-17	8-Nov-2007	28.40	18.77	18.72	0.05	9.67	0.00	26.53	0.05
MW-17	21-Nov-2007	28.40	18.71	18.65	0.06	9.74	0.00	26.53	0.06
MW-17	7-Dec-2007	28.40	17.79	17.50	0.29	10.87	0.40	26.93	0.06
MW-17	21-Dec-2007	28.40	17.40	16.96	0.44	11.39	0.40	27.33	0.00
MW-17	3-Jan-2008	28.40	16.00	15.19	0.81	13.12	1.00	28.33	0.04
MW-17	18-Jan-2008	28.40	15.80	14.48	1.32	13.77	1.50	29.83	0.01
MW-17	24-Jan-2008	28.40	14.96	14.39	0.57	13.95	0.90	30.73	0.00
MW-17	31-Jan-2008	28.40	14.97	14.57	0.40	13.79	0.75	31.48	0.00
MW-17	6-Feb-2008	28.40	14.81	14.27	0.54	14.07	1.00	32.48	0.00
MW-17	15-Feb-2008	28.40	14.62	13.98	0.64	14.35	1.00	33.48	0.00
MW-17	29-Feb-2008	28.40	15.00	14.45	0.55	13.89	0.75	34.23	0.00
MW-17	10-Mar-2008	28.40	15.18	14.81	0.37	13.55	0.00	34.23	0.37
MW-17	12-Mar-2008	28.40	15.25	14.79	0.46	13.56	0.50	34.73	0.00
MW-17	21-Mar-2008	28.40	15.35	15.03	0.32	13.33	0.40	35.13	0.00
MW-17	11-Apr-2008	28.40	15.63	15.32	0.31	13.05	0.79	35.92	0.00
MW-17	17-Apr-2008	28.40	15.53	15.34	0.19	13.04	0.26	36.18	0.00
MW-17	24-Apr-2008	28.40	15.57	15.48	0.09	12.91	0.13	36.31	0.00
MW-17	2-May-2008	28.40	15.54	15.35	0.19	13.03	0.50	36.81	0.01
MW-17	8-May-2008	28.40	15.54	15.42	0.12	12.97	0.20	37.01	0.00
MW-17	14-May-2008	28.40	15.61	15.50	0.11	12.89	0.50	37.51	0.00
MW-17	30-May-2008	28.40	14.76	14.54	0.22	13.84	0.40	37.91	0.00
MW-17	13-Jun-2008	28.40	14.45	14.20	0.25	14.17	0.40	38.31	0.00
MW-17	25-Jun-2008	28.40	15.01	14.84	0.17	13.54	0.21	38.52	0.00
MW-17	11-Jul-2008	28.40	15.85	15.73	0.12	12.66	0.10	38.62	0.00
MW-17	28-Jul-2008	28.40	16.68	16.62	0.06	11.77	0.00	38.62	0.06
MW-17	13-Aug-2008	28.40	17.27	17.12	0.15	11.26	0.13	38.75	0.00
MW-17	27-Aug-2008	28.40	17.48	17.42	0.06	10.97	0.00	38.75	0.06
MW-17	8-Sep-2008	28.40	17.73	17.68	0.05	10.71	0.00	38.75	0.05
MW-17	18-Sep-2008	28.40	18.00	17.95	0.05	10.44	0.00	38.75	0.05
MW-17	30-Sep-2008	28.40	17.17	17.12	0.05	11.27	0.00	38.75	0.05
MW-17	16-Oct-2008	28.40	18.46	18.40	0.06	9.99	0.00	38.75	0.06
MW-17	30-Oct-2008	28.40	18.60	18.56	0.04	9.84	0.00	38.75	0.04
MW-17	14-Nov-2008	28.40	18.53	18.46	0.07	9.93	0.00	38.75	0.07

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
MW-17	26-Nov-2008	28.40	18.36	18.27	0.09	10.12	0.00	38.75	0.09
MW-17	16-Dec-2008	28.40	18.44	18.36	0.08	10.03	0.00	38.75	0.08
MW-17	29-Dec-2008	28.40	18.23	18.04	0.19	10.34	0.13	38.88	0.00
MW-17	15-Jan-2009	28.40	16.49	15.62	0.87	12.68	0.40	39.28	0.01
MW-17	23-Jan-2009	28.40	16.22	15.82	0.40	12.54	0.40	39.68	0.01
MW-17	29-Jan-2009	28.40	16.19	15.96	0.23	12.41	0.26	39.94	0.00
MW-17	4-Feb-2009	28.40	16.15	15.94	0.21	12.44	0.40	40.34	0.01
MW-17	12-Feb-2009	28.40	16.34	16.22	0.12	12.17	0.26	40.60	0.00
MW-17	19-Feb-2009	28.40	16.65	16.57	0.08	11.82	0.00	40.60	0.08
MW-17	10-Mar-2009	28.40	16.61	16.49	0.12	11.90	0.13	40.73	0.00
MW-17	27-Mar-2009	28.40	16.69	16.58	0.11	11.81	0.13	40.86	0.00
MW-17	16-Apr-2009	28.40	16.64	16.55	0.09	11.84	0.00	40.86	0.09
MW-17	14-May-2009	28.40	16.27	16.15	0.12	12.24	0.07	40.93	0.00
MW-17	4-Jun-2009	28.40	15.79	15.73	0.06	12.66	0.00	40.93	0.00
MW-17	13-Jul-2009	28.40	17.26	17.14	0.12	11.25	0.13	41.06	0.01
MW-17	10-Aug-2009	28.40	17.90	17.84	0.06	10.55	0.00	41.06	0.06
MW-17	9-Sep-2009	28.40	18.52	18.47	0.05	9.92	0.00	41.06	0.05
MW-17	15-Oct-2009	28.40	18.79	18.73	0.06	9.66	0.00	41.06	0.06
MW-17	18-Nov-2009	28.40	18.34	18.32	0.02	10.08	0.00	41.06	0.02
MW-17	15-Dec-2009	28.40	17.43	17.31	0.12	11.08	0.16	41.22	0.00
MW-17	13-Jan-2010	28.40	16.80	15.54	1.26	12.72	1.33	42.55	0.00
MW-17	21-Jan-2010	28.40	--	16.83	--	--	0.80	43.35	--
MW-17	26-Jan-2010	28.40	15.74	15.07	0.67	13.26	0.70	44.05	0.00
MW-17	5-Feb-2010	28.40	15.60	15.53	0.07	12.86	0.00	44.05	0.07
MW-17	2-Mar-2010	28.40	16.85	14.92	1.93	13.27	2.10	46.15	0.00
MW-17	12-Mar-2010	28.40	16.06	15.13	0.93	13.17	1.00	47.15	0.00
MW-17	25-Mar-2010	28.40	16.10	15.25	0.85	13.06	1.00	48.15	0.21
MW-17	2-Apr-2010	28.40	16.63	16.12	0.51	12.22	0.25	48.40	0.01
MW-17	9-Apr-2010	28.40	15.63	14.94	0.69	13.38	0.50	48.90	0.00
MW-17	16-Apr-2010	28.40	14.79	14.79	0.00	13.61	0.00	48.90	0.00
MW-17	23-Apr-2010	28.40	16.30	15.22	1.08	13.06	1.00	49.90	0.02
MW-17	4-May-2010	28.40	15.91	15.31	0.60	13.02	0.40	50.30	0.00
MW-17	8-Jun-2010	28.40	14.43	13.80	0.63	14.53	0.75	51.05	0.02
MW-17	9-Jul-2010	28.40	16.02	14.75	1.27	13.51	1.00	52.05	0.00
MW-17	23-Jul-2010	28.40	16.24	15.58	0.66	12.75	0.50	52.55	0.02
MW-17	6-Aug-2010	28.40	16.45	16.08	0.37	12.28	0.50	53.05	0.01
MW-17	19-Aug-2010	28.40	16.73	16.48	0.25	11.89	0.25	53.30	0.01
MW-17	27-Aug-2010	28.40	16.77	16.69	0.08	11.70	0.00	53.30	0.01
MW-17	17-Sep-2010	28.40	17.27	17.13	0.14	11.25	0.50	53.80	0.01
MW-17	8-Oct-2010	28.40	17.48	17.43	0.05	10.96	0.00	53.80	0.05
MW-17	11-Nov-2010	28.40	17.20	16.88	0.32	11.48	0.40	54.20	0.02
MW-17	15-Dec-2010	28.40	16.81	14.18	2.63	13.93	2.50	56.70	0.01
MW-17	21-Dec-2010	28.40	15.39	14.20	1.19	14.07	1.25	57.95	0.01
MW-17	30-Dec-2010	28.40	14.87	13.83	1.04	14.46	1.00	58.95	0.01
MW-17	6-Jan-2011	28.40	14.46	13.74	0.72	14.58	0.75	59.70	0.03
MW-17	13-Jan-2011	28.40	14.41	13.83	0.58	14.51	0.75	60.45	0.01
MW-17	19-Jan-2011	28.40	13.50	13.10	0.40	15.26	0.50	60.95	0.00
MW-17	28-Jan-2011	28.40	13.66	12.96	0.70	15.36	0.75	61.70	0.02
MW-17	9-Feb-2011	28.40	14.75	13.95	0.80	14.36	1.50	63.20	0.02
MW-17	23-Feb-2011	28.40	14.80	14.75	0.05	13.64	0.00	63.20	0.00
MW-17	9-Mar-2011	28.40	14.05	13.32	0.73	15.00	0.40	63.60	0.01
MW-17	29-Mar-2011	28.40	14.97	13.06	1.91	15.13	2.50	66.10	0.02
MW-17	21-Apr-2011	28.40	14.04	12.65	1.39	15.60	1.20	67.30	0.02
MW-17	6-May-2011	28.40	14.01	13.02	0.99	15.27	0.50	67.80	0.02
MW-17	9-Jun-2011	28.40	12.58	12.05	0.53	16.29	0.50	68.30	0.01
MW-17	7-Jul-2011	28.40	14.06	14.05	0.01	14.35	0.00	68.30	0.01
MW-17	3-Aug-2011	28.40	14.79	14.44	0.35	13.92	0.50	68.80	0.01
MW-17	8-Sep-2011	28.40	16.32	16.22	0.10	12.17	0.00	68.80	0.10
MW-17	3-Oct-2011	28.40	17.08	16.83	0.25	11.54	0.50	69.30	0.02
MW-17	10-Nov-2011	28.40	17.65	17.57	0.08	10.82	0.00	69.30	0.80
MW-17	1-Dec-2011	28.40	17.07	17.05	0.02	11.35	0.00	69.30	0.02
MW-17	6-Jan-2012	28.40	16.82	16.78	0.04	11.62	0.00	69.30	0.04
MW-17	25-Jan-2012	28.40	15.70	15.49	0.21	12.89	0.30	69.60	0.01
MW-17	3-Mar-2012	28.40	16.52	15.57	0.95	12.73	1.00	70.60	0.06
MW-17	14-Mar-2012	28.40	15.81	14.85	0.96	13.44	0.75	71.35	0.01
MW-17	22-Mar-2012	28.40	14.99	14.05	0.94	14.25	0.50	71.85	0.01
MW-17	29-Mar-2012	28.40	14.22	13.64	0.58	14.70	0.50	72.35	0.02
MW-17	5-Apr-2012	28.40	13.44	12.92	0.52	15.42	0.25	72.60	0.01
MW-17	13-Apr-2012	28.40	13.30	13.21	0.09	15.18	0.00	72.60	0.09
MW-17	23-Apr-2012	28.40	13.75	13.09	0.66	15.24	0.50	73.10	0.01
MW-17	14-May-2012	28.40	13.85	13.05	0.80	15.26	0.50	73.60	0.02
MW-17	25-May-2012	28.40	13.16	13.15	0.01	15.25	0.00	73.60	0.01
MW-17	12-Jun-2012	28.40	14.16	13.40	0.76	14.92	0.75	74.35	0.01

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
MW-17	3-Jul-2012	28.40	14.04	13.69	0.35	14.67	0.25	74.60	0.01
MW-17	23-Aug-2012	28.40	16.50	16.21	0.29	12.16	0.25	74.85	0.01
MW-17	24-Sep-2012	28.40	17.25	17.05	0.20	11.33	0.25	75.10	0.00
MW-17	8-Oct-2012	28.40	17.47	17.44	0.03	10.96	0.00	75.10	0.03
MW-17	14-Nov-2012	28.40	16.95	16.91	0.04	11.49	0.00	75.10	0.04
MW-17	20-Dec-2012	28.40	15.45	13.51	1.94	14.68	2.00	77.10	0.01
MW-17	4-Jan-2013	28.40	15.11	13.59	1.52	14.64	1.75	78.85	0.01
MW-17	18-Jan-2013	28.40	14.80	14.01	0.79	14.30	0.75	79.60	0.01
MW-17	31-Jan-2013	28.40	15.01	14.49	0.52	13.85	0.40	80.00	0.01
MW-17	6-Mar-2013	28.40	15.82	15.33	0.49	13.02	0.80	80.80	0.01
MW-17	3-Apr-2013	28.40	16.25	16.15	0.10	12.24	0.50	81.30	0.01
MW-17	6-May-2013	28.40	16.17	16.04	0.13	12.35	0.20	81.50	0.01
MW-17	12-Jun-2013	28.40	16.39	16.04	0.35	12.32	0.50	82.00	0.00
MW-17	16-Jul-2013	28.40	16.97	16.73	0.24	11.64	0.20	82.20	0.01
MW-17	26-Aug-2013	28.40	17.78	17.59	0.19	10.79	0.10	82.30	0.01
MW-17	25-Sep-2013	28.40	18.13	18.11	0.02	10.29	0.00	82.30	0.02
MW-17	31-Oct-2013	28.40	18.00	17.93	0.07	10.46	0.00	82.30	0.07
MW-17	27-Nov-2013	28.40	18.01	17.87	0.14	10.51	0.10	82.40	0.01
MW-17	17-Dec-2013	28.40	17.92	17.85	0.07	10.54	0.00	82.40	0.07
MW-17	27-Jan-2014	28.40	18.08	18.00	0.08	10.39	0.00	82.40	0.00
MW-17	27-Feb-2014	28.40	16.90	16.59	0.31	11.78	0.20	82.60	0.03
MW-17	26-Mar-2014	28.40	15.78	14.91	0.87	13.39	1.00	83.60	0.02
MW-17	15-Apr-2014	28.40	16.03	14.93	1.10	13.35	0.50	84.10	0.01
MW-17	9-May-2014	28.40	15.60	14.40	1.20	13.87	1.75	85.85	0.00
MW-17	30-Jun-2014	28.40	15.90	15.60	0.30	12.77	0.50	86.35	0.00
MW-17	16-Jul-2014	28.40	14.95	14.45	0.50	13.90	0.50	86.85	0.00
MW-17	4-Aug-2014	28.40	17.21	16.81	0.40	11.55	0.30	87.15	0.00
MW-17	30-Sep-2014	28.40	15.49	15.45	0.04	12.95	0.00	87.15	0.00
MW-17	27-Oct-2014	28.40	15.61	15.51	0.10	12.88	0.00	87.15	0.00
MW-17	24-Nov-2014	28.40	18.40	17.55	0.85	10.76	1.00	88.15	0.00
MW-17	11-Dec-2014	28.40	16.66	16.48	0.18	11.90	0.20	88.35	0.00
MW-17	29-Jan-2015	28.40	16.90	16.55	0.35	11.81	0.70	89.05	0.00
MW-17	27-Feb-2015	28.40	16.70	16.50	0.20	11.88	0.40	89.45	0.00
MW-17	27-Mar-2015	28.40	18.08	14.72	3.36	13.31	3.00	92.45	0.01
MW-17	28-Apr-2015	28.40	17.01	15.01	2.00	13.17	3.00	95.45	0.00
Well Abandoned May 14, 2015									
MW-19	27-Aug-2003	30.73	21.43	18.61	2.82	11.81	2.00	2.00	0.12
MW-19	3-Sep-2003	30.73	19.55	18.91	0.64	11.75	0.50	2.50	0.02
MW-19	11-Sep-2003	30.73	19.38	19.28	0.10	11.44	0.10	2.60	0.01
MW-19	17-Sep-2003	30.73	19.55	19.46	0.09	11.26	0.10	2.70	0.01
MW-19	30-Sep-2003	30.73	19.65	19.57	0.08	11.15	0.01	2.71	0.02
MW-19	14-Oct-2003	30.73	19.76	19.66	0.10	11.06	0.01	2.72	0.01
MW-19	29-Oct-2003	30.73	19.77	19.65	0.12	11.07	0.10	2.82	0.02
MW-19	13-Nov-2003	30.73	19.91	19.86	0.05	10.86	0.01	2.83	0.00
MW-19	26-Nov-2003	30.73	19.80	19.74	0.06	10.98	0.01	2.84	0.00
MW-19	24-Dec-2003	30.73	19.18	18.07	1.11	12.54	0.20	3.04	0.06
MW-19	30-Dec-2003	30.73	19.15	18.10	1.05	12.51	0.20	3.24	0.02
MW-19	9-Jan-2004	30.73	19.41	15.41	4.00	14.88	0.30	3.54	0.02
MW-19	15-Jan-2004	30.73	19.15	15.59	3.56	14.75	1.90	5.44	0.07
MW-19	21-Jan-2004	30.73	17.34	15.34	2.00	15.17	1.00	6.44	0.02
MW-19	24-Jan-2004	30.73	16.55	14.96	1.59	15.60	0.80	7.24	0.01
MW-19	3-Feb-2004	30.73	17.70	14.45	3.25	15.92	1.00	8.24	0.01
MW-19	12-Feb-2004	30.73	16.75	14.60	2.15	15.89	1.00	9.24	0.01
MW-19	18-Feb-2004	30.73	16.17	14.85	1.32	15.73	0.90	10.14	0.00
MW-19	25-Feb-2004	30.73	15.12	14.71	0.41	15.97	0.30	10.44	0.00
MW-19	3-Mar-2004	30.73	15.25	14.99	0.26	15.71	0.10	10.54	0.01
MW-19	10-Mar-2004	30.73	15.60	15.03	0.57	15.64	0.40	10.94	0.02
MW-19	19-Mar-2004	30.73	15.85	15.08	0.77	15.57	0.50	11.44	0.01
MW-19	24-Mar-2004	30.73	15.90	15.22	0.68	15.44	0.40	11.84	0.01
MW-19	1-Apr-2004	30.73	16.55	15.61	0.94	15.02	0.60	12.44	0.01
MW-19	14-Jan-2005	30.73	--	--	--	--	--	12.44	0.00
MW-19	21-Jan-2005	30.73	20.10	19.00	1.10	11.61	0.75	13.19	0.10
MW-19	28-Jan-2005	30.73	19.22	19.10	0.12	11.62	0.01	13.20	0.03
MW-19	4-Feb-2005	30.73	19.17	19.08	0.09	11.64	0.00	13.20	0.09
MW-19	18-Feb-2005	30.73	19.06	18.97	0.09	11.75	0.00	13.20	0.09
MW-19	25-Feb-2005	30.73	19.35	19.24	0.11	11.48	0.05	13.25	0.03
MW-19	11-Mar-2005	30.73	19.35	19.31	0.04	11.42	0.00	13.25	0.04
MW-19	25-Mar-2005	30.73	19.69	19.61	0.08	11.11	0.00	13.25	0.08
MW-19	30-Apr-2005	30.73	19.36	18.91	0.45	11.77	0.25	13.50	0.00
MW-19	13-May-2005	30.73	18.88	18.56	0.32	12.13	0.25	13.75	0.03
MW-19	31-May-2005	30.73	19.00	18.00	1.00	12.62	1.00	14.75	0.05
MW-19	24-Jun-2005	30.73	19.32	18.11	1.21	12.49	1.50	16.25	0.08

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
MW-19	8-Jul-2005	30.73	19.40	18.42	0.98	12.20	0.75	17.00	0.01
MW-19	15-Jul-2005	30.73	18.87	18.64	0.23	12.06	0.10	17.10	0.01
MW-19	22-Jul-2005	30.73	19.93	19.86	0.07	10.86	0.00	17.10	0.07
MW-19	29-Jul-2005	30.73	19.00	18.93	0.07	11.79	0.00	17.10	0.07
MW-19	12-Aug-2005	30.73	19.34	19.18	0.16	11.53	0.10	17.20	0.02
MW-19	26-Aug-2005	30.73	19.44	19.39	0.05	11.33	0.00	17.20	0.05
MW-19	24-Sep-2005	30.73	19.84	19.75	0.09	10.97	0.00	17.20	0.09
MW-19	21-Oct-2005	30.73	20.00	19.99	0.01	10.74	0.00	17.20	0.01
MW-19	28-Nov-2005	30.73	19.55	19.42	0.13	11.30	0.05	17.25	0.00
MW-19	14-Dec-2005	30.73	19.65	19.22	0.43	11.46	0.10	17.35	0.08
MW-19	21-Dec-2005	30.73	19.16	18.82	0.34	11.87	0.50	17.85	0.10
MW-19	3-Jan-2006	30.73	20.15	17.35	2.80	13.07	2.50	20.35	0.10
MW-19	11-Jan-2006	30.73	17.40	15.00	2.40	15.47	2.50	22.85	0.10
MW-19	17-Jan-2006	30.73	15.75	14.46	1.29	16.13	1.10	23.95	0.03
MW-19	23-Jan-2006	30.73	15.38	14.50	0.88	16.13	0.70	24.65	0.10
MW-19	31-Jan-2006	30.73	14.92	14.33	0.59	16.34	0.20	24.85	0.08
MW-19	17-Feb-2006	30.73	15.25	14.43	0.82	16.21	1.50	26.35	0.04
MW-19	24-Feb-2006	30.73	15.11	14.62	0.49	16.06	1.50	27.85	0.03
MW-19	3-Mar-2006	30.73	15.23	14.57	0.66	16.09	0.50	28.35	0.03
MW-19	14-Mar-2006	30.73	16.19	14.95	1.24	15.64	0.75	29.10	0.05
MW-19	21-Mar-2006	30.73	15.66	14.89	0.77	15.76	0.50	29.60	0.10
MW-19	31-Mar-2006	30.73	15.48	14.89	0.59	15.78	0.30	29.90	0.02
MW-19	6-Apr-2006	30.73	15.45	15.21	0.24	15.49	0.20	30.10	0.01
MW-19	14-Apr-2006	30.73	15.04	14.81	0.23	15.89	0.20	30.30	0.10
MW-19	24-Apr-2006	30.73	15.19	14.75	0.44	15.93	0.25	30.55	0.01
MW-19	9-May-2006	30.73	15.58	14.98	0.60	15.68	0.70	31.25	0.07
MW-19	19-May-2006	30.73	15.50	15.02	0.48	15.66	0.90	32.15	0.01
MW-19	25-May-2006	30.73	15.41	15.06	0.35	15.63	0.70	32.85	0.01
MW-19	2-Jun-2006	30.73	15.33	15.10	0.23	15.60	0.30	33.15	0.03
MW-19	Product Skimmer Installed in Well								
MW-19	9-Jun-2006	30.73	--	--	--	--	0.25	33.40	--
MW-19	19-Jun-2006	30.73	--	--	--	--	0.15	33.55	--
MW-19	28-Jun-2006	30.73	--	--	--	--	0.20	33.75	--
MW-19	3-Jul-2006	30.73	--	--	--	--	0.10	33.85	--
MW-19	10-Jul-2006	30.73	--	--	--	--	0.10	33.95	--
MW-19	18-Jul-2006	30.73	--	--	--	--	0.20	34.15	--
MW-19	25-Jul-2006	30.73	--	--	--	--	0.40	34.55	--
MW-19	4-Aug-2006	30.73	--	--	--	--	0.10	34.65	--
MW-19	11-Aug-2006	30.73	--	--	--	--	0.90	35.55	--
MW-19	18-Aug-2006	30.73	--	--	--	--	0.30	35.85	--
MW-19	23-Aug-2006	30.73	--	--	--	--	0.10	35.95	--
MW-19	8-Sep-2006	30.73	--	--	--	--	0.05	36.00	--
MW-19	20-Sep-2006	30.73	--	--	--	--	0.10	36.10	--
MW-19	3-Oct-2006	30.73	--	--	--	--	0.05	36.15	--
MW-19	6-Nov-2006	30.73	--	--	--	--	0.05	36.20	--
MW-19	22-Nov-2006	30.73	--	--	--	--	0.00	36.20	--
MW-19	4-Dec-2006	30.73	--	--	--	--	1.90	38.10	--
MW-19	13-Dec-2006	30.73	--	--	--	--	1.30	39.40	--
MW-19	18-Dec-2006	30.73	--	--	--	--	1.00	40.40	--
MW-19	26-Dec-2006	30.73	--	--	--	--	1.10	41.50	--
MW-19	9-Jan-2007	30.73	--	--	--	--	1.20	42.70	--
MW-19	15-Jan-2007	30.73	--	--	--	--	1.00	43.70	--
MW-19	26-Jan-2007	30.73	--	--	--	--	1.10	44.80	--
MW-19	31-Jan-2007	30.73	--	--	--	--	1.10	45.90	--
MW-19	9-Feb-2007	30.73	--	--	--	--	1.00	46.90	--
MW-19	13-Feb-2007	30.73	--	--	--	--	1.00	47.90	--
MW-19	28-Feb-2007	30.73	--	--	--	--	1.10	49.00	--
MW-19	6-Mar-2007	30.73	--	--	--	--	1.20	50.20	--
MW-19	23-Mar-2007	30.73	--	--	--	--	4.00	54.20	--
MW-19	29-Mar-2007	30.73	--	--	--	--	5.00	59.20	--
MW-19	5-Apr-2007	30.73	--	--	--	--	0.50	59.70	--
MW-19	11-Apr-2007	30.73	--	--	--	--	0.40	60.10	--
MW-19	16-Apr-2007	30.73	--	--	--	--	8.20	68.30	--
MW-19	25-Apr-2007	30.73	--	--	--	--	0.80	69.10	--
MW-19	3-May-2007	30.73	--	--	--	--	5.00	74.10	--
MW-19	10-May-2007	30.73	--	--	--	--	0.90	75.00	--
MW-19	15-May-2007	30.73	--	--	--	--	0.50	75.50	--
MW-19	25-May-2007	30.73	--	--	--	--	0.25	75.75	--
MW-19	4-Jun-2007	30.73	--	--	--	--	0.75	76.50	--
MW-19	13-Jun-2007	30.73	--	--	--	--	0.20	76.70	--
MW-19	19-Jun-2007	30.73	--	--	--	--	0.10	76.80	--
MW-19	27-Jun-2007	30.73	--	--	--	--	1.00	77.80	--
MW-19	9-Jul-2007	30.73	--	--	--	--	1.20	79.00	--

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
MW-19	25-Jul-2007	30.73	--	--	--	--	0.10	79.10	--
MW-19	9-Aug-2007	30.73	--	--	--	--	0.15	79.25	--
MW-19	22-Aug-2007	30.73	--	--	--	--	0.00	79.25	--
MW-19	7-Sep-2007	30.73	--	--	--	--	0.10	79.35	--
MW-19	14-Sep-2007	30.73	--	--	--	--	0.10	79.45	--
MW-19	19-Sep-2007	30.73	--	--	--	--	0.00	79.45	--
MW-19	4-Oct-2007	30.73	--	--	--	--	0.10	79.55	--
MW-19	11-Oct-2007	30.73	--	--	--	--	0.00	79.55	--
MW-19	24-Oct-2007	30.73	--	--	--	--	0.10	79.65	--
MW-19	8-Nov-2007	30.73	--	--	--	--	0.10	79.75	--
MW-19	21-Nov-2007	30.73	--	--	--	--	0.00	79.75	--
MW-19	7-Dec-2007	30.73	--	--	--	--	0.05	79.80	--
MW-19	21-Dec-2007	30.73	--	--	--	--	0.05	79.85	--
MW-19	3-Jan-2008	30.73	17.59	16.98	0.61	--	1.50	81.35	0.04
MW-19	18-Jan-2008	30.73	17.94	16.25	1.69	--	2.75	84.10	0.00
MW-19	24-Jan-2008	30.73	16.29	15.52	0.77	--	2.00	86.10	0.00
MW-19	31-Jan-2008	30.73	16.48	15.37	1.11	--	2.50	88.60	0.00
MW-19	6-Feb-2008	30.73	16.88	15.07	1.81	--	4.00	92.60	0.00
MW-19	15-Feb-2008	30.73	15.54	14.75	0.79	--	2.75	95.35	0.00
MW-19	29-Feb-2008	30.73	17.00	14.71	2.29	--	2.50	97.85	0.00
MW-19	14-Mar-2008	30.73	16.89	14.88	2.01	--	2.50	100.35	0.00
MW-19	21-Mar-2008	30.73	15.67	15.19	0.48	--	2.25	102.60	0.00
MW-19	11-Apr-2008	30.73	15.87	15.45	0.42	--	1.00	103.60	0.00
MW-19	17-Apr-2008	30.73	15.63	15.50	0.13	--	0.66	104.26	0.00
MW-19	24-Apr-2008	30.73	15.89	15.88	0.01	--	0.40	104.66	0.01
MW-19	2-May-2008	30.73	16.12	16.10	0.02	--	0.25	104.91	0.02
MW-19	8-May-2008	30.73	16.35	16.32	0.03	--	0.13	105.04	0.03
MW-19	14-May-2008	30.73	17.01	17.00	0.01	--	0.00	105.04	0.01
MW-19	30-May-2008	30.73	16.13	16.12	0.01	--	0.60	105.64	0.01
MW-19	13-Jun-2008	30.73	15.64	15.63	0.01	--	0.13	105.77	0
MW-19	25-Jun-2008	30.73	16.92	16.91	0.01	--	0.00	105.77	0.01
MW-19	11-Jul-2008	30.73	16.82	16.81	0.01	--	0.05	105.83	0.01
MW-19	28-Jul-2008	30.73	17.88	17.82	0.06	--	0.00	105.83	0.06
MW-19	13-Aug-2008	30.73	18.31	18.28	0.03	--	0.07	105.89	0.03
MW-19	27-Aug-2008	30.73	19.07	19.00	0.07	--	0.07	105.96	0.07
MW-19	8-Sep-2008	30.73	19.43	19.19	0.24	--	0.26	106.22	0.01
MW-19	18-Sep-2008	30.73	19.66	19.65	0.01	--	0.00	106.22	0.01
MW-19	30-Sep-2008	30.73	20.02	20.01	0.01	--	0.00	106.22	0.01
MW-19	16-Oct-2008	30.73	20.42	20.40	0.02	--	0.00	106.22	0.02
MW-19	30-Oct-2008	30.73	20.41	20.41	0.00	--	0.05	106.27	0.00
MW-19	14-Nov-2008	30.73	20.80	20.80	0.00	--	0.01	106.28	0.00
MW-19	26-Nov-2008	30.73	20.42	20.42	0.00	--	0.00	106.28	0.00
MW-19	16-Dec-2008	30.73	20.68	20.67	0.01	--	0.00	106.28	0.01
MW-19	29-Dec-2008	30.73	19.45	19.45	0.00	--	0.00	106.28	0.00
MW-19	15-Jan-2009	30.73	18.60	16.96	1.64	--	1.19	107.47	0.00
MW-19	23-Jan-2009	30.73	17.12	17.12	0.00	--	0.08	107.55	0
MW-19	29-Jan-2009	30.73	17.30	17.29	0.01	--	0.26	107.81	0.00
MW-19	4-Feb-2009	30.73	17.24	17.24	0.00	--	0.66	108.47	0.01
MW-19	12-Feb-2009	30.73	17.33	17.33	0.00	--	0.53	109.00	0.00
MW-19	19-Feb-2009	30.73	19.34	19.30	0.04	--	0.00	109.00	0.04
MW-19	10-Mar-2009	30.73	18.97	18.94	0.03	--	0.00	109.00	0.03
MW-19	27-Mar-2009	30.73	18.74	18.70	0.04	--	0.05	109.05	0.04
MW-19	16-Apr-2009	30.73	19.00	18.99	0.01	--	0.00	109.05	0.01
MW-19	14-May-2009	30.73	18.46	18.45	0.01	--	0.00	109.05	0.01
MW-19	5-Jun-2009	30.73	17.88	17.86	0.02	--	0.03	109.08	0.00
MW-19	13-Jul-2009	30.73	19.34	19.30	0.04	--	0.04	109.12	0.04
MW-19	10-Aug-2009	30.73	20.15	20.09	0.06	--	0.00	109.12	0.06
MW-19	9-Sep-2009	30.73	21.60	21.52	0.08	--	0.00	109.12	0.08
MW-19	15-Oct-2009	30.73	20.73	20.72	0.01	--	0.00	109.12	0.01
MW-19	18-Nov-2009	30.73	20.53	20.53	0.00	--	0.00	109.12	0.00
MW-19	16-Dec-2009	30.73	19.03	19.03	0.00	--	0.00	109.12	0.00
MW-19	13-Jan-2010	30.73	21.65	17.75	3.90	--	5.00	114.12	0.00
MW-19	21-Jan-2010	30.73	20.26	16.82	3.44	--	3.10	117.22	0.00
MW-19	26-Jan-2010	30.73	--	--	--	--	1.10	118.32	--
MW-19	5-Feb-2010	30.73	--	--	--	--	0.90	119.22	0.00
MW-19	2-Mar-2010	30.73	23.70	15.72	7.98	--	10.75	129.97	0.03
MW-19	12-Mar-2010	30.73	17.36	15.51	1.85	--	3.50	133.47	0.01
MW-19	25-Mar-2010	30.73	19.13	16.10	3.03	--	3.00	136.47	--
MW-19	2-Apr-2010	30.73	17.33	17.33	0.00	--	1.00	137.47	0.00
MW-19	9-Apr-2010	30.73	17.35	15.31	2.04	--	2.50	139.97	0.01
MW-19	16-Apr-2010	30.73	17.43	15.32	2.11	--	2.50	142.47	0.06
MW-19	23-Apr-2010	30.73	17.23	15.72	1.51	--	2.00	144.47	0.01
MW-19	4-May-2010	30.73	19.86	15.94	3.92	--	3.25	147.72	0.03

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
MW-19	8-Jun-2010	30.73	16.19	14.98	1.21	--	1.50	149.22	0.05
MW-19	9-Jul-2010	30.73	22.54	15.25	7.29	--	5.50	154.72	0.09
MW-19	23-Jul-2010	30.73	17.12	15.73	1.39	--	3.25	157.97	0.01
MW-19	6-Aug-2010	30.73	17.06	16.38	0.68	--	1.25	159.22	0.01
MW-19	19-Aug-2010	30.73	17.51	17.48	0.03	--	0.50	159.72	0.01
MW-19	27-Aug-2010	30.73	18.01	17.97	0.04	--	0.00	159.72	0.01
MW-19	17-Sep-2010	30.73	18.75	18.68	0.07	--	0.25	159.97	0.01
MW-19	8-Oct-2010	30.73	18.60	18.58	0.02	--	0.20	160.17	0.02
MW-19	11-Nov-2010	30.73	18.95	18.88	0.07	--	0.00	160.17	0.07
MW-19	15-Dec-2010	30.73	20.10	15.51	4.59	--	4.75	164.92	0.02
MW-19	21-Dec-2010	30.73	18.49	15.20	3.29	--	3.00	167.92	0.04
MW-19	30-Dec-2010	30.73	18.90	16.09	2.81	--	3.00	170.92	0.02
MW-19	6-Jan-2011	30.73	15.90	14.65	1.25	--	2.25	173.17	0.03
MW-19	13-Jan-2011	30.73	16.30	16.07	0.23	--	2.50	175.67	0.01
MW-19	19-Jan-2011	30.73	15.53	14.62	0.91	--	2.25	177.92	0.01
MW-19	28-Jan-2011	30.73	14.43	14.34	0.09	--	0.15	178.07	0.09
MW-19	9-Feb-2011	30.73	15.62	14.51	1.11	--	2.50	180.57	0.02
MW-19	23-Feb-2011	30.73	14.80	14.75	0.05	--	--	180.57	0.00
MW-19	9-Mar-2011	30.73	14.57	14.16	0.41	--	0.85	181.42	0.00
MW-19	29-Mar-2011	30.73	14.21	13.86	0.35	--	1.25	182.67	0.02
MW-19	21-Apr-2011	30.73	13.90	13.78	0.12	--	0.60	183.27	0.02
MW-19	6-May-2011	30.73	14.06	14.00	0.06	--	0.00	183.27	0.06
MW-19	9-Jun-2011	30.73	13.93	13.86	0.07	--	0.00	183.27	0.07
MW-19	7-Jul-2011	30.73	14.23	14.09	0.14	--	0.25	183.52	0.01
MW-19	3-Aug-2011	30.73	14.52	14.48	0.04	--	0.00	183.52	0.04
MW-19	8-Sep-2011	30.73	15.98	15.91	0.07	--	0.00	183.52	0.07
MW-19	3-Oct-2011	30.73	15.79	15.67	0.12	--	0.20	183.72	0.03
MW-19	10-Nov-2011	30.73	16.80	16.73	0.07	--	0.00	183.72	0.07
MW-19	1-Dec-2011	30.73	16.02	16.02	0.00	--	0.00	183.72	0.00
MW-19	6-Jan-2012	30.73	Well buried under asphalt pile.						
MW-19	25-Jan-2012	30.73	Well buried under asphalt pile.						
MW-19	3-Mar-2012	30.73	Well buried under asphalt pile.						
MW-19	6-Mar-2012	30.73	18.75	14.98	3.77	--	3.00	186.72	0.00
MW-19	14-Mar-2012	30.73	Well under large puddle.						
MW-19	22-Mar-2012	30.73	15.57	14.45	1.12	--	1.00	187.72	0.01
MW-19	29-Mar-2012	30.73	Well under large puddle.						
MW-19	5-Apr-2012	30.73	15.66	15.33	0.33	--	0.87	188.59	0.01
MW-19	13-Apr-2012	30.73	14.33	14.24	0.09	--	0.10	188.69	0.09
MW-19	23-Apr-2012	30.73	14.26	14.25	0.01	--	0.13	188.82	0.01
MW-19	14-May-2012	30.73	14.20	14.19	0.01	--	0.05	188.87	0.01
MW-19	25-May-2012	30.73	14.29	14.29	0.00	--	0.00	188.87	0.00
MW-19	12-Jun-2012	30.73	14.30	--	0.00	--	0.00	188.87	0.00
MW-19	3-Jul-2012	30.73	14.64	14.62	0.02	--	0.00	188.87	0.00
MW-19	23-Aug-2012	30.73	15.80	15.35	0.45	--	0.50	189.37	0.05
MW-19	24-Sep-2012	30.73	16.16	16.00	0.16	--	0.75	190.12	0.02
MW-19	8-Oct-2012	30.73	16.68	16.61	0.07	--	0.25	190.37	0.07
MW-19	14-Nov-2012	30.73	16.39	16.38	0.01	--	0.25	190.62	0.01
MW-19	20-Dec-2012	30.73	14.81	14.32	0.49	--	0.75	191.37	0.02
MW-19	4-Jan-2013	30.73	14.19	14.17	0.02	--	0.25	191.62	0.02
MW-19	18-Jan-2013	30.73	14.59	14.58	0.01	--	0.25	191.87	0.02
MW-19	31-Jan-2013	30.73	14.74	14.74	0.00	--	0.00	191.87	0.00
MW-19	6-Mar-2013	30.73	15.22	15.16	0.06	--	0.60	192.47	0.01
MW-19	3-Apr-2013	30.73	15.98	15.48	0.50	--	0.85	193.32	0.01
MW-19	6-May-2013	30.73	16.72	15.98	0.74	--	1.50	194.82	0.01
MW-19	12-Jun-2013	30.73	16.39	16.00	0.39	--	2.50	197.32	0.01
MW-19	16-Jul-2013	30.73	16.65	16.38	0.27	--	0.40	197.72	0.03
MW-19	26-Aug-2013	30.73	17.80	17.63	0.17	--	0.50	198.22	0.01
MW-19	25-Sep-2013	30.73	20.15	20.13	0.02	--	0.00	198.22	0.02
MW-19	31-Oct-2013	30.73	17.50	17.42	0.08	--	0.00	198.22	0.08
MW-19	27-Nov-2013	30.73	17.84	17.77	0.07	--	0.00	198.22	0.07
MW-19	17-Dec-2013	30.73	16.80	16.68	0.12	--	0.20	198.42	0.01
MW-19	27-Jan-2014	30.73	18.60	16.55	2.05	--	2.00	200.42	0.05
MW-19	27-Feb-2014	30.73	16.15	16.05	0.10	--	0.10	200.52	0.01
MW-19	26-Mar-2014	30.73	18.30	15.53	2.77	--	1.00	201.52	0.03
MW-19	15-Apr-2014	30.73	16.30	14.92	1.38	--	0.50	202.02	0.01
MW-19	9-May-2014	30.73	15.86	14.68	1.18	--	1.50	203.52	0.00
MW-19	30-Jun-2014	30.73	16.90	15.60	1.30	--	2.50	206.02	0.00
MW-19	16-Jul-2004	30.73	14.95	14.20	0.75	--	0.25	206.27	0.00
MW-19	4-Aug-2014	30.73	16.55	16.05	0.50	--	0.50	206.77	0.00
MW-19	30-Sep-2014	30.73	18.10	17.30	0.80	--	1.50	208.27	0.00
MW-19	27-Oct-2014	30.73	17.80	17.50	0.30	--	0.25	208.52	0.00
MW-19	24-Nov-2014	30.73	19.20	17.85	1.35	--	2.00	210.52	0.00
MW-19	11-Dec-2014	30.73	17.43	17.30	0.13	--	0.25	210.77	0.00

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
MW-19	29-Jan-2015	30.73	16.15	16.10	0.05	--	0.20	210.97	0.00
MW-19	27-Feb-2015	30.73	17.95	17.75	0.20	--	0.40	211.37	0.00
MW-19	27-Mar-2015	30.73	20.14	15.05	5.09	--	4.25	215.62	0.06
MW-19	28-Apr-2015	30.73	20.27	19.57	0.70	--	2.00	217.62	0.02
MW-19	29-May-2015	30.73	17.90	17.30	0.60	--	2.00	219.62	0.01
MW-19	23-Jun-2015	30.73	17.20	17.12	0.08	--	0.00	219.62	0.08
MW-19	8-Jul-2015	30.73	17.46	17.33	0.13	--	0.50	220.12	0.01
MW-19	12-Aug-2015	30.73	18.09	17.97	0.12	--	3.00	223.12	0.02
MW-19	11-Sep-2015	30.73	18.46	18.32	0.14	--	1.50	224.62	0.00
MW-19	15-Oct-2015	30.73	19.04	18.85	0.19	--	1.00	225.62	0.00
MW-19	10-Nov-2015	30.73	18.80	18.60	0.20	--	1.50	227.12	0.00
MW-19	16-Dec-2015	30.73	17.35	17.20	0.15	--	1.00	228.12	0.00
MW-19	21-Jan-2016	30.73	15.41	14.05	1.36	--	2.00	230.12	0.05
MW-19	17-Feb-2016	30.73	14.80	13.95	0.85	--	2.00	232.12	0.04
MW-19	29-Mar-2016	30.73	14.16	13.84	0.32	--	0.50	232.62	0.00
MW-19	27-Apr-2016	30.73	14.35	14.20	0.15	--	0.25	232.87	0.30
MW-19	27-May-2016	30.73	14.65	14.53	0.12	--	0.25	233.12	0.01
MW-19	29-Jun-2016	30.73	15.07	15.00	0.07	--	0.00	233.12	0.07
MW-19	20-Jul-2016	30.73	15.69	15.50	0.19	--	0.25	233.37	0.04
MW-19	31-Aug-2016	30.73	16.45	16.20	0.25	--	0.45	233.82	0.02
MW-19	16-Sep-2016	30.73	16.48	16.31	0.17	--	0.60	234.42	0.05
MW-19	20-Oct-2016	30.73	16.66	16.65	0.01	--	0.50	234.92	0.00
MW-19	28-Nov-2016	30.73	16.60	15.08	1.52	--	1.00	235.92	0.05
MW-19	19-Dec-2016	30.73	15.10	14.61	0.49	--	0.75	236.67	0.00
MW-19	5-Jan-2017	30.73	14.65	14.65	0.00	--	1.00	237.67	0.00
MW-19	14-Feb-2017	30.73	14.97	14.59	0.38	--	0.50	238.17	0.03
MW-19	28-Mar-2017	30.73	13.10	13.08	0.02	--	0.00	238.17	0.02
MW-19	18-Apr-2017	30.73	13.20	13.20	0.00	--	0.50	238.67	0.00
MW-19	26-May-2017	30.73	13.51	13.51	0.00	--	0.00	238.67	0.00
MW-19	23-Jun-2017	30.73	13.83	13.83	0.00	--	0.00	238.67	0.00
MW-19	21-Jul-2017	30.73	14.33	14.32	0.01	--	0.00	238.67	0.01
MW-19	18-Aug-2017	30.73	14.74	14.72	0.02	--	0.00	238.67	0.02
MW-19	26-Sep-2017	30.73	14.91	14.90	0.01	--	0.50	239.17	0.01
MW-19	30-Oct-2017	30.73	14.66	14.65	0.01	--	0.50	239.67	0.01
MW-19	17-Nov-2017	30.73	14.49	14.45	0.04	--	0.00	239.67	0.04
MW-19	13-Dec-2017	30.73	14.29	14.27	0.02	--	0.00	239.67	0.02
MW-19	26-Jan-2018	30.73	13.84	13.80	0.04	--	0.00	239.67	0.04
MW-19	14-Feb-2018	30.73	14.08	14.07	0.01	--	0.00	239.67	0.01
MW-19	26-Mar-2018	30.73	14.20	14.15	0.05	--	1.00	240.67	0.01
MW-19	3-May-2018	30.73	14.24	14.20	0.04	--	0.00	240.67	0.04
MW-19	31-May-2018	30.73	14.55	14.54	0.01	--	0.00	240.67	0.01
MW-19	21-Jun-2018	30.73	14.98	14.97	0.01	--	0.00	240.67	0.01
MW-19	17-Jul-2018	30.73	15.21	15.20	0.01	--	0.00	240.67	0.01
MW-19	17-Aug-2018	30.73	15.93	15.92	0.01	--	0.00	240.67	0.01
MW-19	16-Oct-2018	30.73	16.67	16.66	0.01	--	0.00	240.67	0.01
MW-19	5-Nov-2018	30.73	16.53	16.52	0.01	--	0.00	240.67	0.01
MW-19	5-Dec-2018	30.73	16.06	16.05	0.01	--	0.00	240.67	0.01
MW-19	31-Dec-2018	30.73	15.53	15.08	0.45	--	3.00	243.67	0.00
MW-19	18-Jan-2019	30.73	15.62	15.07	0.55	15.60	1.50	245.17	0.05
MW-19	21-Feb-2019	30.73	14.56	14.42	0.14	16.29	0.50	245.67	0.01
MW-19	2-Apr-2019	30.73	14.99	14.92	0.07	15.80	0.00	245.67	0.07
MW-19	18-Apr-2019	30.73	14.71	14.60	0.11	16.12	0.10	245.77	0.01
MW-19	16-May-2019	30.73	15.11	15.10	0.01	15.63	0.00	245.77	0.01
MW-19	19-Jun-2019	30.73	15.57	15.56	0.01	15.17	0.00	245.77	0.01
MW-19	23-Jul-2019	30.73	16.25	16.24	0.01	14.49	0.00	245.77	0.01
MW-19	22-Aug-2019	30.73	16.09	--	0.00	14.64	0.00	245.77	0.00
MW-19	25-Sep-2019	30.73	16.26	16.25	0.01	14.48	0.00	245.77	0.00
MW-19	25-Oct-2019	30.73	16.21	16.20	0.01	14.53	0.00	245.77	0.01
MW-19	20-Nov-2019	30.73	16.33	16.32	0.01	14.41	0.00	245.77	0.01
MW-19	9-Dec-2019	30.73	16.65	16.64	0.01	14.09	0.00	245.77	0.01
MW-19	18-Feb-2020	30.73	14.38	14.35	0.03	16.38	0.00	245.77	0.03
MW-19	28-Feb-2020	30.73	14.50	14.49	0.01	16.24	0.20	245.97	0.01
MW-19	19-Mar-2020	30.73	14.93	14.92	0.01	15.81	0.00	245.97	0.01
MW-19	20-Apr-2020	30.73	14.75	14.74	0.01	15.99	0.00	245.97	0.01
MW-19	29-May-2020	30.73	15.53	15.52	0.01	15.21	0.00	245.97	0.01
MW-19	11-Jun-2020	30.73	14.97	14.96	0.01	15.77	0.00	245.97	0.01
MW-19	15-Jul-2020	30.73	15.90	15.88	0.02	14.85	0.00	245.97	0.02
MW-19	31-Aug-2020	30.73	15.65	15.64	0.01	15.09	0.00	245.97	0.01
MW-19	28-Sep-2020	30.73	17.29	17.28	0.01	13.45	0.00	245.97	0.01
MW-19	23-Oct-2020	30.73	17.02	17.01	0.01	13.72	0.00	245.97	0.01
MW-19	13-Nov-2020	30.73	16.85	16.84	0.01	13.89	0.00	245.97	0.01
MW-19	10-Dec-2020	30.73	16.06	16.05	0.01	14.68	0.00	245.97	0.01
MW-19	20-Jan-2021	30.73	14.40	--	0.00	16.33	0.00	243.87	0.00
MW-19	24-Feb-2021	30.73	13.94	--	0.00	16.79	0.00	243.87	0.00

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
MW-19	6-Jan-2022	30.73	14.79	13.92	0.87	16.71	1.50	245.37	0.06
MW-20	27-Aug-2003	30.73	20.58	19.46	1.12	11.15	2.00	2.00	0.04
MW-20	3-Sep-2003	30.73	19.99	19.59	0.40	11.10	0.50	2.50	0.03
MW-20	11-Sep-2003	30.73	20.15	19.91	0.24	10.79	0.50	3.00	0.01
MW-20	17-Sep-2003	30.73	20.27	19.99	0.28	10.71	0.50	3.50	0.01
MW-20	30-Sep-2003	30.73	20.32	20.17	0.15	10.54	0.10	3.60	0.00
MW-20	14-Oct-2003	30.73	20.38	20.26	0.12	10.46	0.10	3.70	0.00
MW-20	29-Oct-2003	30.73	20.36	20.21	0.15	10.50	0.10	3.80	0.00
MW-20	13-Nov-2003	30.73	20.45	20.37	0.08	10.35	0.10	3.90	0.01
MW-20	26-Nov-2003	30.73	20.41	20.35	0.06	10.37	0.10	4.00	0.02
MW-20	24-Dec-2003	30.73	20.66	18.68	1.98	11.83	0.30	4.30	0.04
MW-20	30-Dec-2003	30.73	20.69	18.75	1.94	11.77	0.20	4.50	0.01
MW-20	9-Jan-2004	30.73	20.71	18.88	1.83	11.65	0.10	4.60	0.01
MW-20	15-Jan-2004	30.73	20.70	17.66	3.04	12.74	1.50	6.10	0.04
MW-20	21-Jan-2004	30.73	19.22	16.14	3.08	14.25	1.50	7.60	0.03
MW-20	29-Jan-2004	30.73	19.90	15.55	4.35	14.70	2.00	9.60	0.01
MW-20	3-Feb-2004	30.73	20.90	15.42	5.48	14.71	2.50	12.10	0.01
MW-20	12-Feb-2004	30.73	18.05	15.40	2.65	15.04	1.50	13.60	0.02
MW-20	18-Feb-2004	30.73	19.02	15.62	3.40	14.74	2.20	15.80	0.00
MW-20	25-Feb-2004	30.73	16.56	15.44	1.12	15.17	0.70	16.50	0.00
MW-20	3-Mar-2004	30.73	16.95	15.85	1.10	14.76	0.50	17.00	0.01
MW-20	10-Mar-2004	30.73	17.66	16.00	1.66	14.55	1.00	18.00	0.02
MW-20	18-Mar-2004	30.73	17.29	15.92	1.37	14.66	0.75	18.75	0.02
MW-20	24-Mar-2004	30.73	17.75	16.20	1.55	14.36	1.00	19.75	0.00
MW-20	1-Apr-2004	30.73	17.78	16.92	0.86	13.72	0.50	20.25	0.00
MW-20	14-Jan-2005	30.73	20.70	19.75	0.95	10.88	1.20	21.45	0.01
MW-20	21-Jan-2005	30.73	20.00	19.60	0.40	11.09	1.20	22.65	0.10
MW-20	28-Jan-2005	30.73	19.70	19.50	0.20	11.21	0.10	22.75	0.05
MW-20	4-Feb-2005	30.73	19.73	19.61	0.12	11.11	0.05	22.80	0.06
MW-20	11-Feb-2005	30.73	19.48	19.38	0.10	11.34	0.05	22.85	0.03
MW-20	18-Feb-2005	30.73	19.51	19.45	0.06	11.27	0.00	22.85	0.06
MW-20	25-Feb-2005	30.73	19.77	19.69	0.08	11.03	0.00	22.85	0.08
MW-20	11-Mar-2005	30.73	19.89	19.82	0.07	10.90	0.20	23.05	0.00
MW-20	25-Mar-2005	30.73	20.18	20.12	0.06	10.60	0.00	23.05	0.06
MW-20	30-Apr-2005	30.73	19.49	19.45	0.04	11.28	0.00	23.05	0.04
MW-20	31-May-2005	30.73	18.65	18.60	0.05	12.12	0.00	23.05	0.05
MW-20	24-Jun-2005	30.73	21.02	18.57	2.45	11.89	3.00	26.05	0.00
MW-20	8-Jul-2005	30.73	20.10	18.95	1.15	11.65	1.00	27.05	0.05
MW-20	15-Jul-2005	30.73	19.62	19.14	0.48	11.54	0.25	27.30	0.05
MW-20	22-Jul-2005	30.73	19.61	19.33	0.28	11.37	2.50	29.80	0.09
MW-20	29-Jul-2005	30.73	19.67	19.45	0.22	11.26	2.00	31.80	0.02
MW-20	5-Aug-2005	30.73	19.70	19.61	0.09	11.11	0.00	31.80	0.09
MW-20	12-Aug-2005	30.73	19.85	19.72	0.13	11.00	0.15	31.95	0.02
MW-20	26-Aug-2005	30.73	20.07	19.93	0.14	10.78	0.50	32.45	0.02
MW-20	9-Sep-2005	30.73	20.15	20.10	0.05	10.62	0.00	32.45	0.05
MW-20	24-Sep-2005	30.73	20.36	20.28	0.08	10.44	0.00	32.45	0.08
MW-20	21-Oct-2005	30.73	20.58	20.50	0.08	10.22	0.00	32.45	0.08
MW-20	28-Nov-2005	30.73	20.05	19.95	0.10	10.77	0.00	32.45	0.10
MW-20	3-Jan-2006	30.73	21.43	17.81	3.62	12.52	3.50	35.95	0.10
MW-20	17-Jan-2006	30.73	19.77	14.86	4.91	15.33	3.75	39.70	0.03
MW-20	23-Jan-2006	30.73	16.68	15.07	1.61	15.48	1.50	41.20	0.06
MW-20	31-Jan-2006	30.73	15.91	14.95	0.96	15.67	0.70	41.90	0.03
MW-20	17-Feb-2006	30.73	16.50	15.21	1.29	15.38	2.00	43.90	0.03
MW-20	24-Feb-2006	30.73	16.09	15.52	0.57	15.15	1.50	45.40	0.05
MW-20	3-Mar-2006	30.73	15.81	15.45	0.36	15.24	0.25	45.65	0.01
MW-20	14-Mar-2006	30.73	16.19	15.81	0.38	14.88	0.25	45.90	0.05
MW-20	21-Mar-2006	30.73	16.30	16.09	0.21	14.62	0.25	46.15	0.06
MW-20	31-Mar-2006	30.73	16.65	16.30	0.35	14.39	0.40	46.55	0.03
MW-20	6-Apr-2006	30.73	15.80	15.57	0.23	15.13	0.10	46.65	0.00
MW-20	14-Apr-2006	30.73	15.96	15.59	0.37	15.10	0.30	46.95	0.05
MW-20	24-Apr-2006	30.73	16.02	15.50	0.52	15.17	0.75	47.70	0.00
MW-20	9-May-2006	30.73	16.60	15.95	0.65	14.71	0.70	48.40	0.05
MW-20	19-May-2006	30.73	16.51	15.89	0.62	14.77	1.10	49.50	0.01
MW-20	25-May-2006	30.73	16.41	15.84	0.57	14.83	0.80	50.30	0.01
MW-20	2-Jun-2006	30.73	16.32	15.78	0.54	14.89	0.50	50.80	0.04
MW-20	Product Skimmer Installed in Well								
MW-20	9-Jun-2006	30.73	--	--	--	--	0.75	51.55	--
MW-20	19-Jun-2006	30.73	--	--	--	--	0.25	51.80	--
MW-20	28-Jun-2006	30.73	--	--	--	--	0.30	52.10	--
MW-20	3-Jul-2006	30.73	--	--	--	--	0.15	52.25	--
MW-20	10-Jul-2006	30.73	--	--	--	--	0.10	52.35	--
MW-20	18-Jul-2006	30.73	--	--	--	--	0.20	52.55	--

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
MW-20	25-Jul-2006	30.73	--	--	--	--	0.50	53.05	--
MW-20	4-Aug-2006	30.73	--	--	--	--	0.50	53.55	--
MW-20	11-Aug-2006	30.73	--	--	--	--	0.20	53.75	--
MW-20	18-Aug-2006	30.73	--	--	--	--	0.20	53.95	--
MW-20	23-Aug-2006	30.73	--	--	--	--	0.10	54.05	--
MW-20	8-Sep-2006	30.73	--	--	--	--	0.00	54.05	--
MW-20	20-Sep-2006	30.73	--	--	--	--	0.20	54.25	--
MW-20	3-Oct-2006	30.73	--	--	--	--	0.05	54.30	--
MW-20	6-Nov-2006	30.73	--	--	--	--	0.10	54.40	--
MW-20	22-Nov-2006	30.73	--	--	--	--	0.10	54.50	--
MW-20	4-Dec-2006	30.73	--	--	--	--	1.90	56.40	--
MW-20	13-Dec-2006	30.73	--	--	--	--	1.30	57.70	--
MW-20	18-Dec-2006	30.73	--	--	--	--	1.20	58.90	--
MW-20	26-Dec-2006	30.73	--	--	--	--	1.20	60.10	--
MW-20	5-Jan-2007	30.73	--	--	--	--	1.30	61.40	--
MW-20	9-Jan-2007	30.73	--	--	--	--	1.20	62.60	--
MW-20	15-Jan-2007	30.73	--	--	--	--	0.00	62.60	--
MW-20	26-Jan-2007	30.73	--	--	--	--	1.20	63.80	--
MW-20	31-Jan-2007	30.73	--	--	--	--	1.10	64.90	--
MW-20	9-Feb-2007	30.73	--	--	--	--	1.00	65.90	--
MW-20	13-Feb-2007	30.73	--	--	--	--	1.00	66.90	--
MW-20	28-Feb-2007	30.73	--	--	--	--	1.10	68.00	--
MW-20	6-Mar-2007	30.73	--	--	--	--	1.00	69.00	--
MW-20	23-Mar-2007	30.73	--	--	--	--	1.00	70.00	--
MW-20	29-Mar-2007	30.73	--	--	--	--	4.00	74.00	--
MW-20	5-Apr-2007	30.73	--	--	--	--	1.00	75.00	--
MW-20	11-Apr-2007	30.73	--	--	--	--	1.20	76.20	--
MW-20	5-Apr-2007	30.73	--	--	--	--	1.00	77.20	--
MW-20	11-Apr-2007	30.73	--	--	--	--	1.20	78.40	--
MW-20	16-Apr-2007	30.73	--	--	--	--	2.70	81.10	--
MW-20	25-Apr-2007	30.73	--	--	--	--	0.30	81.40	--
MW-20	3-May-2007	30.73	--	--	--	--	4.10	85.50	--
MW-20	10-May-2007	30.73	--	--	--	--	0.80	86.30	--
MW-20	15-May-2007	30.73	--	--	--	--	1.20	87.50	--
MW-20	25-May-2007	30.73	--	--	--	--	0.50	88.00	--
MW-20	4-Jun-2007	30.73	--	--	--	--	0.50	88.50	--
MW-20	13-Jun-2007	30.73	--	--	--	--	0.50	89.00	--
MW-20	19-Jun-2007	30.73	--	--	--	--	0.00	89.00	--
MW-20	27-Jun-2007	30.73	--	--	--	--	1.00	90.00	--
MW-20	9-Jul-2007	30.73	--	--	--	--	0.50	90.50	--
MW-20	25-Jul-2007	30.73	--	--	--	--	0.10	90.60	--
MW-20	9-Aug-2007	30.73	--	--	--	--	0.10	90.70	--
MW-20	22-Aug-2007	30.73	--	--	--	--	0.10	90.80	--
MW-20	7-Sep-2007	30.73	--	--	--	--	0.10	90.90	--
MW-20	14-Sep-2007	30.73	--	--	--	--	0.90	91.80	--
MW-20	19-Sep-2007	30.73	--	--	--	--	0.10	91.90	--
MW-20	4-Oct-2007	30.73	--	--	--	--	0.10	92.00	--
MW-20	11-Oct-2007	30.73	--	--	--	--	0.00	92.00	--
MW-20	24-Oct-2007	30.73	--	--	--	--	0.10	92.10	--
MW-20	8-Nov-2007	30.73	--	--	--	--	0.10	92.20	--
MW-20	21-Nov-2007	30.73	--	--	--	--	0.00	92.20	--
MW-20	7-Dec-2007	30.73	--	--	--	--	0.05	92.25	--
MW-20	21-Dec-2007	30.73	--	--	--	--	0.05	92.30	--
MW-20	3-Jan-2008	30.73	19.70	17.44	2.26	13.04	3.00	95.30	0.02
MW-20	18-Jan-2008	30.73	18.00	16.93	1.07	13.68	2.50	97.80	0.00
MW-20	24-Jan-2008	30.73	17.57	16.57	1.00	14.05	1.00	98.80	0.00
MW-20	31-Jan-2008	30.73	17.61	16.76	0.85	13.88	1.75	100.55	0.00
MW-20	6-Feb-2008	30.73	18.02	16.55	1.47	14.02	3.00	103.55	0.00
MW-20	15-Feb-2008	30.73	17.46	15.94	1.52	14.62	4.25	107.80	0.00
MW-20	29-Feb-2008	30.73	18.18	16.28	1.90	14.24	2.50	110.30	0.00
MW-20	14-Mar-2008	30.73	17.62	16.59	1.03	14.03	2.50	112.80	0.00
MW-20	21-Mar-2008	30.73	17.40	17.33	0.07	13.39	1.00	113.80	0.00
MW-20	11-Apr-2008	30.73	17.80	17.57	0.23	13.13	2.00	115.80	0.00
MW-20	17-Apr-2008	30.73	17.67	17.56	0.11	13.16	1.06	116.86	0.00
MW-20	24-Apr-2008	30.73	17.84	17.71	0.13	13.01	0.26	117.12	0.00
MW-20	2-May-2008	30.73	17.58	17.50	0.08	13.22	0.25	117.37	0.08
MW-20	8-May-2008	30.73	17.63	17.59	0.04	13.14	1.30	118.67	0.04
MW-20	14-May-2008	30.73	17.92	17.88	0.04	12.85	0.03	118.70	0.04
MW-20	30-May-2008	30.73	16.79	16.71	0.08	14.01	0.03	118.73	0.08
MW-20	13-Jun-2008	30.73	16.50	16.43	0.07	14.29	0.26	118.99	0.00
MW-20	25-Jun-2008	30.73	17.05	16.86	0.19	13.85	0.00	118.99	0.00
MW-20	11-Jul-2008	30.73	17.85	17.76	0.09	12.96	0.13	119.12	0.09
MW-20	28-Jul-2008	30.73	18.22	18.21	0.01	12.52	0.03	119.15	0.01
MW-20	13-Aug-2008	30.73	19.30	19.28	0.02	11.45	0.00	119.15	0.02

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
MW-20	27-Aug-2008	30.73	19.56	19.55	0.01	11.18	0.13	119.28	0.01
MW-20	8-Sep-2008	30.73	19.71	19.68	0.03	11.05	0.00	119.28	0.03
MW-20	18-Sep-2008	30.73	19.86	19.84	0.02	10.89	0.03	119.31	0.02
MW-20	30-Sep-2008	30.73	20.05	20.02	0.03	10.71	0.00	119.31	0.03
MW-20	16-Oct-2008	30.73	20.41	20.40	0.01	10.33	0.00	119.31	0.01
MW-20	30-Oct-2008	30.73	20.40	20.39	0.01	10.34	0.00	119.31	0.01
MW-20	14-Nov-2008	30.73	20.55	20.54	0.01	10.19	0.00	119.31	0.01
MW-20	26-Nov-2008	30.73	20.28	20.23	0.05	10.49	0.00	119.31	0.05
MW-20	16-Dec-2008	30.73	20.47	20.46	0.01	10.27	0.00	119.31	0.01
MW-20	29-Dec-2008	30.73	20.46	20.44	0.02	10.29	0.00	119.31	0.02
MW-20	15-Jan-2009	30.73	18.62	18.07	0.55	12.60	0.33	119.64	0.00
MW-20	23-Jan-2009	30.73	18.85	17.93	0.92	12.70	0.40	120.04	0.01
MW-20	29-Jan-2009	30.73	18.42	18.28	0.14	12.43	0.26	120.30	0.00
MW-20	4-Feb-2009	30.73	18.31	18.03	0.28	12.67	0.79	121.09	0.01
MW-20	12-Feb-2009	30.73	18.53	18.40	0.13	12.32	0.60	121.69	0.00
MW-20	19-Feb-2009	30.73	18.88	18.81	0.07	11.91	0.00	121.69	0.07
MW-20	10-Mar-2009	30.73	19.15	19.12	0.03	11.61	0.05	121.74	0.03
MW-20	27-Mar-2009	30.73	19.06	19.03	0.03	11.70	0.05	121.79	0.03
MW-20	16-Apr-2009	30.73	18.70	18.67	0.03	12.06	0.00	121.79	0.03
MW-20	14-May-2009	30.73	18.51	18.48	0.03	12.25	0.00	121.79	0.03
MW-20	5-Jun-2009	30.73	17.95	17.94	0.01	12.79	0.05	121.84	0.00
MW-20	13-Jul-2009	30.73	19.28	19.28	0.00	11.45	0.00	121.84	0.00
MW-20	10-Aug-2009	30.73	20.10	20.10	0.00	10.63	0.00	121.84	0.00
MW-20	9-Sep-2009	30.73	20.84	20.82	0.02	9.91	0.00	121.84	0.02
MW-20	15-Oct-2009	30.73	20.84	20.80	0.04	9.93	0.00	121.84	0.04
MW-20	18-Nov-2009	30.73	20.46	20.46	0.00	10.27	0.00	121.84	0.00
MW-20	16-Dec-2009	30.73	19.90	19.90	0.00	10.83	0.00	121.84	0.00
MW-20	13-Jan-2010	30.73	20.22	18.38	1.84	12.15	2.50	124.34	0.00
MW-20	21-Jan-2010	30.73	18.67	17.62	1.05	12.99	2.10	126.44	0.00
MW-20	26-Jan-2010	30.73	18.45	17.80	0.65	12.86	1.00	127.44	0.00
MW-20	5-Feb-2010	30.73	--	--	--	--	1.00	128.44	0.00
MW-20	2-Mar-2010	30.73	20.57	17.51	3.06	12.88	2.65	131.09	0.02
MW-20	12-Mar-2010	30.73	18.70	17.35	1.35	13.23	2.25	133.34	0.01
MW-20	25-Mar-2010	30.73	18.56	17.49	1.07	13.12	2.00	135.34	0.01
MW-20	2-Apr-2010	30.73	18.15	17.23	0.92	13.40	2.50	137.84	0.00
MW-20	9-Apr-2010	30.73	18.39	17.43	0.96	13.19	1.25	139.09	0.01
MW-20	16-Apr-2010	30.73	18.44	17.39	1.05	13.22	1.25	140.34	0.03
MW-20	23-Apr-2010	30.73	18.44	17.60	0.84	13.04	2.00	142.34	0.01
MW-20	4-May-2010	30.73	19.58	17.59	1.99	12.92	2.25	144.59	0.02
MW-20	8-Jun-2010	30.73	17.65	16.05	1.60	14.50	1.50	146.09	0.05
MW-20	9-Jul-2010	30.73	19.73	16.80	2.93	13.61	3.75	149.84	0.01
MW-20	23-Jul-2010	30.73	19.05	17.90	1.15	12.70	1.25	151.09	0.01
MW-20	6-Aug-2010	30.73	18.66	18.47	0.19	12.24	1.30	152.39	0.01
MW-20	19-Aug-2010	30.73	18.96	18.90	0.06	11.82	0.00	152.39	0.01
MW-20	27-Aug-2010	30.73	18.91	18.88	0.03	11.85	0.50	152.89	0.01
MW-20	17-Sep-2010	30.73	19.44	19.43	0.01	11.30	0.00	152.89	0.01
MW-20	8-Oct-2010	30.73	19.66	19.63	0.03	11.10	0.00	152.89	0.03
MW-20	11-Nov-2010	30.73	19.96	19.92	0.04	10.81	0.00	152.89	0.04
MW-20	15-Dec-2010	30.73	19.93	16.93	3.00	13.47	5.00	157.89	0.02
MW-20	21-Dec-2010	30.73	18.68	16.39	2.29	14.09	2.25	160.14	0.03
MW-20	30-Dec-2010	30.73	17.84	15.03	2.81	15.39	3.00	163.14	0.02
MW-20	6-Jan-2011	30.73	15.81	15.62	0.19	15.09	2.00	165.14	0.01
MW-20	13-Jan-2011	30.73	16.30	16.07	0.23	14.63	1.00	166.14	0.01
MW-20	19-Jan-2011	30.73	15.76	15.63	0.13	15.09	0.75	166.89	0.03
MW-20	28-Jan-2011	30.73	15.55	15.43	0.12	15.29	0.75	167.64	0.02
MW-20	9-Feb-2011	30.73	16.92	16.13	0.79	14.51	2.00	169.64	0.01
MW-20	23-Feb-2011	30.73	16.30	16.29	0.01	14.44	0.00	169.64	0.01
MW-20	9-Mar-2011	30.73	15.82	15.53	0.29	15.17	0.75	170.39	0.02
MW-20	29-Mar-2011	30.73	16.25	15.27	0.98	15.35	1.25	171.64	0.02
MW-20	21-Apr-2011	30.73	16.11	14.84	1.27	15.75	1.00	172.64	0.01
MW-20	9-Jun-2011	30.73	15.15	14.33	0.82	16.31	0.95	173.59	0.02
MW-20	7-Jul-2011	30.73	15.27	15.06	0.21	15.65	0.50	174.09	0.01
MW-20	3-Aug-2011	30.73	18.35	16.23	2.12	14.27	2.00	176.09	0.01
MW-20	8-Sep-2011	30.73	18.76	18.26	0.50	12.42	0.50	176.59	0.02
MW-20	3-Oct-2011	30.73	19.09	18.89	0.20	11.82	0.50	177.09	0.02
MW-20	10-Nov-2011	30.73	19.53	19.50	0.03	11.23	0.30	177.39	0.03
MW-20	1-Dec-2011	30.73	19.19	19.18	0.01	11.55	0.00	177.39	0.01
MW-20	6-Jan-2012	30.73	19.15	--	0.00	11.58	0.25	177.64	--
MW-20	25-Jan-2012	30.73	--	--	--	--	0.10	177.74	--
MW-20	3-Mar-2012	30.73	19.80	18.00	1.80	12.53	4.00	181.74	0.26
MW-20	6-Mar-2012	30.73	18.90	17.57	1.33	13.01	1.50	183.24	0.00
MW-20	14-Mar-2012	30.73	18.62	17.19	1.43	13.38	2.55	185.79	0.01
MW-20	22-Mar-2012	30.73	18.67	16.43	2.24	14.05	1.50	187.29	0.01

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
MW-20	29-Mar-2012	30.73	16.25	15.84	0.41	14.84	2.00	189.29	0.03
MW-20	5-Apr-2012	30.73	14.35	14.35	0.00	16.38	0.50	189.79	0.00
MW-20	13-Apr-2012	30.73	14.37	14.33	0.04	16.40	0.55	190.34	0.04
MW-20	13-Apr-2012	30.73	16.65	15.26	1.39	15.32	2.30	192.64	0.02
MW-20	14-May-2012	30.73	--	--	--	--	0.79	193.43	--
MW-20	25-May-2012	30.73	16.58	15.32	1.26	15.27	1.75	195.18	0.00
MW-20	12-Jun-2012	30.73	15.67	15.61	0.06	15.11	1.25	196.43	0.00
MW-20	3-Jul-2012	30.73	16.40	15.71	0.69	14.94	0.50	196.93	0.01
MW-20	23-Aug-2012	30.73	18.65	18.31	0.34	12.38	0.60	197.53	0.05
MW-20	24-Sep-2012	30.73	19.42	19.25	0.17	11.46	0.25	197.78	0.02
MW-20	8-Oct-2012	30.73	19.61	19.50	0.11	11.22	0.25	198.03	0.02
MW-20	14-Nov-2012	30.73	19.51	19.48	0.03	11.25	0.00	198.03	0.03
MW-20	20-Dec-2012	30.73	17.71	15.62	2.09	14.88	2.50	200.53	0.00
MW-20	4-Jan-2013	30.73	16.38	15.62	0.76	15.03	2.30	202.83	0.04
MW-20	18-Jan-2013	30.73	16.56	16.26	0.30	14.44	1.25	204.08	0.03
MW-20	31-Jan-2013	30.73	17.03	17.00	0.03	13.73	1.00	205.08	0.01
MW-20	6-Mar-2013	30.73	17.78	17.75	0.03	12.98	0.10	205.18	0.01
MW-20	3-Apr-2013	30.73	17.65	17.54	0.11	13.18	0.90	206.08	--
MW-20	6-May-2013	30.73	16.54	15.74	0.80	14.90	1.50	207.58	0.01
MW-20	12-Jun-2013	30.73	18.11	18.10	0.01	12.63	1.00	208.58	0.01
MW-20	16-Jul-2013	30.73	18.81	18.78	0.03	11.95	0.50	209.08	0.03
MW-20	26-Aug-2013	30.73	20.12	20.01	0.11	10.71	0.30	209.38	0.11
MW-20	25-Sep-2013	30.73	20.15	20.10	0.05	10.62	0.20	209.58	0.05
MW-20	31-Oct-2013	30.73	20.14	20.10	0.04	10.63	0.00	209.58	0.04
MW-20	27-Nov-2013	30.73	19.95	19.93	0.02	10.80	0.00	209.58	0.02
MW-20	17-Dec-2013	30.73	19.90	19.89	0.01	10.84	0.00	209.58	0.01
MW-20	27-Jan-2014	30.73	20.35	20.34	0.01	10.39	0.00	209.58	0.01
MW-20	27-Feb-2014	30.73	19.30	19.30	0.00	11.43	0.00	209.58	0.00
MW-20	26-Mar-2014	30.73	18.54	17.01	1.53	13.55	2.00	211.58	0.01
MW-20	15-Apr-2014	30.73	18.11	17.42	0.69	13.23	0.50	212.08	0.01
MW-20	9-May-2014	30.73	17.25	16.80	0.45	13.88	1.25	213.33	0.00
MW-20	30-Jun-2014	30.73	18.20	17.80	0.40	12.89	0.50	213.83	0.00
MW-20	16-Jul-2014	30.73	19.00	18.45	0.55	12.22	2.00	215.83	0.00
MW-20	4-Aug-2014	30.73	18.95	18.90	0.05	11.82	0.25	216.08	0.00
MW-20	30-Sep-2014	30.73	20.40	19.80	0.60	10.86	0.50	216.58	0.00
MW-20	27-Oct-2014	30.73	19.40	19.20	0.20	11.51	0.25	216.83	0.00
MW-20	24-Nov-2014	30.73	19.90	19.70	0.20	11.01	1.00	217.83	0.00
MW-20	11-Dec-2014	30.73	18.84	18.83	0.01	11.90	0.00	217.83	0.00
MW-20	29-Jan-2015	30.73	18.40	17.80	0.60	12.86	1.00	218.83	0.10
MW-20	27-Feb-2015	30.73	20.00	19.75	0.25	10.95	0.50	219.33	0.00
MW-20	27-Mar-2015	30.73	18.60	17.49	1.11	13.12	1.50	220.83	0.02
MW-20	28-Apr-2015	30.73	18.71	18.00	0.71	12.65	2.00	222.83	0.01
MW-20	29-May-2015	30.73	19.32	19.02	0.30	11.68	1.50	224.33	0.01
MW-20	23-Jun-2015	30.73	19.74	19.44	0.30	11.26	2.00	226.33	0.01
MW-20	8-Jul-2015	30.73	19.66	19.58	0.08	11.14	0.00	226.33	0.08
MW-20	12-Aug-2015	30.73	20.21	19.98	0.23	10.72	3.00	229.33	0.02
MW-20	11-Sep-2015	30.73	20.48	20.30	0.18	10.41	1.50	230.83	0.01
MW-20	15-Oct-2015	30.73	20.73	20.61	0.12	10.11	1.00	231.83	0.00
MW-20	10-Nov-2015	30.73	20.76	20.62	0.14	10.09	0.75	232.58	0.00
MW-20	16-Dec-2015	30.73	18.25	18.15	0.10	12.57	1.00	233.58	0.00
MW-20	21-Jan-2016	30.73	15.68	15.64	0.04	15.09	1.00	234.58	0.00
MW-20	17-Feb-2016	30.73	15.42	15.39	0.03	15.34	0.00	234.58	0.00
MW-20	29-Mar-2016	30.73	15.70	15.20	0.50	15.48	0.50	235.08	0.00
MW-20	27-Apr-2016	30.73	16.19	15.71	0.48	14.97	0.50	235.58	0.03
MW-20	27-May-2016	30.73	17.40	17.13	0.27	13.57	0.50	236.08	0.02
MW-20	29-Jun-2016	30.73	18.95	18.35	0.60	12.31	1.50	237.58	0.06
MW-20	20-Jul-2016	30.73	19.32	19.03	0.29	11.67	0.25	237.83	0.03
MW-20	31-Aug-2016	30.73	20.10	19.78	0.32	10.91	0.50	238.33	0.05
MW-20	16-Sep-2016	30.73	20.39	20.03	0.36	10.66	0.65	238.98	0.06
MW-20	20-Oct-2016	30.73	20.05	20.00	0.05	10.72	0.50	239.48	0.00
MW-20	28-Nov-2016	30.73	18.95	18.91	0.04	11.82	0.00	239.48	0.00
MW-20	19-Dec-2016	30.73	18.30	17.50	0.80	13.14	1.50	240.98	0.00
MW-20	5-Jan-2017	30.73	18.55	17.52	1.03	13.10	1.50	242.48	0.01
MW-20	14-Feb-2017	30.73	16.76	15.17	1.59	15.39	4.00	246.48	0.02
MW-20	28-Mar-2017	30.73	14.38	13.90	0.48	16.78	1.50	247.98	0.00
MW-20	18-Apr-2017	30.73	14.42	14.20	0.22	16.51	1.50	249.48	0.00
MW-20	26-May-2017	30.73	14.66	14.42	0.24	16.28	1.50	250.98	0.01
MW-20	23-Jun-2017	30.73	15.12	15.11	0.01	15.62	0.00	250.98	0.01
MW-20	21-Jul-2017	30.73	16.11	15.80	0.31	14.90	0.10	251.08	0.00
MW-20	18-Aug-2017	30.73	18.52	18.44	0.08	12.28	0.00	251.08	0.08
MW-20	26-Sep-2017	30.73	19.10	18.99	0.11	11.73	0.50	251.58	0.00
MW-20	30-Oct-2017	30.73	18.95	18.91	0.04	11.82	0.25	251.83	0.04
MW-20	17-Nov-2017	30.73	18.85	18.69	0.16	12.02	0.40	252.23	0.03

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
MW-20	13-Dec-2017	30.73	17.34	17.16	0.18	13.55	1.25	253.48	0.02
MW-20	26-Jan-2018	30.73	16.65	16.14	0.51	14.53	0.50	253.98	0.05
MW-20	14-Feb-2018	30.73	16.17	15.94	0.23	14.76	0.85	254.83	0.05
MW-20	26-Mar-2018	30.73	17.31	17.20	0.11	13.52	1.50	256.33	0.01
MW-20	3-May-2018	30.73	16.10	16.06	0.04	14.67	0.50	256.83	0.04
MW-20	31-May-2018	30.73	16.92	15.41	1.51	15.15	3.10	259.93	0.03
MW-20	21-Jun-2018	30.73	18.33	17.75	0.58	12.92	1.50	261.43	0.01
MW-20	17-Jul-2018	30.73	18.97	18.96	0.01	11.77	0.00	261.43	0.01
MW-20	17-Aug-2018	30.73	19.77	19.76	0.01	10.97	0.00	261.43	0.01
MW-20	16-Oct-2018	30.73	20.69	20.64	0.05	10.08	0.10	261.53	0.01
MW-20	5-Nov-2018	30.73	20.79	20.70	0.09	10.02	0.20	261.73	0.01
MW-20	5-Dec-2018	30.73	20.57	20.55	0.02	10.18	0.00	261.73	0.02
MW-20	31-Dec-2018	30.73	19.92	19.91	0.01	10.82	0.00	261.73	0.01
MW-20	18-Jan-2019	30.73	19.52	19.43	0.09	11.29	0.50	262.23	0.00
MW-20	21-Feb-2019	30.73	18.21	17.70	0.51	12.97	1.50	263.73	0.01
MW-20	2-Apr-2019	30.73	18.34	18.24	0.10	12.48	0.50	264.23	0.01
MW-20	18-Apr-2019	30.73	17.23	17.11	0.12	13.61	0.01	264.24	0.01
MW-20	16-May-2019	30.73	17.91	17.75	0.16	12.96	0.01	264.25	0.01
MW-20	19-Jun-2019	30.73	18.88	18.83	0.05	11.89	0.00	264.25	0.05
MW-20	23-Jul-2019	30.73	20.14	20.12	0.02	10.61	0.00	264.25	0.02
MW-20	22-Aug-2019	30.73	19.85	19.84	0.01	10.89	0.00	264.25	0.01
MW-20	25-Sep-2019	30.73	20.72	20.56	0.16	10.15	0.25	264.50	0.01
MW-20	25-Oct-2019	30.73	20.86	20.80	0.06	9.92	0.00	264.50	0.06
MW-20	20-Nov-2019	30.73	20.26	20.24	0.02	10.49	0.00	264.50	0.02
MW-20	9-Dec-2019	30.73	20.90	20.89	0.01	9.84	0.00	264.50	0.01
MW-20	18-Feb-2020	30.73	17.41	16.42	0.99	14.20	1.00	265.50	0.02
MW-20	28-Feb-2020	30.73	16.99	16.82	0.17	13.89	0.15	265.65	0.00
MW-20	19-Mar-2020	30.73	18.20	18.18	0.02	12.55	0.05	265.70	0.02
MW-20	20-Apr-2020	30.73	17.32	17.27	0.05	13.45	0.45	266.15	0.00
MW-20	29-May-2020	30.73	18.40	18.35	0.05	12.37	0.00	266.15	0.05
MW-20	11-Jun-2020	30.73	18.07	18.04	0.03	12.69	0.00	266.15	0.03
MW-20	15-Jul-2020	30.73	19.21	19.20	0.01	11.53	0.00	266.15	0.01
MW-20	31-Aug-2020	30.73	19.08	19.07	0.01	11.66	0.00	266.15	0.01
MW-20	28-Sep-2020	30.73	20.64	20.60	0.04	10.13	0.00	266.15	0.04
MW-20	23-Oct-2020	30.73	21.00	20.95	0.05	9.77	0.06	266.21	0.05
MW-20	13-Nov-2020	30.73	20.68	20.67	0.01	10.06	0.00	266.21	0.01
MW-20	10-Dec-2020	30.73	20.30	20.30	0.00	10.43	0.00	266.21	0.00
MW-20	20-Jan-2021	30.73	16.90	16.32	0.58	14.35	0.35	263.79	0.02
MW-20	24-Feb-2021	30.73	16.03	15.94	0.09	14.78	0.10	263.89	0.00
MW-20	6-Jan-2022	30.73	16.01	15.28	0.73	15.37	1.20	265.09	0.03
HC-1	2-Feb-2005	32.36	28.72	--	0.00	3.64	0.00	0.00	0.00
HC-1	2-Jun-2005	32.36	26.42	--	0.00	5.94	0.00	0.00	0.00
HC-1	14-Sep-2005	32.36	30.29	--	0.00	2.07	0.00	0.00	0.00
HC-1	6-Dec-2005	32.36	27.88	--	0.00	4.48	0.00	0.00	0.00
HC-1	13-Mar-2006	32.36	27.05	--	0.00	5.31	0.00	0.00	0.00
HC-1	27-Jun-2006	32.36	25.32	--	0.00	7.04	0.00	0.00	0.00
HC-1	19-Sep-2006	32.36	30.42	--	0.00	1.94	0.00	0.00	0.00
HC-1	13-Dec-2006	32.36	27.40	--	0.00	4.96	0.00	0.00	0.00
HC-1	29-Mar-2007	32.36	24.85	--	0.00	7.51	0.00	0.00	0.00
HC-1	27-Jun-2007	32.36	28.33	--	0.00	4.03	0.00	0.00	0.00
HC-1	18-Sep-2007	32.36	30.65	--	0.00	1.71	0.00	0.00	0.00
HC-2	2-Feb-2005	32.19	27.69	--	0.00	4.50	0.00	0.00	0.00
HC-2	2-Jun-2005	32.19	25.16	--	0.00	7.03	0.00	0.00	0.00
HC-2	14-Sep-2005	32.19	29.88	--	0.00	2.31	0.00	0.00	0.00
HC-2	6-Dec-2005	32.19	27.60	--	0.00	4.59	0.00	0.00	0.00
HC-2	13-Mar-2006	32.19	26.50	--	0.00	5.69	0.00	0.00	0.00
HC-2	27-Jun-2006	32.19	24.20	--	0.00	7.99	0.00	0.00	0.00
HC-2	19-Sep-2006	32.19	29.89	--	0.00	2.30	0.00	0.00	0.00
HC-2	13-Dec-2006	32.19	26.83	--	0.00	5.36	0.00	0.00	0.00
HC-2	29-Mar-2007	32.19	24.43	--	0.00	7.76	0.00	0.00	0.00
HC-2	27-Jun-2007	32.19	27.44	--	0.00	4.75	0.00	0.00	0.00
HC-2	18-Sep-2007	32.19	29.99	--	0.00	2.20	0.00	0.00	0.00
HC-2	6-Dec-2007	32.19	25.41	--	0.00	6.78	0.00	0.00	0.00
HC-2	10-Mar-2008	32.19	27.90	--	0.00	4.29	0.00	0.00	0.00
HC-2	12-Jun-2008	32.19	20.07	--	0.00	12.12	0.00	0.00	0.00
HC-2	8-Sep-2008	32.19	29.44	--	0.00	2.75	0.00	0.00	0.00
HC-2	29-Dec-2008	32.19	28.02	--	0.00	4.17	0.00	0.00	0.00
HC-2	9-Mar-2009	32.19	27.98	--	0.00	4.21	0.00	0.00	0.00
HC-2	4-Jun-2009	32.19	22.40	--	0.00	9.79	0.00	0.00	0.00
HC-3	2-Feb-2005	32.88	25.17	--	0.00	7.71	0.00	0.00	0.00
HC-3	2-Jun-2005	32.88	26.72	--	0.00	6.16	0.00	0.00	0.00

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
HC-3	14-Sep-2005	32.88	31.24	--	0.00	1.64	0.00	0.00	0.00
HC-3	6-Dec-2005	32.88	29.00	--	0.00	3.88	0.00	0.00	0.00
HC-3	13-Mar-2006	32.88	27.82	--	0.00	5.06	0.00	0.00	0.00
HC-3	27-Jun-2006	32.88	25.52	--	0.00	7.36	0.00	0.00	0.00
HC-3	19-Sep-2006	32.88	31.29	--	0.00	1.59	0.00	0.00	0.00
HC-3	13-Dec-2006	32.88	28.21	--	0.00	4.67	0.00	0.00	0.00
HC-3	29-Mar-2007	32.88	25.79	--	0.00	7.09	0.00	0.00	0.00
HC-3	27-Jun-2007	32.88	28.92	--	0.00	3.96	0.00	0.00	0.00
HC-3	18-Sep-2007	32.88	31.32	--	0.00	1.56	0.00	0.00	0.00
HC-3	6-Dec-2007	32.88	27.36	--	0.00	5.52	0.00	0.00	0.00
HC-3	10-Mar-2008	32.88	29.19	--	0.00	3.69	0.00	0.00	0.00
HC-3	12-Jun-2008	32.88	21.28	--	0.00	11.60	0.00	0.00	0.00
HC-3	8-Sep-2008	32.88	30.91	--	0.00	1.97	0.00	0.00	0.00
HC-3	29-Dec-2008	32.88	29.34	--	0.00	3.54	0.00	0.00	0.00
HC-3	9-Mar-2009	32.88	29.35	--	0.00	3.53	0.00	0.00	0.00
HC-3	4-Jun-2009	32.88	23.77	--	0.00	9.11	0.00	0.00	0.00
HC-4S	2-Feb-2005	32.35	26.14	--	0.00	6.21	0.00	0.00	0.00
HC-4S	2-Jun-2005	32.35	26.10	--	0.00	6.25	0.00	0.00	0.00
HC-4S	14-Sep-2005	32.35	26.05	--	0.00	6.30	0.00	0.00	0.00
HC-4S	6-Dec-2005	32.35	26.05	--	0.00	6.30	0.00	0.00	0.00
HC-4S	13-Mar-2006	32.35	26.05	--	0.00	6.30	0.00	0.00	0.00
HC-4S	27-Jun-2006	32.35	26.06	--	0.00	6.29	0.00	0.00	0.00
HC-4S	19-Sep-2006	32.35	26.12	--	0.00	6.23	0.00	0.00	0.00
HC-4S	13-Dec-2006	32.35	26.13	--	0.00	6.22	0.00	0.00	0.00
HC-4S	29-Mar-2007	32.35	26.08	--	0.00	6.27	0.00	0.00	0.00
HC-4S	27-Jun-2007	32.35	26.13	--	0.00	6.22	0.00	0.00	0.00
HC-4S	18-Sep-2007	32.35	26.14	--	0.00	6.21	0.00	0.00	0.00
HC-4S	6-Dec-2007	32.35	27.73	--	0.00	4.62	0.00	0.00	0.00
HC-4S	10-Mar-2008	32.35	26.09	--	0.00	6.26	0.00	0.00	0.00
HC-4S	12-Jun-2008	32.35	22.08	--	0.00	10.27	0.00	0.00	0.00
HC-4S	8-Sep-2008	32.35	26.42	--	0.00	5.93	0.00	0.00	0.00
HC-4S	29-Dec-2008	32.35	26.13	--	0.00	6.22	0.00	0.00	0.00
HC-4S	9-Mar-2009	32.35	26.08	--	0.00	6.27	0.00	0.00	0.00
HC-4S	4-Jun-2009	32.35	24.59	--	0.00	7.76	0.00	0.00	0.00
HC-4D	2-Feb-2005	32.18	29.46	--	0.00	2.72	0.00	0.00	0.00
HC-4D	2-Jun-2005	32.18	27.22	--	0.00	4.96	0.00	0.00	0.00
HC-4D	14-Sep-2005	32.18	31.91	--	0.00	0.27	0.00	0.00	0.00
HC-4D	6-Dec-2005	32.18	30.02	--	0.00	2.16	0.00	0.00	0.00
HC-4D	13-Mar-2006	32.18	27.45	--	0.00	4.73	0.00	0.00	0.00
HC-4D	27-Jun-2006	32.18	25.31	--	0.00	6.87	0.00	0.00	0.00
HC-4D	19-Sep-2006	32.18	31.94	--	0.00	0.24	0.00	0.00	0.00
HC-4D	13-Dec-2006	32.18	29.74	--	0.00	2.44	0.00	0.00	0.00
HC-4D	29-Mar-2007	32.18	26.58	--	0.00	5.60	0.00	0.00	0.00
HC-4D	27-Jun-2007	32.18	29.53	--	0.00	2.65	0.00	0.00	0.00
HC-4D	18-Sep-2007	32.18	32.13	--	0.00	0.05	0.00	0.00	0.00
HC-4D	6-Dec-2007	32.18	26.16	--	0.00	6.02	0.00	0.00	0.00
HC-4D	10-Mar-2008	32.18	29.77	--	0.00	2.41	0.00	0.00	0.00
HC-4D	12-Jun-2008	32.18	22.48	--	0.00	9.70	0.00	0.00	0.00
HC-4D	8-Sep-2008	32.18	31.92	--	0.00	0.26	0.00	0.00	0.00
HC-4D	29-Dec-2008	32.18	29.75	--	0.00	2.43	0.00	0.00	0.00
HC-4D	9-Mar-2009	32.18	29.53	--	0.00	2.65	0.00	0.00	0.00
HC-4D	4-Jun-2009	32.18	24.49	--	0.00	7.69	0.00	0.00	0.00
HC-5	11-Feb-2005	32.10	18.24	--	0.00	13.86	0.00	0.00	0.00
HC-5	3-Jun-2005	32.10	18.06	--	0.00	14.04	0.00	0.00	0.00
HC-5	14-Sep-2005	32.10	18.63	--	0.00	13.47	0.00	0.00	0.00
HC-5	6-Dec-2005	32.10	17.90	--	0.00	14.20	0.00	0.00	0.00
HC-5	13-Mar-2006	32.10	18.02	--	0.00	14.08	0.00	0.00	0.00
HC-5	27-Jun-2006	32.10	18.36	--	0.00	13.74	0.00	0.00	0.00
HC-5	19-Sep-2006	32.10	18.78	--	0.00	13.32	0.00	0.00	0.00
HC-5	13-Dec-2006	32.10	18.11	--	0.00	13.99	0.00	0.00	0.00
HC-5	29-Mar-2007	32.10	18.15	--	0.00	13.95	0.00	0.00	0.00
HC-5	27-Jun-2007	32.10	18.59	--	0.00	13.51	0.00	0.00	0.00
HC-5	18-Sep-2007	32.10	19.08	--	0.00	13.02	0.00	0.00	0.00
HC-5	6-Dec-2007	32.10	17.91	--	0.00	14.19	0.00	0.00	0.00
HC-5	10-Mar-2008	32.10	18.26	--	0.00	13.84	0.00	0.00	0.00
HC-5	12-Jun-2008	32.10	18.26	--	0.00	13.84	0.00	0.00	0.00
HC-5	8-Sep-2008	32.10	19.00	--	0.00	13.10	0.00	0.00	0.00
HC-5	29-Dec-2008	32.10	18.41	--	0.00	13.69	0.00	0.00	0.00
HC-5	9-Mar-2009	32.10	18.58	--	0.00	13.52	0.00	0.00	0.00
HC-5	4-Jun-2009	32.10	19.50	--	0.00	12.60	0.00	0.00	0.00
HC-5	9-Sep-2009	32.10	19.46	--	0.00	12.64	0.00	0.00	0.00

Please refer to notes at the end of table.

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Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
HC-5	15-Dec-2009	32.10	18.49	--	0.00	13.61	0.00	0.00	0.00
HC-5	11-Mar-2010	32.10	18.27	--	0.00	13.83	0.00	0.00	0.00
HC-5	8-Jun-2010	32.10	17.83	--	0.00	14.27	0.00	0.00	0.00
HC-5	16-Sep-2010	32.10	18.78	--	0.00	13.32	0.00	0.00	0.00
HC-5	13-Dec-2010	32.10	17.46	--	0.00	14.64	0.00	0.00	0.00
HC-5	9-Jun-2011	32.10	15.78	15.78	0.00	16.32	0.00	0.00	0.00
HC-5	1-Dec-2011	32.10	18.01	--	0.00	14.09	0.00	0.00	0.00
HC-5	11-Jun-2012	32.10	18.17	--	0.00	13.93	0.00	0.00	0.00
HC-5	19-Dec-2012	32.10	17.70	--	0.00	14.40	0.00	0.00	0.00
HC-5	17-Dec-2013	32.10	18.68	--	0.00	13.42	0.00	0.00	0.00
HC-5	11-Dec-2014	32.10	18.14	--	0.00	13.96	0.00	0.00	0.00
HC-5	15-Dec-2015	32.10	17.52	--	0.00	14.58	0.00	0.00	0.00
HC-5	19-Dec-2016	32.10	18.09	--	0.00	14.01	0.00	0.00	0.00
HC-5	13-Dec-2017	32.10	18.27	--	0.00	13.83	0.00	0.00	0.00
HC-5	5-Dec-2018	32.10	19.73	19.70	0.03	12.40	0.10	0.10	0.00
HC-5	31-Dec-2018	32.10	18.59	18.50	0.09	13.59	0.50	0.60	0.00
HC-5	17-Jan-2019	32.10	18.53	18.48	0.05	12.24	0.50	1.10	0.00
HC-5	21-Feb-2019	32.10	18.19	18.13	0.06	12.59	0.50	1.60	0.00
HC-5	2-Apr-2019	32.10	18.80	18.74	0.06	11.98	0.25	1.85	0.01
HC-5	18-Apr-2019	32.10	18.35	18.32	0.03	12.41	0.01	1.86	0.00
HC-5	16-May-2019	32.10	18.67	18.63	0.04	12.10	0.01	1.87	0.00
HC-5	19-Jun-2019	32.10	18.91	18.90	0.01	11.83	0.00	1.87	0.01
HC-5	23-Jul-2019	32.10	19.25	19.23	0.02	11.50	0.00	1.87	0.02
HC-5	22-Aug-2019	32.10	19.10	--	0.00	11.63	0.00	1.87	0.00
HC-5	25-Sep-2019	32.10	19.47	19.47	0.00	11.26	0.00	1.87	0.00
HC-5	25-Oct-2019	32.10	19.65	19.65	0.00	11.08	0.00	1.87	0.00
HC-5	20-Nov-2019	32.10	19.71	19.71	0.00	11.02	0.00	1.87	0.00
HC-5	9-Dec-2019	32.10	20.10	19.83	0.27	10.87	1.00	2.87	0.00
HC-5	18-Feb-2020	32.10	18.32	18.32	0.00	13.78	0.00	2.87	0.00
HC-5	28-Feb-2020	32.10	18.44	18.44	0.00	13.66	0.00	2.87	0.00
HC-5	19-Mar-2020	32.10	18.61	18.61	0.00	13.49	0.00	2.87	0.00
HC-5	20-Apr-2020	32.10	18.52	18.52	0.00	13.58	0.00	2.87	0.00
HC-5	29-May-2020	32.10	18.93	18.93	0.00	13.17	0.00	2.87	0.00
HC-5	11-Jun-2020	32.10	18.71	18.71	0.00	13.39	0.00	2.87	0.00
HC-5	15-Jul-2020	32.10	19.62	19.62	0.00	12.48	0.00	2.87	0.00
HC-5	31-Aug-2020	32.10	19.48	19.48	0.00	12.62	0.00	2.87	0.00
HC-5	28-Sep-2020	32.10	19.82	19.82	0.00	12.28	0.00	2.87	0.00
HC-5	23-Oct-2020	32.10	19.66	19.66	0.00	12.44	0.00	2.87	0.00
HC-5	13-Nov-2020	32.10	18.98	18.98	0.00	13.12	0.00	2.87	0.00
HC-5	10-Dec-2020	32.10	18.71	18.71	0.00	13.39	0.00	2.87	0.00
HC-5	20-Jan-2021	32.10	17.97	--	0.00	14.13	0.00	0.60	0.00
HC-5	24-Feb-2021	32.10	16.64	--	0.00	15.46	0.00	0.60	0.00
HC-5	7-Apr-2021	32.10	18.60	--	0.00	13.50	0.00	0.60	0.00
HC-5	22-Dec-2021	32.10	17.81	17.77	0.04	14.33	0.30	0.90	0.00
HC-5	6-Jan-2022	32.10	17.72	--	0.00	14.38	0.00	0.90	0.00
HC-6S	27-Aug-2003	32.62	18.93	--	0.00	13.69	0.00	0.00	0.00
HC-6S	3-Sep-2003	32.62	19.00	--	0.00	13.62	0.00	0.00	0.00
HC-6S	11-Sep-2003	32.62	19.11	--	0.00	13.51	0.00	0.00	0.00
HC-6S	17-Sep-2003	32.62	19.20	--	0.00	13.42	0.00	0.00	0.00
HC-6S	30-Sep-2003	32.62	19.15	--	0.00	13.47	0.00	0.00	0.00
HC-6S	14-Oct-2003	32.62	19.19	--	0.00	13.43	0.00	0.00	0.00
HC-6S	29-Oct-2003	32.62	19.29	--	0.00	13.33	0.00	0.00	0.00
HC-6S	13-Nov-2003	32.62	19.33	--	0.00	13.29	0.00	0.00	0.00
HC-6S	26-Nov-2003	32.62	19.13	--	0.00	13.49	0.00	0.00	0.00
HC-6S	24-Dec-2003	32.62	18.60	--	0.00	14.02	0.00	0.00	0.00
HC-6S	21-Jan-2004	32.62	17.31	--	0.00	15.31	0.00	0.00	0.00
HC-6S	25-Feb-2004	32.62	17.81	--	0.00	14.81	0.00	0.00	0.00
HC-6S	24-Mar-2004	32.62	16.31	--	0.00	16.31	0.00	0.00	0.00
HC-6S	2-Feb-2005	32.62	18.69	--	0.00	13.93	0.00	0.00	0.00
HC-6S	2-Jun-2005	32.62	18.41	--	0.00	14.21	0.00	0.00	0.00
HC-6S	14-Sep-2005	32.62	18.64	--	0.00	13.98	0.00	0.00	0.00
HC-6S	6-Dec-2005	32.62	18.47	--	0.00	14.15	0.00	0.00	0.00
HC-6S	13-Mar-2006	32.62	17.71	--	0.00	14.91	0.00	0.00	0.00
HC-6S	27-Jun-2006	32.62	18.11	--	0.00	14.51	0.00	0.00	0.00
HC-6S	19-Sep-2006	32.62	18.68	--	0.00	13.94	0.00	0.00	0.00
HC-6S	13-Dec-2006	32.62	18.39	--	0.00	14.23	0.00	0.00	0.00
HC-6S	29-Mar-2007	32.62	18.13	--	0.00	14.49	0.00	0.00	0.00
HC-6S	27-Jun-2007	32.62	18.60	--	0.00	14.02	0.00	0.00	0.00
HC-6S	18-Sep-2007	32.62	19.13	--	0.00	13.49	0.00	0.00	0.00
HC-6S	6-Dec-2007	32.62	18.79	--	0.00	13.83	0.00	0.00	0.00
HC-6S	10-Mar-2008	32.62	18.16	--	0.00	14.46	0.00	0.00	0.00
HC-6S	12-Jun-2008	32.62	18.20	--	0.00	14.42	0.00	0.00	0.00

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
HC-6S	8-Sep-2008	32.62	19.11	--	0.00	13.51	0.00	0.00	0.00
HC-6S	29-Dec-2008	32.62	21.56	--	0.00	11.06	0.00	0.00	0.00
HC-6S	9-Mar-2009	32.62	18.43	--	0.00	14.19	0.00	0.00	0.00
HC-6S	4-Jun-2009	32.62	18.84	--	0.00	13.78	0.00	0.00	0.00
HC-6D	27-Aug-2003	32.48	21.90	--	0.00	10.58	0.00	0.00	0.00
HC-6D	3-Sep-2003	32.48	21.99	--	0.00	10.49	0.00	0.00	0.00
HC-6D	11-Sep-2003	32.48	22.04	--	0.00	10.44	0.00	0.00	0.00
HC-6D	17-Sep-2003	32.48	22.10	--	0.00	10.38	0.00	0.00	0.00
HC-6D	30-Sep-2003	32.48	22.06	--	0.00	10.42	0.00	0.00	0.00
HC-6D	14-Oct-2003	32.48	22.16	--	0.00	10.32	0.00	0.00	0.00
HC-6D	29-Oct-2003	32.48	22.04	--	0.00	10.44	0.00	0.00	0.00
HC-6D	13-Nov-2003	32.48	22.10	--	0.00	10.38	0.00	0.00	0.00
HC-6D	26-Nov-2003	32.48	21.96	--	0.00	10.52	0.00	0.00	0.00
HC-6D	24-Dec-2003	32.48	21.35	--	0.00	11.13	0.00	0.00	0.00
HC-6D	21-Jan-2004	32.48	19.88	--	0.00	12.60	0.00	0.00	0.00
HC-6D	25-Feb-2004	32.48	20.71	--	0.00	11.77	0.00	0.00	0.00
HC-6D	24-Mar-2004	32.48	17.88	--	0.00	14.60	0.00	0.00	0.00
HC-6D	2-Feb-2005	32.48	22.45	--	0.00	10.03	0.00	0.00	0.00
HC-6D	2-Jun-2005	32.48	21.38	--	0.00	11.10	0.00	0.00	0.00
HC-6D	14-Sep-2005	32.48	21.90	--	0.00	10.58	0.00	0.00	0.00
HC-6D	6-Dec-2005	32.48	21.33	--	0.00	11.15	0.00	0.00	0.00
HC-6D	13-Mar-2006	32.48	20.68	--	0.00	11.80	0.00	0.00	0.00
HC-6D	27-Jun-2006	32.48	20.72	--	0.00	11.76	0.00	0.00	0.00
HC-6D	19-Sep-2006	32.48	21.75	--	0.00	10.73	0.00	0.00	0.00
HC-6D	13-Dec-2006	32.48	21.23	--	0.00	11.25	0.00	0.00	0.00
HC-6D	29-Mar-2007	32.48	20.42	--	0.00	12.06	0.00	0.00	0.00
HC-6D	27-Jun-2007	32.48	21.43	--	0.00	11.05	0.00	0.00	0.00
HC-6D	18-Sep-2007	32.48	21.96	--	0.00	10.52	0.00	0.00	0.00
HC-6D	6-Dec-2007	32.48	20.57	--	0.00	11.91	0.00	0.00	0.00
HC-6D	10-Mar-2008	32.48	20.98	--	0.00	11.50	0.00	0.00	0.00
HC-6D	12-Jun-2008	32.48	19.28	--	0.00	13.20	0.00	0.00	0.00
HC-6D	8-Sep-2008	32.48	21.91	--	0.00	10.57	0.00	0.00	0.00
HC-6D	29-Dec-2008	32.48	19.03	18.81	0.22	13.65	0.10	0.10	0.00
HC-6D	9-Mar-2009	32.48	21.76	--	0.00	10.72	0.00	0.10	0.00
HC-6D	4-Jun-2009	32.48	20.86	--	0.00	11.62	0.00	0.10	0.00
HC-10	27-Aug-2003	29.30	21.98	17.71	4.27	11.12	2.00	2.00	0.21
HC-10	3-Sep-2003	29.30	20.06	18.03	2.03	11.05	0.50	2.50	0.04
HC-10	11-Sep-2003	29.30	19.61	18.46	1.15	10.71	0.10	2.60	0.03
HC-10	17-Sep-2003	29.30	19.77	18.65	1.12	10.53	0.20	2.80	0.03
HC-10	30-Sep-2003	29.30	19.69	18.99	0.70	10.23	0.20	3.00	0.01
HC-10	14-Oct-2003	29.30	19.68	18.85	0.83	10.36	0.30	3.30	0.02
HC-10	29-Oct-2003	29.30	19.62	18.83	0.79	10.38	0.10	3.40	0.07
HC-10	13-Nov-2003	29.30	19.60	19.05	0.55	10.19	0.01	3.41	0.01
HC-10	19-Nov-2003	29.30	19.60	19.15	0.45	10.10	0.10	3.51	0.03
HC-10	26-Nov-2003	29.30	19.51	19.00	0.51	10.24	0.10	3.61	0.01
HC-10	3-Dec-2003	29.30	19.27	18.89	0.38	10.37	0.10	3.71	0.01
HC-10	10-Dec-2003	29.30	19.88	19.60	0.28	9.67	0.10	3.81	0.01
HC-10	17-Dec-2003	29.30	18.66	18.36	0.30	10.91	0.10	3.91	0.01
HC-10	24-Dec-2003	29.30	17.98	17.76	0.22	11.52	0.01	3.92	0.00
HC-10	9-Jan-2004	29.30	17.11	16.84	0.27	12.43	0.10	4.02	0.01
HC-10	15-Jan-2004	29.30	17.00	16.71	0.29	12.56	0.10	4.12	0.01
HC-10	21-Jan-2004	29.30	16.01	15.85	0.16	13.43	0.10	4.22	0.01
HC-10	29-Jan-2004	29.30	16.00	15.30	0.70	13.92	0.30	4.52	0.01
HC-10	3-Feb-2004	29.30	16.10	15.40	0.70	13.82	0.30	4.82	0.01
HC-10	12-Feb-2004	29.30	15.87	15.28	0.59	13.96	0.10	4.92	0.01
HC-10	18-Feb-2004	29.30	16.22	15.41	0.81	13.80	0.10	5.02	0.00
HC-10	25-Feb-2004	29.30	15.47	14.86	0.61	14.37	0.10	5.12	0.00
HC-10	3-Mar-2004	29.30	15.95	15.55	0.40	13.71	0.10	5.22	0.01
HC-10	10-Mar-2004	29.30	16.10	15.65	0.45	13.60	0.05	5.27	0.01
HC-10	18-Mar-2004	29.30	16.03	15.59	0.44	13.66	0.05	5.32	0.00
HC-10	24-Mar-2004	29.30	16.33	15.99	0.34	13.27	0.05	5.37	0.00
HC-10	1-Apr-2004	29.30	16.50	15.95	0.55	13.29	0.08	5.45	0.00
HC-10	14-Jan-2005	29.30	18.90	18.49	0.41	10.76	0.10	5.55	0.09
HC-10	21-Jan-2005	29.30	18.60	18.25	0.35	11.01	1.00	6.55	0.10
HC-10	28-Jan-2005	29.30	18.48	18.22	0.26	11.05	0.15	6.70	0.09
HC-10	2-Feb-2005	29.30	18.66	18.47	0.19	10.81	0.00	6.70	0.00
HC-10	4-Feb-2005	29.30	18.49	18.27	0.22	11.01	0.20	6.90	0.03
HC-10	11-Feb-2005	29.30	18.30	18.12	0.18	11.16	0.05	6.95	0.06
HC-10	18-Feb-2005	29.30	18.26	18.11	0.15	11.17	0.10	7.05	0.06
HC-10	25-Feb-2005	29.30	18.50	18.37	0.13	10.92	0.05	7.10	0.06
HC-10	4-Mar-2005	29.30	18.64	18.52	0.12	10.77	0.05	7.15	0.02
HC-10	11-Mar-2005	29.30	18.58	18.48	0.10	10.81	0.15	7.30	0.01

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
HC-10	18-Mar-2005	29.30	18.56	18.47	0.09	10.82	0.00	7.30	0.09
HC-10	25-Mar-2005	29.30	18.86	18.75	0.11	10.54	0.05	7.35	0.01
HC-10	1-Apr-2005	29.30	18.52	18.46	0.06	10.83	0.00	7.35	0.06
HC-10	14-Apr-2005	29.30	18.44	18.43	0.01	10.87	0.10	7.45	0.01
HC-10	30-Apr-2005	29.30	18.22	18.14	0.08	11.15	0.00	7.45	0.08
HC-10	13-May-2005	29.30	18.88	18.82	0.06	10.47	0.00	7.45	0.06
HC-10	31-May-2005	29.30	17.38	17.32	0.06	11.97	0.00	7.45	0.06
HC-10	2-Jun-2005	29.30	17.45	17.33	0.12	11.96	0.00	7.45	
HC-10	24-Jun-2005	29.30	17.55	17.50	0.05	11.79	0.00	7.45	0.05
HC-10	29-Jul-2005	29.30	18.16	18.09	0.07	11.20	0.00	7.45	0.07
HC-10	26-Aug-2005	29.30	18.60	18.52	0.08	10.77	0.00	7.45	0.08
HC-10	14-Sep-2005	29.30	18.93	0.00	18.93	27.22	0.00	7.45	
HC-10	24-Sep-2005	29.30	19.05	18.90	0.15	10.38	0.05	7.50	0.00
HC-10	10-Oct-2005	29.30	19.25	19.05	0.20	10.23	0.50	8.00	0.04
HC-10	21-Oct-2005	29.30	19.25	19.19	0.06	10.10	0.00	8.00	0.06
HC-10	28-Nov-2005	29.30	18.70	18.65	0.05	10.64	0.00	8.00	0.05
HC-10	6-Dec-2005	29.30	18.62	0.00	18.62	27.25	0.00	8.00	
HC-10	3-Jan-2006	29.30	17.35	17.30	0.05	11.99	0.00	8.00	0.05
HC-10	17-Feb-2006	29.30	15.33	14.79	0.54	14.45	1.00	9.00	0.08
HC-10	3-Mar-2006	29.30	15.43	14.89	0.54	14.35	0.25	9.25	0.06
HC-10	13-Mar-2006	29.30	15.54	15.15	0.39	14.11	0.00	9.25	0.39
HC-10	27-Jun-2006	29.30	15.58	15.41	0.17	13.87	0.10	9.35	0.01
HC-10	19-Sep-2006	29.30	19.18	18.34	0.84	10.87	0.35	9.70	0.02
HC-10	13-Dec-2006	29.30	17.16	16.63	0.53	12.61	0.25	9.95	0.02
HC-10	29-Mar-2007	29.30	15.91	15.33	0.58	13.91	0.25	10.20	0.08
HC-10	27-Jun-2007	29.30	17.50	17.03	0.47	12.22	2.00	12.20	0.07
HC-10	19-Sep-2007	29.30	19.09	18.70	0.39	10.56	0.25	12.45	0.01
HC-10	6-Dec-2007	29.30	18.76	18.49	0.27	10.78	0.40	12.85	0.00
HC-10	10-Mar-2008	29.30	16.16	15.82	0.34	13.44	0.00	12.85	0.08
HC-10	12-Mar-2008	29.30	16.28	15.82	0.46	13.43	0.50	13.35	0.00
HC-10	13-Jun-2008	29.30	15.23	15.10	0.13	14.19	0.26	13.61	0.00
HC-10	8-Sep-2008	29.30	18.61	18.16	0.45	11.09	0.20	13.81	0.00
HC-10	9-Sep-2008	29.30	18.46	18.40	0.06	10.89	0.79	14.60	0.00
HC-10	29-Dec-2008	29.30	19.03	18.81	0.22	10.47	0.33	14.93	0.01
HC-10	10-Mar-2009	29.30	17.34	17.32	0.02	11.98	0.00	14.93	0.02
HC-10	4-Jun-2009	29.30	16.75	16.54	0.21	12.74	0.08	15.01	0.01
HC-10	9-Sep-2009	29.30	19.01	18.83	0.18	10.45	0.07	15.08	0.00
HC-10	15-Dec-2009	29.30	18.32	18.23	0.09	11.06	0.00	15.08	0.09
HC-10	12-Mar-2010	29.30	16.62	16.21	0.41	13.04	0.25	15.33	0.00
HC-10	25-Mar-2010	29.30	16.35	16.30	0.05	12.99	0.00	15.33	0.05
HC-10	16-Apr-2010	29.30	16.50	16.09	0.41	13.16	0.25	15.58	0.01
HC-10	23-Apr-2010	29.30	16.77	16.48	0.29	12.79	0.13	15.71	0.00
HC-10	4-May-2010	29.30	16.71	16.63	0.08	12.66	0.00	15.71	0.08
HC-10	8-Jun-2010	29.30	15.53	15.27	0.26	14.00	0.25	15.96	0.00
HC-10	9-Jul-2010	29.30	--	--	--	--	0.00	15.96	0.00
HC-10	23-Jul-2010	29.30	--	--	--	--	0.00	15.96	0.00
HC-10	6-Aug-2010	29.30	17.34	16.95	0.39	12.31	0.25	16.21	0.02
HC-10	19-Aug-2010	29.30	17.59	17.30	0.29	11.97	0.25	16.46	0.00
HC-10	27-Aug-2010	29.30	17.71	17.49	0.22	11.79	0.25	16.71	0.01
HC-10	17-Sep-2010	29.30	18.01	17.82	0.19	11.46	0.25	16.96	0.02
HC-10	8-Oct-2010	29.30	18.36	18.18	0.18	11.10	0.10	17.06	0.01
HC-10	11-Nov-2010	29.30	18.15	18.02	0.13	11.27	0.10	17.16	0.00
HC-10	15-Dec-2010	29.30	16.32	16.15	0.17	13.13	0.10	17.26	0.01
HC-10	21-Dec-2010	29.30	15.88	15.72	0.16	13.56	0.20	17.46	0.01
HC-10	30-Dec-2010	29.30	--	--	--	--	0.00	17.46	--
HC-10	6-Jan-2011	29.30	15.22	15.08	0.14	14.20	0.25	17.71	0.02
HC-10	13-Jan-2011	29.30	15.34	15.31	0.03	13.99	0.00	17.71	0.03
HC-10	19-Jan-2011	29.30	15.09	14.76	0.33	14.50	0.25	17.96	0.00
HC-10	28-Jan-2011	29.30	14.41	14.12	0.29	15.15	0.25	18.21	0.00
HC-10	9-Feb-2011	29.30	15.35	15.19	0.16	14.09	0.25	18.46	0.00
HC-10	23-Feb-2011	29.30	15.31	15.11	0.20	14.17	0.10	18.56	0.03
HC-10	9-Mar-2011	29.30	15.49	15.31	0.18	13.97	0.25	18.81	0.02
HC-10	29-Mar-2011	29.30	14.98	14.64	0.34	14.62	0.25	19.06	0.00
HC-10	21-Apr-2011	29.30	14.42	14.08	0.34	15.18	0.30	19.36	0.00
HC-10	6-May-2011	29.30	14.57	14.23	0.34	15.03	0.15	19.51	0.00
HC-10	9-Jun-2011	29.30	13.42	13.12	0.30	16.15	0.20	19.71	0.00
HC-10	7-Jul-2011	29.30	13.43	12.84	0.59	16.40	0.25	19.96	0.01
HC-10	3-Aug-2011	29.30	15.69	15.45	0.24	13.82	0.20	20.16	0.00
HC-10	8-Sep-2011	29.30	17.25	17.04	0.21	12.24	0.25	20.41	0.01
HC-10	3-Oct-2011	29.30	17.67	17.54	0.13	11.75	0.20	20.61	0.01
HC-10	10-Nov-2011	29.30	18.26	18.13	0.13	11.16	0.10	20.71	0.10
HC-10	1-Dec-2011	29.30	17.96	17.88	0.08	11.41	0.00	20.71	0.08
HC-10	6-Jan-2012	29.30	17.72	17.63	0.09	11.66	0.00	20.71	0.09

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
HC-10	25-Jan-2012	29.30	17.16	17.06	0.10	12.23	0.00	20.71	0.10
HC-10	3-Mar-2012	29.30	17.11	16.93	0.18	12.35	0.20	20.91	0.01
HC-10	14-Mar-2012	29.30	16.35	16.22	0.13	13.07	0.15	21.06	0.00
HC-10	22-Mar-2012	29.30	15.80	15.67	0.13	13.62	0.12	21.18	0.00
HC-10	29-Mar-2012	29.30	15.07	14.99	0.08	14.30	0.00	21.18	0.08
HC-10	5-Apr-2012	29.30	14.46	14.36	0.10	14.93	0.13	21.30	0.00
HC-10	13-Apr-2012	29.30	14.41	14.41	0.00	14.89	0.00	21.30	0.00
HC-10	23-Apr-2012	29.30	14.58	14.38	0.20	14.90	0.25	21.55	0.00
HC-10	14-May-2012	29.30	14.31	14.16	0.15	15.12	0.20	21.75	0.00
HC-10	25-May-2012	29.30	14.36	14.33	0.03	14.97	0.00	21.75	0.03
HC-10	12-Jun-2012	29.30	14.81	14.61	0.20	14.67	0.10	21.85	0.01
HC-10	3-Jul-2012	29.30	15.10	14.75	0.35	14.51	0.13	21.98	0.01
HC-10	23-Aug-2012	29.30	17.08	17.02	0.06	12.27	0.00	21.98	0.06
HC-10	24-Sep-2012	29.30	18.01	17.77	0.24	11.50	0.13	22.10	0.00
HC-10	8-Oct-2012	29.30	18.23	18.15	0.08	11.14	0.00	22.10	0.08
HC-10	14-Nov-2012	29.30	18.00	17.99	0.01	11.31	0.00	22.10	0.01
HC-10	20-Dec-2012	29.30	15.36	15.11	0.25	14.16	0.10	22.20	0.01
HC-10	4-Jan-2013	29.30	15.44	15.08	0.36	14.18	0.10	22.30	0.01
HC-10	18-Jan-2013	29.30	15.53	15.24	0.29	14.03	0.25	22.55	0.00
HC-10	31-Jan-2013	29.30	16.14	15.87	0.27	13.40	0.05	22.60	0.01
HC-10	6-Mar-2013	29.30	16.53	16.33	0.20	12.95	0.10	22.70	0.01
HC-10	3-Apr-2013	29.30	17.27	17.10	0.17	12.18	0.20	22.90	0.01
HC-10	6-May-2013	29.30	17.11	16.90	0.21	12.38	0.50	23.40	0.00
HC-10	12-Jun-2013	29.30	17.12	17.00	0.12	12.29	0.15	23.55	0.00
HC-10	16-Jul-2013	29.30	17.50	17.38	0.12	11.91	0.10	23.65	0.01
HC-10	26-Aug-2013	29.30	18.45	18.40	0.05	10.89	0.10	23.75	0.01
HC-10	25-Sep-2013	29.30	20.09	20.08	0.01	9.22	0.00	23.75	0.01
HC-10	31-Oct-2013	29.30	18.68	18.61	0.07	10.68	0.10	23.85	0.07
HC-10	27-Nov-2013	29.30	18.56	18.45	0.11	10.84	0.10	23.95	0.01
HC-10	17-Dec-2013	29.30	18.53	18.46	0.07	10.83	0.00	23.95	0.01
HC-10	12-Dec-2014	29.30	17.48	17.31	0.17	11.97	0.20	24.15	0.00
HC-10	29-Jan-2015	29.30	17.70	17.50	0.20	11.78	0.50	24.65	0.00
HC-10	27-Feb-2015	29.30	17.60	17.40	0.20	11.88	0.40	25.05	0.00
HC-10	27-Mar-2015	29.30	15.60	15.58	0.02	13.72	0.00	25.05	0.02
HC-10	28-Apr-2015	29.30	15.64	15.61	0.03	13.69	0.00	25.05	0.03
HC-10	29-May-2015	29.30	17.53	17.48	0.05	11.81	0.00	25.05	0.05
HC-10	23-Jun-2015	29.30	18.06	17.97	0.09	11.32	0.00	25.05	0.09
HC-10	8-Jul-2015	29.30	18.20	18.11	0.09	11.18	0.00	25.05	0.09
HC-10	12-Aug-2015	29.30	18.70	18.62	0.08	10.67	0.00	25.05	0.08
HC-10	11-Sep-2015	29.30	19.16	18.86	0.30	10.41	1.00	26.05	0.00
HC-10	15-Oct-2015	29.30	19.68	19.20	0.48	10.05	1.00	27.05	0.01
HC-10	10-Nov-2015	29.30	19.80	19.30	0.50	9.95	1.00	28.05	0.01
HC-10	16-Dec-2015	29.30	17.20	17.00	0.20	12.28	1.25	29.30	0.00
HC-10	21-Jan-2016	29.30	15.00	14.80	0.20	14.48	0.25	29.55	0.02
HC-10	17-Feb-2016	29.30	14.41	14.25	0.16	15.03	0.25	29.80	0.01
HC-10	29-Mar-2016	29.30	14.80	14.18	0.62	15.05	0.70	30.50	0.00
HC-10	27-Apr-2016	29.30	15.24	14.70	0.54	14.54	0.50	31.00	0.04
HC-10	27-May-2016	29.30	16.68	16.10	0.58	13.14	0.50	31.50	0.01
HC-10	29-Jun-2016	29.30	17.51	17.00	0.51	12.24	0.75	32.25	0.05
HC-10	20-Jul-2016	29.30	18.10	17.58	0.52	11.66	0.50	32.75	0.03
HC-10	31-Aug-2016	29.30	18.81	18.31	0.50	10.94	0.50	33.25	0.01
HC-10	16-Sep-2016	29.30	18.85	18.62	0.23	10.65	0.50	33.75	0.01
HC-10	20-Oct-2016	29.30	19.00	18.65	0.35	10.61	0.50	34.25	0.00
HC-10	28-Nov-2016	29.30	17.91	17.61	0.30	11.66	0.10	34.35	0.00
HC-10	19-Dec-2016	29.30	16.78	16.50	0.28	12.77	0.50	34.85	0.00
HC-10	5-Jan-2017	29.30	16.73	16.50	0.23	12.77	0.50	35.35	0.01
HC-10	14-Feb-2017	29.30	14.97	14.59	0.38	14.67	0.50	35.85	0.01
HC-10	28-Mar-2017	29.30	12.73	12.42	0.31	16.85	0.50	36.35	0.00
HC-10	18-Apr-2017	29.30	13.03	12.36	0.67	16.87	0.50	36.85	0.03
HC-10	26-May-2017	29.30	13.13	12.70	0.43	16.55	0.50	37.35	0.05
HC-10	23-Jun-2017	29.30	13.91	13.63	0.28	15.64	0.50	37.85	0.00
HC-10	21-Jul-2017	29.30	16.11	15.80	0.31	13.47	0.50	38.35	0.00
HC-10	18-Aug-2017	29.30	17.49	17.04	0.45	12.21	0.10	38.45	0.04
HC-10	26-Sep-2017	29.30	17.79	17.49	0.30	11.78	0.50	38.95	0.01
HC-10	30-Oct-2017	29.30	18.03	17.74	0.29	11.53	0.25	39.20	0.00
HC-10	17-Nov-2017	29.30	17.89	17.59	0.30	11.68	0.10	39.30	0.01
HC-10	13-Dec-2017	29.30	16.69	16.27	0.42	12.98	2.00	41.30	0.03
HC-10	26-Jan-2018	29.30	16.32	15.52	0.80	13.69	0.15	41.45	0.01
HC-10	14-Feb-2018	29.30	15.51	15.21	0.30	14.06	0.10	41.55	0.01
HC-10	26-Mar-2018	29.30	16.75	16.34	0.41	12.91	1.00	42.55	0.01
HC-10	3-May-2018	29.30	15.57	15.22	0.35	14.04	0.10	42.65	0.01
HC-10	31-May-2018	29.30	14.50	14.36	0.14	14.92	0.50	43.15	0.02

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
HC-10	21-Jun-2018	29.30	16.70	16.41	0.29	12.86	0.50	43.65	0.01
HC-10	17-Jul-2018	29.30	17.78	17.56	0.22	11.72	0.50	44.15	0.00
HC-10	17-Aug-2018	29.30	18.47	18.20	0.27	11.07	0.10	44.25	0.00
HC-10	16-Oct-2018	29.30	19.51	19.05	0.46	10.20	0.10	44.35	0.01
HC-10	5-Nov-2018	29.30	19.59	19.15	0.44	10.10	0.50	44.85	0.07
HC-10	5-Dec-2018	29.30	19.40	19.15	0.25	10.12	0.10	44.95	0.01
HC-10	31-Dec-2018	29.30	18.82	18.60	0.22	10.68	0.50	45.45	0.01
HC-10	18-Jan-2019	29.30	18.30	18.19	0.11	11.10	0.50	45.95	0.00
HC-10	21-Feb-2019	29.30	17.41	16.92	0.49	12.33	1.00	46.95	0.01
HC-10	2-Apr-2019	29.30	17.08	16.76	0.32	12.50	0.50	47.45	0.01
HC-10	18-Apr-2019	29.30	16.04	15.89	0.15	13.39	0.05	47.50	0.01
HC-10	16-May-2019	29.30	16.50	16.35	0.15	12.93	0.05	47.55	0.01
HC-10	19-Jun-2019	29.30	17.49	17.30	0.19	11.98	0.05	47.60	0.01
HC-10	23-Jul-2019	29.30	18.45	18.41	0.04	10.89	0.25	47.85	0.01
HC-10	22-Aug-2019	29.30	18.33	NP	0.00	10.97	0.00	47.85	0.00
HC-10	25-Sep-2019	29.30	19.02	19.01	0.01	10.29	0.00	47.85	0.00
HC-10	25-Oct-2019	29.30	19.24	19.23	0.01	10.07	0.00	47.85	0.01
HC-10	20-Nov-2019	29.30	18.95	18.94	0.01	10.36	0.00	47.85	0.01
HC-10	9-Dec-2019	29.30	19.42	19.39	0.03	9.91	0.00	47.85	0.03
HC-10	18-Feb-2020	29.30	13.14	13.14	0.00	16.16	0.00	47.85	0.00
HC-10	28-Feb-2020	29.30	15.94	15.71	0.23	13.56	0.05	47.90	0.00
HC-10	19-Mar-2020	29.30	17.13	16.80	0.33	12.46	0.50	48.40	0.00
HC-10	20-Apr-2020	29.30	16.48	16.38	0.10	12.91	0.25	48.65	0.00
HC-10	29-May-2020	29.30	17.10	16.77	0.33	12.49	0.06	48.71	0.00
HC-10	11-Jun-2020	29.30	16.58	16.32	0.26	12.95	0.07	48.78	0.00
HC-10	15-Jul-2020	29.30	17.20	17.16	0.04	12.14	0.05	48.83	0.00
HC-10	31-Aug-2020	29.30	17.09	17.02	0.07	12.27	0.08	48.91	0.00
HC-10	28-Sep-2020	29.30	19.07	19.05	0.02	10.25	0.00	48.91	0.02
HC-10	23-Oct-2020	29.30	19.25	19.22	0.03	10.08	0.00	48.91	0.03
HC-10	13-Nov-2020	29.30	19.06	19.04	0.02	10.26	0.00	48.91	0.02
HC-10	10-Dec-2020	29.30	18.75	18.57	0.18	10.71	0.06	48.97	0.00
HC-10	20-Jan-2021	29.30	15.99	15.57	0.42	13.68	0.07	46.64	0.00
HC-10	24-Feb-2021	29.30	14.98	14.92	0.06	14.37	0.10	46.74	0.00
HC-10	6-Jan-2022	29.30	13.32	12.91	0.41	16.34	0.25	46.99	0.22
HC-12S	27-Aug-2003	29.19	14.14	--	0.00	15.05	0.00	0.00	0.00
HC-12S	3-Sep-2003	29.19	14.20	--	0.00	14.99	0.00	0.00	0.00
HC-12S	11-Sep-2003	29.19	14.34	--	0.00	14.85	0.00	0.00	0.00
HC-12S	17-Sep-2003	29.19	14.44	--	0.00	14.75	0.00	0.00	0.00
HC-12S	30-Sep-2003	29.19	14.39	--	0.00	14.80	0.00	0.00	0.00
HC-12S	14-Oct-2003	29.19	14.44	--	0.00	14.75	0.00	0.00	0.00
HC-12S	29-Oct-2003	29.19	14.60	--	0.00	14.59	0.00	0.00	0.00
HC-12S	13-Nov-2003	29.19	14.63	--	0.00	14.56	0.00	0.00	0.00
HC-12S	26-Nov-2003	29.19	14.50	--	0.00	14.69	0.00	0.00	0.00
HC-12S	24-Dec-2003	29.19	14.01	--	0.00	15.18	0.00	0.00	0.00
HC-12S	21-Jan-2004	29.19	12.75	--	0.00	16.44	0.00	0.00	0.00
HC-12S	25-Feb-2004	29.19	13.56	--	0.00	15.63	0.00	0.00	0.00
HC-12S	24-Mar-2004	29.19	12.97	--	0.00	16.22	0.00	0.00	0.00
HC-12S	2-Feb-2005	29.19	24.00	--	0.00	5.19	0.00	0.00	0.00
HC-12S	2-Jun-2005	29.19	13.91	--	0.00	15.28	0.00	0.00	0.00
HC-12S	14-Sep-2005	29.19	14.21	--	0.00	14.98	0.00	0.00	0.00
HC-12S	6-Dec-2005	29.19	13.97	--	0.00	15.22	0.00	0.00	0.00
HC-12S	13-Mar-2006	29.19	13.41	--	0.00	15.78	0.00	0.00	0.00
HC-12S	27-Jun-2006	29.19	13.73	--	0.00	15.46	0.00	0.00	0.00
HC-12S	19-Sep-2006	29.19	14.03	--	0.00	15.16	0.00	0.00	0.00
HC-12S	13-Dec-2006	29.19	13.61	--	0.00	15.58	0.00	0.00	0.00
HC-12S	29-Mar-2007	29.19	13.45	--	0.00	15.74	0.00	0.00	0.00
HC-12S	27-Jun-2007	29.19	13.89	--	0.00	15.30	0.00	0.00	0.00
HC-12S	18-Sep-2007	29.19	14.22	--	0.00	14.97	0.00	0.00	0.00
HC-12S	6-Dec-2007	29.19	14.75	--	0.00	14.44	0.00	0.00	0.00
HC-12S	10-Mar-2008	29.19	13.68	--	0.00	15.51	0.00	0.00	0.00
HC-12S	12-Jun-2008	29.19	13.75	--	0.00	15.44	0.00	0.00	0.00
HC-12S	8-Sep-2008	29.19	14.24	--	0.00	14.95	0.00	0.00	0.00
HC-12S	29-Dec-2008	29.19	14.38	--	0.00	14.81	0.00	0.00	0.00
HC-12S	9-Mar-2009	29.19	13.88	--	0.00	15.31	0.00	0.00	0.00
HC-12S	4-Jun-2009	29.19	13.93	--	0.00	15.26	0.00	0.00	0.00
HC-12D	27-Aug-2003	28.91	18.26	--	0.00	10.65	0.00	0.00	0.00
HC-12D	3-Sep-2003	28.91	18.34	--	0.00	10.57	0.00	0.00	0.00
HC-12D	11-Sep-2003	28.91	18.65	--	0.00	10.26	0.00	0.00	0.00
HC-12D	17-Sep-2003	28.91	18.71	--	0.00	10.20	0.00	0.00	0.00
HC-12D	30-Sep-2003	28.91	18.60	--	0.00	10.31	0.00	0.00	0.00
HC-12D	14-Oct-2003	28.91	18.69	--	0.00	10.22	0.00	0.00	0.00

Please refer to notes at the end of table.

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Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
HC-12D	29-Oct-2003	28.91	19.01	--	0.00	9.90	0.00	0.00	0.00
HC-12D	13-Nov-2003	28.91	19.16	--	0.00	9.75	0.00	0.00	0.00
HC-12D	26-Nov-2003	28.91	18.98	--	0.00	9.93	0.00	0.00	0.00
HC-12D	24-Dec-2003	28.91	17.89	--	0.00	11.02	0.00	0.00	0.00
HC-12D	21-Jan-2004	28.91	17.63	--	0.00	11.28	0.00	0.00	0.00
HC-12D	25-Feb-2004	28.91	15.03	--	0.00	13.88	0.00	0.00	0.00
HC-12D	24-Mar-2004	28.91	17.17	--	0.00	11.74	0.00	0.00	0.00
HC-12D	2-Feb-2005	28.91	18.73	--	0.00	10.18	0.00	0.00	0.00
HC-12D	2-Jun-2005	28.91	17.26	17.25	0.01	11.66	0.00	0.00	0.01
HC-12D	14-Sep-2005	28.91	18.76	--	0.00	10.15	0.00	0.00	0.00
HC-12D	6-Dec-2005	28.91	18.45	--	0.00	10.46	0.00	0.00	0.00
HC-12D	13-Mar-2006	28.91	15.03	--	0.00	13.88	0.00	0.00	0.00
HC-12D	27-Jun-2006	28.91	15.39	--	0.00	13.52	0.00	0.00	0.00
HC-12D	19-Sep-2006	28.91	18.47	--	0.00	10.44	0.00	0.00	0.00
HC-12D	13-Dec-2006	28.91	15.72	--	0.00	13.19	0.00	0.00	0.00
HC-12D	29-Mar-2007	28.91	15.25	--	0.00	13.66	0.00	0.00	0.00
HC-12D	27-Jun-2007	28.91	17.03	--	0.00	11.88	0.00	0.00	0.00
HC-12D	18-Sep-2007	28.91	18.76	--	0.00	10.15	0.00	0.00	0.00
HC-12D	6-Dec-2007	28.91	18.34	--	0.00	10.57	0.00	0.00	0.00
HC-12D	10-Mar-2008	28.91	15.91	--	0.00	13.00	0.00	0.00	0.00
HC-12D	12-Jun-2008	28.91	14.76	--	0.00	14.15	0.00	0.00	0.00
HC-12D	8-Sep-2008	28.91	18.25	--	0.00	10.66	0.00	0.00	0.00
HC-12D	29-Dec-2008	28.91	17.07	--	0.00	11.84	0.00	0.00	0.00
HC-12D	9-Mar-2009	28.91	17.39	--	0.00	11.52	0.00	0.00	0.00
HC-12D	4-Jun-2009	28.91	16.19	--	0.00	12.72	0.00	0.00	0.00
HC-12D	11-Dec-2014	28.91	17.34	--	0.00	11.57	0.00	0.00	0.00
HC-12D	15-Dec-2015	28.91	17.36	--	0.00	11.55	0.00	0.00	0.00
HC-12D	19-Dec-2016	28.91	16.50	--	0.00	12.41	0.00	0.00	0.00
HC-12D	13-Dec-2017	28.91	16.40	--	0.00	12.51	0.00	0.00	0.00
HC-12D	5-Dec-2018	28.91	19.30	--	0.00	9.61	0.00	0.00	0.00
HC-12D	17-Jan-2019	28.91	18.23	--	0.00	10.68	0.00	0.00	0.00
HC-12D	9-Dec-2019	28.91	19.60	--	0.00	9.31	0.00	0.00	0.00
HC-12D	10-Dec-2020	28.91	18.97	--	0.00	10.35	0.00	0.00	0.00
HC-12D	22-Dec-2021	28.91	15.98	--	0.00	13.34	0.00	0.00	0.00
HC-12D	6-Jan-2022	28.91	14.82	--	0.00	14.50	0.00	0.00	0.00
HC-13	14-Sep-2005	NS	Unable to locate well						
HC-13	6-Dec-2005	NS	Unable to locate well						
HC-13	13-Mar-2006	NS	Unable to locate well						
HC-13	27-Jun-2006	NS	Unable to locate well						
HC-13	19-Sep-2006	NS	17.09	--	0.00	--	0.00	0.00	0.00
HC-13	13-Dec-2006	NS	16.95	--	0.00	--	0.00	0.00	0.00
HC-13	29-Mar-2007	NS	16.73	--	0.00	--	0.00	0.00	0.00
HC-13	27-Jun-2007	NS	17.01	--	0.00	--	0.00	0.00	0.00
HC-13	18-Sep-2007	NS	18.08	--	0.00	--	0.00	0.00	0.00
HC-13	6-Dec-2007	NS	17.22	--	0.00	--	0.00	0.00	0.00
HC-13	10-Mar-2008	NS	16.70	--	0.00	--	0.00	0.00	0.00
HC-13	12-Jun-2008	NS	16.70	--	0.00	--	0.00	0.00	0.00
HC-13	8-Sep-2008	NS	17.34	17.34	0.00	--	0.00	0.00	0.00
HC-13	29-Dec-2008	NS	17.38	--	0.00	--	0.00	0.00	0.00
HC-13	9-Mar-2009	NS	17.20	--	0.00	--	0.00	0.00	0.00
HC-13	4-Jun-2009	NS	17.09	--	0.00	--	0.00	0.00	0.00
Well Abandoned									
HC-15	27-Aug-2003	33.16	15.59	--	0.00	17.57	0.00	0.00	0.00
HC-15	3-Sep-2003	33.16	15.68	--	0.00	17.48	0.00	0.00	0.00
HC-15	11-Sep-2003	33.16	15.85	--	0.00	17.31	0.00	0.00	0.00
HC-15	17-Sep-2003	33.16	15.98	--	0.00	17.18	0.00	0.00	0.00
HC-15	30-Sep-2003	33.16	16.03	--	0.00	17.13	0.00	0.00	0.00
HC-15	14-Oct-2003	33.16	16.07	--	0.00	17.09	0.00	0.00	0.00
HC-15	29-Oct-2003	33.16	16.11	--	0.00	17.05	0.00	0.00	0.00
HC-15	13-Nov-2003	33.16	16.19	--	0.00	16.97	0.00	0.00	0.00
HC-15	26-Nov-2003	33.16	16.03	--	0.00	17.13	0.00	0.00	0.00
HC-15	24-Dec-2003	33.16	15.36	--	0.00	17.80	0.00	0.00	0.00
HC-15	21-Jan-2004	33.16	14.76	--	0.00	18.40	0.00	0.00	0.00
HC-15	25-Feb-2004	33.16	14.35	--	0.00	18.81	0.00	0.00	0.00
HC-15	24-Mar-2004	33.16	14.66	--	0.00	18.50	0.00	0.00	0.00
HC-15	14-Jan-2005	33.16	--	--	--	--	--	0.00	--
HC-15	21-Jan-2005	33.16	15.45	--	0.00	17.71	0.00	0.00	0.00
HC-15	28-Jan-2005	33.16	15.44	--	0.00	17.72	0.00	0.00	0.00
HC-15	25-Feb-2005	33.16	15.45	--	0.00	17.71	0.00	0.00	0.00
HC-15	25-Mar-2005	33.16	15.61	--	0.00	17.55	0.00	0.00	0.00
HC-15	30-Apr-2005	33.16	15.25	--	0.00	17.91	0.00	0.00	0.00
HC-15	13-May-2005	33.16	15.32	--	0.00	17.84	0.00	0.00	0.00

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
Well Abandoned									
HC-16	27-Aug-2003	32.83	15.75	--	0.00	17.08	0.00	0.00	0.00
HC-16	3-Sep-2003	32.83	15.83	--	0.00	17.00	0.00	0.00	0.00
HC-16	11-Sep-2003	32.83	16.00	--	0.00	16.83	0.00	0.00	0.00
HC-16	17-Sep-2003	32.83	16.16	--	0.00	16.67	0.00	0.00	0.00
HC-16	30-Sep-2003	32.83	16.15	--	0.00	16.68	0.00	0.00	0.00
HC-16	14-Oct-2003	32.83	16.18	--	0.00	16.65	0.00	0.00	0.00
HC-16	29-Oct-2003	32.83	16.28	--	0.00	16.55	0.00	0.00	0.00
HC-16	13-Nov-2003	32.83	16.28	--	0.00	16.55	0.00	0.00	0.00
HC-16	26-Nov-2003	32.83	16.15	--	0.00	16.68	0.00	0.00	0.00
HC-16	24-Dec-2003	32.83	15.49	--	0.00	17.34	0.00	0.00	0.00
HC-16	21-Jan-2004	32.83	15.88	--	0.00	16.95	0.00	0.00	0.00
HC-16	25-Feb-2004	32.83	14.45	--	0.00	18.38	0.00	0.00	0.00
HC-16	24-Mar-2004	32.83	14.76	--	0.00	18.07	0.00	0.00	0.00
HC-16	14-Jan-2005	32.83	15.71	--	0.00	17.12	0.00	0.00	0.00
HC-16	28-Jan-2005	32.83	15.67	15.65	0.02	17.18	0.00	0.00	0.02
HC-16	2-Feb-2005	32.83	15.69	--	0.00	17.14	0.00	0.00	0.00
HC-16	25-Feb-2005	32.83	15.66	15.65	0.01	17.18	0.00	0.00	0.01
HC-16	25-Mar-2005	32.83	15.81	15.80	0.01	17.03	0.00	0.00	0.01
HC-16	30-Apr-2005	32.83	15.58	--	0.00	17.25	0.00	0.00	0.00
HC-16	31-May-2005	32.83	15.35	--	0.00	17.48	0.00	0.00	0.00
HC-16	2-Jun-2005	32.83	15.35	--	0.00	17.48	0.00	0.00	0.00
HC-16	24-Jun-2005	32.83	15.36	--	0.00	17.47	0.00	0.00	0.00
HC-16	29-Jul-2005	32.83	15.52	--	0.00	17.31	0.00	0.00	0.00
HC-16	26-Aug-2005	32.83	15.70	--	0.00	17.13	0.00	0.00	0.00
HC-16	14-Sep-2005	32.83	15.72	--	0.00	17.11	0.00	0.00	0.00
HC-16	24-Sep-2005	32.83	15.85	--	0.00	16.98	0.00	0.00	0.00
HC-16	21-Oct-2005	32.83	15.95	--	0.00	16.88	0.00	0.00	0.00
HC-16	28-Nov-2005	32.83	15.63	--	0.00	17.20	0.00	0.00	0.00
HC-16	6-Dec-2005	32.83	15.51	--	0.00	17.32	0.00	0.00	0.00
HC-16	3-Jan-2006	32.83	15.14	--	0.00	17.69	0.00	0.00	0.00
HC-16	17-Feb-2006	32.83	14.20	--	0.00	18.63	0.00	0.00	0.00
HC-16	13-Mar-2006	32.83	14.40	--	0.00	18.43	0.00	0.00	0.00
HC-16	27-Jun-2006	32.83	14.98	--	0.00	17.85	0.00	0.00	0.00
HC-16	19-Sep-2006	32.83	15.62	--	0.00	17.21	0.00	0.00	0.00
HC-16	13-Dec-2006	32.83	15.04	--	0.00	17.79	0.00	0.00	0.00
HC-16	29-Mar-2007	32.83	14.66	--	0.00	18.17	0.00	0.00	0.00
HC-16	27-Jun-2007	32.83	15.31	--	0.00	17.52	0.00	0.00	0.00
HC-16	18-Sep-2007	32.83	15.95	--	0.00	16.88	0.00	0.00	0.00
HC-16	6-Dec-2007	32.83	15.81	--	0.00	17.02	0.00	0.00	0.00
HC-16	10-Mar-2008	32.83	14.84	--	0.00	17.99	0.00	0.00	0.00
HC-16	12-Jun-2008	32.83	15.10	--	0.00	17.73	0.00	0.00	0.00
HC-16	8-Sep-2008	32.83	15.87	--	0.00	16.96	0.00	0.00	0.00
HC-16	29-Dec-2008	32.83	15.85	--	0.00	16.98	0.00	0.00	0.00
HC-16	10-Mar-2009	32.83	15.44	--	0.00	17.39	0.00	0.00	0.00
HC-16	4-Jun-2009	32.83	15.47	--	0.00	17.36	0.00	0.00	0.00
HC-17R	13-Nov-2003	33.61	16.94	--	0.00	16.67	0.00	0.00	0.00
HC-17R	26-Nov-2003	33.61	16.41	--	0.00	17.20	0.00	0.00	0.00
HC-17R	24-Dec-2003	33.61	16.41	--	0.00	17.20	0.00	0.00	0.00
HC-17R	9-Jan-2004	33.61	16.05	16.02	0.03	17.59	0.00	0.00	0.03
HC-17R	21-Jan-2004	33.61	15.82	15.79	0.03	17.82	0.00	0.00	0.03
HC-17R	3-Feb-2004	33.61	15.90	15.88	0.02	17.73	0.00	0.00	0.02
HC-17R	18-Feb-2004	33.61	15.71	15.55	0.16	18.04	0.03	0.03	0.00
HC-17R	25-Feb-2004	33.61	15.58	15.48	0.10	18.12	0.02	0.05	0.00
HC-17R	10-Mar-2004	33.61	15.69	15.60	0.09	18.00	0.00	0.05	0.09
HC-17R	24-Mar-2004	33.61	16.87	16.78	0.09	16.82	0.00	0.05	0.09
HC-17R	14-Jan-2005	33.61	17.60	--	0.00	16.01	0.00	0.05	0.00
HC-17R	28-Jan-2005	33.61	17.47	17.47	0.00	16.14	0.00	0.05	0.00
HC-17R	2-Feb-2005	33.61	17.56	--	0.00	16.05	0.00	0.05	0.00
HC-17R	25-Feb-2005	33.61	17.52	17.52	0.00	16.09	0.00	0.05	0.00
HC-17R	25-Mar-2005	33.61	17.65	17.63	0.02	15.98	0.00	0.05	0.02
HC-17R	30-Apr-2005	33.61	17.35	--	0.00	16.26	0.00	0.05	0.00
HC-17R	31-May-2005	33.61	17.15	--	0.00	16.46	0.00	0.05	0.00
HC-17R	2-Jun-2005	33.61	17.14	17.13	0.01	16.48	0.00	0.05	0.01
HC-17R	24-Jun-2005	33.61	17.14	--	0.00	16.47	0.00	0.05	0.00
HC-17R	29-Jul-2005	33.61	17.33	--	0.00	16.28	0.00	0.05	0.00
HC-17R	26-Aug-2005	33.61	17.46	--	0.00	16.15	0.00	0.05	0.00
HC-17R	14-Sep-2005	33.61	17.50	--	0.00	16.11	0.00	0.05	0.00
HC-17R	24-Sep-2005	33.61	17.55	--	0.00	16.06	0.00	0.05	0.00
HC-17R	21-Oct-2005	33.61	17.62	--	0.00	15.99	0.00	0.05	0.00
HC-17R	28-Nov-2005	33.61	17.30	--	0.00	16.31	0.00	0.05	0.00
HC-17R	6-Dec-2005	33.61	17.12	--	0.00	16.49	0.00	0.05	0.00

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
HC-17R	3-Jan-2006	33.61	16.73	--	0.00	16.88	0.00	0.05	0.00
HC-17R	17-Feb-2006	33.61	16.20	--	0.00	17.41	0.00	0.05	0.00
HC-17R	13-Mar-2006	33.61	16.36	--	0.00	17.25	0.00	0.05	0.00
HC-17R	27-Jun-2006	33.61	16.82	--	0.00	16.79	0.00	0.05	0.00
HC-17R	19-Sep-2006	33.61	17.47	--	0.00	16.14	0.00	0.05	0.00
HC-17R	13-Dec-2006	33.61	16.93	--	0.00	16.68	0.00	0.05	0.00
HC-17R	29-Mar-2007	33.61	16.70	--	0.00	16.91	0.00	0.05	0.00
HC-17R	27-Jun-2007	33.61	17.29	--	0.00	16.32	0.00	0.05	0.00
HC-17R	18-Sep-2007	33.61	17.89	--	0.00	15.72	0.00	0.05	0.00
HC-17R	6-Dec-2007	33.61	17.24	--	0.00	16.37	0.00	0.05	0.00
HC-17R	10-Mar-2008	33.61	16.85	--	0.00	16.76	0.00	0.05	0.00
HC-17R	12-Jun-2008	33.61	16.88	--	0.00	16.73	0.00	0.05	0.00
HC-17R	8-Sep-2008	33.61	17.85	--	0.00	15.76	0.00	0.05	0.00
HC-17R	29-Dec-2008	33.61	17.89	--	0.00	15.72	0.00	0.05	0.00
HC-17R	10-Mar-2009	33.61	17.61	--	0.00	16.00	0.00	0.05	0.00
HC-17R	4-Jun-2009	33.61	17.54	--	0.00	16.07	0.00	0.05	0.00
HC-18	13-Nov-2003	33.29	16.37	--	0.00	16.92	0.00	0.00	0.00
HC-18	26-Nov-2003	33.29	15.83	--	0.00	17.46	0.00	0.00	0.00
HC-18	24-Dec-2003	33.29	15.38	--	0.00	17.91	0.00	0.00	0.00
HC-18	21-Jan-2004	33.29	14.73	--	0.00	18.56	0.00	0.00	0.00
HC-18	25-Feb-2004	33.29	14.37	--	0.00	18.92	0.00	0.00	0.00
HC-18	24-Mar-2004	33.29	14.68	--	0.00	18.61	0.00	0.00	0.00
HC-18	14-Jan-2005	33.29	15.71	--	0.00	17.58	0.00	0.00	0.00
HC-18	2-Feb-2005	33.29	15.66	--	0.00	17.63	0.00	0.00	0.00
HC-18	28-Jan-2005	33.29	15.60	--	0.00	17.69	0.00	0.00	0.00
HC-18	25-Feb-2005	33.29	15.65	15.65	0.00	17.64	0.00	0.00	0.00
HC-18	25-Mar-2005	33.29	15.81	15.81	0.00	17.48	0.00	0.00	0.00
HC-18	30-Apr-2005	33.29	16.50	--	0.00	16.79	0.00	0.00	0.00
HC-18	31-May-2005	33.29	15.34	--	0.00	17.95	0.00	0.00	0.00
HC-18	2-Jun-2005	33.29	15.33	--	0.00	17.96	0.00	0.00	0.00
HC-18	24-Jun-2005	33.29	15.35	--	0.00	17.94	0.00	0.00	0.00
HC-18	29-Jul-2005	33.29	15.52	--	0.00	17.77	0.00	0.00	0.00
HC-18	26-Aug-2005	33.29	15.67	--	0.00	17.62	0.00	0.00	0.00
HC-18	14-Sep-2005	33.29	15.75	--	0.00	17.54	0.00	0.00	0.00
HC-18	24-Sep-2005	33.29	15.83	--	0.00	17.46	0.00	0.00	0.00
HC-18	21-Oct-2005	33.29	15.95	--	0.00	17.34	0.00	0.00	0.00
HC-18	28-Nov-2005	33.29	15.63	--	0.00	17.66	0.00	0.00	0.00
HC-18	6-Dec-2005	33.29	15.01	--	0.00	18.28	0.00	0.00	0.00
HC-18	3-Jan-2006	33.29	15.06	--	0.00	18.23	0.00	0.00	0.00
HC-18	17-Feb-2006	33.29	14.13	--	0.00	19.16	0.00	0.00	0.00
HC-18	13-Mar-2006	33.29	14.35	--	0.00	18.94	0.00	0.00	0.00
HC-18	27-Jun-2006	33.29	15.97	--	0.00	17.32	0.00	0.00	0.00
HC-18	19-Sep-2006	33.29	15.65	--	0.00	17.64	0.00	0.00	0.00
HC-18	13-Dec-2006	33.29	15.09	--	0.00	18.20	0.00	0.00	0.00
HC-18	29-Mar-2007	33.29	14.65	--	0.00	18.64	0.00	0.00	0.00
HC-18	27-Jun-2007	33.29	15.35	--	0.00	17.94	0.00	0.00	0.00
HC-18	18-Sep-2007	33.29	15.99	--	0.00	17.30	0.00	0.00	0.00
HC-18	6-Dec-2007	33.29	15.89	--	0.00	17.40	0.00	0.00	0.00
HC-18	10-Mar-2008	33.29	14.79	--	0.00	18.50	0.00	0.00	0.00
HC-18	12-Jun-2008	33.29	15.12	--	0.00	18.17	0.00	0.00	0.00
HC-18	8-Sep-2008	33.29	15.96	--	0.00	17.33	0.00	0.00	0.00
HC-18	29-Dec-2008	33.29	16.43	--	0.00	16.86	0.00	0.00	0.00
HC-18	10-Mar-2009	33.29	15.45	--	0.00	17.84	0.00	0.00	0.00
HC-18	4-Jun-2009	33.29	15.51	--	0.00	17.78	0.00	0.00	0.00
HC-19	13-Nov-2003	33.05	17.92	--	0.00	15.13	0.00	0.00	0.00
HC-19	26-Nov-2003	33.05	17.79	--	0.00	15.26	0.00	0.00	0.00
HC-19	24-Dec-2003	33.05	16.85	--	0.00	16.20	0.00	0.00	0.00
HC-19	21-Jan-2004	33.05	16.29	--	0.00	16.76	0.00	0.00	0.00
HC-19	25-Feb-2004	33.05	18.11	--	0.00	14.94	0.00	0.00	0.00
HC-19	24-Mar-2004	33.05	16.41	--	0.00	16.64	0.00	0.00	0.00
HC-19	14-Jan-2005	33.05	17.40	--	0.00	15.65	0.00	0.00	0.00
HC-19	28-Jan-2005	33.05	17.29	17.29	0.00	15.76	0.00	0.00	0.00
HC-19	2-Feb-2005	33.05	17.34	--	0.00	15.71	0.00	0.00	0.00
HC-19	25-Feb-2005	33.05	17.29	17.29	0.00	15.76	0.00	0.00	0.00
HC-19	25-Mar-2005	33.05	17.45	17.45	0.00	15.60	0.00	0.00	0.00
HC-19	30-Apr-2005	33.05	17.14	--	0.00	15.91	0.00	0.00	0.00
HC-19	31-May-2005	33.05	15.90	--	0.00	17.15	0.00	0.00	0.00
HC-19	2-Jun-2005	33.05	15.15	--	0.00	17.90	0.00	0.00	0.00
HC-19	24-Jun-2005	33.05	16.95	--	0.00	16.10	0.00	0.00	0.00
HC-19	29-Jul-2005	33.05	17.11	--	0.00	15.94	0.00	0.00	0.00
HC-19	26-Aug-2005	33.05	17.28	--	0.00	15.77	0.00	0.00	0.00
HC-19	14-Sep-2005	33.05	17.25	--	0.00	15.80	0.00	0.00	0.00

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
HC-19	24-Sep-2005	33.05	17.40	--	0.00	15.65	0.00	0.00	0.00
HC-19	21-Oct-2005	33.05	17.43	--	0.00	15.62	0.00	0.00	0.00
HC-19	28-Nov-2005	33.05	17.09	--	0.00	15.96	0.00	0.00	0.00
HC-19	6-Dec-2005	33.05	16.84	--	0.00	16.21	0.00	0.00	0.00
HC-19	3-Jan-2006	33.05	16.30	--	0.00	16.75	0.00	0.00	0.00
HC-19	17-Feb-2006	33.05	15.96	--	0.00	17.09	0.00	0.00	0.00
HC-19	13-Mar-2006	33.05	16.13	--	0.00	16.92	0.00	0.00	0.00
HC-19	27-Jun-2006	33.05	16.60	--	0.00	16.45	0.00	0.00	0.00
HC-19	19-Sep-2006	33.05	17.26	--	0.00	15.79	0.00	0.00	0.00
HC-19	13-Dec-2006	33.05	16.67	--	0.00	16.38	0.00	0.00	0.00
HC-19	29-Mar-2007	33.05	16.36	--	0.00	16.69	0.00	0.00	0.00
HC-19	27-Jun-2007	33.05	17.04	--	0.00	16.01	0.00	0.00	0.00
HC-19	18-Sep-2007	33.05	17.63	--	0.00	15.42	0.00	0.00	0.00
HC-19	6-Dec-2007	33.05	16.59	--	0.00	16.46	0.00	0.00	0.00
HC-19	10-Mar-2008	33.05	16.48	--	0.00	16.57	0.00	0.00	0.00
HC-19	12-Jun-2008	33.05	16.01	--	0.00	17.04	0.00	0.00	0.00
HC-19	8-Sep-2008	33.05	17.64	--	0.00	15.41	0.00	0.00	0.00
HC-19	29-Dec-2008	33.05	17.55	--	0.00	15.50	0.00	0.00	0.00
HC-19	10-Mar-2009	33.05	17.34	--	0.00	15.71	0.00	0.00	0.00
HC-19	4-Jun-2009	33.05	17.27	--	0.00	15.78	0.00	0.00	0.00
HC-19	9-Sep-2009	33.05	18.03	--	0.00	15.02	0.00	0.00	0.00
HC-19	15-Dec-2009	33.05	17.52	--	0.00	15.53	0.00	0.00	0.00
HC-19	11-Mar-2010	33.05	16.75	--	0.00	16.30	0.00	0.00	0.00
HC-19	8-Jun-2010	33.05	16.50	--	0.00	16.55	0.00	0.00	0.00
HC-19	16-Sep-2010	33.05	17.26	--	0.00	15.79	0.00	0.00	0.00
HC-19	13-Dec-2010	33.05	16.26	--	0.00	16.79	0.00	0.00	0.00
HC-19	9-Jun-2011	33.05	15.12	--	0.00	17.93	0.00	0.00	0.00
HC-19	1-Dec-2011	33.05	17.03	--	0.00	16.02	0.00	0.00	0.00
HC-19	11-Jun-2012	33.05	16.30	--	0.00	16.75	0.00	0.00	0.00
HC-19	19-Dec-2012	33.05	16.13	--	0.00	16.92	0.00	0.00	0.00
HC-19	17-Dec-2013	33.05	17.84	--	0.00	15.21	0.00	0.00	0.00
HC-19	11-Dec-2014	33.05	17.28	--	0.00	15.77	0.00	0.00	0.00
HC-19	15-Dec-2015	33.05	16.08	--	0.00	16.97	0.00	0.00	0.00
HC-19	19-Dec-2016	33.05	16.86	--	0.00	16.19	0.00	0.00	0.00
HC-19	13-Dec-2017	33.05	16.96	--	0.00	16.09	0.00	0.00	0.00
HC-19	5-Dec-2018	33.05	18.47	--	0.00	14.58	0.00	0.00	0.00
HC-19	17-Jan-2019	33.05	17.89	--	0.00	15.16	0.00	0.00	0.00
HC-19	9-Dec-2019	33.05	18.90	--	0.00	14.15	0.00	0.00	0.00
HC-19	10-Dec-2020	33.05	18.45	--	0.00	14.60	0.00	0.00	0.00
HC-19	6-Jan-2022	33.05	15.08	--	0.00	17.97	0.00	0.00	0.00
HC-20	13-Nov-2003	32.26	16.18	--	0.00	16.08	0.00	0.00	0.00
HC-20	26-Nov-2003	32.26	15.99	--	0.00	16.27	0.00	0.00	0.00
HC-20	24-Dec-2003	32.26	15.36	--	0.00	16.90	0.00	0.00	0.00
HC-20	21-Jan-2004	32.26	14.78	--	0.00	17.48	0.00	0.00	0.00
HC-20	25-Feb-2004	32.26	14.50	14.46	0.04	17.80	0.00	0.00	0.04
HC-20	10-Mar-2004	32.26	14.70	14.65	0.05	17.60	0.00	0.00	0.05
HC-20	24-Mar-2004	32.26	14.85	14.81	0.04	17.45	0.00	0.00	0.04
HC-20	14-Jan-2005	32.26	--	--	--	--	--	0.00	--
HC-20	21-Jan-2005	32.26	17.40	--	0.00	14.86	0.00	0.00	0.00
HC-20	28-Jan-2005	32.26	15.40	--	0.00	16.86	0.00	0.00	0.00
HC-20	2-Feb-2005	32.26	15.45	--	0.00	16.81	0.00	0.00	0.00
HC-20	25-Feb-2005	32.26	15.36	--	0.00	16.90	0.00	0.00	0.00
HC-20	25-Mar-2005	32.26	15.56	15.56	0.00	16.70	0.00	0.00	0.00
HC-20	30-Apr-2005	32.26	15.31	--	0.00	16.95	0.00	0.00	0.00
HC-20	31-May-2005	32.26	15.17	--	0.00	17.09	0.00	0.00	0.00
HC-20	2-Jun-2005	32.26	15.15	--	0.00	17.11	0.00	0.00	0.00
HC-20	24-Jun-2005	32.26	15.17	--	0.00	17.09	0.00	0.00	0.00
HC-20	29-Jul-2005	32.26	15.33	--	0.00	16.93	0.00	0.00	0.00
HC-20	26-Aug-2005	32.26	15.49	--	0.00	16.77	0.00	0.00	0.00
HC-20	14-Sep-2005	32.26	15.50	--	0.00	16.76	0.00	0.00	0.00
HC-20	24-Sep-2005	32.26	16.69	--	0.00	15.57	0.00	0.00	0.00
HC-20	21-Oct-2005	32.26	15.70	--	0.00	16.56	0.00	0.00	0.00
HC-20	28-Nov-2005	32.26	15.32	--	0.00	16.94	0.00	0.00	0.00
HC-20	6-Dec-2005	32.26	15.22	--	0.00	17.04	0.00	0.00	0.00
HC-20	3-Jan-2006	32.26	14.82	--	0.00	17.44	0.00	0.00	0.00
HC-20	17-Feb-2006	32.26	14.16	--	0.00	18.10	0.00	0.00	0.00
HC-20	13-Mar-2006	32.26	14.30	--	0.00	17.96	0.00	0.00	0.00
HC-20	27-Jun-2006	32.26	--	--	--	--	--	0.00	--
HC-20	19-Sep-2006	32.26	15.58	--	0.00	16.68	0.00	0.00	0.00
HC-20	13-Dec-2006	32.26	14.78	--	0.00	17.48	0.00	0.00	0.00
HC-20	29-Mar-2007	32.26	14.50	--	0.00	17.76	0.00	0.00	0.00
HC-20	27-Jun-2007	32.26	15.15	--	0.00	17.11	0.00	0.00	0.00

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
HC-20	18-Sep-2007	32.26	15.70	--	0.00	16.56	0.00	0.00	0.00
HC-20	6-Dec-2007	32.26	15.09	--	0.00	17.17	0.00	0.00	0.00
HC-20	10-Mar-2008	32.26	14.71	--	0.00	17.55	0.00	0.00	0.00
HC-20	12-Jun-2008	32.26	14.83	--	0.00	17.43	0.00	0.00	0.00
HC-20	8-Sep-2008	32.26	15.63	--	0.00	16.63	0.00	0.00	0.00
HC-20	29-Dec-2008	32.26	Well inadvertently not gauged during groundwater monitoring event.						
HC-20	10-Mar-2009	32.26	15.70	--	0.00	16.56	0.00	0.00	0.00
HC-20	4-Jun-2009	32.26	15.25	--	0.00	17.01	0.00	0.00	0.00
HC-21	13-Nov-2003	31.95	17.60	--	0.00	14.35	0.00	0.00	0.00
HC-21	26-Nov-2003	31.95	17.41	--	0.00	14.54	0.00	0.00	0.00
HC-21	24-Dec-2003	31.95	16.22	--	0.00	15.73	0.00	0.00	0.00
HC-21	21-Jan-2004	31.95	15.53	--	0.00	16.42	0.00	0.00	0.00
HC-21	25-Feb-2004	31.95	15.32	--	0.00	16.63	0.00	0.00	0.00
HC-21	24-Mar-2004	31.95	14.60	--	0.00	17.35	0.00	0.00	0.00
HC-21	14-Jan-2005	31.95	16.36	--	0.00	15.59	0.00	0.00	0.00
HC-21	28-Jan-2005	31.95	16.53	16.52	0.01	15.43	0.00	0.00	0.01
HC-21	2-Feb-2005	31.95	16.62	--	0.00	15.33	0.00	0.00	0.00
HC-21	25-Feb-2005	31.95	16.57	16.57	0.00	15.38	0.00	0.00	0.00
HC-21	25-Mar-2005	31.95	16.78	16.78	0.00	15.17	0.00	0.00	0.00
HC-21	30-Apr-2005	31.95	16.44	--	0.00	15.51	0.00	0.00	0.00
HC-21	31-May-2005	31.95	16.18	--	0.00	15.77	0.00	0.00	0.00
HC-21	2-Jun-2005	31.95	16.20	--	0.00	15.75	0.00	0.00	0.00
HC-21	24-Jun-2005	31.95	16.29	--	0.00	15.66	0.00	0.00	0.00
HC-21	29-Jul-2005	31.95	16.49	--	0.00	15.46	0.00	0.00	0.00
HC-21	26-Aug-2005	31.95	16.65	--	0.00	15.30	0.00	0.00	0.00
HC-21	14-Sep-2005	31.95	16.52	--	0.00	15.43	0.00	0.00	0.00
HC-21	24-Sep-2005	31.95	17.70	--	0.00	14.25	0.00	0.00	0.00
HC-21	21-Oct-2005	31.95	16.70	--	0.00	15.25	0.00	0.00	0.00
HC-21	28-Nov-2005	31.95	16.21	--	0.00	15.74	0.00	0.00	0.00
HC-21	6-Dec-2005	31.95	15.81	--	0.00	16.14	0.00	0.00	0.00
HC-21	3-Jan-2006	31.95	15.07	--	0.00	16.88	0.00	0.00	0.00
HC-21	17-Feb-2006	31.95	14.95	--	0.00	17.00	0.00	0.00	0.00
HC-21	13-Mar-2006	31.95	15.02	--	0.00	16.93	0.00	0.00	0.00
HC-21	27-Jun-2006	31.95	15.62	--	0.00	16.33	0.00	0.00	0.00
HC-21	19-Sep-2006	31.95	16.54	--	0.00	15.41	0.00	0.00	0.00
HC-21	13-Dec-2006	31.95	15.53	--	0.00	16.42	0.00	0.00	0.00
HC-21	29-Mar-2007	31.95	15.09	--	0.00	16.86	0.00	0.00	0.00
HC-21	27-Jun-2007	31.95	16.11	--	0.00	15.84	0.00	0.00	0.00
HC-21	18-Sep-2007	31.95	16.84	--	0.00	15.11	0.00	0.00	0.00
HC-21	6-Dec-2007	31.95	15.05	--	0.00	16.90	0.00	0.00	0.00
HC-21	10-Mar-2008	31.95	15.29	--	0.00	16.66	0.00	0.00	0.00
HC-21	12-Jun-2008	31.95	15.36	--	0.00	16.59	0.00	0.00	0.00
HC-21	8-Sep-2008	31.95	16.83	--	0.00	15.12	0.00	0.00	0.00
HC-21	29-Dec-2008	31.95	16.44	--	0.00	15.51	0.00	0.00	0.00
HC-21	10-Mar-2009	31.95	16.40	--	0.00	15.55	0.00	0.00	0.00
HC-21	4-Jun-2009	31.95	16.25	--	0.00	15.70	0.00	0.00	0.00
HC-21	9-Sep-2009	31.95	17.37	--	0.00	14.58	0.00	0.00	0.00
HC-21	15-Dec-2009	31.95	16.32	--	0.00	15.63	0.00	0.00	0.00
HC-21	11-Mar-2010	31.95	15.43	--	0.00	16.52	0.00	0.00	0.00
HC-21	8-Jun-2010	31.95	15.14	--	0.00	16.81	0.00	0.00	0.00
HC-21	16-Sep-2010	31.95	15.39	--	0.00	16.56	0.00	0.00	0.00
HC-21	13-Dec-2010	31.95	14.90	--	0.00	17.05	0.00	0.00	0.00
HC-21	9-Jun-2011	31.95	13.78	--	0.00	18.17	0.00	0.00	0.00
HC-21	1-Dec-2011	31.95	15.94	--	0.00	16.01	0.00	0.00	0.00
HC-21	11-Jun-2012	31.95	15.05	--	0.00	16.90	0.00	0.00	0.00
HC-21	19-Dec-2012	31.95	14.65	--	0.00	17.30	0.00	0.00	0.00
HC-21	17-Dec-2013	31.95	17.06	--	0.00	14.89	0.00	0.00	0.00
HC-21	11-Dec-2014	31.95	16.14	--	0.00	15.81	0.00	0.00	0.00
HC-21	15-Dec-2015	31.95	14.43	--	0.00	17.52	0.00	0.00	0.00
HC-21	19-Dec-2016	31.95	15.23	--	0.00	16.72	0.00	0.00	0.00
HC-21	13-Dec-2017	31.95	15.25	--	0.00	16.70	0.00	0.00	0.00
HC-21	5-Dec-2018	31.95	17.57	--	0.00	14.38	0.00	0.00	0.00
HC-21	17-Jan-2019	31.95	16.59	--	0.00	15.36	0.00	0.00	0.00
HC-21	9-Dec-2019	31.95	18.16	--	0.00	13.79	0.00	0.00	0.00
HC-21	10-Dec-2020	31.95	17.43	--	0.00	14.52	0.00	0.00	0.00
HC-21	6-Jan-2022	31.95	14.74	--	0.00	17.21	0.00	0.00	0.00
HC-22	13-Nov-2003	31.91	16.04	--	0.00	15.87	0.00	0.00	0.00
HC-22	26-Nov-2003	31.91	15.88	--	0.00	16.03	0.00	0.00	0.00
HC-22	24-Dec-2003	31.91	14.46	--	0.00	17.45	0.00	0.00	0.00
HC-22	21-Jan-2004	31.91	13.79	--	0.00	18.12	0.00	0.00	0.00
HC-22	25-Feb-2004	31.91	13.43	--	0.00	18.48	0.00	0.00	0.00
HC-22	24-Mar-2004	31.91	15.33	--	0.00	16.58	0.00	0.00	0.00

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
HC-22	14-Jan-2005	31.91	--	--	--	--	--	0.00	--
HC-22	21-Jan-2005	31.91	14.50	--	0.00	17.41	0.00	0.00	0.00
HC-22	2-Feb-2005	31.91	14.51	--	0.00	17.40	0.00	0.00	0.00
HC-22	28-Jan-2005	31.91	14.46	--	0.00	17.45	0.00	0.00	0.00
HC-22	25-Feb-2005	31.91	15.49	15.49	0.00	16.42	0.00	0.00	0.00
HC-22	25-Mar-2005	31.91	15.65	15.65	0.00	16.26	0.00	0.00	0.00
HC-22	30-Apr-2005	31.91	14.36	--	0.00	17.55	0.00	0.00	0.00
HC-22	31-May-2005	31.91	14.15	--	0.00	17.76	0.00	0.00	0.00
HC-22	2-Jun-2005	31.91	14.14	--	0.00	17.77	0.00	0.00	0.00
HC-22	24-Jun-2005	31.91	14.22	--	0.00	17.69	0.00	0.00	0.00
HC-22	29-Jul-2005	31.91	14.39	--	0.00	17.52	0.00	0.00	0.00
HC-22	26-Aug-2005	31.91	14.55	--	0.00	17.36	0.00	0.00	0.00
HC-22	14-Sep-2005	31.91	14.60	--	0.00	17.31	0.00	0.00	0.00
HC-22	24-Sep-2005	31.91	14.70	--	0.00	17.21	0.00	0.00	0.00
HC-22	21-Oct-2005	31.91	14.81	--	0.00	17.10	0.00	0.00	0.00
HC-22	28-Nov-2005	31.91	14.39	--	0.00	17.52	0.00	0.00	0.00
HC-22	6-Dec-2005	31.91	14.12	--	0.00	17.79	0.00	0.00	0.00
HC-22	3-Jan-2006	31.91	13.69	--	0.00	18.22	0.00	0.00	0.00
HC-22	17-Feb-2006	31.91	13.07	--	0.00	18.84	0.00	0.00	0.00
HC-22	13-Mar-2006	31.91	13.15	--	0.00	18.76	0.00	0.00	0.00
HC-22	27-Jun-2006	31.91	13.82	--	0.00	18.09	0.00	0.00	0.00
HC-22	19-Sep-2006	31.91	14.45	--	0.00	17.46	0.00	0.00	0.00
HC-22	13-Dec-2006	31.91	13.74	--	0.00	18.17	0.00	0.00	0.00
HC-22	29-Mar-2007	31.91	13.45	--	0.00	18.46	0.00	0.00	0.00
HC-22	27-Jun-2007	31.91	14.14	--	0.00	17.77	0.00	0.00	0.00
HC-22	18-Sep-2007	31.91	14.74	--	0.00	17.17	0.00	0.00	0.00
HC-22	6-Dec-2007	31.91	14.07	--	0.00	17.84	0.00	0.00	0.00
HC-22	10-Mar-2008	31.91	13.68	--	0.00	18.23	0.00	0.00	0.00
HC-22	12-Jun-2008	31.91	--	--	--	--	--	0.00	--
HC-22	8-Sep-2008	31.91	14.67	--	0.00	17.24	0.00	0.00	0.00
HC-22	29-Dec-2008	31.91	13.91	--	0.00	18.00	0.00	0.00	0.00
HC-22	10-Mar-2009	31.91	14.18	--	0.00	17.73	0.00	0.00	0.00
HC-22	4-Jun-2009	31.91	14.24	--	0.00	17.67	0.00	0.00	0.00
HC-23	13-Nov-2003	32.74	15.28	--	0.00	17.46	0.00	0.00	0.00
HC-23	26-Nov-2003	32.74	14.88	--	0.00	17.86	0.00	0.00	0.00
HC-23	24-Dec-2003	32.74	15.23	15.15	0.08	17.58	0.01	0.01	0.00
HC-23	30-Dec-2003	32.74	15.22	15.05	0.17	17.67	0.01	0.02	0.00
HC-23	9-Jan-2004	32.74	14.85	14.77	0.08	17.96	0.01	0.03	0.01
HC-23	15-Jan-2004	32.74	14.61	--	0.00	18.13	0.00	0.03	0.00
HC-23	21-Jan-2004	32.74	14.42	14.41	0.01	18.33	0.01	0.04	0.01
HC-23	3-Feb-2004	32.74	14.05	--	0.00	18.69	0.00	0.04	0.00
HC-23	18-Feb-2004	32.74	14.05	--	0.00	18.69	0.00	0.04	0.00
HC-23	25-Feb-2004	32.74	13.98	--	0.00	18.76	0.00	0.04	0.00
HC-23	10-Mar-2004	32.74	14.15	--	0.00	18.59	0.00	0.04	0.00
HC-23	24-Mar-2004	32.74	14.33	--	0.00	18.41	0.00	0.04	0.00
HC-23	14-Jan-2005	32.74	--	--	--	--	0.00	0.04	0.00
HC-23	21-Jan-2005	32.74	15.35	15.30	0.05	17.43	0.01	0.05	0.00
HC-23	28-Jan-2005	32.74	15.28	15.27	0.01	17.47	0.00	0.05	0.01
HC-23	2-Feb-2005	32.74	15.36	15.33	0.03	17.41	0.00	0.05	0.03
HC-23	25-Feb-2005	32.74	15.31	15.30	0.01	17.44	0.00	0.05	0.01
HC-23	25-Mar-2005	32.74	15.48	15.45	0.03	17.29	0.00	0.05	0.03
HC-23	30-Apr-2005	32.74	15.18	--	0.00	17.56	0.00	0.05	0.00
HC-23	31-May-2005	32.74	14.95	--	0.00	17.79	0.00	0.05	0.00
HC-23	2-Jun-2005	32.74	14.97	14.95	0.02	17.79	0.00	0.05	0.02
HC-23	24-Jun-2005	32.74	15.01	14.96	0.05	17.77	0.00	0.05	0.05
HC-23	29-Jul-2005	32.74	16.25	16.25	0.00	16.49	0.00	0.05	0.00
HC-23	26-Aug-2005	32.74	15.51	15.30	0.21	17.42	0.50	0.55	0.05
HC-23	9-Sep-2005	32.74	15.49	15.40	0.09	17.33	0.00	0.55	0.09
HC-23	14-Sep-2005	32.74	15.50	--	0.00	17.24	0.00	0.55	0.00
HC-23	24-Sep-2005	32.74	15.64	15.47	0.17	17.25	0.05	0.60	0.05
HC-23	10-Oct-2005	32.74	15.55	15.52	0.03	17.22	0.00	0.60	0.03
HC-23	21-Oct-2005	32.74	15.47	15.45	0.02	17.29	0.00	0.60	0.02
HC-23	28-Nov-2005	32.74	15.27	15.27	0.00	17.47	0.00	0.60	0.00
HC-23	6-Dec-2005	32.74	15.14	--	0.00	17.60	0.00	0.60	0.00
HC-23	3-Jan-2006	32.74	14.75	--	0.00	17.99	0.00	0.60	0.00
HC-23	17-Feb-2006	32.74	13.73	--	0.00	19.01	0.00	0.60	0.00
HC-23	13-Mar-2006	32.74	13.91	--	0.00	18.83	0.00	0.60	0.00
HC-23	27-Jun-2006	32.74	--	--	--	--	--	0.60	--
HC-23	19-Sep-2006	32.74	15.25	15.23	0.02	17.51	0.00	0.60	0.02
HC-23	13-Dec-2006	32.74	14.68	14.65	0.03	18.09	0.00	0.60	0.03
HC-23	29-Mar-2007	32.74	14.20	14.19	0.01	18.55	0.00	0.60	0.01
HC-23	27-Jun-2007	32.74	14.93	14.91	0.02	17.83	0.00	0.60	0.02

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
HC-23	18-Sep-2007	32.74	15.59	15.56	0.03	17.18	0.00	0.60	0.03
HC-23	6-Dec-2007	32.74	15.51	--	0.00	17.23	0.00	0.60	0.00
HC-23	10-Mar-2008	32.74	14.37	--	0.00	18.37	0.00	0.60	0.00
HC-23	12-Jun-2008	32.74	14.65	--	0.00	18.09	0.00	0.60	0.00
HC-23	8-Sep-2008	32.74	15.50	--	0.00	17.24	0.00	0.60	0.00
HC-23	29-Dec-2008	32.74	15.50	--	0.00	17.24	0.00	0.60	0.00
HC-23	10-Mar-2009	32.74	15.04	--	0.00	17.70	0.00	0.60	0.00
HC-23	4-Jun-2009	32.74	15.04	--	0.00	17.70	0.00	0.60	0.00
HC-23	9-Sep-2009	32.74	15.81	--	0.00	16.93	0.00	0.60	0.00
HC-23	15-Dec-2009	32.74	15.12	--	0.00	17.62	0.00	0.60	0.00
HC-23	11-Mar-2010	32.74	14.55	--	0.00	18.19	0.00	0.60	0.00
HC-23	8-Jun-2010	32.74	14.48	--	0.00	18.26	0.00	0.60	0.00
HC-23	16-Sep-2010	32.74	15.11	--	0.00	17.63	0.00	0.60	0.00
HC-23	13-Dec-2010	32.74	14.60	--	0.00	18.14	0.00	0.60	0.00
HC-23	9-Jun-2011	32.74	13.60	13.60	0.00	19.14	0.00	0.60	0.00
HC-23	1-Dec-2011	32.74	14.93	--	0.00	17.81	0.00	0.60	0.00
HC-23	11-Jun-2012	32.74	14.00	--	0.00	18.74	0.00	0.60	0.00
HC-23	19-Dec-2012	32.74	14.12	--	0.00	18.62	0.00	0.60	0.00
HC-23	17-Dec-2013	32.74	15.68	15.57	0.11	17.16	0.10	0.70	0.00
HC-23	11-Dec-2014	32.74	17.05	--	0.00	15.69	0.00	0.70	0.00
HC-23	15-Dec-2015	32.74	14.62	--	0.00	18.12	0.00	0.70	0.00
HC-23	19-Dec-2016	32.74	14.42	--	0.00	18.32	0.00	0.70	0.00
HC-23	13-Dec-2017	32.74	14.04	--	0.00	18.70	0.00	0.70	0.00
HC-23	5-Dec-2018	32.74	15.35	--	0.00	17.39	0.00	0.70	0.00
HC-23	17-Jan-2019	32.74	14.74	--	0.00	18.00	0.00	0.70	0.00
HC-23	9-Dec-2019	32.74	15.71	--	0.00	17.03	0.00	0.70	0.00
HC-23	10-Dec-2020	32.74	15.19	--	0.00	17.55	0.00	0.70	0.00
HC-23	6-Jan-2022	32.74	13.77	--	0.00	18.97	0.00	0.70	0.00
HC-24	13-Nov-2003	30.04	15.08	--	0.00	14.96	0.00	0.00	0.00
HC-24	26-Nov-2003	30.04	14.68	--	0.00	15.36	0.00	0.00	0.00
HC-24	24-Dec-2003	30.04	13.82	--	0.00	16.22	0.00	0.00	0.00
HC-24	21-Jan-2004	30.04	13.13	--	0.00	16.91	0.00	0.00	0.00
HC-24	25-Feb-2004	30.04	12.35	--	0.00	17.69	0.00	0.00	0.00
HC-24	24-Mar-2004	30.04	12.61	--	0.00	17.43	0.00	0.00	0.00
HC-24	14-Jan-2005	30.04	14.90	--	0.00	15.14	0.00	0.00	0.00
HC-24	28-Jan-2005	30.04	15.79	--	0.00	14.25	0.00	0.00	0.00
HC-24	2-Feb-2005	30.04	14.85	--	0.00	15.19	0.00	0.00	0.00
HC-24	25-Feb-2005	30.04	14.80	14.80	0.00	15.24	0.00	0.00	0.00
HC-24	25-Mar-2005	30.04	15.07	15.07	0.00	14.97	0.00	0.00	0.00
HC-24	30-Apr-2005	30.04	14.62	--	0.00	15.42	0.00	0.00	0.00
HC-24	31-May-2005	30.04	17.34	--	0.00	12.70	0.00	0.00	0.00
HC-24	2-Jun-2005	30.04	14.31	--	0.00	15.73	0.00	0.00	0.00
HC-24	24-Jun-2005	30.04	14.30	--	0.00	15.74	0.00	0.00	0.00
HC-24	29-Jul-2005	30.04	14.60	--	0.00	15.44	0.00	0.00	0.00
HC-24	26-Aug-2005	30.04	14.92	--	0.00	15.12	0.00	0.00	0.00
HC-24	14-Sep-2005	30.04	15.05	--	0.00	14.99	0.00	0.00	0.00
HC-24	24-Sep-2005	30.04	15.18	--	0.00	14.86	0.00	0.00	0.00
HC-24	21-Oct-2005	30.04	15.33	--	0.00	14.71	0.00	0.00	0.00
HC-24	28-Nov-2005	30.04	14.55	--	0.00	15.49	0.00	0.00	0.00
HC-24	6-Dec-2005	30.04	14.30	--	0.00	15.74	0.00	0.00	0.00
HC-24	3-Jan-2006	30.04	13.53	--	0.00	16.51	0.00	0.00	0.00
HC-24	17-Feb-2006	30.04	12.23	--	0.00	17.81	0.00	0.00	0.00
HC-24	13-Mar-2006	30.04	12.38	--	0.00	17.66	0.00	0.00	0.00
HC-24	27-Jun-2006	30.04	13.31	--	0.00	16.73	0.00	0.00	0.00
HC-24	19-Sep-2006	30.04	14.64	--	0.00	15.40	0.00	0.00	0.00
HC-24	13-Dec-2006	30.04	12.84	--	0.00	17.20	0.00	0.00	0.00
HC-24	29-Mar-2007	30.04	12.30	--	0.00	17.74	0.00	0.00	0.00
HC-24	27-Jun-2007	30.04	13.74	13.73	0.01	16.31	0.00	0.00	0.01
HC-24	18-Sep-2007	30.04	14.99	--	0.00	15.05	0.00	0.00	0.00
HC-24	6-Dec-2007	30.04	13.13	--	0.00	16.91	0.00	0.00	0.00
HC-24	10-Mar-2008	30.04	12.72	--	0.00	17.32	0.00	0.00	0.00
HC-24	12-Jun-2008	30.04	13.22	--	0.00	16.82	0.00	0.00	0.00
HC-24	8-Sep-2008	30.04	14.68	--	0.00	15.36	0.00	0.00	0.00
HC-24	29-Dec-2008	30.04	13.05	--	0.00	16.99	0.00	0.00	0.00
HC-24	10-Mar-2009	30.04	13.92	--	0.00	16.12	0.00	0.00	0.00
HC-24	4-Jun-2009	30.04	13.89	--	0.00	16.15	0.00	0.00	0.00
HC-24	9-Sep-2009	30.04	15.01	--	0.00	15.03	0.00	0.00	0.00
HC-24	15-Dec-2009	30.04	14.09	--	0.00	15.95	0.00	0.00	0.00
HC-24	11-Mar-2010	30.04	12.65	--	0.00	17.39	0.00	0.00	0.00
HC-24	8-Jun-2010	30.04	12.57	--	0.00	17.47	0.00	0.00	0.00
HC-24	16-Sep-2010	30.04	15.05	15.05	0.00	14.99	0.00	0.00	0.00
HC-24	13-Dec-2010	30.04	12.31	12.31	0.00	17.73	0.00	0.00	0.00

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
HC-24	9-Jun-2011	30.04	11.84	--	0.00	18.20	0.00	0.00	0.00
HC-24	1-Dec-2011	30.04	13.29	--	0.00	16.75	0.00	0.00	0.00
HC-24	11-Jun-2012	30.04	12.22	--	0.00	17.82	0.00	0.00	0.00
HC-24	19-Dec-2012	30.04	12.02	--	0.00	18.02	0.00	0.00	0.00
HC-24	17-Dec-2013	30.04	14.64	--	0.00	15.40	0.00	0.00	0.00
HC-24	11-Dec-2014	30.04	13.29	--	0.00	16.75	0.00	0.00	0.00
HC-24	15-Dec-2015	30.04	11.87	--	0.00	18.17	0.00	0.00	0.00
HC-24	19-Dec-2016	30.04	12.33	--	0.00	17.71	0.00	0.00	0.00
HC-24	13-Dec-2017	30.04	12.25	--	0.00	17.79	0.00	0.00	0.00
HC-24	5-Dec-2018	30.04	14.29	--	0.00	15.75	0.00	0.00	0.00
HC-24	9-Dec-2019	30.04	14.92	--	0.00	15.12	0.00	0.00	0.00
HC-24	10-Dec-2020	30.04	13.60	--	0.01	16.45	0.00	0.00	0.00
HC-24	6-Jan-2022	30.04	11.09	--	0.00	18.95	0.00	0.00	0.00
EX-1	27-Aug-2003	33.08	15.78	--	0.00	17.30	0.00	0.00	0.00
EX-1	3-Sep-2003	33.08	15.88	--	0.00	17.20	0.00	0.00	0.00
EX-1	11-Sep-2003	33.08	16.06	--	0.00	17.02	0.00	0.00	0.00
EX-1	17-Sep-2003	33.08	16.21	--	0.00	16.87	0.00	0.00	0.00
EX-1	30-Sep-2003	33.08	16.22	--	0.00	16.86	0.00	0.00	0.00
EX-1	14-Oct-2003	33.08	16.25	--	0.00	16.83	0.00	0.00	0.00
EX-1	29-Oct-2003	33.08	16.38	--	0.00	16.70	0.00	0.00	0.00
EX-1	13-Nov-2003	33.08	16.45	--	0.00	16.63	0.00	0.00	0.00
EX-1	26-Nov-2003	33.08	16.07	--	0.00	17.01	0.00	0.00	0.00
EX-1	24-Dec-2003	33.08	15.46	--	0.00	17.62	0.00	0.00	0.00
EX-1	21-Jan-2004	33.08	15.06	--	0.00	18.02	0.00	0.00	0.00
EX-1	25-Feb-2004	33.08	14.53	--	0.00	18.55	0.00	0.00	0.00
EX-1	24-Mar-2004	33.08	14.84	--	0.00	18.24	0.00	0.00	0.00
EX-1	28-Jan-2005	33.08	15.79	--	0.00	17.29	0.00	0.00	0.00
EX-1	25-Feb-2005	33.08	14.80	14.80	0.00	18.28	0.00	0.00	0.00
EX-1	25-Mar-2005	33.08	15.07	15.07	0.00	18.01	0.00	0.00	0.00
EX-1	30-Apr-2005	33.08	14.62	--	0.00	18.46	0.00	0.00	0.00
EX-1	31-May-2005	33.08	17.34	--	0.00	15.74	0.00	0.00	0.00
EX-1	24-Jun-2005	33.08	14.30	--	0.00	18.78	0.00	0.00	0.00
EX-1	29-Jul-2005	33.08	14.60	--	0.00	18.48	0.00	0.00	0.00
EX-1	26-Aug-2005	33.08	14.92	--	0.00	18.16	0.00	0.00	0.00
EX-1	24-Sep-2005	33.08	15.18	--	0.00	17.90	0.00	0.00	0.00
EX-1	21-Oct-2005	33.08	15.33	--	0.00	17.75	0.00	0.00	0.00
EX-1	28-Nov-2005	33.08	14.55	--	0.00	18.53	0.00	0.00	0.00
EX-1	3-Jan-2006	33.08	13.53	--	0.00	19.55	0.00	0.00	0.00
EX-1	17-Feb-2006	33.08	12.23	--	0.00	20.85	0.00	0.00	0.00
EX-1	13-Mar-2006	33.08	12.38	--	0.00	20.70	0.00	0.00	0.00
EX-1	27-Jun-2006	33.08	13.31	--	0.00	19.77	0.00	0.00	0.00
EX-1	19-Sep-2006	33.08	14.64	--	0.00	18.44	0.00	0.00	0.00
EX-1	13-Dec-2006	33.08	12.84	--	0.00	20.24	0.00	0.00	0.00
EX-1	29-Mar-2007	33.08	12.30	--	0.00	20.78	0.0	0.00	0.00
EX-1	27-Jun-2007	33.08	13.74	13.73	0.01	19.35	0.0	0.00	0.01
EX-1	18-Sep-2007	33.08	14.99	--	0.00	18.09	0.0	0.00	0.00
EX-1	6-Dec-2007	33.08	13.13	--	0.00	19.95	0.0	0.00	0.00
EX-1	10-Mar-2008	33.08	12.72	--	0.00	20.36	0.0	0.00	0.00
EX-1	12-Jun-2008	33.08	13.22	--	0.00	19.86	0.0	0.00	0.00
EX-1	8-Sep-2008	33.08	14.68	--	0.00	18.40	0.0	0.00	0.00
EX-1	29-Dec-2008	33.08	13.05	--	0.00	20.03	0.0	0.00	0.00
EX-1	10-Mar-2009	33.08	--	--	--	--	--	0.00	--
EX-1	24-Jun-2009	33.08	--	--	--	--	--	0.00	--
BE-1	2-Jun-2005	19.75	10.02	--	0.00	9.73	0.00	0.00	0.00
BE-1	24-Jun-2005	19.75	10.01	--	0.00	9.74	0.00	0.00	0.00
BE-1	29-Jul-2005	19.75	10.23	--	0.00	9.52	0.00	0.00	0.00
BE-1	26-Aug-2005	19.75	10.27	--	0.00	9.48	0.00	0.00	0.00
BE-1	14-Sep-2005	19.75	10.05	--	0.00	9.70	0.00	0.00	0.00
BE-1	24-Sep-2005	19.75	10.22	--	0.00	9.53	0.00	0.00	0.00
BE-1	21-Oct-2005	19.75	10.10	--	0.00	9.65	0.00	0.00	0.00
BE-1	28-Nov-2005	19.75	9.91	--	0.00	9.84	0.00	0.00	0.00
BE-1	6-Dec-2005	19.75	9.70	--	0.00	10.05	0.00	0.00	0.00
BE-1	3-Jan-2006	19.75	--	--	0.00	#VALUE!	0.00	0.00	0.00
BE-1	17-Feb-2006	19.75	9.61	--	0.00	10.14	0.00	0.00	0.00
BE-1	13-Mar-2006	19.75	9.55	--	0.00	10.20	0.00	0.00	0.00
BE-1	27-Jun-2006	19.75	9.66	--	0.00	10.09	0.00	0.00	0.00
BE-1	19-Sep-2006	19.75	10.10	--	0.00	9.65	0.00	0.00	0.00
BE-1	13-Dec-2006	19.75	6.57	--	0.00	13.18	0.00	0.00	0.00
BE-1	29-Mar-2007	19.75	6.23	--	0.00	13.52	0.00	0.00	0.00
BE-1	27-Jun-2007	19.75	6.76	--	0.00	12.99	0.00	0.00	0.00
BE-1	18-Sep-2007	19.75	7.79	--	0.00	11.96	0.00	0.00	0.00
BE-1	6-Dec-2007	19.75	6.38	--	0.00	13.37	0.00	0.00	0.00

Please refer to notes at the end of table.

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Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
BE-1	10-Mar-2008	19.75	6.49	--	0.00	13.26	0.00	0.00	0.00
BE-1	12-Jun-2008	19.75	3.90	--	0.00	15.85	0.00	0.00	0.00
BE-1	8-Sep-2008	19.75	7.08	--	0.00	12.67	0.00	0.00	0.00
BE-1	29-Dec-2008	19.75	6.51	--	0.00	13.24	0.00	0.00	0.00
BE-1	10-Mar-2009	19.75	6.89	--	0.00	12.86	0.00	0.00	0.00
BE-1	4-Jun-2009	19.75	5.63	--	0.00	14.12	0.00	0.00	0.00
BE-1	9-Sep-2009	19.75	7.25	--	0.00	12.50	0.00	0.00	0.00
BE-1	15-Dec-2009	19.75	7.01	--	0.00	12.74	0.00	0.00	0.00
BE-1	11-Mar-2010	19.75	6.72	--	0.00	13.03	0.00	0.00	0.00
BE-1	8-Jun-2010	19.75	2.40	--	0.00	17.35	0.00	0.00	0.00
BE-1	16-Sep-2010	19.75	6.86	--	0.00	12.89	0.00	0.00	0.00
BE-1	13-Dec-2010	19.75	6.15	--	0.00	13.60	0.00	0.00	0.00
BE-1	21-Jun-2011	19.75	2.09	--	0.00	17.66	0.00	0.00	0.00
BE-1	1-Dec-2011	19.75	6.73	--	0.00	13.02	0.00	0.00	0.00
BE-1	12-Jun-2012	19.75	5.30	--	0.00	14.45	0.00	0.00	0.00
BE-1	19-Dec-2012	19.75	5.88	--	0.00	13.87	0.00	0.00	0.00
BE-1	17-Dec-2013	19.75	6.84	--	0.00	12.91	0.00	0.00	0.00
BE-1	11-Dec-2014	19.75	6.24	--	0.00	13.51	0.00	0.00	0.00
BE-1	15-Dec-2015	19.75	5.94	--	0.00	13.81	0.00	0.00	0.00
BE-1	19-Dec-2016	19.75	6.34	--	0.00	13.41	0.00	0.00	0.00
BE-1	13-Dec-2017	19.75	6.69	--	0.00	13.06	0.00	0.00	0.00
BE-1	5-Dec-2018	19.75	7.01	--	0.00	12.74	0.00	0.00	0.00
BE-1	17-Jan-2019	19.75	6.62	--	0.00	13.13	0.00	0.00	0.00
BE-1	9-Dec-2019	19.75	7.19	--	0.00	12.56	0.00	0.00	0.00
BE-1	10-Dec-2020	19.75	6.99	--	0.00	12.76	0.00	0.00	0.00
BE-1	22-Dec-2021	19.75	6.15	--	0.00	13.60	0.00	0.00	0.00
BE-1	7-Jan-2022	19.75	7.37	--	0.00	12.38	0.00	0.00	0.00
BE-2	2-Jun-2005	19.69	8.94	--	0.00	10.75	0.00	0.00	0.00
BE-2	24-Jun-2005	19.69	8.94	--	0.00	10.75	0.00	0.00	0.00
BE-2	29-Jul-2005	19.69	9.04	--	0.00	10.65	0.00	0.00	0.00
BE-2	26-Aug-2005	19.69	9.12	--	0.00	10.57	0.00	0.00	0.00
BE-2	14-Sep-2005	19.69	8.94	--	0.00	10.75	0.00	0.00	0.00
BE-2	24-Sep-2005	19.69	6.02	--	0.00	13.67	0.00	0.00	0.00
BE-2	21-Oct-2005	19.69	8.95	--	0.00	10.74	0.00	0.00	0.00
BE-2	28-Nov-2005	19.69	8.64	--	0.00	11.05	0.00	0.00	0.00
BE-2	6-Dec-2005	19.69	8.48	--	0.00	11.21	0.00	0.00	0.00
BE-2	3-Jan-2006	19.69	--	--	0.00	--	--	0.00	--
BE-2	17-Feb-2006	19.69	8.43	--	0.00	11.26	0.00	0.00	0.00
BE-2	13-Mar-2006	19.69	8.21	--	0.00	11.48	0.00	0.00	0.00
BE-2	27-Jun-2006	19.69	8.45	--	0.00	11.24	0.00	0.00	0.00
BE-2	19-Sep-2006	19.69	8.79	--	0.00	10.90	0.00	0.00	0.00
BE-2	13-Dec-2006	19.69	8.57	--	0.00	11.12	0.00	0.00	0.00
BE-2	29-Mar-2007	19.69	8.07	--	0.00	11.62	0.00	0.00	0.00
BE-2	27-Jun-2007	19.69	8.55	--	0.00	11.14	0.00	0.00	0.00
BE-2	18-Sep-2007	19.69	8.90	--	0.00	10.79	0.00	0.00	0.00
BE-2	6-Dec-2007	19.69	7.89	--	0.00	11.80	0.00	0.00	0.00
BE-2	10-Mar-2008	19.69	8.21	--	0.00	11.48	0.00	0.00	0.00
BE-2	12-Jun-2008	19.69	5.73	--	0.00	13.96	0.00	0.00	0.00
BE-2	8-Sep-2008	19.69	8.98	--	0.00	10.71	0.00	0.00	0.00
Well Destroyed									
BE-3	2-Jun-2005	17.55	6.56	--	0.00	10.99	0.00	0.00	
BE-3	24-Jun-2005	17.55	6.42	--	0.00	11.13	0.00	0.00	0.00
BE-3	29-Jul-2005	17.55	6.66	--	0.00	10.89	0.00	0.00	0.00
BE-3	26-Aug-2005	17.55	6.79	--	0.00	10.76	0.00	0.00	0.00
BE-3	14-Sep-2005	17.55	6.73	--	0.00	10.82	0.00	0.00	0.00
BE-3	24-Sep-2005	17.55	6.80	--	0.00	10.75	0.00	0.00	0.00
BE-3	21-Oct-2005	17.55	6.75	--	0.00	10.80	0.00	0.00	0.00
BE-3	28-Nov-2005	17.55	6.58	--	0.00	10.97	0.00	0.00	0.00
BE-3	6-Dec-2005	17.55	6.50	--	0.00	11.05	0.00	0.00	0.00
BE-3	3-Jan-2006	17.55	--	--	0.00	--	--	0.00	--
BE-3	17-Feb-2006	17.55	6.64	--	0.00	10.91	0.00	0.00	0.00
BE-3	13-Mar-2006	17.55	6.47	--	0.00	11.08	0.00	0.00	0.00
BE-3	27-Jun-2006	17.55	6.31	--	0.00	11.24	0.00	0.00	0.00
BE-3	19-Sep-2006	17.55	6.83	--	0.00	10.72	0.00	0.00	0.00
BE-3	13-Dec-2006	17.55	9.47	--	0.00	8.08	0.00	0.00	0.00
BE-3	29-Mar-2007	17.55	9.44	--	0.00	8.11	0.00	0.00	0.00
BE-3	27-Jun-2007	17.55	9.99	--	0.00	7.56	0.00	0.00	0.00
BE-3	18-Sep-2007	17.55	10.13	--	0.00	7.42	0.00	0.00	0.00
BE-3	6-Dec-2007	17.55	8.79	--	0.00	8.76	0.00	0.00	0.00
BE-3	10-Mar-2008	17.55	10.41	--	0.00	7.14	0.00	0.00	0.00
BE-3	12-Jun-2008	17.55	5.97	--	0.00	11.58	0.00	0.00	0.00
BE-3	8-Sep-2008	17.55	10.18	--	0.00	7.37	0.00	0.00	0.00

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
BE-3	29-Dec-2008	17.55	9.59	--	0.00	7.96	0.00	0.00	0.00
BE-3	10-Mar-2009	17.55	9.85	--	0.00	7.70	0.00	0.00	0.00
BE-3	4-Jun-2009	17.55	8.13	--	0.00	9.42	0.00	0.00	0.00
BE-3	9-Sep-2009	17.55	10.36	--	0.00	7.19	0.00	0.00	0.00
BE-3	15-Dec-2009	17.55	9.88	--	0.00	7.67	0.00	0.00	0.00
BE-3	11-Mar-2010	17.55	9.65	--	0.00	7.90	0.00	0.00	0.00
BE-3	8-Jun-2010	17.55	4.60	--	0.00	12.95	0.00	0.00	0.00
BE-3	16-Sep-2010	17.55	9.81	--	0.00	7.74	0.00	0.00	0.00
BE-3	13-Dec-2010	17.55	8.67	--	0.00	8.88	0.00	0.00	0.00
BE-3	9-Jun-2011	17.55	1.89	--	0.00	15.66	0.00	0.00	0.00
BE-3	1-Dec-2011	17.55	9.63	--	0.00	7.92	0.00	0.00	0.00
BE-3	11-Jun-2012	17.55	7.16	--	0.00	10.39	0.00	0.00	0.00
BE-3	19-Dec-2012	17.55	8.09	--	0.00	9.46	0.00	0.00	0.00
BE-3	17-Dec-2013	17.55	9.96	--	0.00	7.59	0.00	0.00	0.00
BE-3	11-Dec-2014	17.55	9.13	--	0.00	8.42	0.00	0.00	0.00
BE-3	15-Dec-2015	17.55	8.37	--	0.00	9.18	0.00	0.00	0.00
BE-3	19-Dec-2016	17.55	9.25	--	0.00	8.30	0.00	0.00	0.00
BE-3	13-Dec-2017	17.55	9.48	--	0.00	8.07	0.00	0.00	0.00
BE-3	5-Dec-2018	17.55	9.86	--	0.00	7.69	0.00	0.00	0.00
BE-3	17-Jan-2019	17.55	9.78	--	0.00	7.77	0.00	0.00	0.00
BE-3	9-Dec-2019	17.55	10.25	--	0.00	7.30	0.00	0.00	0.00
BE-3	10-Dec-2020	17.55	10.15	--	0.00	7.40	0.00	0.00	0.00
BE-4	2-Jun-2005	31.16	18.12	--	0.00	13.04	0.00	0.00	0.00
BE-4	24-Jun-2005	31.16	18.81	--	0.00	12.35	0.00	0.00	0.00
BE-4	29-Jul-2005	31.16	19.14	--	0.00	12.02	0.00	0.00	1.00
BE-4	26-Aug-2005	31.16	19.07	--	0.00	12.09	0.00	0.00	2.00
BE-4	14-Sep-2005	31.16	18.73	--	0.00	12.43	0.00	0.00	3.00
BE-4	24-Sep-2005	31.16	18.75	--	0.00	12.41	0.00	0.00	4.00
BE-4	21-Oct-2005	31.16	18.29	--	0.00	12.87	0.00	0.00	5.00
BE-4	28-Nov-2005	31.16	17.39	17.39	0.00	13.77	0.00	0.00	0.00
BE-4	6-Dec-2005	31.16	17.06	17.05	0.01	14.11	0.00	0.00	
BE-4	3-Jan-2006	31.16	14.72	14.69	0.03	16.47	0.00	0.00	0.03
BE-4	17-Feb-2006	31.16	14.88	14.82	0.06	16.33	0.00	0.00	0.06
BE-4	13-Mar-2006	31.16	15.55	15.51	0.04	15.65	0.00	0.00	0.04
BE-4	27-Jun-2006	31.16	16.03	15.95	0.08	15.20	0.00	0.00	0.08
BE-4	19-Sep-2006	31.16	17.01	16.79	0.22	14.35	0.75	0.75	0.02
BE-4	13-Dec-2006	31.16	15.67	15.66	0.01	15.50	0.00	0.75	0.02
BE-4	29-Mar-2007	31.16	15.25	15.18	0.07	15.97	0.00	0.75	0.07
BE-4	27-Jun-2007	31.16	16.51	16.31	0.20	14.83	1.00	1.75	0.01
BE-4	9-Aug-2007	31.16	16.85	16.47	0.38	14.65	0.50	2.25	0.01
BE-4	22-Aug-2007	31.16	16.82	16.58	0.24	14.55	1.00	3.25	0.01
BE-4	7-Sep-2007	31.16	17.62	16.76	0.86	14.31	1.50	4.75	0.01
BE-4	14-Sep-2007	31.16	18.16	18.06	0.10	13.09	0.25	5.00	0.00
BE-4	18-Sep-2007	31.16	16.78	16.72	0.06	14.43	0.00	5.00	
BE-4	4-Oct-2007	31.16	16.81	16.71	0.10	14.44	0.40	5.40	0.00
BE-4	11-Oct-2007	31.16	16.74	16.66	0.08	14.49	0.00	5.40	0.08
BE-4	24-Oct-2007	31.16	16.62	16.54	0.08	14.61	0.00	5.40	0.08
BE-4	8-Nov-2007	31.16	16.78	16.71	0.07	14.44	0.00	5.40	0.07
BE-4	21-Nov-2007	31.16	16.68	16.60	0.08	14.55	0.00	5.40	0.08
BE-4	7-Dec-2007	31.16	14.16	14.13	0.03	17.03	0.00	5.40	0.03
BE-4	21-Dec-2007	31.16	15.76	15.75	0.01	15.41	0.00	5.40	0.01
BE-4	3-Jan-2008	31.16	14.64	14.63	0.01	16.53	0.00	5.40	0.01
BE-4	18-Jan-2008	31.16	14.32	14.31	0.01	16.85	0.00	5.40	0.01
BE-4	24-Jan-2008	31.16	14.98	14.95	0.03	16.21	0.00	5.40	0.03
BE-4	31-Jan-2008	31.16	15.31	15.28	0.03	15.88	0.00	5.40	0.03
BE-4	6-Feb-2008	31.16	14.17	14.16	0.01	17.00	0.00	5.40	0.03
BE-4	15-Feb-2008	31.16	14.18	14.18	0.00	16.98	0.00	5.40	0.00
BE-4	29-Feb-2008	31.16	15.35	15.35	0.00	15.81	0.00	5.40	0.00
BE-4	10-Mar-2008	31.16	16.61	16.61	0.00	14.55	0.00	5.40	0.00
BE-4	21-Mar-2008	31.16	15.63	15.63	0.00	15.53	0.00	5.40	0.00
BE-4	11-Apr-2008	31.16	15.69	15.67	0.02	15.49	0.00	5.40	0.00
BE-4	17-Apr-2008	31.16	15.76	15.71	0.05	15.44	0.00	5.40	0.00
BE-4	24-Apr-2008	31.16	15.72	15.67	0.05	15.48	0.05	5.45	0.00
BE-4	2-May-2008	31.16	15.73	15.66	0.07	15.49	0.00	5.45	0.00
BE-4	8-May-2008	31.16	16.02	15.78	0.24	15.35	0.10	5.55	0.01
BE-4	14-May-2008	31.16	16.00	15.93	0.07	15.22	0.00	5.55	0.07
BE-4	30-May-2008	31.16	15.22	15.18	0.04	15.98	0.00	5.55	0.04
BE-4	13-Jun-2008	31.16	15.30	15.26	0.04	15.90	0.00	5.55	0.04
BE-4	25-Jun-2008	31.16	15.78	15.76	0.02	15.40	0.00	5.55	0.02
BE-4	11-Jul-2008	31.16	16.34	16.08	0.26	15.05	0.05	5.60	0.01
BE-4	28-Jul-2008	31.16	16.65	16.35	0.30	14.78	0.07	5.67	0.00
BE-4	13-Aug-2008	31.16	16.92	16.60	0.32	14.52	0.13	5.80	0.01
BE-4	27-Aug-2008	31.16	16.98	16.73	0.25	14.40	0.53	6.33	0.01

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
BE-4	8-Sep-2008	31.16	17.12	16.82	0.30	14.31	0.53	6.86	0.02
BE-4	18-Sep-2008	31.16	17.16	16.92	0.24	14.21	0.66	7.52	0.00
BE-4	30-Sep-2008	31.16	17.28	17.05	0.23	14.08	0.05	7.57	0.01
BE-4	16-Oct-2008	31.16	17.40	17.18	0.22	13.96	0.10	7.67	0.01
BE-4	30-Oct-2008	31.16	17.42	17.25	0.17	13.89	0.20	7.87	0.00
BE-4	14-Nov-2008	31.16	16.92	16.91	0.01	14.25	0.00	7.87	0.01
BE-4	26-Nov-2008	31.16	16.98	16.94	0.04	14.22	0.00	7.87	0.04
BE-4	29-Dec-2008	31.16	16.54	16.52	0.02	14.64	0.00	7.87	0.02
BE-4	15-Jan-2009	31.16	15.39	15.37	0.02	15.79	0.00	7.87	0.02
BE-4	23-Jan-2009	31.16	15.93	15.92	0.01	15.24	0.00	7.87	0.01
BE-4	29-Jan-2009	31.16	16.11	16.10	0.01	15.06	0.00	7.87	0.01
BE-4	4-Feb-2009	31.16	16.18	16.17	0.01	14.99	0.00	7.87	0.01
BE-4	12-Feb-2009	31.16	16.40	16.34	0.06	14.81	0.00	7.87	0.06
BE-4	19-Feb-2009	31.16	12.58	12.56	0.02	18.60	0.00	7.87	0.02
BE-4	10-Mar-2009	31.16	16.60	16.54	0.06	14.61	0.00	7.87	0.06
BE-4	27-Mar-2009	31.16	16.63	16.49	0.14	14.65	0.05	7.92	0.02
BE-4	16-Apr-2009	31.16	16.67	16.59	0.08	14.56	0.00	7.92	0.08
BE-4	14-May-2009	31.16	16.76	16.53	0.23	14.60	0.05	7.97	0.00
BE-4	4-Jun-2009	31.16	16.35	16.27	0.08	14.88	0.00	7.97	0.08
BE-4	13-Jul-2009	31.16	17.15	17.06	0.09	14.09	0.00	7.97	0.09
BE-4	10-Aug-2009	31.16	17.43	17.09	0.34	14.03	0.01	7.98	0.01
BE-4	9-Sep-2009	31.16	17.29	17.26	0.03	13.90	0.03	8.01	0.03
BE-4	15-Oct-2009	31.16	17.93	17.39	0.54	13.71	0.03	8.04	0.00
BE-4	18-Nov-2009	31.16	16.92	16.72	0.20	14.42	0.05	8.09	0.00
BE-4	15-Dec-2009	31.16	16.62	16.45	0.17	14.69	0.02	8.11	0.01
BE-4	13-Jan-2010	31.16	15.64	15.56	0.08	15.59	0.00	8.11	0.08
BE-4	2-Mar-2010	31.16	15.74	15.66	0.08	15.49	0.00	8.11	0.08
BE-4	11-Mar-2010	31.16	15.78	15.70	0.08	15.45	0.00	8.11	0.08
BE-4	25-Mar-2010	31.16	15.95	15.80	0.15	15.34	0.10	8.21	0.01
BE-4	2-Apr-2010	31.16	15.65	15.65	0.00	15.51	0.00	8.21	0.00
BE-4	9-Apr-2010	31.16	15.62	15.41	0.21	15.73	0.25	8.46	0.08
BE-4	16-Apr-2010	31.16	15.67	15.45	0.22	15.69	0.25	8.71	0.01
BE-4	23-Apr-2010	31.16	15.70	15.62	0.08	15.53	0.00	8.71	0.08
BE-4	8-Jun-2010	31.16	13.61	13.59	0.02	17.57	0.00	8.71	0.02
BE-4	9-Jul-2010	31.16	14.63	14.61	0.02	16.55	0.00	8.71	0.02
BE-4	23-Jul-2010	31.16	15.90	15.89	0.01	15.27	0.00	8.71	0.01
BE-4	6-Aug-2010	31.16	16.29	16.00	0.29	15.13	0.25	8.96	0.05
BE-4	19-Aug-2010	31.16	16.37	16.31	0.06	14.84	0.00	8.96	0.05
BE-4	27-Aug-2010	31.16	16.41	16.19	0.22	14.95	0.50	9.46	0.04
BE-4	17-Sep-2010	31.16	16.55	16.33	0.22	14.81	0.25	9.71	0.05
BE-4	8-Oct-2010	31.16	16.44	16.42	0.02	14.74	0.00	9.71	0.02
BE-4	11-Nov-2010	31.16	16.94	16.81	0.13	14.34	0.05	9.76	0.01
BE-4	15-Dec-2010	31.16	14.22	14.06	0.16	17.08	0.25	10.01	0.02
BE-4	21-Dec-2010	31.16	14.15	13.95	0.20	17.19	0.20	10.21	0.02
BE-4	30-Dec-2010	31.16	13.68	13.25	0.43	17.86	0.50	10.71	0.01
BE-4	6-Jan-2011	31.16	13.67	13.64	0.03	17.52	0.00	10.71	0.03
BE-4	13-Jan-2011	31.16	13.92	13.89	0.03	17.27	0.00	10.71	0.03
BE-4	19-Jan-2011	31.16	13.87	13.83	0.04	17.33	0.00	10.71	0.04
BE-4	28-Jan-2011	31.16	14.13	14.11	0.02	17.05	0.00	10.71	0.02
BE-4	9-Feb-2011	31.16	15.03	15.01	0.02	16.15	0.00	10.71	0.02
BE-4	23-Feb-2011	31.16	15.18	15.17	0.01	15.99	0.00	10.71	0.01
BE-4	9-Mar-2011	31.16	15.38	15.34	0.04	15.82	0.00	10.71	0.04
BE-4	29-Mar-2011	31.16	14.00	13.96	0.04	17.20	0.00	10.71	0.04
BE-4	21-Apr-2011	31.16	13.93	13.90	0.03	17.26	0.00	10.71	0.03
BE-4	6-May-2011	31.16	14.14	14.10	0.04	17.06	0.00	10.71	0.04
BE-4	9-Jun-2011	31.16	13.02	13.01	0.01	18.15	0.00	10.71	0.01
BE-4	7-Jul-2011	31.16	14.17	13.89	0.28	17.24	0.25	10.96	0.00
BE-4	3-Aug-2011	31.16	15.31	15.29	0.02	15.87	0.00	10.96	0.02
BE-4	8-Sep-2011	31.16	15.86	15.79	0.07	15.36	0.00	10.96	0.07
BE-4	3-Oct-2011	31.16	16.18	16.03	0.15	15.11	0.20	11.16	0.01
BE-4	10-Nov-2011	31.16	16.50	16.37	0.13	14.78	0.20	11.36	0.00
BE-4	1-Dec-2011	31.16	17.96	17.88	0.08	13.27	0.00	11.36	0.08
BE-4	6-Jan-2012	31.16	16.13	16.09	0.04	15.07	0.00	11.36	0.04
BE-4	25-Jan-2012	31.16	15.84	15.80	0.04	15.36	0.00	11.36	0.04
BE-4	3-Mar-2012	31.16	15.63	15.58	0.05	15.57	0.00	11.36	0.05
BE-4	14-Mar-2012	31.16	15.27	15.25	0.02	15.91	0.00	11.36	0.02
BE-4	22-Mar-2012	31.16	14.40	14.38	0.02	16.78	0.00	11.36	0.02
BE-4	29-Mar-2012	31.16	14.34	14.31	0.03	16.85	0.00	11.36	0.03
BE-4	5-Apr-2012	31.16	13.73	13.72	0.01	17.44	0.00	11.36	0.01
BE-4	13-Apr-2012	31.16	14.35	14.30	0.05	16.85	0.00	11.36	0.05
BE-4	23-Apr-2012	31.16	14.37	14.32	0.05	16.83	0.00	11.36	0.05
BE-4	14-May-2012	31.16	14.38	14.35	0.03	16.81	0.00	11.36	0.03
BE-4	25-May-2012	31.16	--	--	0.00	--	--	11.36	--
BE-4	12-Jun-2012	31.16	14.75	14.73	0.02	16.43	0.00	11.36	0.02
BE-4	3-Jul-2012	31.16	14.86	14.85	0.01	16.31	0.00	11.36	0.01
BE-4	28-Aug-2012	31.16	16.01	15.96	0.05	15.19	0.00	11.36	0.05

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
BE-4	24-Sep-2012	31.16	Well Not Accessible						
BE-4	8-Oct-2012	31.16	16.44	16.40	0.04	14.76	0.00	11.36	0.04
BE-4	14-Nov-2012	31.16	16.04	16.04	0.00	15.12	0.00	11.36	0.00
BE-4	19-Dec-2012	31.16	14.16	14.09	0.07	17.06	0.00	11.36	0.07
BE-4	4-Jan-2013	31.16	14.21	14.09	0.12	17.06	0.10	11.46	0.01
BE-4	18-Jan-2013	31.16	15.07	15.04	0.03	16.12	0.00	11.46	0.01
BE-4	31-Jan-2013	31.16	15.39	15.38	0.01	15.78	0.00	11.46	0.01
BE-4	6-Mar-2013	31.16	15.76	15.74	0.02	15.42	0.00	11.46	0.01
BE-4	3-Apr-2013	31.16	16.13	16.11	0.02	15.05	0.00	11.46	0.01
BE-4	6-May-2013	31.16	16.39	16.38	0.01	14.78	0.00	11.46	0.01
BE-4	12-Jun-2013	31.16	16.15	16.14	0.01	15.02	0.00	11.46	0.01
BE-4	16-Jul-2013	31.16	16.60	16.40	0.20	14.74	0.10	11.56	0.05
BE-4	26-Aug-2013	31.16	17.31	17.30	0.01	13.86	0.00	11.56	0.01
BE-4	25-Sep-2013	31.16	17.90	17.88	0.02	13.28	0.00	11.56	0.02
BE-4	31-Oct-2013	31.16	18.68	18.61	0.07	12.54	0.00	11.56	0.07
BE-4	27-Nov-2013	31.16	16.78	16.78	0.00	14.38	0.00	11.56	0.00
BE-4	17-Dec-2013	31.16	16.84	16.80	0.04	14.36	0.00	11.56	0.02
BE-4	11-Dec-2014	31.16	16.06	15.99	0.07	15.16	0.00	11.56	0.02
BE-4	15-Dec-2015	31.16	16.20	16.00	0.20	15.14	0.00	11.56	0.20
BE-4	17-Feb-2016	31.16	14.54	14.40	0.14	16.74	0.50	12.06	0.01
BE-4	29-Mar-2016	31.16	14.12	14.11	0.01	17.05	0.10	12.16	0.00
BE-4	27-Apr-2016	31.16	15.19	15.18	0.01	15.98	0.10	12.26	0.00
BE-4	27-May-2016	31.16	15.81	15.80	0.01	15.36	0.00	12.26	0.01
BE-4	29-Jun-2016	31.16	16.25	16.20	0.05	14.95	0.00	12.26	0.05
BE-4	20-Jul-2016	31.16	16.39	16.34	0.05	14.81	0.00	12.26	0.05
BE-4	31-Aug-2016	31.16	16.70	16.65	0.05	14.50	0.00	12.26	0.05
BE-4	16-Sep-2016	31.16	16.92	16.88	0.04	14.28	0.00	12.26	0.04
BE-4	20-Oct-2016	31.16	16.38	16.35	0.03	14.81	0.00	12.26	0.03
BE-4	28-Nov-2016	31.16	15.48	15.48	0.00	15.68	0.00	12.26	0.00
BE-4	19-Dec-2016	31.16	15.19	15.18	0.01	15.98	0.00	12.26	0.01
BE-4	5-Jan-2017	31.16	15.48	15.45	0.03	15.71	0.00	12.26	0.03
BE-4	14-Feb-2017	31.16	13.86	13.85	0.01	17.31	0.00	12.26	0.01
BE-4	28-Mar-2017	31.16	12.44	12.42	0.02	18.74	0.00	12.26	0.02
BE-4	18-Apr-2017	31.16	13.56	13.55	0.01	17.61	0.00	12.26	0.01
BE-4	26-May-2017	31.16	13.79	13.78	0.01	17.38	0.00	12.26	0.01
BE-4	23-Jun-2017	31.16	14.29	14.28	0.01	16.88	0.00	12.26	0.01
BE-4	21-Jul-2017	31.16	15.54	15.53	0.01	15.63	0.00	12.26	0.01
BE-4	18-Aug-2017	31.16	15.97	15.95	0.02	15.21	0.00	12.26	0.02
BE-4	26-Sep-2017	31.16	16.45	16.42	0.03	14.74	0.00	12.26	0.03
BE-4	30-Oct-2017	31.16	16.22	16.20	0.02	14.96	0.00	12.26	0.02
BE-4	17-Nov-2017	31.16	16.18	16.09	0.09	15.06	0.00	12.26	0.09
BE-4	13-Dec-2017	31.16	15.31	15.30	0.01	15.86	0.00	12.26	0.01
BE-4	26-Jan-2018	31.16	15.00	14.99	0.01	16.17	0.00	12.26	0.01
BE-4	14-Feb-2018	31.16	14.99	14.98	0.01	16.18	0.00	12.26	0.01
BE-4	26-Mar-2018	31.16	15.15	15.10	0.05	16.05	0.50	12.76	0.01
BE-4	3-May-2018	31.16	15.17	15.16	0.01	16.00	0.00	12.76	0.01
BE-4	31-May-2018	31.16	14.54	14.52	0.02	16.64	0.00	12.76	0.02
BE-4	21-Jun-2018	31.16	15.91	15.90	0.01	15.26	0.00	12.76	0.01
BE-4	17-Jul-2018	31.16	15.72	15.71	0.01	15.45	0.00	12.76	0.01
BE-4	17-Aug-2018	31.16	16.83	16.81	0.02	14.35	0.00	12.76	0.02
BE-4	16-Oct-2018	31.16	17.01	17.01	0.00	14.15	0.00	12.76	0.00
BE-4	5-Nov-2018	31.16	17.20	17.20	0.00	13.96	0.00	12.76	0.00
BE-4	5-Dec-2018	31.16	17.20	17.19	0.01	13.97	0.00	12.76	0.01
BE-4	31-Dec-2018	31.16	16.49	16.49	0.00	14.67	0.00	12.76	0.01
BE-4	17-Jan-2019	31.16	16.34	--	0.00	14.82	0.00	12.76	0.00
BE-4	21-Feb-2019	31.16	15.55	15.54	0.01	15.62	0.00	12.76	0.01
BE-4	2-Apr-2019	31.16	15.80	15.78	0.02	15.38	0.00	12.76	0.02
BE-4	18-Apr-2019	31.16	15.80	15.78	0.02	15.38	0.00	12.76	0.02
BE-4	16-May-2019	31.16	15.73	15.72	0.01	15.44	0.00	12.76	0.01
BE-4	19-Jun-2019	31.16	16.13	16.12	0.01	15.04	0.00	12.76	0.01
BE-4	23-Jul-2019	31.16	17.13	17.11	0.02	14.05	0.00	12.76	0.02
BE-4	22-Aug-2019	31.16	17.02	17.02	0.00	14.14	0.00	12.76	0.00
BE-4	25-Sep-2019	31.16	17.50	17.49	0.01	13.67	0.00	12.76	0.00
BE-4	25-Oct-2019	31.16	17.58	17.56	0.02	13.60	0.00	12.76	0.02
BE-4	20-Nov-2019	31.16	17.22	17.21	0.01	13.95	0.00	12.76	0.01
BE-4	9-Dec-2019	31.16	17.79	17.76	0.03	13.40	0.00	12.76	0.03
BE-4	18-Feb-2020	31.16	15.50	15.50	0.00	15.66	0.00	12.76	0.00
BE-4	28-Feb-2020	31.16	15.74	15.74	0.00	15.42	0.00	12.76	0.00
BE-4	19-Mar-2020	31.16	16.08	16.08	0.00	15.08	0.00	12.76	0.00
BE-4	20-Apr-2020	31.16	15.91	15.91	0.00	15.25	0.00	12.76	0.00
BE-4	29-May-2020	31.16	16.53	16.52	0.01	14.64	0.00	12.76	0.01
BE-4	11-Jun-2020	31.16	16.16	16.14	0.02	15.02	0.00	12.76	0.02
BE-4	15-Jul-2020	31.16	17.05	17.04	0.01	14.12	0.00	12.76	0.01
BE-4	31-Aug-2020	31.16	16.90	16.89	0.01	14.27	0.00	12.76	0.01
BE-4	28-Sep-2020	31.16	17.75	17.74	0.01	13.42	0.00	12.76	0.01

Please refer to notes at the end of table.

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	Top of Casing	Initial Measurements				Product Removal		
			Depth to Water	Depth to Product	Product Thickness	Groundwater Elevation *	Discrete Event	Cumulative	Final Product Thickness
			(feet)				(gallons)		(feet)
BE-4	23-Oct-2020	31.16	17.71	17.70	0.01	13.46	0.00	12.76	0.01
BE-4	13-Nov-2020	31.16	17.32	17.32	0.00	13.84	0.00	12.76	0.00
BE-4	10-Dec-2020	31.16	17.13	17.12	0.01	14.04	0.00	12.76	0.01
BE-4	20-Jan-2021	31.16	14.92	--	0.00	16.24	0.00	12.76	0.00
BE-4	24-Feb-2021	31.16	14.03	--	0.00	17.13	0.00	12.76	0.00
BE-4	6-Jan-2022	31.16	14.48	--	0.00	16.68	0.00	12.76	0.00
BE-5	9-Sep-2009	21.12	11.08	--	0.00	10.04	0.00	0.00	0.00
BE-5	15-Dec-2009	21.12	10.87	--	0.00	10.25	0.00	0.00	0.00
BE-5	11-Mar-2010	21.12	10.61	--	0.00	10.51	0.00	0.00	0.00
BE-5	8-Jun-2010	21.12	6.04	--	0.00	15.08	0.00	0.00	0.00
BE-5	16-Sep-2010	21.12	10.87	--	0.00	10.25	0.00	0.00	0.00
BE-5	13-Dec-2010	21.12	9.52	--	0.00	11.60	0.00	0.00	0.00
BE-5	9-Jun-2011	21.12	3.29	--	0.00	17.83	0.00	0.00	0.00
BE-5	1-Dec-2011	21.12	10.83	--	0.00	10.29	0.00	0.00	0.00
BE-5	11-Jun-2012	21.12	8.33	--	0.00	12.79	0.00	0.00	0.00
BE-5	19-Dec-2012	21.12	9.24	--	0.00	11.88	0.00	0.00	0.00
BE-5	17-Dec-2013	21.12	11.12	--	0.00	10.00	0.00	0.00	0.00
BE-5	11-Dec-2014	21.12	10.10	--	0.00	11.02	0.00	0.00	0.00
BE-5	15-Dec-2015	21.12	9.39	--	0.00	11.73	0.00	0.00	0.00
BE-5	19-Dec-2016	21.12	10.19	--	0.00	10.93	0.00	0.00	0.00
BE-5	13-Dec-2017	21.12	10.37	--	0.00	10.75	0.00	0.00	0.00
BE-5	5-Dec-2018	21.12	11.06	--	0.00	10.06	0.00	0.00	0.00
BE-5	17-Jan-2019	21.12	10.72	--	0.00	10.40	0.00	0.00	0.00
BE-5	9-Dec-2019	21.12	11.29	--	0.00	9.83	0.00	0.00	0.00
BE-5	10-Dec-2020	21.12	11.02	--	0.00	10.10	0.00	0.00	0.00
BE-5	22-Dec-2021	21.12	8.37	--	0.00	12.75	0.00	0.00	0.00
BE-5	7-Jan-2022	21.12	7.39	--	0.00	13.73	0.00	0.00	0.00

Table C1
Historical Groundwater and Product Level Monitoring
Terminal 4 Slip 3 Upland Facility
Port of Portland

Notes:

1. * Phreatic Elevation = (Casing Elevation - Depth to Water) + S_g * (Product Thickness).
2. -- = Not measured or not applicable.

Table C2
Historical LNAPL Recovery
Terminal 4 Slip 3 Upland Facility
Port of Portland

Year	MW-15	MW-17	MW-19	MW-20	HC-10	BE-4	HC-5	Total
	LNAPL Removed (gallons)							
2005	Data for individual wells not shown							24
2006	Data for individual wells not shown							61
2007	Data for individual wells not shown							100
2008	Data for individual wells not shown							71
2009	2.59	2.34	2.84	2.53	0.15	0.24	--	10.69
2010	4.53	15.48	61.80	41.40	2.38	2.60	--	155.69
2011	0.30	10.55	13.05	16.50	3.25	0.65	--	50.69
2012	1.13	7.80	7.66	23.14	1.50	0.00	--	41.22
2013	2.75	5.30	6.95	9.05	1.75	0.20	--	26.00
2014	1.25	0.20	12.35	8.25	0.20	0.00	--	22.25
2015	n/a	6.50	18.10	15.95	6.15	n/a	--	46.70
2016	n/a	n/a	8.55	7.40	5.55	0.70	--	22.20
2017	n/a	n/a	3.00	12.50	6.45	0.00	--	21.95
2018	n/a	n/a	5.50	8.75	4.65	0.50	1.70	21.10
2019	n/a	n/a	2.10	2.77	2.40	0.00	2.27	9.54
2020	n/a	n/a	0.20	1.31	1.12	0.00	0.00	2.28
2021	n/a	n/a	1.50	1.65	0.42	0.00	0.30	3.87

Notes:

1. The current (2017) LNAPL recovery program includes wells MW-19, MW-20, HC-10, and BE-4. If LNAPL is present at a thickness that is practical for recovery (greater than 0.1 foot), the LNAPL is removed.
2. n/a = not available
3. Wells MW-15 and MW-17 were abandoned in May 2015.

Table C3
Historical Groundwater Analytical Results
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	TPH		PAHs															
		Diesel-Range	Residual-Range	Acenaph-thene	Acenaph-thylene	Anthracene	Benzo(a)-anthracene	Benzo(a)-pyrene	Benzo(b)-fluoranthene	Benzo(g,h,i)-perylene	Benzo(k)-fluoranthene	Chrysene	Dibenzo(a,h)-anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
		Concentration in µg/L																	
HC-2	11/5/1998	--	--	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
HC-2	5/10/2004	<250	< 500	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
HC-2	2/11/2005	120 J	310 J	< 0.021	--	--	0.0053	< 0.021	--	--	--	--	--	0.0084	< 0.021	--	0.14	0.0069	--
HC-2	6/2/2005	20 J	< 500	0.0058 J	0.0055 J	0.027	0.0043 J	0.0044 J	0.0056 J	0.0046 J	0.0042 J	0.0049 J	< 0.020	0.0086 J	0.0094 J	0.0052 J	0.026	0.017 J	0.0075 J
HC-2	9/15/2005	<238	< 476	< 0.098	< 0.098	< 0.098	< 0.098	< 0.098	< 0.098	< 0.098	< 0.098	< 0.098	< 0.196	< 0.098	< 0.098	< 0.098	< 0.098	< 0.098	< 0.098
HC-2	12/9/2005	<236	< 472	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.190	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952
HC-2	6/28/2006	<240	< 481	< 0.0943	< 0.0943	< 0.0943	< 0.0943	< 0.0943	< 0.0943	< 0.0943	< 0.0943	< 0.0943	< 0.189	< 0.0943	< 0.0943	< 0.0943	< 0.0943	< 0.0943	< 0.0943
HC-2	6/27/2007	<238	< 476	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.190	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952
HC-2	6/12/2008	<236	<472	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.190	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952
HC-2	6/4/2009	<238	<476	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.190	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952
HC-5	11/12/1998	--	--	< 2.5	< 2.5	< 0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 2.5	< 0.1	< 0.1	< 0.5	< 0.1
HC-5	5/10/2004	990,000	< 50,000	< 25	< 25	27.6	0.742	< 0.5	< 0.5	< 0.5	< 0.5	1.65	< 1.0	< 25	86.1	< 0.5	< 37.5	43.0	14.9
HC-5	6/10/2004	102,000	< 5,000	11.4	< 10	< 10	0.422	< 0.25	< 0.25	< 0.5	< 0.25	0.815	< 0.25	< 10	35.3	< 0.25	16.8	17.4	4.68
HC-5	2/11/2005	26,000 J	4,800 J	0.65	--	--	< 0.02	< 0.02	--	--	--	--	--	0.07	2.9	--	< 0.19	0.28	--
HC-5	6/2/2005	3,200 Y	< 500	0.26	< 0.064	< 0.37	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.096	2.7	< 0.020	< 0.17	< 0.21	< 0.020
HC-5	9/15/2005	1,510 J	< 476	0.973	< 0.476	< 0.476	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.190	< 0.0952	4.21	< 0.0952	< 0.952	< 0.476	< 0.143
HC-5	12/7/2005	1,940	< 485	< 0.143	< 0.0952	< 0.238	< 0.0952	< 0.476	< 0.476	< 0.476	< 0.476	< 0.0952	< 0.952	< 0.0952	1.15	< 0.476	< 0.143	< 0.143	< 0.238
HC-5	6/28/2006	2,990	< 476	< 0.190	< 0.190	< 0.190	< 0.190	< 0.190	< 0.190	< 0.190	< 0.190	< 0.190	< 0.381	< 0.190	1.10	< 0.190	< 0.190	< 0.190	< 0.190
HC-5	6/27/2007	856	< 476	0.835	< 0.288	< 0.192	< 0.192	< 0.192	< 0.192	< 0.192	< 0.192	< 0.192	< 0.385	< 0.192	3.08	< 0.192	0.421	< 0.288	< 0.192
HC-5	6/12/2008	1,050 Q11	<472	0.495	0.476	0.190	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.190	<0.0952	1.55	<0.0952	0.266	<0.190	<0.0952
HC-5	6/4/2009	999 Q11	<476	0.279	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.190	<0.0952	1.41	<0.0952	< 0.143	< 0.143	<0.0952
HC-5	9/16/2010	2,810 Q11	<400	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HC-5	6/10/2011	5,220 Q11	156 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HC-5	6/11/2012	3,600 Q11	<400	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HC-5	12/20/2012	1,200 J	<480	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HC-5	12/20/12 DUP	640 J	<480	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HC-5	12/17/2013	2,200 JY	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HC-5	12/17/2013 DUP	4,600 JY	890	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HC-5	12/12/2014	9,200 JY	2,100 JY	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HC-5	12/12/2014 DUP	6,100 JY	1,300 JY	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HC-5	12/16/2015	8,000	840 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HC-5	12/16/2015 DUP	9,200	1,300 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HC-5	12/19/2016	4300 J	580 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HC-5	12/19/16 DUP	6100 J	1900 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HC-5	12/13/2017	9,300 J-, R	5,900 J-, R	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HC-5	12/13/17 DUP	10,000 J-, R	4,100 J-, R	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HC-5	2/14/2018	3,000	<350	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HC-5	2/14/2018 DUP	3,300	<350	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HC-5	12/5/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HC-5	12/10/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HC-5	12/9/2020	216000 J	<20,000 UJ	<13.1	<4.04	<9.09	<4.04	<4.04	<4.04	<4.04	<4.04	<4.04	<4.04	3.67 J	40.3	<4.04	<8.08	<4.04	5.48
HC-5	4/7/2021	7,890	<220	<0.610 UJ	<0.134 UJ	<0.366 UJ	<0.0488 UJ	<0.0244 UJ	<0.0244 UJ	<0.0244 UJ	<0.0244 UJ	<0.0976 UJ	<0.0244 UJ	0.119 J-	1.36 J-	<0.0244 UJ	<0.0976 UJ	<0.159 UJ	0.202 J-
HC-5	7/8/2021	14,000	<215	0.871	<0.105	<0.0952	<0.0381	<0.0190	<0.0190	<0.0190	<0.0190	<0.0571	<0.0190	<0.0952	2.45	<0.0190	<0.133	<0.114	<0.171
HC-19	5/10/2004	10,800	1,420	< 1.5	< 0.5	< 1.25	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0	< 0.5	4.3	< 0.5	< 1.75	< 1.0	< 0.5
HC-19	2/11/2005	9,700 J	1,800 J	1.0	--	--	0.014	0.016	--	--	--	--	--	0.041	3.1	--	< 0.26	0.054	--
HC-19	2/11/2005 DUP	9,700 J	2,000 J	0.99	--	--	0.012	0.013	--	--	--	--	--	0.041	3.0	--	< 0.23	0.055	--
HC-19	6/3/2005	510 Y	< 500	0.72	< 0.086	0.21	0.023	0.034	0.028	0.025	0.025	0.041							

Table C3
Historical Groundwater Analytical Results
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	TPH		PAHs															
		Diesel-Range	Residual-Range	Acenaph-thene	Acenaph-thylene	Anthracene	Benzo(a)-anthracene	Benzo(a)-pyrene	Benzo(b)-fluoranthene	Benzo(g,h,i)-perylene	Benzo(k)-fluoranthene	Chrysene	Dibenzo(a,h)-anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
		Concentration in µg/L																	
HC-19	9/17/2010	889 Q11	<400	0.379	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.190	<0.0952	1.140	<0.0952	<0.0952	<0.0952	<0.143	<0.0952
HC-19	12/13/2010	1,400 Q12	515 Q7	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.190	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952
HC-19	6/10/2011	209 J	<400	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.189	<0.0943	0.141	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943
HC-19	6/10/2011 DUP	253 J	<400	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.189	<0.0943	0.125	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943
HC-19	12/2/2011	1,260 Q11	73.2 J	<0.0962	<0.0962	<0.0962	<0.0962	<0.0962	<0.0962	<0.0962	<0.0962	<0.192	<0.0962	0.460	<0.0962	<0.0962	<0.0962	<0.0962	<0.0962
HC-19	12/2/2011 DUP	1,290 Q11	89.8 J	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.189	<0.0943	0.549	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943
HC-19	6/11/2012	450 Q11	<400	<0.095	<0.095	<0.095	<0.095	<0.095	<0.095	<0.095	<0.095	<0.19	<0.095	0.10	<0.095	<0.095	<0.095	<0.095	<0.095
HC-19	6/11/2012 DUP	<400	<400	<0.095	<0.095	<0.095	<0.095	<0.095	<0.095	<0.095	<0.095	<0.19	<0.095	0.12	<0.095	<0.095	<0.095	<0.095	<0.095
HC-21	5/10/2004	1,210	< 625	1.95	< 0.5	0.966	1.43	1.63	1.5	1.44	1.5	1.66	< 1.0	3.4	1.28	1.21	< 0.5	4.38	3.6
HC-21	2/11/2005	13,000 J	3,200 J	0.58	--	0.30	3.8	5.7	--	--	--	--	--	4.7	0.94	--	0.18	2.3	--
HC-21	6/3/2005	430 Y	< 500	0.30	< 0.059	0.24	0.62	0.95	0.79	0.82	0.56	0.77	0.22	1.2	0.82	1.1	0.13	0.62	1.3
HC-21	9/15/2005	179 J	< 476	< 0.485	< 0.485	< 0.485	0.410	0.515	0.577	0.283	0.470	0.521	< 0.194	0.679	1.87	0.262	< 0.485	< 0.485	0.925
HC-21	12/7/2005	652	< 481	0.495	< 0.0962	< 0.240	0.259	0.397	0.405	0.252	0.375	0.342	< 0.385	0.403	0.808	0.224	0.172	0.334	0.667
HC-21	3/14/2006	221	< 481	< 0.102	< 0.102	< 0.153	0.242	0.244	0.188	0.156 J	0.184	0.208	< 0.204	0.318	< 0.102	0.156	< 0.102	< 0.204	0.298
HC-21	6/28/2006	2,460	< 476	1.07	< 0.400	0.840	4.62	5.37	5.67	4.43	4.02	4.61	1.73	7.33	0.996	3.97	0.457	3.21	8.31
HC-21	9/19/2006	600	< 476	3.74	< 0.476	3.33	19.6	21.5	20.6	15.2	17.6	19.8	4.64	25.1	3.08	14.4	0.759	14	25.8
HC-21	12/13/2006	1,210	< 481	< 0.0952	< 0.0952	< 0.143	0.135	0.174	0.167	0.133	0.141	0.122	< 0.190	0.184	< 0.0952	0.125	< 0.0952	< 0.190	0.125
HC-21	3/29/2007	< 238	< 476	< 0.0952	< 0.0952	< 0.190	0.145	0.202	0.186	0.166	0.152	0.175	< 0.190	0.315	< 0.0952	0.153	< 0.0952	< 0.0952	0.192
HC-21	6/27/2007	390	< 476	0.745	< 0.476	< 0.476	< 0.476	< 0.476	< 0.476	< 0.476	< 0.476	< 0.476	< 0.476	< 0.476	2.06	< 0.476	< 0.476	< 0.476	< 0.476
HC-21	9/18/2007	261	< 472	0.247	< 0.0952	< 0.190	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.190	< 0.190	0.622	< 0.0952	< 0.190	< 0.190	< 0.190
HC-21	12/6/2007	582	< 476	< 0.0952	< 0.0952	< 0.0952	0.0978	0.128	0.116	0.0994	0.106	0.114	< 0.190	0.149	< 0.0952	< 0.0952	< 0.0952	< 0.0952	0.144
HC-21	3/10/2008	<238	<476	<0.0952	<0.0952	<0.143	0.156	0.194	0.220	0.109	0.139	0.169	<0.190	0.218	<0.0952	0.117	<0.0952	<0.143	0.212
HC-21	6/12/2008	<236	<472	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.190	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952
HC-21	9/8/2008	<240	<481	<0.0962	<0.0962	<0.144	<0.0962	<0.0962	<0.0962	<0.0962	<0.0962	<0.0962	<0.192	<0.144	0.258	<0.0962	<0.0962	<0.144	<0.144
HC-21	12/29/2008	16,100 Q9	<5,000	<0.190	<0.190	<0.381	0.269	0.208	<0.190	<0.190	0.276	<0.381	0.279	<0.190	<0.190	1.28	<0.190	<0.190	0.463
HC-21	3/10/2009	569 Q11	< 476	0.336	< 0.0952	< 0.0952	0.0619 J	0.0566 J	0.0566 J	0.0566 J	0.054 J	< 0.0952	< 0.0952	1.18	< 0.0952	< 0.0952	< 0.0952	< 0.0952	0.0939 J
HC-21	6/4/2009	5,070 Q11	802	0.309	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.190	< 0.0952	0.77	< 0.0952	< 0.0952	0.099	0.144
HC-21	9/9/2009	559 Q11	<476	0.284	< 0.0952	< 0.143	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.190	0.121	1.19	< 0.0952	< 0.429	< 0.143	0.171
HC-21	12/15/2009	3,110 Q11	<472	<0.190	<0.190	<0.190	<0.190	0.216	<0.190	0.196	<0.190	<0.190	<0.381	0.194	<0.190	<0.190	<0.190	<0.190	0.222
HC-21	3/11/2010	387 Q11	<476	<0.476	<0.476	<0.476	<0.476	<0.476	<0.476	<0.476	<0.476	<0.476	<0.952	<0.476	<0.476	<0.476	<0.476	<0.476	<0.476
HC-21	6/8/2010	246 Q11	<472	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.190	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952
HC-21	9/16/2010	1,480 Q11	133 J	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.190	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952
HC-21	12/13/2010	2,080 Q12	631 Q7	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.190	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952
HC-21	6/9/2011	1,110 Q11	102 J	<0.0943	<0.0943	<0.0943	0.314	0.396	0.343	0.341	0.331	0.340	<0.189	0.409	<0.0943	0.306	<0.0943	0.217	0.506
HC-21	12/1/2011	6,890 Q11	1,010	<0.0943	<0.0943	<0.189	0.120	0.185	0.165	0.171	0.128	0.140	<0.189	0.181	<0.0943	0.139	<0.0943	<0.0943	0.217
HC-21	6/11/2012	1,300 Q11	<400	<0.095	<0.095	<0.095	<0.095	0.089	0.098	<0.095	<0.095	<0.095	<0.019	0.11	<0.095	<0.095	<0.095	<0.095	0.096
HC-24	5/10/2004	736	< 500	1.21	< 0.25	< 0.3	< 0.1	0.118	0.101	0.101	< 0.1	0.109	< 0.2	0.144	3.51	< 0.1	< 1.5	4.09	0.163
HC-24	2/11/2005	4,500 J	970 J	1.2	--	--	0.11	0.15	--	--	--	--	--	0.18	5.4	--	< 0.55	1.8	--
HC-24	6/6/2005	450 Y	30 J	1.1	< 0.25	0.13	0.021	0.019 J	0.019 J	0.015 J	0.018 J	0.022	< 0.020	0.053	5.0	0.019 J	< 0.63	2.8	0.071
HC-24	9/15/2005	4,480 J	536	0.594	< 0.146	< 0.243	0.288	0.370	0.342	0.247	0.363	0.353	< 0.194	0.427	3.79	0.224	< 0.874	0.698	0.462
HC-24	12/7/2005	837	< 481	0.861	< 0.144	< 0.192	< 0.0962	< 0.0962	< 0.0962	< 0.0962	< 0.0962	< 0.0962	< 0.192	< 0.0962	2.83	< 0.0962	< 1.06	1.91	< 0.0962
HC-24	3/13/2006	706	< 481	0.441	< 0.153	< 0.102	< 0.102	< 0.102	< 0.102	< 0.102	< 0.102	< 0.102	< 0.204	< 0.102	1.60	< 0.102	< 0.255	1.06	< 0.102
HC-24	6/28/2006	1,020	< 476	1.99	< 0.377	0.363	0.996	1.10	1.97 J	0.834	< 0.189 J	0.989	< 0.377	1.49	6.00	0.754	< 0.943	4.24	1.34
HC-24	9/20/2006	705	< 481	1.49	< 0.481	< 0.481	0.753	0.948	0.935	0.668	0.823	0.82	< 0.962	1.02	4.35	0.62	< 0.481	1.00	1.04
HC-24	12/13/2006	1,810	< 481	2.10	< 0.962	< 0.962	< 0.962	< 0.962	< 0.962	< 0.962	< 0.962	< 0.962	< 1.92	< 0.962	6.99	< 0.962	< 1.44	5.73	< 0.962
HC-24	3/29/2007	787	< 481	1.01	< 0.190	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.190	< 0.0952	3.43	< 0.0952	< 0.524	1.10	< 0.0952
HC-24	6/27/2007 ⁷	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HC-24	9/18/2007	436	< 472	1.05	< 0.286	< 0.190	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.190	< 0.0952	3.53	< 0.0952	< 1.14	1.92	0.12
HC-24	12/6/2007	676	< 476	1.32	< 0.476	< 0.190	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.190	< 0.0952	4.71	< 0.0952	< 0.476	3.72	< 0.0952
HC-24	3/10/2008	2,270	<476	2.3	<0.952	<0.952 Q10	<0.952	<0.952	<0.952	<0.952	<0.952	<0.952	<1.90	<0.952	7.08	<0.952	<1.43	6.64	<0.952
HC-24	6/12/2008	1,150	<472	1.51	<0.286	<0.143	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.190	<0.0952	4.99	<0.0952	<0.429	3.42	<0.0952
HC-24	9/9/2008	459 Q9	<481	1.22	<0.192	0.117	<0.0962	<0.0962	<0.0962	<0.0962	<0.0962	<0.0962	<0.192	<0.0962	4.74	<0.0962	<0.481	0.759	<0.0962
HC-24	12/29/2008	2,780 Q9	<500	1.29	<0.238	0.121	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.							

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Well ID	Date	TPH		PAHs															
		Diesel-Range	Residual-Range	Acenaph-thene	Acenaph-thylene	Anthracene	Benzo(a)-anthracene	Benzo(a)-pyrene	Benzo(b)-fluoranthene	Benzo(g,h,i)-perylene	Benzo(k)-fluoranthene	Chrysene	Dibenzo(a,h)-anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
		Concentration in µg/L																	
BE-1	6/6/2005	3,500 Y ⁸	2,300 O ⁸	0.31	0.11	0.28	1.7	2.1	2.0	1.8	1.6	2.2	0.36	3.4	0.16	2.0	0.49	1.4	3.4
BE-1	9/15/2005	172 J ⁸	< 515 ⁸	0.0575 J	< 0.103	0.0516 J	0.322	0.385	0.368	0.296	0.370	0.424	< 0.206	0.646	< 0.103	0.251	< 0.103	0.286	0.674
BE-1	12/7/2005	430 ⁸	< 400 ⁸	< 0.200	< 0.200	< 0.200	0.397	0.449	0.540	0.214	0.459	0.501	< 0.400	0.866	< 0.200	0.169 J	< 0.200	0.461	1.12
BE-1	3/13/2006	< 102 J	< 191 J	< 0.333	< 0.333	< 0.333	< 0.333	0.350	0.334	< 0.333	< 0.333	< 0.333	< 0.667	0.448	< 0.333	< 0.333	< 0.333	< 0.333	0.431
BE-1	6/28/2006	< 312	< 625	< 0.0962	< 0.0962	< 0.0962	0.112	0.133	0.137	0.105	< 0.0962	0.124	< 0.192	0.181	< 0.0962	< 0.0962	< 0.0962	< 0.0962	0.244
BE-1	9/20/2006	< 357	< 714	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BE-1	12/14/2006	801	< 476	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.190	< 0.0952	0.298	< 0.0952	< 0.0952	0.503	< 0.0952
BE-1	3/30/2007	210	< 250	< 0.0267	< 0.0267	< 0.0267	< 0.0267	< 0.0267	< 0.0267	< 0.0267	< 0.0267	< 0.0267	< 0.0267	< 0.0267	< 0.0267	< 0.0267	< 0.0533	0.0431	0.0423
BE-1	6/27/2007	518	< 476	< 0.476	< 0.476	< 0.476	2.19	2.78	2.61	2.20	2.31	2.49	< 0.952	3.14	< 0.476	1.98	< 0.476	1.34	3.09
BE-1	9/18/2007	598	< 1,000	< 0.0333	< 0.0333	< 0.0333	< 0.0333	< 0.0333	< 0.0333	< 0.0333	< 0.0333	< 0.0333	< 0.0333	< 0.050	0.0791	< 0.0333	0.498	0.145	0.0598
BE-1	12/6/2007	< 238	< 476	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.190	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952
BE-1	3/12/2008	449	<500	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.189	0.101	<0.0943	<0.0943	<0.0943	<0.0943	0.145
BE-1	6/12/2008	<236	<472	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.190	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952
BE-1	9/9/2008	190 Q11	<588	<0.357	<0.357	<0.357	<0.357	<0.357	<0.357	<0.357	<0.357	<0.714	<0.357	<0.357	<0.357	<0.357	<0.357	<0.357	<0.357
BE-1	12/29/2008	377 Q9	<500	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.190	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952
BE-1	3/9/2009	<236	<472	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.194	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971
BE-1	6/5/2009	<238	<476	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.190	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952
BE-1	9/9/2009	<250	<500	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.194	<0.0971	<0.0971	<0.0971	<0.0971	0.141	<0.0971	<0.0971
BE-1	12/15/2009	<236	<472	<0.0962	<0.0962	<0.0962	<0.0962	<0.0962	<0.0962	<0.0962	<0.0962	<0.192	<0.0962	<0.0962	<0.0962	<0.0962	<0.0962	<0.0962	<0.0962
BE-1	3/11/2010	<238	<476	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.190	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952
BE-1	6/8/2010	<236	<472	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.190	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952
BE-1	9/16/2010	380	<400	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.190	<0.0952	0.252	<0.0952	<0.0952	0.229	<0.0952	<0.0952
BE-1	12/13/2010	1,340 Q12	345 J	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.194	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971
BE-1	6/21/2011	91.8 J	78.8 J	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.189	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943
BE-1	12/1/2011	319 Q11 J	<400	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.189	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943
BE-1	6/12/2012	<400	<400	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.20	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099
BE-1	12/19/2012	<400	<400	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
BE-1	12/17/2013	220 Y	<250	<0.096	<0.096	<0.096	<0.096	<0.096	<0.096	<0.096	<0.096	<0.19	<0.096	<0.096	<0.096	<0.096	<0.096	<0.096	<0.096
BE-1	12/11/2014	1,200 Y	420 Y	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	<0.020	<0.020	<0.020	<0.020	0.024	<0.020	0.022	0.050	<0.020	0.032
BE-1	12/15/2015	180	<250	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	0.058 H	<0.020 H	<0.020 H
BE-1	12/19/2016	1,000	280	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.030	<0.020	<0.020	<0.020	<0.020	<0.020	<0.040	<0.020	0.029 B
BE-1	12/14/2017	1,900 R	890 R	<0.041	<0.041	<0.10	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041
BE-1	2/14/2018	<110	<350	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BE-1	12/5/2018	19,000 J-	2,900 J-	<0.019 H	<0.019 H	0.061 J-, H	<0.019 H	<0.019 H	<0.019 H	<0.019 H	<0.019 H	<0.019 H	<0.019 H	<0.019 H	0.019 J-, H	<0.019 H	<0.019 H	0.022 J-, H	<0.019 H
BE-1	1/16/2019	430	<350	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BE-1	5/16/2019	66 J	<91	0.025 J	<0.0086	0.026 J	<0.013	<0.01	<0.01	<0.011	<0.011	<0.015	<0.025	<0.048	0.061 J	<0.025	0.04 J	0.07 J	<0.031
BE-1	12/9/2019	170	<330	0.023 J,B	<0.049	<0.098	<0.049	<0.098	<0.049	<0.049	<0.049	<0.098	<0.098	<0.20	0.031 J,B	<0.049	0.048 J	<0.098	0.049 J
BE-1	12/9/2020	2,920 J	286 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BE-1	12/22/2021	139 J	<189	<0.0743	<0.0743	<0.149	<0.0372	<0.0372	<0.0372	<0.0743	<0.0372	<0.0372	<0.0372	<0.0743	<0.0743	<0.0372	<0.149	<0.149	<0.0743
Well Destroyed																			
BE-3	6/6/2005	640 Y ⁸	1,000 O ⁸	0.33	0.16	0.43	2.8	4.2	3.7	3.8	2.8	3.6	0.79	4.9	0.22	4.1	0.1		

Table C3
Historical Groundwater Analytical Results
Terminal 4 Slip 3 Upland Facility
Port of Portland

Well ID	Date	TPH		PAHs															
		Diesel-Range	Residual-Range	Acenaph-thene	Acenaph-ethylene	Anthracene	Benzo(a)-anthracene	Benzo(a)-pyrene	Benzo(b)-fluoranthene	Benzo(g,h,i)-perylene	Benzo(k)-fluoranthene	Chrysene	Dibenzo(a,h)-anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
		Concentration in µg/L																	
BE-3	12/6/2007	371	< 806	0.0460	< 0.0333	0.0680	0.434	0.604	0.655	0.503	0.439	0.540	< 0.167	1.10	< 0.0667	0.407	0.199	0.316	0.538
BE-3	3/12/2008	634 QP, Q11	<714	<0.50	<0.50	<0.10	0.212	0.269	0.281	0.285	0.186	0.232	<0.20	0.364	<0.50	0.22	0.228	0.14	0.253
BE-3	6/12/2008	787 Q9	<472	<0.118	<0.118	<0.118	0.302	0.358	0.360	0.272	0.291	0.340	<0.235	0.476	<0.118	0.242	<0.118	0.235	0.578
BE-3	9/9/2008	264 Q11	<833	<0.100	<0.100	<0.100	<0.100	<0.100	0.104	<0.100	<0.100	0.175	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
BE-3	12/29/2008	563 Q11	<746	<0.111	<0.111	<0.111	<0.111	<0.111	<0.111	<0.111	<0.111	<0.111	<0.222	<0.111	<0.111	<0.111	<0.111	<0.111	<0.111
BE-3	3/9/2009	<133	<833	<0.182	<0.182	<0.182	<0.182	<0.182	<0.182	<0.182	<0.182	<0.182	<0.364	0.120 J	<0.182	<0.182	<0.182	<0.182	0.0915 J
BE-3	6/5/2009	<248	<495	<0.0990	<0.0990	<0.0990	<0.0990	<0.0990	<0.0990	<0.0990	<0.0990	<0.0990	<0.198	<0.0990	<0.0990	<0.0990	<0.0990	<0.0990	<0.0990
BE-3	9/9/2009	--	--	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.200	<0.100	<0.100	<0.100	0.100	<0.100	<0.100
BE-3	12/15/2009	--	--	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.194	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971
BE-3	3/11/2010	164 Q11	<1,000	<0.0990	<0.0990	<0.0990	<0.0990	<0.0990	<0.0990	<0.0990	<0.0990	<0.0990	<0.198	<0.0990	<0.0990	<0.0990	<0.0990	<0.0990	<0.0990
BE-3	6/8/2010	295 Q11	<495	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.190	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952
BE-3	9/16/2010	153 B	<400	<0.133	<0.133	<0.133	<0.133	<0.133	<0.133	<0.133	<0.133	<0.133	<0.267	<0.133	0.171	<0.133	<0.133	0.193	<0.133
BE-3	12/13/2010	757 Q12	226 J	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.194	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971	<0.0971
BE-3	6/9/2011	190 J	<400	<0.0962	<0.0962	<0.0962	<0.0962	<0.0962	<0.0962	<0.0962	<0.0962	<0.0962	<0.192	<0.0962	<0.0962	<0.0962	<0.0962	<0.0962	<0.0962
BE-3	12/1/2011	762 Q11	353 J	<0.100	<0.100	<0.100	0.165	0.189	0.198	0.168	0.135	0.206	<0.200	0.226	<0.100	0.135	<0.100	<0.100	0.251
BE-3	6/11/2012	<400	<400	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.22	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11
BE-3	12/19/2012	<400	<400	<0.10	<0.10	<0.10	0.22	0.25 B	0.19	0.15	0.14	0.23	<0.20	0.27	<0.10	0.17	<0.10	0.14	0.31
BE-3	12/17/2013	150 Y	<250	<0.095	<0.095	<0.095	<0.095	0.110	<0.095	<0.095	<0.095	<0.095	<0.095	<0.095	<0.095	0.110	<0.095	<0.095	0.110
BE-3	12/11/2014	740 Y	280 Y	<0.021	<0.021	0.024	0.036	0.044	0.062	0.048	0.025	0.046	<0.021	0.046	0.043	0.057	0.065	0.030	0.064
BE-3	12/15/2015	170	<250	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	0.022 H	<0.020 H	<0.020 H
BE-4	6/3/2005	590 Y	< 500	1.9	< 0.25	< 0.22	0.012 J	< 0.020	< 0.020	< 0.020	< 0.020	0.034	< 0.020	0.036	3.8	< 0.020	< 0.31	< 0.088	0.084
BE-4	9/15/2005	1,560 J	< 476	< 0.714	< 0.476	< 0.190	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.0952	< 0.19	< 0.0952	0.844	< 0.0952	< 0.476	< 0.190	< 0.0952
BE-4	12/7/2005 ⁷	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BE-4	3/13/2006 ⁷	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BE-4	6/28/2006 ⁷	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BE-4	9/20/2006 ⁷	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BE-4	12/13/2006 ⁷	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BE-4	3/30/2007 ⁷	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BE-4	6/27/2007 ⁷	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BE-4	9/18/2007 ⁷	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BE-4	12/6/2007 ⁷	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BE-4	9/8/2008 ⁷	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BE-4	12/29/2008 ⁷	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BE-4	03/9/2009 ⁷	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BE-4	06/5/2009 ⁷	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BE-4	09/9/2009 ⁷	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BE-4	12/15/2009 ⁷	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BE-4	3/11/2010 ⁷	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BE-4	6/8/2010 ⁷	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BE-4	9/16/2010 ⁷	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BE-4	12/13/2011 ⁷	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BE-4	6/9/2011 ⁷	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BE-5	9/9/2009	<263	<526	<0.0952	<0.0952	<0.0952	0.184	0.217	0.194	0.166	0.174	0.216	<0.190	0.388	<0.0952	0.135	<0.238	<0.238	0.422
BE-5	12/15/2009	<236	<472	<0.0952	<0.0952	<0.0952	0.186	0.214	0.187	0.184	0.160	0.198	<0.190	0.352	<0.0952	0.152	<0.286	<0.238	0.382
BE-5	3/11/2010	<238	<476	<0.0952	<0.0952	<0.0952	<0.0952	0.102	<0.0952	<0.0952	<0.0952	0.098	<0.190	0.141	<0.0952	<0.0952	<0.0952	<0.0952	0.174
BE-5	6/8/2010	247 Q11	<472	<0.0952	<0.0952	<0.0952	0.151	0.175	0.147	0.141	0.129	0.175	<0.190	0.284	<0.0952	0.116	<0.0952	0.112	0.318
BE-5	9/16/2010	1,670 Q9	359 J	<0.0952	<0.0952	0.0963	0.214	0.274	0.252	0.226	0.203	0.259	<0.190	0.463	0.176	0.187	<0.143	0.316	0.499
BE-5	12/13/2010	659 Q12	354 J	<0.0952	<0.0952	<0.0952	0.163	0.223	0.203	0.184	0.165	0.211	<0.190	0.338	<0.0952	0.141	<0.0952	0.131	0.356
BE-5	6/9/2011	182 J	<400																

Table C3
Historical Groundwater Analytical Results
Terminal 4 Slip 3 Upland Facility
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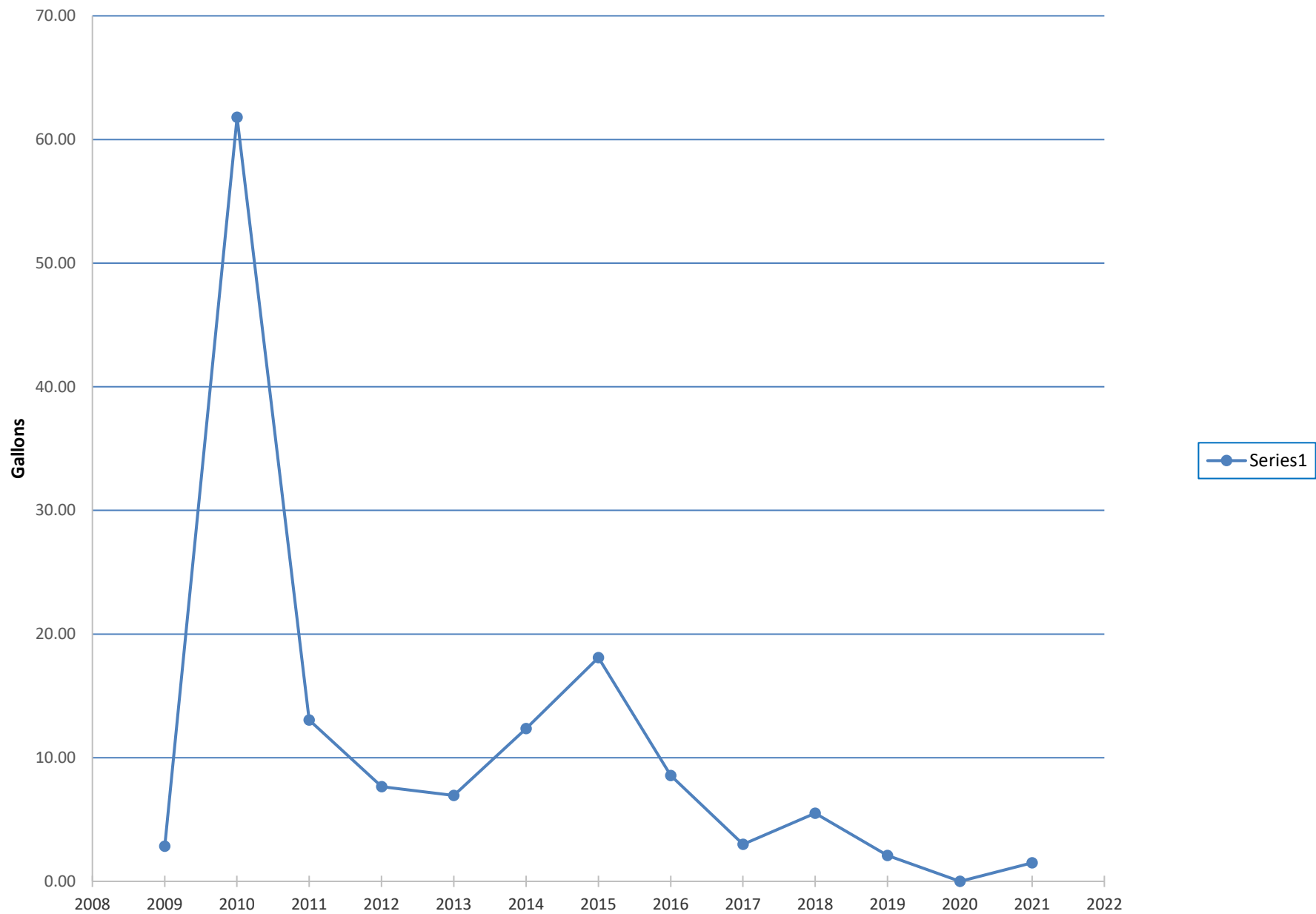
Well ID	Date	TPH		PAHs															
		Diesel-Range	Residual-Range	Acenaph-thene	Acenaph-thylene	Anthracene	Benzo(a)-anthracene	Benzo(a)-pyrene	Benzo(b)-fluoranthene	Benzo(g,h,i)-perylene	Benzo(k)-fluoranthene	Chrysene	Dibenzo(a,h)-anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
		Concentration in µg/L																	
HC-12D	11/13/1998	--	--	<1.00	<1.00	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.200	<0.100	<1.00	<0.100	<1.00	<0.500	<0.100
HC-12D	2/16/1999	--	--	<5.00	<1.00	<2.00	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.200	<1.00	5.210	<0.100	<1.00	8.190	<1.00
HC-12D	5/18/1999	--	--	0.31	<0.100	<1.00	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.200	<0.100	<10.0	<0.100	<1.00	<1.00	<0.100
HC-12D	8/25/1999	--	--	0.40	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.200	<0.1	0.200	<0.1	<0.1
HC-12D	12/12/2014	2,200 Y	290 Y	0.50	<0.02	<0.02	0.020	<0.02	0.023	0.021	<0.02	0.021	0.021	<0.02	0.360	0.03	0.120	0.072	<0.02
HC-12D	12/16/2015	440	<250	0.22 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H
HC-12D	12/19/2016	1,200	<250	0.26	<0.02	<0.02	<0.02	<0.02	0.021	<0.02	<0.03	<0.02	<0.02	0.049	<0.02	<0.02	0.075	<0.02	0.052 B
HC-12D	12/13/2017	3,800 R	1,200 R	0.39	0.035	<0.047	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	0.091	<0.019	0.210	0.050	<0.019
HC-12D	2/14/2018	640	<350	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HC-12D	12/5/2018	2,600	<350	0.39 J-, H	<0.19 H	<0.19 H	<0.19 H	<0.19 H	<0.19 H	<0.19 H	<0.19 H	<0.19 H	<0.19 H	<0.19 H	<0.19 H	<0.19 H	<0.19 H	<0.19 H	<0.19 H
HC-12D	12/5/2018 DUP	2,000	<360	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HC-12D	12/5/2018	2,600	<350	0.39 J-, H	<0.19 H	<0.19 H	<0.19 H	<0.19 H	<0.19 H	<0.19 H	<0.19 H	<0.19 H	<0.19 H	<0.19 H	<0.19 H	<0.19 H	<0.19 H	<0.19 H	<0.19 H
HC-12D	12/5/2018 DUP	2,000	<360	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HC-12D	12/10/2019	780 D	<330	0.39	<0.047	0.081 J	0.018 J,B	0.017 J	0.018 J,B	0.016 J,B	0.015 J,B	0.018 J	<0.094	<0.19	<0.094	0.019 J,B	0.063 J	0.051 J	<0.094
HC-12D	12/10/19 DUP	500 D	<330	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HC-12D	12/9/2020	227	<381	0.375	<0.0400	<0.0500	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	<0.270	<0.0400	<0.160	<0.0400	<0.0400
HC-12D	12/9/20 DUP	218	<381	0.422	<0.0408	<0.0510	<0.0408	<0.0408	<0.0408	<0.0408	<0.0408	<0.0408	<0.0408	<0.0408	<0.224	<0.0408	<0.143	<0.0408	<0.0408
HC-12D	12/22/2021	170 J	<189	0.417	<0.0739	<0.0739	<0.0369	<0.0369	<0.0369	<0.0739	<0.0369	<0.0369	<0.0369	<0.0739	<0.462	<0.0369	<0.296	<0.296	<0.0739
ROD Compliance Criteria		1,000	1,000	520	--	--	0.027	0.014	--	--	--	--	--	6.16	3.9	--	620	6.3	--

Please refer to notes on last page of table.

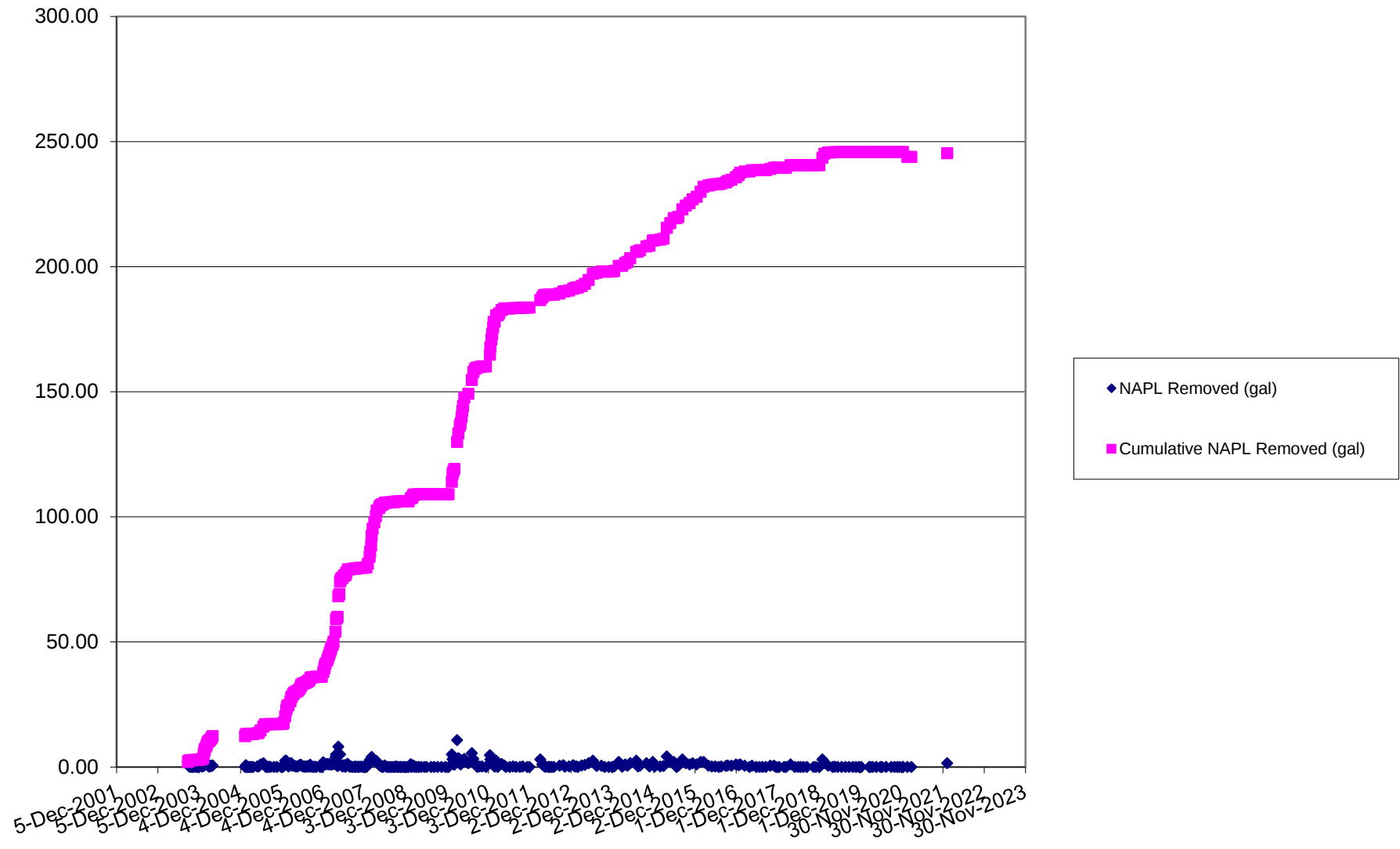
Appendix D

LNAPL Thickness and Recovery Trend Plots

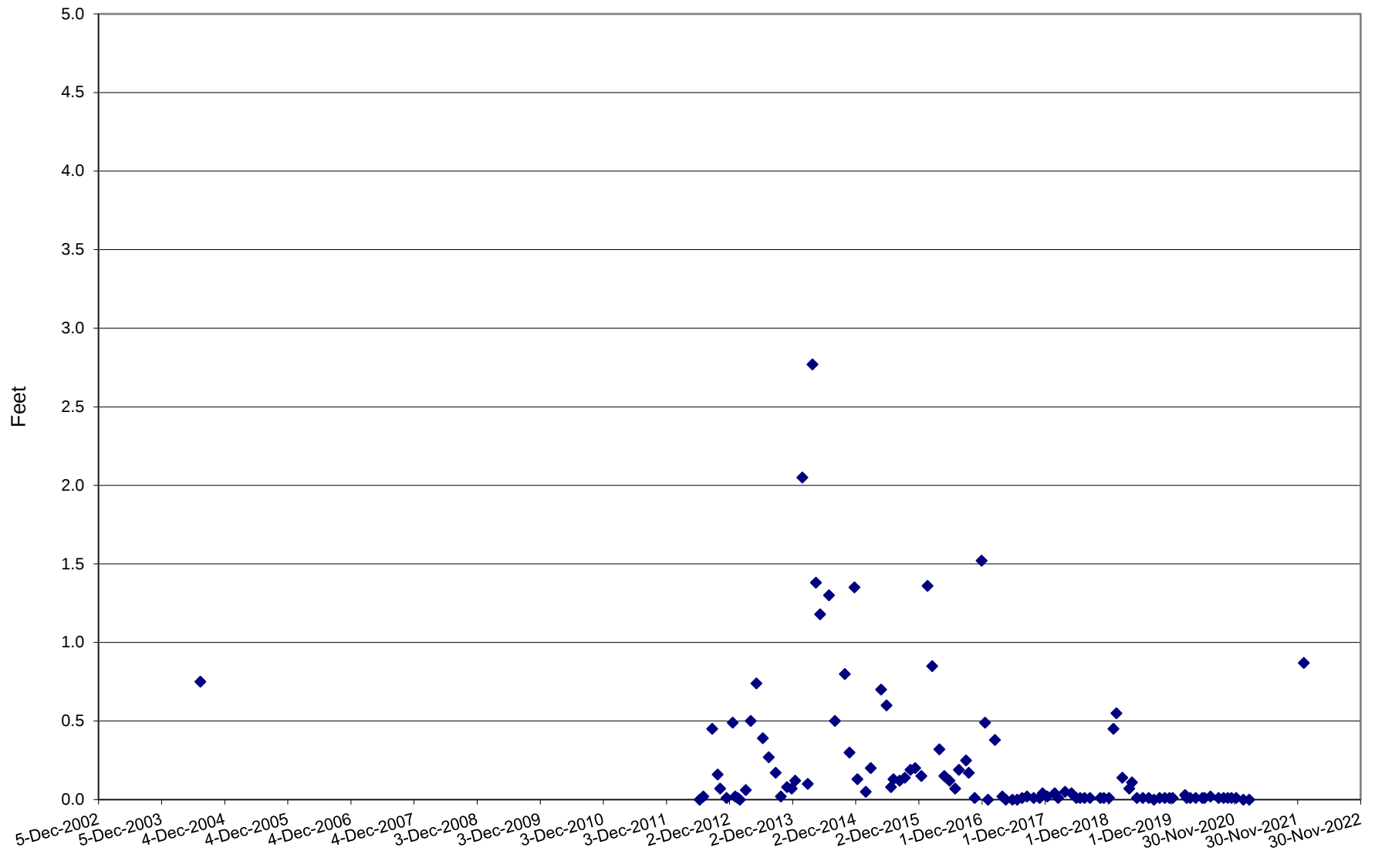
MW-19



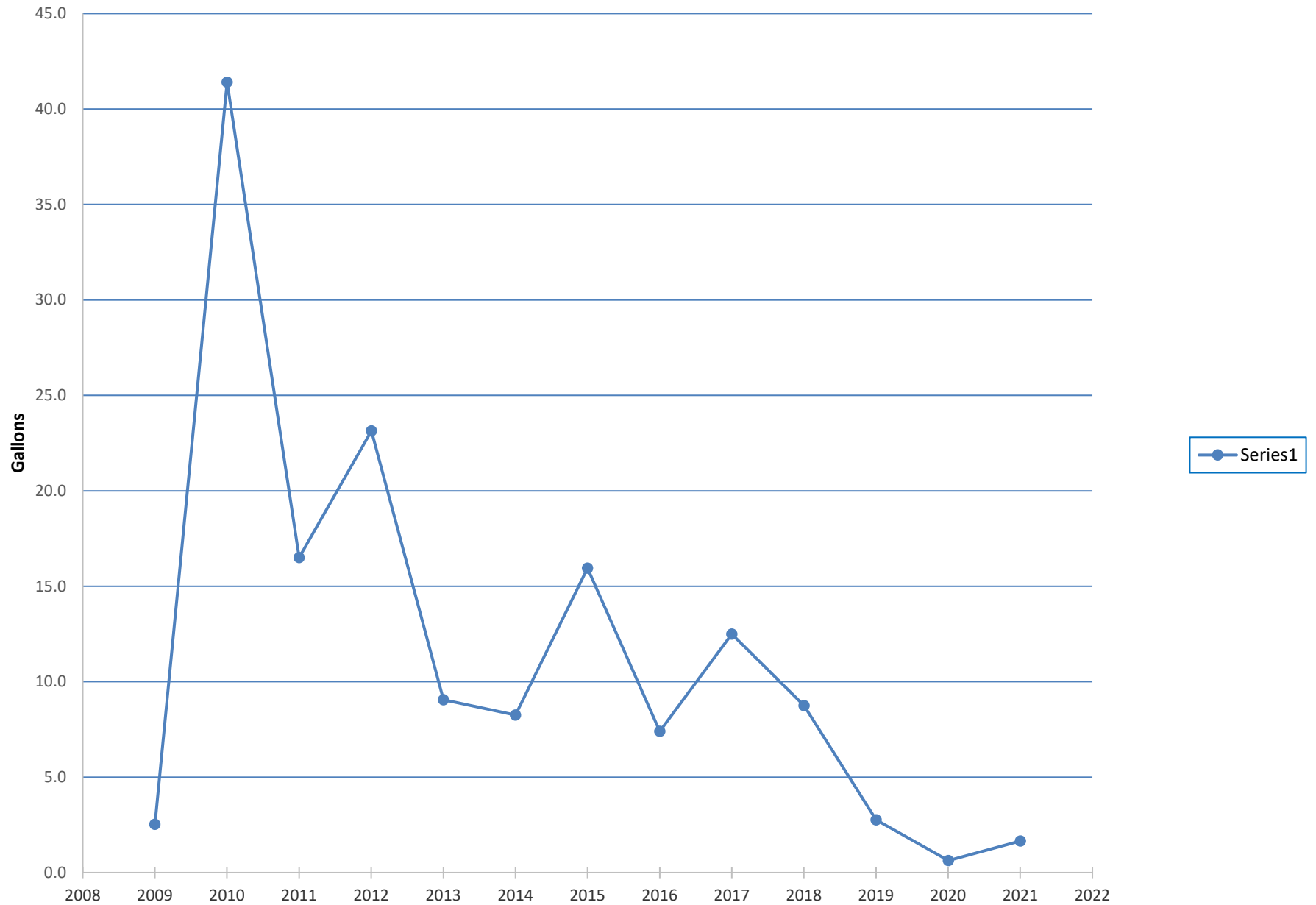
MW-19



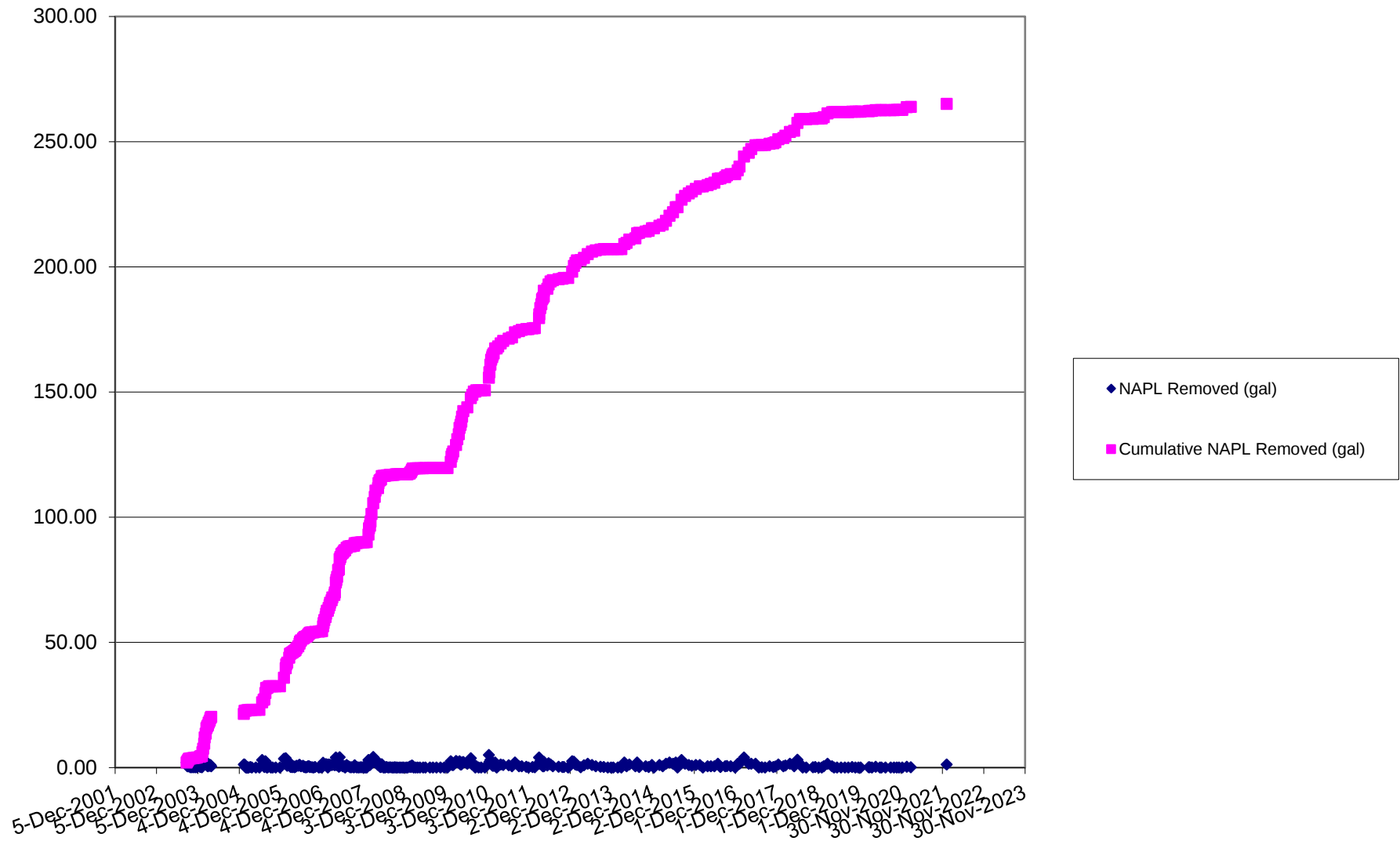
MW-19 NAPL Thickness (ft)



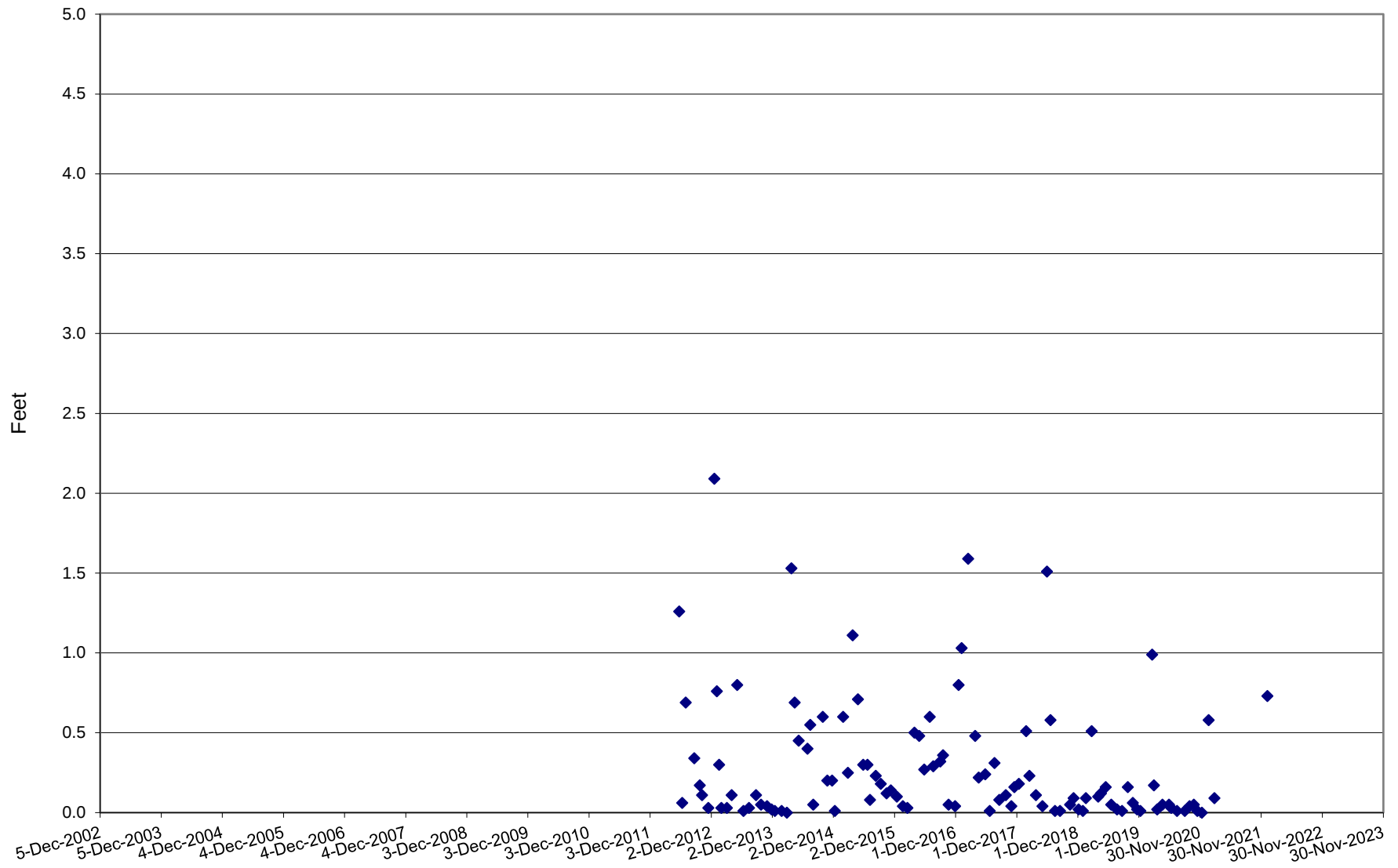
MW-20



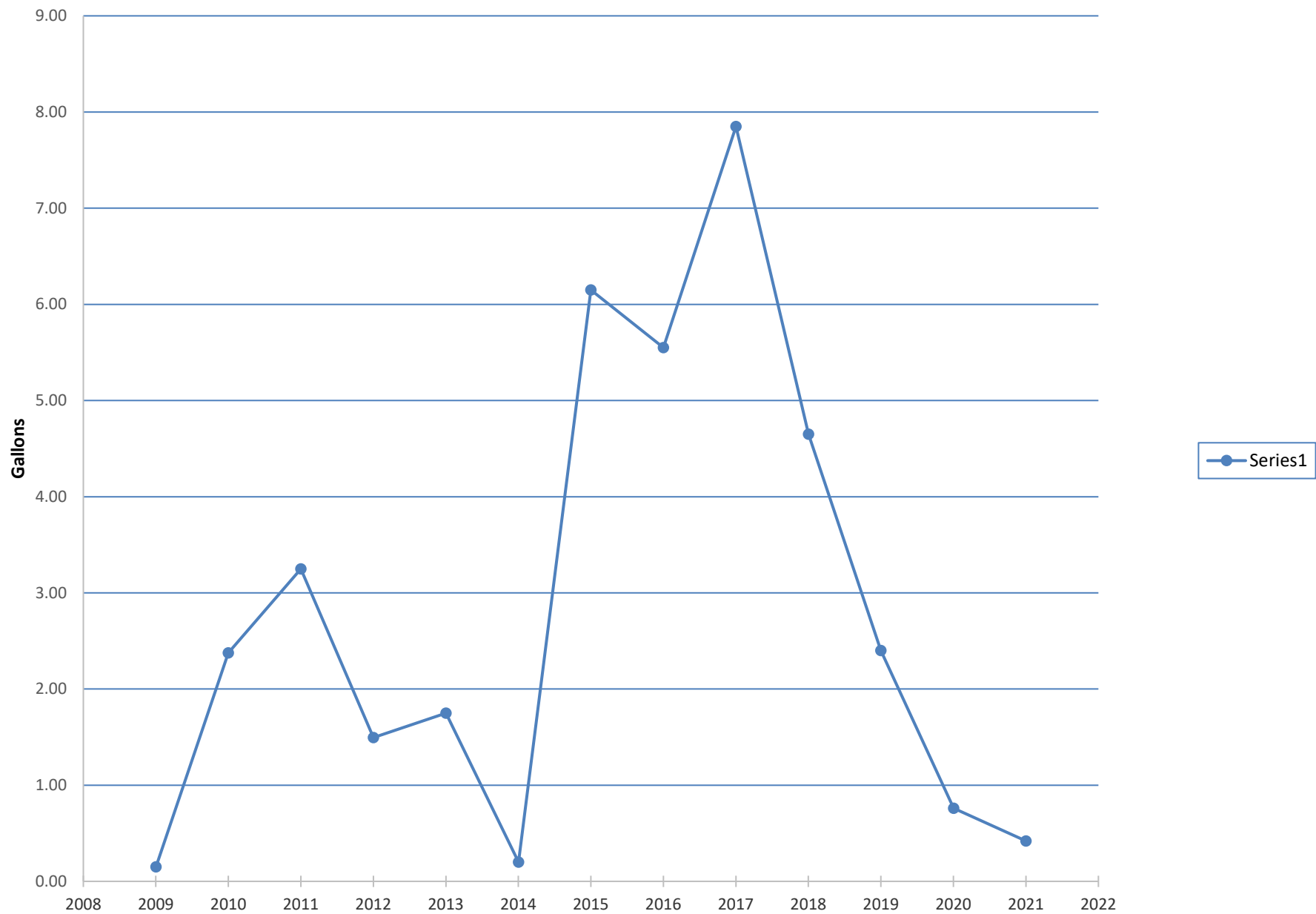
MW-20



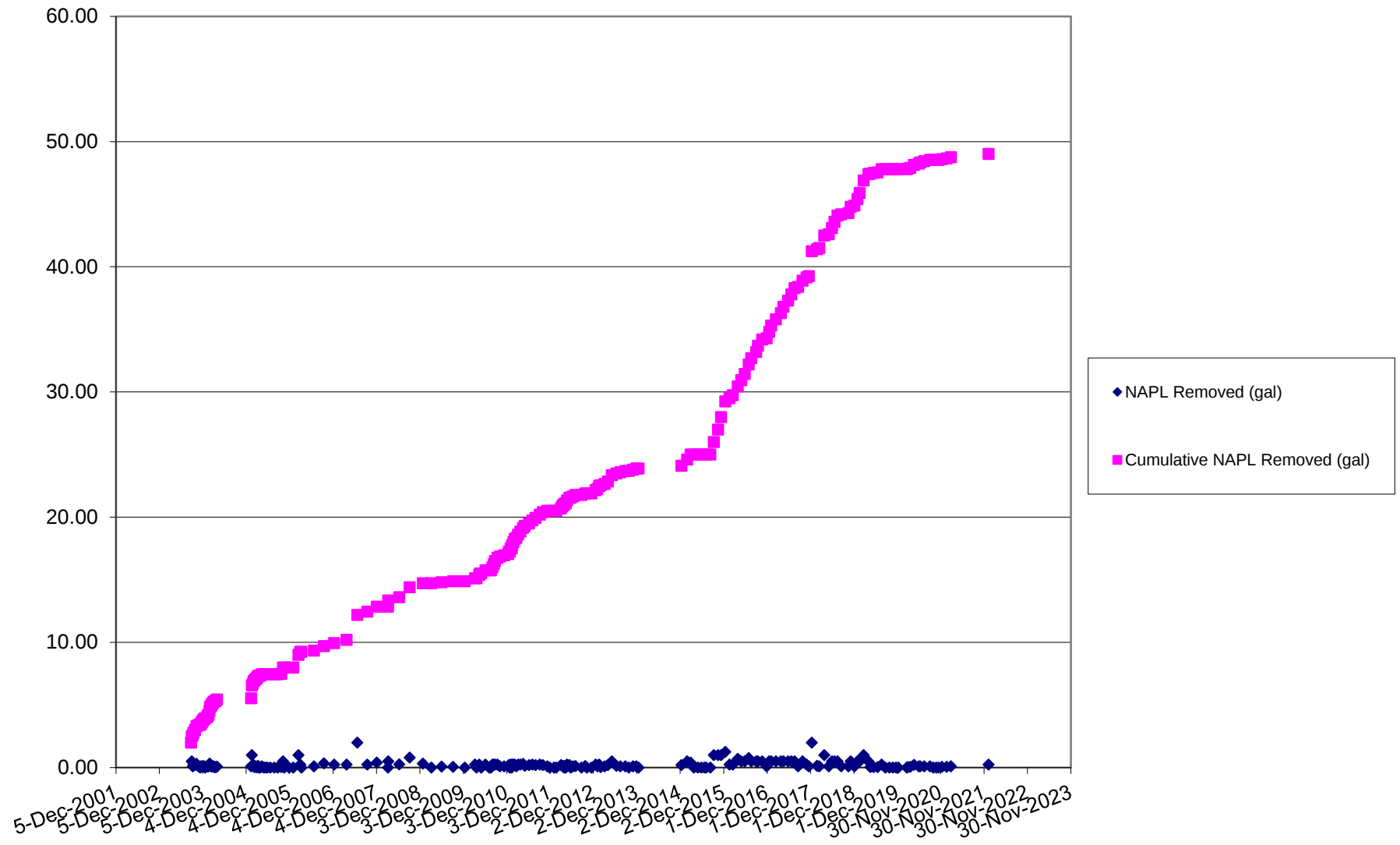
MW-20 NAPL Thickness (ft)



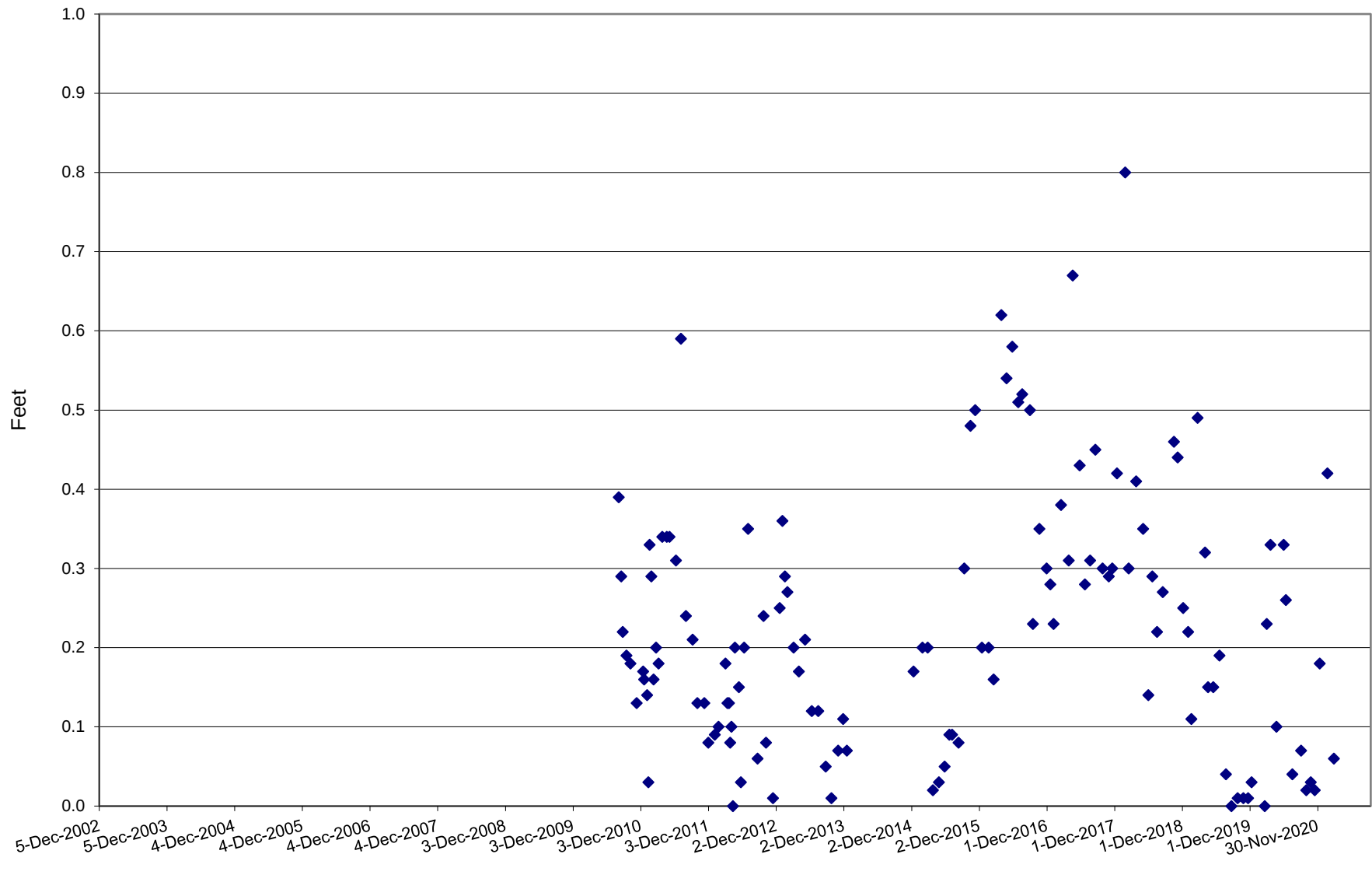
HC-10



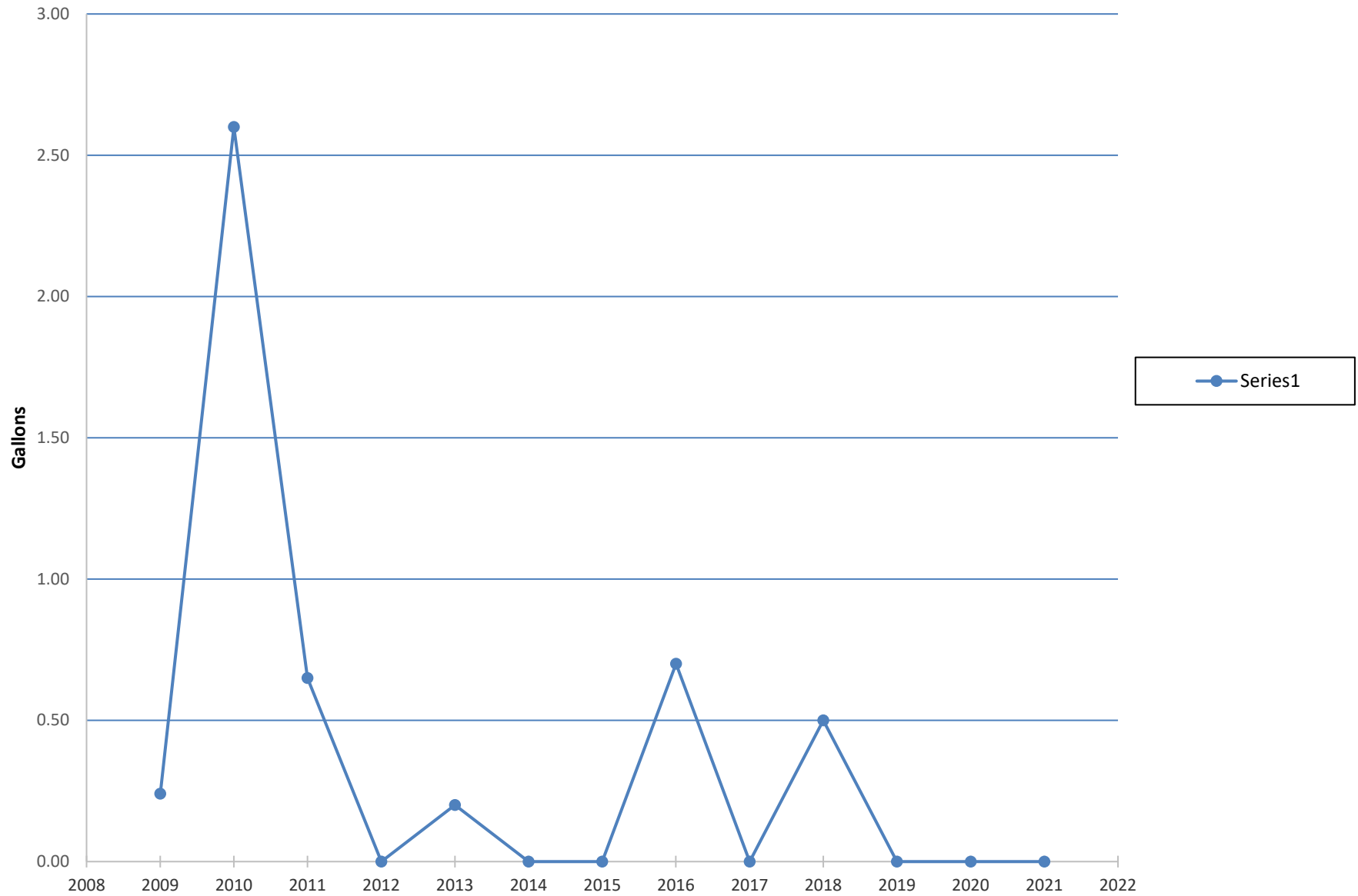
HC-10



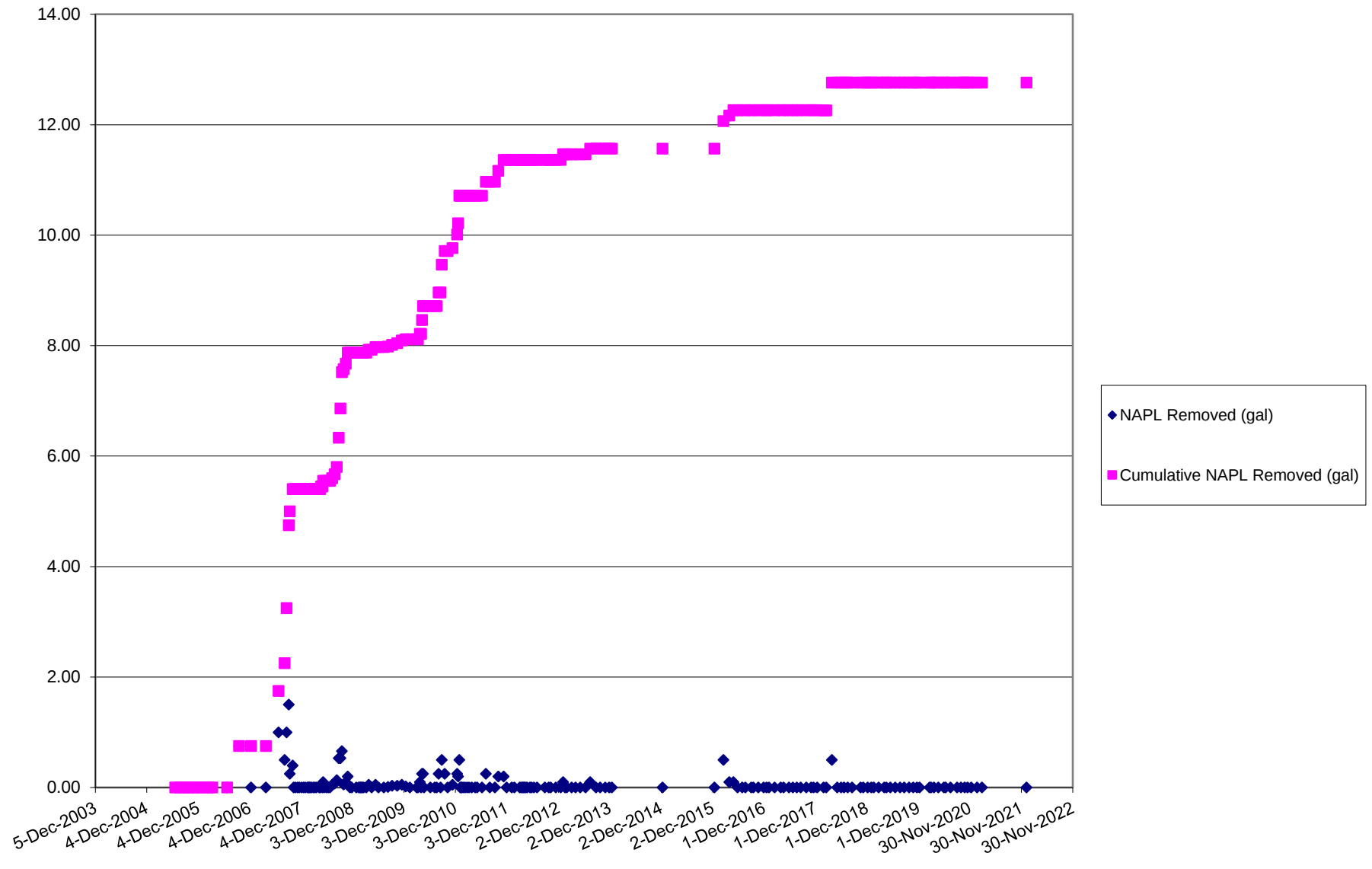
HC-10 NAPL Thickness (ft)



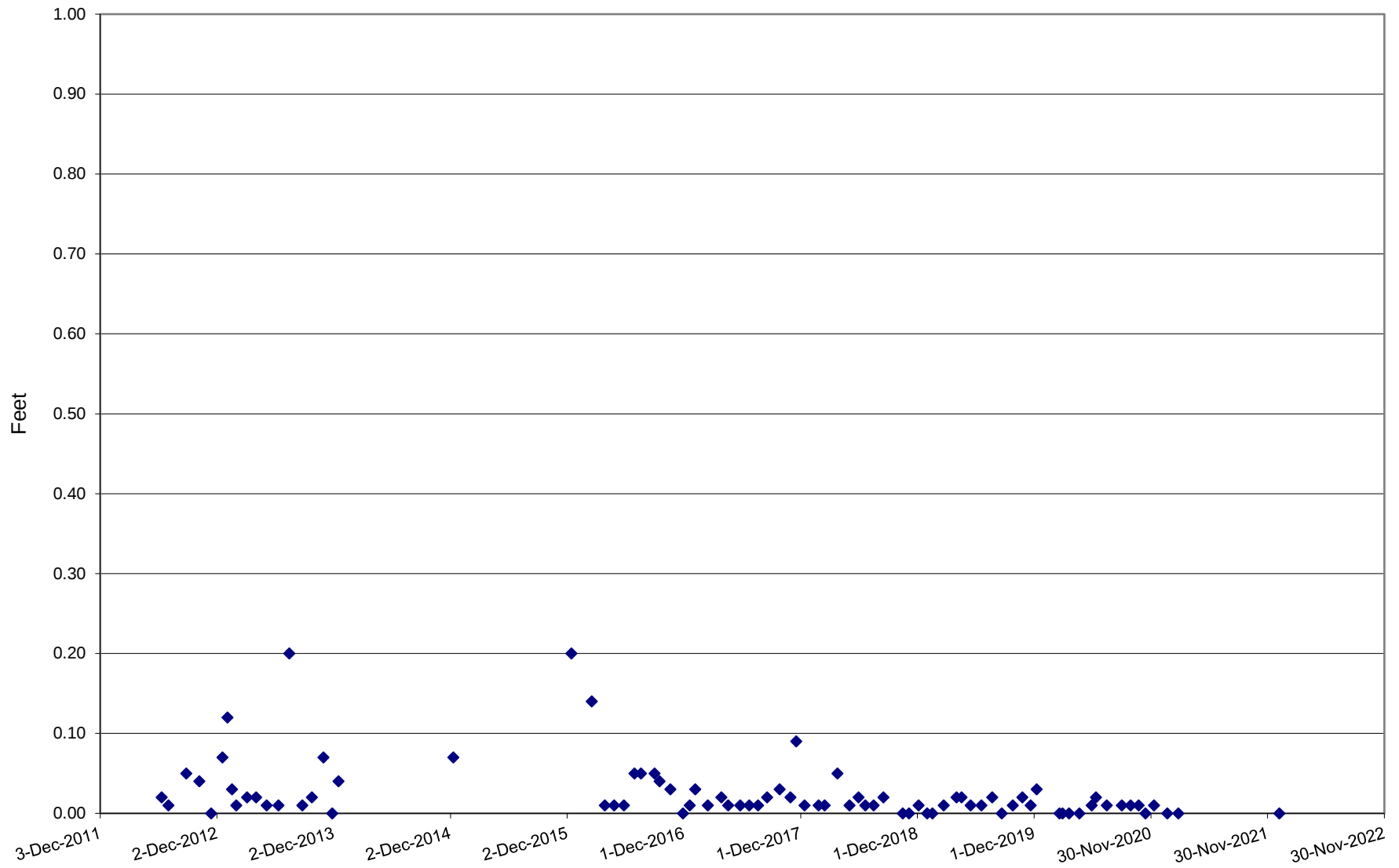
BE-4



BE-4



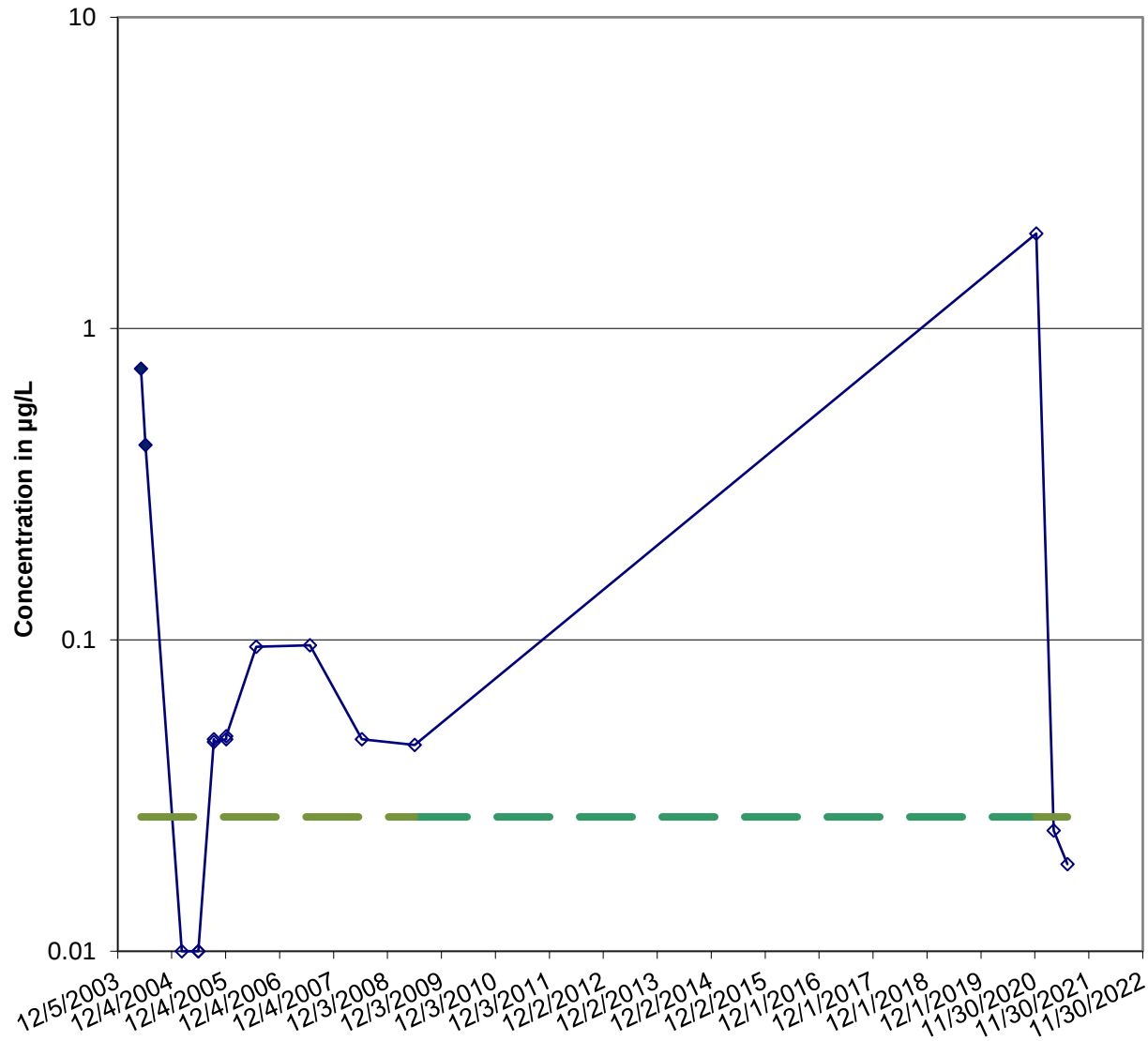
BE-4 NAPL Thickness (ft)



Appendix E

Chemical Concentration Versus Time Plots

HC-5



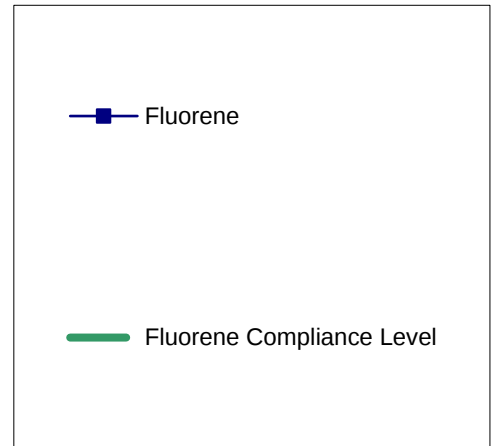
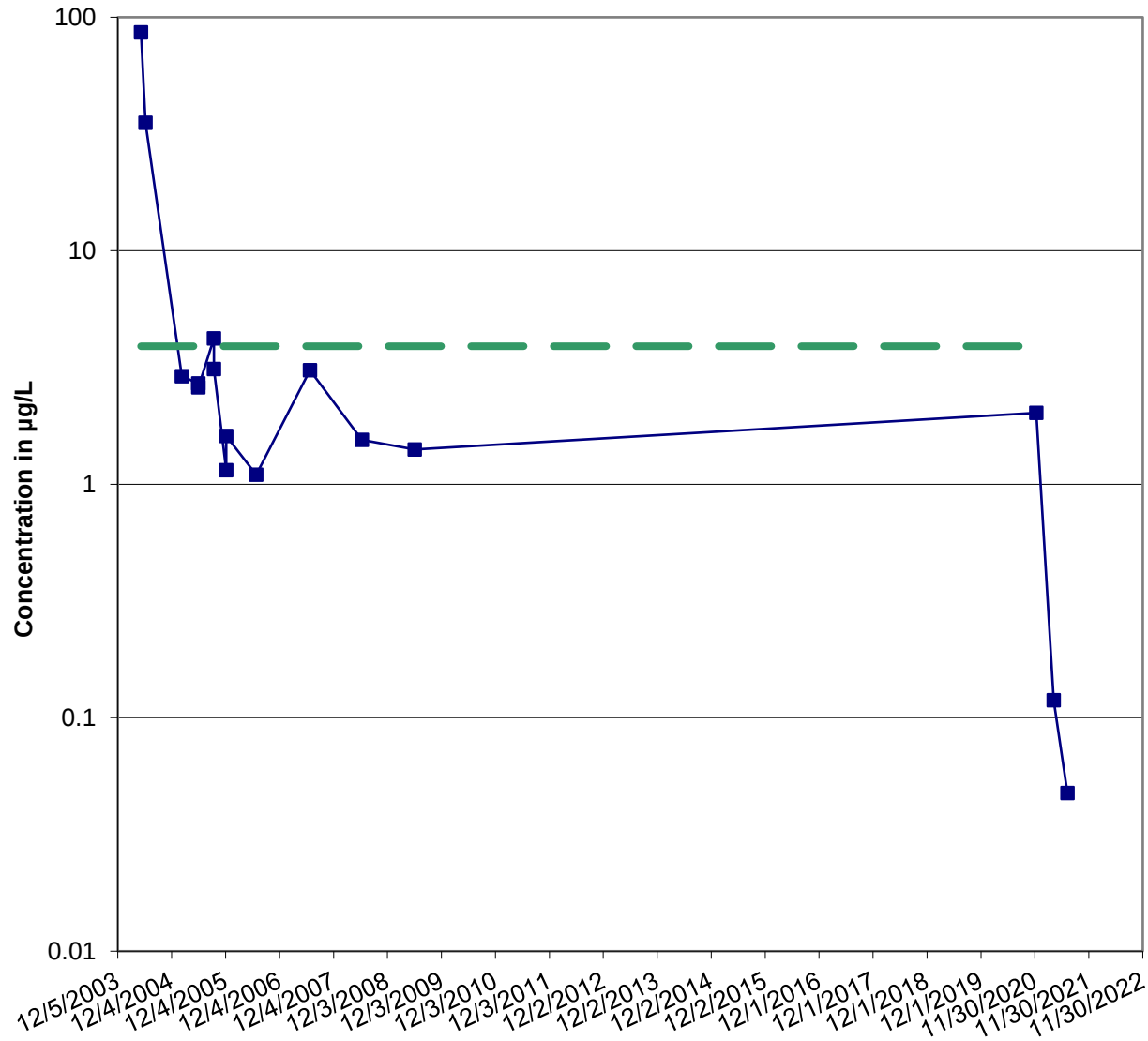
—◇— BAA

— BAA Compliance Level

Note:

Open symbols denote the result was non-detect and the symbol is shown at 1/2 the method reporting limit.

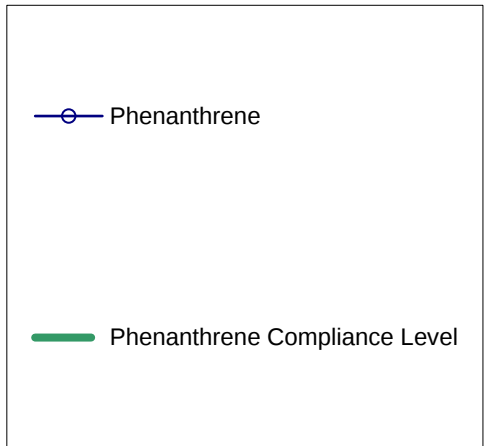
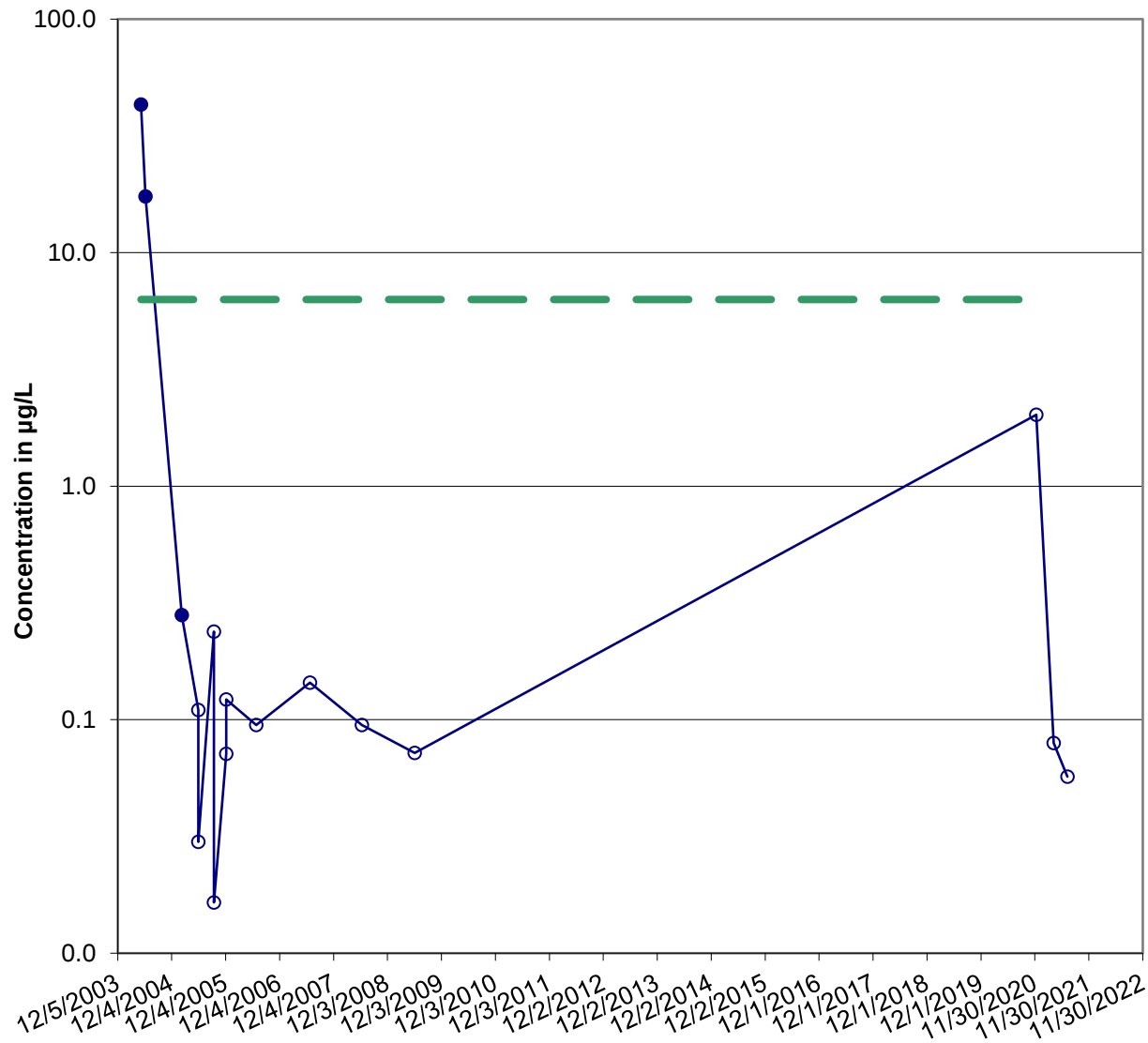
HC-5



Note:

Open symbols denote the result was non-detect and the symbol is shown at 1/2 the method reporting limit.

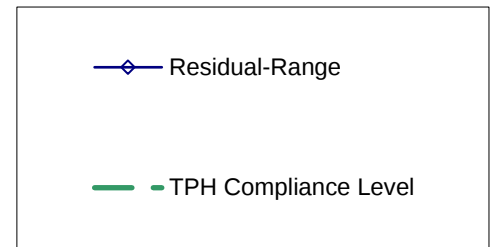
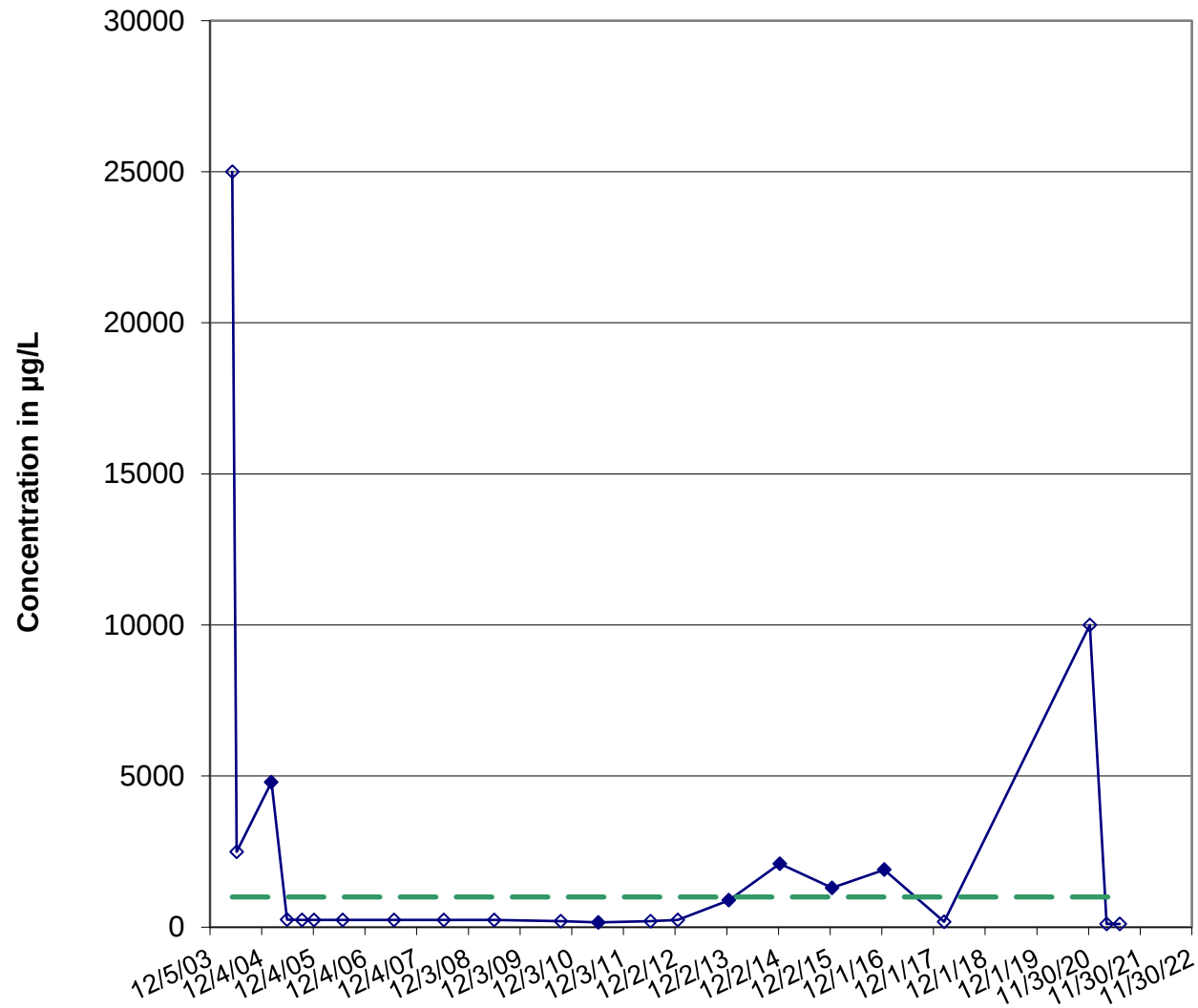
HC-5



Note:

Open symbols denote the result was non-detect and the symbol is shown at 1/2 the method reporting limit.

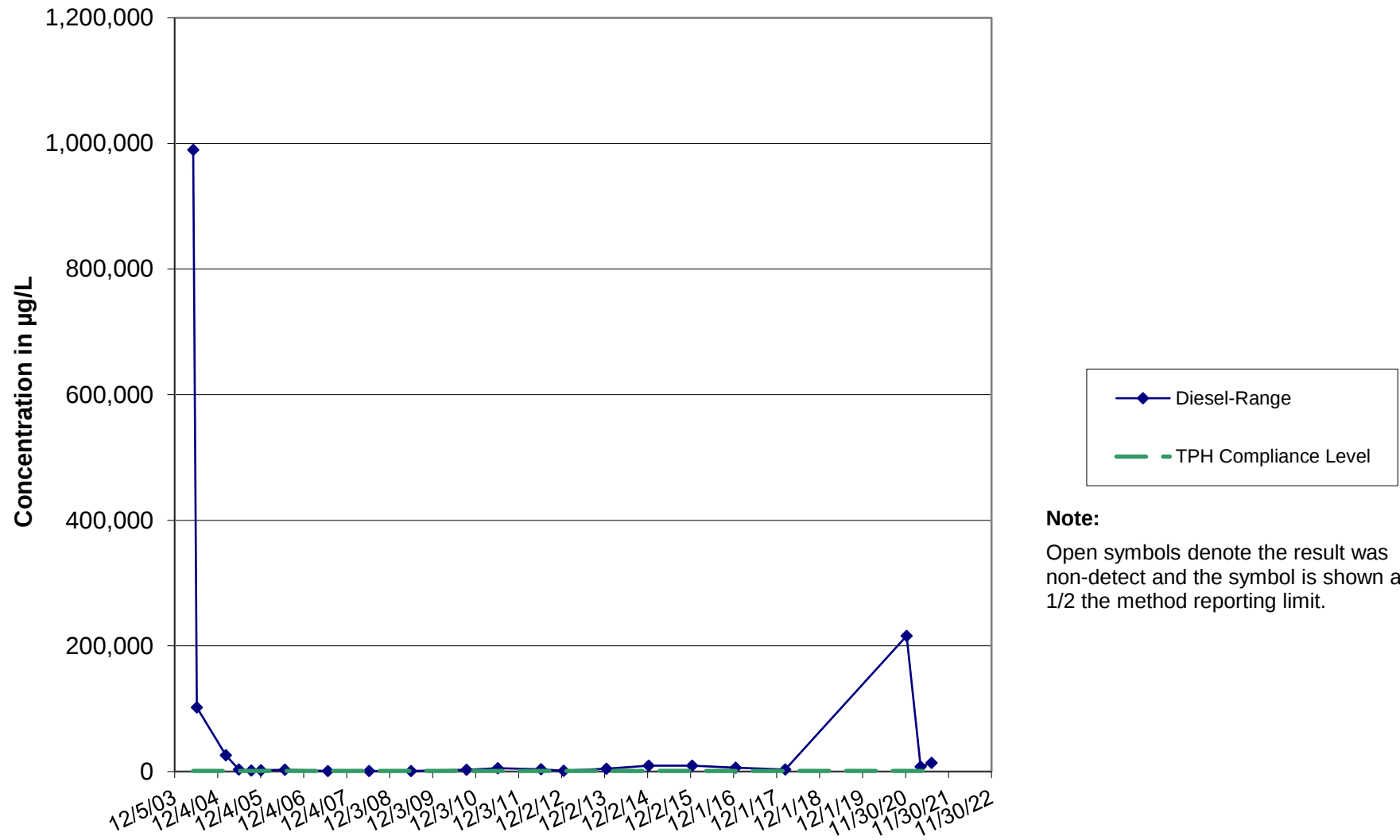
HC-5



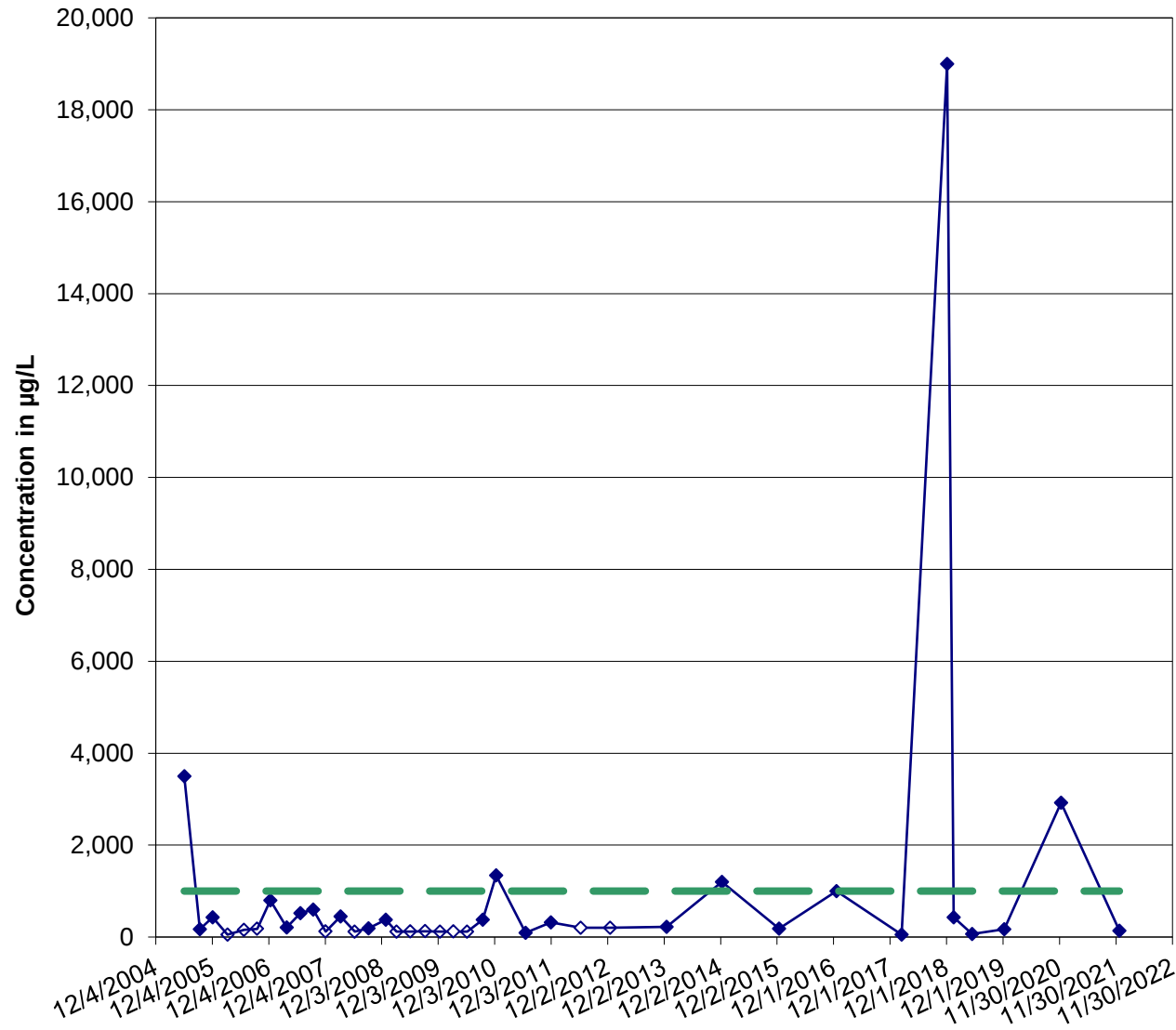
Note:

Open symbols denote the result was non-detect and the symbol is shown at 1/2 the method reporting limit.

HC-5



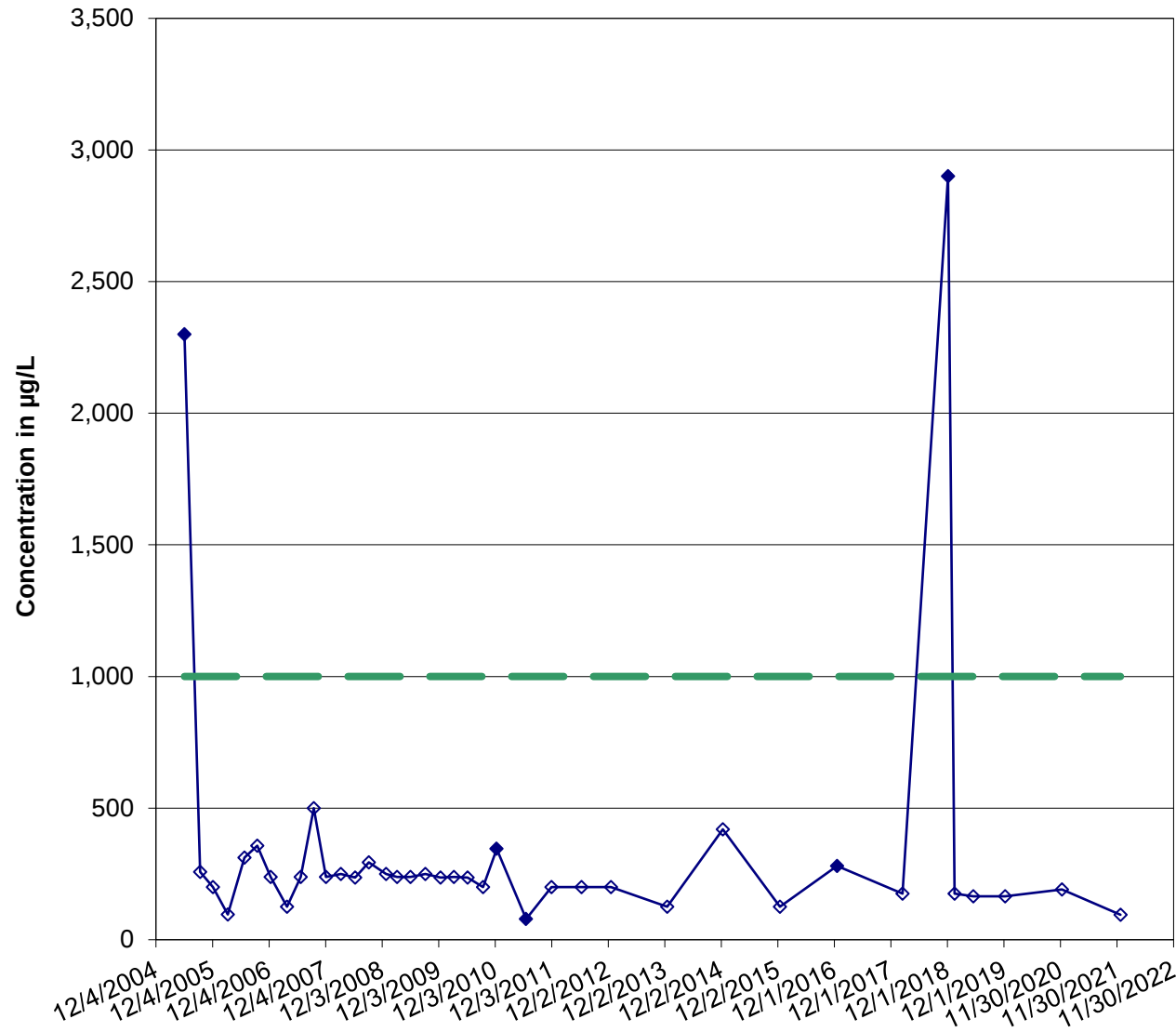
BE-1



Note:

Open symbols denote the result was non-detect and the symbol is shown at 1/2 the method reporting limit.

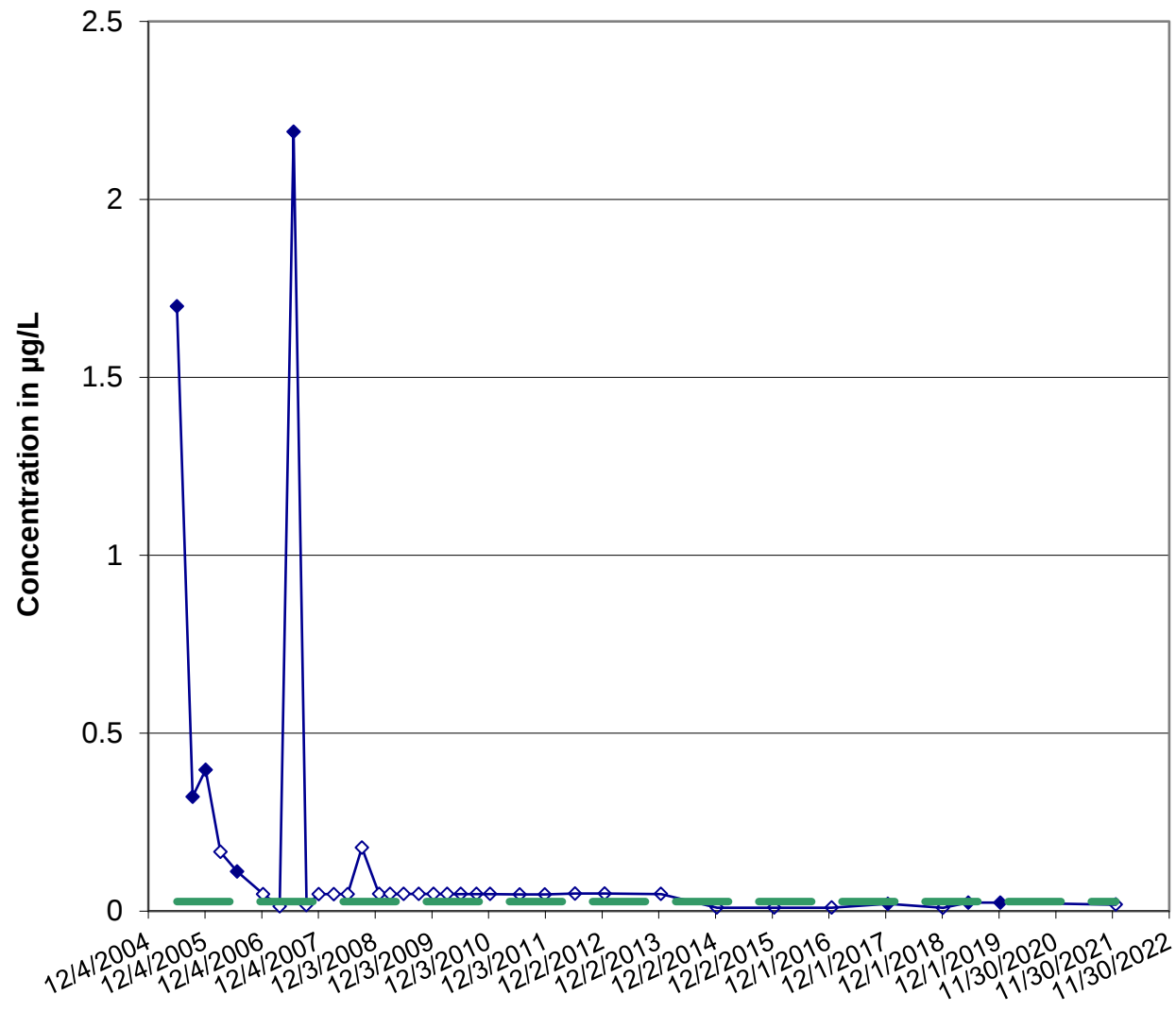
BE-1



Note:

Open symbols denote the result was non-detect and the symbol is shown at 1/2 the method reporting limit.

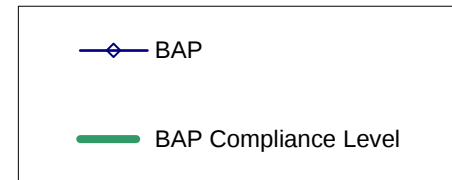
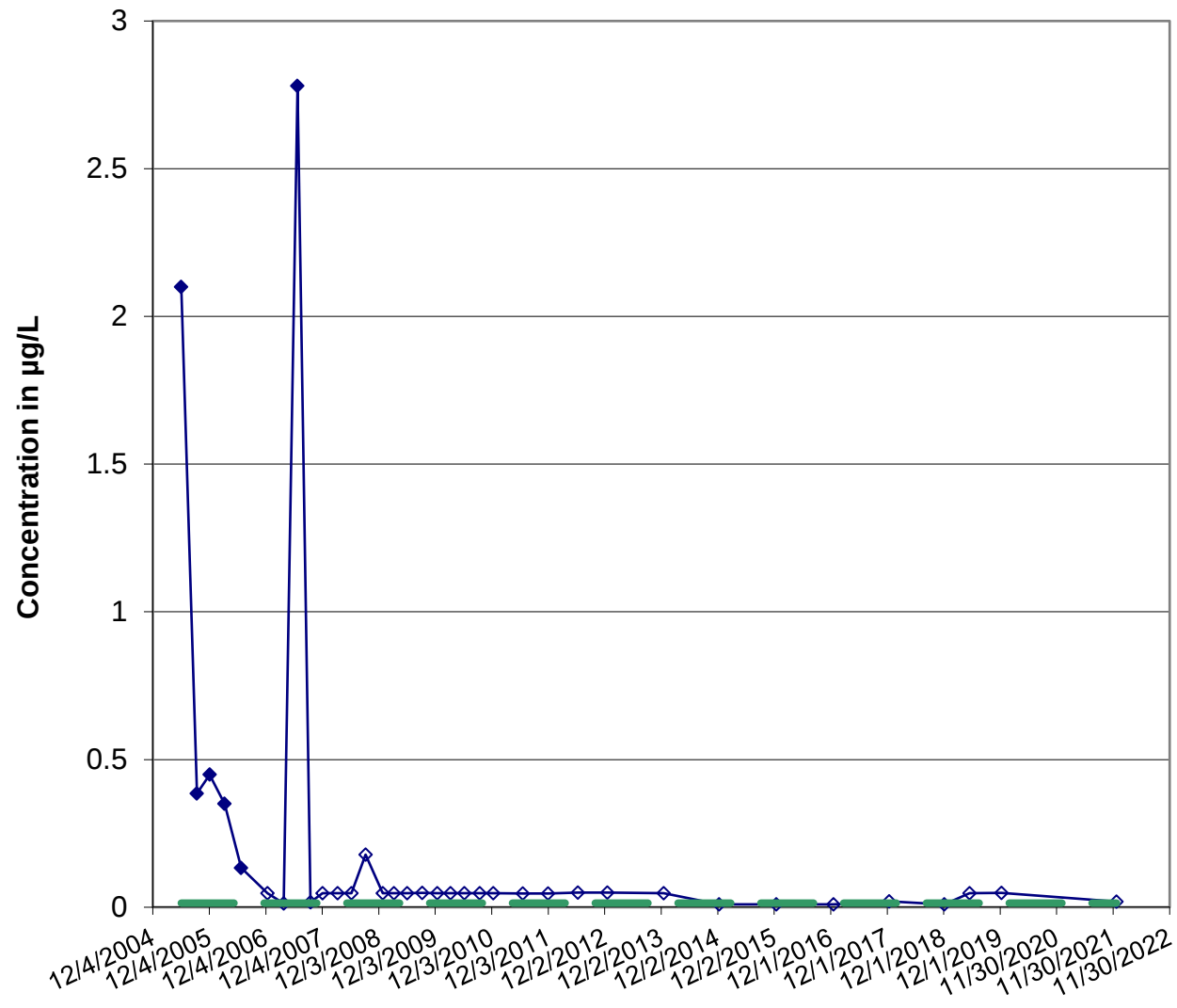
BE-1



Note:

Open symbols denote the result was non-detect and the symbol is shown at 1/2 the method reporting limit.

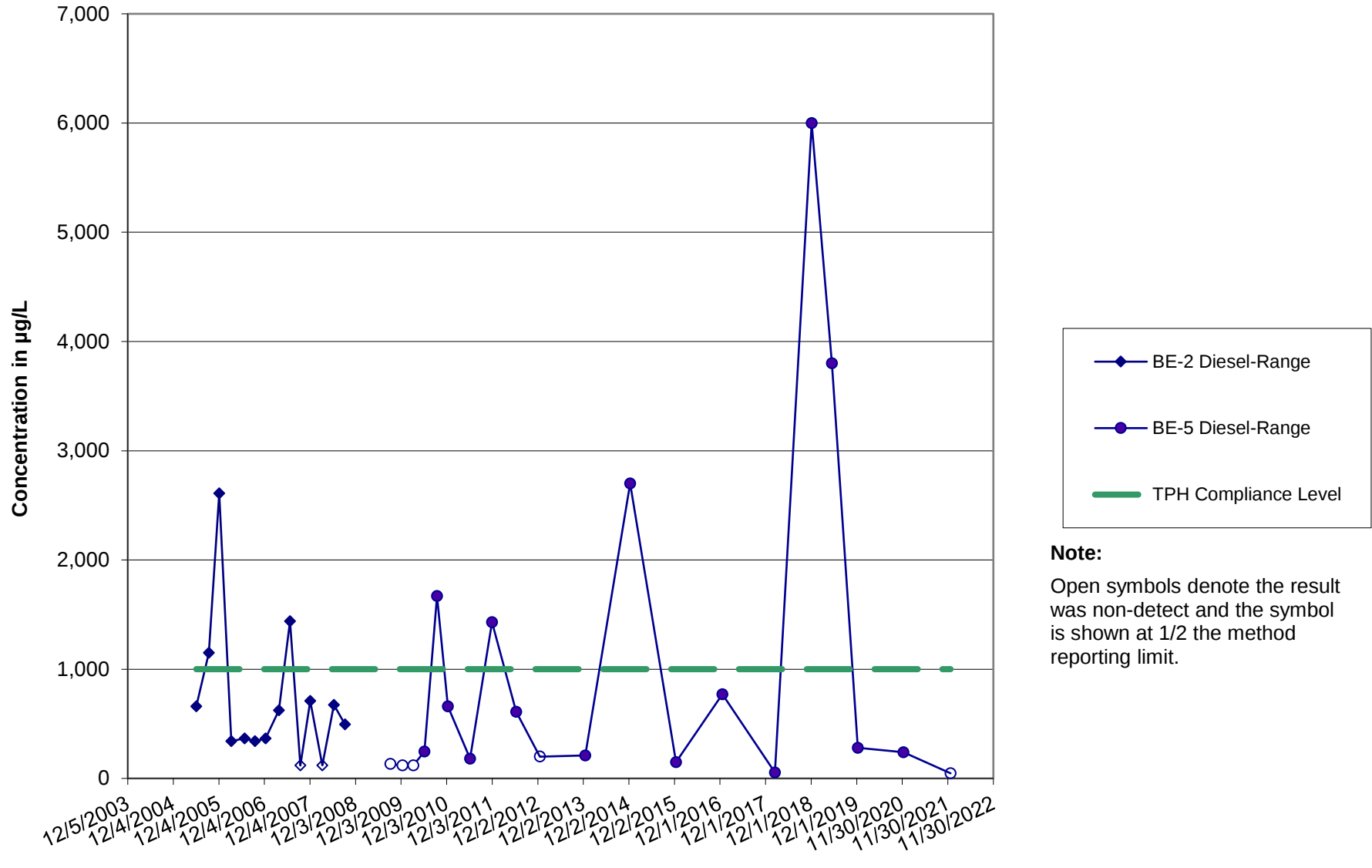
BE-1



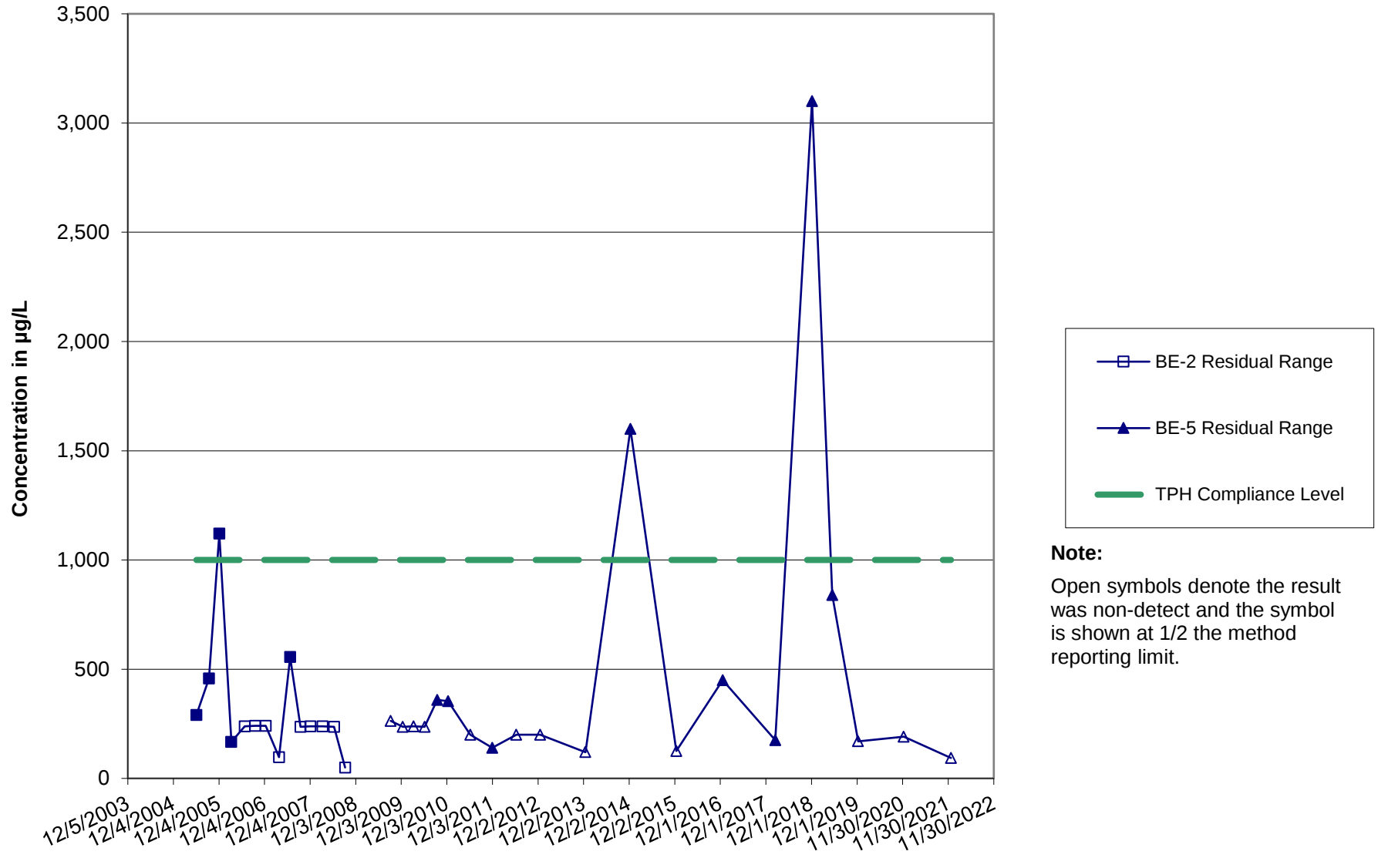
Note:

Open symbols denote the result was non-detect and the symbol is shown at 1/2 the method reporting limit.

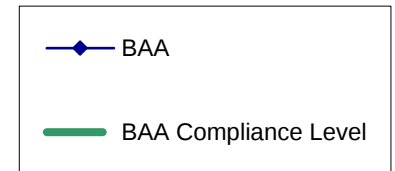
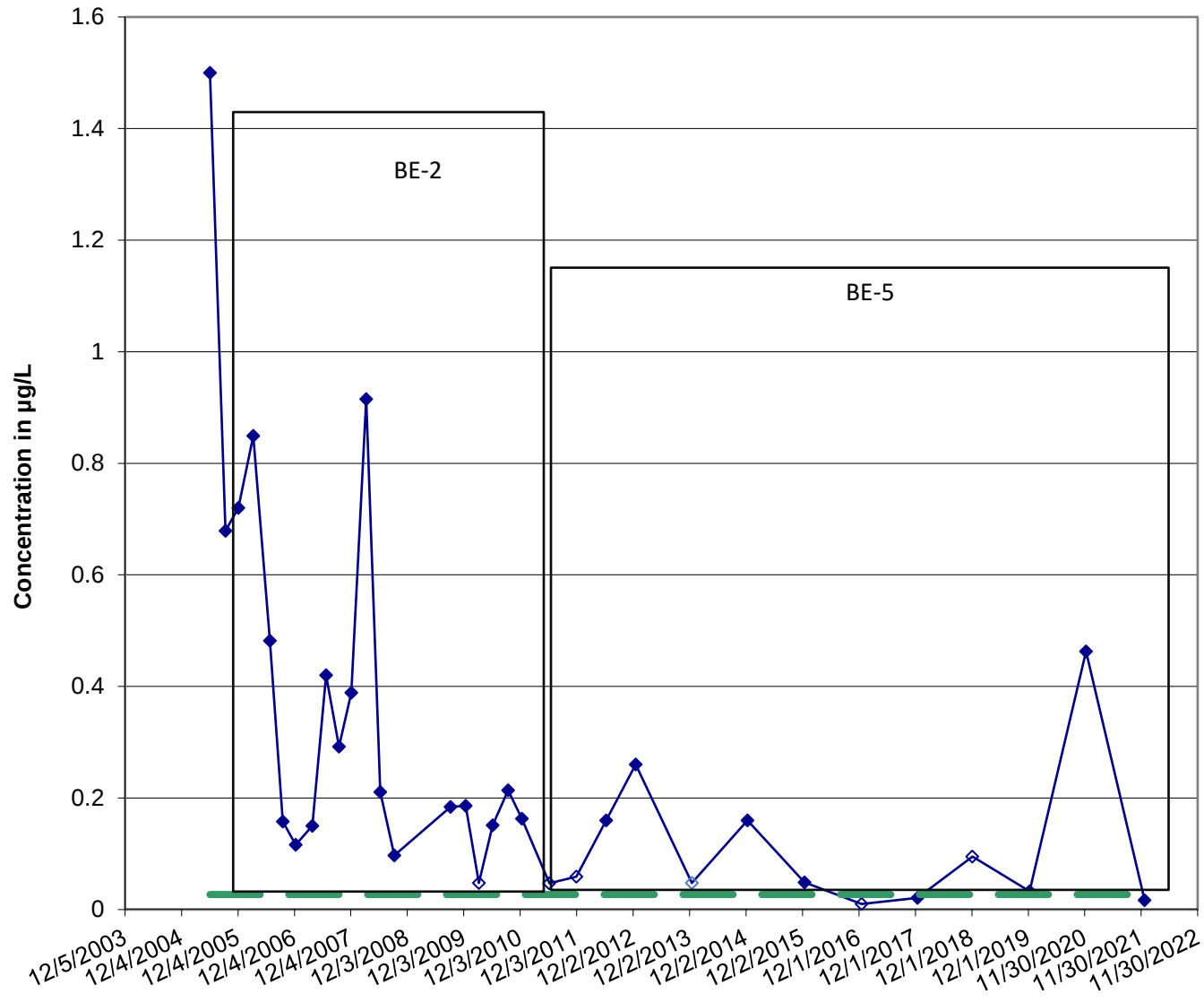
BE-2 and BE-5



BE-2 and BE-5



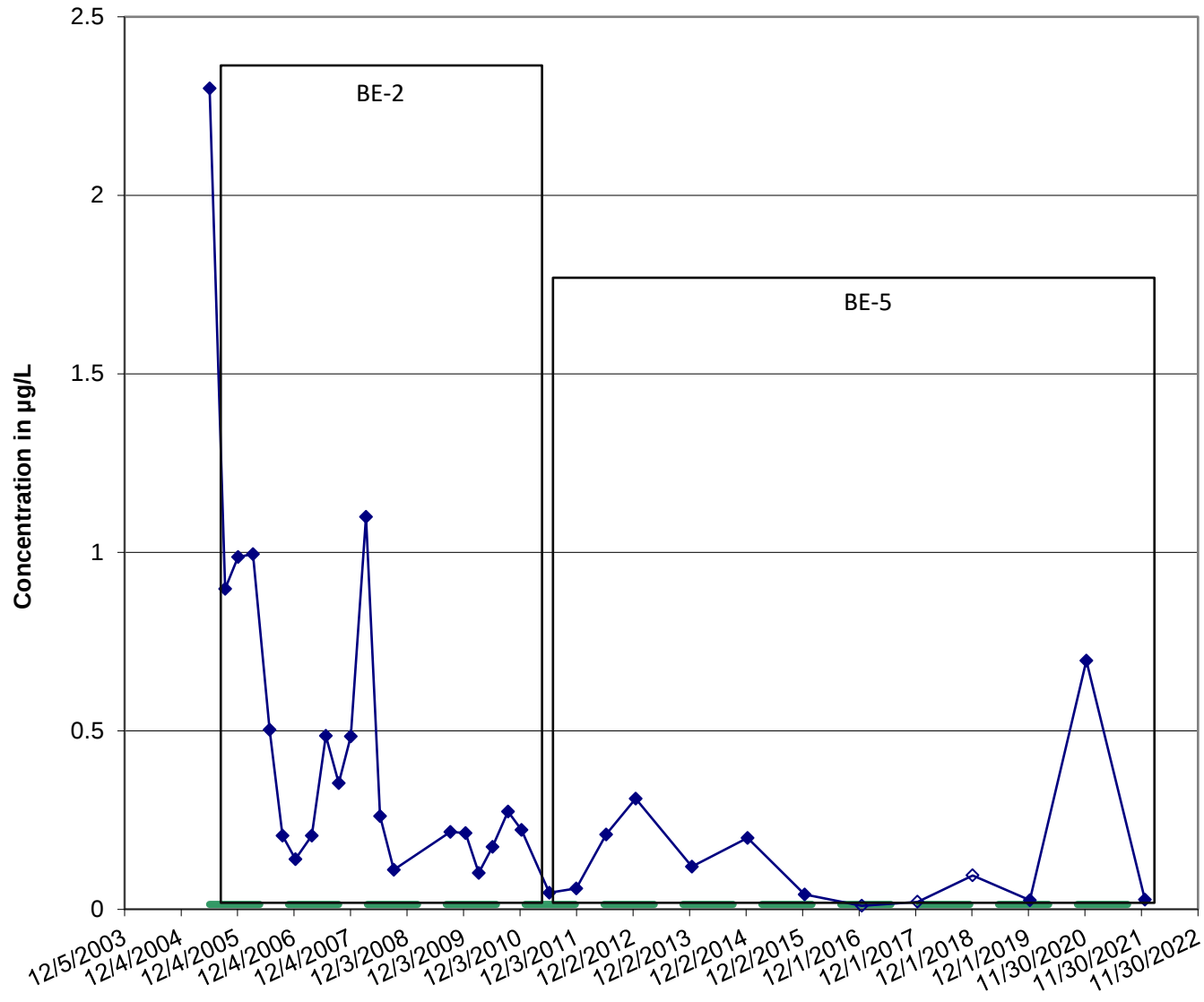
BE-2 and BE-5



Note:

Open symbols denote the result was non-detect and the symbol is shown at 1/2 the method reporting limit.

BE-2 and BE-5



— BAP Compliance Level

—◆ BAP

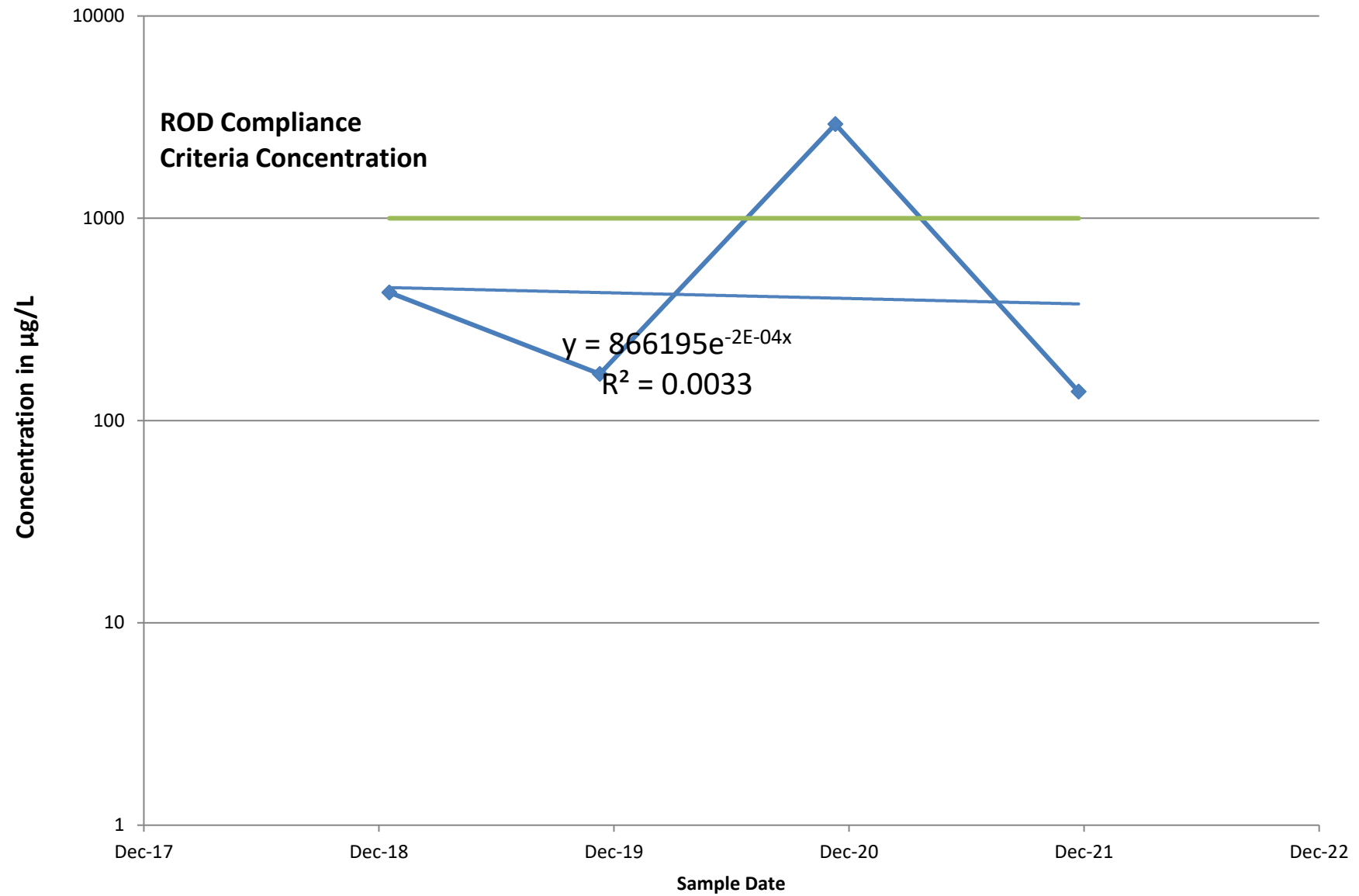
Note:

Open symbols denote the result was non-detect and the symbol is shown at 1/2 the method reporting limit.

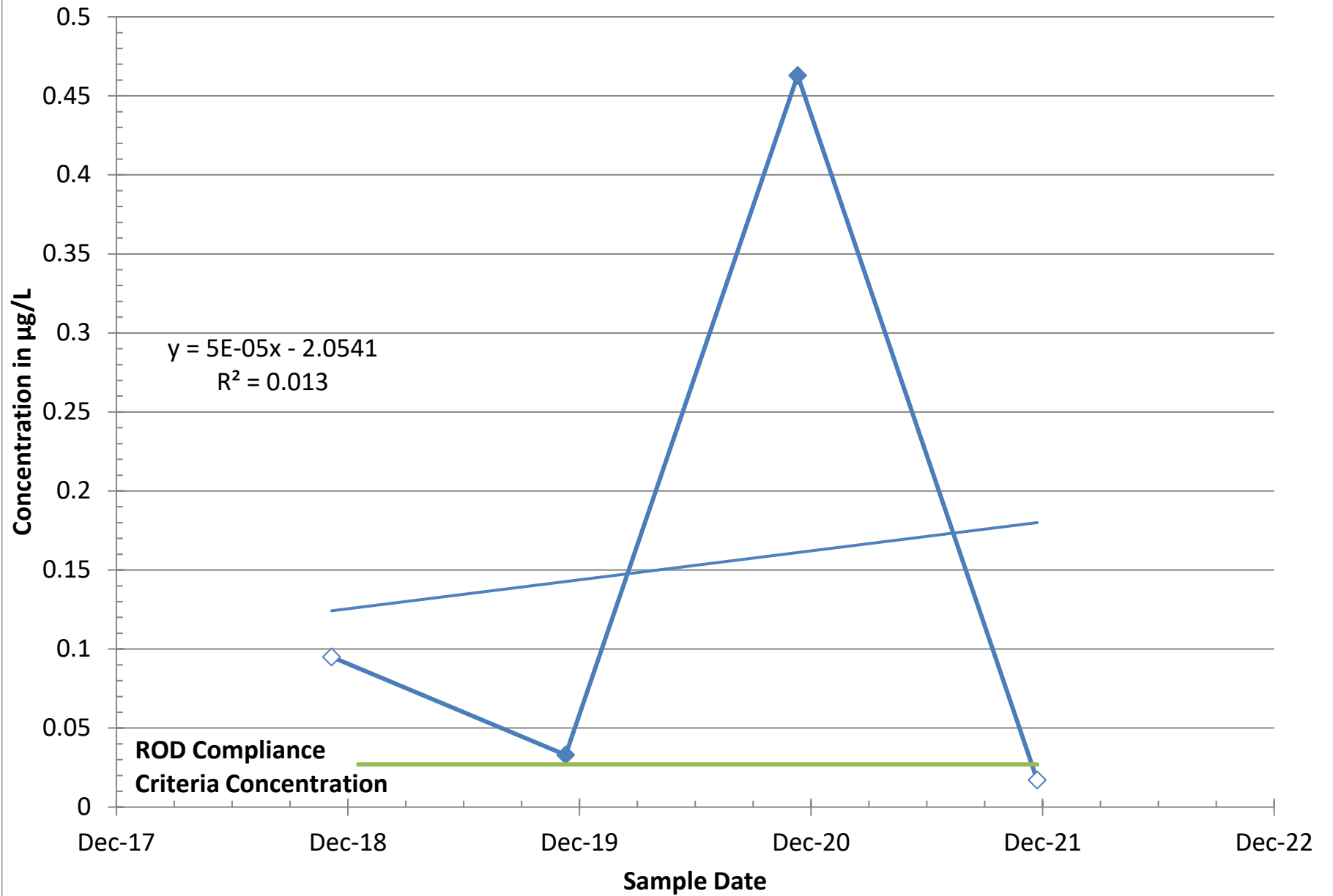
Appendix F

Four-Year Chemical Concentration Trend Plots

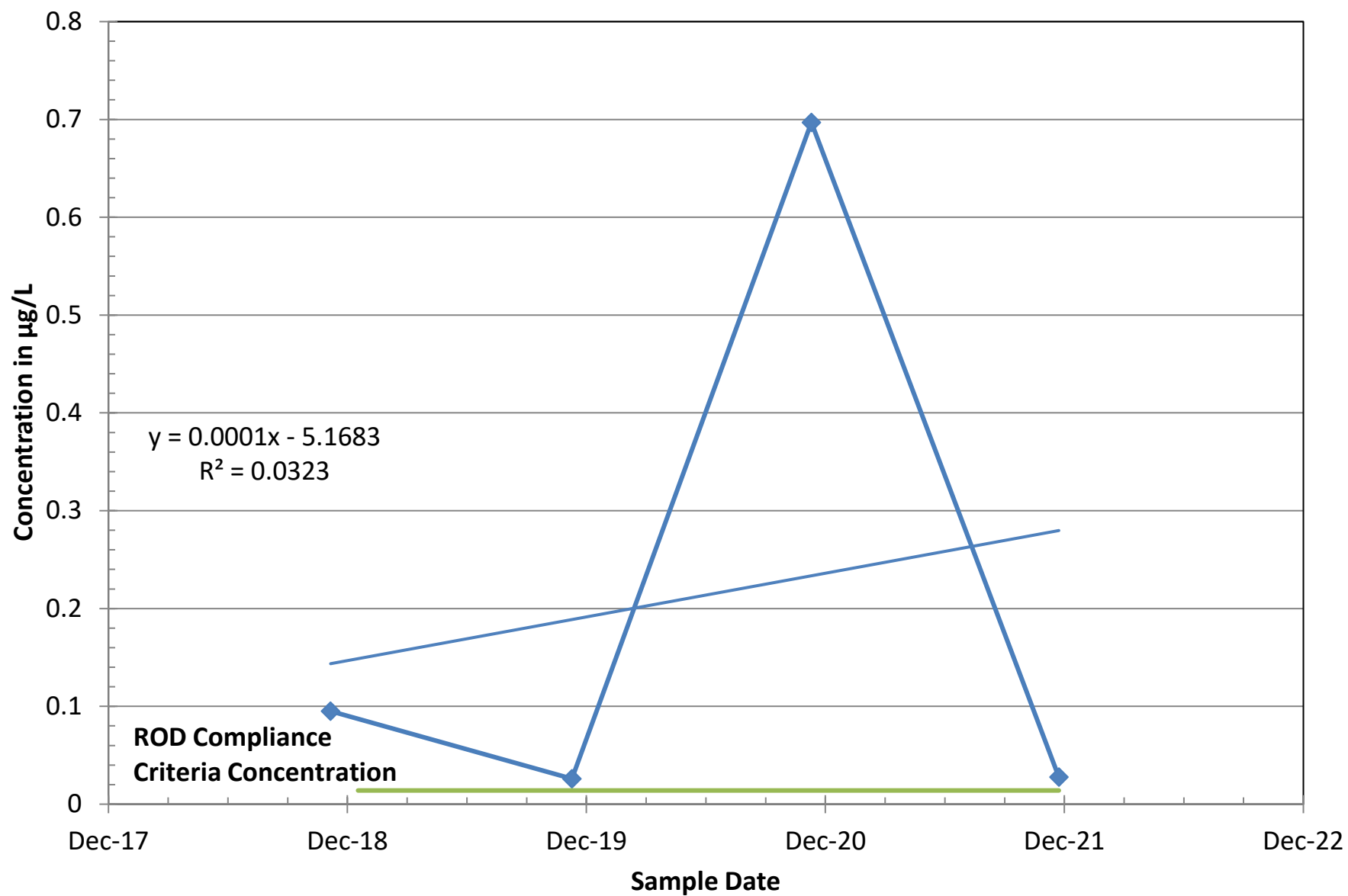
BE-1 TPH



BE-5 BAA



BE-5 BAP



HC-5 TPH-D

