

Kinder Morgan Liquids Terminals, LLC

2022 Annual Groundwater Monitoring Report

**Harbor Island Terminal
Seattle, Washington**

January 2023

2022 Annual Groundwater Monitoring Report

**Harbor Island Terminal
Seattle, Washington**

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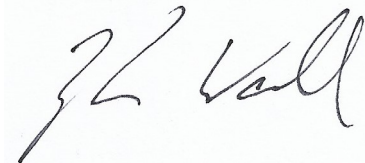
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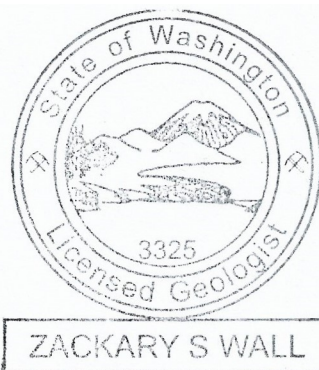
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1 Introduction

Arcadis U.S., Inc. (Arcadis) has prepared this report on behalf of Kinder Morgan Liquids Terminals, LLC, a wholly owned indirect subsidiary of Kinder Morgan, Inc., to present the results of the first and second semiannual 2022 groundwater monitoring events at the Harbor Island Terminal (the site). The site is located at 2720 13th Avenue Southwest in Seattle, Washington. A site location map is presented on **Figure 1**.

Groundwater monitoring events were completed between April 18 and April 20, 2022, and September 19 and September 23, 2022, in accordance with the Compliance Monitoring Plan (KHM 1999) and associated addenda, included as **Appendix A**. Remedial performance monitoring was performed periodically in 2022.

1.1 Site Description

The site is a 14-acre bulk petroleum storage facility located east of 13th Avenue Southwest on Harbor Island in Seattle, King County, Washington. The site has operated as a bulk petroleum storage terminal since 1944 and is surrounded by industrial facilities including shipyards, bulk petroleum storage facilities, and the Port of Seattle. The topography is relatively flat with an elevation of approximately 9 to 16 feet above the North American Vertical Datum of 1988 (NAVD 88). A site plan is presented on **Figure 2**.

The site consists of five distinct operational yards (A, B, C, D, and E). Features include aboveground storage tanks (ASTs) containing refined petroleum products in the B and C Yards. The A Yard, located in the southern portion of the site, consists of the terminal office, a truck loading rack, and other support structures. The B Yard, located north of the A Yard and south of the D Yard, contains 15 ASTs and associated piping and is surrounded by a 15-foot-high concrete wall. The D Yard, located north of the B Yard, is composed of a driveway and a maintenance building and is the primary corridor for site utilities. The C Yard, located north of the D Yard and south of the E Yard, contains six ASTs and associated piping and is surrounded by a 15-foot-high concrete wall. The E Yard, located at the north end of the site, is leased to other parties and consists of an office building and vehicle storage facilities.

1.2 Regulatory Background

The Washington Department of Ecology (Ecology) established site-specific cleanup levels (SSCLs) for groundwater as part of Consent Decree 00-2-07760-2SEA (CD [Ecology 2000]). The groundwater SSCLs were established on the basis that site groundwater is, and is anticipated to remain, non-potable. As such, the SSCLs were derived to meet surface water standards that are protective of aquatic organisms in the Duwamish River and Elliott Bay. The Cleanup Action Plan (Exhibit B of the CD [Ecology 1999]) outlines site-specific constituents of concern (COCs) and applicable cleanup levels. The groundwater SSCLs for each COC are as follows:

Constituent	Cleanup Level
Benzene	0.071 mg/L
Ethylbenzene	29.0 mg/L
Lead	0.0058 mg/L
Toluene	200 mg/L
GRO	1.0 mg/L
DRO	10 mg/L
HO	10 mg/L
Product	No sheen

DRO = diesel-range organic
 GRO = gas-range organic
 HO = heavy oil
 mg/L = milligrams per liter

The Compliance Monitoring Plan (Exhibit F of the CD [KHM 1999]) provides groundwater monitoring objectives for site compliance. Groundwater monitoring compliance requirements have been amended in the Site-Wide Groundwater Compliance Monitoring Plan - Proposed Reduced Monitoring (Delta 2007), Technical Revision Request – Low Flow Groundwater Sampling (Delta 2008), Revised Site Groundwater Monitoring Plan (Arcadis 2014), and the Groundwater Analytical Reduction Request (Arcadis 2016). Groundwater monitoring compliance documents and approvals are included in **Appendix A**. The compliance status, most recent detections of COCs at concentrations above SSCLs, and most recent separate-phase hydrocarbons (SPH) observations in monitoring wells at the site are presented in **Table 1**.

1.3 Remedial Sulfate Application

In June 2013, gypsum and Epsom salt were applied to the ground surface in the B and D Yards to enhance anaerobic biological oxidation (ABOx) of residual petroleum hydrocarbons in the soil and groundwater using sulfate as a terminal electron acceptor, as summarized in the B and D Yards Groundwater Remediation – Engineering Design Report (Arcadis 2012). Approximately 264,000 pounds of gypsum and 42,000 pounds of Epsom salt were applied across 30,000 square feet (SF) of permeable soil to supply sulfate to the vadose-zone soils and groundwater.

Supplemental applications of Epsom salt in targeted areas of the B, C, and D Yards were conducted in accordance with the B and D Yards Groundwater Remediation – Engineering Design Report (Arcadis 2012) in September 2015, October 2016, April 2018, November 2018, December 2019, July 2021, and September 2022. The scope and timing of supplemental sulfate applications is informed by performance monitoring, which includes analytical results from semiannual groundwater monitoring and periodic measurements of groundwater conductivity using a water quality meter. To maintain the target sulfate concentration of 900 mg/L in groundwater, the following supplemental applications have been completed:

- September 2015 – 16,000 pounds of Epsom salt were distributed over approximately 20,500 SF in the B, C and D Yards.
- October 2016 – 15,000 pounds of Epsom salt were distributed over approximately 16,000 SF in the B, C and D Yards.
- April 2018 – 10,000 pounds of Epsom salt were distributed over approximately 15,000 SF in the B, C and D Yards.
- November 2018 – 5,000 pounds of Epsom salt were distributed over approximately 5,000 SF in the C and D Yard near MW-19.
- December 2019 – approximately 14,400 pounds of Epsom salt were distributed over approximately 15,000 SF in the B, C, and D Yards.
- July 2021 – 10,000 pounds of Epsom salt were distributed over approximately 10,000 SF in the B, C, and D Yards.
- September 2022 – 15,000 pounds of Epsom salt were distributed over approximately 18,000 SF in the B, C and D Yards.

The remedial sulfate application extents are presented on **Figure 3**.

2 Scope of Work

The following sections describe the work performed at the site during 2022.

2.1 Semiannual Groundwater Monitoring Events

The 2022 semiannual groundwater monitoring events were performed in accordance with the groundwater monitoring compliance requirements presented in Section 1.2 and included as **Appendix A**. The scope of work for the 2022 semiannual monitoring events included:

- Measuring depth to water and SPH (where present) in 50 monitoring wells in April and September 2022. MW-25 was not accessible in April and September 2022.
- Purging monitoring wells using low-flow sampling methods; collecting field parameters including dissolved oxygen (DO), oxygen-reduction potential (ORP), pH, temperature, turbidity, and specific conductivity; and collecting groundwater samples from:
 - 18 monitoring wells in the first semiannual groundwater monitoring event.
 - 39 monitoring wells in the second semiannual groundwater monitoring event.
- Submitting groundwater samples to Pace National Center for Testing and Innovation (Pace) of Mount Juliet, Tennessee, for laboratory analysis.

Monitoring wells were purged using low-flow methodology with a peristaltic pump, and groundwater quality field parameters were measured using an Aqua TROLL 600 multiparameter sonde and an optical turbidimeter. Monitoring wells were sampled after depth to water, pH, specific conductivity, DO, ORP, turbidity, and temperature had stabilized in accordance with the Technical Revision Request – Low-Flow Groundwater

Sampling (Delta 2008). Groundwater elevation data are presented in **Table 2**, and groundwater monitoring field data sheets are included as **Appendix B**.

Groundwater samples were collected in laboratory-provided bottles, placed in coolers with ice, and submitted to Pace under standard chain-of-custody protocol. Groundwater samples were analyzed for some or all of the following constituents in accordance with the Groundwater Analytical Reduction Request (Arcadis 2016) included in **Appendix A**:

- GRO by Northwest Method NWTPH-Gx;
- DRO and HO by Northwest Method NWTPH-Dx (with silica gel cleanup);
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX, collectively) by United States Environmental Protection Agency (USEPA) Method 8260D;
- Dissolved lead by USEPA Method 6020B;
- Total lead by USEPA Method 6020B;
- Sulfate by USEPA Method 9056A.

During the second semiannual groundwater monitoring event, groundwater samples collected from five monitoring wells located in the 13th Avenue Southwest area were also analyzed for the following geochemical parameters:

- Methane by USEPA Method RSK-175;
- Ferrous iron by Standard Method 3500Fe B-2011;
- Nitrate by USEPA Method 9056A;
- Sulfide by Standard Method 4500S2 D-2011.

Blind duplicate samples were collected from MW-7 and MW-21 in both groundwater monitoring events for quality assurance purposes. Laboratory analytical reports and chain-of-custody documentation are included as **Appendix C**.

2.2 Remedial Performance Monitoring and Irrigation

Performance monitoring of the groundwater remedy in the B, C, and D Yards has been performed periodically since the initial sulfate application was completed in July 2013. Specific conductivity was measured at nine monitoring wells within the remedial treatment area (12, MW-7, MW-19, and TMW-1 through TMW-6) using a multi-parameter water quality meter. Field measurements of specific conductivity have been correlated to groundwater sulfate concentrations to monitor remedial performance between semiannual monitoring events to obtain more frequent sulfate concentration information.

Precipitation and infiltration are the primary mechanisms for delivering sulfate to the groundwater to support ABOx reactions. The irrigation system present in the B, C and D Yards is typically used to supplement natural rainfall during the summer, when precipitation is less frequent, to drive dissolution of Epsom salt and gypsum on the ground surface and infiltration of sulfate to the groundwater. The irrigation system was operated from July 12, 2022 through November 3, 2022. Irrigation connections to D yard sprinklers were not operating, but B and C yard irrigation connections were functioning throughout the 2022 irrigation period.

Per Ecology's approval of the Revised Site Groundwater Monitoring Plan (Ecology 2014), Arcadis conducts quarterly SPH and LNAPL monitoring. If any SPH or LNAPL is found at any well, Arcadis gauges and removes using an absorbent sock. On February 25, April 18, September 20, and December 7 wells A-6 and A-16 were gauged using an oil/water interface probe along with absorbent sock deployments.

3 Summary of Results

Sample analytical results and field measurements collected during the first and second semiannual 2022 groundwater monitoring events are presented below.

3.1 Water Level Measurements

Depths to groundwater in monitoring wells were measured on April 18, 2022, and September 19 and 20, 2022 using oil/water interface probes. Monitoring well MW-25 could not be accessed during the first and second semiannual monitoring events due to an impacted lid. MW-25 is located in the A yard in the direct path of trucks approaching or waiting in line to access the truck loading rack. The weight of these trucks over time has cracked the well monument, rendering the lid difficult to remove. MW-25 is located within 130' of five other A yard wells which provide adequate water level information for the area.

Groundwater elevations were calculated using depth-to-water measurements and wellhead survey elevations obtained in July 2003. Depths to groundwater for the April 18, 2022 gauging event ranged from 1.55 feet (monitoring well 12) to 10.20 feet (A-27; not including an assumed erroneous measurement of 12.26 feet at A-12). Measured depth to groundwater in well A-12 was approximately 6 feet deeper than surrounding wells. Based on historical depth-to-water measurements at this location and the recorded depths at nearby wells during this event (Table 2), it is likely that this measurement was incorrectly collected and is considered anomalous. Groundwater elevations (relative to NAVD 88) at the Site for the April event ranged from 6.48 feet (A-6) to 9.36 feet (MW-18).

Depths to groundwater during the September 19, 2022 monitoring event ranged from 2.57 feet (monitoring well 12) to 10.72 feet (A-27) with groundwater elevations (relative to NAVD 88) ranging from 5.47 feet (A-14R and A-26R) to 7.82 feet (MW-18). Groundwater direction is north through the C yard and southeast from the D Yard with an approximate hydraulic gradient ranging from 0.003 to 0.005 foot per foot (measured between MW-19 and A-6). The groundwater elevation data are presented in **Table 2**, and potentiometric contour maps for the two semiannual groundwater monitoring events are presented on **Figures 4 and 5**.

3.2 Passive Separate-Phase Hydrocarbon Recovery

As discussed in Section 2.2 above, SPH monitoring and recovery efforts were conducted at monitoring wells A-6 and A-16 on February 25, April 18, September 20, and December 7, 2022. Although SPH was not observed in monitoring wells A-6 and A-16 on February 25, 2022, the absorbent socks present in the wells were removed and replaced. SPH also was not observed in monitoring wells A-6 and A-16 on April 18, 2022 (first semiannual groundwater monitoring event), and both socks were removed.

On June 30, 2022, SPH was observed at a thickness of 0.01 foot in A-6, and a new sock was placed in the well. There was no measurable LNAPL thickness in well A-16 during this event, but sheen was observed on the

interface probe during gauging and a new sock was placed in the well. During the second semiannual groundwater monitoring event (September 20, 2022), sheen was observed in both A-6 and A-16 though not at a measurable thickness thus the existing socks were removed from A-6 and A-16. During the last gauging event on December 7, 2022, neither sheen nor LNAPL were observed in well A-16, therefore no sock was left. In well A-6, sheen was detected, and a sock was placed in the well.

Quarterly gauging and sock management will continue through 2023 consistent with Ecology’s approval of the Revised Site Groundwater Monitoring Plan (Ecology 2014).

3.3 Groundwater Analytical and Geochemical Results

Concentrations of COCs exceeding SSCLs in groundwater samples collected from monitoring wells at the site during 2022 are summarized below:

COC	Number of Wells Exceeding SSCL	Number of Wells Analyzed	Maximum Concentration (mg/L)	Location of Maximum Concentration
First Semiannual Groundwater Monitoring Event				
GRO	8	18	11.10	MW-24
Benzene	2	18	0.552	MW-24
Second Semiannual Groundwater Monitoring Event				
GRO	8	39	8.370	TMW-6
Benzene	3	39	0.407	MW-24
Total Lead	2	18	0.0130	12
Dissolved Lead	1	18	0.00584	12

During the second semiannual 2022 groundwater monitoring event, groundwater samples from five monitoring wells (A-27, A-28R, TMW-B1, MW-23, and MW-24) were analyzed for geochemical parameters to monitor natural attenuation along 13th Avenue Southwest:

- Methane was detected in all five monitoring wells at concentrations ranging from 2.56 mg/L (A-27) to 12.4 mg/L (MW-23).
- Ferrous iron was detected in all five monitoring wells at concentrations ranging from 5.7 mg/L (TMW-B1) to 52.2 mg/L (MW-24).
- Sulfide was detected in all five monitoring wells at concentrations ranging from 0.090 mg/L (MW-23) to 1.08 mg/L (A-27).
- Sulfate was detected in monitoring wells A-27 and A-28R at concentrations of 19.8 mg/L and 31.9 mg/L respectively.
- Nitrate was analyzed, but not detected at concentrations above laboratory reporting limits.

Groundwater analytical results are presented in **Table 3**. Groundwater geochemical data, including field measurements, are presented in **Table 4**. Laboratory analytical reports and chain-of-custody documentation are

included in **Appendix C**, historical groundwater elevations are included in **Appendix D**, and historical groundwater analytical results are included in **Appendix E**.

3.4 Remedial Performance Results

During the semiannual 2022 monitoring events, samples from 10 monitoring wells (11, 12, MW-7, MW-19, and TMW-1 through TMW-6) within the remedial treatment area were analyzed for sulfate and compared to the target concentration designed to support ABOx of petroleum hydrocarbons (900 mg/L; KHM 2001b).

During the first semiannual event, sulfate concentrations in the remedial treatment area ranged from 29.7 mg/L in well MW-19 to 1,340 mg/L in well 12. Sulfate concentrations collected during the second semiannual event ranged from below the laboratory reporting limit of 5 mg/L in well MW-19 to 1,040 mg/L in well 12. Sulfate concentrations greater than the target of 900 mg/L within the remedial treatment area were observed in the following locations:

- Monitoring wells 12, TMW-1, TMW-2, TMW-3, and TMW-5 during the first event;
- Monitoring well 12 during the second event.

In September 2022, a supplemental sulfate application was conducted to replenish sulfate in the remedial treatment area and sustain concentrations above the target concentration of 900 mg/L. Groundwater analytical results for geochemical parameters are presented in **Table 4**. Constituent trend graphs for the performance monitoring of wells within the remedial treatment area are presented on **Graphs 1** through **10**. Laboratory analytical reports and chain-of-custody documentation are included in **Appendix C**. Historical groundwater analytical results are included in **Appendix E**.

3.5 Data Validation Results

Analytical data produced as part of the first and second semiannual 2022 groundwater monitoring events (sample delivery groups L1485500, L1538381, L1538521, L1539403, L1539417 and L1541049 [**Appendix C**]) were reviewed for completeness and technical compliance. All field samples from both semiannual monitoring events were analyzed within their specified hold times, except for the samples analyzed for ferrous iron by Method 3500-Fe B-2011. Ferrous iron is considered “out of hold” as received at the laboratory in accordance with the method, but the results are minimally impacted. Reported concentrations of ferrous iron should be considered minimum values. Two field duplicates, DUP-1 (MW-7) and DUP-2 (MW-21) during both events, were collected and analyzed. The relative percent differences between the parent and the duplicates were acceptable at slightly above 20 percent for DUP-2 (MW-21) and slightly above 20 percent for DUP-1 (MW-7). Quality control samples analyzed by the laboratory were within established acceptance criteria.

4 Compliance and Conclusions

4.1 A Yard

Passive recovery of SPH using absorbent socks is conducted in accordance with the procedure outlined in the Ecology email approval of the Revised Site Groundwater Monitoring Plan (Arcadis 2014), which requires quarterly gauging and sock replacement for four quarters following the occurrence of measurable SPH during a semiannual monitoring event (Ecology 2014). On June 30, 2022, during a performance monitoring event SPH was observed in monitoring well A-6 at a thickness of 0.01 foot. A new absorbent sock was placed in the well to passively recover SPH. Wells A-6 and A-16 will continue to be gauged quarterly to monitor for SPH in accordance with the Revised Site Groundwater Monitoring Plan (Arcadis 2014), and absorbent socks will be deployed as needed when measurable SPH occurrences are observed.

Groundwater samples were collected from within the A Yard at one monitoring well (A-5) during the first groundwater monitoring event and four monitoring wells (A-5, A-8, A-10, and A-14R) during the second groundwater monitoring event. COCs in groundwater samples collected from the A Yard monitoring wells have been below SSCLs since 2012, except for GRO in monitoring well A-5, which was detected at a concentration above the SSCL of 1.0 mg/L during the first semiannual monitoring event in 2021. There were no exceedances of groundwater SSCLs in samples collected from the A Yard in 2022. Analytical results are presented on **Figures 6** and **7** and presented in **Table 3**.

4.2 B, C, and D Yards

4.2.1 Remedial Treatment Area

Concentrations of COCs during the first and second semiannual 2022 groundwater monitoring events in the 10 performance monitoring wells within the remedial treatment area (11, 12, MW-7, MW-19, and TMW-1 through TMW-6) were generally consistent with concentrations observed during previous groundwater monitoring events. Concentrations of COCs were below SSCLs for all constituents in six performance monitoring wells (11, MW-7, TMW-1, TMW-2, TMW-3 and TMW-5) for both monitoring events. Samples collected from four performance monitoring wells (12, MW-19, TMW-4, and TMW-6) contained GRO concentrations exceeding the SSCL during both of the 2022 monitoring events. Analytical results from the 10 performance monitoring wells within the remedial treatment area for the first and second semiannual groundwater monitoring events are presented on **Figures 6** and **7**, respectively. Trend graphs showing the remedial performance and historical concentrations of COCs and sulfate are presented on **Graphs 1** through **10**. In general, COC concentrations in the remedial treatment area demonstrate stable to decreasing trends.

Sulfate concentrations in groundwater generally decreased between the first and second semiannual monitoring events and were below the target concentration of 900 mg/L in most locations during the second semiannual event. The additional sulfate application in September 2022 targeted locations where sulfate concentrations had decreased and concentrations of GRO were above the SSCLs to increase sulfate concentrations above the target threshold of 900 mg/L. Performance monitoring was conducted in November 2022 and groundwater conductivity

measurements indicated that concentrations of sulfate had increased within the remedial treatment area. Sulfate concentrations in monitoring wells downgradient of the remedial treatment area (MW-9 and A-27) were less than 40 mg/L and do not indicate widespread migration of sulfate outside of the target treatment area. The observed sulfate concentrations are well below the secondary water quality level of 250 mg/L.

During the second semiannual 2022 groundwater monitoring event, total lead was detected in monitoring well 12 at a concentration (0.0130 mg/L) that exceeded the SSCL (0.0058 mg/L). Lead impacts at the site have been attributed to former off-site smelting operations and the former smelter located on Harbor Island. Lead-impacted shallow soil was removed from the B and C Yards in 2002 (KHM 2002). Residual total lead and dissolved lead impacts to groundwater are monitored in accordance with the CD (Ecology 2000).

4.2.2 Outside Remedial Treatment Area

Seven monitoring wells in the B, C, and D Yards (MW-3, MW-5, MW-8, MW-9, MW-14, MW-20, and MW-21) are sampled either annually or semiannually and are not located within the remedial treatment area. Concentrations of all site COCs were below SSCLs in six of the seven monitoring wells and comply with the requirements of the CD (Ecology 2000). Concentrations of total lead measured in monitoring well MW-8 during the second semiannual event (0.0110 mg/L) exceeded the SSCL (0.0058 mg/L). SPH has not been observed in the B Yard since April 2014, the C Yard since gauging was initiated in 2000 (KHM 2001a) or the D yard since May 2002 (KHM 2002). Analytical results for both semiannual groundwater monitoring events are presented on **Figures 6 and 7** and in **Table 3**. Analytical results for select monitoring wells with recent or historical concentrations exceeding SSCLs (MW-5, MW-8, and MW-14) are presented on **Graphs 11 through 13**.

4.3 E Yard

Groundwater sampling is conducted annually in one well (MW-1) located within the E Yard. Concentrations of site COCs have been below SSCLs in the E Yard since 2002.

4.4 13th Avenue Southwest Monitored Natural Attenuation Area

Concentrations of COCs in wells within the 13th Avenue Southwest monitored natural attenuation (MNA) area (A-27, A-28R, TMW-B1, MW-23, and MW-24) are consistent with historical concentrations, which show generally stable to decreasing trends.

In the 13th Avenue Southwest MNA area, concentrations of GRO in all four of the wells sampled in the first semiannual monitoring event and four of the five wells sampled in the second semiannual monitoring event exceeded the SSCL. Benzene concentrations exceeded the SSCL in two of the wells sampled during the first and second semiannual monitoring events. Constituent trend graphs for monitoring wells exceeding SSCLs are presented on **Graphs 14 through 19**.

Concentrations of geochemical parameters in the 13th Avenue Southwest MNA wells are consistent with those detected in previous groundwater monitoring events. Concentrations of DO in wells A-27, A-28R, TMW-B1, MW-

23, and MW-24 are equal to or less than 0.18 mg/L, indicating that groundwater conditions are typically anaerobic. Methane and ferrous iron were generally detected at concentrations above 3 mg/L and 7 mg/L, respectively. Based on the lack of DO and the relatively high concentrations of methane and ferrous iron, reducing conditions are present in the vicinity of these monitoring wells.

These data demonstrate that natural attenuation is occurring in wells located in the 13th Avenue Southwest MNA area, and that anaerobic biological degradation is occurring through iron reduction and methanogenesis (Ecology 2005).

5 References

- Arcadis. 2012. B and D Yards Groundwater Remediation – Engineering Design Report. October 12.
- Arcadis. 2014. 2014 Revised Site Groundwater Monitoring Plan, Kinder Morgan Liquid Terminals. April 30.
- Arcadis. 2016. Groundwater Analytical Reduction Request. Kinder Morgan Harbor Island Terminal. February 11.
- Delta. 2007. Site-Wide Groundwater Compliance Monitoring Plan – Proposed Reduced Monitoring. June 21.
- Delta. 2008. Technical Revision Request – Low-Flow Groundwater Sampling. September 4.
- Ecology. 1999. Cleanup Action Plan. GATX Terminal Corporation Harbor Island. November 2.
- Ecology. 2000. Final Consent Decree No. 00-2-07760-2SEA. April 12.
- Ecology. 2005. Guidance on Remediation of Petroleum-Contaminated Ground Water by Natural Attenuation. July.
- Ecology. 2014. Email Approval of Revised Site Groundwater Monitoring Plan. August 13.
- KHM. 1999. Compliance Monitoring Plan. Kinder Morgan Liquid Terminals, LLC, Harbor Island Terminal. October 27.
- KHM. 2001a. Groundwater Monitoring Report Third Quarter 2000. Kinder Morgan Liquid Terminals, LLC, Harbor Island Terminal. January.
- KHM. 2001b. Engineering Design Report. Kinder Morgan Energy Partners, Harbor Island Terminal, Seattle, Washington. April.
- KHM. 2002. Annual Groundwater Monitoring Report, Second Quarter 2002. Kinder Morgan Liquid Terminals, LLC, Harbor Island Terminal. December.

Tables

Table 1
Monitoring Well Compliance Status
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington

Well ID	Location	Date of Last SPH or Sheen Observation	Date of Last Exceedance of SSCL	Constituent(s)	Comments
A-4	A Yard	05/23/11	--	--	SPH Skimmer
A-5	A Yard	09/15/03	04/13/21	GRO	
A-6	A Yard	12/07/22	--	--	SPH Skimmer, EFR, PR
A-8	A Yard	11/18/03	--	--	
A-10	A Yard	05/10/04	06/07/05	DRO	
A-11	A Yard	09/19/05	--	--	
A-12	A Yard	03/08/05	--	--	
A-14R	A Yard	09/19/05	12/14/04	Total Lead	
A-16	A Yard	09/20/22	--	--	SPH, EFR, PR
A-18	A Yard	09/19/05	--	--	
A-19	13th Ave	09/11/06	--	--	EFR
A-20	13th Ave	09/19/05	05/25/11	GRO	
A-21	13th Ave	05/20/02	08/25/12	GRO	
A-22R	13th Ave	10/12/05	05/25/11	GRO, Benzene	EFR
A-23R	13th Ave	Never	12/11/07	Benzene	
A-25	A Yard	11/15/10	06/16/11	GRO, Benzene	
A-26R	13th Ave	09/19/05	05/25/11	GRO, Benzene	EFR
A-27	13th Ave	12/18/00	04/19/22	GRO	
A-28R	13th Ave	Never	09/21/22	GRO	
11	B Yard	Never	--	--	ABOX
12	B Yard	03/28/17	09/22/22	GRO, Total Lead, Dissolved Lead, Benzene	ABOX
MW-1	E Yard	Never	11/05/02	Total Lead	
MW-2	13th Ave	Never	06/08/10	Total Lead	
MW-3	C Yard	Never	10/02/19	Total Lead	
MW-4	11th Ave	12/13/04	09/21/05	DRO	
MW-5	D Yard	Never	04/09/13	Total Lead	
MW-6	13th Ave	12/18/00	12/13/05	GRO	
MW-7	B Yard	11/16/09	04/13/21	GRO	ABOX
MW-8	B Yard	05/20/02	09/22/22	Total Lead	
MW-9	B Yard	05/23/11	10/04/18	Total Lead	
MW-12R	11th Ave	Never	08/26/04	Benzene	
MW-14	D Yard	Never	10/11/16	GRO	
MW-16	13th Ave	Never	--	--	
MW-17	13th Ave	Never	--	--	
MW-18	13th Ave	Never	06/08/06	GRO, Benzene	
MW-19	D Yard	05/20/02	09/20/22	GRO	ABOX
MW-20	C Yard	Never	09/25/01	Benzene	
MW-21	B Yard	03/01/12	09/22/09	GRO	
MW-22	13th Ave	Never	11/05/02	Benzene	
MW-23	13th Ave	08/29/11	09/21/22	GRO, Benzene	EFR
MW-24	13th Ave	08/29/11	09/21/22	GRO, Benzene	EFR
MW-25	A Yard	02/24/04	09/20/05	Total Lead	
SH-02R	11th Ave	Never	09/16/03	Total Lead	
SH-04	13th Ave	Never	--	--	
SH-05	11th Ave	Never	12/20/00	Total Lead	

Table 1
Monitoring Well Compliance Status
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington

Well ID	Location	Date of Last SPH or Sheen Observation	Date of Last Exceedance of SSCL	Constituent(s)	Comments
SH-05R	11th Ave	11/18/03	12/15/04	DRO	
MW-07R	11th Ave	Never	09/13/06	Total Lead	
TMW-B1	13th Ave	Never	09/21/22	GRO	
TMW-1	D Yard	Never	09/29/15	GRO	ABOX
TMW-2	D Yard	Never	--	--	ABOX
TMW-3	B Yard	Never	10/04/18	GRO	ABOX
TMW-4	B Yard	Never	09/20/22	GRO	ABOX
TMW-5	B Yard	Never	10/11/21	GRO	ABOX
TMW-6	B Yard	Never	09/22/22	GRO	ABOX

Notes:

Shading indicates SPH observance or SSCL exceedance in 2022

-- = No data/not applicable

ABOX = Sulfate application area

DRO = Diesel range organics

EFR = Enhanced fluids recovery, pilot test

GRO = Gasoline range organics

PR = Passive recovery absorbent sock

SSCL = Site-specific cleanup level

SPH = Separate phase hydrocarbons

Table 2
Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington

Well ID	Date Measured	Casing Elevation ¹ (feet)	Depth to Groundwater (feet BTOC)	SPH Thickness (feet)	Groundwater Elevation ¹ (feet)
A-4	04/18/22	13.22	6.73	--	6.49
	09/19/22	13.22	7.02	--	6.20
A-5	04/18/22	14.13	7.52	--	6.61
	09/19/22	14.13	7.81	--	6.32
A-6	04/18/22	12.81	6.33	--	6.48
	09/20/22	12.81	6.81	--	6.00
	12/07/22	12.82	6.39	--	6.43
A-8	04/18/22	14.61	7.54	--	7.07
	09/19/22	14.61	8.95	--	5.66
A-10	04/18/22	13.51	6.70	--	6.81
	09/19/22	13.51	7.10	--	6.41
A-11	04/18/22	14.40	7.50	--	6.90
	09/19/22	14.40	7.85	--	6.55
A-12	04/18/22	12.95	12.26	--	0.69
	09/19/22	12.95	6.60	--	6.35
A-14R	04/18/22	14.21	7.44	--	6.77
	09/19/22	14.21	8.74	--	5.47
A-16	04/18/22	14.39	7.69	--	6.70
	09/20/22	14.39	8.05	--	6.34
	12/07/22	14.39	7.71	--	6.68
A-18	04/18/22	14.74	7.87	--	6.87
	09/19/22	14.74	8.18	--	6.56
A-19	04/18/22	14.57	7.80	--	6.77
	09/19/22	14.57	8.10	--	6.47
A-20	04/18/22	14.19	7.45	--	6.74
	09/19/22	14.19	7.76	--	6.43
A-21	04/18/22	14.35	7.56	--	6.79
	09/19/22	14.35	7.86	--	6.49
A-22R	04/18/22	14.11	7.22	--	6.89
	09/19/22	14.11	7.63	--	6.48
A-23R	04/18/22	15.57	8.80	--	6.77
	09/19/22	15.57	9.10	--	6.47
A-25	04/18/22	13.90	7.09	--	6.81
	09/19/22	13.90	7.51	--	6.39
A-26R	04/18/22	14.19	7.22	--	6.97
	09/19/22	14.19	8.72	--	5.47
A-27	04/18/22	17.22	10.20	--	7.02
	09/19/22	17.22	10.72	--	6.50
A-28R	04/18/22	14.93	7.76	--	7.17
	09/19/22	14.93	8.35	--	6.58
11	04/18/22	12.08	3.93	--	8.15
	09/19/22	12.08	5.19	--	6.89
12	04/18/22	9.79	1.55	--	8.24
	09/19/22	9.79	2.57	--	7.22
MW-1	04/18/22	13.21	4.99	--	8.22
	09/19/22	13.21	6.15	--	7.06
MW-2	04/18/22	15.22	8.30	--	6.92
	09/19/22	15.22	7.81	--	7.41

Table 2
Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington

Well ID	Date Measured	Casing Elevation ¹ (feet)	Depth to Groundwater (feet BTOC)	SPH Thickness (feet)	Groundwater Elevation ¹ (feet)
MW-3	04/18/22	11.39	2.39	--	9.00
	09/19/22	11.39	3.97	--	7.42
MW-4	04/18/22	14.69	5.92	--	8.77
	09/19/22	14.69	7.13	--	7.56
MW-5	04/18/22	11.13	2.22	--	8.91
	09/19/22	11.13	3.69	--	7.44
MW-6	04/18/22	15.17	6.37	--	8.80
	09/19/22	15.17	7.69	--	7.48
MW-7	04/18/22	10.62	2.10	--	8.52
	09/19/22	10.62	3.30	--	7.32
MW-8	04/18/22	10.63	3.05	--	7.58
	09/19/22	10.63	4.13	--	6.50
MW-9	04/18/22	9.75	2.40	--	7.35
	09/19/22	9.75	3.29	--	6.46
MW-12R	04/18/22	15.47	7.02	--	8.45
	09/19/22	15.47	7.95	--	7.52
MW-14	04/18/22	11.44	2.65	--	8.79
	09/19/22	11.44	4.10	--	7.34
MW-16	04/18/22	15.23	6.14	--	9.09
	09/19/22	15.23	7.63	--	7.60
MW-18	04/18/22	15.49	6.13	--	9.36
	09/19/22	15.49	7.67	--	7.82
MW-19	04/18/22	11.39	2.15	--	9.24
	09/19/22	11.39	3.63	--	7.76
MW-20	04/18/22	11.72	2.61	--	9.11
	09/19/22	11.72	5.97	--	5.75
MW-21	04/18/22	9.41	2.55	--	6.86
	09/19/22	9.41	3.19	--	6.22
MW-22	04/18/22	16.32	7.36	--	8.96
	09/19/22	16.32	8.83	--	7.49
MW-23	04/18/22	14.15	7.29	--	6.86
	09/19/22	14.15	7.61	--	6.54
MW-24	04/18/22	14.34	7.28	--	7.06
	09/19/22	14.34	8.64	--	5.70
MW-25	04/18/22	13.05	--	--	--
	09/19/22	13.05	--	--	--
SH-02R	04/18/22	13.40	4.89	--	8.51
	09/19/22	13.40	6.05	--	7.35
SH-05R	04/18/22	13.89	6.67	--	7.22
	09/19/22	13.89	7.17	--	6.72
MW-07R	04/18/22	13.92	5.83	--	8.09
	09/19/22	13.92	6.67	--	7.25
TMW-B1	04/18/22	--	7.20	--	--
	09/19/22	--	8.31	--	--
TMW-1	04/18/22	--	2.64	--	--
	09/19/22	--	4.05	--	--
TMW-2	04/18/22	--	2.74	--	--
	09/19/22	--	4.19	--	--
TMW-3	04/18/22	--	2.97	--	--
	09/19/22	--	4.21	--	--
TMW-4	04/18/22	--	2.55	--	--
	09/19/22	--	3.94	--	--
TMW-5	04/18/22	--	2.69	--	--
	09/19/22	--	3.71	--	--

Table 2
Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington

Well ID	Date Measured	Casing Elevation ¹ (feet)	Depth to Groundwater (feet BTOC)	SPH Thickness (feet)	Groundwater Elevation ¹ (feet)
TMW-6	04/18/22	--	1.75	--	--
	09/19/22	--	3.03	--	--

Notes:

-- = not measured/not applicable

BTOC = below top of casing (TOC); depth to groundwater measured from TOC

SPH = separate-phase hydrocarbons

1. MW cover of MW-25 couldnot be removed during 2022 groundwater monitoring event and therefore not gauged.
2. Groundwater elevation at wells with separate-phase hydrocarbons (SPH) corrected for SPH thickness using a specific gravity of 0.8, which is generally within the range of values presented in the American Petroleum Institute's LNAPL Parameters database for gasoline and diesel fuel.

Table 3
Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO	DRO, SGC	HO, SGC	Benzene	Toluene	Ethylbenzene	Xylenes	Total Lead	Dissolved Lead
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Site-Specific Cleanup Levels:		1.0	10	10	0.071	200	29.0	N/A	0.0058	0.0058
A-5	04/20/22	0.510 B	--	--	0.00108	0.00128	<0.00100	<0.00300	--	--
	09/22/22	0.258	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--
A-8	09/22/22	<0.100	<0.200	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--
A-10	09/22/22	<0.100	0.446	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--
A-14R	09/22/22	<0.100	<0.200	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200
A-21	04/19/22	<0.100	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--
	09/21/22	0.111	--	--	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200
A-23R	09/19/22	<0.100	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--
A-27	04/19/22	1.190	--	--	0.0228	<0.00100	0.0317	<0.00300	--	--
	09/21/22	0.835	--	--	0.0343	<0.00100	0.0108	<0.00300	--	--
A-28R	04/19/22	2.280	--	--	0.0166	0.00144	0.00562	<0.00300	--	--
	09/21/22	1.040	--	--	0.00631	0.00160	0.00263	<0.00300	<0.00200	<0.00200
11	04/19/22	<0.100	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--
	09/22/22	<0.100	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--
12	04/19/22	2.070	--	--	0.0139	0.00463	0.0940	0.0238	--	--
	09/22/22	2.430	0.729	<0.250	0.169	0.0108	0.0912	0.0604	0.0130	0.00584
MW-1	09/19/22	<0.100	<0.200	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200
MW-2	09/21/22*	<0.100	<0.200	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200
MW-3	09/20/22	<0.100	<0.200	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200
MW-4	09/22/22	0.179	0.793	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--
MW-5	09/20/22	<0.100	<0.200	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	0.00253	<0.00200
MW-6	09/21/22	0.232	--	--	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200
MW-7	04/18/22	0.109 B	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--
	09/20/22	0.119	--	--	<0.00100	<0.00100	0.00233	<0.00300	0.00406	0.00244 B
MW-7 (DUP)	04/18/22	0.120 B	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--
	09/20/22	0.146	--	--	<0.00100	<0.00100	0.00244	<0.00300	0.00399	<0.00200
MW-07R	09/22/22	<0.100	<0.200	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200
MW-8	09/22/22	<0.100	0.523	0.508	<0.00100	<0.00100	<0.00100	<0.00300	0.0110	0.00325
MW-9	04/19/22	0.110 B	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--
	09/22/22	0.105	--	--	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200
MW-12R	09/22/22	<0.100	<0.200	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200
MW-14	09/20/22	<0.100	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--
MW-16	09/21/22	<0.100	<0.200	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--
MW-18	09/21/22	<0.100	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--
MW-19	04/19/22	1.320	--	--	<0.00100	0.00193	0.0183	<0.00300	--	--
	09/20/22	1.780	--	--	<0.00100	0.00250	0.0223	0.182	--	--
MW-20	09/20/22	<0.100	<0.200	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--

Table 3
Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington

Well ID	Date Sampled	GRO	DRO, SGC	HO, SGC	Benzene	Toluene	Ethylbenzene	Xylenes	Total Lead	Dissolved Lead
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Site-Specific Cleanup Levels:		1.0	10	10	0.071	200	29.0	N/A	0.0058	0.0058
MW-21	04/19/22	<0.100	0.594	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--
	09/22/22	<0.100	1.960	<0.500	<0.00100	<0.00100	<0.00100	<0.00300	--	--
MW-21 (DUP)	04/19/22	<0.100	0.633	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--
	09/22/22	<0.100	1.580	<0.500	<0.00100	<0.00100	<0.00100	<0.00300	--	--
MW-22	09/21/22	<0.100	0.485	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--
MW-23	04/19/22	3.220	--	--	0.173	0.00609	0.00633	<0.0150	--	--
	09/21/22	2.660	--	--	0.140	0.00625	0.00842	<0.0150	<0.00200	<0.00200
MW-24	04/19/22	11.10	--	--	0.552	0.0303	0.776	0.263	--	--
	09/21/22	8.240	--	--	0.407	0.0217	0.772	0.201	0.00303	<0.00200
SH-02R	09/22/22	<0.100	0.271	<0.250	<0.00500	<0.00500	<0.00500	<0.0150	<0.00200	<0.00200
SH-05R	09/22/22	<0.100	0.455	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200
TMW-B1	09/21/22	5.050	--	--	0.0190	0.00242	0.0156	0.00685	--	--
TMW-1	04/19/22	<0.100	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--
	09/20/22	<0.100	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--
TMW-2	04/19/22	<0.100	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--
	09/20/22	<0.100	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--
TMW-3	04/18/22	0.123 B	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--
	09/20/22	<0.100	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--
TMW-4	04/19/22	1.870	--	--	0.00135	0.00156	0.00124	<0.00300	--	--
	09/20/22	2.060	--	--	<0.00100	0.0158	0.193	0.192	--	--
TMW-5	04/18/22	0.896	--	--	0.00308	<0.00100	<0.00100	<0.00300	--	--
	09/20/22	0.439	--	--	0.00585	0.00309	<0.00100	<0.00300	--	--
TMW-6	04/19/22	6.950	--	--	<0.0100	<0.0100	0.357	0.604	--	--
	09/22/22	8.370	--	--	<0.0100	0.0174	0.528	0.811	--	--
	09/28/22	<0.100	--	--	--	--	--	--	--	--

Notes:

*: MW-2 total and dissolved lead samples were taken on 9/22/22.

-- = Not applicable/Sample not analyzed for this parameter

< = Denotes compound was not detected at designated detection limit.

Bold = Analyte detected at a concentration above the laboratory reporting limit

Highlight = Detected concentration above the Site-Specific Cleanup Level

mg/L = milligrams per liter (parts per million [ppm])

B = The same analyte is found in the associated blank.

N/A = Not applicable

SGC = A silica gel wash as performed on the solvent extract before analysis. Silica gel cleanup was completed for samples with TPH-DRO and TPH-HO detections above the method reporting limit. All samples analyzed since September 2015 were performed with SGC for all TPH-DRO and TPH-HO analysis.

USEPA = United States Environmental Protection Agency

1. Total Petroleum Hydrocarbons (TPH) as gasoline range organics (GRO) - Analysis by Washington Method WTPH-G prior to 5/20/98; analysis by Northwest Method NWTPH-Gx from 5/20/98 through present.

2. Total Petroleum Hydrocarbons (TPH) as diesel range organics (DRO) and heavy oil range organics (HO) - Analysis by Washington Method WTPH-D+ extended prior to 5/20/98; analysis by Northwest Method NWTPH-Dx from 5/20/98 through present.

3. Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) Compounds - Analysis by EPA Method 8020 prior to 5/20/98; analysis by USEPA Method 8260B from 5/20/98 through present.

Table 4
Groundwater Geochemical Parameters
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington

Well ID	Date Sampled	Dissolved Oxygen ¹	Methane	Total Iron	Dissolved Iron	Ferrous Iron	Nitrate	Sulfate	Sulfide
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
A-5	04/20/22	1.46	--	--	--	--	--	--	--
	09/22/22	0.18	--	--	--	--	--	--	--
A-8	09/22/22	0.18	--	--	--	--	--	--	--
A-10	09/22/22	0.15	--	--	--	--	--	--	--
A-14R	09/22/22	0.20	--	--	--	--	--	--	--
A-21	04/19/22	1.80	--	--	--	--	--	--	--
	09/21/22	0.34	--	--	--	--	--	--	--
A-23R	09/19/22	0.12	--	--	--	--	--	--	--
A-27	04/19/22	0.10	--	--	--	--	--	--	--
	09/21/22	0.18	2.56	--	--	9.04 T8	<0.100	19.8	1.08
A-28R	04/19/22	0.13	--	--	--	--	--	--	--
	09/21/22	0.10	3.20	--	--	31.9 T8	<0.100	31.9	0.178
11	04/19/22	4.94	--	--	--	--	--	113	--
	09/22/22	1.41	--	--	--	--	--	103	--
12	04/18/22	0.04	--	--	--	--	--	1,340	--
	09/22/22	3.32	--	--	--	--	--	1,040	--
MW-1	09/19/22	0.10	--	--	--	--	--	--	--
MW-2	09/21/22	1.35	--	--	--	--	--	--	--
MW-3	09/20/22	0.85	--	--	--	--	--	--	--
MW-4	09/22/22	0.20	--	--	--	--	--	--	--
MW-5	09/20/22	0.10	--	--	--	--	--	--	--
MW-6	09/21/22	0.20	--	--	--	--	--	--	--
MW-7	04/18/22	0.12	--	--	--	--	--	876	--
	09/20/22	0.07	--	--	--	--	--	604	--
MW-7 (DUP)	04/18/22	0.12	--	--	--	--	--	870	--
	09/20/22	0.07	--	--	--	--	--	591	--
MW-07R	09/22/22	0.16	--	--	--	--	--	--	--
MW-8	09/22/22	1.08	--	--	--	--	--	--	--
MW-9	04/19/22	4.99	--	--	--	--	--	35.8	--
	09/22/22	0.26	--	--	--	--	--	7.29 P1	--
MW-12R	09/22/22	0.25	--	--	--	--	--	--	--
MW-14	09/20/22	0.10	--	--	--	--	--	--	--
MW-16	09/21/22	2.04	--	--	--	--	--	--	--
MW-18	09/21/22	0.13	--	--	--	--	--	--	--
MW-19	04/19/22	0.21	--	--	--	--	--	29.7	--
	09/20/22	0.12	--	--	--	--	--	<5.00	--
MW-20	09/20/22	0.12	--	--	--	--	--	--	--

Table 4
Groundwater Geochemical Parameters
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington

Well ID	Date Sampled	Dissolved Oxygen ¹	Methane	Total Iron	Dissolved Iron	Ferrous Iron	Nitrate	Sulfate	Sulfide
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW-21	04/19/22	1.28	--	--	--	--	--	--	--
	09/22/22	0.24	--	--	--	--	--	--	--
MW-21 (DUP)	04/19/22	1.28	--	--	--	--	--	--	--
	09/22/22	0.24	--	--	--	--	--	--	--
MW-22	09/21/22	0.27	--	--	--	--	--	--	--
MW-23	04/19/22	0.09	--	--	--	--	--	--	--
	09/21/22	0.16	12.4	--	--	15.4 T8	<0.100	<5.00	0.090
MW-24	04/19/22	0.16	--	--	--	--	--	--	--
	09/21/22	0.11	11.6	--	--	52.2 T8	<0.100	<5.00	0.099
SH-02R	09/22/22	0.40	--	--	--	--	--	--	--
SH-05R	09/22/22	0.26	--	--	--	--	--	--	--
TMW-B1	09/21/22	0.15	9.31	--	--	5.7 T8	<0.100	<5.00	0.166
TMW-1	04/19/22	8.06	--	--	--	--	--	989	--
	09/20/22	0.29	--	--	--	--	--	708	--
TMW-2	04/18/22	0.14	--	--	--	--	--	1,330	--
	09/20/22	0.14	--	--	--	--	--	868	--
TMW-3	04/18/22	0.09	--	--	--	--	--	1,170	--
	09/20/22	0.10	--	--	--	--	--	627	--
TMW-4	04/19/22	0.12	--	--	--	--	--	638	--
	09/20/22	0.21	--	--	--	--	--	382	--
TMW-5	04/18/22	0.03	--	--	--	--	--	958	--
	09/20/22	0.09	--	--	--	--	--	417	--
TMW-6	04/19/22	0.47	--	--	--	--	--	269	--
	09/22/22	0.13	--	--	--	--	--	326	--

Notes:

< = Denotes compound was not detected above the designated detection limit.

-- = Not applicable/Sample not analyzed for this parameter

Bold = Analyte detected at a concentration above the laboratory reporting limit

mg/L = milligrams per liter (parts per million)

T8 = Sample was received by the lab outside the hold time for the analyte; value should be considered a minimum.

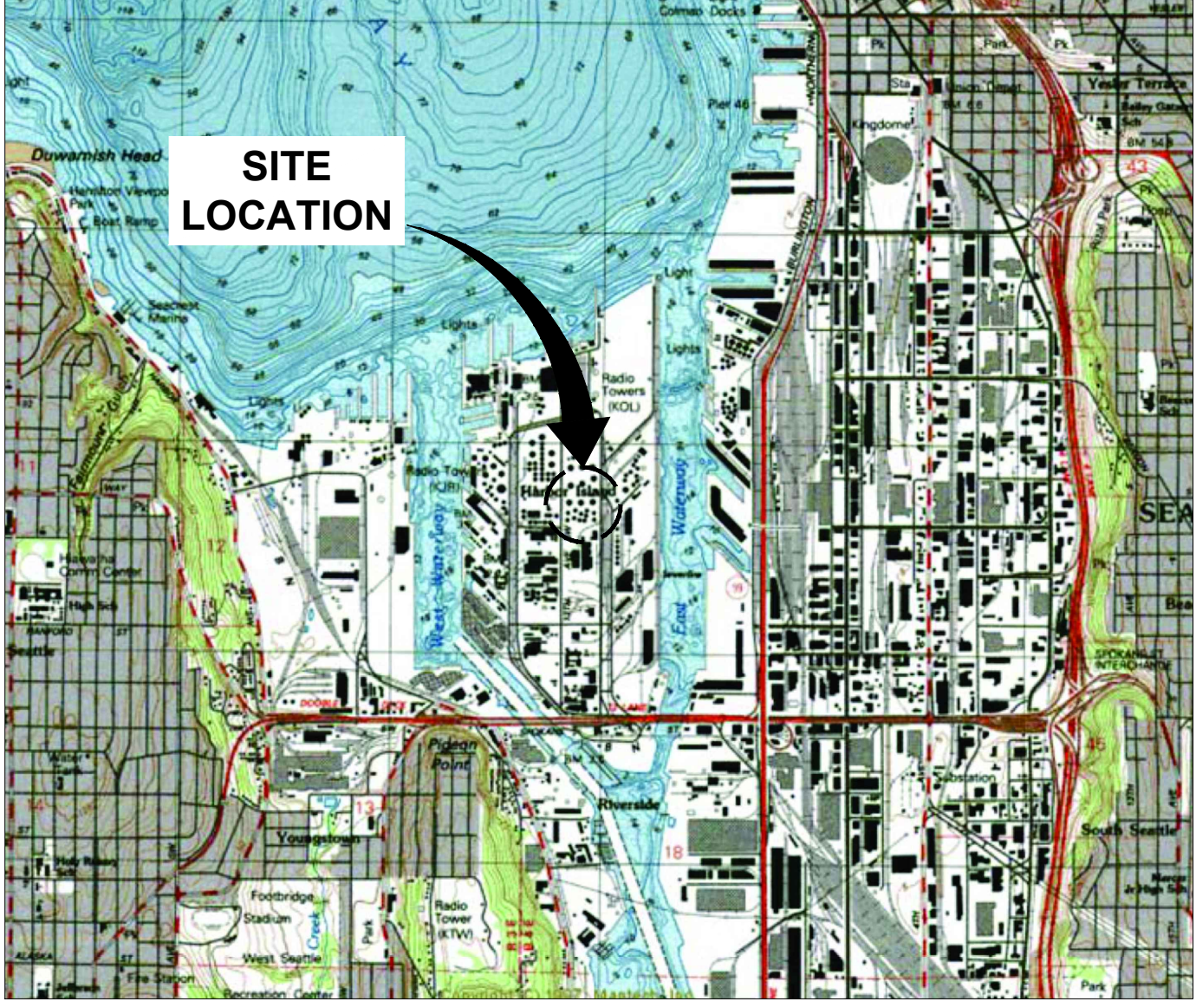
P1 = Relative percent difference value not applicable for sample concentrations less than 5 times the reporting limit.

1. Dissolved oxygen measurements were collected in the field and reflect the final reading recorded following stabilization and prior to sample collection.

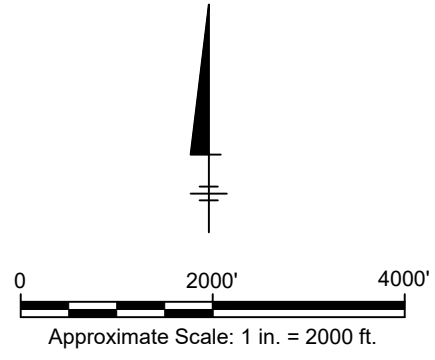
Figures

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XREFS: IMAGES: PROJECTNAME: ---
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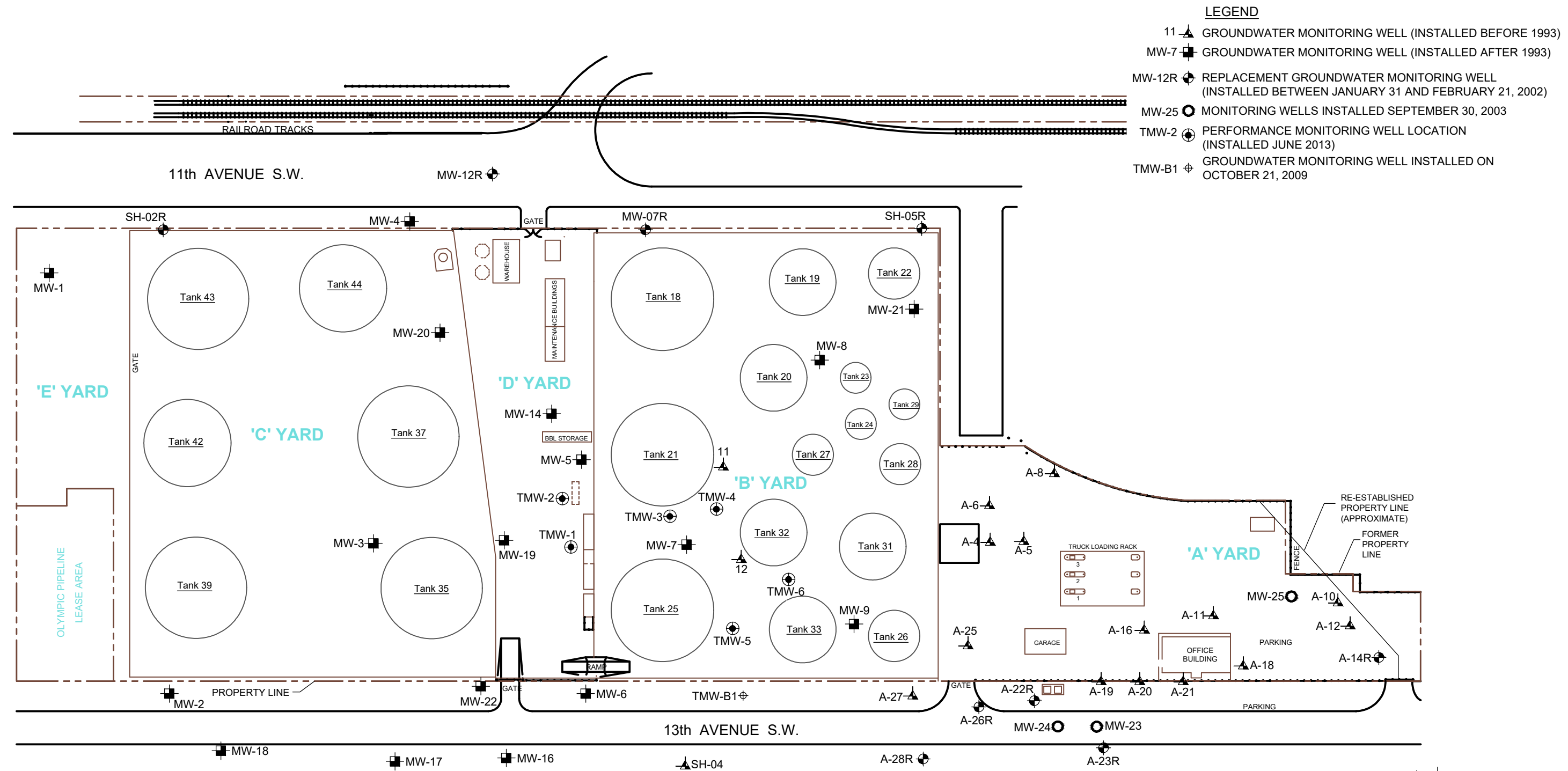
REFERENCE: BASE MAP USGS 7.5. MINUTE TOPOGRAPHIC MAP SEATTLE SOUTH, WASHINGTON 1083



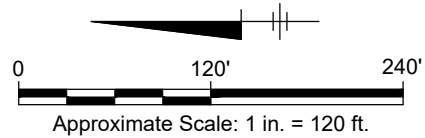
KINDER MORGAN LIQUIDS TERMINALS, LLC
 HARBOR ISLAND TERMINAL
 2720 13TH AVENUE SOUTHWEST, SEATTLE, WASHINGTON
2022 ANNUAL GROUNDWATER MONITORING REPORT

SITE LOCATION MAP

CITY: (Red) DIV: (Red) DB: (Red) LD: (Red) PIC: (Red) PM: (Red) TM: (Red) LVR: (Red) ON: (Red) OFF: (Red) REF: (Red)
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 XREFS: IMAGES: PROJECTNAME: X-SITEBASE WA000004



- LEGEND**
- 11 ▲ GROUNDWATER MONITORING WELL (INSTALLED BEFORE 1993)
 - MW-7 ■ GROUNDWATER MONITORING WELL (INSTALLED AFTER 1993)
 - MW-12R ● REPLACEMENT GROUNDWATER MONITORING WELL (INSTALLED BETWEEN JANUARY 31 AND FEBRUARY 21, 2002)
 - MW-25 ○ MONITORING WELLS INSTALLED SEPTEMBER 30, 2003
 - TMW-2 ⊕ PERFORMANCE MONITORING WELL LOCATION (INSTALLED JUNE 2013)
 - TMW-B1 ⊕ GROUNDWATER MONITORING WELL INSTALLED ON OCTOBER 21, 2009

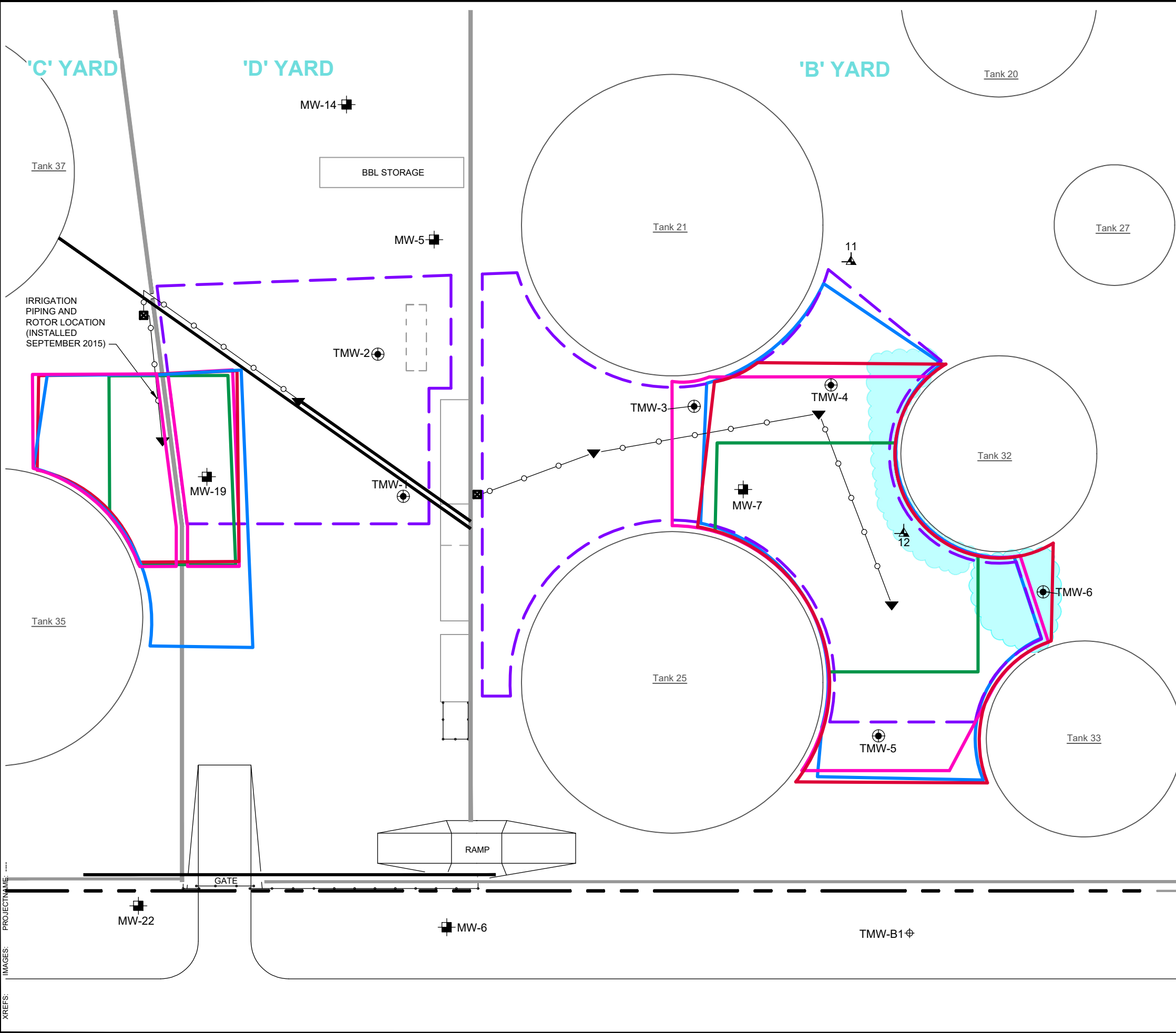


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 HARBOR ISLAND TERMINAL
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2022 ANNUAL GROUNDWATER MONITORING REPORT

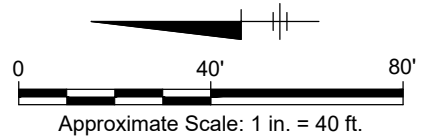
SITE PLAN

 **ARCADIS** | **FIGURE 2**

CITY:\Red\ DIV\GROUP\ (Red) DB\ (Red) LD\ (Opt) PIC\ (Opt) PM\ (Red) TM\ (Opt) LVR\ (Opt) ON\ *OFF+REF*
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 PLOTTED: 12/8/2022 8:25 PM BY: MURUGESAN, GOKULAKANNAN
 XREFS: PROJECTNAME: ---



- LEGEND**
- SH-02 ▲ GROUNDWATER MONITORING WELL (INSTALLED BEFORE 1993)
 - MW-7 ■ GROUNDWATER MONITORING WELL (INSTALLED AFTER 1993)
 - MW-12R ● REPLACEMENT GROUNDWATER MONITORING WELL (INSTALLED BETWEEN JANUARY 31 AND FEBRUARY 21, 2002)
 - WATER SOURCE LOCATION
 - TMW-2 ● PERFORMANCE MONITORING WELL LOCATION (INSTALLED JUNE 2013)
 - TMW-B1 ⊕ GROUNDWATER MONITORING WELL INSTALLED ON OCTOBER 21, 2009
 - ▼ IRRIGATION ROTOR LOCATION
 - IRRIGATION PIPING
 - CONCRETE WALL
 - Sulfate Application Area; June 2013
 - Approximate Boundary of the Supplemental Sulfate Application Area; Applied in April 2018, November 2018, December 2019, and September 2022
 - Approximate Boundary of the Supplemental Sulfate Application Area; Applied in October 2016
 - Approximate Boundary of the Supplemental Sulfate Application Area; Applied in September 2015
 - Sulfate Application Area; July 2021
 - ☁ THERE WAS A STANDING WATER IN OCTOBER 2016 AND THEREFORE EPSOM WAS NOT APPLIED IN THIS AREA.

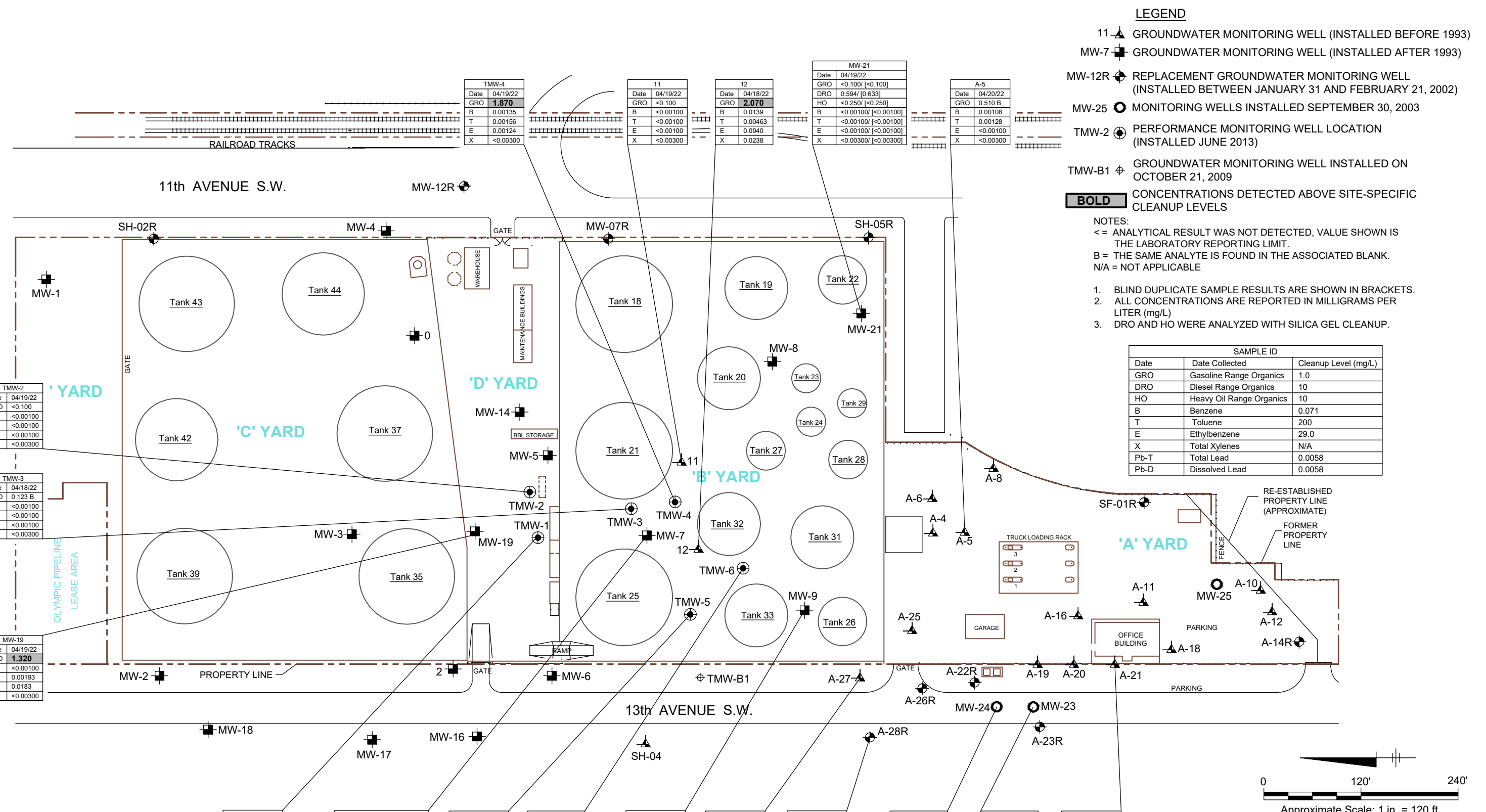


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 HARBOR ISLAND TERMINAL
 2720 13TH AVENUE SOUTHWEST, SEATTLE, WASHINGTON
2022 ANNUAL GROUNDWATER MONITORING REPORT

REMEDIAL SULFATE APPLICATION AREA

FIGURE
3

CITY: (Red) DIV: (Red) LD: (Opt) PIC: (Opt) PM: (Red) TM: (Opt) LVR: (Opt) ON: OFF: REF: C:\Users\jadhav\Documents\Arcadis\ASAM-HARBOR ISLAND TERMINAL-SEATTLE-Washington\Project Files\202201-1n-Progress\01-DWG\GWM-202202-F06-GWEAM.dwg LAYOUT: 6 SAVED: 11/1/2022 2:07 PM ACADVER: 24.2S (LMS TECH) PAGES: 10 PLOT: 11/1/2022 2:09 PM BY: JADHAV, PRAJAKTA XREFS: IMAGES: PROJECTNAME: X-SITEBASE WAD00004



LEGEND

- 11 ▲ GROUNDWATER MONITORING WELL (INSTALLED BEFORE 1993)
- MW-7 ■ GROUNDWATER MONITORING WELL (INSTALLED AFTER 1993)
- MW-12R ● REPLACEMENT GROUNDWATER MONITORING WELL (INSTALLED BETWEEN JANUARY 31 AND FEBRUARY 21, 2002)
- MW-25 ○ MONITORING WELLS INSTALLED SEPTEMBER 30, 2003
- TMW-2 ⊕ PERFORMANCE MONITORING WELL LOCATION (INSTALLED JUNE 2013)
- TMW-B1 ⊕ GROUNDWATER MONITORING WELL INSTALLED ON OCTOBER 21, 2009
- BOLD** CONCENTRATIONS DETECTED ABOVE SITE-SPECIFIC CLEANUP LEVELS

NOTES:

- < = ANALYTICAL RESULT WAS NOT DETECTED, VALUE SHOWN IS THE LABORATORY REPORTING LIMIT.
- B = THE SAME ANALYTE IS FOUND IN THE ASSOCIATED BLANK.
- N/A = NOT APPLICABLE

1. BLIND DUPLICATE SAMPLE RESULTS ARE SHOWN IN BRACKETS.
2. ALL CONCENTRATIONS ARE REPORTED IN MILLIGRAMS PER LITER (mg/L)
3. DRO AND HO WERE ANALYZED WITH SILICA GEL CLEANUP.

SAMPLE ID		
Date	Date Collected	Cleanup Level (mg/L)
GRO	Gasoline Range Organics	1.0
DRO	Diesel Range Organics	10
HO	Heavy Oil Range Organics	10
B	Benzene	0.071
T	Toluene	200
E	Ethylbenzene	29.0
X	Total Xylenes	N/A
Pb-T	Total Lead	0.0058
Pb-D	Dissolved Lead	0.0058

TMW-2	
Date	04/19/22
GRO	<0.100
B	<0.00100
T	<0.00100
E	<0.00100
X	<0.00300

TMW-3	
Date	04/18/22
GRO	0.123 B
B	<0.00100
T	<0.00100
E	<0.00100
X	<0.00300

MW-19	
Date	04/19/22
GRO	1.320
B	<0.00100
T	0.00193
E	0.0183
X	<0.00300

TMW-1	
Date	04/19/22
GRO	<0.100
B	<0.00100
T	<0.00100
E	<0.00100
X	<0.00300

MW-7	
Date	04/18/22
GRO	0.109 B [0.120 B]
B	<0.00100/ <0.00100
T	<0.00100/ <0.00100
E	<0.00100/ <0.00100
X	<0.00300/ <0.00300

TMW-5	
Date	04/18/22
GRO	0.896
B	0.00308
T	<0.00100
E	<0.00100
X	<0.00300

TMW-6	
Date	04/19/22
GRO	6.950
B	<0.0100
T	<0.0100
E	0.357
X	0.604

MW-9	
Date	04/19/22
GRO	0.110 B
B	<0.00100
T	<0.00100
E	<0.00100
X	<0.00300

A-27	
Date	04/19/22
GRO	1.190
B	0.0228
T	<0.00100
E	0.0317
X	<0.00300

A-28R	
Date	04/19/22
GRO	2.280
B	0.0166
T	0.00144
E	0.00562
X	<0.00300

MW-24	
Date	04/19/22
GRO	11.1
B	0.552
T	0.0303
E	0.776
X	0.263

MW-23	
Date	04/19/22
GRO	3.220
B	0.173
T	0.00609
E	0.00633
X	<0.0150

A-21	
Date	04/19/22
GRO	<0.100
B	<0.00100
T	<0.00100
E	<0.00100
X	<0.00300

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HARBOR ISLAND TERMINAL
2720 13TH AVENUE SOUTHWEST, SEATTLE, WASHINGTON
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GROUNDWATER ANALYTICAL RESULTS - APRIL 2022



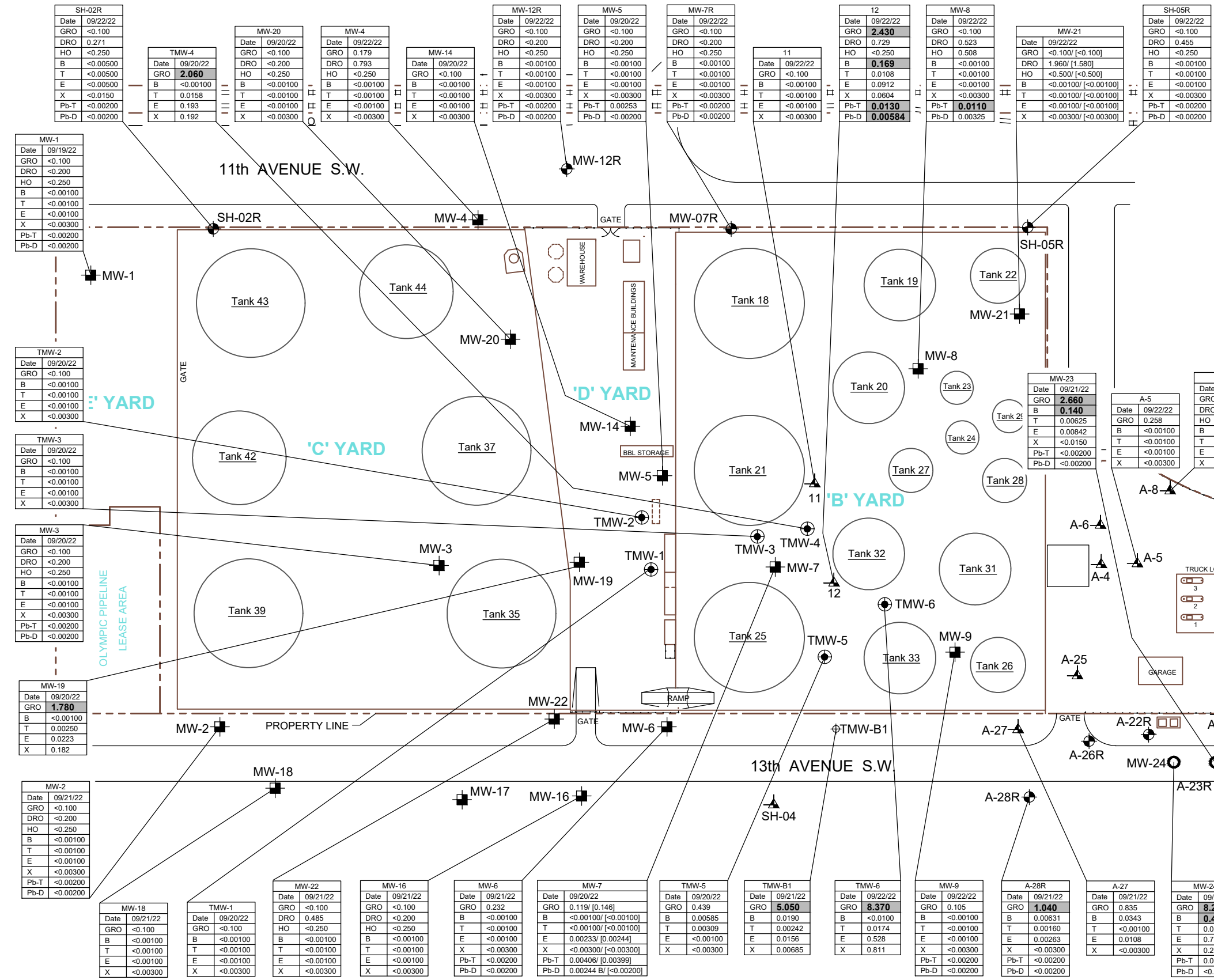
LEGEND

- 11-▲ GROUNDWATER MONITORING WELL (INSTALLED BEFORE 1993)
- MW-7-■ GROUNDWATER MONITORING WELL (INSTALLED AFTER 1993)
- MW-12R-⊕ REPLACEMENT GROUNDWATER MONITORING WELL (INSTALLED BETWEEN JANUARY 31 AND FEBRUARY 21, 2002)
- MW-25-○ MONITORING WELLS INSTALLED SEPTEMBER 30, 2003
- TMW-2-⊕ PERFORMANCE MONITORING WELL LOCATION (INSTALLED JUNE 2013)
- TMW-B1-⊕ GROUNDWATER MONITORING WELL INSTALLED ON OCTOBER 21, 2009

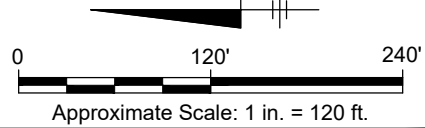
BOLD CONCENTRATIONS DETECTED ABOVE SITE-SPECIFIC CLEANUP LEVELS

NOTES:

- < = ANALYTICAL RESULT WAS NOT DETECTED, VALUE SHOWN IS THE LABORATORY REPORTING LIMIT.
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- 1. BLIND DUPLICATE SAMPLE RESULTS ARE SHOWN IN BRACKETS.
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- 3. DRO AND HO WERE ANALYZED WITH SILICA GEL CLEANUP.



SAMPLE ID		
Date	Date Collected	Cleanup Level (mg/L)
GRO	Gasoline Range Organics	1.0
DRO	Diesel Range Organics	10
HO	Heavy Oil Range Organics	10
B	Benzene	0.071
T	Toluene	200
E	Ethylbenzene	29.0
X	Total Xylenes	N/A
Pb-T	Total Lead	0.0058
Pb-D	Dissolved Lead	0.0058

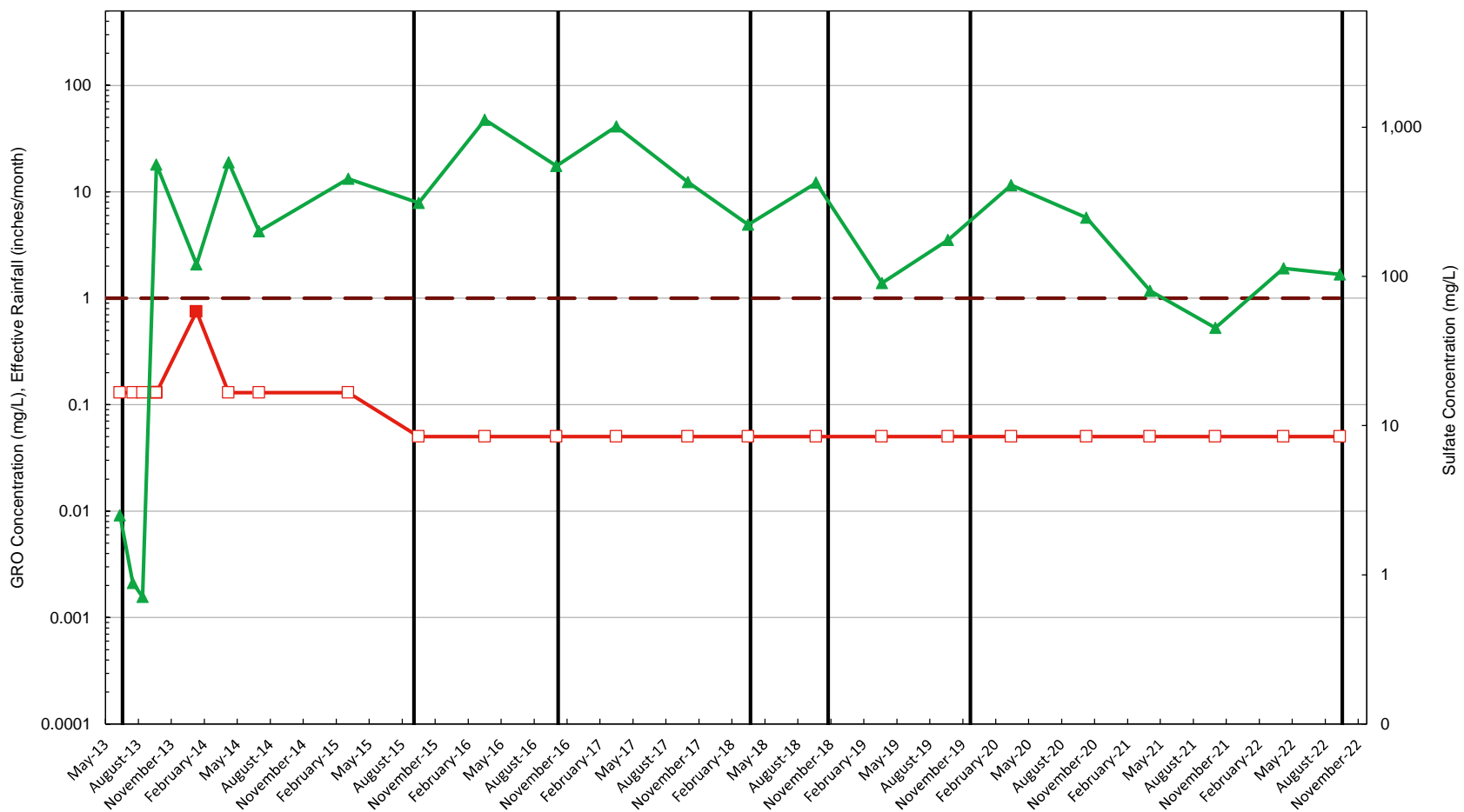


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GROUNDWATER ANALYTICAL RESULTS - SEPTEMBER 2022



Graphs



- Sulfate Land Application
- GRO
- Site-Specific Cleanup Level; GRO
- ▲— Sulfate

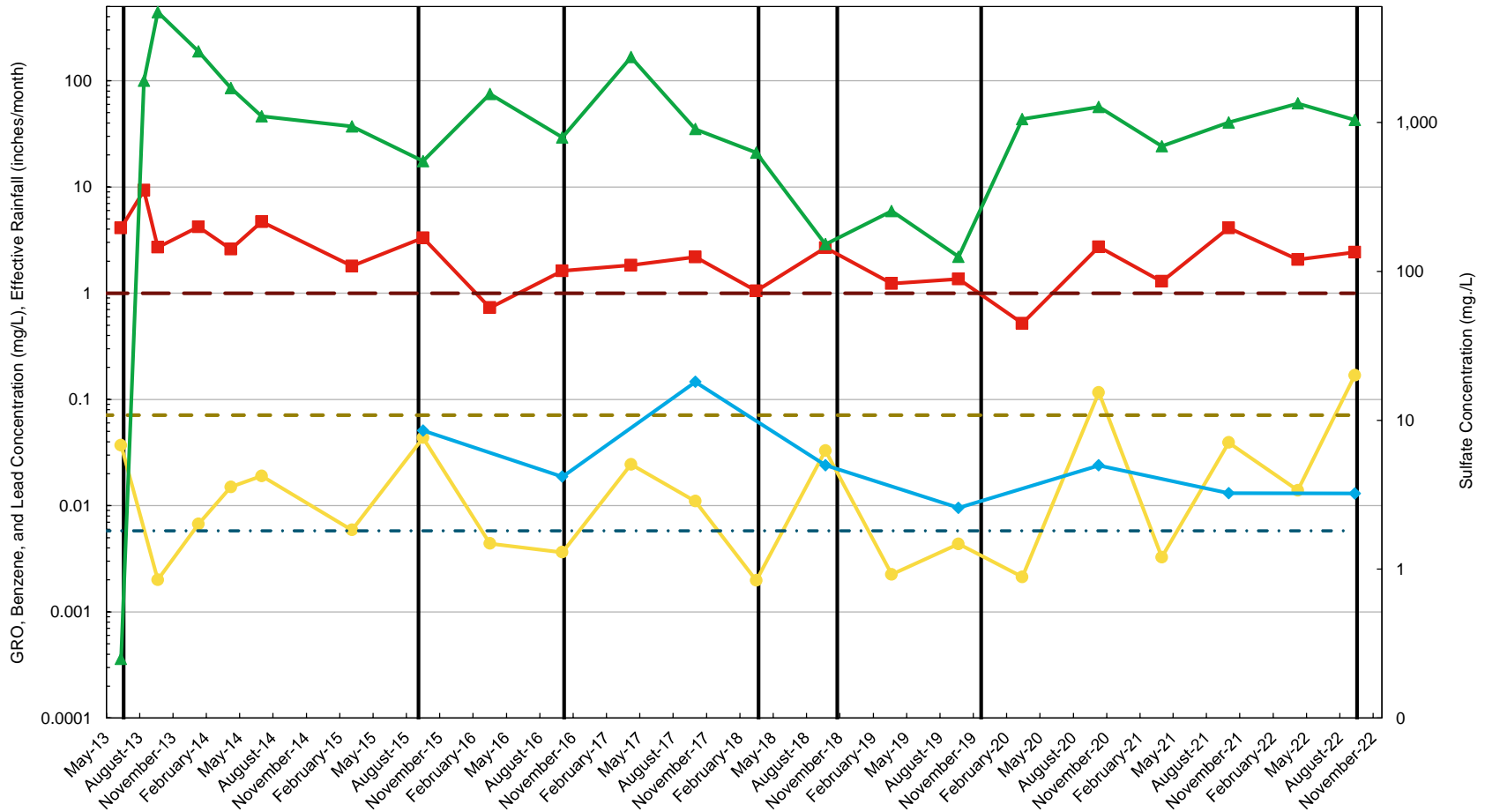
Notes:
 1. GRO = gasoline range organics
 2. mg/L = milligrams per liter
 3. Open data points indicate that concentrations were not measured above the laboratory reporting limit (RL), plotted at half the RL

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11 CONSTITUENT TREND PLOT



GRAPH
1




- Sulfate Land Application
- Site-Specific Cleanup Level; GRO
- Site-Specific Cleanup Level; Benzene
- Site-Specific Cleanup Level; Total Lead
- GRO
- Benzene
- ◆ Total Lead
- ▲ Sulfate

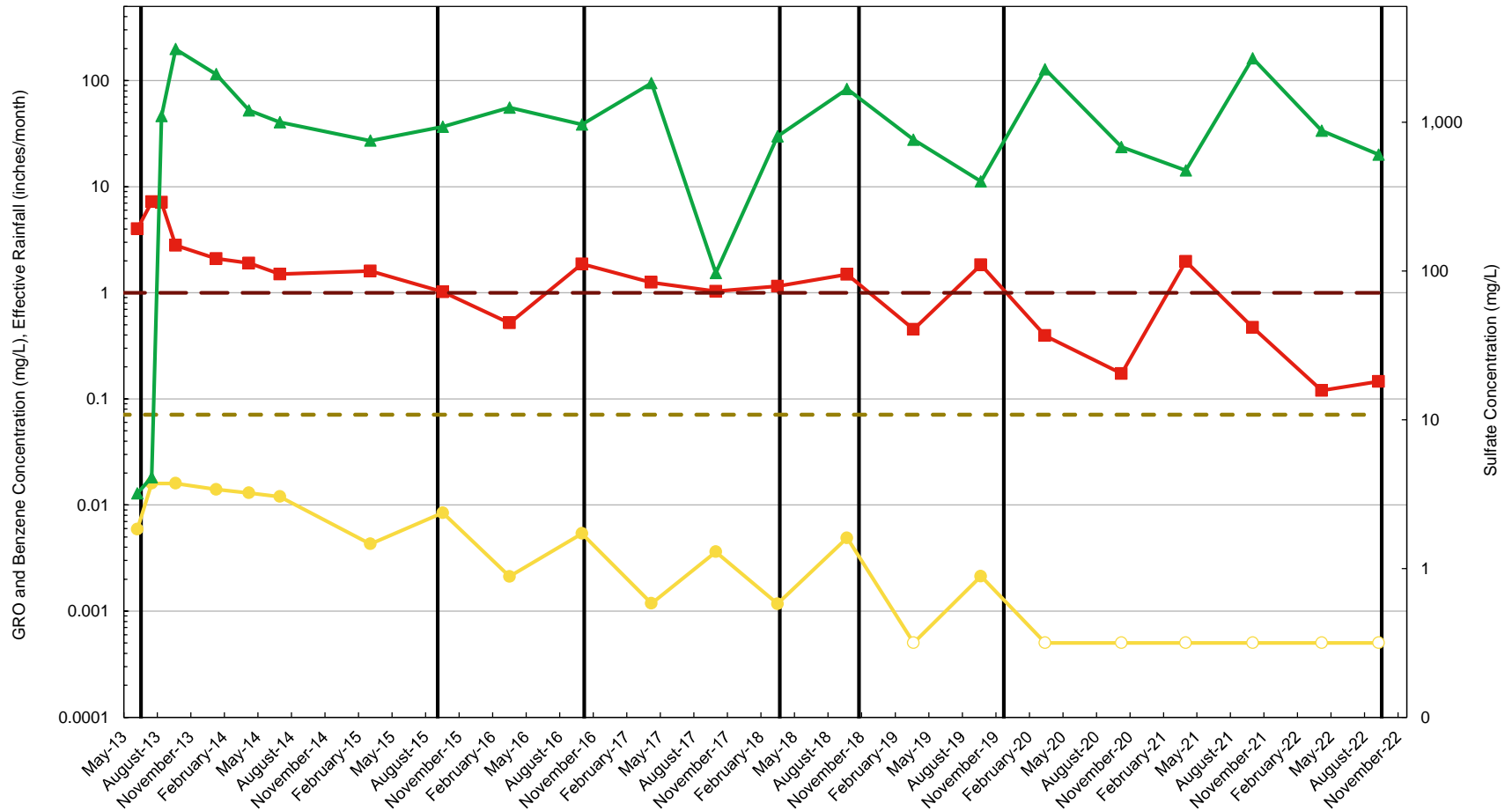
Notes:
 1. GRO = gasoline range organics
 2. mg/L = milligrams per liter

KINDER MORGAN LIQUID TERMINALS, LLC
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 2720 13TH AVENUE SOUTHWEST, SEATTLE, WASHINGTON
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12 CONSTITUENT TREND PLOT



GRAPH
2



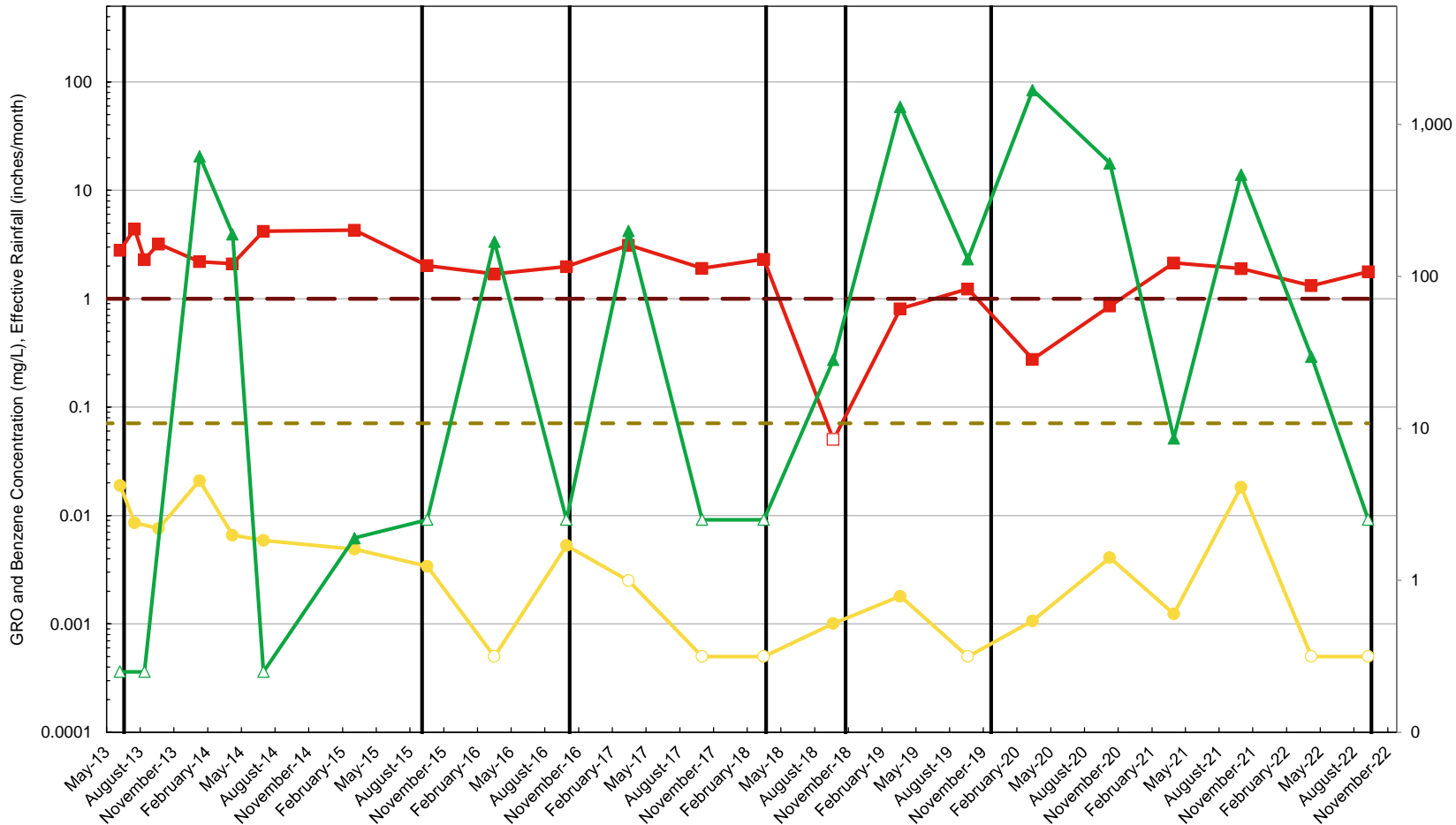
- Sulfate Land Application
- GRO
- Site-Specific Cleanup Level; GRO
- Benzene
- Site-Specific Cleanup Level; Benzene
- ▲ Sulfate

Notes:
 1. GRO = gasoline range organics
 2. mg/L = milligrams per liter
 3. Open data points indicate that concentrations were not measured above the laboratory reporting limit (RL), plotted at half the RL

KINDER MORGAN LIQUID TERMINALS, LLC
 HARBOR ISLAND TERMINAL
 2720 13TH AVENUE SOUTHWEST, SEATTLE, WASHINGTON
 2022 ANNUAL GROUNDWATER MONITORING REPORT

MW-7 CONSTITUENT TREND PLOT






- Sulfate Land Application
- GRO
- Site-Specific Cleanup Level; GRO
- Benzene
- Site-Specific Cleanup Level; Benzene
- ▲ Sulfate

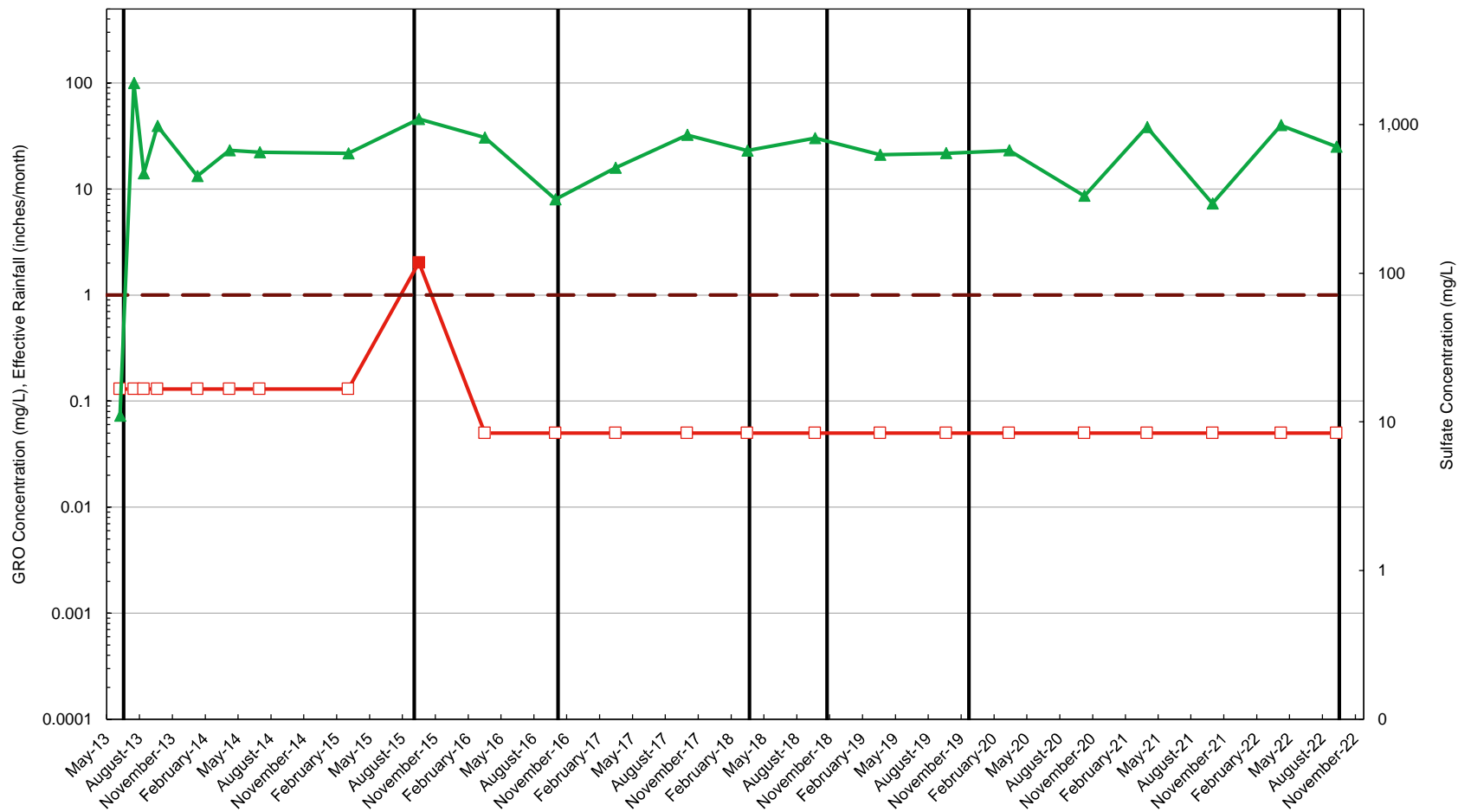
Notes:
 1. GRO = gasoline range organics
 2. mg/L = milligrams per liter
 3. Open data points indicate that concentrations were not measured above the laboratory reporting limit (RL), plotted at half the RL

KINDER MORGAN LIQUID TERMINALS, LLC
 HARBOR ISLAND TERMINAL
 2720 13TH AVENUE SOUTHWEST, SEATTLE, WASHINGTON
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MW-19 CONSTITUENT TREND PLOT



GRAPH
4




— Sulfate Land Application
 ■ GRO
 — Site-Specific Cleanup Level; GRO
 ▲ Sulfate

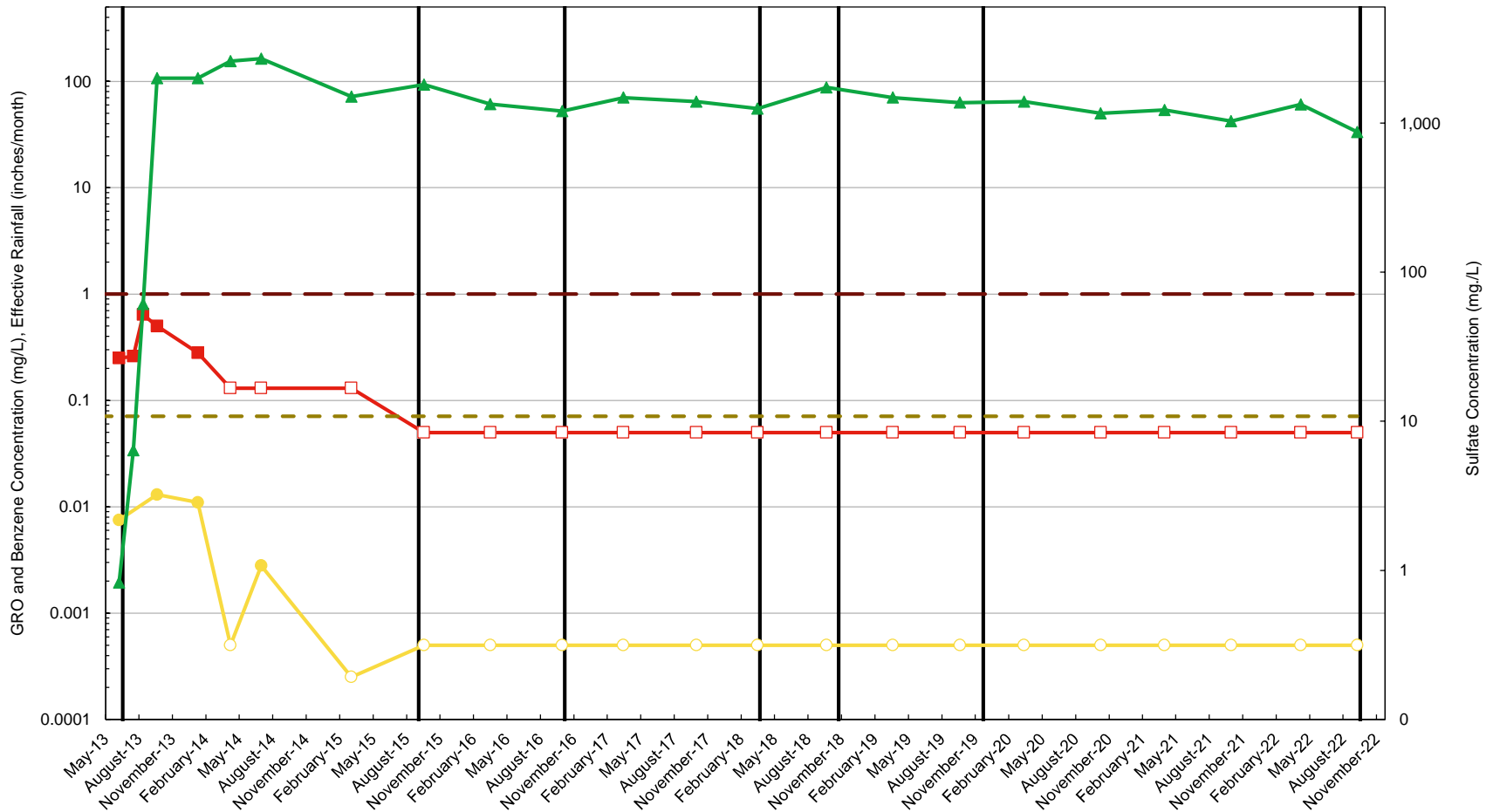
Notes:
 1. GRO = gasoline range organics
 2. mg/L = milligrams per liter
 3. Open data points indicate that concentrations were not measured above the laboratory reporting limit (RL), plotted at half the RL

KINDER MORGAN LIQUID TERMINALS, LLC
 HARBOR ISLAND TERMINAL
 2720 13TH AVENUE SOUTHWEST, SEATTLE, WASHINGTON
2022 ANNUAL GROUNDWATER MONITORING REPORT

TMW-1 CONSTITUENT TREND PLOT



GRAPH
5




- Sulfate Land Application
- GRO
- Site-Specific Cleanup Level; GRO
- Benzene
- Site-Specific Cleanup Level; Benzene
- ▲ Sulfate

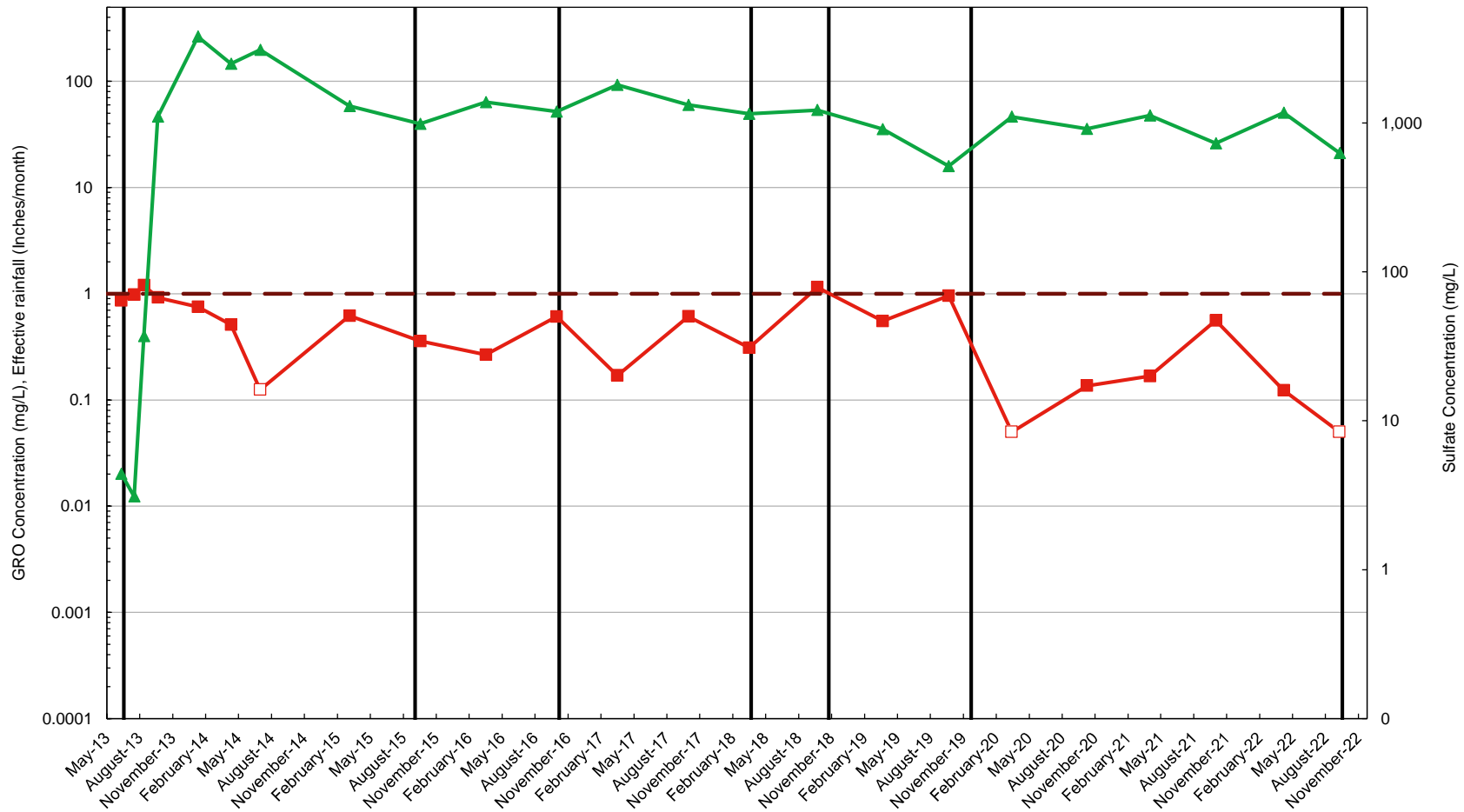
Notes:
 1. GRO = gasoline range organics
 2. mg/L = milligrams per liter
 3. Open data points indicate that concentrations were not measured above the laboratory reporting limit (RL), plotted at half the RL

KINDER MORGAN LIQUID TERMINALS, LLC
 HARBOR ISLAND TERMINAL
 2720 13TH AVENUE SOUTHWEST, SEATTLE, WASHINGTON
2022 ANNUAL GROUNDWATER MONITORING REPORT

TMW-2 CONSTITUENT TREND PLOT



GRAPH
6



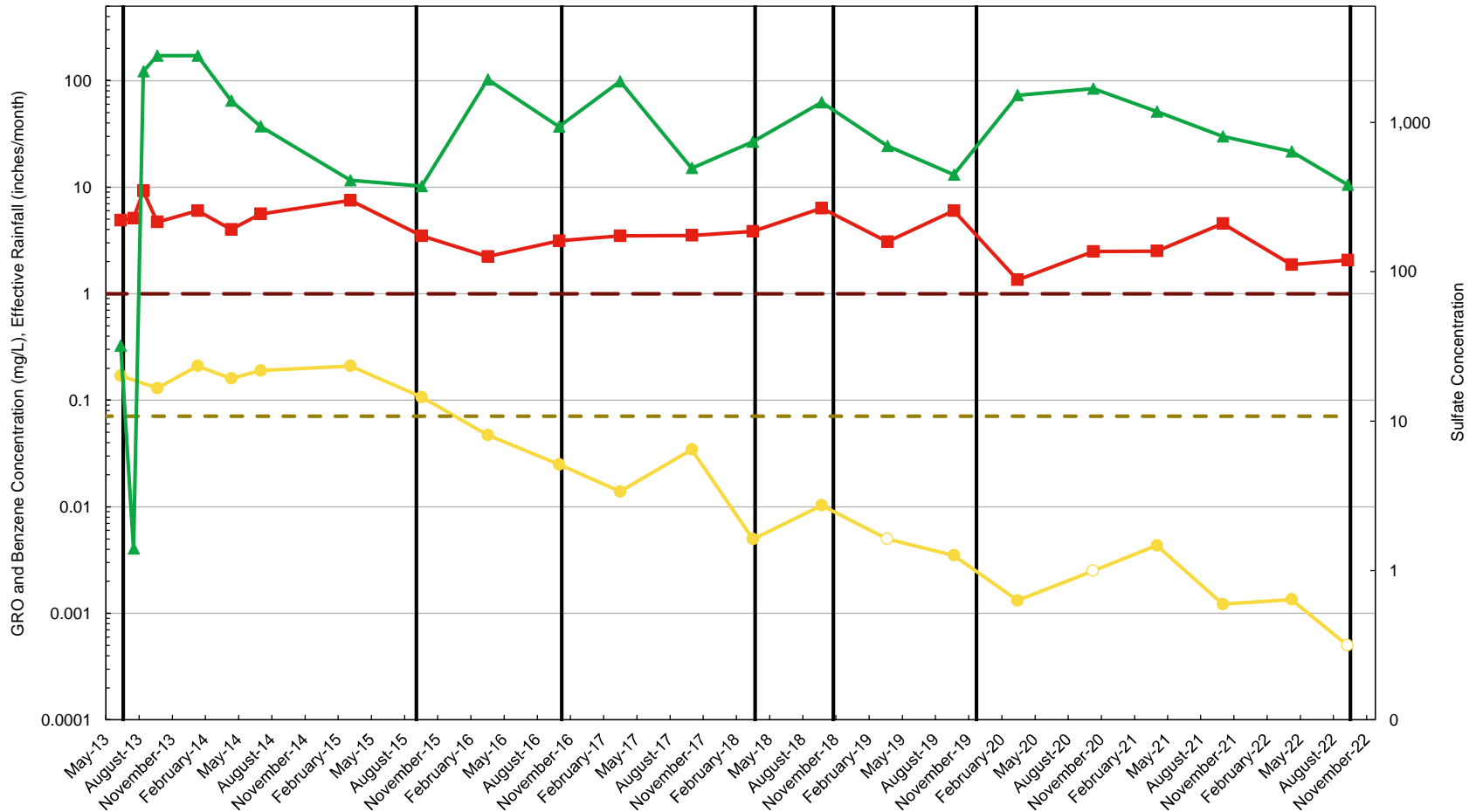
- Sulfate Land Application
- GRO
- Site-Specific Cleanup Level; GRO
- ▲ Sulfate

Notes:
 1. GRO = gasoline range organics
 2. mg/L = milligrams per liter
 3. Open data points indicate that concentrations were not measured above the laboratory reporting limit (RL), plotted at half the RL

KINDER MORGAN LIQUID TERMINALS, LLC
 HARBOR ISLAND TERMINAL
 2720 13TH AVENUE SOUTHWEST, SEATTLE, WASHINGTON
 2022 ANNUAL GROUNDWATER MONITORING REPORT

TMW-3 CONSTITUENT TREND PLOT






- Sulfate Land Application
- GRO
- Site-Specific Cleanup Level; GRO
- Benzene
- Site-Specific Cleanup Level; Benzene
- ▲ Sulfate

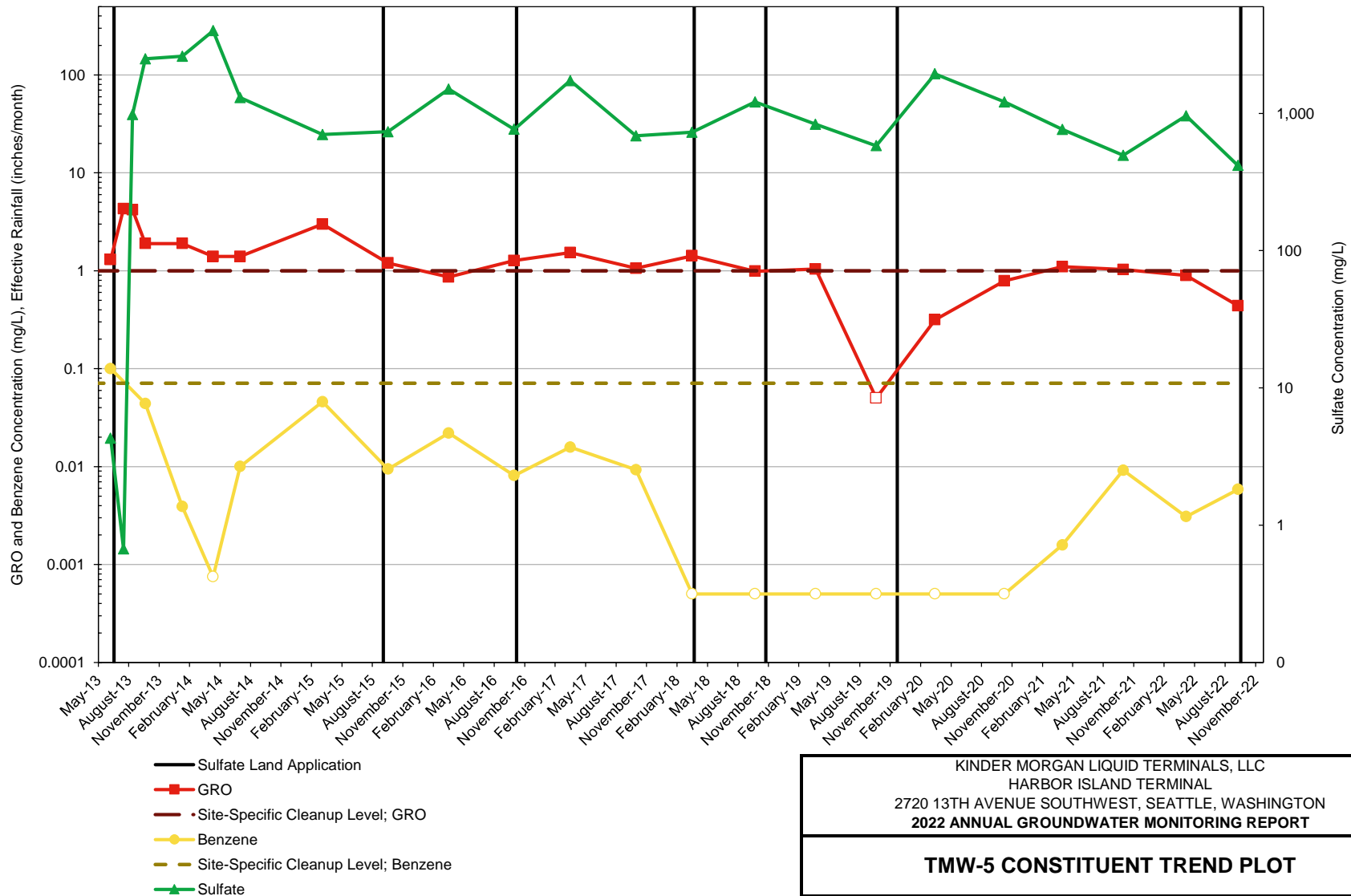
Notes:
 1. GRO = gasoline range organics
 2. mg/L = milligrams per liter
 3. Open data points indicate that concentrations were not measured above the laboratory reporting limit (RL), plotted at half the RL

KINDER MORGAN LIQUID TERMINALS, LLC
 HARBOR ISLAND TERMINAL
 2720 13TH AVENUE SOUTHWEST, SEATTLE, WASHINGTON
2022 ANNUAL GROUNDWATER MONITORING REPORT

TMW-4 CONSTITUENT TREND PLOT



GRAPH
8



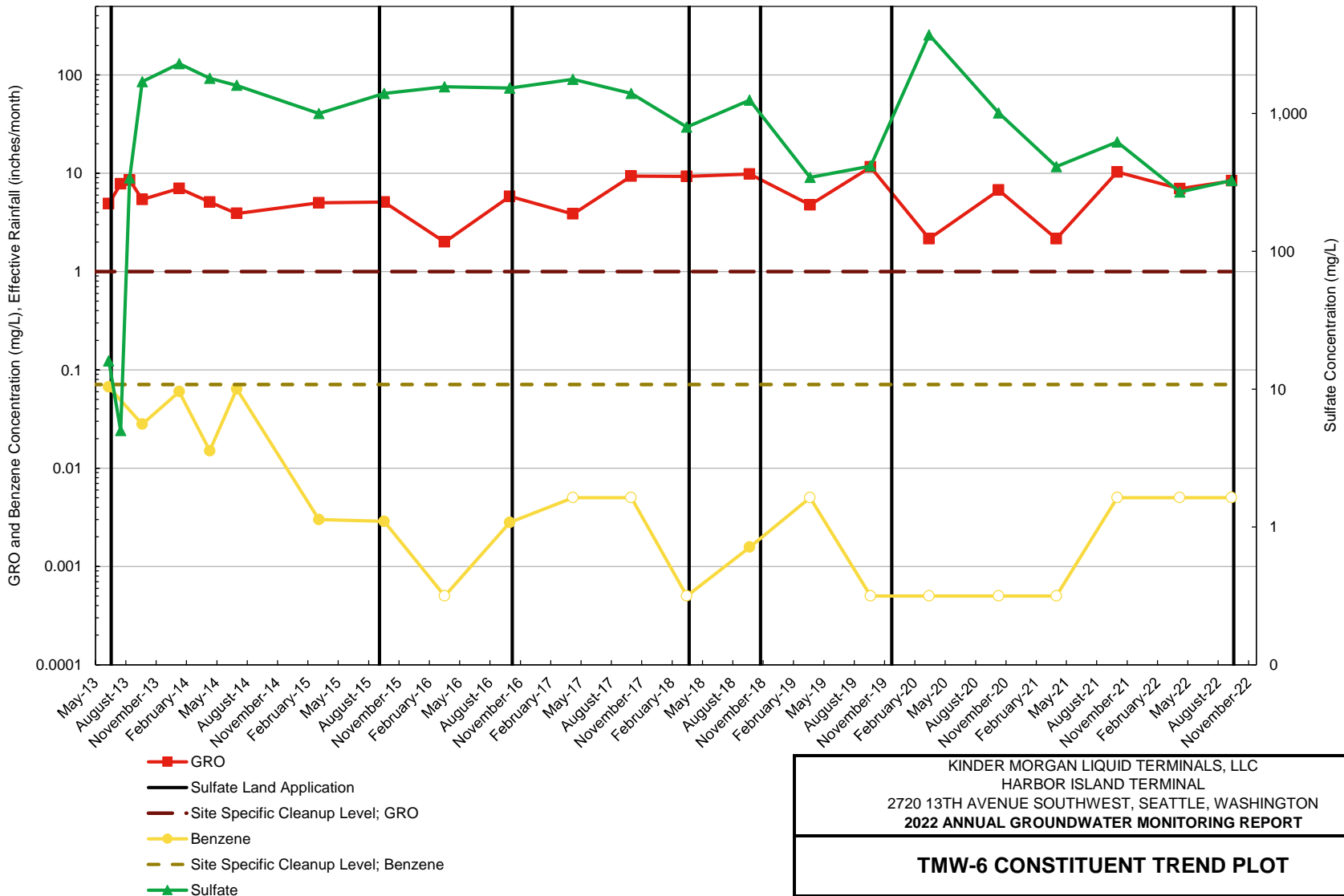
Notes:
 1. GRO = gasoline range organics
 2. mg/L = milligrams per liter
 3. Open data points indicate that concentrations were not measured above the laboratory reporting limit (RL), plotted at half the RL

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TMW-5 CONSTITUENT TREND PLOT



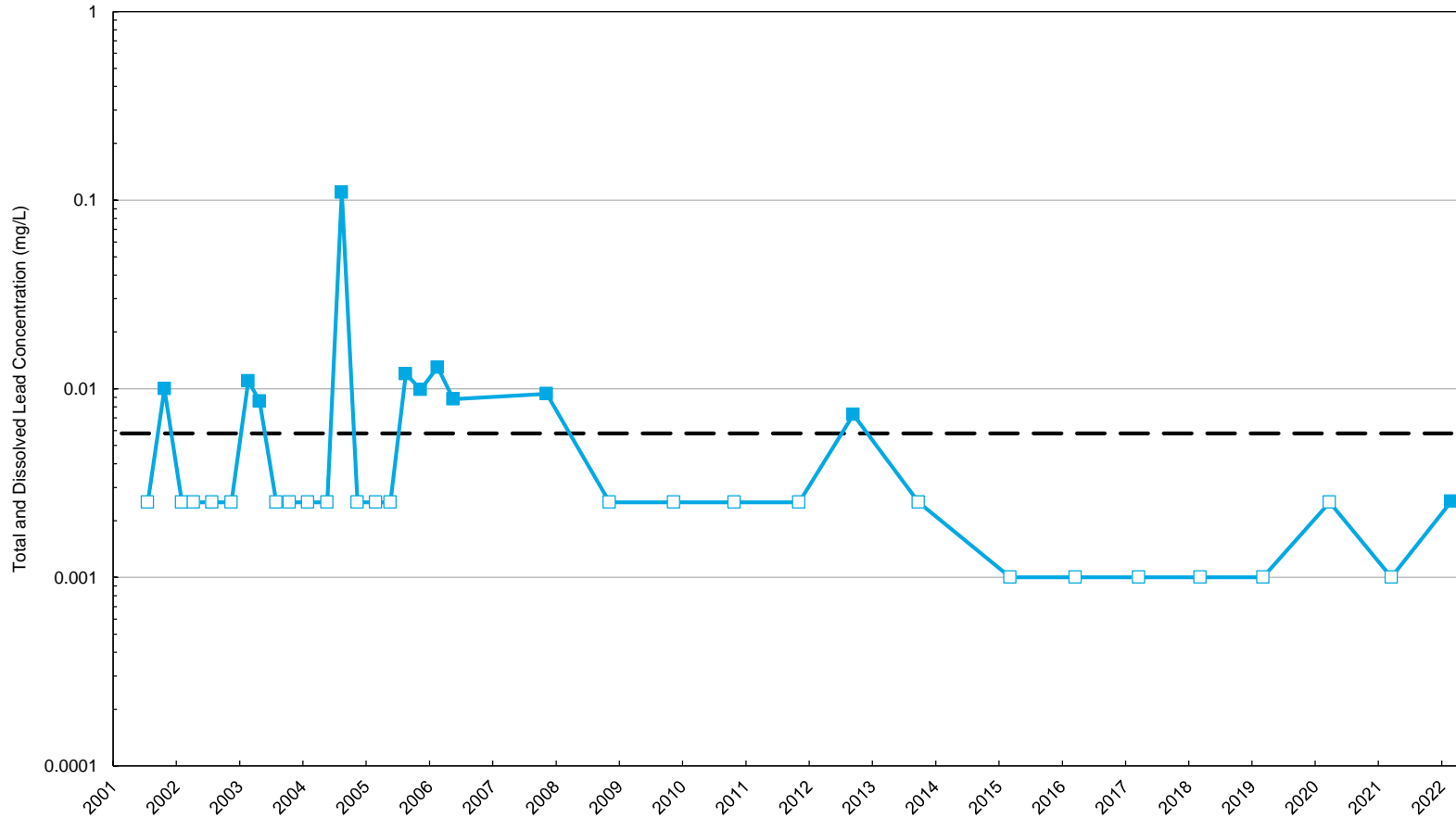
GRAPH
9



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TMW-6 CONSTITUENT TREND PLOT





— • Site-Specific Cleanup Level; Total and Dissolved Lead
 — □ Total Lead

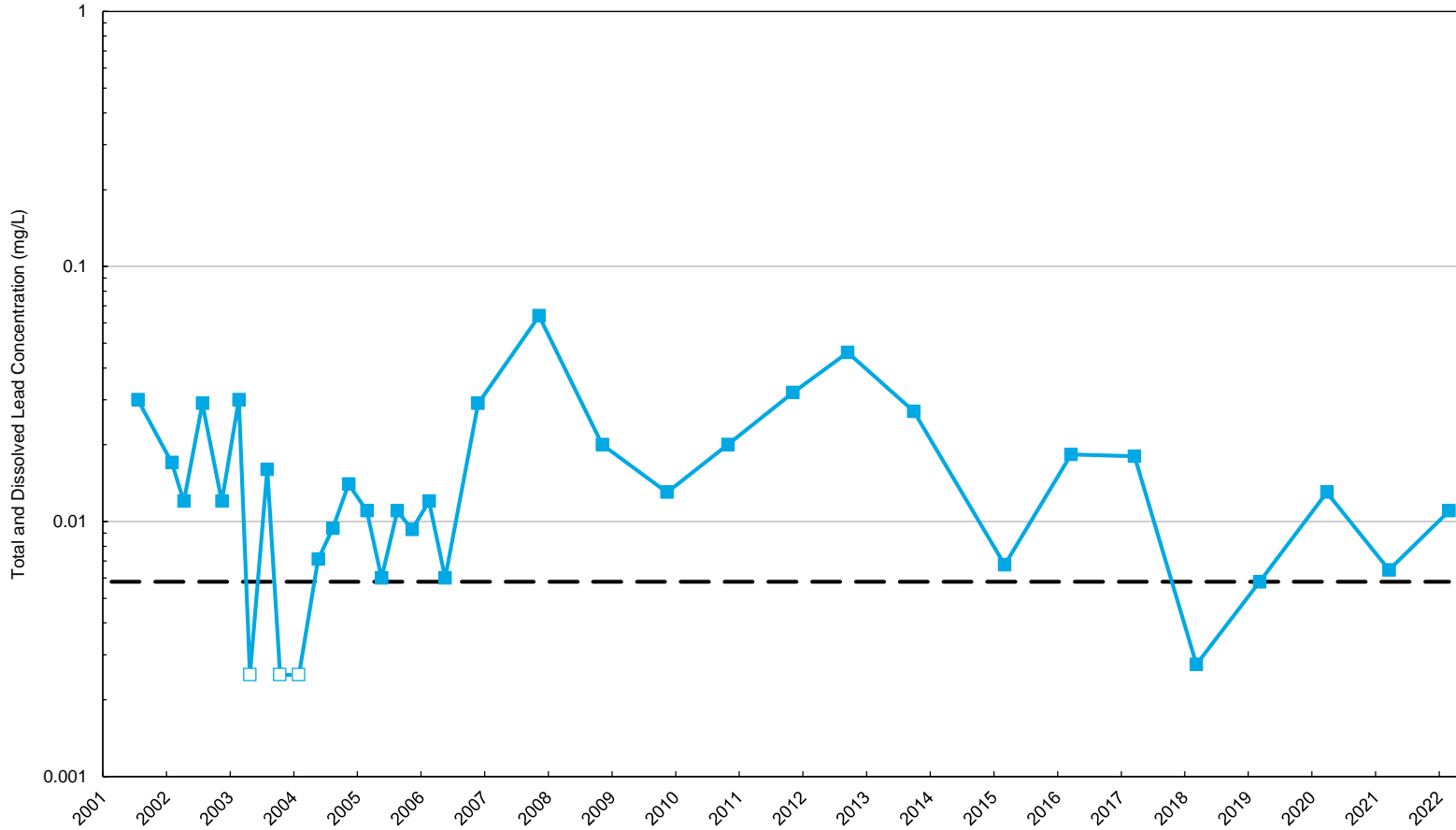
Notes:
 1. mg/L = milligrams per liter
 2. Open data points indicate that concentrations were not measured above the laboratory reporting limit (RL), plotted at half the RL

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MW-5 CONSTITUENT TREND PLOT



GRAPH 11



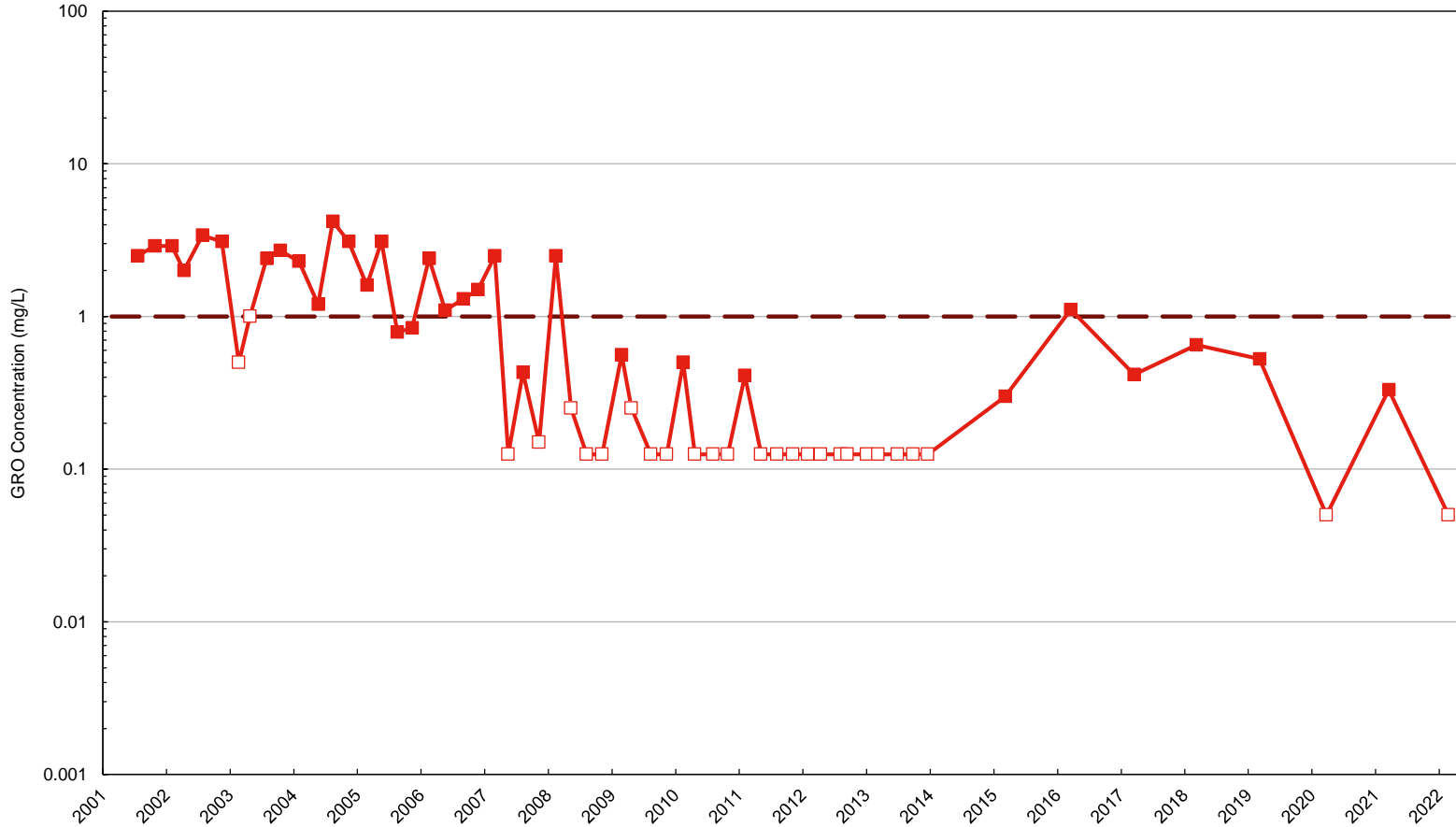
— Site-Specific Cleanup Level; Total and Dissolved Lead
 — Total Lead

Notes:
 1. mg/L = milligrams per liter
 2. Open data points indicate that concentrations were not measured above the laboratory reporting limit (RL), plotted at half the RL

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MW-8 CONSTITUENT TREND PLOT





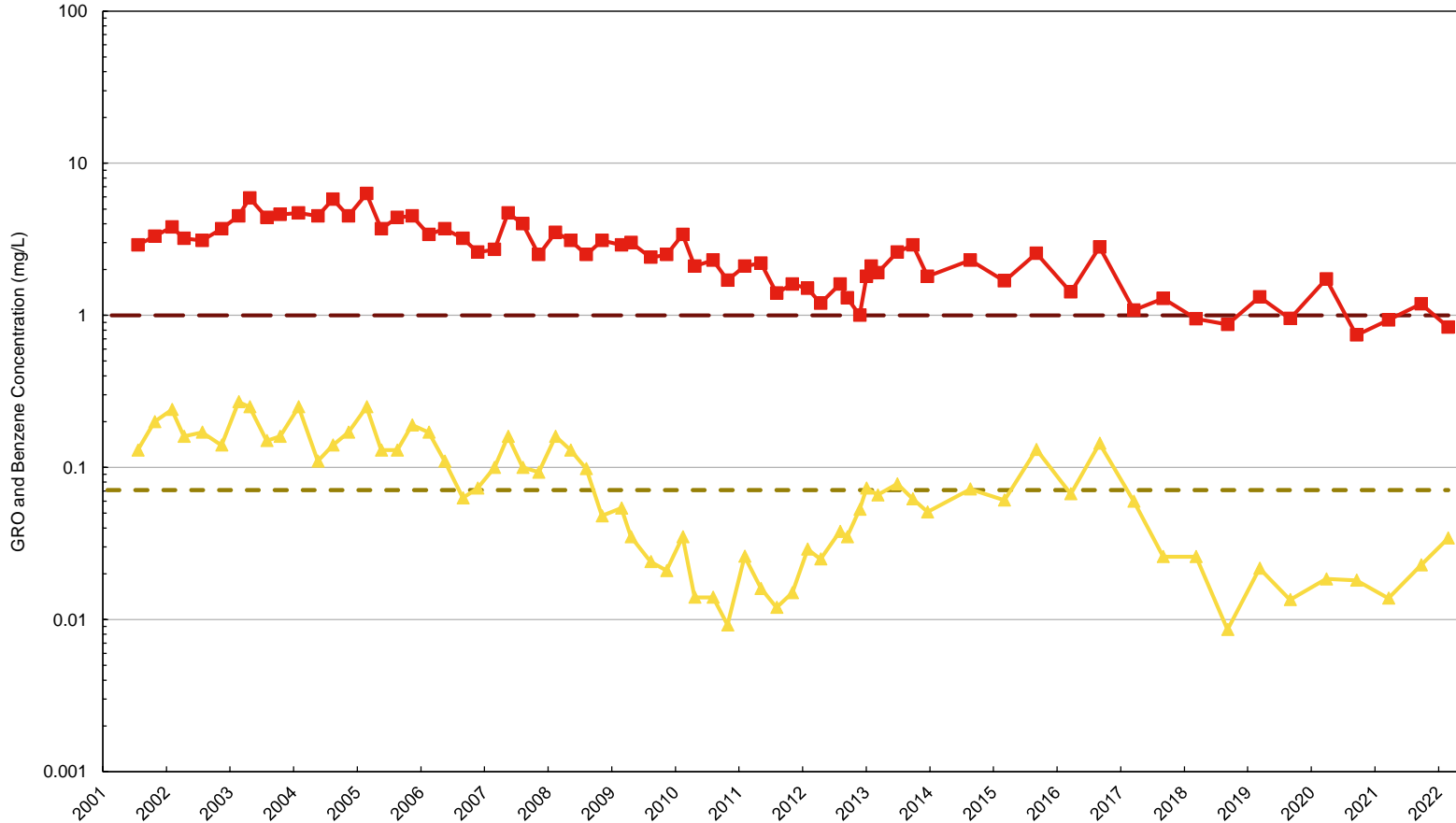
— • Site-Specific Cleanup Level; GRO
■ GRO

Notes:
 1. GRO = gasoline range organics
 2. mg/L = milligrams per liter
 3. Open data points indicate that concentrations were not measured above the laboratory reporting limit (RL), plotted at half the RL

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MW-14 CONSTITUENT TREND PLOT





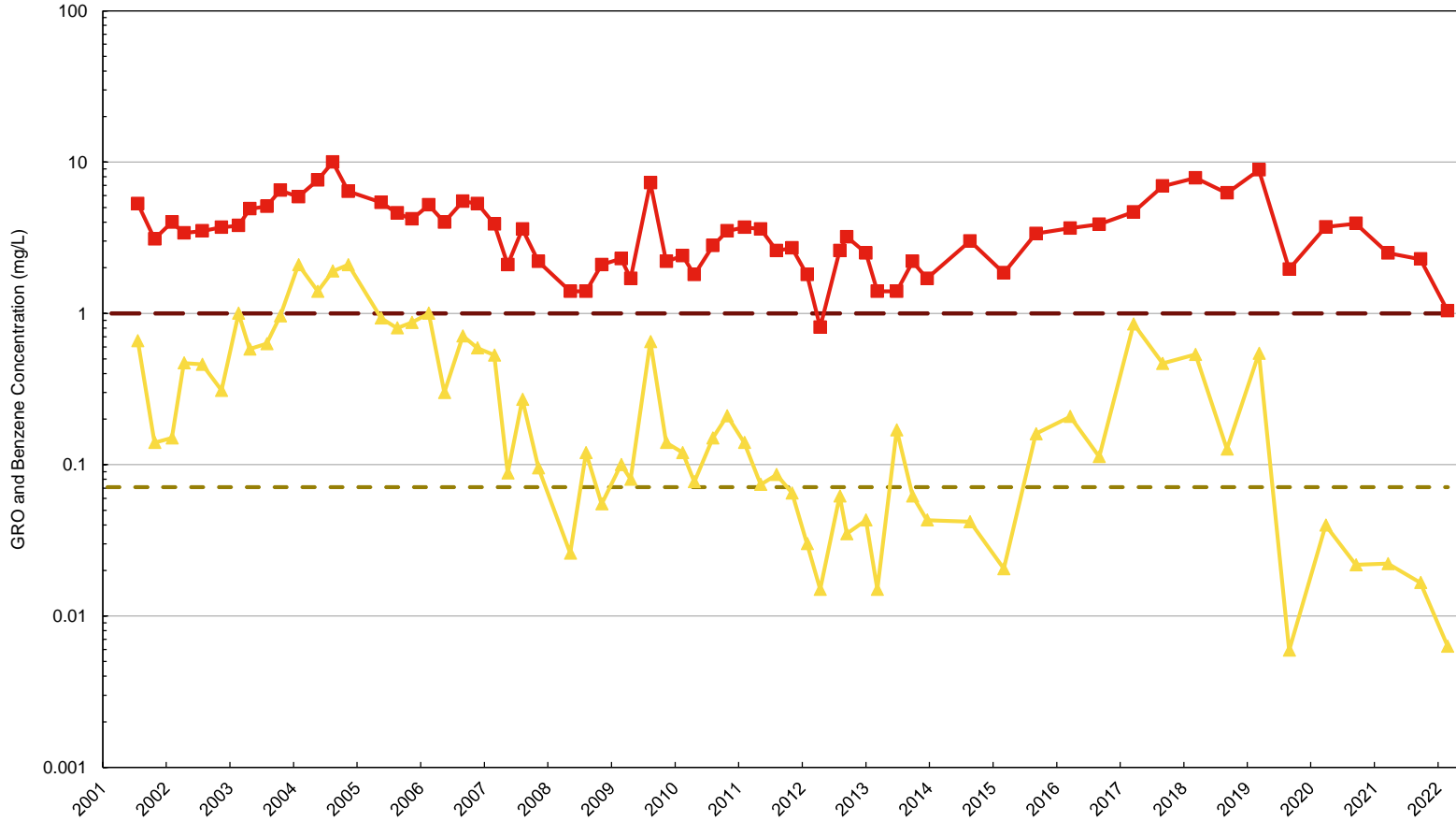
- Site-Specific Cleanup Level; GRO
- GRO
- ▲— Site-Specific Cleanup Level; Benzene
- ▲— Benzene

Notes:
 1. GRO = gasoline range organics
 2. mg/L = milligrams per liter

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A-27 CONSTITUENT TREND PLOT

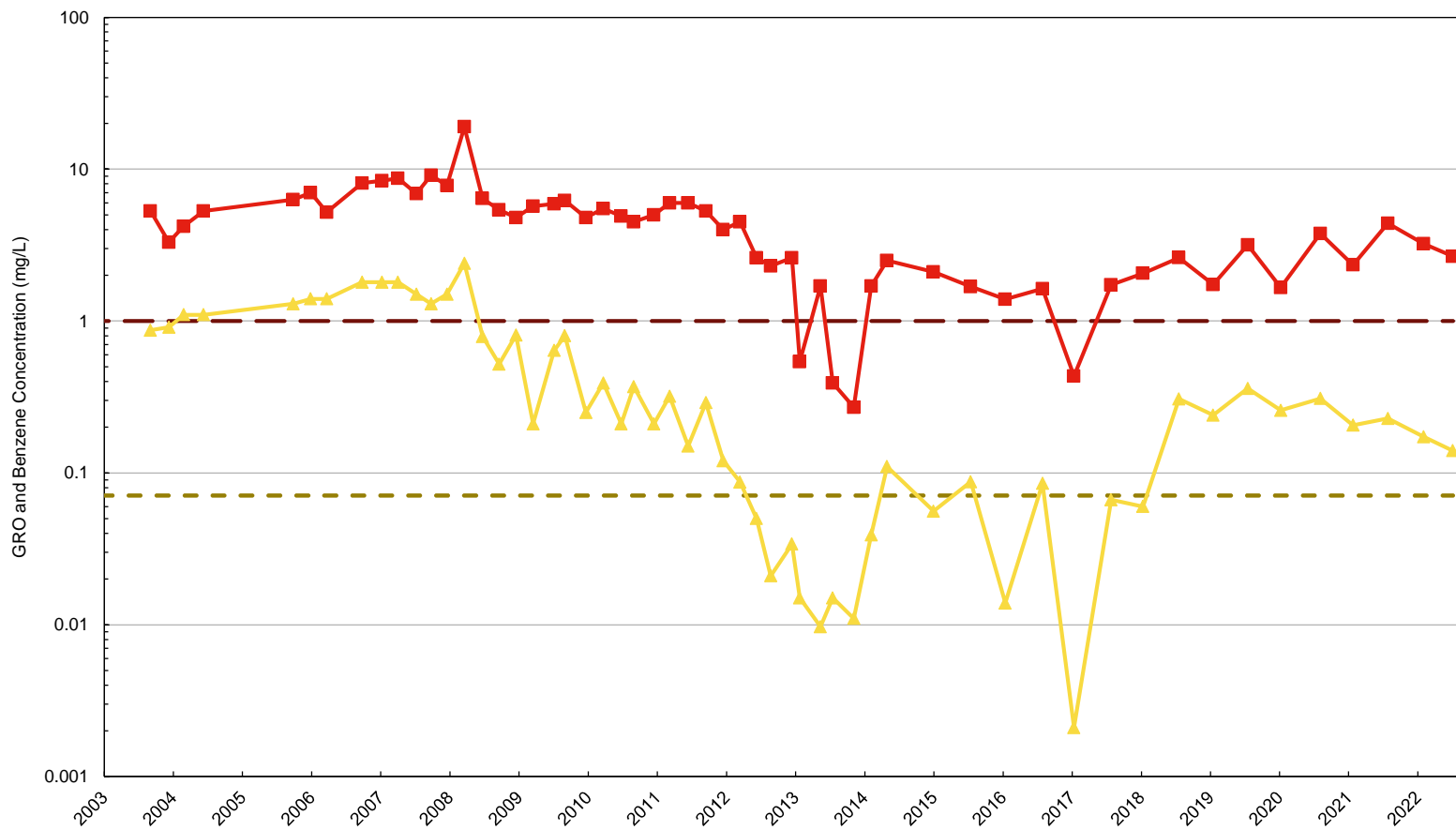




- Site-Specific Cleanup Level; GRO
- GRO
- ▲— Site-Specific Cleanup Level; Benzene
- ▲— Benzene

Notes:
 1. GRO = gasoline range organics
 2. mg/L = milligrams per liter

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A-28R CONSTITUENT TREND PLOT	
	GRAPH 15



- Site-Specific Cleanup Level; GRO
- GRO
- ▲— Site-Specific Cleanup Level; Benzene
- ▲— Benzene

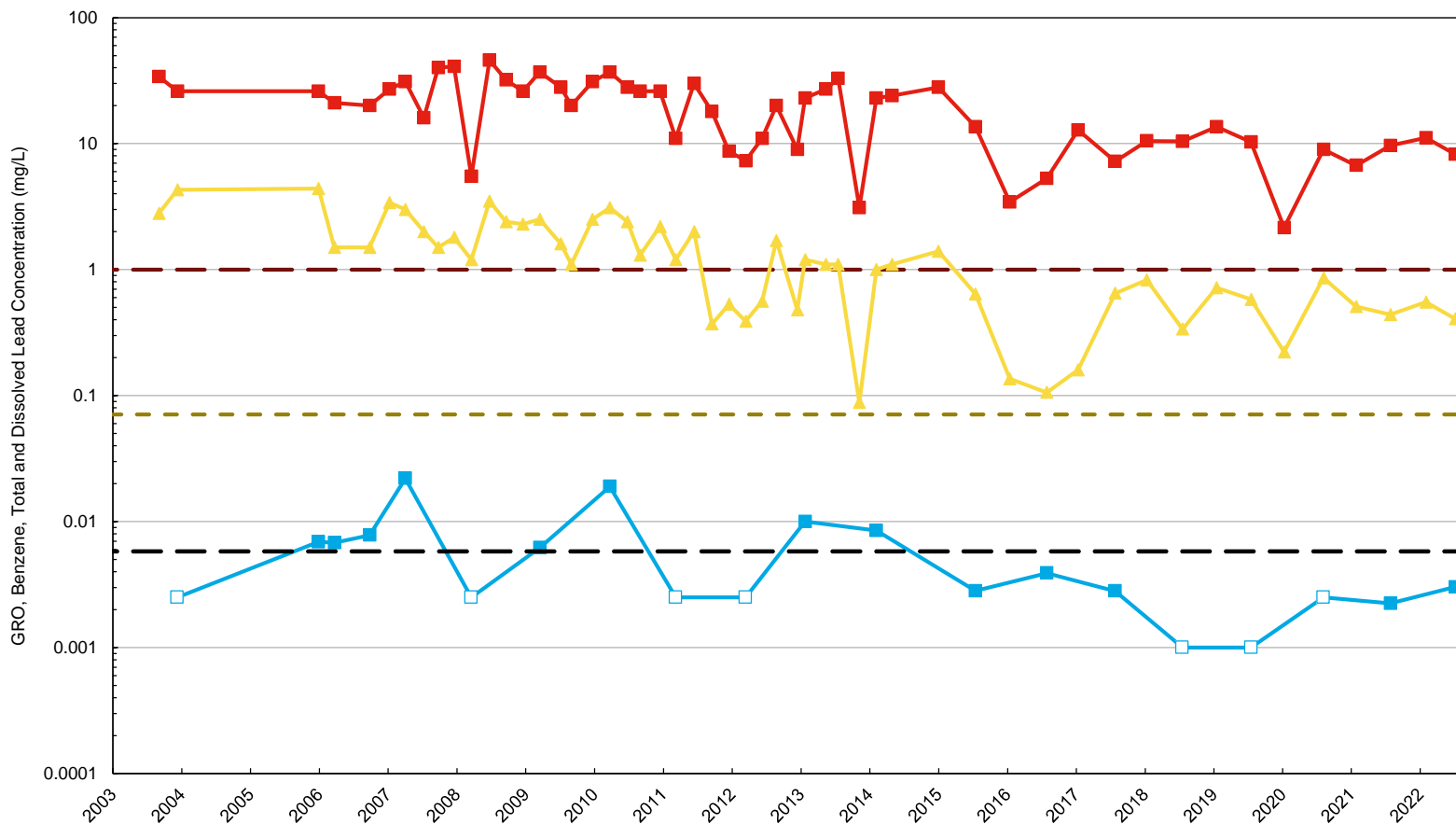
Notes:
 1. GRO = gasoline range organics
 2. mg/L = milligrams per liter

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MW-23 CONSTITUENT TREND PLOT



GRAPH
16



- Site-Specific Cleanup Level; GRO
- GRO
- Site-Specific Cleanup Level; Benzene
- ▲ Benzene
- Total Lead
- Site Specific Cleanup Level; Total and Dissolved Lead

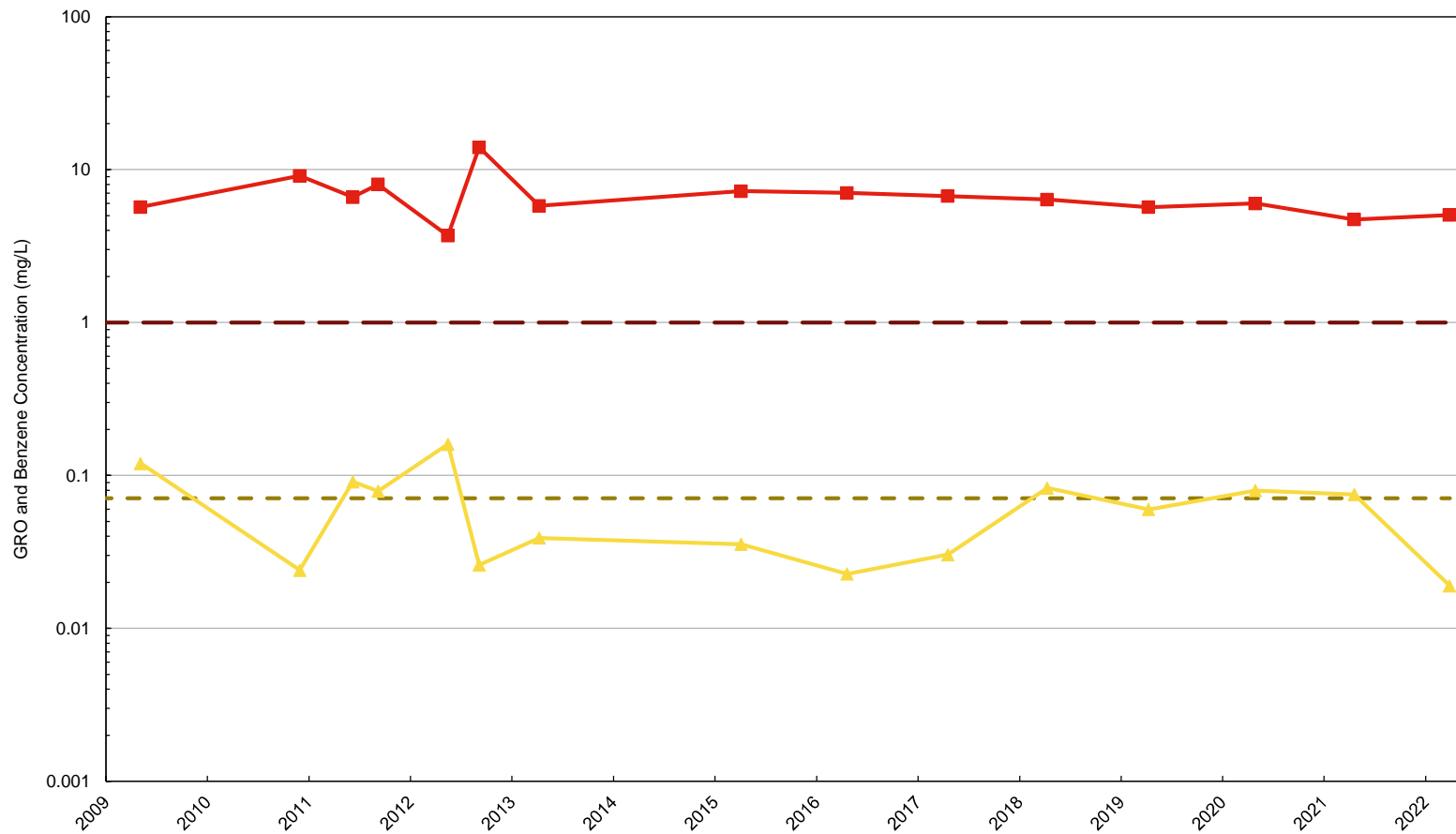
Notes:
 1. GRO = gasoline range organics
 2. mg/L = milligrams per liter
 3. Open data points indicate that concentrations were not measured above the laboratory reporting limit (RL), plotted at half the RL

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MW-24 CONSTITUENT TREND PLOT



GRAPH
17



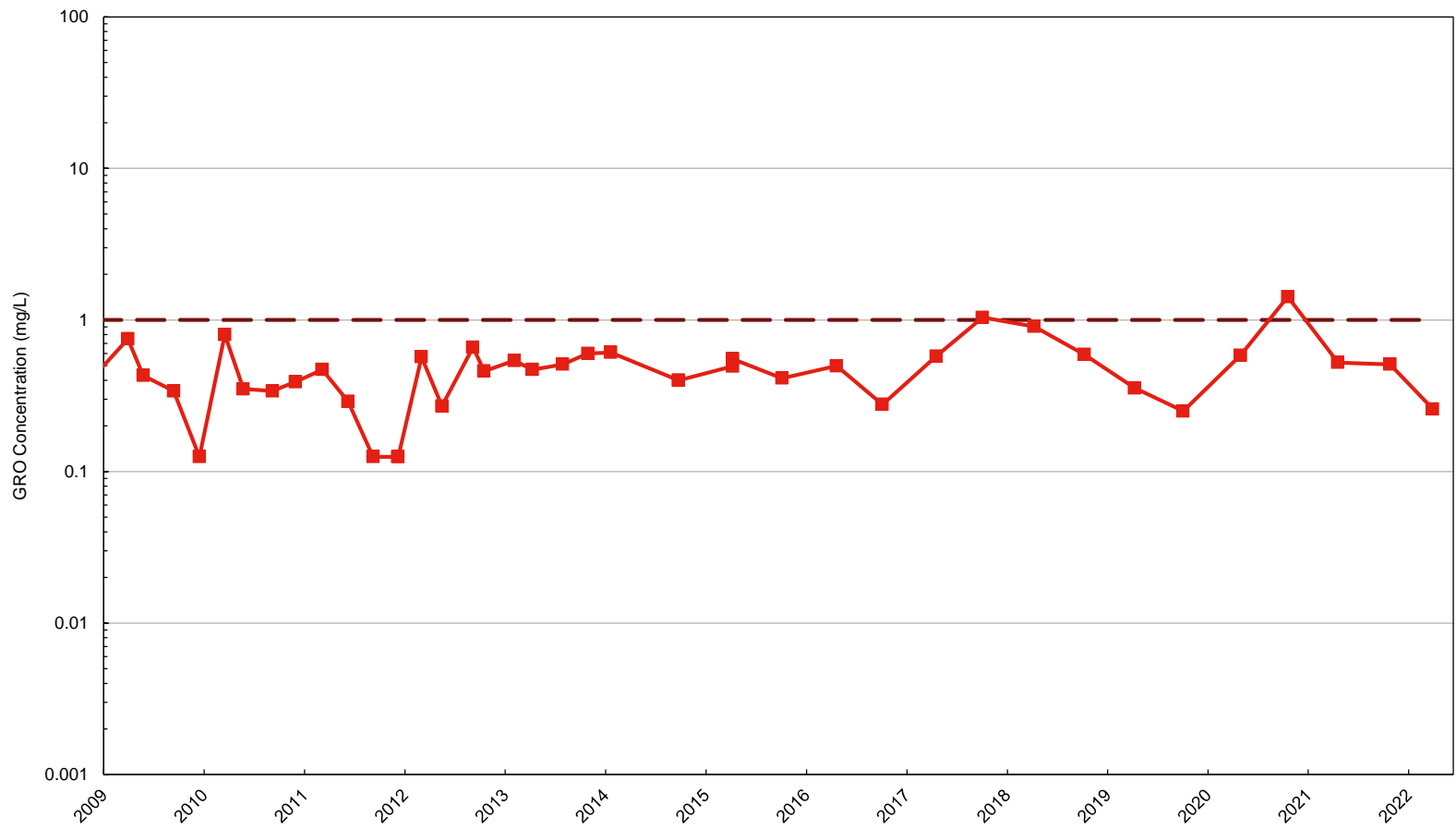
- Site-Specific Cleanup Level; GRO
- GRO
- Site-Specific Cleanup Level; Benzene
- ▲— Benzene

Notes:
 1. GRO = gasoline range organics
 2. mg/L = milligrams per liter

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TMW-B1 CONSTITUENT TREND PLOT





— • Site-Specific Cleanup Level; GRO
—■ GRO

Notes:
 1. GRO = gasoline range organics
 2. mg/L = milligrams per liter

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A-5 CONSTITUENT TREND PLOT

	GRAPH 19
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Appendix A

Groundwater Monitoring Compliance Program

Compliance Monitoring Plan

Site-Wide Groundwater Compliance Monitoring Plan - Proposed Reduced Monitoring

Ecology Approval Letter

Technical Revision Request – Low-Flow Groundwater Sampling

Ecology Approval Letter

Revised Site Groundwater Monitoring Plan

Ecology Approval Emails

Groundwater Analytical Reduction Request

Ecology Approval Email

Compliance Monitoring Plan

EXHIBIT F

COMPLIANCE MONITORING PLAN
GATX TERMINALS CORPORATION
HARBOR ISLAND TERMINAL
SEATTLE, WASHINGTON

ISSUED TO:

WASHINGTON STATE DEPARTMENT OF ECOLOGY

SUBMITTED BY:

GATX TERMINALS CORPORATION

October 27, 1999

PREPARED BY:

KHM ENVIRONMENTAL MANAGEMENT, INC.
16771 NE 80th Street, Suite 203
REDMOND, WASHINGTON 98052

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Appendix A – Compliance Sampling and Analysis Plan

10 Introduction

This Compliance Monitoring Plan has been prepared to describe the protocol and procedures that will be used to confirm that cleanup requirements have been achieved at the GATX Harbor Island Terminal (Terminal) located in Seattle, Washington. The monitoring plan has been prepared to satisfy the requirements of the Model Toxics Control Act (MTCA) regulations WAC 173-340-410, -720, and -820. This plan was also prepared in accordance with requirements of the Consent Decree, cooperatively entered into between GATX Terminals Corporation (GATX) and the Washington State Department of Ecology (Ecology).

A variety of components included in this compliance monitoring plan address the requirements of WAC 173-340-410. These components include:

- 1) Introduction: Discuss site overview, hydrogeology, cleanup action summary, monitoring objectives and rationale, types of monitoring, monitoring locations, and schedule;
- 2) Protection Monitoring: Describe the criteria for protection monitoring under WAC 173-340-400;
- 3) Performance Monitoring: Describe the criteria and methodology for performance monitoring of free product recovery, natural attenuation, and other selected remedial technologies to document that the cleanup action is performing as anticipated;
- 4) Confirmation Monitoring: Describe the confirmation criteria which monitors the long-term effectiveness of the cleanup action once cleanup and performance standards have been attained;
- 5) Data Evaluation and Reporting: Discuss free product monitoring, groundwater sampling and analytical procedures, data validation, evaluation procedures, reporting, and monitoring schedules;
- 6) Criteria for Meeting Performance and Compliance Standards: Discuss criteria to be used to determine if performance and compliance standards have been met; and
- 7) Contingency Plans: Discuss the steps that will be implemented in the event the proposed cleanup actions are not effective.

11 SITE DESCRIPTION

The GATX Harbor Island Terminal is located at 2720 13th Avenue Southwest in Seattle, Washington and is part of a U.S. EPA Superfund Site, the Terminal Operable Unit. The facility, approximately 14 acres in size, is located in the highly industrialized north-central section of Harbor Island. The Terminal is situated on relatively level property, with surface elevations ranging between 6 to 11 feet above sea level. There are no surface water bodies within the Terminal property boundaries. The site is situated approximately 1,400 feet from the West Waterway and over 1,000 feet from the East Waterway. The site is zoned industrial and meets the industrial criteria established under WAC 173-340-745. It is likely that the site will remain an industrial facility in the foreseeable future because of the site zoning, and, perhaps more importantly, because of the substantial industrial improvements to Harbor Island (e.g., construction of cargo handling facilities and construction of major petroleum distribution pipelines for the island). Ecology and EPA have determined that there is no current or planned future use of groundwater beneath Harbor Island for drinking water purposes.

The Terminal is presently divided into five distinct areas. These areas include the A, B, C, D, and E Yards. The A Yard contains two fuel tanker truck-loading racks. The administrative office and maintenance building is also situated in the A Yard. The A Yard is entirely paved with asphalt or concrete. The A Yard is bounded by a containment dike for the B Yard on the north, and by chain-link fencing on the south, east, and west.

The B and C Yards are used as bulk fuel storage areas. Fifteen above ground storage tanks are located within the B Yard and six are situated within the C Yard. Both yards are mostly unpaved and are surrounded by concrete containment dikes. The D Yard is situated between the B and C Yards and has been used to route product and utility lines. Several maintenance buildings and material handling areas are also situated within the D Yard.

The Terminal is situated on the southeast portion of a groundwater mound which is centered on the northern half of Harbor Island. Groundwater flow migration is south and southeast across the site. The primary groundwater discharge point is the Duwamish River East and West Waterways. Due to the dampening effect of the bulkhead structures along the East and West Waterways of the Duwamish River, and the inland location of the site, water table fluctuations in response to tidal influence and seasonal fluctuations is less than one foot.

12 SELECTED CLEANUP ACTION SUMMARY

The selected cleanup action is designed to accomplish the following requirements: protect human health and the environment, comply with cleanup standards established in WAC 173-340-700, comply with applicable state and federal laws under WAC 173-340-710, provide compliance monitoring as set forth in WAC 173-340-410, use permanent solutions to the maximum extent practicable as mandated in WAC 173-340-360 (2), (3), (4), (5), (7), and (8), provide a reasonable time restoration in accordance with WAC 173-340-360 (6), and consider public concerns as designated in WAC 173-340-600.

Cleanup actions at the site include source removal in the soil and groundwater and recycling/off-site disposal, monitoring, natural attenuation, and institutional controls.

Soil. The goal of soil cleanup standards for petroleum hydrocarbons is to protect the beneficial use of groundwater (surface water quality and associated ecosystem). The preferred alternative will result in substantive compliance with the soil cleanup standards by reducing concentrations of contaminants in soils to levels that will support and maintain compliance with ground water quality standards.

The specific soil cleanup actions are:

- In-situ treatment of soil that includes soil vapor extraction (SVE), and natural attenuation/intrinsic biodegradation.
- Excavation of accessible total petroleum hydrocarbons (TPH) subsurface soil hot spots with concentrations above 10,000 milligrams per kilogram (mg/kg) to the extent practicable in the C Yard.
- Excavation of accessible TPH subsurface hot spots with concentrations above 20,000 mg/kg to the extent practicable in the A, B, and D Yards.
- In-situ treatment of inaccessible soil hot spots to the extent practicable in all Yards.
- Natural attenuation of the residual TPH in the subsurface soil.

- Excavation or capping of lead- and arsenic-impacted surface soil with concentrations above 1,000 mg/kg and 32.6 mg/kg, respectively, in the B and C Yards.

Groundwater. The achievement of cleanup levels in groundwater shall be measured at points of performance and compliance located within the product plume area and at the downgradient edge of the site. The wells at the downgradient edge of the site are considered conditional points of compliance wells. These points of compliance and performance shall consist of a network of monitoring wells located in the product plume area and on the downgradient property boundary. Other wells (sentry wells) situated off-site will also be used to document plume migration, performance standards, and to warn of any unanticipated change in off-site groundwater conditions. Exact locations of these wells are identified in the Section 2 of this plan.

The specific cleanup actions include:

- Active and passive free product recovery in the A, B, and C Yards,
- Dual-phase extraction of groundwater and product in the A and C Yards,
- Extraction of groundwater and/or free product,
- Active and passive point-source extraction in the A, B, and C Yards,
- Partially-penetrating down-gradient vertical barrier to stop product migration in the A and C Yards,
- Free product monitoring in the A, B, C, and D Yards,
- Groundwater monitoring in point of compliance (confirmation), performance and offsite (sentry) wells for the site, and
- Institutional control in the form of a deed restriction for the site.

13 MONITORING OBJECTIVES AND RATIONALE

The cleanup action incorporates monitoring to determine that cleanup standards are achieved and maintained after remedial actions have been completed. During the remedial actions, performance monitoring will be conducted to confirm that cleanup actions have attained cleanup standards and treatment goals. After remedial actions are performed, performance monitoring will be conducted to confirm and document that cleanup actions have attained cleanup standards and performance standards. Protection monitoring will be used to adequately protect human health and the environment during construction and operation of the cleanup actions.

The achievement of cleanup levels in groundwater shall be measured at points of performance and compliance located within the free product plume area and at the downgradient edge of the site. The overall objective of the compliance monitoring wells downgradient of the free product plumes and on the property boundaries is to provide additional safeguards by providing both Ecology and GATX with early warning of potential contamination migration and basis for Contingency Plan reviews and implementation, if necessary. Sentry wells, situated off property limits and downgradient of dissolved petroleum hydrocarbon plumes, will also be used to monitor migration of dissolved petroleum constituents.

Monitoring methods, monitoring locations, and types of analyses were selected to monitor the effectiveness of the cleanup actions in attaining the soil, free product, and groundwater cleanup standards for the site. The specific details of these monitoring activities are described in subsequent sections of this document.

13.1 SOIL

TPH, arsenic, and lead concentrations were above levels requiring action at the site.

The determination of adequate soil treatment will be based on the ability to comply with the groundwater cleanup standards for the site, to meet performance standards designed to minimize human health or environmental exposure to soils above cleanup levels, and to provide practicable treatment of contaminated soils.

Monitoring objectives are based on the following site observations:

1. **TPH in the A Yard.** Soil TPH concentrations were above the cleanup action levels (20,000 mg/kg) north, northwest and west of the Garage Building Area.
2. **TPH, Arsenic, and Lead in the B Yard.** Soil TPH concentrations were above the cleanup action levels (20,000 mg/kg) between Tanks 18 and 21, and southwest of Tank 22. Concentrations of arsenic and lead in surface soil were above the cleanup levels (32.6 and 1,000 mg/kg, respectively) in unpaved soil covering roughly half of the B Yard.
3. **TPH, Arsenic, and Lead in the C Yard.** Soil TPH concentrations were above the cleanup action levels (10,000 mg/kg) at seven locations in the C Yard as follows: i) MW-4, SS-17, SS-18, which is southeast of Tank 44, ii) SS-2, which is northwest of Tank 44, iii) S-6, which is northwest of Tank 37, iv) SS-2 and SS-13, which is between Tanks 42 and 39, v) S-5 and S-8, which is between Tanks 35 and 37, vi) S-10, which is north of Tank 35, and vii) S-12, which is southwest of Tank 35. Concentrations of arsenic and lead in surface soil were above the cleanup levels (32.6 and 1,000 mg/kg, respectively) in unpaved soil covering roughly half of the C Yard.

13.2 GROUNDWATER

Groundwater will be monitored for benzene, toluene, ethylbenzene, TPH-G, TPH-D, TPH-O, free product, and lead in specific areas of the site

prior, during and after implementation of the cleanup action discussed in Section 1.2. The selected analysis and monitoring locations correspond to the soil cleanup areas identified in Section 1.3.1, areas of product recovery, and the water quality chemistry data for the site.

Wells Not Included in Compliance Monitoring Program.

Monitoring wells not included in the confirmation, performance, or the sentry wells are excluded from this Compliance Groundwater Monitoring Program. After the one-year review of the site groundwater analytical data as discussed in Section 3.4.1, Ecology and GATX will review potential wells for abandonment as appropriate.

Damaged Wells Due To Cleanup Action Implementation.

Monitoring wells designated for confirmation, performance or sentry wells that become disabled as a result of the cleanup action implementation must be replaced. Ecology must approve the new proposed location before replacement of the damaged groundwater monitoring well.

Areas Above Cleanup Levels

BTEX and TPH Areas. Shallow monitoring wells with periodic or consistent detection of BTEX constituents or TPH above the cleanup levels include, Well 24, T-10, T-17, T-11, MW-3, T-15, T-8, T-5, T-19, T-13, T-18, Well 17, MW-14, MW-7, Well 15, MW-9, A-27, A-28, A-26, A-24, A-3, A-21, A-23, A-15, and A-10. These wells are located in or around Yards A, B, C, and D and, due to historic detection of petroleum-hydrocarbon-related IHSs above cleanup levels (Table 2), these monitoring wells will be included in the compliance monitoring program. Monitoring in these wells will be focused on the IHSs for groundwater to provide water quality data for baseline data and trend analysis. Furthermore, a selection of these wells will be monitored for natural attenuation parameters (Table 3).

Lead Areas. Total lead was detected periodically above the cleanup level (0.0058 mg/l) in the following wells: MW-1, MW-2, MW-3, MW-5, MW-6, MW-7, MW-07, MW-8, MW-9, MW-11D, MW-12, MW-13, A-14, A-21, A-23, A-24, A-28, SF-01, SH-02, SH-04, and SH-05. Dissolved lead was detected periodically above the cleanup level (0.0058mg/l) in MW-7. These wells will be included in the compliance monitoring wells and analyzed for total and dissolved lead as part of the performance and confirmation monitoring of the surface cleanup action for the site as described in Section 1.2.

14 COMPLIANCE MONITORING CATEGORIES AND SCHEDULE

Groundwater compliance monitoring will consist of free product monitoring, groundwater elevation monitoring, and groundwater sampling.

- Free product monitoring will consist of measuring free product thickness in areas of the site as part of the performance standard evaluation after implementation of the preferred remedial alternative.
- Groundwater elevation monitoring will be performed during free product monitoring events and during groundwater sampling events.
- Groundwater samples will be collected from designated GATX compliance monitoring wells, performance monitoring wells, and sentry wells.

The monitoring objectives have been categorized as protection, confirmation, and performance monitoring. These three forms of compliance monitoring will be performed in accordance with WAC 173-340-410.

Protection Monitoring to confirm that human health and the environment are adequately protected during construction and the operation and maintenance period of the cleanup action.

Performance Monitoring to confirm that the cleanup action has attained cleanup standards and other performance standards.

Confirmation Monitoring (Confirmation and Sentry Wells) to confirm the long-term effectiveness of the cleanup action once cleanup actions and other performance standards have been attained.

Monitoring Schedule. Groundwater sampling will begin in the quarter that the Consent Decree is approved (December 1999) and will continue for five years (December 2004). Sampling will occur quarterly for the first year. Ecology and GATX will review the data after one year. If trends are declining, the sampling frequency and number of parameters may be reduced.

2.0 Compliance Monitoring

Compliance monitoring will begin within the quarter the Consent Decree is approved and will continue for five years. Figure 1 shows the locations of all wells in which product will be monitored, groundwater levels will be measured, and groundwater samples will be collected as part of the site compliance monitoring program. Table 1 provides a list of compliance monitoring wells, identifying the well location, monitoring objective, and well use. A summary of the analytical parameters to be used in compliance monitoring is presented in Tables 2 and 3. A detailed description of each compliance-monitoring component, including the media type, location, and schedule, is presented this section. Specific schedule details are discussed within Sections 2.2.3 and 2.3.3. and Table 1.

2.1 PROTECTION MONITORING

The objective of protection monitoring is to confirm that human health and the environment are adequately protected during construction, operation and maintenance of the cleanup action [WAC 173-340-410(1)(a)]. Protection monitoring will be addressed in the health and safety plan prepared in conjunction with the engineering design report, construction plans and specifications, and operation and maintenance plan (WAC 173-340-400).

2.2 PERFORMANCE MONITORING

The objective of performance monitoring is to confirm that the cleanup action has attained cleanup standards and other performance standards as appropriate [WAC 173-340-410(1)(b)]. Performance monitoring will consist of free product monitoring during product recovery activities and groundwater sampling to evaluate the effectiveness of soil and groundwater cleanup actions and natural attenuation.

2.2.1 PERFORMANCE MONITORING LOCATIONS

Wells A-14, A-21, A-23, A-27, MW-3 through MW-9, MW-14, MW-07, SH-02, SH-05, and three new wells will be used for performance wells. These wells are located in or around Yards A, B, C, and D within groundwater plume. Due to historic detection of petroleum-hydrocarbon-related IHSs above cleanup levels, these monitoring wells will be included in the compliance monitoring program. Monitoring in these wells will be focused on the IHSs for groundwater to provide water quality data for baseline data

and trend analysis. These wells will also be monitored for natural attenuation parameters (Table 3).

Areas Below Cleanup Levels: IHSs were not detected above the groundwater cleanup levels (Table 2) more than once in shallow monitoring wells MW-1, MW-2, MW-5, MW-07, MW-8, MW-12, MW-13, MW-16, MW-17, MW-18, A-8, A-24, SH-02, SH-05, T-3, T-4, and T-12. Most of these wells are located at the downgradient sides of the C Yard and some are located in the A, B, and D Yards.

Free Product: Shallow wells located in or around a free product plume in the C Yard include Well 20, Well 21, Well 22, MW-4, Well 25 and Well 27. Shallow wells located in or around a free product plume within the A Yard, include, A-6, A-4, A-29, A-22, A-16, A-13, A-14, A-20 and A-19. A shallow well located in or around a free product plume within the B Yard is Well 12.

All monitoring wells where water level measurements are taken will be measured for free product. A measurable thickness of free product is defined as greater than or equal to 0.01 feet. There are presently 76 monitoring wells being used to develop groundwater elevation contours for the site.

A Yard: Shallow wells located in or around a free product plume at the A Yard with current free product detection include A-6, A-4, A-29, A-22, A-16, A-13, A-14, A-20 and A-19.

B Yard: Shallow well located in or around a free product plume at the B Yard with current free product detection is Well 12.

C Yard: Shallow wells located in or around a free product plume at the C Yard with historic and current free product detection include Well 20, Well 21, Well 22, MW-4, Well 25 and Well 27.

Product performance monitoring will be performed in these wells prior, during, and after implementation of the remedial action alternatives discussed in Section 1.2. The product performance standard is a “measurable product thickness”, and the product cleanup standard is “no visible sheen.” Sheen is defined as a visible display of iridescent colors on equipment or water removed from a monitoring well. After the performance standard has been met in these wells, they will be sampled for BTEX, TPH, (Table 2) and natural attenuation parameters (Table 3). Product shall be removed from the water table throughout the site, when ever present, to the extent technically feasible.

Dissolved TPH Constituents: Dissolved TPH constituents of TPH-G, -D, -O, and BTEX performance monitoring will be monitored in these wells prior, during and after implementation of the remedial action alternatives discussed in Section 1.2 for baseline data and trend analysis. Shallow monitoring wells with periodic or consistent detection of BTEX constituents or TPH above the cleanup levels include Wells 15, 17, 24, MW-3, MW-7, MW-9, MW-14, A-3, A-10, A-15, A-21, A-23, A-24, A-26, A-27, and A-28. These wells are located in or around Yards A, B, C, and D. Due to historic detection of petroleum-hydrocarbon-related IHSs above cleanup levels (Table 2), some of these monitoring wells will be included in the compliance monitoring program. Monitoring in these selected wells will be focused on the IHSs for groundwater to provide water quality data for baseline data and trend analysis. Additionally, these selected wells will be monitored for natural attenuation parameters (Table 3).

A Yard: Shallow well located adjacent to a free product plume at the A Yard with dissolved TPH constituents detected above cleanup standards (Table 2) include A-23 and A-28.

B Yard: Shallow well located adjacent to a free product plume at the B Yard with dissolved TPH constituents detected above cleanup standards (Table 2) is MW-7.

C Yard: Shallow wells located in or around a free product plume and soil TPH hot spots at the C Yard with dissolved TPH constituents detected above cleanup standards (Table 2) include MW-3, MW-4, Well 24, Well 25, T-5, T-18, and T-19.

D Yard: Shallow wells located adjacent to a free product plume and soil TPH hot spots at the D Yard with dissolved TPH constituents detected above cleanup standards (Table 2) include Wells MW-14, Well 17, T-13, T-15, and T-17.

Total and Dissolved Lead: Total lead was detected periodically above the cleanup level (Table 2) in Wells MW-6, MW-7, MW-07, MW-8, MW-9, MW-12, MW-13, A-21, A-23, A-24, A-28, SF-01, SH-02, SH-04, and SH-05. Dissolved lead was detected periodically above the cleanup level (Table 2) in MW-7. Performance monitoring will be performed in these wells, prior, during and after implementation of the remedial alternative discussed in Section 1.2 for total lead baseline data and trend analysis.

Off-site Sentry Monitoring wells: Wells A-23, A-28, MW-12, MW-13, MW-16, and MW-18 will serve as sentry wells. These wells will be included in the program due to their location adjacent to areas with soil cleanup

actions, free product plume or to provide off property boundary well network. Monitoring in these wells will be focused on the IHSs for groundwater to provide water quality data for baseline data and trend analysis.

Background wells: Wells MW-1 and MW-2 are located upgradient along a south/southeast groundwater flow direction for the site and will serve as the site background monitoring wells. These wells will be monitored for the IHSs for groundwater and natural attenuation parameters to establish baseline and background groundwater quality data. After one year, these wells will be monitored for the IHSs for groundwater only.

2.2.2 PERFORMANCE CRITERIA

Separate-Phase Hydrocarbons: To monitor the effectiveness of the preferred remedial alternative discussed in Section 1.2 for free product, the performance criterion will be a lack of measurable product thickness in compliance monitoring wells.

Dissolved TPH Constituents and Lead: Groundwater cleanup levels (Table 2) are based on the protection of aquatic organisms and on human ingestion of such organisms. The Conditional Point of Compliance for the site groundwater is the property boundary.

Natural Attenuation: To demonstrate that natural attenuation is occurring to reduce contaminant concentrations, the performance criteria will be periodic monitoring of constituent plume data (i.e., BTEX and TPH) and a variety of other indicators of natural attenuation processes. These processes include physical, chemical, or biological processes in the form of biodegradation, dispersion, dilution, sorption, volatilization, and chemical or biological stabilization or destruction of contaminants. Following is the rationale for the selection of the natural attenuation monitoring parameters (from USEPA, 1994c).

Constituent Plume Characteristics

In the absence of natural attenuation mechanisms, constituent concentrations would remain relatively constant within the plume and then decrease rapidly at the edge of the plume. If natural attenuation is occurring, constituent concentrations will decrease with distance from the source along the flow path of the plume as a result of dispersion. If other natural attenuation mechanisms are occurring, the rate at which concentrations of constituents are reduced will be accelerated.

Monitoring of constituent concentrations in the groundwater over time will give the best indication of whether natural attenuation is occurring. If natural attenuation is occurring, the contaminant plume will migrate more slowly than expected based on the average groundwater velocity. Receding plumes typically occur when the

source has been eliminated. Natural attenuation may also be occurring in plumes that are expanding, but at a slower than expected rate. For example, in sandy soils [similar to Harbor Island] with relatively low organic carbon content (about 0.1 percent), BTEX constituents are expected to migrate at one-third to two-thirds of the average groundwater speed velocity (McAllister, 1994). Higher organic carbon content would further retard constituent migration. If constituents are migrating more slowly than expected based on groundwater flow rates and retardation factors, then other natural attenuation mechanisms (primarily biodegradation) are likely reducing constituent concentrations. For stable plumes, the rate at which contaminants are being added to the system at the source is equal to the rate of attenuation. A plume may be stable for a long period of time before it begins to recede, and in some cases, if the source is not eliminated, the plume may not recede.

Occurrence of biodegradation might also be deduced by comparison of the relative migration of individual constituents. The relative migration rates of BTEX constituents, based on the chemical properties, are expected to be in the following order:

benzene > toluene, o-xylene > ethylbenzene, m-xylene, p-xylene

If the actual migration rates do not follow this pattern, biodegradation may be responsible.

Dissolved Oxygen Indicators

The rate of biodegradation will depend, in part, on the supply of oxygen to the contaminated area. At levels of dissolved oxygen (D.O.) below 1 to 2 mg/L in the groundwater, aerobic biodegradation rates are very slow. If background D.O. levels (upgradient of the contaminant source) equal or exceed 1 to 2 mg/L, the flow of groundwater from the up-gradient source will supply D.O. to the contaminated area, and aerobic degradation is possible.

Where aerobic biodegradation is occurring, an inverse relationship between D.O. concentration and constituent concentrations can be expected (i.e., D.O. levels increase as constituent levels decrease). Thus, if D.O. is significantly below background within the plume, aerobic biodegradation is probably occurring at the perimeter of the plume.

Geochemical Indicators

Certain geochemical characteristics can also serve as indicators that natural attenuation, particularly biodegradation, is occurring. Aerobic biodegradation of petroleum products produces carbon dioxide and organic acids, both of which tend to cause a region of lower pH and increased alkalinity within the constituent plume.

Anaerobic biodegradation may result in different geochemical changes, such as increased pH. Under anaerobic conditions, biodegradation of aromatic hydrocarbons typically causes reduction of Fe^{3+} (insoluble) to Fe^{2+} (soluble), because iron is commonly used as an electron acceptor under anaerobic conditions. Thus, soluble iron concentrations in the groundwater tend to increase immediately downgradient of a petroleum source as the D.O. is depleted, and conditions change to become anaerobic (i.e., reduced). The concentration of methane increases, another indication that anaerobic biodegradation is occurring.

Oxidation/Reduction Potential

The oxidation/reduction (redox) potential of groundwater is a measure of electron activity and is an indicator of the relative tendency of a solution to accept or transfer electrons. Because redox reactions in groundwater are biologically mediated, the rates of biodegradation both influence and depend on redox potential. Many biological processes operate only within a prescribed range of redox conditions. Redox potential also can be used as an indicator of certain geochemical activities (e.g., reduction of sulfate, nitrate, or iron). The redox potential of groundwater generally ranges from 800 millivolts to about -400 millivolts. The lower the redox potential, the more reducing and anaerobic the environment.

Measurement of redox potential of groundwater also allows for approximate delineation of the extent of the contaminant plume. Redox potential values taken from within the contaminant plume will be lower than background (upgradient) redox values and values from outside the plume. This is due in part to the anaerobic conditions that typically exist within the core of the dissolved hydrocarbon plume.

Methane. Methanogenesis has been determined to be a predominant biodegradation mechanism for fuel spills. During the aerobic biodegradation of petroleum constituents, methane is produced. Methane concentrations above background levels may indicate the occurrence of aerobic biodegradation of petroleum constituents.

Nitrate. After dissolved oxygen has been depleted, nitrate may be used as an electron acceptor for anaerobic biodegradation. Nitrate concentrations below background levels may indicate the occurrence of anaerobic biodegradation of petroleum compounds.

Sulfate. After dissolved oxygen and nitrate have been depleted, sulfate may be used as an electron acceptor for anaerobic biodegradation. Sulfate concentrations below background levels may indicate the occurrence of anaerobic biodegradation of petroleum compounds.

Based on this discussion (USEPA, 1994c), groundwater samples collected for natural attenuation evaluation will be analyzed for plume characterization parameters (BTEX, TPH-G, TPH-D, and TPH-O), dissolved oxygen, geochemical indicators (alkalinity, carbon dioxide, total iron (from which ferric iron [Fe³⁺] can be calculated), ferrous iron (Fe²⁺), hardness, methane, pH, and sulfate), and oxidation/reduction potential (Table 3).

2.2.3 MONITORING SCHEDULE

Free product monitoring will be conducted at periodic intervals to allow product to accumulate in wells but no less frequently than once a month. The frequency of free product monitoring will also depend on the amount

and type of free product removed from the monitoring wells as well as the season and type of free product recovery activity.

Groundwater monitoring conducted to confirm the effectiveness of natural attenuation and to estimate the rate will be conducted quarterly for the first year and annually thereafter (Table 3). Natural attenuation monitoring will be performed in accordance with confirmation groundwater sampling described in Section 2.3.

2.3 CONFIRMATION MONITORING

The objective of confirmation monitoring is to confirm the long-term effectiveness of the cleanup action as discussed in Section 1.2, once performance and cleanup standards have been met [WAC 173-340-410(1)(c)]. Confirmation monitoring will include the sentry wells, and will consist of free product and groundwater monitoring for the IHS indicator parameters (Tables 2 and 3) as appropriate.

2.3.1 CONFIRMATION MONITORING LOCATIONS

All monitoring wells in which water level measurements are taken will be checked for free product. There are presently 76 monitoring wells being used to develop groundwater elevation contours for the site.

A total of 28 monitoring wells designated in Table 1 will be used as confirmation monitoring wells. These wells will be included in the program due to their location adjacent to areas with soil cleanup actions or to provide a property boundary well network. Monitoring in these wells will be focused on the IHSs (BTEX, TPH) to provide water quality data for baseline data and trend analysis. Some of these wells will also be monitored for natural attenuation parameters.

2.3.2 SENTRY MONITORING WELLS

Wells A-23, A-28, MW-12, MW-13, MW-16, and MW-18 will serve as sentry wells. These wells will be included in the program due to their location adjacent to areas with soil cleanup actions, product plume, or to provide off property boundary well network. Monitoring in these wells will be focused on the IHSs (Table 2) for groundwater to provide water quality data for baseline data and trend analysis. Except for A-19, A-23, A-27, and A-28, the rest of these wells will not be monitored for natural attenuation parameters (Table 3) since cleanup levels have been already met in these wells.

Total and Dissolved Lead: Total lead was detected periodically above the cleanup level in the following wells MW-6, MW-7, MW-07, MW-8, MW-9, MW-12, MW-13, A-21, A-23, A-28, SH-02, and SH-05. Dissolved lead was detected periodically above the cleanup level (Table 2) in MW-7. Confirmation monitoring will be performed in these wells, prior, during, and after implementation of the remedial alternative discussed in Section 1.2 for total lead baseline data and trend analysis.

2.33 COMPLIANCE CRITERIA

Separate-Phase Hydrocarbons: To demonstrate that free product removal has been accomplished, the performance criterion will be a lack of sheen in compliance monitoring wells.

Groundwater: Cleanup levels are based on the protection of aquatic organisms and humans ingesting such organisms. The conditional point of compliance where these cleanup levels will be met is at the property boundary of the GATX site. The groundwater cleanup levels are presented in Table 2.

Groundwater compliance criteria will document that cleanup levels have been achieved. Groundwater analytical data will be evaluated using time-trend plots, data comparison to cleanup levels, and statistical analysis, if appropriate. Time-trend plots will be used to evaluate long-term analytical trends in relation to the associated cleanup levels. If statistical analysis is performed, the analysis will be conducted in accordance with WAC 173-340-720(8) and Ecology Guidance (1992, 1993, and 1995).

2.34 MONITORING SCHEDULE

Confirmation free product monitoring will be conducted monthly for a period of one year after cessation of free product recovery activities as discussed in Section 1.2. The schedule will be reevaluated at that time as discussed in Section 3.4.1.

Monitoring of the confirmation, performance, and sentry groundwater monitoring wells will begin within the quarter the Consent Decree is approved. Confirmation monitoring will continue for five years after completion of the cleanup action. Sampling will occur quarterly for the first year. Ecology and GATX will review the data after one year. If monitoring data indicates that trends are declining, the sampling frequency and number of parameters may be reduced as warranted.

30 Data Evaluation

3.1 DATA VALIDATION

Analytical data will be validated according to United States Environmental Protection Agency (USEPA) data validation guidelines. Data validation will include evaluation of holding times, method blank results, surrogate recovery results, field and laboratory duplicate results, completeness, detection limits, laboratory control sample results, and chain-of-custody forms. Data validation procedures are further described in the Sampling and Analysis Plan (Appendix A).

3.2 PRACTICAL QUANTITATION LIMITS

Practical Quantitation Limits (PQLs) will be established for each analyte to determine whether any of the limits are above the corresponding cleanup level. The PQL will be determined by multiplying the lowest method detection limit (MDL) obtained by the laboratory for Terminal groundwater samples by a factor of ten (Ecology, 1993). If the PQL for any constituent is above the corresponding cleanup level, the cleanup level will be considered to be attained if the constituent is detected below the PQL [WAC 173-340-707(2)].

3.3 PRODUCT MONITORING DATA

Product monitoring data will be reviewed as it is generated to determine the need for free product recovery system alterations or to determine changes in free product monitoring frequency. Quality control protocol will be followed to ensure that free product measurements are reliably obtained and consistently measured. Groundwater and product level data will be entered in spreadsheets for trend plots and analysis.

3.4 GROUNDWATER CHEMISTRY DATA REVIEW

Natural Attenuation Monitoring Data. Natural attenuation monitoring data will be reviewed to determine if the data is sufficient to evaluate natural attenuation processes at the site. If data gaps are identified, GATX may propose to add parameters as necessary to adequately evaluate natural attenuation.

Confirmation, Performance, and Sentry Monitoring Data. After each monitoring event, groundwater chemistry data will be reviewed once

it is validated. The data will be compared to groundwater cleanup levels. If a sample result is above a groundwater cleanup level and is also above the historic high concentration in that well, the well will be re-sampled to verify the result. Re-sampling will occur within one month of receiving the laboratory data. Groundwater chemistry and elevation data will be used in the one and five-year review as subsequently described.

3.4.1 ONE YEAR SITE REVIEW

Groundwater elevation and chemistry data will be evaluated after the first year of sampling. Natural attenuation monitoring well data will be evaluated as previously discussed in Section 2.2.2. Spatial and temporal changes in plume characterization parameters, dissolved oxygen, geochemical indicators, and oxidation/reduction potential (Table 3) will be evaluated to determine the effectiveness and rate of natural attenuation at the site.

Groundwater analytical results will be evaluated using time-trend plots and data comparison to cleanup levels. Time-trend plots will be prepared for each constituent detected above the PQL; trends will be identified by visual observation. The time-trend plots will be used to evaluate long-term trends in compliance wells and to compare groundwater conditions with cleanup levels. A groundwater contour map will be prepared to verify that the predominant groundwater flow directions at the Terminal remain relatively consistent.

The data evaluation will be submitted to Ecology for review. After the first year review, if the confirmation (and or sentry) wells exceed cleanup standards, Ecology and GATX (and the potentially affected adjacent property owner) will evaluate groundwater conditions prior to considering contingency plans. If monitoring data indicates that trends are declining, the sampling frequency and number of parameters may be reduced as warranted.

3.4.2 FIVE YEAR SITE REVIEW

Groundwater elevation and chemistry data will be evaluated after five years of monitoring. Groundwater contour maps will be prepared to verify that the groundwater flow directions at the Terminal have not changed significantly.

Natural Attenuation Monitoring Data. Natural attenuation monitoring data will be evaluated as previously described in Section 2.2.2.

The data evaluation will be documented and presented in the five-year review report.

Sentry Well Data: Groundwater analytical data will be evaluated using time-trend plots and data comparison to cleanup levels. Time-trend plots will be prepared for each constituent detected above the PQL and trends will be identified by visual observation.

Confirmation and Performance Well Data: Groundwater analytical data will be evaluated using time-trend plots, data comparison to cleanup levels, and, if appropriate, statistical analysis. Time-trend plots will be prepared for each constituent detected above the PQL and trends will be identified. Time-trend plots will be used to evaluate long-term analytical trends in relation to the associated cleanup levels. If statistical analysis is performed, the analysis will be conducted in accordance with WAC 173-340-720(8) and Ecology Guidance (1992, 1993, and 1995).

4.0 Compliance Evaluation Criteria

4.1 PERFORMANCE MONITORING

Monitoring data will be evaluated to determine the effectiveness of the remedy, whether changes to the free product monitoring schedule and/or monitoring wells are warranted. Changes may be made in the frequency of free product monitoring to optimize free product removal or system efficiency. These changes may depend on the amount and type of free product removed from the monitoring wells, the season, and the type of free product recovery activity. Other changes in performance monitoring will be made as follows:

- Additional free product recovery activities and monitoring will be initiated immediately if free product is observed in wells that previously had not contained free product.
- An additional well or well point will be installed and monitored if free product is observed for the first time in a downgradient or cross-gradient well. The need for additional free product recovery activities will also be reviewed.
- Performance monitoring will continue as long as free product is observed in the area being monitored.
- Performance monitoring will end and confirmation monitoring will begin when free product has not been observed in any well in the area being monitored for a period of six months.

4.2 CONFIRMATIONAL MONITORING

4.2.1 FREE PRODUCT

Free product confirmation monitoring will end and the area will be considered to be free of free product when no sheen is observed in any well in the area being monitored for a period of one year.

Free product recovery activities and performance monitoring will resume if measurable product is found in any well in an area being monitored.

4.2.2 GROUNDWATER

The review of groundwater quality data will be focused on evaluating groundwater quality trends and not on a single event or exceedance in a single well. Changes to the groundwater-monitoring program will be based on groundwater quality data review as described in Section 3.4.

Groundwater quality data will be tabulated and trend plots prepared as part of the one-year site review and five-year site review. If the chemistry results are all below cleanup levels for four consecutive quarters, then GATX will petition Ecology for site de-listing review and if Ecology concurs, the site shall be de-listed.

As part of the five-year site review, statistical analysis of the data will be performed if groundwater analytical results remain above cleanup levels. Alternatively, if the cleanup standards are met in 95 percent of the wells for four consecutive quarters, GATX will petition Ecology for site de-listing review and if Ecology concurs, the site shall be de-listed. In addition to reviewing chemistry data for the indicator hazardous substances (Table 2), natural attenuation parameters (Table 3) will also be evaluated to determine the effectiveness of natural attenuation at the site.

Data will be evaluated as described in Section 3.4.2. The contingency plan (summarized in Section 5.0) will be initiated if the five-year review identifies the following:

- There is an increasing trend in the groundwater quality data and the data trend exceeds the cleanup level in the performance, confirmation and sentry wells.
- An analyte is consistently above the cleanup level or statistically above the cleanup level with an increasing trend and with no evidence of natural attenuation.

5.0 Contingency Plan

A contingency plan sets forth a “backup” remediation technology in the event that a remedial technology within the Cleanup Plan fails or proves ineffective in a timely manner (five years after implementation of the preferred option discussed in Section 1.2). When evaluating the need to implement the contingency plan, all data will be evaluated as described in Section 3.4.2. A contingency plan will be initiated and implemented within 30 days of meeting any of the following criteria:

- If, after implementing the selective remedial action, the results of the groundwater monitoring program indicate elevated contaminant concentration over the specified restoration time frame of 5 years;
- If contaminants are newly identified in point of compliance wells located beyond the original plume boundary, indicating renewed contaminant migration; or
- If contaminant migration is not decreasing at a sufficient rate to ensure that the primary and secondary concerns identified for the site are being met.

The following actions will be initiated if the above criteria are triggered:

- Identification of the source(s) causing the criteria to be triggered. The highest priority in the compliance plan would be to identify and control the source. Accessible sources will be removed to the extent technically practicable without undermining the integrity of the adjacent above storage tanks, if present near the source area(s).
- Review Preferred Options Summary discussed in Section 1.2 and propose a supplemental remedy or combination of remedies, if needed, to prevent adverse impacts to offsite properties. (e.g., evaluation and potential expansion of the free product recovery system to ensure removal of free product from the water table if residual free product is identified beyond the capture zone of the system).

In the event that site conditions trigger a contingency plan implementation due to adverse impacts to offsite properties, Ecology, GATX, and the potential to be affected adjacent property owner will evaluate groundwater conditions prior to implementation of the contingency plan. In the event that site conditions trigger a contingency plan implementation other than considerations due to adverse impacts to offsite properties, Ecology and GATX will evaluate groundwater conditions prior to implementation of the contingency plan.

In the event that the contingency plan should be implemented, GATX will prepare a contingency work plan that contains engineering design criteria to address the remediation technology necessary to address the criteria triggering the contingency plan implementation. The contingency work plan will be approved by Ecology prior to its implementation.

6.0 Reporting

During the compliance-monitoring program, monitoring data will be submitted to Ecology on a periodic basis. Ecology will also be notified if new data indicates that a significant change in site conditions has occurred. Monitoring data and other information will be submitted in the following reports:

- **Quarterly Data Reports.** Laboratory analytical data reports will be submitted to Ecology after each round of monitoring has been completed.
- **Annual Monitoring Reports.** Monitoring reports will be prepared annually. The report will include a data validation memo, updated groundwater chemistry tables (including any well re-sampling results), and free product recovery data. Analytical time-trend plots will also be included in the reports. Analytical time-trends will be discussed when they are observed and other relevant data observations will be described. Any changes in the free product recovery system will also be discussed.
- **Five-year Review Report.** A report will be submitted to Ecology summarizing the five-year review of the compliance monitoring data. The report will include an updated groundwater elevation table, a representative groundwater contour map, time-trend plots for analytes detected above the PQL, and a comparison of the data to cleanup levels. Groundwater elevation and chemistry data will be evaluated. In addition to reviewing chemistry data relative to the indicator hazardous substances, natural attenuation parameters will also be evaluated to determine the effectiveness of natural attenuation and other cleanup action implementation at the site. As part of the five-year site review, statistical analysis of the data will be performed if analytical results remain above cleanup levels.

7.0 References

Ebasco. 1990. Final Phase I Remedial Investigation, Harbor Island Site, Seattle, Washington. Submitted to EPA, Region 10.

Ecology. 1991. The Model Toxics Control Act Cleanup Regulation, WAC Chapter 170-340. Washington State Dept. of Ecology, February.

Ecology. 1992. Statistical Guidance for Ecology Site Managers. Publication No. 92-54. August.

Ecology. 1993a. Statistical Guidance for Ecology Site Managers, Supplement S-6, Analyzing Site or Background Data with Below-detection Limit or Below PQL Values (Censored Data Sets). August.

Ecology. 1993b. Implementation Memo No. 3 (re: PQLs as Cleanup Standards) from S. Robb to interested Ecology staff. Ecology Publication 93-100. November 24.

Ecology. 1993. Groundwater Cleanup Standards for Harbor Island. Letter correspondence to Shell. April 20th.

Ecology. 1993. Soil and Groundwater Cleanup Levels for Harbor Island RI/FS. Letter correspondence to Shell. July 26th.

Ecology. 1995. Guidance on Sampling and Data Analysis Methods. Publication No. 94-49. January.

Hart Crowser. 1992. Final Background Summary Report, Shell Oil Company, Harbor Island Terminal, Seattle, Washington. Submitted to Ecology. August 6th.

Hart Crowser. 1992. Remedial Investigation Work Plan, Shell Oil Company, Harbor Island Terminal, Seattle, Washington. Submitted to Ecology. November 4th.

Galaster, R.W., and W.T. Laprade, 1991. Geology of Seattle, Washington, United States of America. Bull. Assoc. of Engineering Geologist, V. 28, No. 3.

Madakor, Nnamdi. 1997. Washington State Department of Ecology, Toxics Cleanup Program. Analytical Fate and Transport Modeling, Harbor Island Tank Farms (ARCO, TEXACO, & GATX), "A decision making tool in the Cleanup Action Plan"

Pacific Environmental Group Inc. 1994. Remedial Investigation Report, Shell Oil Company, Harbor Island Terminal, Seattle Washington. Submitted to Ecology December 28th.

Pacific Environmental Group Inc. 1997. Focused Feasibility Study, GATX Terminals Corporation, Harbor Island Terminal, Seattle, Washington. Submitted to Ecology April 9th.

Pacific Environmental Group Inc. 1996. Supplemental Remedial Investigation, GATX Harbor Island Terminal, Seattle, Washington. Submitted to Ecology April 11th.

Pacific Environmental Group Inc. 1997. Supplemental Remedial Investigation, C Yard Fuel Spill, GATX Harbor Island Terminal, Seattle, Washington. Submitted to Ecology March 20th.

USEPA. 1993. Record of Decision; Declaration, Decision Summary, and Responsiveness Summary for Harbor Island Soil and Groundwater, Seattle, Washington. USEPA, Region 10. September 1994.

USEPA. 1994c. "Chapter IX, Natural Attenuation" in How to Evaluate Alternative Cleanup Technologies for Underground Storage Tank Sites, A Guide for Corrective Action Plan Reviewers. USEPA Office of Solid Waste and Emergency Response. EPA 510-B-94-003. October.

USEPA. 1995. A Guide for Corrective Action Plan Review, How to Evaluate Alternative Cleanup Technologies for Underground Storage Tank Site, 510-B-95-007. May.

USEPA. 1997. Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites, Draft Interim Final OSWER Directive 9200.4-17. USEPA Office of Solid Waste and Emergency Response. November.

Weston. 1993. Remedial Investigation Report; Remedial Investigation and Feasibility Study, Harbor Island. Prepared for USEPA, Region 10. February.

Table 1
Compliance Monitoring Wells
GATX Harbor Island Terminal
Seattle, Washington

Monitoring Well	Well Location	Compliance Monitoring Objective
A-5	A Yard	Confirmational
A-8	A Yard	Confirmational
A-10	A Yard	Confirmational
A-14	A Yard	Performance / Confirmational
A-21	A Yard	Performance / Confirmational
A-23	A Yard*	Performance / Confirmational / Sentry
MW-7	B Yard	Performance / Confirmational
MW-8	B Yard	Performance / Confirmational
MW-9	B Yard	Performance / Confirmational
MW-07	B Yard	Performance / Confirmational
A-27	B Yard	Performance / Confirmational
SH-05	B Yard	Performance / Confirmational
A-28	B Yard*	Confirmational / Sentry
New Well #2	B Yard	Confirmational
MW-2	C Yard	Background / Confirmational
MW-3	C Yard	Performance/ Confirmational
MW-4	C Yard	Performance / Confirmational
SH-02	C Yard	Performance / Confirmational
New Well #1	C Yard	Performance / Confirmational
New Well #4	C Yard	Performance / Confirmational
MW-12	D Yard*	Confirmational / Sentry
MW-13	C Yard*	Confirmational / Sentry
MW-16	C Yard*	Confirmational / Sentry
MW-18	C Yard*	Confirmational / Sentry
MW-5	D Yard	Performance / Confirmational
MW-6	D Yard	Performance / Confirmational
MW-14	D Yard	Performance
New Well #3	D Yard	Performance / Confirmational
MW-1	E Yard	Background / Confirmational

NOTES: All wells where water levels are measured serve as Performance or Confirmation wells for free product

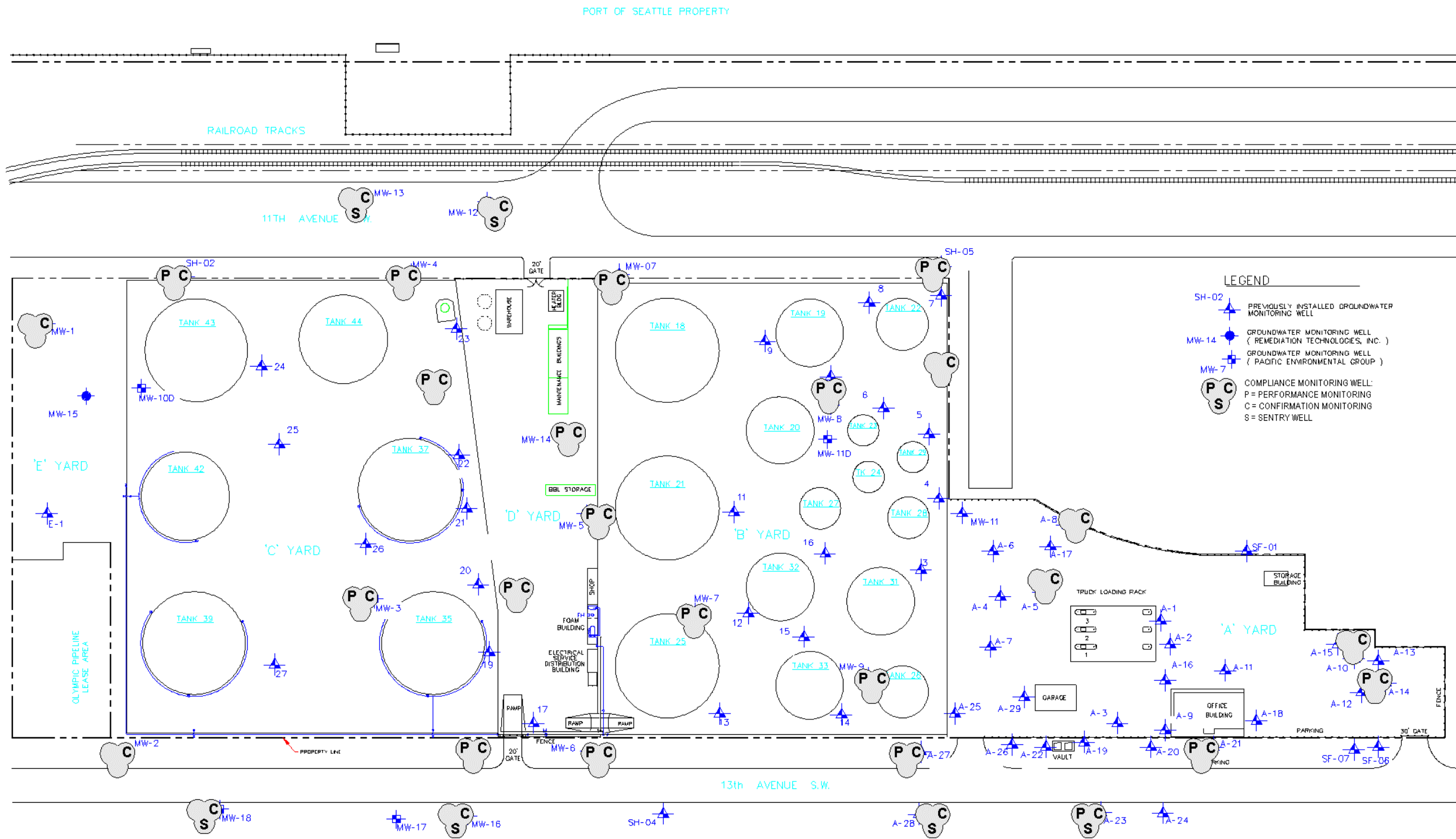
* Located Off-site

Table 2
Groundwater Cleanup Levels
GATX Harbor Island Terminal
Seattle, Washington

Constituent	Cleanup Level (mg/L)
Benzene	0.071
Toluene	200.0
Ethylbenzene	29.0
TPH-G	1
TPH-D	10
TPH-O	10
Lead	0.0058

Table 3
Natural Attenuation Indicator Parameters
 GATX Harbor Island Terminal
 Seattle, Washington

PARAMETER	METHOD / UNIT
Temperature, pH, alkalinity	Field / variable
Dissolved Oxygen (DO)	Field / mg/l
Carbon dioxide	Field / mg/l
Nitrate (NO ₃)	Laboratory / mg/l
Nitrite (NO ₂)	Laboratory / mg/l
Dissolved ferrous iron (Fe ²⁺)	Laboratory / mg/l
Dissolved Methane (CH ₄)	Laboratory / mg/l
Sulfate (SO ₄)	Laboratory / mg/l
Sulfide (H ₂ S)	Laboratory / mg/l
Reduction/Oxidation potential (Redox, Eh)	Field / millivolts



	TITLE Compliance Well Location Map		
	GATX Terminals Corporation Harbor Island Terminal 2720 13th Avenue Southwest Seattle, Washington		
DATE 10/26/99	PROJECT A30-01A	FIGURE 1	

**Site-Wide Groundwater Compliance Monitoring Plan – Proposed
Reduced Monitoring**

June 21, 2007

Mr. Roger Nye
Washington State Department of Ecology
Northwest Regional Office
3190 160th Avenue N.E.
Bellevue, Washington 98008-5452

Sent via FedEx Saver

SUBJ: Site-Wide Groundwater Compliance Monitoring Plan – Proposed
Reduced Monitoring
Kinder Morgan Harbor Island Terminal
Seattle, Washington
Delta Project No. STKM-001-M.0005



Dear Mr. Nye:

This plan has been prepared on behalf of Kinder Morgan Liquid Terminals, LLC (KMLT) by Delta Environmental Consultants (Delta) and presents a proposed revision to the site-wide groundwater compliance monitoring program for the KMLT Harbor Island Terminal located at 2720 13th Avenue Southwest in Seattle, Washington ("the site"). The revisions included in this document supersede those revisions previously proposed in an August 2, 2006 letter to you, and in a second draft dated March 22, 2007. These plan revisions are proposed in accordance with Section 2.3.4 of the Compliance Monitoring Plan (Plan) developed for the site. Further modifications to the Draft Plan were discussed with you by telephone on June 13, 2007, and this Final Proposed Reduced Monitoring Plan incorporates those modifications.

PROPOSED SITE-WIDE COMPLIANCE MONITORING PLAN

The Plan was developed to describe the protocol and procedures used to confirm that cleanup requirements are achieved at the site. This monitoring plan was prepared to satisfy the requirements of the Model Toxics Control Act (MTCA) regulations WAC 173-340-410, -720, and -820 and in accordance with requirements from Exhibit F of the Consent Decree.

The achievement of cleanup levels in groundwater is measured at points of performance and compliance located within the hydrocarbon plume area and at the downgradient edge of the site. The wells at the downgradient edge of the site are considered conditional points of compliance wells. These points of compliance and performance consist of a network of monitoring wells located in the hydrocarbon plume area and on the downgradient property boundary. Sentry wells are also used to document plume migration, performance standards, and to warn of any unanticipated change in off-site groundwater conditions.

The Compliance Monitoring Plan incorporated in the Consent Decree includes quarterly monitoring for free product, dissolved TPH constituents, total and dissolved lead, and natural attenuation parameters. In accordance with *Section 2.3.4 Monitoring Schedule* of the Plan, the sampling frequency and number of parameters may be reduced if monitoring data indicates that trends are declining. Following are the proposed revisions for each of these compliance monitoring criteria, and the rationale for each revision.

Free Product

As established in the Plan, KMLT currently performs quarterly gauging of 71 wells for monitoring of free product. KMLT proposes to continue monitoring of wells in which free product has been observed during the past 8 quarters, and the 29 wells which were identified as Compliance Monitoring Wells in Table 1 of the Plan. Accordingly, KMLT proposes to continue quarterly gauging of the following 43 wells: A-4, A-5, A-6, A-8, A-10, A-11, A-12, A-14R, A-16, A-18, A-19, A-20, A-21, A-22R, A-23R, A-25, A-26R, A-27, A-28R, 12, MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-12R, MW-13R, MW-14, MW-16, MW-18, MW-19, MW-20, MW-21, MW-22, MW-23, MW-24, SH-02R, SH-05R, and MW-07R.

Dissolved TPH Constituents

The current compliance monitoring program for dissolved TPH constituents includes quarterly sampling of 32 monitoring wells (29 Compliance Monitoring Wells and 3 additional wells which were installed in September 2003 as part of a supplemental study to further characterize free product in the A Yard). A summary of monitoring wells and annual analyses included in the current dissolved TPH constituents compliance monitoring program is presented on Table 1. A site map showing locations of groundwater monitoring wells is included as Figure 2.

An evaluation of groundwater analytical data collected since the execution of the Consent Decree indicates that data collected from numerous monitoring wells have demonstrated that cleanup criteria have either been met from the outset of the program or have demonstrated at least 4 consecutive quarters meeting cleanup criteria. A summary of groundwater analytical results for 2000 through December 2006 are presented in Table 2.

An evaluation of historical groundwater analytical results with respect to established cleanup criteria is summarized in Table 3. Where applicable, wells and corresponding analytes which demonstrate a consistent trend of meeting cleanup criteria are noted. Wells and corresponding analytes are highlighted where historic monitoring indicates a reduction in monitoring frequency or analytes is warranted.

KMLT proposes a revision from quarterly monitoring for TPH parameters as follows. For wells which have demonstrated that cleanup criteria for TPH-G, BTEX, TPH-D, and TPH-O have been met from the outset of the program, KMLT proposes to reduce the frequency of quarterly monitoring to annual monitoring. For wells which have not met the criteria for TPH-G and BTEX, but have met the criteria for TPH-D and TPH-O, KMLT proposes to continue quarterly monitoring for TPH-G and BTEX and discontinue monitoring for TPH-D and TPH-O. Proposed compliance monitoring plan revisions are summarized in Table 4.

After the revised program is initiated, if results demonstrate that any TPH cleanup criteria has been exceeded in a well, KMLT will revert to quarterly monitoring for respective analytes that were exceeded for the well, and will resume quarterly monitoring for natural attenuation parameters.

Total and Dissolved Lead

As established in the Plan, KMLT currently monitors for total lead on a quarterly basis in 20 wells. The purpose of this monitoring is to demonstrate performance and confirmation monitoring of the surface cleanup action for the site. The surface cleanup action, which included removal of surface soils containing concentrations of total lead exceeding the hot-spot cleanup criteria, was executed and completed in April and May 2002. In accordance with *Section 2.2* of the Plan, performance monitoring for total lead has been performed on a quarterly basis since the completion of the surface cleanup action. Following the performance of the surface cleanup action, total lead has infrequently exceeded the cleanup criterion. KMLT proposes to continue monitoring for this parameter on an annual basis.

As required in the Plan, KMLT also currently monitors for dissolved lead on a quarterly basis in the same 20 wells which are monitored for total lead. Cleanup criteria for this parameter was not established in the Cleanup Action Plan. Dissolved lead has been detected in 4 of the 20 wells. Dissolved lead was detected in one or two instances in two wells, and was detected in two wells on a more frequent basis in two wells. Delta proposes to monitor for

dissolved lead in two wells (A-23R and MW-7) which have contained measurable concentrations on a periodic basis in the past.

A summary of monitoring wells and annual analyses included in the current total and dissolved lead compliance monitoring program is presented on Table 1. A summary of groundwater analytical results for 2000 through December 2006 are presented in Table 2. An evaluation of historical groundwater analytical results with respect to established cleanup criteria is summarized in Table 3. Proposed compliance monitoring plan revisions are summarized in Table 4.

Natural Attenuation Parameters


The current compliance monitoring program for natural attenuation parameters includes quarterly sampling of 26 monitoring wells (23 Compliance Monitoring Wells and 3 additional wells which were installed in September 2003 as part of a supplemental study to further characterize free product in the A Yard). In accordance with *Section 2.2.3 Monitoring Schedule* of the Plan which states that natural attenuation monitoring will be conducted quarterly for the first year and annually thereafter, KMLT proposes to discontinue monitoring of wells which have met the criteria for TPH-G, BTEX, TPH-D and TPH-O constituents, and continue monitoring on an annual basis those wells which have not met the criteria. Proposed compliance monitoring plan revisions are summarized in Table 4.

A summary of proposed compliance monitoring plan revisions are presented in Table 4. Wells which are designated for annual monitoring will be monitored during the second quarter event. A summary of monitoring wells and a tally of annual analyses for all parameters proposed in this compliance monitoring program revision is presented on Table 5.

KMLT proposes to incorporate the compliance monitoring plan revisions included herein during the third quarter 2007 monitoring event. Please call if you have any questions regarding the contents of this letter, or if you would like to discuss any aspect of the proposed compliance monitoring plan. Delta looks forward to your approval of this program.

Sincerely,

DELTA ENVIRONMENTAL CONSULTANTS, INC.


for Ward Crell
Principal Geologist

Enc: Table 1 – Summary of Current Annual Analyses, Groundwater Compliance Program
Table 2 – Groundwater Analytical Results
Table 3 – Analytical Summary 2000 – December 2006, Current Groundwater Compliance Program
Table 4 – Proposed Groundwater Compliance Program, Recommended Monitoring Frequency
Table 5 – Summary of Proposed Annual Analyses, Groundwater Compliance Program
Figure 1 – Site Plan – Groundwater Monitoring Well Locations

cc: Mr. Robert Truedinger, Kinder Morgan Energy Partners, L.P., Richmond, California
Ms. Kelsy Hardy, Kinder Morgan Energy Partners, L.P., Orange, California (File Copy - CD Only)

TABLE 1
CURRENT ANNUAL ANALYSES
GROUNDWATER COMPLIANCE PROGRAM
 Kinder Morgan Harbor Island Terminal

Well ID	Indicator Hazardous Substances				Natural Attenuation Parameters				
	TPH-G/ BTEX	TPH-D+ extended	Total Lead	Dissolved Lead	Nitrate (NO3)	Ferrous Iron	Methane	Sulfate (SO4)	Sulfide (H2S)
A-5	4	4							
A-8	4	4							
A-10	4	4			4	4	4	4	4
A-14R	4	4	4	4	4	4	4	4	4
A-21	4	4	4	4	4	4	4	4	4
A-23R	4	4	4	4	4	4	4	4	4
A-27	4	4			4	4	4	4	4
A-28R	4	4	4	4	4	4	4	4	4
MW-1	4	4	4	4	4	4	4	4	4
MW-2	4	4	4	4	4	4	4	4	4
MW-3	4	4	4	4	4	4	4	4	4
MW-4	4	4			4	4	4	4	4
MW-5	4	4	4	4	4	4	4	4	4
MW-6	4	4	4	4	4	4	4	4	4
MW-7	4	4	4	4	4	4	4	4	4
MW-8	4	4	4	4	4	4	4	4	4
MW-9	4	4	4	4	4	4	4	4	4
MW-12R	4	4	4	4					
MW-13R	4	4	4	4					
MW-14	4	4			4	4	4	4	4
MW-16	4	4							
MW-18	4	4							
MW-19	4	4			4	4	4	4	4
MW-20	4	4			4	4	4	4	4
MW-21	4	4			4	4	4	4	4
MW-22	4	4			4	4	4	4	4
SH-02R	4	4	4	4	4	4	4	4	4
SH-05R	4	4	4	4	4	4	4	4	4
MW-07R	4	4	4	4	4	4	4	4	4
MW-23	4	4	4	4	4	4	4	4	4
MW-24	4	4	4	4	4	4	4	4	4
MW-25	4	4	4	4	4	4	4	4	4
ANNUAL TOTAL:	128	128	80	80	104	104	104	104	104

Notes: Number denotes number of quarters sampled annually

 Parameter not analyzed

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
 Kinder Morgan Liquid Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest
 Seattle, Washington

Sample I.D.	Date	TPH-Gasoline (ppm)	TPH-Diesel (ppm)	TPH-Oil (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	Total Lead (ppm)
MW-1	02/13/02	<0.25	2.0	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*
	05/21/02	<0.25	1.9	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*
	08/28/02	<0.25	1.0	<0.5	0.0013	0.0067	0.00052	0.0016	<0.005*
	11/05/02	<0.25	0.87	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	0.021*
	02/19/03	<0.25	1.9	<0.5	<0.0005	0.00058	<0.0005	<0.0005	<0.005*
	06/10/03	<0.25	1.1	<0.25	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*
	09/16/03	<0.25	<0.50	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	11/19/03	<0.25	<0.50	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	02/25/04	<0.25	1.3	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	05/11/04	<0.25	0.87	<0.50	<0.0005	0.00068	<0.0005	<0.0005	<0.0050*
	08/25/04	0.83	0.40	<0.50	<0.0005	<0.0005	0.00065	<0.0005	<0.0050*
	12/15/04	<0.25	0.38	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	03/09/05	<0.25	0.63	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	06/08/05	<0.25	0.80	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	09/21/05	<0.25	0.40	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	12/14/05	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	03/14/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
06/07/06	<0.25	0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	
09/13/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.0052*	
12/13/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	
MW-2	02/13/02	<0.25	0.71	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*
	05/21/02	<0.25	0.66	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*
	08/29/02	<0.25	0.91	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*
	11/05/02	<0.25	0.73	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*
	02/19/03	<0.25	0.74	<0.5	<0.0005	0.00062	<0.0005	<0.0005	0.028*
	06/10/03	<0.25	0.61	<0.25	<0.0005	0.00071	<0.0005	<0.0005	0.026 ^{sa}
	09/16/03	<0.25	<0.50	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.062*
	11/19/03	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.021*
	02/25/04	<0.25	<0.50	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.030*
	05/11/04	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	08/25/04	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	12/14/04	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	03/10/05	<0.25	0.29	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	06/07/05	<0.25	0.91	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.036*
	09/20/05	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	12/13/05	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.024*
	03/15/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
06/08/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.0063*	
09/12/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	
12/12/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	
MW-3	02/13/02	<0.25	1.8	<0.5	0.011	0.0015	0.0045	0.011	<0.005*
	05/20/02	0.38	1.9	<0.5	0.052	0.0028	0.025	0.02	0.01*
	08/28/02	0.62	2.5	<0.5	0.11	0.0071	0.021	0.030	<0.005*
	11/06/02	0.63	1.1	<0.5	0.14	0.0053	0.021	0.015	0.006*
	02/19/03	<0.25	1.8	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	0.014*
	06/11/03	<0.25	1.3	<0.25	<0.0005	<0.0005	<0.0005	<0.0005	0.019*
	09/17/03	<0.25	1.4	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.042*
	11/20/03	<0.25	2.4	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.0063*
	02/25/04	<0.25	1.2	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.025*
	05/11/04	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	08/25/04	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.0051*
	12/15/04	<0.25	0.33	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.018*
	03/09/05	<0.25	<0.25	<0.50	0.001	<0.0005	<0.0005	<0.0005	<0.0050*
	06/08/05	<0.25	<0.25	<0.50	0.0011	<0.0005	<0.0005	<0.0005	<0.0050*
	09/21/05	<0.25	<0.25	<0.50	0.00094	<0.0005	<0.0005	<0.0005	<0.0050*
	12/14/05	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	03/14/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
06/07/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	
09/13/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	
12/13/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	
Dup-2^a	06/08/05	<0.25	<0.25	<0.50	0.0011	<0.0005	<0.0005	<0.0005	<0.0050*
	09/21/05	<0.25	0.27	<0.50	0.00098	<0.0005	<0.0005	<0.0005	<0.0050*
	12/14/05	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	03/14/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	06/07/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.010*
	09/13/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
12/13/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	

**TABLE 2
GROUNDWATER ANALYTICAL RESULTS**

Kinder Morgan Liquid Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest
Seattle, Washington

Sample I.D.	Date	TPH-Gasoline (ppm)	TPH-Diesel (ppm)	TPH-Oil (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	Total Lead (ppm)
MW-4	02/14/02	0.78	280	<50	0.3	0.0072	0.0023	0.0082	NA
	05/21/02	1.5	8.6	<0.5	0.43	0.023	0.034	0.13	NA
	08/28/02	3.3	30	2.6	1.1	0.016	0.016	0.024	NA
	11/04/02	NS	NS	NS	NS	NS	NS	NS	NA
	02/19/03	3.1	31	<0.5	0.056	0.0017	0.014	0.02	NA
	06/10/03	0.39	12	<0.25	0.031	0.0012	0.0091	0.0096	NA
	09/16/03	NS	NS	NS	NS	NS	NS	NS	NS
	11/19/03	0.25	19	<0.50	0.033	<0.001	0.0042	0.0069	NA
	02/25/04	0.36	15	<0.50	0.035	0.0014	0.0056	0.0094	NA
	05/12/04	0.33	7.4	<0.50	0.012	<0.001	0.0048	0.0058	NA
	08/26/04	<0.50	5.1	<0.50	0.014	<0.0025	0.0039	0.0069	NA
	12/15/04	NS	NS	NS	NS	NS	NS	NS	NA
	03/09/05	<2.0	11	<0.50	<0.01	<0.01	<0.01	0.013	NA
	06/08/05	<1.0	16	1.1	<0.005	<0.005	<0.005	<0.005	<0.0050
	09/21/05	<2.0	19	2.1	<0.010	<0.010	<0.010	<0.010	NA
	12/14/05	<0.50	6.2	0.81	0.012	<0.0025	0.0032	0.0084	NA
	03/14/06	<0.40	3.9	0.69	0.0063	<0.0020	0.0020	0.0062	NA
	06/07/06	<0.50	4.5	<0.50	0.0037	<0.0025	<0.0025	<0.0025	NA
	09/13/06	<0.50	2.7	<0.50	0.0034	<0.0025	<0.0025	0.0029	NA
	12/13/06	<0.25	3.7	0.62	0.0012	<0.0005	<0.0005	0.0023	NA
MW-5	02/13/02	<0.25	<0.25	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*
	05/21/02	<0.25	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	0.01*
	08/29/02	<0.25	1.2	<0.5	<0.0005	0.0018	<0.0005	0.00063	<0.005*
	11/05/02	<0.25	1.6	<0.5	0.0055	0.0016	<0.0005	0.00056	<0.005*
	02/20/03	<0.25	<0.25	<0.5	<0.0005	0.00066	<0.0005	<0.0005	<0.005*
	06/11/03	<0.25	0.36	<0.25	<0.0005	0.00079	<0.0005	<0.0005	<0.005*
	09/16/03	<0.25	<0.50	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.011*
	11/20/03	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0086*
	02/24/04	<0.25	<0.50	<0.50	<0.0005	0.0014	<0.0005	<0.0005	<0.0050*
	05/11/04	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	08/26/04	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	12/15/04	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	03/09/05	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.11*
	06/08/05	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	09/21/05	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	12/14/05	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	03/14/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.012*
	06/07/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.0099*
	09/13/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.013*
	12/13/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.0088*
MW-6	02/13/02	0.97	1.1	<0.5	0.014	0.0007	<0.0005	0.00065	<0.005*
	05/22/02	1.1	2.5	<0.5	0.035	0.0012	0.0024	0.00072	<0.005*
	08/29/02	0.58	6.4	<0.5	0.0014	<0.001	<0.001	<0.001	<0.005*
	11/05/02	0.59	7.3	<0.5	0.064	<0.001	<0.001	0.0016	0.02*
	02/19/03	0.54	1.7	<0.5	0.0062	<0.0005	<0.0005	<0.0005	<0.005*
	06/10/03	0.70	1.9	<0.25	0.025	0.0011	0.00052	0.00051	<0.005*
	09/16/03	0.68	<0.50	<0.50	<0.0005	<0.0005	0.00053	<0.0005	0.019*
	11/19/03	0.44	1.6	<0.50	0.0095	0.00067	<0.0005	0.00051	<0.0050*
	02/25/04	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	05/11/04	1.0	0.67	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	08/25/04	<0.25	0.50	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	12/14/04	0.82	0.81	<0.50	0.008	<0.0005	<0.0005	<0.0005	0.011*
	03/10/05	1.0	0.42	<0.50	0.0011	<0.0005	<0.0005	<0.0005	<0.0050*
	06/07/05	0.9	<0.25	<0.50	0.0014	<0.0005	<0.0005	<0.0005	<0.0050*
	09/20/05	0.9	<0.25	<0.50	<0.0005	<0.0005	0.00062	<0.0005	<0.0050*
	12/13/05	1.2	0.38	<0.50	0.0032	<0.0005	0.0005	<0.0005	<0.0050*
	03/15/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	06/08/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	09/12/06	0.71	<0.25	<0.50	<0.0005	0.00055	<0.0005	<0.0005	<0.0050*
	12/12/06	<0.25	<0.25	<0.50	<0.0005	0.00055	<0.0005	<0.0005	<0.0050*

**TABLE 2
GROUNDWATER ANALYTICAL RESULTS**

Kinder Morgan Liquid Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest
Seattle, Washington

Sample I.D.	Date	TPH-Gasoline (ppm)	TPH-Diesel (ppm)	TPH-Oil (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Xylenes (ppm)	Total Lead (ppm)
MW-7	02/14/02	13	7.5	<0.5	0.20	0.24	0.57	1.8	0.035*
	05/21/02	6.6	11	<0.5	0.16	0.089	0.43	0.66	0.04*
	08/29/02	2.9	5.7	<0.5	0.12	0.042	0.24	0.11	0.047*
	11/05/02	0.9	5.9	<0.5	0.021	0.0022	0.004	0.0066	0.041*
	02/20/03	9.7	11	<0.5	0.12	0.13	0.33	1.4	0.11 ^{sa}
	06/11/03	5.7	8.7	<0.25	0.13	0.092	0.26	0.52	0.081 ^{sa}
	09/17/03	1.4	12	<0.50	0.078	0.031	0.15	0.089	0.11 ^{sa}
	11/20/03	0.26	0.8	<0.50	<0.0005	<0.0005	<0.0005	0.035	0.019 ^{sa}
	02/26/04	15	21	<0.50	0.11	0.34	0.63	3.8	0.034 ^{sa}
	05/11/04	6.3	11	<0.50	0.059	0.15	0.31	1.3	0.0083 ^{sa}
	08/26/04	7.1	20	<0.50	0.054	0.22	0.34	1.7	0.067 ^{sa}
	12/15/04	18	4.4	<0.50	0.14	0.37	0.53	3	0.19 ^{sa}
	03/09/05	3.5	2.1	<0.50	0.045	0.034	0.09	0.27	0.079 ^{sa}
	06/08/05	2.9	2.3	<0.50	0.054	0.05	0.11	0.44	0.069 ^{sa}
	09/20/05	NS	NS	NS	NS	NS	NS	NS	NS
	12/14/05	8.8	0.59	<0.50	0.16	0.19	0.31	1.5	0.042 ^{sa}
03/14/06	15	0.50	<0.50	0.12	0.26	0.50	3.6	0.026*	
06/07/06	17	0.85	<0.50	0.12	0.35	0.69	4.5	0.023*	
09/13/06	2.4	0.32	<0.50	0.05	0.06	0.19	0.39	0.021 ^a	
12/13/06	NS	NS	NS	NS	NS	NS	NS	NS	
MW-8	02/14/02	<0.25	8.1	<5.0	<0.0005	0.00086	<0.0005	<0.0005	0.03*
	08/29/02	<0.25	7.5	<0.5	<0.0005	0.00082	<0.0005	<0.0005	0.017*
	11/05/02	<0.25	1.7	1.2	<0.0005	<0.0005	<0.0005	<0.0005	0.012*
	02/20/03	<0.25	6.6	<0.5	<0.0005	0.00055	<0.0005	0.0024	0.029*
	06/11/03	<0.25	3.8	<0.25	0.0013	<0.001	<0.001	<0.001	0.012*
	09/17/03	<0.25	3.3	0.77	<0.0005	<0.0005	<0.0005	<0.0005	0.030*
	11/20/03	<0.25	2.5	<0.50	<0.001	<0.001	<0.001	<0.001	<0.0050*
	02/26/04	<0.25	2.7	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.016*
	05/11/04	<0.25	1.5	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	08/26/04	<0.25	1.0	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	12/15/04	<0.25	1.5	<0.50	<0.001	<0.001	<0.001	<0.001	0.0071*
	03/09/05	<0.25	1.6	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.0094*
	06/08/05	<0.25	1.8	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.014*
	09/21/05	<0.25	1.0	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.011*
	12/14/05	<0.25	1.1	0.58	<0.001	<0.001	<0.001	0.0013	0.0060*
	03/14/06	<0.25	0.54	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.011*
06/07/06	<0.25	0.88	0.61	<0.0005	<0.0005	<0.0005	<0.0005	0.0093*	
09/13/06	<0.25	0.35	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.012*	
12/13/06	<0.25	0.82	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.0060*	
MW-9	06/11/03	6.0	13	<0.50	0.0031	0.036	0.076	0.6	0.022*
	09/17/03	5.3	39	0.72	0.026	0.027	0.09	0.45	0.0095*
	11/20/03	8.5	19	<0.50	<0.005	0.018	0.14	1.1	0.0096*
	02/26/04	4.1	28	<0.50	0.022	0.0072	0.025	0.47	0.0083*
	05/11/04	4.1	5.8	<0.50	0.0023	0.0093	0.081	0.44	<0.0050*
	08/26/04	4.2	6.2	<0.50	0.0066	0.025	0.13	0.43	0.0099*
	12/15/04	5.4	7.6	<0.50	<0.0025	0.011	0.12	0.39	0.0094*
	03/09/05	4.5	3.5	<0.50	0.0037	0.0047	0.042	0.18	0.021*
	06/08/05	3.2	3.9	<0.50	0.0035	0.0087	0.069	0.17	0.0076*
	09/21/05	2.3	2.6	<0.50	0.007	0.0077	0.033	0.12	0.0076*
	12/14/05	4.7	1.2	<0.50	0.0078	0.010	0.12	0.38	0.0095*
	03/14/06	2.4	1.4	<0.50	0.0024	0.003	0.018	0.12	0.013*
	06/07/06	<0.25	1.0	<0.50	0.0011	0.023	0.049	0.21	0.021*
09/13/06	1.8	0.46	<0.50	0.0044	0.016	0.063	0.06	0.010*	
12/13/06	2.6	3.8	<0.50	<0.0025	<0.0025	0.024	0.190	0.025*	

**TABLE 2
GROUNDWATER ANALYTICAL RESULTS**

Kinder Morgan Liquid Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest
Seattle, Washington

Sample I.D.	Date	TPH-Gasoline (ppm)	TPH-Diesel (ppm)	TPH-Oil (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Xylenes (ppm)	Total Lead (ppm)
MW-12	06/20/01	<0.06	1.7	<0.5	<0.001	<0.001	<0.001	<0.003	<0.004
MW-12R	02/14/02	<0.25	1.4	<0.5	0.014	<0.0005	<0.0005	<0.0005	<0.005*
	05/21/02	<0.25	2.5	<0.5	0.08	0.0013	<0.0005	0.00066	<0.005*
	08/28/02	<0.25	2.1	<0.5	0.028	0.0059	<0.0005	0.0015	<0.005*
	11/05/02	<0.25	1.3	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*
	02/19/03	0.26	2.5	<0.5	0.19	0.0012	<0.001	<0.001	<0.005*
	06/10/03	0.41	1.3	<0.25	0.11	0.00055	<0.0005	<0.0005	<0.005*
	09/16/03	<0.25	0.67	<0.50	0.0021	<0.0005	<0.0005	<0.0005	<0.013*
	11/19/03	0.42	<0.25	<0.50	0.26	<0.001	<0.001	<0.001	0.0078
	02/25/04	0.26	1.8	<0.50	0.099	0.0005	<0.0005	0.00076	0.010*
	05/12/04	0.56	0.74	<0.50	0.20	<0.001	<0.001	<0.001	<0.0050*
	08/26/04	0.35	0.50	<0.50	0.089	<0.001	<0.001	<0.001	<0.0050*
	12/15/04	<0.25	0.50	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	03/09/05	<0.25	0.39	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	06/08/05	<0.25	0.39	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA*
	09/21/05	0.26	0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	12/14/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	03/14/06	<0.25	<0.25	<0.50	<0.001	<0.001	<0.001	<0.001	<0.0050*
	06/07/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	09/13/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	12/13/06	<0.25	0.27	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
MW-13	06/19/01	<0.05	1.3	<0.5	<0.001	<0.001	<0.001	<0.003	<0.004
MW-13R	02/14/02	<0.25	3.2	<0.5	0.056	<0.0005	<0.0005	0.00075	<0.005*
	05/21/02	<0.25	3.5	<0.5	0.0025	<0.0005	<0.0005	<0.0005	<0.005*
	08/28/02	<0.25	2.4	<0.5	<0.0005	0.0019	<0.0005	0.0007	<0.005*
	11/05/02	<0.25	2.0	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*
	02/19/03	<0.25	1.7	<0.5	0.00078	0.0032	<0.0005	0.00083	<0.005*
	06/10/03	<0.25	0.76	<0.25	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*
	09/16/03	<0.25	1.4	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.0078*
	11/19/03	<0.25	<0.50	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.0066
	02/25/04	<0.25	<0.50	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.012*
	05/12/04	<0.25	0.61	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	08/26/04	<0.25	0.49	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	12/15/04	<0.25	0.91	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	03/09/05	<0.25	0.35	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	06/08/05	<0.25	0.49	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA*
	09/21/05	<0.25	0.39	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	12/14/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	03/14/06	<0.25	<0.25	<0.50	<0.001	<0.001	<0.001	<0.001	<0.0050*
	06/07/06	<0.25	<0.25	<0.50	<0.005	<0.005	<0.005	<0.005	<0.0050*
	09/13/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	12/13/06	<0.25	0.33	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0077*

**TABLE 2
GROUNDWATER ANALYTICAL RESULTS**

Kinder Morgan Liquid Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest
Seattle, Washington

Sample I.D.	Date	TPH-Gasoline (ppm)	TPH-Diesel (ppm)	TPH-Oil (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	Total Lead (ppm)
MW-14	02/13/02	2.5	37	<5.0	0.01	0.0085	0.18	0.22	NA
	05/21/02	2.9	23	1.0	0.0093	0.0057	0.18	0.15	NA
	08/29/02	2.9	28	<0.5	0.017	0.0073	0.21	0.14	NA
	11/05/02	2.0	28	0.91	0.06	0.0059	0.12	0.076	NA
	02/20/03	3.4	18	<0.5	0.056	0.0062	0.14	0.11	NA
	06/11/03	3.1	28	<0.5	0.059	0.0098	0.23	0.13	NA
	09/16/03	<1.0	15	<0.50	0.13	<0.005	0.019	0.022	NA
	11/20/03	<2.0	29	0.70	0.12	<0.01	0.02	0.031	NA
	02/24/04	2.4	21	<0.50	0.061	0.014	0.25	0.2	NA
	05/11/04	2.7	27	<0.50	0.053	0.0092	0.21	0.16	NA
	08/26/04	2.3	11	0.53	0.024	<0.0025	0.16	0.19	NA
	12/15/04	1.2	9.6	<0.50	0.0084	<0.005	0.01	0.0055	NA
	03/09/05	4.2	7.7	<0.50	0.0053	0.0094	0.18	0.099	NA
	06/08/05	3.1	8.8	<0.50	0.0043	0.0069	0.17	0.11	NA
	09/21/05	1.6	10.0	1.1	0.012	0.0048	0.077	0.068	NA
	12/14/05	3.1	2.0	<0.50	0.0059	0.0075	0.120	0.068	NA
03/14/06	0.79	2.1	<0.50	<0.0025	<0.0025	0.023	0.03	NA	
06/07/06	0.84	3.0	<0.50	<0.0025	<0.0025	0.061	0.033	NA	
09/13/06	2.4	1.8	<0.50	<0.0025	0.0060	0.100	0.056	NA	
	12/13/06	1.1	1.4	<0.50	<0.0025	<0.0025	0.044	0.029	NA
MW-16	02/13/02	<0.25	<0.25	<0.5	0.0013	0.0037	<0.0005	0.0011	NA
	05/21/02	<0.25	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	NA
	08/29/02	<0.25	<0.5	<0.5	<0.0005	0.0022	<0.0005	0.00069	NA
	11/05/02	<0.25	0.29	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	NA
	02/19/03	<0.25	<0.25	<0.5	<0.0005	0.0018	<0.0005	<0.0005	NA
	06/10/03	<0.25	<0.25	<0.25	<0.0005	<0.0005	<0.0005	<0.0005	NA
	09/16/03	<0.25	<0.50	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	11/19/03	<0.25	<0.25	<0.50	<0.0005	0.0013	<0.0005	0.00062	NA
	02/25/04	<0.25	<0.50	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	05/11/04	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	08/26/04	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	12/15/04	<0.25	<0.25	<0.50	0.029	<0.0005	<0.0005	<0.0005	NA
	03/10/05	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	06/07/05	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	09/20/05	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	12/13/05	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
03/15/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA	
06/08/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA	
09/12/06	<0.25	<0.25	<0.50	<0.0005	0.00062	0.0012	<0.0005	NA	
	12/12/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
MW-18	02/13/02	7.6	0.77	<0.5	1.8	0.067	0.29	0.34	NA
	05/21/02	1.2	0.30	<0.5	0.25	0.016	0.068	0.068	NA
	08/29/02	1.6	<0.5	<0.5	0.45	0.014	0.032	0.044	NA
	11/05/02	1.1	<0.25	<0.5	<0.3	0.010	0.011	0.031	NA
	02/19/03	<0.25	<0.25	<0.5	0.0035	0.0047	<0.0005	0.0016	NA
	06/10/03	<0.25	<0.25	<0.25	0.022	0.0016	<0.0005	0.004	NA
	09/16/03	<0.25	<0.50	<0.50	0.036	0.0019	<0.0005	0.0075	NA
	11/19/03	<0.25	<0.25	<0.50	0.0042	<0.0005	<0.0005	0.0015	NA
	02/25/04	0.58	<0.25	<0.50	0.11	0.0048	0.00087	0.026	NA
	05/11/04	1.1	<0.25	<0.50	0.25	0.0073	0.0016	0.037	NA
	08/26/04	<0.25	<0.25	<0.50	0.003	<0.0005	<0.0005	<0.0005	NA
	12/15/04	0.84	<0.25	<0.50	0.14	0.006	0.0019	0.029	NA
	03/10/05	0.84	<0.25	<0.50	0.25	0.0049	0.002	0.021	NA
	06/07/05	0.68	<0.25	<0.50	0.17	0.0039	0.0019	0.0098	NA
	09/20/05	4.0	<0.25	<0.50	0.74	0.021	0.0091	0.09	NA
	12/13/05	2.3	<0.25	<0.50	0.45	0.015	0.0067	0.033	NA
03/15/06	4.9	<0.25	<0.50	1.2	0.035	0.025	0.12	NA	
06/08/06	1.2	<0.25	<0.50	0.15	0.011	0.011	0.034	NA	
09/12/06	0.35	<0.25	<0.50	0.023	0.0021	0.0022	0.0047	NA	
	12/12/06	0.28	<0.25	<0.50	0.023	0.0018	0.0019	0.0060	NA

**TABLE 2
GROUNDWATER ANALYTICAL RESULTS**

Kinder Morgan Liquid Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest
Seattle, Washington

Sample I.D.	Date	TPH-Gasoline (ppm)	TPH-Diesel (ppm)	TPH-Oil (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	Total Lead (ppm)
MW-19	02/13/02	29	6.8	<2.5	0.057	0.73	0.58	6.5	NA
	05/21/02	30	7.7	<0.5	0.049	0.65	0.53	6.5	NA
	08/29/02	13	11	<0.5	0.14	0.29	0.20	2.1	NA
	11/05/02	8.2	3.0	<0.5	0.21	0.37	0.16	1.7	NA
	02/20/03	38	19	<0.5	0.091	1.2	0.80	8.0	NA
	06/11/03	32	15	<1.0	0.042	0.38	0.80	6.7	NA
	09/16/03	4.2	12	<0.50	0.19	0.043	0.19	1.1	NA
	11/20/03	22	10	<0.50	0.11	0.67	0.75	6.1	NA
	02/24/04	19	14	<0.50	<0.015	0.49	0.63	4.7	NA
	05/11/04	27	13	<0.50	<0.025	0.22	0.87	7.2	NA
	08/26/04	22	0.72	<0.50	0.042	0.26	0.64	4.6	NA
	12/15/04	15	7.6	<0.50	0.039	0.12	0.37	2.7	NA
	03/09/05	27	9.1	<0.50	0.073	0.18	0.56	3.4	NA
	06/08/05	17	6.3	<0.50	0.071	0.17	0.61	2.8	NA
	09/20/05	NS	NS	NS	NS	NS	NS	NS	NS
	12/14/05	NS	NS	NS	NS	NS	NS	NS	NS
	03/14/06	NS	NS	NS	NS	NS	NS	NS	NS
06/07/06	14	1.4	<0.50	<0.010	0.043	0.29	1.4	NA	
09/13/06	11	0.5	<0.50	0.032	0.047	0.41	1.1	NA	
	12/13/06	8.0	1.4	<0.50	0.016	0.052	0.30	1.4	NA
MW-20	02/13/02	<0.25	0.64	<0.5	<0.001	<0.001	<0.001	<0.001	NA
	05/20/02	<0.25	1.3	<0.5	0.018	0.0012	0.0048	0.014	NA
	08/29/02	0.6	1.1	<0.5	0.057	0.0065	0.021	0.084	NA
	11/06/02	<0.25	0.81	<0.5	0.0023	0.00053	<0.0005	<0.0005	NA
	02/19/03	<0.25	<0.25	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	NA
	06/11/03	<0.25	0.68	<0.25	<0.0005	<0.0005	<0.0005	<0.0005	NA
	09/17/03	<0.25	<0.50	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	11/20/03	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	0.00072	NA
	02/25/04	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	05/11/04	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	08/26/04	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	12/15/04	<0.25	0.30	<0.50	0.0013	<0.0005	<0.0005	<0.0005	NA
	03/09/05	<0.25	<0.25	<0.50	0.00074	<0.0005	<0.0005	<0.0005	NA
	06/08/05	<0.25	0.55	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	09/21/05	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	12/14/05	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	03/14/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
06/07/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA	
09/13/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA	
	12/13/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
MW-21	06/11/03	NS	NS	NS	NS	NS	NS	NS	NS
	09/17/03	NS	NS	NS	NS	NS	NS	NS	NS
	11/20/03	0.97	19	<0.50	<0.0025	<0.0025	<0.0025	<0.0025	NA
	02/26/04	2.3	35	<0.50	<0.0025	<0.0025	<0.0025	<0.0025	NA
	05/11/04	1.2	29	<0.50	<0.0025	<0.0025	<0.0025	<0.0025	NA
	08/26/04	4.3	33	<0.50	<0.001	<0.001	0.0013	0.0014	NA
	12/15/04	NS	NS	NS	NS	NS	NS	NS	NA
	03/09/05	2.4	140	<5.0	<0.0015	<0.0015	0.0016	<0.0015	NA
	06/08/05	1.8	31	0.5	<0.002	<0.002	0.0026	<0.002	NA
	09/21/05	1.7	46	3.3	<0.0010	<0.0010	0.0013	<0.0010	NA
	12/14/05	1.0	6.1	0.54	<0.002	<0.002	0.0027	<0.002	NA
	03/14/06	<0.25	33	3.1	<0.0005	<0.0005	<0.0005	<0.0005	NA
06/07/06	0.8	18	1.2	<0.0025	<0.0025	<0.0025	<0.0025	NA	
09/13/06	NS	NS	NS	NS	NS	NS	NS	NS	
	12/13/06	NS	NS	NS	NS	NS	NS	NS	NS

**TABLE 2
GROUNDWATER ANALYTICAL RESULTS**

Kinder Morgan Liquid Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest
Seattle, Washington

Sample I.D.	Date	TPH-Gasoline (ppm)	TPH-Diesel (ppm)	TPH-Oil (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	Total Lead (ppm)
MW-22	02/13/02	0.96	9.2	<0.5	0.012	0.0053	0.017	0.0097	NA
	05/21/02	1.1	7.7	<0.5	0.16	0.049	0.023	0.03	NA
	08/29/02	1.4	2.4	<0.5	0.5	0.0093	0.044	0.0066	NA
	11/05/02	0.49	1.7	<0.5	0.14	0.0031	0.025	<0.001	NA
	02/19/03	<0.25	9.1	<0.5	<0.001	<0.001	<0.001	<0.001	NA
	06/10/03	<0.25	7.4	0.87 ^a	<0.001	<0.001	<0.001	<0.001	NA
	09/16/03	<0.25	2.7	<0.50	0.0018	<0.0005	<0.0005	<0.0005	NA
	11/19/03	<0.50	8.4	<0.50	<0.0025	<0.0025	<0.0025	<0.0025	NA
	02/25/04	<0.25	6.4	<0.50	<0.001	<0.001	<0.001	<0.001	NA
	05/11/04	<0.25	2.0	<0.50	<0.001	<0.001	<0.001	<0.001	NA
	08/25/04	<0.25	0.61	<0.50	<0.001	<0.001	<0.001	<0.001	NA*
	12/14/04	<0.25	1.1	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	03/10/05	<0.25	2.2	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	06/07/05	<0.25	3.0	<0.50	0.0049	<0.001	<0.001	<0.001	NA
	09/20/05	0.40	2.9	<0.50	<0.001	<0.001	<0.001	<0.001	NA
	12/13/05	<0.25	0.71	<0.50	<0.001	<0.001	<0.001	<0.001	NA
	03/15/06	<0.25	2.4	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	06/08/06	<0.25	0.89	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	09/12/06	<0.25	0.45	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	12/12/06	<0.25	1.4	<0.50	<0.001	<0.001	<0.001	<0.001	NA
MW-23	11/19/03	5.3	1.4	<0.50	0.87	0.016	0.098	0.23	NA
	02/25/04	3.3	0.85	<0.50	0.91	0.011	0.046	0.03	0.0052*
	05/12/04	4.2	1.3	<0.50	1.1	0.013	0.046	0.048	<0.0050*
	08/26/04	5.3	0.72	<0.50	1.1	0.023	0.2	0.17	0.014*
	12/14/04	NS	NS	NS	NS	NS	NS	NS	NS
	03/08/05	NS	NS	NS	NS	NS	NS	NS	NS
	06/07/05	NS	NS	NS	NS	NS	NS	NS	NS
	09/20/05	NS	NS	NS	NS	NS	NS	NS	NS
	12/13/05	6.3	<0.25	<0.50	1.3	0.014	0.048	0.044	<0.0050*
	03/15/06	7.0	0.28	<0.50	1.4	0.015	0.19	0.21	<0.0050*
	06/08/06	5.2	1.30	<0.50	1.4	0.014	0.11	0.11	<0.0050*
	09/12/06	NS	NS	NS	NS	NS	NS	NS	NS
	12/12/06	8.1	<0.25	<0.50	1.8	0.020	0.11	0.16	<0.0050*
MW-24	11/19/03	34	6.4	0.54	2.8	0.54	1.4	6	NA
	02/25/04	26	3.0	<0.50	4.3	0.085	1.0	3.3	<0.0050*
	05/12/04	NS	NS	NS	NS	NS	NS	NS	NS
	08/26/04	NS	NS	NS	NS	NS	NS	NS	NS
	12/14/04	NS	NS	NS	NS	NS	NS	NS	NS
	03/08/05	NS	NS	NS	NS	NS	NS	NS	NS
	06/07/05	NS	NS	NS	NS	NS	NS	NS	NS
	09/20/05	NS	NS	NS	NS	NS	NS	NS	NS
	12/14/05	NS	NS	NS	NS	NS	NS	NS	NS
	03/15/06	26	0.34	<0.50	4.4	0.064	0.88	4.2	0.0069
	06/08/06	21	<0.25	<0.50	1.5	0.039	0.86	4.9	0.0068
	09/12/06	NS	NS	NS	NS	NS	NS	NS	NS
	12/12/06	20	1.1	<0.50	1.5	0.037	0.69	3.2	0.0078*
MW-25	11/20/03	<0.25	1.3	<0.50	0.0061	<0.0005	<0.0005	<0.0005	NA
	02/26/04	0.38	8.9	<0.50	0.0011	<0.0005	0.0027	<0.0005	0.012*
	5/12/04	<0.25	1.6	<0.50	<0.0005	<0.0005	0.0034	<0.0005	<0.0050*
	08/26/04	<0.25	0.27	<0.50	0.013	<0.0005	<0.0005	<0.0005	0.034 ^{a,b}
	12/14/04	<0.25	1.4	<0.50	0.0035	<0.001	<0.001	<0.001	<0.0050*
	03/10/05	0.31	3.7	<0.50	0.0014	<0.0005	0.00064	<0.0005	<0.0050*
	06/07/05	0.40	3.2	<0.50	<0.001	<0.001	0.0014	<0.001	<0.0050*
	09/20/05	0.30	1.4	<0.50	0.0016	<0.0005	<0.0005	<0.0005	0.059 ^a
	12/13/05	<0.25	1.2	<0.50	<0.001	<0.001	<0.001	<0.001	<0.0050*
	03/15/06	<0.25	1.0	<0.50	0.0019	<0.001	<0.001	<0.001	<0.0050*
	06/08/06	<0.25	1.4	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
09/12/06	<0.25	0.31	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	
12/12/06	<0.25	0.86	<0.50	0.0052	<0.0005	<0.0005	<0.0005	<0.0050*	

**TABLE 2
GROUNDWATER ANALYTICAL RESULTS**

Kinder Morgan Liquid Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest
Seattle, Washington

Sample I.D.	Date	TPH-Gasoline (ppm)	TPH-Diesel (ppm)	TPH-Oil (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	Total Lead (ppm)
A-5	02/14/02	<0.25	2.3	<0.5	0.00055	0.0017	<0.0005	<0.0005	NA
	05/22/02	<0.25	2.0	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	NA
	08/29/02	<0.25	1.2	<0.5	0.0017	0.00062	<0.0005	0.00099	NA
	11/06/02	<0.25	1.2	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	NA
	02/20/03	<0.25	<0.25	<0.5	0.00086	0.0019	<0.0005	0.001	NA
	06/10/03	0.26	0.4	<0.25	<0.0005	0.00067	<0.0005	0.0007	NA
	09/17/03	<0.25	0.60	<0.50	0.0042	<0.0005	<0.0005	<0.0005	NA
	11/20/03	<0.25	0.53	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	02/26/04	<0.25	3.3	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	05/12/04	0.27	0.43	<0.50	<0.0005	<0.0005	<0.0005	0.00057	NA
	08/25/04	<0.25	1.1	<0.50	0.0029	<0.0005	<0.0005	<0.0005	NA
	12/14/04	<0.25	0.43	<0.50	0.021	<0.001	<0.001	<0.001	NA
	03/10/05	0.43	5.2	<0.50	0.12	0.0025	<0.001	0.0012	NA
	06/07/05	0.54	2.4	1.70	0.12	0.0028	<0.001	0.0013	NA
	09/20/05	0.37	1.2	<0.50	0.037	0.0017	<0.001	0.0011	NA
	12/13/05	0.44	0.31	<0.50	0.049	0.0021	<0.0005	0.0013	NA
03/15/06	0.36	0.45	<0.50	0.052	0.0017	<0.001	0.0017	NA	
06/08/06	0.91	0.55	<0.50	0.099	0.0036	0.00076	0.0034	NA	
09/12/06	0.46	0.43	<0.50	0.031	0.0016	<0.001	0.0014	NA	
	12/12/06	0.70	0.53	<0.50	0.079	0.0028	<0.001	0.0025	NA
A-8	02/14/02	<0.25	1.6	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	NA
	05/22/02	<0.25	0.51	<0.5	<0.0005	0.00058	<0.0005	<0.0005	NA
	08/28/02	<0.25	<0.5	<0.5	<0.0005	0.0014	<0.0005	0.00066	NA
	11/06/02	<0.25	0.43	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	NA
	02/20/03	<0.25	<0.25	<0.5	<0.0005	0.00083	<0.0005	<0.0005	NA
	06/10/03	<0.25	<0.25	<0.25	<0.0005	0.00056	<0.0005	<0.0005	NA
	09/17/03	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	11/20/03	<0.25	1.4	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	02/26/04	0.35	1.0	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	05/12/04	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	08/25/04	<0.25	4.9	<0.50	<0.001	<0.001	<0.001	<0.001	NA
	12/14/04	<0.25	1.7	<0.50	0.00056	0.00052	<0.0005	0.00094	NA
	03/10/05	<0.25	2.1	<0.50	<0.0005	<0.0005	<0.0005	0.00055	NA
	06/07/05	<0.25	1.2	1.5	<0.0005	<0.0005	<0.0005	<0.0005	NA
	09/20/05	<0.25	3.5	0.8	0.0012	<0.001	<0.001	0.0012	NA
	12/13/05	<0.25	0.54	<0.50	<0.0005	<0.0005	<0.0005	0.0011	NA
03/15/06	<0.25	0.55	<0.50	<0.001	<0.001	<0.001	<0.001	NA	
06/08/06	<0.25	0.47	<0.50	<0.001	<0.001	<0.001	<0.001	NA	
09/12/06	<0.25	0.76	<0.50	<0.001	<0.001	<0.001	0.0011	NA	
	12/12/06	0.27	0.87	<0.50	<0.001	0.0011	<0.001	0.0015	NA
A-10	02/14/02	<0.25	9.2	<0.5	<0.0005	0.00062	<0.0005	<0.0005	NA
	05/22/02	0.31	8.8	<0.5	<0.0005	0.00086	<0.0005	<0.0005	NA
	08/28/02	0.30	15	<0.5	<0.001	<0.001	<0.001	<0.001	NA
	11/06/02	0.37	13	<0.50	<0.0005	0.00057	<0.0005	<0.0005	NA
	02/20/03	<0.25	6.0	<0.5	0.0013	<0.0005	<0.0005	0.00055	NA
	06/10/03	0.45	19	<0.25	<0.001	<0.001	<0.001	<0.001	NA
	09/17/03	0.68	30	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	11/20/03	1.1	89	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	02/26/04	<0.25	35	0.74	<0.0005	<0.0005	<0.0005	<0.0005	NA
	05/12/04	<0.25	3.5	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	08/25/04	<0.25	5.1	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA*
	12/14/04	<0.25	1.1	<0.50	0.003	<0.001	<0.001	<0.001	NA
	03/10/05	<0.25	4.6	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	06/07/05	0.3	68.0	2.10	0.00069	<0.0005	<0.0005	<0.0005	NA
	09/20/05	0.6	1.5	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
	12/13/05	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA
03/15/06	<0.25	1.7	<0.50	<0.0005	<0.0005	<0.0005	0.0005	NA	
06/08/06	<0.25	0.7	<0.50	<0.0005	<0.0005	<0.0005	0.0005	NA	
09/12/06	<0.25	0.65	<0.50	<0.0005	<0.0005	<0.0005	0.0005	NA	
	12/12/06	<0.25	0.98	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA

**TABLE 2
GROUNDWATER ANALYTICAL RESULTS**

Kinder Morgan Liquid Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest
Seattle, Washington

Sample I.D.	Date	TPH-Gasoline (ppm)	TPH-Diesel (ppm)	TPH-Oil (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Xylenes (ppm)	Total Lead (ppm)
A-14	12/20/00	<0.05	<0.25	<0.5	<0.001	<0.001	<0.001	<0.003	0.65
A-14R	02/14/02	<0.25	<0.25	<0.5	0.00061	0.0021	<0.0005	<0.0005	0.005*
	05/22/02	<0.25	<0.5	<0.5	0.00053	0.0021	<0.0005	0.00054	0.02*
	08/28/02	<0.25	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*
	11/06/02	<0.25	<0.25	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*
	02/20/03	<0.25	<0.25	<0.25	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*
	06/10/03	<0.25	<0.25	<0.25	<0.0005	<0.0005	<0.0005	<0.0005	0.02*
	09/17/03	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.025*
	11/20/03	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.032*
	02/26/04	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.018*
	05/12/04	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	08/25/04	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	12/14/04	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.0072*
	03/10/05	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	06/07/05	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	09/20/05	NS	NS	NS	NS	NS	NS	NS	NS
	12/13/05	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	03/15/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	06/08/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	09/12/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	12/12/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
A-21	02/14/02	<0.25	<0.25	<0.5	<0.0005	0.001	<0.0005	<0.0005	<0.005*
	05/22/02	<0.25	<0.5	<0.5	0.00061	0.0017	<0.0005	0.00057	<0.005*
	08/29/02	<0.25	0.76	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*
	11/06/02	<0.25	0.37	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*
	02/19/03	<0.25	<0.5	<0.5	0.0013	0.0018	<0.0005	0.00061	<0.005*
	06/10/03	0.25	<0.25	<0.25	0.0082	0.00058	<0.0005	<0.0005	0.062*
	09/16/03	<0.25	<0.25	<0.50	0.0034	<0.0005	<0.0005	<0.0005	0.0085*
	11/19/03	0.47	<0.25	<0.50	0.061	0.0019	<0.0005	0.0029	0.0067*
	02/25/04	0.63	<0.50	<0.50	0.013	0.00066	0.045	0.0016	<0.0050*
	05/12/04	0.50	<0.25	<0.50	0.0019	<0.0005	0.0042	0.00072	<0.0050*
	08/25/04	0.26	<0.25	<0.50	0.0015	<0.0005	<0.0005	0.0015	<0.0050*
	12/14/04	0.99	<0.25	<0.50	0.061	0.0025	0.022	0.0083	<0.0050*
	03/10/05	1.5	0.26	<0.50	0.024	0.0021	0.0025	0.011	0.020*
	06/07/05	1.2	0.35	<0.50	0.0076	0.00084	0.00077	0.0043	<0.0050*
	09/20/05	1.3	<0.25	<0.50	0.011	0.0012	0.00066	0.0048	<0.0050*
	12/13/05	1.6	<0.25	<0.50	0.017	0.0016	0.0015	0.0052	<0.0050*
	03/15/06	0.97	<0.25	<0.50	0.0098	0.00097	0.0023	0.0033	<0.0050*
	06/08/06	0.82	<0.25	<0.50	0.0023	0.00059	<0.0005	0.0019	<0.0050*
	09/12/06	0.85	<0.25	<0.50	0.0019	<0.0005	<0.0005	0.0016	<0.0050*
	12/12/06	0.85	<0.25	<0.50	0.0071	<0.0005	0.0021	0.0014	<0.0050*
A-23R	02/14/02	0.26	2.1	<0.5	0.06	0.001	0.0099	0.0072	0.72 ^{ab}
	05/20/02	0.74	6.9	<0.5	0.15	<0.001	0.088	0.0067	0.095 ^{ab}
	08/28/02	0.62	2.1	<0.5	0.2	0.0035	0.021	0.0075	0.23*
	11/05/02	0.74	1.7	<0.5	0.22	<0.0015	0.0059	0.014	0.18*
	02/19/03	0.71	2.3	<0.5	0.26	0.0033	0.0054	0.0059	0.049*
	06/10/03	<0.25	1.8	<0.25	0.0073	<0.001	0.0028	<0.001	<0.005*
	09/16/03	0.70	1.3	<0.50	0.043	0.0029	0.057	0.0018	0.38*
	11/19/03	1.0	0.78	<0.50	0.08	0.0037	0.069	0.0035	0.13*
	02/25/04	1.6	0.78	<0.50	0.26	0.0072	0.061	0.015	0.081*
	05/12/04	0.28	0.45	<0.50	0.020	0.00075	0.0022	0.00082	<0.0050*
	08/25/04	2.3	0.35	<0.50	0.46	0.012	0.074	0.02	0.012*
	12/14/04	2.0	0.65	<0.50	0.37	0.0084	0.041	0.013	0.018*
	03/10/05	0.60	0.31	<0.50	0.035	0.0011	0.0045	0.0014	0.035*
	06/07/05	0.33	<0.25	<0.50	0.0080	<0.0005	0.0012	<0.0005	0.013*
	09/20/05	<0.25	<0.25	<0.50	0.00060	<0.0005	<0.0005	<0.0005	0.0096 ^a
	12/14/05	0.37	<0.25	<0.50	0.019	0.00056	0.00065	0.00058	0.032*
	03/15/06	1.1	<0.25	<0.50	0.34	0.0033	<0.0025	0.0051	<0.0050*
	06/08/06	0.34	<0.25	<0.50	0.033	<0.0005	<0.0005	0.031	0.0081*
	09/12/06	0.42	<0.25	<0.50	0.010	<0.0005	0.032	0.0013	0.035*
	12/12/06	2.1	<0.25	<0.50	0.520	0.0066	0.053	0.021	<0.0050*
Dup-1^a	09/20/05	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	12/14/05	0.42	<0.25	<0.50	0.020	0.00064	0.00081	0.00063	0.025*
	03/15/06	1.1	<0.25	<0.50	0.310	0.0036	0.0027	0.0052	0.0099*
	06/08/06	0.33	<0.25	<0.50	0.032	<0.0005	<0.0005	0.031	0.013*
	09/12/06	0.36	<0.25	<0.50	0.009	<0.0005	0.027	0.0011	0.12*
	12/12/06	2.2	<0.25	<0.50	0.520	0.0076	0.061	0.024	0.0077*

**TABLE 2
GROUNDWATER ANALYTICAL RESULTS**

Kinder Morgan Liquid Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest
Seattle, Washington

Sample I.D.	Date	TPH-Gasoline (ppm)	TPH-Diesel (ppm)	TPH-Oil (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	Total Lead (ppm)
A-27	02/14/02	2.9	11	<0.5	0.13	0.014	0.096	0.25	NA
	05/22/02	3.3	8.2	<0.5	0.2	0.016	0.14	0.38	NA
	08/29/02	3.8	8.1	<0.5	0.24	0.016	0.14	0.29	NA
	11/06/02	3.2	8.0	<0.5	0.16	0.016	0.065	0.14	NA
	02/19/03	3.1	6.8	<0.5	0.17	0.017	0.052	0.13	NA
	06/10/03	3.7	4.5	<0.25	0.14	0.013	0.11	0.23	NA
	09/16/03	4.5	5.6	<0.50	0.27	0.02	0.18	0.38	NA
	11/19/03	5.9	5.3	<0.50	0.25	0.023	0.13	0.33	NA
	02/25/04	4.4	16.0	<0.50	0.15	0.016	0.18	0.30	NA
	05/11/04	4.6	5.2	<0.50	0.16	0.017	0.23	0.38	NA
	08/25/04	4.7	2.5	<0.50	0.25	0.018	0.17	0.24	NA*
	12/14/04	4.5	4.4	<0.50	0.11	0.012	0.099	0.14	NA
	03/10/05	5.8	4.7	<0.50	0.14	0.015	0.16	0.22	NA
	06/07/05	4.5	7.8	<0.50	0.17	0.014	0.24	0.34	NA
	09/20/05	6.3	2.3	<0.50	0.25	0.019	0.18	0.22	NA
	12/13/05	3.7	0.83	<0.50	0.13	0.012	0.083	0.095	NA
03/15/06	4.4	1.3	<0.50	0.13	0.017	0.19	0.24	NA	
06/08/06	4.5	1.1	<0.50	0.19	0.016	0.23	0.28	NA	
09/12/06	3.4	0.82	<0.50	0.17	0.011	0.12	0.12	NA	
	12/12/06	3.7	0.90	<0.50	0.110	0.0096	0.10	0.12	NA
A-28R	02/14/02	5.3	2.7	<0.5	0.66	0.027	0.42	0.2	0.035*
	05/22/02	3.1	6.7	<0.5	0.14	0.01	0.2	0.092	0.05*
	08/29/02	4	6	<0.5	0.15	0.019	0.23	0.078	0.032*
	11/06/02	3.4	1.8	<0.5	0.47	0.015	0.053	0.05	0.028*
	02/19/03	3.5	4.6	<0.5	0.46	0.015	0.051	0.05	0.013*
	06/10/03	3.7	2.9	<0.25	0.31	0.0081	0.085	0.051	0.064*
	09/16/03	3.8	2.0	<0.50	1.0	0.013	0.075	0.048	0.17*
	11/19/03	4.9	<0.25	<0.50	0.58	0.012	0.059	0.064	0.11*
	02/25/04	5.1	1.7	<0.50	0.63	0.0093	0.19	0.076	0.0080*
	05/12/04	6.5	2.6	<0.50	0.96	0.012	0.20	0.058	<0.0050*
	08/25/04	5.9	0.88	<0.50	2.1	0.018	0.05	0.053	0.043*
	12/14/04	7.6	3.0	<0.50	1.4	0.015	0.073	0.062	0.025*
	03/10/05	10	0.76	<0.50	1.9	0.019	0.077	0.064	0.0078*
	06/07/05	6	1.20	<0.50	2.1	0.015	0.069	0.048	0.0068*
	09/20/05	NS	NS	NS	NS	NS	NS	NS	NS
	12/13/05	5.4	<0.25	<0.50	0.93	0.011	0.033	0.036	0.012*
03/15/06	4.6	<0.25	<0.50	0.80	0.012	0.11	0.035	<0.0050*	
06/08/06	4.2	0.49	0.73	0.87	0.013	0.07	0.035	0.019*	
09/12/06	5.2	<0.25	<0.50	1.0	0.015	0.048	0.036	0.016*	
	12/12/06	4.0	0.57	<0.50	0.30	0.0095	0.027	0.028	<0.0050*
SH-02	12/20/00	0.078	<0.25	<0.5	0.001	<0.001	<0.001	<0.003	0.015**
SH-02R	02/13/02	<0.25	0.56	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*
	05/21/02	<0.25	2.4	<0.5	0.037	<0.0005	<0.0005	<0.0005	0.005*
	08/28/02	<0.25	4.3	<0.5	0.087	0.0038	0.00061	0.0023	0.006*
	11/05/02	<0.25	1.1	<0.5	0.016	<0.0005	<0.0005	<0.0005	0.005*
	02/19/03	<0.25	<0.5	<0.5	<0.0005	0.00086	<0.0005	<0.0005	<0.005*
	06/10/03	<0.25	0.97	<0.25	<0.0005	0.00051	<0.0005	<0.0005	0.0059*
	09/16/03	<0.25	3.0	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.010*
	11/19/03	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	02/25/04	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	05/12/04	<0.25	0.74	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	08/26/04	<0.25	0.58	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	12/15/04	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	03/09/05	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	06/08/05	<0.25	0.31	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	09/21/05	<0.25	0.58	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	12/14/05	<0.25	0.30	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.0078*
03/14/06	<0.25	0.30	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0072*	
06/07/06	<0.25	0.59	<0.50	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050*	
09/13/06	<0.25	<0.25	<0.50	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050*	
	12/13/06	<0.25	0.49	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*

**TABLE 2
GROUNDWATER ANALYTICAL RESULTS**

Kinder Morgan Liquid Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest
Seattle, Washington

Sample I.D.	Date	TPH-Gasoline (ppm)	TPH-Diesel (ppm)	TPH-Oil (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Xylenes (ppm)	Total Lead (ppm)
SH-05	12/20/00	<0.05	1.0	<0.5	<0.001	<0.001	<0.003	<0.001	0.017**
SH-05R	05/21/02	0.71	11	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*
	08/28/02	0.77	10	<0.5	<0.0005	0.0015	<0.0005	<0.0005	0.006*
	11/05/02	1.4	7.1	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	0.008*
	02/19/03	0.8	6.8	<0.5	<0.001	0.0016	<0.001	<0.001	<0.005*
	06/10/03	1.1	45	<0.25	<0.0005	<0.0005	<0.0005	<0.0005	0.04*
	09/16/03	<0.25	23	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.074*
	11/19/03	0.62	19	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.075*
	02/25/04	<0.25	5.3	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	05/12/04	0.43	4.3	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	08/26/04	0.63	3.0	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050
	12/15/04	0.30	10	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0056*
	03/09/05	0.78	4.3	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	06/08/05	0.32	4.0	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	09/21/05	0.61	2.8	1.0	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	12/14/05	0.78	1.3	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	03/14/06	<0.25	1.4	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.0074*
	06/07/06	<0.25	1.4	<0.50	<0.001	<0.001	<0.001	<0.001	<0.0050*
	09/13/06	0.34	0.56	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	12/13/06	<0.50	1.9	<0.50	<0.0025	<0.0025	<0.0025	<0.0025	<0.0050*
MW-07R	02/13/02	<0.25	1.2	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	0.035*
	05/21/02	<0.25	2.1	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	0.005*
	08/28/02	<0.25	2.4	<0.5	<0.0005	0.0028	<0.0005	0.0012	0.006*
	11/05/02	<0.25	3.7	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*
	02/19/03	NS	NS	NS	NS	NS	NS	NS	NS
	06/10/03	NS	NS	NS	NS	NS	NS	NS	NS
	09/16/03	<0.25	1.9	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.045*
	11/19/03	<0.25	2.1	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.020*
	02/25/04	<0.25	<0.50	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	05/12/04	<0.25	0.48	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	08/26/04	<0.25	0.42	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	NA*
	12/15/04	<0.25	0.85	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.0076*
	03/09/05	<0.25	0.54	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	06/08/05	<0.25	0.46	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	09/21/05	<0.25	0.70	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	12/14/05	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	03/14/06	<0.25	0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	06/07/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*
	09/13/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.0065
	12/13/06	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*

Notes:
 < = Denotes compound was not detected at designated detection limit.
 NA = Not analyzed for this parameter
 NS = Not sampled
 ^ = Dup-1 is a duplicate sample for A-23R; Dup-2 is a duplicate sample for MW-3.
 * = Also tested for Dissolved Lead (EPA-200.8), results are below detection limit of 0.0050 ppm.
 ** = Also tested for Dissolved Lead (EPA-200.8), results are at or above detection limit of 0.0050 ppm.
 *** = Also tested for Dissolved Lead (EPA-7421), results are below detection limit of 0.004 ppm.
^a = Insulating oil range hydrocarbons were reported for MW-22 at concentration of 0.87 ppm.
 TPH as gasoline - Analysis by Washington Method WTPH-G prior to 5/20/98; analysis by Northwest Method NWTPH-Gx from 5/20/98 through present.
 TPH as diesel and oil - Analysis by Washington Method WTPH-D+ extended prior to 5/20/98; analysis by Northwest Method NWTPH-Dx from 5/20/98 through present.
 BTEX Compounds - Analysis by EPA Method 8020 prior to 5/20/98; analysis by EPA Method 8021B from 5/20/98 through present.

TABLE 3
ANALYTICAL SUMMARY 2000 - DECEMBER 2006
CURRENT GROUNDWATER COMPLIANCE PROGRAM
 Kinder Morgan Harbor Island Terminal

Well ID	Indicator Hazardous Substances, concentration in mg/L							
	TPH-G	Benzene	Ethylbenzene	Toluene	TPH-D	TPH-O	Total Lead	Dissolved Lead
Cleanup Criteria	1.0	0.071	29.0	200.0	10	10	0.0058	--
A-5	ND - 0.54	ND - 0.12, >0.071 on 12-06	ND	ND - 0.0036	ND - 5.2	ND - 1.7		
A-8	ND - 0.35	ND - 0.0012	ND	ND - 0.0014	ND - 4.9	ND - 1.5		
A-10	ND - 1.1, <1 since 02-04	ND - 0.0030	ND	ND - 0.00086	ND - 89, <10 since 09-05	ND - 2.1		
A-14R	ND	ND - 0.002	ND	ND - 0.0021	ND	ND	ND-0.032 <0.0058 since 06-05	ND
A-21	ND - 1.6, <1 since 03-06	ND - 0.061, <0.071 since 06-01	ND - 0.045	ND - 0.0025	ND - 0.76	ND	ND-0.062 <0.0058 since 06-05	ND
A-23R	ND - 2.3, >1 on 12-06	0.00060 - 0.46, >0.071 on 12-06	ND - 0.088	ND - 0.012	ND - 6.9	ND	ND - 0.72 <0.0058 since 09-06	detected
A-27	2.0 - 6.3, >1 on 12-06	0.11 - 0.27	0.04 - 0.24	0.009 - 0.023	0.83 - 16, <10 since 05-04	ND		
A-28R	3.1 - 10	0.14 - 2.1	0.033 - 0.42	0.0081 - 0.027	ND - 6.7	ND	ND - 0.17 <0.0058 since 12-06	ND
MW-1	ND - 0.83	ND - 0.0013	ND - 0.0020	ND - 0.0067	ND - 2.0	ND	ND - 0.021 <0.0058 since 02-03	ND
MW-2	ND	ND	ND	ND - 0.00071	ND - 0.91	ND	ND - 0.062 since 09-06	detected
MW-3	ND - 45, <1 since 02-02	ND - 0.36, <0.071 since 02-03	ND - 0.23	ND - 0.18	ND - 17, <10 since 12-00	ND - 0.68	ND - 0.042 <0.0058 since 03-05	ND
MW-4	ND - 3.3, <1 since 06-03*	ND - 1.1, <0.071 since 02-03	ND - 0.034	ND - 0.023	1.1 - 280, <10 since 12-05	ND - 2.6		
MW-5	ND - 0.13	ND - 0.019	ND	ND - 0.0018	ND - 1.6	ND	ND - 0.11 >0.0058 on 12-06	ND
MW-6	ND - 1.1, <1 since 03-06	ND - 0.19, <0.071 since 09-01	ND - 0.0050	ND - 0.0070	ND - 7.3	ND	ND - 0.052 since 03-05	ND
MW-7	0.26 - 18, >1 on 09-06	ND - 0.34, >0.071 on 09-06	ND - 0.69	ND - 0.37	ND - 21, <10 since 12-04	ND - 0.81	0.0083 - 0.23 >0.058 on 09-06	detected
MW-8	ND	ND - 0.0013	ND	ND - 0.00086	0.54 - 42, <10 since 03-01	ND - 2.9	ND - 0.069 <0.0058 since 12-06	ND
MW-9	ND - 10, >1 on 12-06	ND - 0.038	0.020 - 0.23	0.0034 - 0.049	1.2 - 39 <10 since 05-04	ND - 0.72	ND - 0.053 >0.0058 on 12-06	ND
MW-12R	ND - 0.56	ND - 0.26, <0.071 since 12-04	ND	ND - 0.0059	ND - 2.5	ND	ND - 0.013 <0.0058 since 05-04	ND
MW-13R	ND	ND - 0.056	ND	ND - 0.0032	ND - 3.5	ND	ND - 0.012 <0.0058 since 05-04	ND
MW-14	ND - 6.8, >1 on 12-06	ND - 0.48, <0.071 since 02-04	0.019 - 0.26	ND - 0.014	2.0 - 37, <10 since 12-05	ND - 1.1		
MW-16	ND - 0.88	ND - 0.029	ND - 0.0010	ND - 0.0037	ND - 1.7	ND		
MW-18	ND - 7.6, <1 since 09-06	ND - 1.8, <0.071 since 09-06	ND - 0.29	ND - 0.067	ND - 0.77	ND		
MW-19	4.2 - 68	ND - 1.4, <0.071 since 06-06	0.16 - 1.1	0.12 - 4.0	0.72 - 19 <10 since 08-04	ND		
MW-20	ND - 1.8, <1 since 03-01	ND - 0.68, <0.071 since 02-02	ND - 0.067	ND - 0.020	ND - 5.0	ND - 0.7		
MW-21	ND - 4.3, SPH on 12-06	ND	ND - 0.019	ND - 0.006	6.1 - 140, SPH on 12-06	ND - 3.3 SPH on 12-06		
MW-22	ND - 5.1, <1 since 11-02	ND - 1.9, <0.071 since 02-03	ND - 0.35	ND - 0.097	0.61 - 9.2	ND - 0.87		
SH-02R	ND - 0.078	ND - 0.087, <0.071 since 11-02	ND - 0.00061	ND - 0.0038	ND - 4.3	ND	ND - 0.010 <0.0058 since 06-06	ND
SH-05R	ND - 1.4, <1 since 09-03	ND	ND	ND - 0.0016	1.3 - 45, <10 since 03-05	ND - 1.0	ND - 0.075 <0.0058 since 03-05	ND
MW-07R	ND	ND	ND	ND - 0.0028	ND - 3.7	ND	ND - 0.045 <0.0058 since 12-06	ND
MW-23	SPH, 4.2 - 7.0 >1 on 12-06	0.87 - 1.4 >0.071 on 12-06	0.046 - 0.19	0.011 - 0.023	SPH, ND - 1.4	ND	ND - 0.014 <0.0058 since 12-05	ND
MW-24	SPH, 26 - 34	2.8 - 4.4	0.88 - 1.4	0.064 - 0.54	SPH, 0.34 - 6.4	ND - 0.54	ND - 0.0069 >0.0058 on 12-07	ND
MW-25	ND - 0.40	ND - 0.013	ND - 0.0034	ND	0.27 - 8.9	ND	ND - 0.034	detected

Notes: * ND but detection limit > 1 during 2 events in 2005

Recommend reduction in monitoring frequency and/or parameters

Parameter not analyzed

TABLE 4
PROPOSED GROUNDWATER COMPLIANCE PROGRAM
RECOMMENDED MONITORING FREQUENCY
Kinder Morgan Harbor Island Terminal

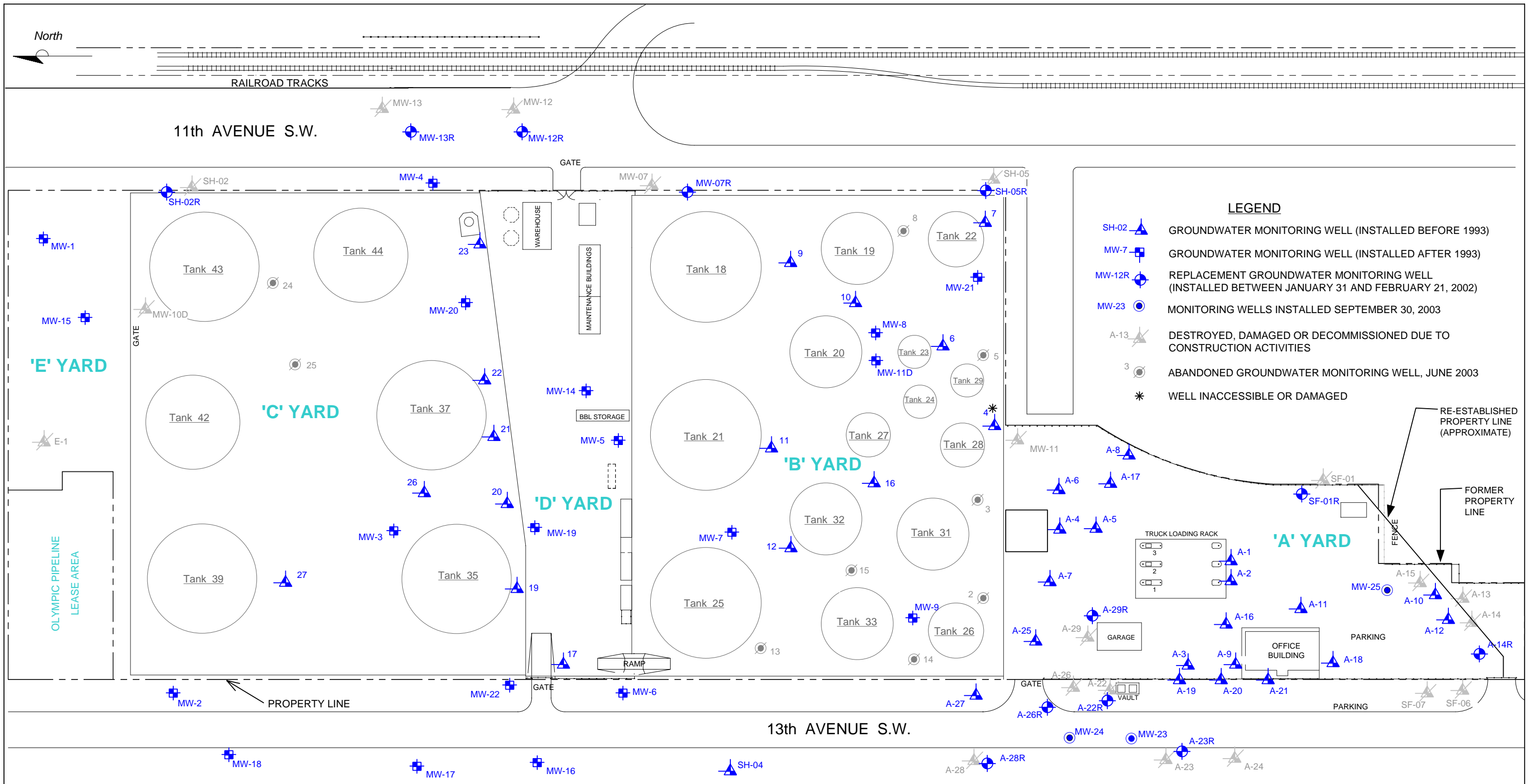
Well ID	Indicator Hazardous Substances				Natural Attenuation Parameters				
	TPH-G/ BTEX	TPH-D/TPH-O	Total Lead	Dissolved Lead	Nitrate (NO3)	Ferrous Iron	Methane	Sulfate (SO4)	Sulfide (H2S)
A-5	Quarterly	Discontinue							
A-8	Annual	Annual							
A-10	Annual	Annual			Discontinue	Discontinue	Discontinue	Discontinue	Discontinue
A-14R	Annual	Annual	Annual	Discontinue	Discontinue	Discontinue	Discontinue	Discontinue	Discontinue
A-21	Quarterly	Discontinue	Annual	Discontinue	Annual	Annual	Annual	Annual	Annual
A-23R	Quarterly	Discontinue	Annual	Annual	Annual	Annual	Annual	Annual	Annual
A-27	Quarterly	Discontinue			Annual	Annual	Annual	Annual	Annual
A-28R	Quarterly	Discontinue	Annual	Discontinue	Annual	Annual	Annual	Annual	Annual
MW-1	Annual	Annual	Annual	Discontinue	Discontinue	Discontinue	Discontinue	Discontinue	Discontinue
MW-2	Annual	Annual	Annual	Discontinue	Discontinue	Discontinue	Discontinue	Discontinue	Discontinue
MW-3	Annual	Annual	Annual	Discontinue	Discontinue	Discontinue	Discontinue	Discontinue	Discontinue
MW-4	Annual	Annual			Discontinue	Discontinue	Discontinue	Discontinue	Discontinue
MW-5	Annual	Annual	Annual	Discontinue	Discontinue	Discontinue	Discontinue	Discontinue	Discontinue
MW-6	Quarterly	Discontinue	Annual	Discontinue	Annual	Annual	Annual	Annual	Annual
MW-7	Quarterly	Discontinue	Annual	Annual	Annual	Annual	Annual	Annual	Annual
MW-8	Annual	Annual	Annual	Discontinue	Discontinue	Discontinue	Discontinue	Discontinue	Discontinue
MW-9	Quarterly	Discontinue	Annual	Discontinue	Annual	Annual	Annual	Annual	Annual
MW-12R	Annual	Annual	Annual	Discontinue					
MW-13R	Annual	Annual	Annual	Discontinue					
MW-14	Quarterly	Discontinue			Annual	Annual	Annual	Annual	Annual
MW-16	Annual	Annual							
MW-18	Quarterly	Discontinue							
MW-19	Quarterly	Discontinue			Annual	Annual	Annual	Annual	Annual
MW-20	Annual	Annual			Discontinue	Discontinue	Discontinue	Discontinue	Discontinue
MW-21	Quarterly	Quarterly			Annual	Annual	Annual	Annual	Annual
MW-22	Annual	Annual			Discontinue	Discontinue	Discontinue	Discontinue	Discontinue
SH-02R	Annual	Annual	Annual	Discontinue	Discontinue	Discontinue	Discontinue	Discontinue	Discontinue
SH-05R	Annual	Annual	Annual	Discontinue	Discontinue	Discontinue	Discontinue	Discontinue	Discontinue
MW-07R	Annual	Annual	Annual	Discontinue	Discontinue	Discontinue	Discontinue	Discontinue	Discontinue
MW-23	Quarterly	Discontinue	Annual	Discontinue	Annual	Annual	Annual	Annual	Annual
MW-24	Quarterly	Discontinue	Annual	Discontinue	Annual	Annual	Annual	Annual	Annual
MW-25	Annual	Annual	Annual	Discontinue	Discontinue	Discontinue	Discontinue	Discontinue	Discontinue

Notes: Recommended reduced monitoring frequency

 Parameter not analyzed

TABLE 5
PROPOSED ANNUAL ANALYSES
GROUNDWATER COMPLIANCE PROGRAM
 Kinder Morgan Harbor Island Terminal

Well ID	Indicator Hazardous Substances				Natural Attenuation Parameters				
	TPH-G/ BTEX	TPH-D+ extended	Total Lead	Dissolved Lead	Nitrate (NO3)	Ferrous Iron	Methane	Sulfate (SO4)	Sulfide (H2S)
A-5	4	0							
A-8	1	1							
A-10	1	1			0	0	0	0	0
A-14R	1	1	1	0	0	0	0	0	0
A-21	4	0	1	0	1	1	1	1	1
A-23R	4	0	1	1	1	1	1	1	1
A-27	4	0			1	1	1	1	1
A-28R	4	0	1	0	1	1	1	1	1
MW-1	1	1	1	0	0	0	0	0	0
MW-2	1	1	1	0	0	0	0	0	0
MW-3	1	1	1	0	0	0	0	0	0
MW-4	1	1			0	0	0	0	0
MW-5	1	1	1	0	0	0	0	0	0
MW-6	4	0	1	0	1	1	1	1	1
MW-7	4	0	1	1	1	1	1	1	1
MW-8	1	1	1	0	0	0	0	0	0
MW-9	4	0	1	0	1	1	1	1	1
MW-12R	1	1	1	0					
MW-13R	1	1	1	0					
MW-14	4	0			1	1	1	1	1
MW-16	1	1							
MW-18	4	0							
MW-19	4	0			1	1	1	1	1
MW-20	1	1			0	0	0	0	0
MW-21	4	4			1	1	1	1	1
MW-22	1	1			0	0	0	0	0
SH-02R	1	1	1	0	0	0	0	0	0
SH-05R	1	1	1	0	0	0	0	0	0
MW-07R	1	1	1	0	0	0	0	0	0
MW-23	4	0	1	0	1	1	1	1	1
MW-24	4	0	1	0	1	1	1	1	1
MW-25	1	1	1	0	0	0	0	0	0
Annual Total	74	22	20	2	12	12	12	12	12



LEGEND

- ▲ SH-02 GROUNDWATER MONITORING WELL (INSTALLED BEFORE 1993)
- MW-7 GROUNDWATER MONITORING WELL (INSTALLED AFTER 1993)
- MW-12R REPLACEMENT GROUNDWATER MONITORING WELL (INSTALLED BETWEEN JANUARY 31 AND FEBRUARY 21, 2002)
- MW-23 MONITORING WELLS INSTALLED SEPTEMBER 30, 2003
- ▲ A-13 DESTROYED, DAMAGED OR DECOMMISSIONED DUE TO CONSTRUCTION ACTIVITIES
- 3 ABANDONED GROUNDWATER MONITORING WELL, JUNE 2003
- * WELL INACCESSIBLE OR DAMAGED

RE-ESTABLISHED PROPERTY LINE (APPROXIMATE)

FORMER PROPERTY LINE

FENCE

TRUCK LOADING RACK

3	A-1
2	A-2
1	A-3

OFFICE BUILDING

PARKING

VAULT

GARAGE

WAREHOUSE

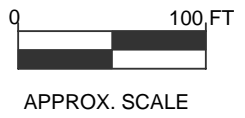
MAINTENANCE BUILDINGS

BBL STORAGE

RAMP

FIGURE 1
SITE MAP
KINDER MORGAN LIQUID TERMINALS, LLC
HARBOR ISLAND TERMINAL
2720 13th AVENUE SOUTHWEST
SEATTLE, WASHINGTON

PROJECT NO. STKM-001-M.0005	DRAWN BY DL March 2007
FILE NO. STKM-001-M.0005	PREPARED BY DL March 2007
REVISION NO. 0	REVIEWED BY WC



Ecology Approval Letter



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Northwest Regional Office • 3190 160th Avenue SE • Bellevue, Washington 98008-5452 • (425) 649-7000

August 7, 2007

Robert Truedinger
Remediation Project Manager
Kinder Morgan Energy Partners
1140 Canal Boulevard
Richmond, CA 94804

Re: Reduced Groundwater Monitoring Plan

Dear Mr. Truedinger:

This letter is to indicate the Department of Ecology's approval of the Site-Wide Groundwater Compliance Monitoring Plan – Proposed Reduced Monitoring, as presented in Delta Environmental Consultants' submittal dated June 21, 2007.

Sorry that this approval has taken awhile. Further adjustments / reductions in the monitoring may be appropriate in the future.

Sincerely,

A handwritten signature in cursive script that reads "Roger K. Nye".

Roger K. Nye
Project Coordinator

cc: Ward Crell, Dawna Leong: Delta Environmental Consultants



Technical Revision Request – Low-Flow Groundwater Sampling

September 4, 2008

Mr. Roger Nye
Washington State Department of Ecology
Northwest Regional Office
3190 160th Avenue N.E.
Bellevue, Washington 98008-5452

Sent via FedEx Saver

SUBJ: Technical Revision Request – Low-Flow Groundwater Sampling
Kinder Morgan Harbor Island Terminal
Seattle, Washington
Delta Project No. STKM-001-P.0005



Dear Mr. Nye:

Delta Consultants (Delta) has prepared this request on behalf of Kinder Morgan Liquid Terminals, LLC (KMLT) to propose a technical revision to Appendix A (Compliance Sampling and Analysis Plan) of the Compliance Monitoring Plan, dated October 27, 1999. This letter request supersedes a previous request, dated July 16, 2008. The Compliance Monitoring Plan was included as Appendix F of the Model Toxics Control Act (MTCA) Consent Decree 00-2-07760-25EA, which was executed to implement remedial actions for the site. As discussed in a March 31, 2008 telephone conversation with you, KMLT is proposing a revision to Section 2.3.2, Sampling Procedures, of the Compliance Sampling and Analysis Plan (Plan) to replace the purge-sampling methodology with low-flow sampling techniques.

CURRENT PURGE-SAMPLING PROCEDURES

Sampling ground water traditionally involves purging a monitoring well to remove stagnant water in the well casing prior to sampling. The current sampling procedure incorporated into the Plan includes purging three to five volumes of the well prior to collecting a groundwater sample. This well evacuation approach can pose several problems, including: 1) as the well recovers, groundwater cascading in the well screen can affect contaminant and dissolved gas concentrations; 2) draining water from the sand pack surrounding the screen can result in air being trapped in the pore spaces, also affecting dissolved gas concentrations; and 3) increased turbidity can affect total and dissolved metal concentrations.

In the Revised Site-Wide Groundwater Compliance Monitoring Plan, dated June 21, 2007, Delta presented an evaluation of historical groundwater analytical results with respect to established cleanup criteria. During the preparation of the Revised Plan, Delta and Ecology discussed the periodic occurrence of dissolved lead in the wells sampled. These occurrences appeared to be random, with no apparent trend to the occurrence.

a member of:



At the time, it was mentioned that turbulence created during sampling may have caused the occurrence of dissolved lead. Eliminating turbulence during sampling may end or reduce this occurrence.

PROPOSED LOW-FLOW SAMPLING PROCEDURES

Low-flow/low-volume sampling is a method that can be used to overcome many of the problems created by traditional purge-sampling. Low-flow sampling can minimize turbidity and minimize groundwater chemistry alteration. By pumping at very low flowrates from the well screen zone, disturbance to the water column in the well is significantly reduced and stress on the surrounding formation is minimized. Samples obtained in this manner will better reflect contaminant concentrations and ground-water chemistry at ambient flow conditions.

Sampling Procedures

KMLT proposes to replace Section 2.3.2 of the Compliance Sampling and Analysis Plan with the following low-flow procedures for sampling the site's compliance wells.

Water Level Measurements

Water level measurements will be taken prior to purging and will be recorded to the nearest 0.01 foot. Measurements will be taken from least contaminated wells first followed by wells in increasing order of contamination. If product is observed, the thickness will be measured with an electronic oil/water interface meter. Wells with measurable product will not be purged or sampled.

Monitoring Well Purging

Purging will be conducted in a manner such that water levels do not drop more than two feet below static. Wells will be purged using dedicated downhole tubing connected to a surface portable peristaltic pump. The pump rate will be monitored and set at a rate of less than 1,000 ml/min. During purging, the following parameters will be monitored: dissolved oxygen, pH, specific conductance, temperature, turbidity, and depth to water. Field parameters will be measured in a flow-through container. Water level data will be collected with an electronic indicator probe. Measurements will be taken beginning with the first water purged from the well. During purging, additional measurements will be taken and recorded as frequently as possible. Measurements will be recorded to the following standards: dissolved oxygen to 0.05 mg/L; pH to ± 0.01 units; specific conductance to \pm uS/cm (measured specific conductance ≤ 99 uS/cm), to ± 10 uS/cm (99 uS/cm < specific conductance < 1,000 uS/cm), or to ± 100 uS/cm (measured specific conductance > 1,000 uS/cm); temperature to $\pm 0.5^\circ\text{C}$; and turbidity to 0.1 NTU. The meters will be calibrated near the beginning and end of each sampling day.

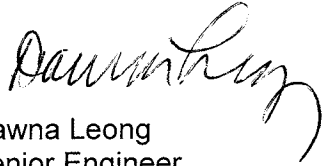
Groundwater samples will be collected after specific conductance and dissolved oxygen measurements are within 10 percent for 3 consecutive readings.

Sample Collection

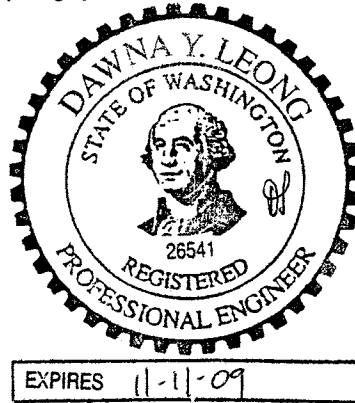
Following purging, samples will be collected for laboratory analyses. Samples will be pumped directly into laboratory-supplied sample containers, and each sample bottle will be labeled with the sample identification number, the sample date, the facility name, and the name of the technician who performed the sampling. Samples will be collected in the following order: TPH-G/BTEX, methane (if analyzed, TPH-Dx, metals (if analyzed), and field analytes (if analyzed). Duplicate samples will be collected by alternately filling the sample and the duplicate sample bottles.

KMLT proposes to implement the low-flow sampling procedures described herein upon approval from Ecology. Please call if you have any questions regarding the contents of this letter, or if you would like to discuss any aspect of the proposed sampling procedures. Delta looks forward to your approval of this proposal.

Sincerely,
DELTA CONSULTANTS, INC.



Dawna Leong
Senior Engineer



cc: Mr. Robert Truedinger, Kinder Morgan Energy Partners, L.P., Richmond, California (Electronic Copy)
Ms. Kelsy Hardy, Kinder Morgan Energy Partners, L.P., Orange, California (File Copy - CD Only)

Ecology Approval Letter



RECEIVED BY:

FEB 11 2009

Delta Consultants - SEATTLE

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Northwest Regional Office • 3190 160th Avenue SE • Bellevue, Washington 98008-5452 • (425) 649-7000

February 9, 2009

Dawna Leong
Delta Consultants, Inc.
4006 148th Avenue NE
Redmond, Washington 98052

Re: Technical Revision Request – Low-Flow Groundwater Sampling
Kinder Morgan Harbor Island Terminal
Seattle, Washington
Consent Decree No. 00-2-07760-2SEA

Dear Ms. Leong:

This letter indicates the Department of Ecology's approval of your proposal to replace the purge-sampling methodology with low-flow sampling techniques at the Kinder Morgan Harbor Island facility as described in your letter dated September 4, 2008.

The proposal constitutes a technical revision as allowed under Section XV of the Consent Decree, to Section 2.3.2 of the Compliance Sampling and Analysis Plan (Appendix A of the Compliance Monitoring Plan - Exhibit F). The Compliance Monitoring Plan is an attachment to the Cleanup Action Plan - Exhibit B under the Consent Decree.

This letter establishes a mutual written agreement between the Department of Ecology and Kinder Morgan Liquid Terminals LLC to implement the technical revision described above.

Sincerely,

Roger K. Nye
Site Manager

cc: Robert Truedinger, Remediation Project Manager,
Kinder Morgan Energy Partners, L.P.



Revised Site Groundwater Monitoring Plan



Ms. Maura O'Brien
Washington State Department of Ecology
Northwest Regional Office
3190 – 160th Avenue SE
Bellevue, WA 98008-5452

Subject:

Revised Site Groundwater Monitoring Plan

Kinder Morgan Harbor Island Terminal
KMLT File No. 29.79.02 (81171)
2720 13th Avenue Southwest
Seattle, Washington 98134

Dear Ms. O'Brien:

On behalf of Kinder Morgan Liquids Terminal, LLC (KMLT), ARCADIS US, Inc (ARCADIS) is pleased to submit this Revised Site Groundwater Monitoring Plan (Plan) for the KMLT Harbor Island Terminal located at 2720 13th Avenue Southwest in Seattle, Washington (site). The purpose of this Plan is to request and provide justification to support the reduction of groundwater sampling frequency at the site for the compliance and performance monitoring programs.

Reduced frequency of groundwater monitoring at the site is warranted due to:

- Quarterly groundwater quality data has been collected at the site since 2002
- Current groundwater conditions onsite are stable and not migrating offsite
- There have been no product releases reported at the site since 2010
- SPH has only been observed in one monitoring well (A-6) in the last 9 quarterly monitoring events.

Cleanup activities at the site are being conducted under a Consent Decree (CD) number 00-2-07760-2SEA between Washington State Department of Ecology (Ecology) and GATX Terminals Corporation (GATX) executed on April 4, 2000. KMLT assumed the obligations of the CD with the purchase of GATX Harbor Island Terminal in 2001. Compliance groundwater monitoring and sampling is currently

ARCADIS U.S., Inc.
1100 Olive Way
Suite 800
Seattle
Washington 98101
Tel 206.325.5254
Fax 206.325.8218
www.arcadis-us.com

ENVIRONMENT

Date:
May 20, 2014

Contact:
Matt Annis

Phone:
206.726.4716

Email:
matt.annis@arcadis-us.com

Our ref:
WA000804.2014

performed in accordance with the *Proposed Reduced Monitoring-Site-Wide Groundwater Compliance Monitoring Plan* (Reduced Monitoring Plan [Delta Consultants Inc. (Delta) 2007]). Additionally, low-flow groundwater sampling techniques are used in accordance with the Technical Revision Request (Delta 2008).

In addition, performance monitoring groundwater samples are collected in accordance with the letter Response to Comments - *B and D Yards Groundwater Remediation Engineering Design Report* dated December 12, 2012 (ARCADIS 2012) to evaluate the overall effectiveness of the sulfate land application.

Contaminants of Concern and Cleanup Levels

The approved Reduced Monitoring Plan (Delta 2007) outlines site-specific contaminants of concern (COCs) and applicable cleanup levels for groundwater. These site-specific COCs and their cleanup levels are as follows:

- Total Petroleum Hydrocarbons as Gasoline Range Organics at 1.0 milligrams per liter (mg/L)
- Total Petroleum Hydrocarbons as Diesel Range Organics at 10 mg/L
- Total Petroleum Hydrocarbons as Heavy Oil at 10 mg/L
- Benzene at 0.071 mg/L
- Toluene at 200 mg/L
- Ethylbenzene at 29 mg/L
- Total Lead at 0.0058 mg/L
- No Product Sheen

Current Groundwater Monitoring Plan

Compliance Monitoring

In accordance with the Reduced Monitoring Plan (Delta 2007) and Technical Revision Request (Delta 2008), the current groundwater compliance plan schedule is presented in Table 1 and Figure 2.

Performance Monitoring

In accordance with the Response to Comments - *B and D Yards Groundwater Remediation Engineering Design Report* dated December 12, 2012 (ARCADIS 2012), the current groundwater performance plan schedule is presented in Table 1.

Proposed Groundwater Monitoring Plan

The section below summarizes the proposed changes to the current groundwater monitoring plan. Groundwater gauging and sample collection protocols and procedures will continue to be implemented in accordance with the Ecology-approved plans mentioned above.

Compliance Monitoring

This proposed groundwater monitoring plan was prepared with consideration for the requirements of the Model Toxics Control Act (MTCA) regulations and requirements from Exhibit F of the CD. The achievement of cleanup levels in groundwater is measured at points of performance and compliance located within the hydrocarbon plume area and at the edges of the site in accordance with section 1.2 in Exhibit F of the CD. Points of compliance will not be altered for this plan and consist of the 44 wells presented in Table 2. Hydrograph and COC trend graphs for monitoring wells MW-7, MW-9, MW-14, and MW-19 are presented in Attachment A. The graphs are representative of the compliance points and indicate stable or decreasing groundwater conditions.

Future compliance groundwater monitoring events are proposed to be conducted on a semi-annual basis until the site has achieved compliance with the applicable cleanup levels. The proposed compliance groundwater monitoring plan is summarized in Table 2 and presented in Figure 3.

Proposed Performance Groundwater Monitoring Plan

In accordance with the Response to Comments letter dated December 20, 2012 and the KMLT *Remedial Action Report – B and D Yards* (RAP) [ARCADIS 2013]), the current groundwater performance monitoring plan will be conducted quarterly through third quarter 2014.

After the completion of the third quarter 2014 monitoring event KMLT proposes to alter the performance monitoring schedule to semi-annual monitoring which will be conducted concurrently with compliance monitoring activities. The proposed performance groundwater monitoring plan is summarized in Table 2 and presented in Figure 4.

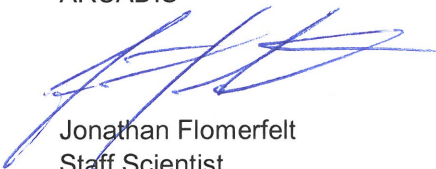
Schedule

The proposed Plan would be initiated during the third quarter 2014 sampling event upon Ecology approval; annual sampling will be conducted in the third quarter of each year.


If you have any questions or comments, please contact Matt Annis at 206.726.4716 or by email at matt.annis@arcadis-us.com.

Sincerely,

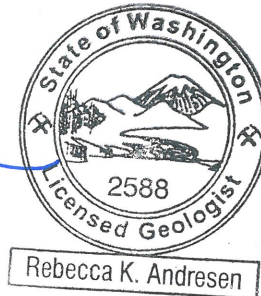
ARCADIS



Jonathan Flomerfelt
Staff Scientist



Rebecca Andresen, L.G.
Associate Vice President



Copies:

- Mr. Dave Rowland, KMLT, Seattle (CD Copy)
- Mr. Robert Truedinger, c/o Stephanie Randall, KMLT, Orange, CA (CD copy)
- Stephanie Randall, KMLT, Orange, CA (File Copy)

Tables

Table 1	Current Groundwater Monitoring
Table 2	Proposed Groundwater Monitoring Plan

Figures

Figure 1	Site Location
Figure 2	Current Groundwater Monitoring Plan
Figure 3	Proposed Groundwater Monitoring Plan
Figure 4	Proposed Performance Monitoring Plan

Attachments

Attachment A	Hydrographs and Trend Graphs
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Tables

Table 1
Current Monitoring Schedule
2014 Revised Groundwater Monitoring Plan
Kinder Morgan Liquids Terminals, LLC, Harbor Island Terminal
Seattle, Washington

Well	Sampling Schedule	GRO by NWTPH-GX	DRO by NWTPH-DX	HO by NWTPH-DX	BTEX by EPA 8260B	Total and Dissolved Lead by EPA 200.8	MNA Geochemical Parameters ¹	Depth to Water/SPH by downhole meter
A-4	1Q, 3Q, 4Q							X
	2Q							X
A-5	1Q, 3Q, 4Q	X			X			X
	2Q	X			X			X
A-6	1Q, 3Q, 4Q							X
	2Q							X
A-8	1Q, 3Q, 4Q							X
	2Q	X	X	X	X			X
A-10	1Q, 3Q, 4Q							X
	2Q	X	X	X	X			X
A-11	1Q, 3Q, 4Q							X
	2Q							X
A-12	1Q, 3Q, 4Q							X
	2Q							X
A-14R	1Q, 3Q, 4Q							X
	2Q	X	X	X	X	X		X
A-16	1Q, 3Q, 4Q							X
	2Q							X
A-18	1Q, 3Q, 4Q							X
	2Q							X
A-19	1Q, 3Q, 4Q							X
	2Q							X
A-20	1Q, 3Q, 4Q							X
	2Q							X

Table 1
Current Monitoring Schedule
2014 Revised Groundwater Monitoring Plan
Kinder Morgan Liquids Terminals, LLC, Harbor Island Terminal
Seattle, Washington

Well	Sampling Schedule	GRO by NWTPH-GX	DRO by NWTPH-DX	HO by NWTPH-DX	BTEX by EPA 8260B	Total and Dissolved Lead by EPA 200.8	MNA Geochemical Parameters ¹	Depth to Water/SPH by downhole meter
A-21	1Q, 3Q, 4Q	X			X		X	X
	2Q	X			X	X	X	X
A-22R	1Q, 3Q, 4Q							X
	2Q							X
A-23R	1Q, 3Q, 4Q	X			X			X
	2Q	X			X		X	X
A-25	1Q, 3Q, 4Q							X
	2Q							X
A-26R	1Q, 3Q, 4Q							X
	2Q							X
A-27	1Q, 3Q, 4Q	X			X		X	X
	2Q	X			X		X	X
A-28R	1Q, 3Q, 4Q	X			X		X	X
	2Q	X			X	X	X	X
12	1Q, 3Q, 4Q							X
	2Q							X
MW-1	1Q, 3Q, 4Q							X
	2Q	X	X	X	X	X		X
MW-2	1Q, 3Q, 4Q							X
	2Q	X	X	X	X	X	X	X
MW-3	1Q, 3Q, 4Q							X
	2Q	X	X	X	X	X		X
MW-4	1Q, 3Q, 4Q							X
	2Q	X	X	X	X			X

**Table 1
Current Monitoring Schedule
2014 Revised Groundwater Monitoring Plan
Kinder Morgan Liquids Terminals, LLC, Harbor Island Terminal
Seattle, Washington**

Well	Sampling Schedule	GRO by NWTPH-GX	DRO by NWTPH-DX	HO by NWTPH-DX	BTEX by EPA 8260B	Total and Dissolved Lead by EPA 200.8	MNA Geochemical Parameters ¹	Depth to Water/SPH by downhole meter
MW-5	1Q, 3Q, 4Q							X
	2Q	X	X	X	X	X		X
MW-6	1Q, 3Q, 4Q	X			X			X
	2Q	X			X	X	X	X
MW-7	1Q, 3Q, 4Q	X			X		X	X
	2Q	X			X	X	X	X
MW-8	1Q, 3Q, 4Q							X
	2Q	X	X	X	X	X		X
MW-9	1Q, 3Q, 4Q	X			X		X	X
	2Q	X			X	X	X	X
MW-12R	1Q, 3Q, 4Q							X
	2Q	X	X	X	X	X	X	X
MW-14	1Q, 3Q, 4Q	X			X		X	X
	2Q	X			X		X	X
MW-16	1Q, 3Q, 4Q							X
	2Q	X	X	X	X			X
MW-18	1Q, 3Q, 4Q	X			X			X
	2Q	X			X			X
MW-19	1Q, 3Q, 4Q	X			X		X	X
	2Q	X			X		X	X
MW-20	1Q, 3Q, 4Q							X
	2Q	X	X	X	X			X
MW-21	1Q, 3Q, 4Q	X	X	X	X		X	X
	2Q	X	X	X	X		X	X

Table 1
Current Monitoring Schedule
2014 Revised Groundwater Monitoring Plan
Kinder Morgan Liquids Terminals, LLC, Harbor Island Terminal
Seattle, Washington

Well	Sampling Schedule	GRO by NWTPH-GX	DRO by NWTPH-DX	HO by NWTPH-DX	BTEX by EPA 8260B	Total and Dissolved Lead by EPA 200.8	MNA Geochemical Parameters ¹	Depth to Water/SPH by downhole meter
MW-22	1Q, 3Q, 4Q							X
	2Q	X	X	X	X			X
MW-23	1Q, 3Q, 4Q	X			X		X	X
	2Q	X			X	X	X	X
MW-24	1Q, 3Q, 4Q	X			X		X	X
	2Q	X			X	X	X	X
MW-25	1Q, 3Q, 4Q							X
	2Q	X	X	X	X	X		X
MW-07R	1Q, 3Q, 4Q							X
	2Q	X	X	X	X	X	X	X
SH-02R	1Q, 3Q, 4Q							X
	2Q	X	X	X	X	X	X	X
SH-05R	1Q, 3Q, 4Q							X
	2Q							X
TMW-B1	1Q, 3Q, 4Q							X
	2Q	X			X			

Notes

1 Monitored Natural Attenuation (MNA) Geochemical Parameters include dissolved oxygen, methane, ferrous iron, nitrate, sulfate, and sulfide
GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics by Northwest Method NWTPH-Gx
BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes by Environmental Protection Agency (EPA) Method 8260B.
1Q, 2Q, 3Q, 4Q = Denotes the quarter for each sampling event
-- Not Applicable

Table 2
Proposed Monitoring Schedule
2014 Revised Groundwater Monitoring Plan
Kinder Morgan Liquids Terminals, LLC, Harbor Island Terminal
Seattle, Washington

Well	Sampling Schedule	GRO by NWTPH-GX	DRO by NWTPH-DX	HO by NWTPH-DX	BTEX by EPA 8260B	Total and Dissolved Lead by EPA 200.8	MNA Geochemical Parameters ¹	Depth to Water/SPH by downhole meter
A-4	1Q							X
	3Q							X
A-5	1Q	X			X			X
	3Q	X			X			X
A-6	1Q							X
	3Q							X
A-8	1Q							X
	3Q	X	X	X	X			X
A-10	1Q							X
	3Q	X	X	X	X			X
A-11	1Q							X
	3Q							X
A-12	1Q							X
	3Q							X
A-14R	1Q							X
	3Q	X	X	X	X	X		X
A-16	1Q							X
	3Q							X
A-18	1Q							X
	3Q							X
A-19	1Q							X
	3Q							X
A-20	1Q							X
	3Q							X

Table 2
Proposed Monitoring Schedule
2014 Revised Groundwater Monitoring Plan
Kinder Morgan Liquids Terminals, LLC, Harbor Island Terminal
Seattle, Washington

Well	Sampling Schedule	GRO by NWTPH-GX	DRO by NWTPH-DX	HO by NWTPH-DX	BTEX by EPA 8260B	Total and Dissolved Lead by EPA 200.8	MNA Geochemical Parameters ¹	Depth to Water/SPH by downhole meter
A-21	1Q	X			X		X	X
	3Q	X			X	X	X	X
A-22R	1Q							X
	3Q							X
A-23R	1Q							X
	3Q	X			X		X	X
A-25	1Q							X
	3Q							X
A-26R	1Q							X
	3Q							X
A-27	1Q	X			X		X	X
	3Q	X			X		X	X
A-28R	1Q	X			X		X	X
	3Q	X			X	X	X	X
11 ²	1Q	X			X		X	X
	3Q	X			X		X	X
12 ²	1Q	X			X		X	X
	3Q	X	X	X	X	X	X	X
MW-1	1Q							X
	3Q	X	X	X	X	X		X
MW-2	1Q							X
	3Q	X	X	X	X	X	X	X
MW-3	1Q							X
	3Q	X	X	X	X	X		X

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Proposed Monitoring Schedule
2014 Revised Groundwater Monitoring Plan
Kinder Morgan Liquids Terminals, LLC, Harbor Island Terminal
Seattle, Washington

Well	Sampling Schedule	GRO by NWTPH-GX	DRO by NWTPH-DX	HO by NWTPH-DX	BTEX by EPA 8260B	Total and Dissolved Lead by EPA 200.8	MNA Geochemical Parameters ¹	Depth to Water/SPH by downhole meter
MW-4	1Q							X
	3Q	X	X	X	X			X
MW-5	1Q							X
	3Q	X	X	X	X	X		X
MW-6	1Q							X
	3Q	X			X	X	X	X
MW-7 ²	1Q	X			X		X	X
	3Q	X			X	X	X	X
MW-8	1Q							X
	3Q	X	X	X	X	X		X
MW-9 ²	1Q	X			X		X	X
	3Q	X			X	X	X	X
MW-12R	1Q							X
	3Q	X	X	X	X	X	X	X
MW-14	1Q							X
	3Q	X			X		X	X
MW-16	1Q							X
	3Q	X	X	X	X			X
MW-18	1Q	X			X			X
	3Q	X			X			X
MW-19 ²	1Q	X			X		X	X
	3Q	X			X		X	X
MW-20	1Q							X
	3Q	X	X	X	X			X

Table 2
Proposed Monitoring Schedule
2014 Revised Groundwater Monitoring Plan
Kinder Morgan Liquids Terminals, LLC, Harbor Island Terminal
Seattle, Washington

Well	Sampling Schedule	GRO by NWTPH-GX	DRO by NWTPH-DX	HO by NWTPH-DX	BTEX by EPA 8260B	Total and Dissolved Lead by EPA 200.8	MNA Geochemical Parameters ¹	Depth to Water/SPH by downhole meter
MW-21	1Q	X	X	X	X		X	X
	3Q	X	X	X	X		X	X
MW-22	1Q							X
	3Q	X	X	X	X			X
MW-23	1Q	X			X		X	X
	3Q	X			X	X	X	X
MW-24	1Q	X			X		X	X
	3Q	X			X	X	X	X
MW-25	1Q							X
	3Q	X	X	X	X	X		X
MW-07R	1Q							X
	3Q	X	X	X	X	X	X	X
SH-02R	1Q							X
	3Q	X	X	X	X	X	X	X
SH-05R	1Q							X
	3Q	X	X	X	X	X		X
TMW-B1	1Q							X
	3Q	X			X			

Table 2
Proposed Monitoring Schedule
2014 Revised Groundwater Monitoring Plan
Kinder Morgan Liquids Terminals, LLC, Harbor Island Terminal
Seattle, Washington

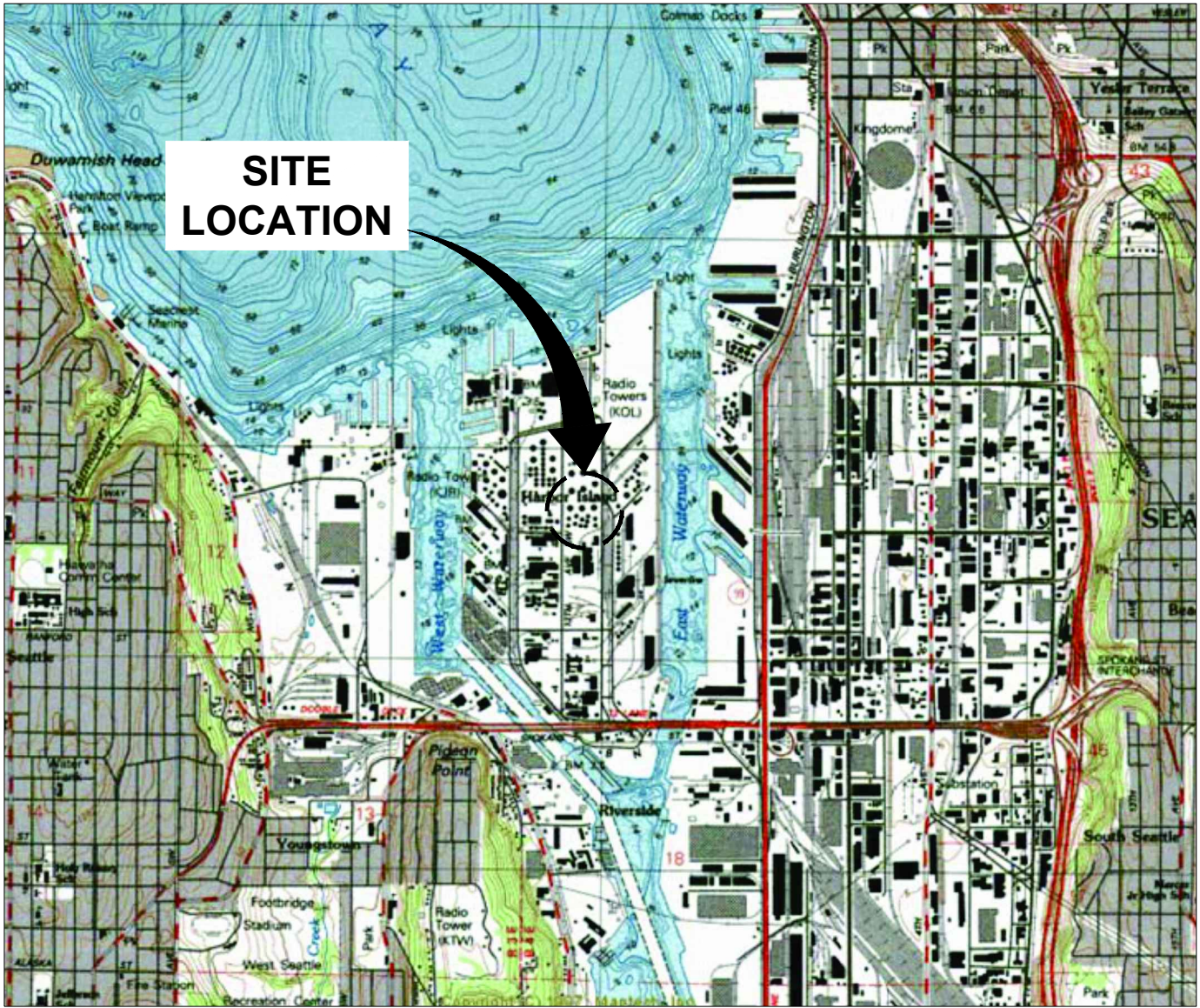
Well	Sampling Schedule	GRO by NWTPH-GX	DRO by NWTPH-DX	HO by NWTPH-DX	BTEX by EPA 8260B	Total and Dissolved Lead by EPA 200.8	MNA Geochemical Parameters ¹	Depth to Water/SPH by downhole meter
TMW-1 ²	1Q	X			X		X	X
	3Q	X			X		X	X
TMW-2 ²	1Q	X			X		X	X
	3Q	X			X		X	X
TMW-3 ²	1Q	X			X		X	X
	3Q	X			X		X	X
TMW-4 ²	1Q	X			X		X	X
	3Q	X			X		X	X
TMW-5 ²	1Q	X			X		X	X
	3Q	X			X		X	X
TMW-6 ²	1Q	X			X		X	X
	3Q	X			X		X	X

Notes

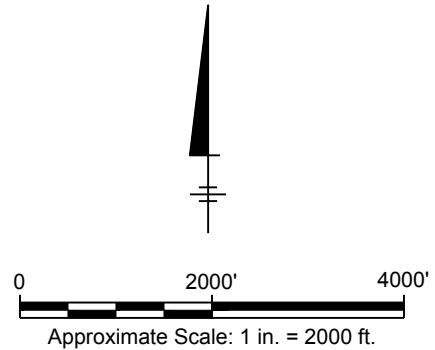
1 Monitored Natural Attenuation (MNA) Geochemical Parameters include dissolved oxygen, methane, ferrous iron, nitrate, sulfate, and sulfide
2 Performance monitoring locations
GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics by Northwest Method NWTPH-Gx
BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes by Environmental Protection Agency (EPA) Method 8260B.
1Q, 2Q, 3Q, 4Q = Denotes the quarter for each sampling event
-- Not Applicable

Figures

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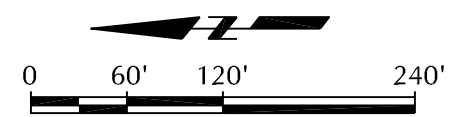
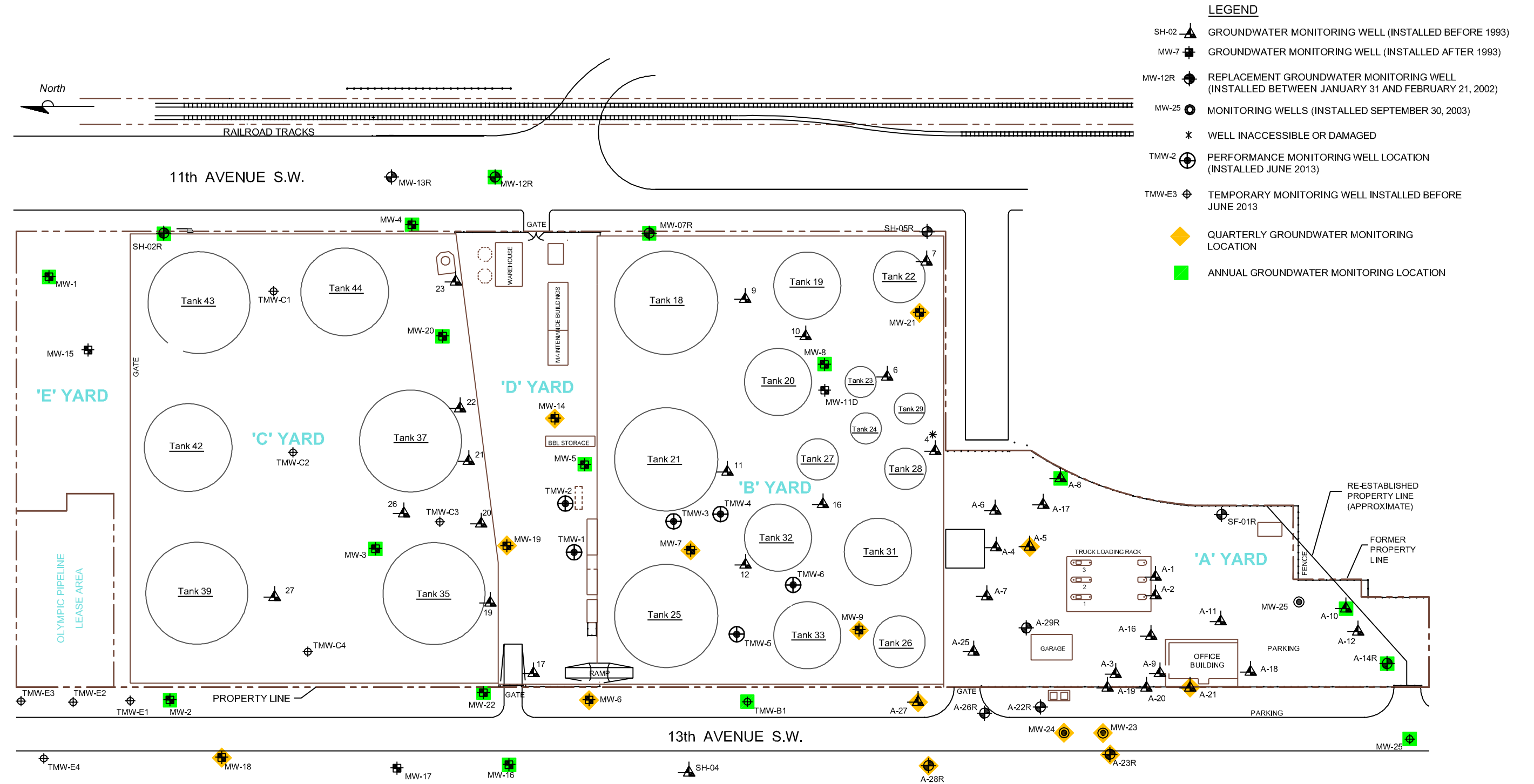
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 HARBOR ISLAND TERMINAL
 2720 13TH AVENUE SOUTHWEST, SEATTLE, WASHINGTON
 2014 REVISED GROUNDWATER MONITORING PLAN

SITE LOCATION MAP

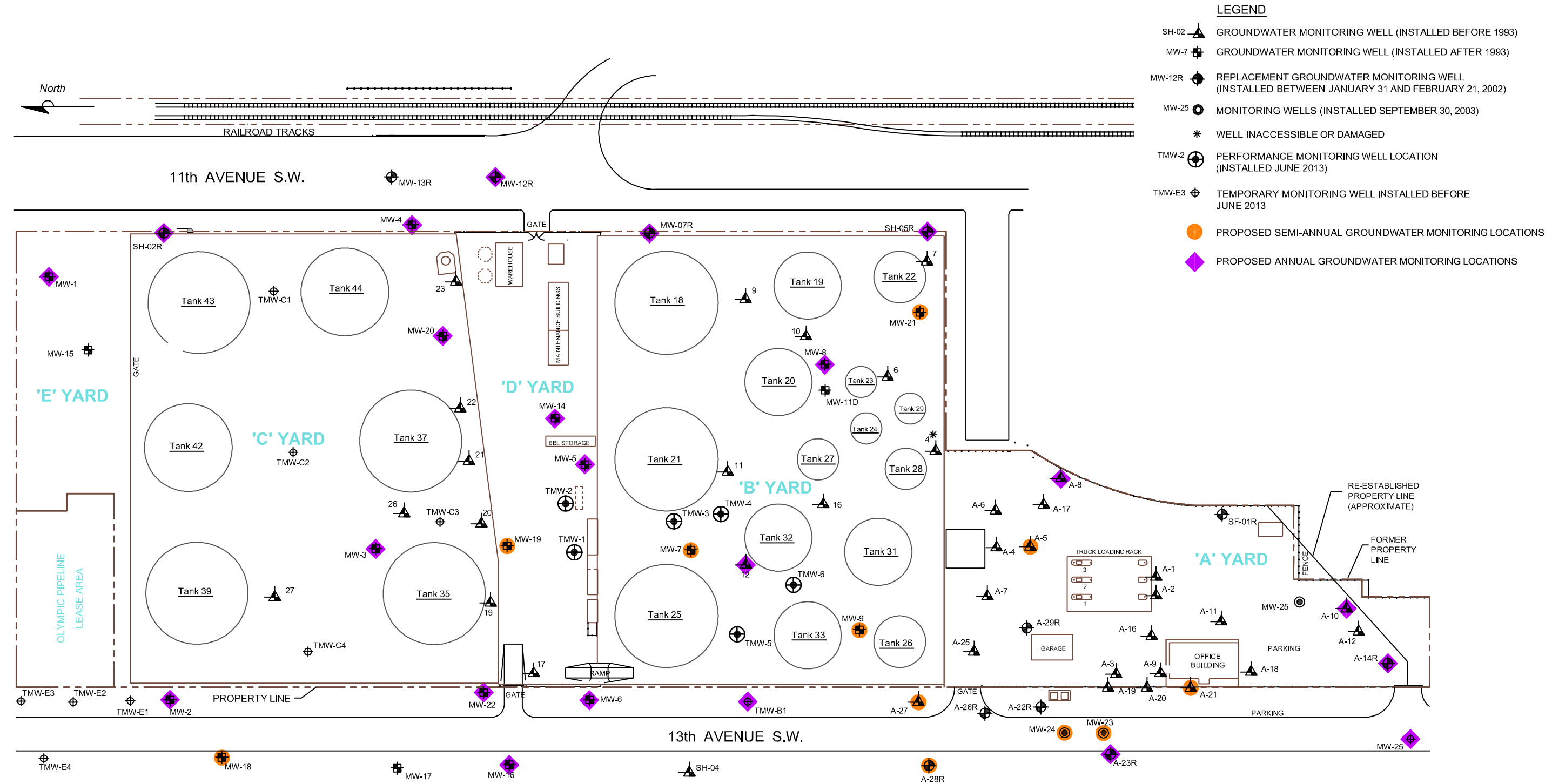
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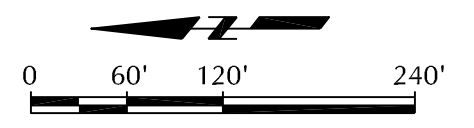
KINDER MORGAN LIQUID TERMINALS, LLC
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2014 REVISED GROUNDWATER MONITORING PLAN
CURRENT QUARTERLY AND ANNUAL GROUNDWATER MONITORING LOCATIONS


FIGURE
2

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- LEGEND**
- SH-02 ▲ GROUNDWATER MONITORING WELL (INSTALLED BEFORE 1993)
 - MW-7 ⊕ GROUNDWATER MONITORING WELL (INSTALLED AFTER 1993)
 - MW-12R ⊕ REPLACEMENT GROUNDWATER MONITORING WELL (INSTALLED BETWEEN JANUARY 31 AND FEBRUARY 21, 2002)
 - MW-25 ● MONITORING WELLS (INSTALLED SEPTEMBER 30, 2003)
 - * WELL INACCESSIBLE OR DAMAGED
 - TMW-2 ⊕ PERFORMANCE MONITORING WELL LOCATION (INSTALLED JUNE 2013)
 - TMW-E3 ⊕ TEMPORARY MONITORING WELL INSTALLED BEFORE JUNE 2013
 - PROPOSED SEMI-ANNUAL GROUNDWATER MONITORING LOCATIONS
 - ◆ PROPOSED ANNUAL GROUNDWATER MONITORING LOCATIONS



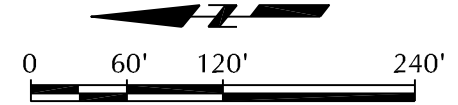
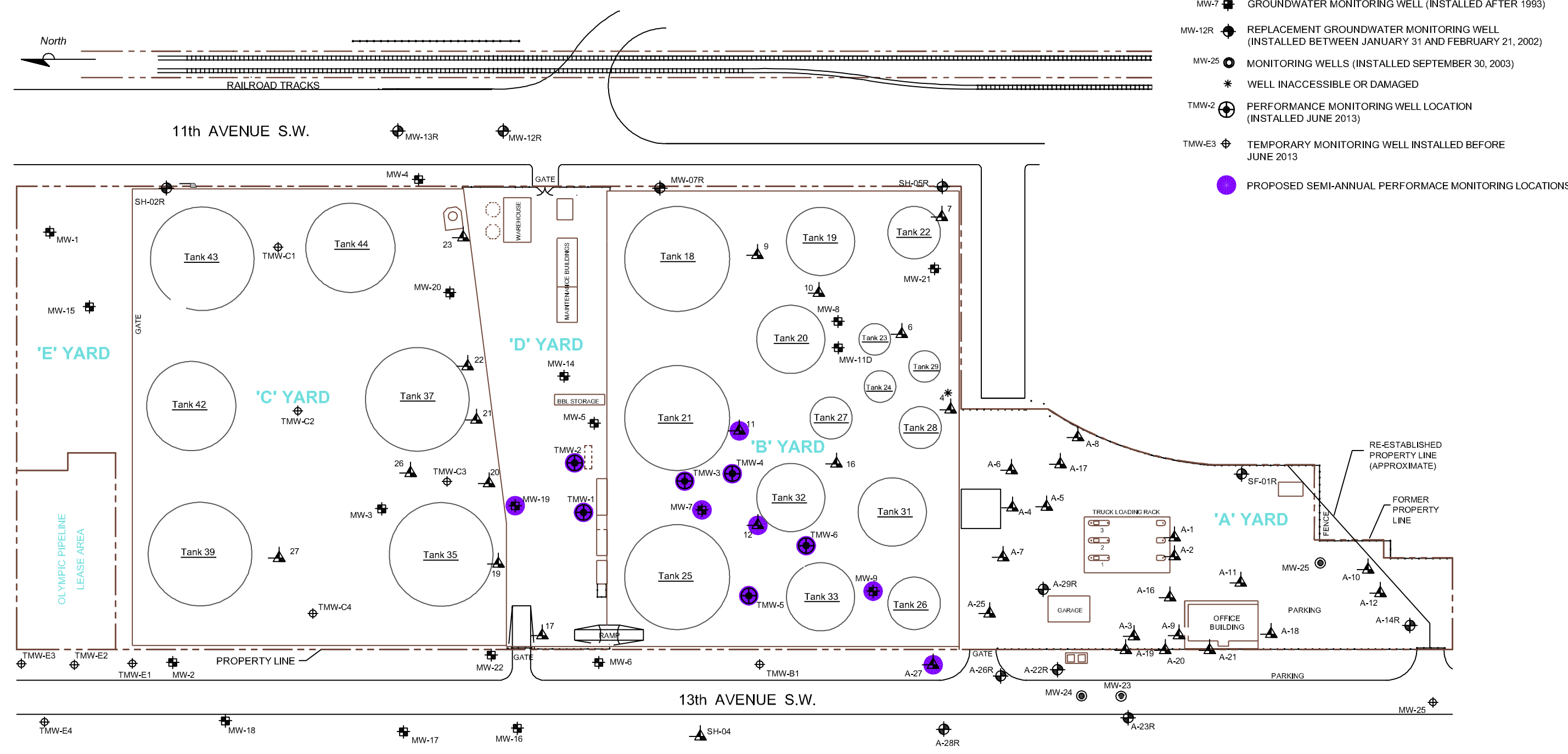
KINDER MORGAN LIQUID TERMINALS, LLC
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2014 REVISED GROUNDWATER MONITORING PLAN
PROPOSED SEMI-ANNUAL AND ANNUAL
GROUNDWATER MONITORING
LOCATIONS



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LEGEND

- SH-02 GROUNDWATER MONITORING WELL (INSTALLED BEFORE 1993)
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- TMW-E3 TEMPORARY MONITORING WELL INSTALLED BEFORE JUNE 2013
- PROPOSED SEMI-ANNUAL PERFORMANCE MONITORING LOCATIONS



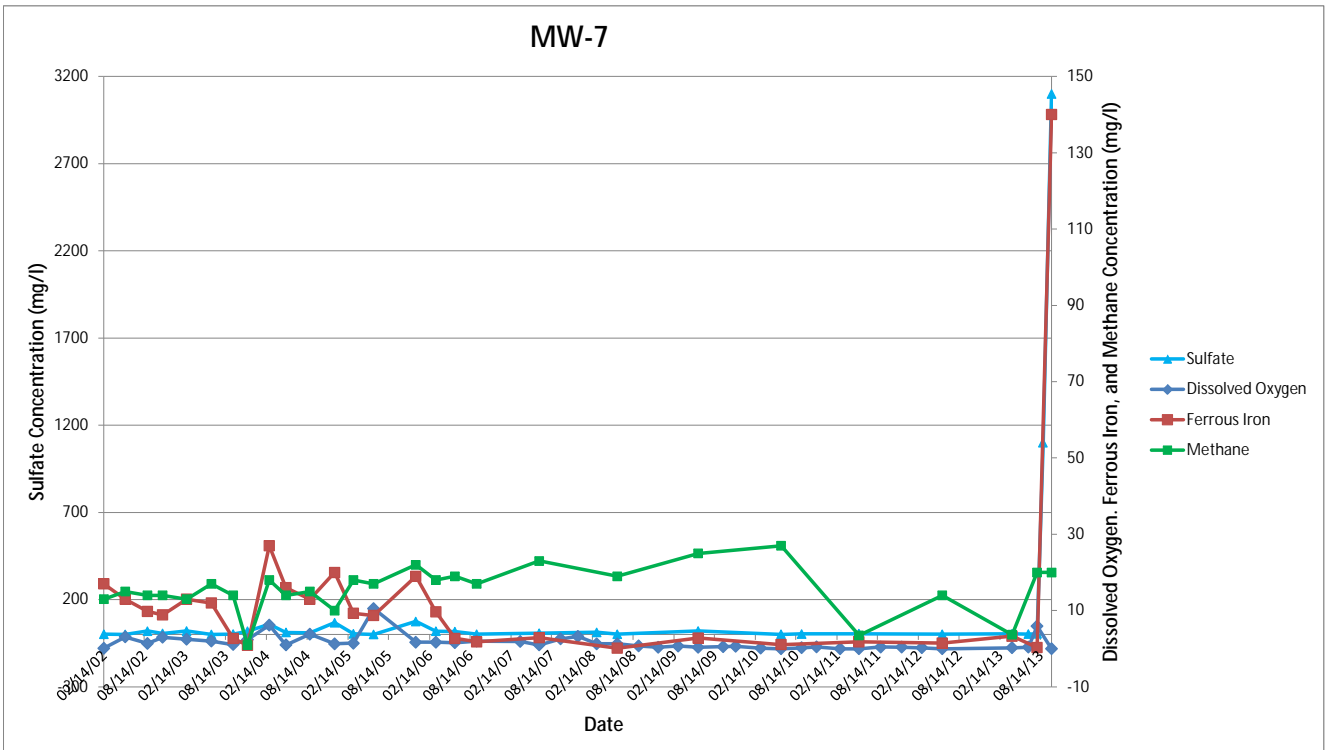
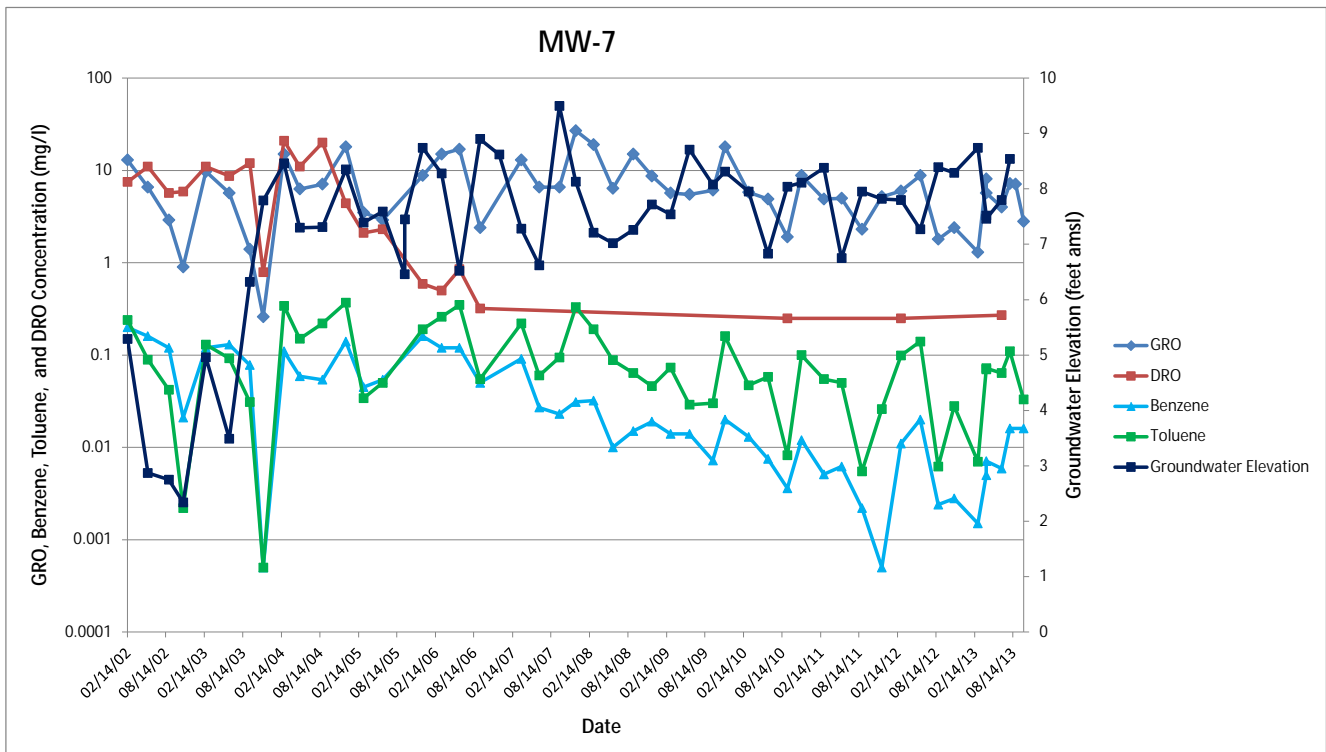
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2014 REVISED GROUNDWATER MONITORING PLAN

PROPOSED PERFORMANCE MONITORING LOCATIONS

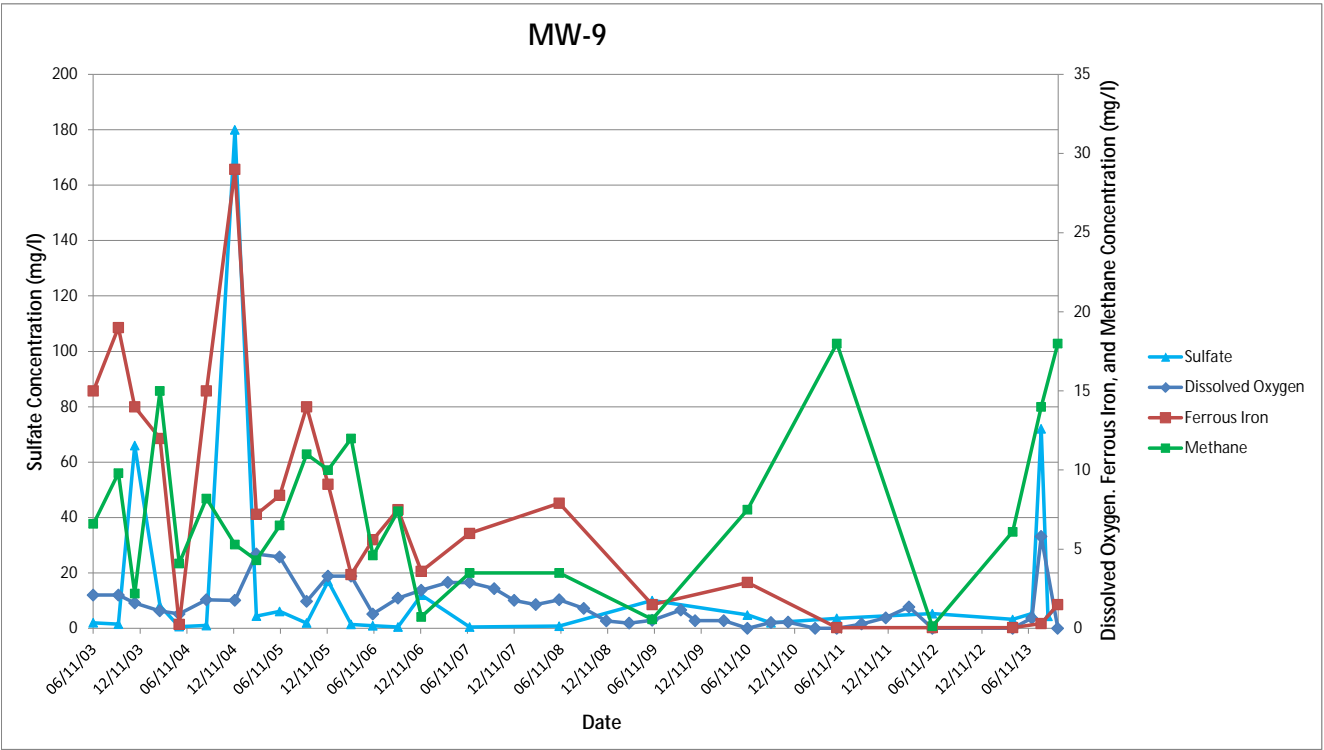
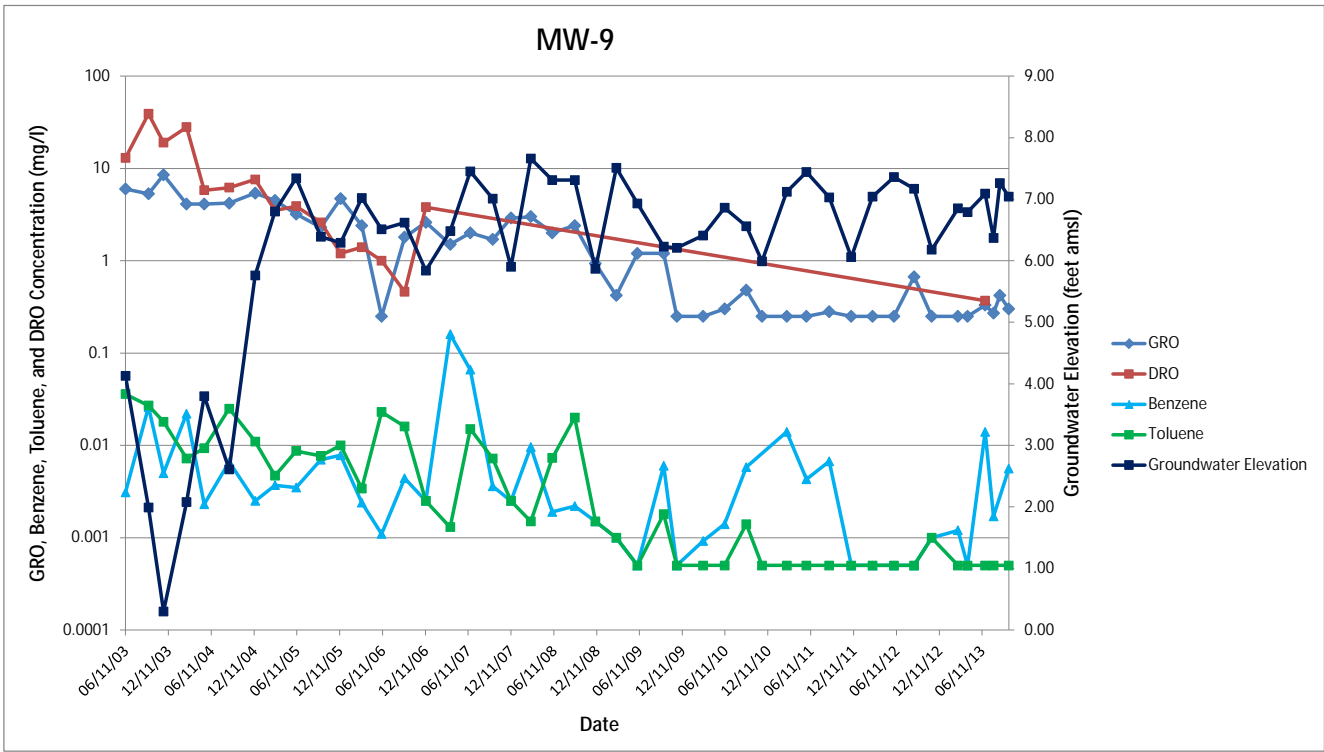




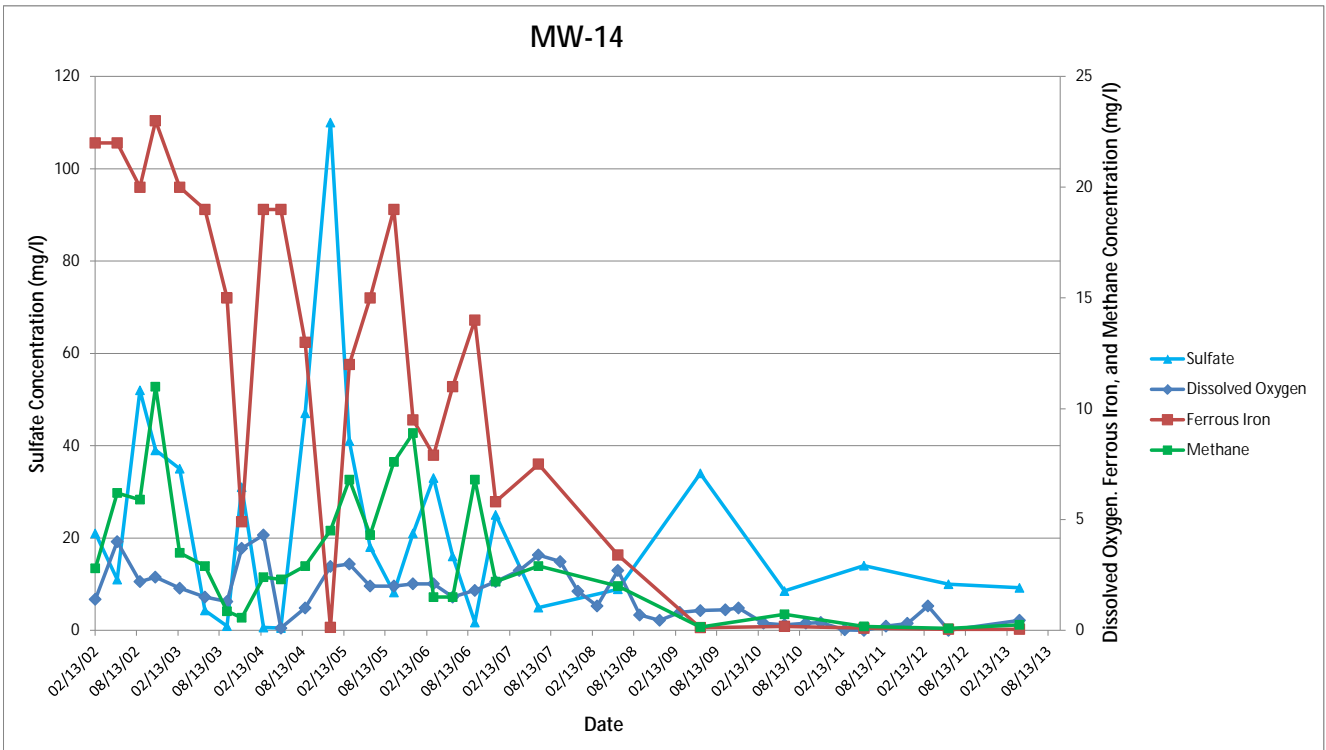
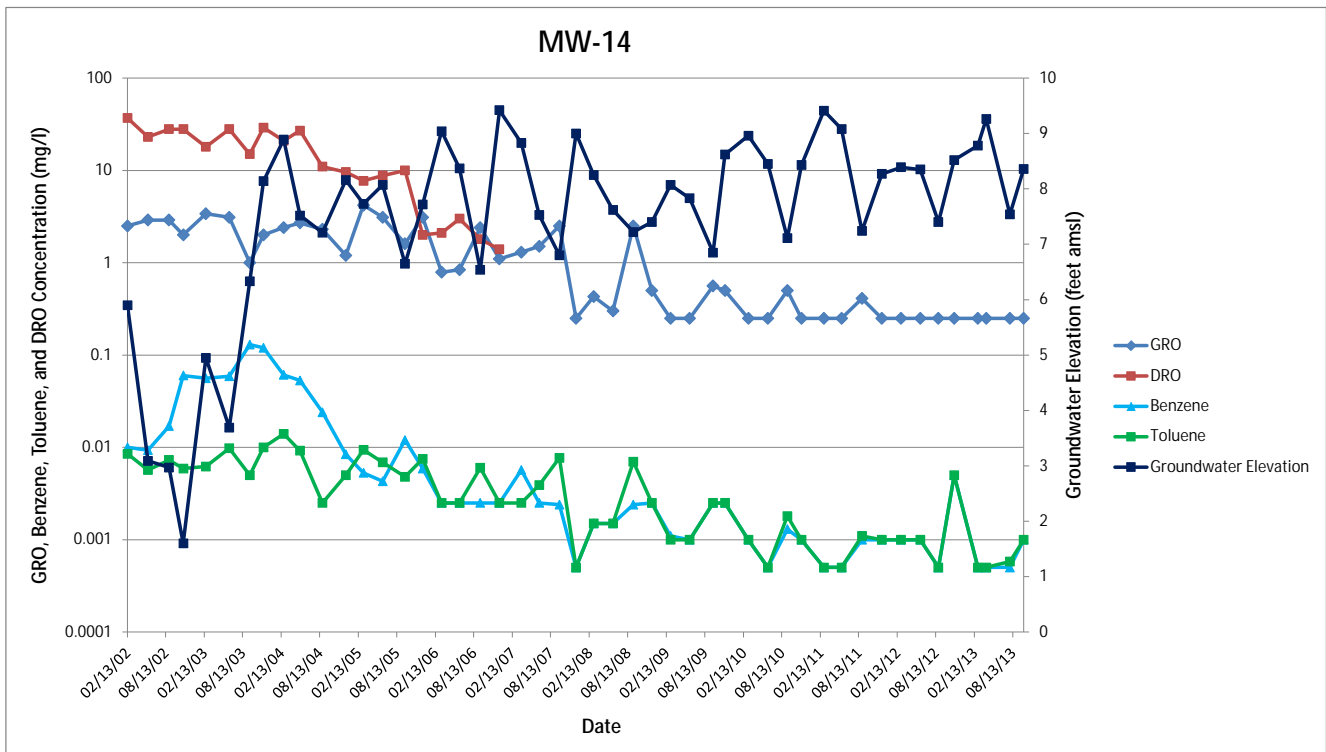
Attachment A



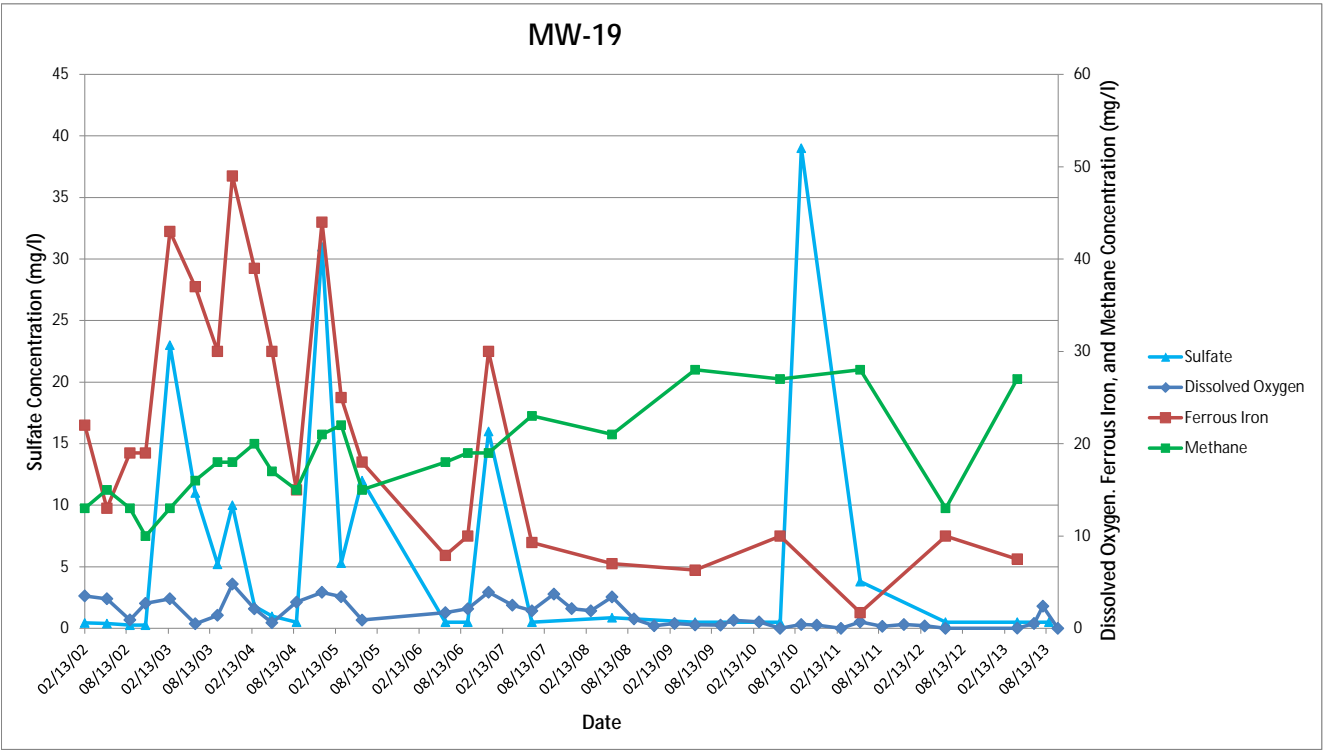
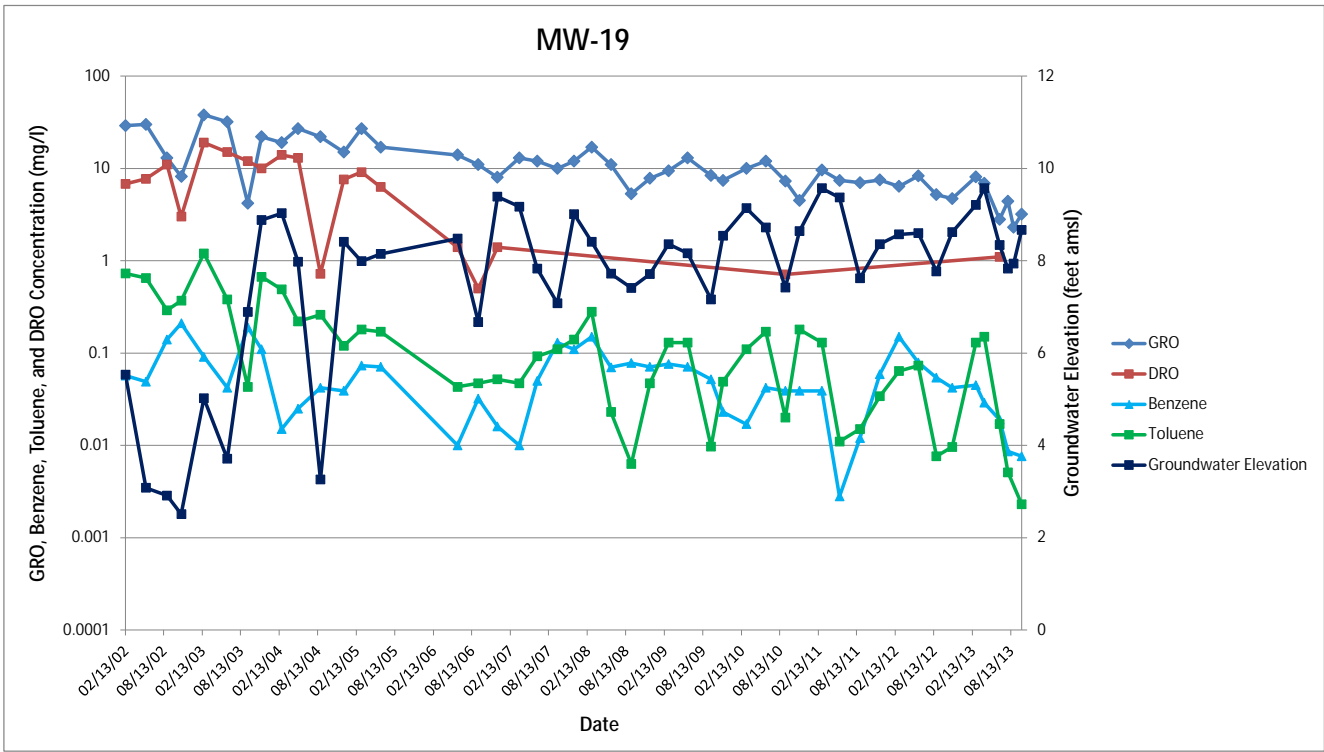
KINDER MORGAN LIQUID TERMINALS, LLC
 HARBOR ISLAND TERMINAL
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2014 REVISED GROUNDWATER MONITORING PLAN
ATTACHMENT A
HYDROGRAPH AND CONSTITUENT TREND GRAPHS



KINDER MORGAN LIQUID TERMINALS, LLC
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HYDROGRAPH AND CONSTITUENT TREND GRAPHS

Ecology Approval Emails

From: [Flomerfelt, Jonathan](mailto:Flomerfelt_Jonathan)
To: [Wenning, Scott](mailto:Wenning_Scott)
Cc: [Annis, Matt](mailto:Annis_Matt)
Subject: FW: Kinder Morgan Harbor Island Terminal Proposed Revised Compliance Monitoring Plan
Date: Wednesday, August 20, 2014 9:25:42 AM

Since there were some clarifications, lets use 8/13, email below as official approval

From: O'Brien, Maura (ECY) [<mailto:MOBR461@ECY.WA.GOV>]
Sent: Wednesday, August 13, 2014 4:50 PM
To: Annis, Matt; Flomerfelt, Jonathan; Truedinger, Robert
Cc: Wang, Ching-Pi (ECY)
Subject: RE: Kinder Morgan Harbor Island Terminal Proposed Revised Compliance Monitoring Plan

This is fine.

Maura

Maura S. O'Brien, PG/HG #869
Professional Geologist/Hydrogeologist
Toxics Cleanup Program - NWRO
Department of Ecology
3190 - 160th Avenue SE
Bellevue, WA 98008-5452
Tele 425-649-7249
Fax 425-649-7098
Email mobr461@ecy.wa.gov

From: Annis, Matt [<mailto:Matt.Annis@arcadis-us.com>]
Sent: Wednesday, August 13, 2014 3:08 PM
To: O'Brien, Maura (ECY); Flomerfelt, Jonathan; Truedinger, Robert
Cc: Wang, Ching-Pi (ECY)
Subject: RE: Kinder Morgan Harbor Island Terminal Proposed Revised Compliance Monitoring Plan

Hi Maura – One last clarification. Please see below in red. Thanks.

Matt Annis | Principal Environmental Scientist | matt.annis@arcadis-us.com
ARCADIS U.S., Inc. | 1100 Olive Way, Suite 800 | Seattle, WA, 98101
T: 206.726.4716 | C: 206.434.1929 | F: 206.325.8218
www.arcadis-us.com

ARCADIS, Imagine the result

Please consider the environment before printing this email.

From: O'Brien, Maura (ECY) [<mailto:MOBR461@ECY.WA.GOV>]
Sent: Wednesday, August 13, 2014 2:07 PM
To: Annis, Matt; Flomerfelt, Jonathan; Truedinger, Robert
Cc: Wang, Ching-Pi (ECY)
Subject: RE: Kinder Morgan Harbor Island Terminal Proposed Revised Compliance Monitoring Plan

Rob Truedinger and Matt Annis,
Ecology approves the revised Kinder Morgan Harbor Island Terminal Proposed Revised Compliance Monitoring Plan for the KM Terminal prepared by Arcadis on May 20, 2014 and revised August 13, 2014. The revised plan is effective fall 2014 and the next monitoring **quarter event** will occur first quarter 2015.

Maura

Maura S. O'Brien, PG/HG #869
Professional Geologist/Hydrogeologist
Toxics Cleanup Program - NWRO
Department of Ecology
3190 - 160th Avenue SE
Bellevue, WA 98008-5452
Tele 425-649-7249
Fax 425-649-7098
Email mobr461@ecy.wa.gov

From: Annis, Matt [<mailto:Matt.Annis@arcadis-us.com>]
Sent: Wednesday, August 13, 2014 12:50 PM
To: O'Brien, Maura (ECY); Flomerfelt, Jonathan; Truedinger, Robert
Cc: Wang, Ching-Pi (ECY)
Subject: RE: Kinder Morgan Harbor Island Terminal Proposed Revised Compliance Monitoring Plan

Hi Maura,

Below in red are responses/clarifications to your comments. Thank you for reviewing the Revised Site Groundwater Monitoring Plan so quickly.

Matt Annis | Principal Environmental Scientist | matt.annis@arcadis-us.com
ARCADIS U.S., Inc. | 1100 Olive Way, Suite 800 | Seattle, WA, 98101
T: 206.726.4716 | C: 206.434.1929 | F: 206.325.8218
www.arcadis-us.com

ARCADIS, Imagine the result

Please consider the environment before printing this email.

From: O'Brien, Maura (ECY) [<mailto:MOBR461@ECY.WA.GOV>]
Sent: Thursday, August 07, 2014 3:35 PM
To: Annis, Matt; Flomerfelt, Jonathan; Truedinger, Robert
Cc: Wang, Ching-Pi (ECY)
Subject: RE: Kinder Morgan Harbor Island Terminal Proposed Revised Compliance Monitoring Plan

Hello

Thank you for your proposed Revised Site Groundwater Monitoring Plan at the Kinder Morgan Harbor Island Terminal site prepared by Arcadis US dated May 20, 2014. Ecology approves this

revised compliance plan with two additions:

-If SPH or LNAPL occur at any well, then gauging and removal will be implemented quarterly for four quarters and then to re-evaluate. If SPH or LNAPL occur at any well, ARCADIS will gauge and remove quarterly. Removal will be performed using absorbent socks, which is consistent with recent SPH/LNAPL removal performed at the site.

-If any groundwater compliance well shows concentration increase for two consecutive events, then to discuss with Ecology if additional monitoring or cleanup action needs to be implemented at that location. OK

Starting third quarter 2014, this revised annual and semi-annual monitoring will begin. The next monitoring event will occur in 1Q2015 and moving forward reporting will be conducted semi-annually.

Thanks for your hard work and continued efforts to bring this site to completion under MTCA.

Maura

Maura S. O'Brien, PG/HG #869
Professional Geologist/Hydrogeologist
Toxics Cleanup Program - NWRO
Department of Ecology
3190 - 160th Avenue SE
Bellevue, WA 98008-5452
Tele 425-649-7249
Fax 425-649-7098
Email mobr461@ecy.wa.gov

From: Annis, Matt [<mailto:Matt.Annis@arcadis-us.com>]
Sent: Thursday, August 07, 2014 11:09 AM
To: O'Brien, Maura (ECY)
Cc: Flomerfelt, Jonathan
Subject: Kinder Morgan Harbor Island Periodic Review

Hi Maura,

Under Section 2.2 of the boilerplate you sent, are you looking for a summary of all site investigations and sample results to date or just those between the last 5-year review and present? Thanks.

Matt Annis | Senior Environmental Scientist | matt.annis@arcadis-us.com
ARCADIS U.S., Inc. | 1100 Olive Way, Suite 800 | Seattle, WA, 98101
T: 206.726.4716 | C: 206.434.1929 | F: 206.325.8218
www.arcadis-us.com

ARCADIS, Imagine the result

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Groundwater Analytical Reduction Request

SUBJECT**Kinder Morgan Harbor Island Terminal
Groundwater Analytical Reduction Request****DATE**

February 11, 2016

TO

Maura O'Brien—Washington Department of Ecology

COPY

Rob Truedinger—Kinder Morgan

PROJECT NUMBER

WA000804.2016

FROMMatt Annis—Arcadis U.S., Inc.
Kyle Haslam—Arcadis U.S., Inc.

Arcadis U.S., Inc. (Arcadis), on behalf of Kinder Morgan Energy Partners (Kinder Morgan), is requesting a revision to our current sampling scheme at the Kinder Morgan Harbor Island fuel terminal in Seattle, Washington (**Figure 1**). Kinder Morgan is currently analyzing samples from 24 wells for geochemical natural attenuation (NA) indicators (**Table 1**), such as ferrous iron and nitrate, in accordance with the Washington Department of Ecology (Ecology) approved Revised Site Groundwater Monitoring Plan (Arcadis 2014). Based on a review of recent data, it appears that a number of these 24 wells either have groundwater concentrations below site-specific cleanup levels for the constituents of concern (COCs) outlined in the Consent Decree (Ecology 2000), or are in a portion of the site undergoing remedial action via sulfate land application. Analyzing for natural attenuation indicators is not appropriate at these locations, as NA does not need to be demonstrated where groundwater concentrations are already below applicable cleanup levels and NA should not be evaluated in an area where remediation is ongoing. As such, Arcadis proposes to reduce the number of wells where full NA geochemical evaluations are performed from 24 to four (**Table 2**). The four well locations (A-27, A-28R, MW-23, and MW-24) proposed for continued evaluation of NA geochemical indicators are located within the 13th Avenue right-of-way, where NA is the approved remedy. We further propose to reduce the frequency of NA geochemical sample collection to annually, which would provide the ample data for continued NA evaluation in this area. Wells that are within the ongoing remedial area would be analyzed for facility COCs, in addition to sulfate, which is the primary remedial performance evaluation analyte. For wells outside of the ongoing remedial area and the 13th Avenue right-of-way, all of which have been below site-specific cleanup levels for at least 4 years¹ and a majority of which have been below site-specific cleanup levels for close to 10 years, Arcadis proposes to analyze for COCs only (gasoline-range organics, diesel-range organics, heavy oil, benzene, toluene, ethylbenzene, xylenes, and lead [total and dissolved]).

Arcadis would like to implement this reduced analyte sampling scheme beginning in the first quarter of 2016. Our proposed sampling start date is March 14, 2016. Please contact us if you would like any additional information regarding our request.

Enclosures:

Figure 1 – Site Plan

Table 1 – Current Groundwater Monitoring Plan

Table 2 – Proposed Groundwater Monitoring Plan

References:








Arcadis. 2014. Revised Wide Groundwater Monitoring Plan. Kinder Morgan Harbor Island Terminal. May 20.

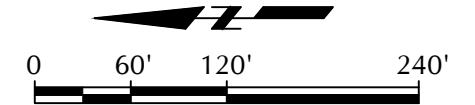
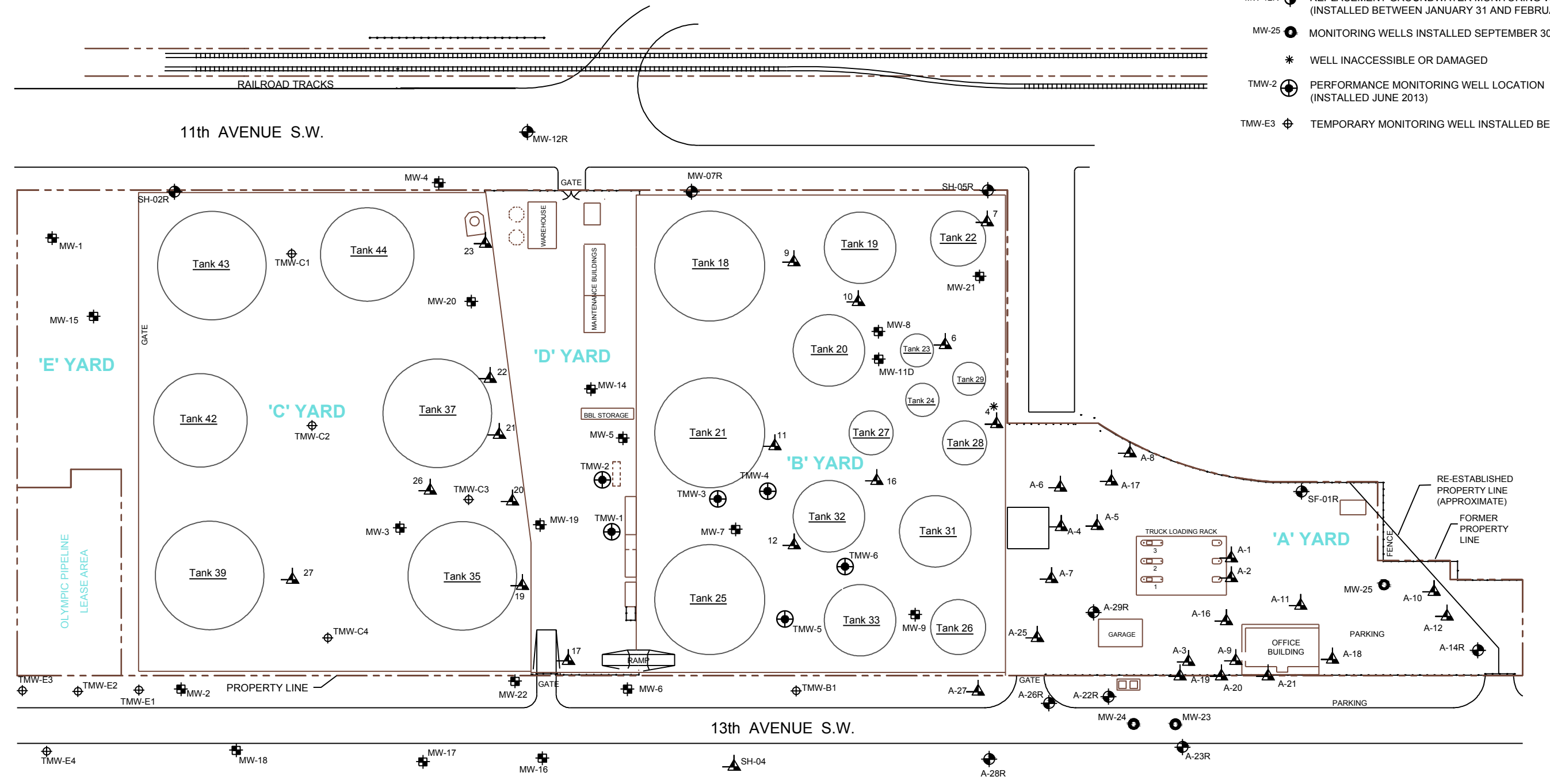
Ecology. 2000. Consent Decree 00-2-07760-2SEA. April 12.

ⁱ Well MW-8 has exceeded the site-specific cleanup level for lead since sampling of this well began in 2002. Lead is not a constituent that is subject to NA through biological means, therefore collecting NA geochemical indicator samples would not provide any benefit at this location.

CITY:\Redd\DIV\GROUP\Redd\DB\Redd\LD\Opt\PM\Redd\TM\Opt\LYR\Opt\ON\OFF=REF\ LAYOUT: 2_SAVED: 10/22/2015 11:12 AM ACADVER: 19.1S (LMS TECH) PAGES: 10/22/2015 12:21 PM BY: REYES, ALEC
 G:\ENVCAD\Emeryville\ACT\W\008042015\000012\ref\semi\Ann2015\DWG\W\00804 B02.dwg

LEGEND

- SH-02  GROUNDWATER MONITORING WELL (INSTALLED BEFORE 1993)
- MW-7  GROUNDWATER MONITORING WELL (INSTALLED AFTER 1993)
- MW-12R  REPLACEMENT GROUNDWATER MONITORING WELL (INSTALLED BETWEEN JANUARY 31 AND FEBRUARY 21, 2002)
- MW-25  MONITORING WELLS INSTALLED SEPTEMBER 30, 2003
- *  WELL INACCESSIBLE OR DAMAGED
- TMW-2  PERFORMANCE MONITORING WELL LOCATION (INSTALLED JUNE 2013)
- TMW-E3  TEMPORARY MONITORING WELL INSTALLED BEFORE JUNE 2013



KINDER MORGAN LIQUID TERMINALS, LLC
 HARBOR ISLAND TERMINAL
 2720 13TH AVENUE SOUTHWEST, SEATTLE, WASHINGTON

SITE PLAN



FIGURE
1

**Table 1
Current Groundwater Monitoring Plan
2016 Analyte Reduction Request
Kinder Morgan Harbor Island Terminal
Seattle, Washington**

Well	Sampling Schedule	GRO by NWTPH-GX	DRO by NWTPH-DX	HO by NWTPH-DX	BTEX by EPA 8260B	Total and Dissolved Lead by EPA 200.8	MNA Geochemical Parameters ¹	Depth to Water/SPH by downhole meter
A-4	1Q							X
	3Q							X
A-5	1Q	X			X			X
	3Q	X			X			X
A-6	1Q							X
	3Q							X
A-8	1Q							X
	3Q	X	X	X	X			X
A-10	1Q							X
	3Q	X	X	X	X			X
A-11	1Q							X
	3Q							X
A-12	1Q							X
	3Q							X
A-14R	1Q							X
	3Q	X	X	X	X	X		X
A-16	1Q							X
	3Q							X
A-18	1Q							X
	3Q							X
A-19	1Q							X
	3Q							X
A-20	1Q							X
	3Q							X

**Table 1
Current Groundwater Monitoring Plan
2016 Analyte Reduction Request
Kinder Morgan Harbor Island Terminal
Seattle, Washington**

Well	Sampling Schedule	GRO by NWTPH-GX	DRO by NWTPH-DX	HO by NWTPH-DX	BTEX by EPA 8260B	Total and Dissolved Lead by EPA 200.8	MNA Geochemical Parameters ¹	Depth to Water/SPH by downhole meter
A-21	1Q	X			X		X	X
	3Q	X			X	X	X	X
A-22R	1Q							X
	3Q							X
A-23R	1Q							X
	3Q	X			X		X	X
A-25	1Q							X
	3Q							X
A-26R	1Q							X
	3Q							X
A-27 ²	1Q	X			X		X	X
	3Q	X			X		X	X
A-28R	1Q	X			X		X	X
	3Q	X			X	X	X	X
11 ²	1Q	X			X		X	X
	3Q	X			X		X	X
12 ²	1Q	X			X		X	X
	3Q	X	X	X	X	X	X	X
MW-1	1Q							X
	3Q	X	X	X	X	X		X
MW-2	1Q							X
	3Q	X	X	X	X	X	X	X
MW-3	1Q							X
	3Q	X	X	X	X	X		X

Table 1
Current Groundwater Monitoring Plan
2016 Analyte Reduction Request
Kinder Morgan Harbor Island Terminal
Seattle, Washington

Well	Sampling Schedule	GRO by NWTPH-GX	DRO by NWTPH-DX	HO by NWTPH-DX	BTEX by EPA 8260B	Total and Dissolved Lead by EPA 200.8	MNA Geochemical Parameters ¹	Depth to Water/SPH by downhole meter
MW-4	1Q							X
	3Q	X	X	X	X			X
MW-5	1Q							X
	3Q	X	X	X	X	X		X
MW-6	1Q							X
	3Q	X			X	X	X	X
MW-7 ²	1Q	X			X		X	X
	3Q	X			X	X	X	X
MW-8	1Q							X
	3Q	X	X	X	X	X		X
MW-9 ²	1Q	X			X		X	X
	3Q	X			X	X	X	X
MW-12R	1Q							X
	3Q	X	X	X	X	X	X	X
MW-14	1Q							X
	3Q	X			X		X	X
MW-16	1Q							X
	3Q	X	X	X	X			X
MW-18	1Q	X			X			X
	3Q	X			X			X
MW-19 ²	1Q	X			X		X	X
	3Q	X			X		X	X
MW-20	1Q							X
	3Q	X	X	X	X			X

**Table 1
Current Groundwater Monitoring Plan
2016 Analyte Reduction Request
Kinder Morgan Harbor Island Terminal
Seattle, Washington**

Well	Sampling Schedule	GRO by NWTPH-GX	DRO by NWTPH-DX	HO by NWTPH-DX	BTEX by EPA 8260B	Total and Dissolved Lead by EPA 200.8	MNA Geochemical Parameters ¹	Depth to Water/SPH by downhole meter
MW-21	1Q	X	X	X	X		X	X
	3Q	X	X	X	X		X	X
MW-22	1Q							X
	3Q	X	X	X	X			X
MW-23	1Q	X			X		X	X
	3Q	X			X	X	X	X
MW-24	1Q	X			X		X	X
	3Q	X			X	X	X	X
MW-25	1Q							X
	3Q	X	X	X	X	X		X
MW-07R	1Q							X
	3Q	X	X	X	X	X	X	X
SH-02R	1Q							X
	3Q	X	X	X	X	X	X	X
SH-05R	1Q							X
	3Q	X	X	X	X	X		X
TMW-B1	1Q							X
	3Q	X			X			X

**Table 1
Current Groundwater Monitoring Plan
2016 Analyte Reduction Request
Kinder Morgan Harbor Island Terminal
Seattle, Washington**

Well	Sampling Schedule	GRO by NWTPH-GX	DRO by NWTPH-DX	HO by NWTPH-DX	BTEX by EPA 8260B	Total and Dissolved Lead by EPA 200.8	MNA Geochemical Parameters ¹	Depth to Water/SPH by downhole meter
TMW-1 ²	1Q	X			X		X	X
	3Q	X			X		X	X
TMW-2 ²	1Q	X			X		X	X
	3Q	X			X		X	X
TMW-3 ²	1Q	X			X		X	X
	3Q	X			X		X	X
TMW-4 ²	1Q	X			X		X	X
	3Q	X			X		X	X
TMW-5 ²	1Q	X			X		X	X
	3Q	X			X		X	X
TMW-6 ²	1Q	X			X		X	X
	3Q	X			X		X	X

Notes

1 Monitored Natural Attenuation (MNA) Geochemical Parameters include dissolved oxygen, methane, ferrous iron, nitrate, sulfate, and sulfide
2 Performance monitoring locations
GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics by Northwest Method NWTPH-Gx
DRO = Total Petroleum Hydrocarbons - Diesel Range Organics by Northwest Method NWTPH-Dx
HO = Total Petroleum Hydrocarbons - Heavy Oil by Northwest Method NWTPH-Gx
BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes by Environmental Protection Agency (EPA) Method 8260B.
1Q, 2Q, 3Q, 4Q = Denotes the quarter for each sampling event
-- Not Applicable

**Table 2
Proposed Groundwater Monitoring Plan
2016 Analyte Reduction Request
Kinder Morgan Harbor Island Terminal
Seattle, Washington**

Well	Sampling Schedule	GRO by NWTPH-GX	DRO by NWTPH-DX	HO by NWTPH-DX	BTEX by EPA 8260B	Total and Dissolved Lead by EPA 200.8	MNA Geochemical Parameters ¹	Depth to Water/SPH by downhole meter
A-4	1Q							X
	3Q							X
A-5	1Q	X			X			X
	3Q	X			X			X
A-6	1Q							X
	3Q							X
A-8	1Q							X
	3Q	X	X	X	X			X
A-10	1Q							X
	3Q	X	X	X	X			X
A-11	1Q							X
	3Q							X
A-12	1Q							X
	3Q							X
A-14R	1Q							X
	3Q	X	X	X	X	X		X
A-16	1Q							X
	3Q							X
A-18	1Q							X
	3Q							X
A-19	1Q							X
	3Q							X
A-20	1Q							X
	3Q							X

**Table 2
Proposed Groundwater Monitoring Plan
2016 Analyte Reduction Request
Kinder Morgan Harbor Island Terminal
Seattle, Washington**

Well	Sampling Schedule	GRO by NWTPH-GX	DRO by NWTPH-DX	HO by NWTPH-DX	BTEX by EPA 8260B	Total and Dissolved Lead by EPA 200.8	MNA Geochemical Parameters ¹	Depth to Water/SPH by downhole meter
A-21	1Q	X			X			X
	3Q	X			X	X		X
A-22R	1Q							X
	3Q							X
A-23R	1Q							X
	3Q	X			X			X
A-25	1Q							X
	3Q							X
A-26R	1Q							X
	3Q							X
A-27 ²	1Q	X			X		X	X
	3Q	X			X		X	X
A-28R	1Q	X			X		X	X
	3Q	X			X	X	X	X
11 ²	1Q	X			X		X ³	X
	3Q	X			X		X ³	X
12 ²	1Q	X			X		X ³	X
	3Q	X	X	X	X	X	X ³	X
MW-1	1Q							X
	3Q	X	X	X	X	X		X
MW-2	1Q							X
	3Q	X	X	X	X	X		X
MW-3	1Q							X
	3Q	X	X	X	X	X		X

Table 2
Proposed Groundwater Monitoring Plan
2016 Analyte Reduction Request
Kinder Morgan Harbor Island Terminal
Seattle, Washington

Well	Sampling Schedule	GRO by NWTPH-GX	DRO by NWTPH-DX	HO by NWTPH-DX	BTEX by EPA 8260B	Total and Dissolved Lead by EPA 200.8	MNA Geochemical Parameters ¹	Depth to Water/SPH by downhole meter
MW-4	1Q							X
	3Q	X	X	X	X			X
MW-5	1Q							X
	3Q	X	X	X	X	X		X
MW-6	1Q							X
	3Q	X			X	X		X
MW-7 ²	1Q	X			X		X ³	X
	3Q	X			X	X	X ³	X
MW-8	1Q							X
	3Q	X	X	X	X	X		X
MW-9 ²	1Q	X			X		X ³	X
	3Q	X			X	X	X ³	X
MW-12R	1Q							X
	3Q	X	X	X	X	X		X
MW-14	1Q							X
	3Q	X			X			X
MW-16	1Q							X
	3Q	X	X	X	X			X
MW-18	1Q	X			X			X
	3Q	X			X			X
MW-19 ²	1Q	X			X		X ³	X
	3Q	X			X		X ³	X
MW-20	1Q							X
	3Q	X	X	X	X			X

**Table 2
Proposed Groundwater Monitoring Plan
2016 Analyte Reduction Request
Kinder Morgan Harbor Island Terminal
Seattle, Washington**

Well	Sampling Schedule	GRO by NWTPH-GX	DRO by NWTPH-DX	HO by NWTPH-DX	BTEX by EPA 8260B	Total and Dissolved Lead by EPA 200.8	MNA Geochemical Parameters ¹	Depth to Water/SPH by downhole meter
MW-21	1Q	X	X	X	X			X
	3Q	X	X	X	X			X
MW-22	1Q							X
	3Q	X	X	X	X			X
MW-23	1Q	X			X		X	X
	3Q	X			X	X	X	X
MW-24	1Q	X			X		X	X
	3Q	X			X	X	X	X
MW-25	1Q							X
	3Q	X	X	X	X	X		X
MW-07R	1Q							X
	3Q	X	X	X	X	X		X
SH-02R	1Q							X
	3Q	X	X	X	X	X		X
SH-05R	1Q							X
	3Q	X	X	X	X	X		X
TMW-B1	1Q							X
	3Q	X			X		X	X

Table 2
Proposed Groundwater Monitoring Plan
2016 Analyte Reduction Request
Kinder Morgan Harbor Island Terminal
Seattle, Washington

Well	Sampling Schedule	GRO by NWTPH-GX	DRO by NWTPH-DX	HO by NWTPH-DX	BTEX by EPA 8260B	Total and Dissolved Lead by EPA 200.8	MNA Geochemical Parameters ¹	Depth to Water/SPH by downhole meter
TMW-1 ²	1Q	X			X		X ³	X
	3Q	X			X		X ³	X
TMW-2 ²	1Q	X			X		X ³	X
	3Q	X			X		X ³	X
TMW-3 ²	1Q	X			X		X ³	X
	3Q	X			X		X ³	X
TMW-4 ²	1Q	X			X		X ³	X
	3Q	X			X		X ³	X
TMW-5 ²	1Q	X			X		X ³	X
	3Q	X			X		X ³	X
TMW-6 ²	1Q	X			X		X ³	X
	3Q	X			X		X ³	X

Notes

1 = Monitored Natural Attenuation (MNA) Geochemical Parameters include dissolved oxygen, methane, ferrous iron, nitrate, sulfate, and sulfide
2 = Performance monitoring locations
3 = Sulfate is the only geochemical analysis to be run at this location
GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics by Northwest Method NWTPH-Gx
DRO = Total Petroleum Hydrocarbons - Diesel Range Organics by Northwest Method NWTPH-Dx
HO = Total Petroleum Hydrocarbons - Heavy Oil by Northwest Method NWTPH-Gx
BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes by Environmental Protection Agency (EPA) Method 8260B.
1Q, 2Q, 3Q, 4Q = Denotes the quarter for each sampling event
-- Not Applicable

Ecology Approval Email

Ullery, Mark

From: Cruz, Jerome (ECY) <JCRU461@ECY.WA.GOV>
Sent: Thursday, September 15, 2016 4:15 PM
To: Annis, Matt
Cc: Haslam, Kyle; Truedinger, Robert (Robert_Truedinger@kindermorgan.com); Wang, Ching-Pi (ECY)
Subject: RE: Kinder Morgan Harbor Island Terminal - analyte frequency reduction request

Hi Rob, Matt, and Kyle,

Thank you for meeting with me today and for your patience while I get up to speed with the site issues and requests.

My understanding is that the reduction request will consist of eliminating only natural attenuation indicators such as ferrous iron and nitrate (with the exception of sulfate) from the list of analytes at select wells depicted in Figure 3 of the Proposed MNA Geochemical Parameters Analytical Reduction Plan. Site COCs will continue to be analyzed.

I concur with the analyte groundwater reduction request in your memo dated August 3, 2016. Please proceed in accordance with the revisions proposed in the memo.

Please also proceed with the proposed sulfate land reapplication in accordance with the August 31, 2016 field implementation memorandum.

Thanks,

Jerome



Jerome B. Cruz, Ph.D.
Toxics Cleanup Program, Northwest Regional Office
3190 - 160th SE Bellevue, WA 98008
Tel: (425) 649-7094 Fax: (425) 649-7098
Jerome.Cruz@ecy.wa.gov
<http://www.ecy.wa.gov/programs/tcp/cleanup.html>

From: Annis, Matt [mailto:Matt.Annis@arcadis.com]
Sent: Thursday, August 04, 2016 10:12 AM
To: Cruz, Jerome (ECY) <JCRU461@ECY.WA.GOV>
Cc: Haslam, Kyle <Kyle.Haslam@arcadis.com>; Truedinger, Robert (Robert_Truedinger@kindermorgan.com) <Robert_Truedinger@kindermorgan.com>
Subject: RE: Kinder Morgan Harbor Island Terminal - analyte frequency reduction request

Hi Jerome,

We have revised our analyte reduction request memo to incorporate the maps you requested below (see attached). For clarification, at this time we are not proposing to drop any wells from the program. This request is limited to dropping

NA analytical parameters from a handful of wells. Perhaps later this year we should take a look at dropping wells from the program that have been in compliance for several years. Please confirm the revisions meet the expectations of your request. Thanks.

Matt Annis | Principal Environmental Scientist | matt.annis@arcadis.com

Arcadis | Arcadis U.S., Inc.

1100 Olive Way, Suite 800 | Seattle, WA | 98101 | USA

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From: Cruz, Jerome (ECY) [<mailto:JCRU461@ECY.WA.GOV>]

Sent: Thursday, July 28, 2016 9:18 AM

To: Annis, Matt <Matt.Annis@arcadis.com>

Cc: Haslam, Kyle <Kyle.Haslam@arcadis.com>; Truedinger, Robert (Robert_Truedinger@kindermorgan.com) <Robert_Truedinger@kindermorgan.com>

Subject: RE: Kinder Morgan Harbor Island Terminal - analyte frequency reduction request

Hi Matt,

I started reviewing the analyte reduction request and first semiannual 2016 GW monitoring report. In order to understand the nature of this request and evolution, I reviewed the past requests for reduced monitoring in the semiannual monitoring report. From what I could find, there were two requests:

- June 21, 2007 to Roger Nye, approved August 7, 2007
- May 20, 2014 to Maura O'Brien, approved ??

The May 20 request had maps showing current quarterly and annual GW monitoring locations (Fig. 2), proposed semi- and annual locations (Fig. 3), and proposed performance monitoring locations (Fig. 4).

May I request similar maps for the current proposal? This will allow me to better understand the proposal, its variation from past/current monitoring, and its rationale. What might also help is to superimpose contaminant concentrations in the proposed monitoring network/frequency map for me to verify how the current proposal addresses the existing site conditions. I agree that if a well has been in compliance for several years, we should consider dropping it from the monitoring program, but I would like to identify where these are on the maps before I approve anything.

Please don't hesitate to contact me if you have questions or would like to discuss.

Thanks,

Jerome



Jerome B. Cruz, Ph.D.
Toxics Cleanup Program, Northwest Regional Office
3190 - 160th SE Bellevue, WA 98008
Tel: (425) 649-7094 Fax: (425) 649-7098
Jerome.Cruz@ecy.wa.gov
<http://www.ecy.wa.gov/programs/tcp/cleanup.html>

From: Annis, Matt [<mailto:Matt.Annis@arcadis.com>]
Sent: Wednesday, July 20, 2016 1:43 PM
To: Cruz, Jerome (ECY) <JCRU461@ECY.WA.GOV>
Cc: Haslam, Kyle <Kyle.Haslam@arcadis.com>; Truedinger, Robert (Robert_Truedinger@kindermorgan.com) <Robert_Truedinger@kindermorgan.com>
Subject: FW: Kinder Morgan Harbor Island Terminal - analyte frequency reduction request

Hi Jerome,

Please see below and attached. We are starting to plan for our Q3 monitoring event and were hoping Ecology would provide an opinion on our request before then. Please give me a call if you have questions or would like to discuss. Thanks.

Matt Annis | Principal Environmental Scientist | matt.annis@arcadis.com
Arcadis | Arcadis U.S., Inc.
1100 Olive Way, Suite 800 | Seattle, WA | 98101 | USA
T. +1 206 726 4716 | M. +1 206 434 1929

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From: Annis, Matt
Sent: Wednesday, February 24, 2016 3:53 PM
To: 'mobr461@ecy.wa.gov' <mobr461@ecy.wa.gov>
Cc: Truedinger, Robert (Robert_Truedinger@kindermorgan.com) <Robert_Truedinger@kindermorgan.com>
Subject: FW: Kinder Morgan Harbor Island Terminal - analyte frequency reduction request

Hi Maura,

Thanks for taking the time to call me on 2/22 to discuss this request and your pending retirement (good for you!). You indicated you were in general agreement with our request to reduce the number of wells we have been performing natural attenuation analyses on and were also going to discuss with the new site manager (Jerome Cruz). As you suggested, we will push our Q1 sampling back to the week of 3/21 so Ecology has sufficient time to provide an opinion on our request.

Also, you mentioned having a transition meeting with Ecology, Kinder Morgan and Arcadis prior to your last day. Kinder Morgan and Arcadis definitely want to take you up on that offer. Are you and Jerome available for this transition meeting on the afternoon of 3/24? Please let us know as soon as you can as Rob will need to travel from Portland to attend. Thanks.

Matt Annis | Principal Environmental Scientist | matt.annis@arcadis.com

Arcadis | T. +1 206 726 4716 | M. +1 206 434 1929

www.arcadis.com

From: Annis, Matt

Sent: Thursday, February 11, 2016 2:23 PM

To: 'mobr461@ecy.wa.gov' <mobr461@ecy.wa.gov>

Cc: Truedinger, Robert (Robert_Truedinger@kindermorgan.com) <Robert_Truedinger@kindermorgan.com>; Haslam, Kyle <Kyle.Haslam@arcadis.com>

Subject: Kinder Morgan Harbor Island Terminal - analyte frequency reduction request

Hi Maura,

Attached is a memorandum that includes a request to cease the analysis of natural attenuation parameters in monitoring wells that are currently below site-specific cleanup levels (and have been for some time) at the Kinder Morgan terminal on Harbor Island. The memorandum also includes a request to temporarily cease the analysis of natural attenuation parameters (with the exception of sulfate) at the performance monitoring wells located with the sulfate land application. We are hoping to have an opinion from Ecology on this request prior to our first quarter sampling event, which is current scheduled for mid-March 2016. Please give me a call if you have any questions or would like to discuss. Thanks.

Matt Annis | Principal Environmental Scientist | matt.annis@arcadis.com

Arcadis | Arcadis U.S., Inc.

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T. +1 206 726 4716 | M. +1 206 434 1929

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Be green, leave it on the screen.

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Appendix B

Groundwater Monitoring Field Data Sheets

Low-Flow Test Report:

Test Date / Time: 4/18/2022 1:35:15 PM
Project: Kinder Morgan Harbor Island (21)
Operator Name: Joseph Sepiol

Location Name: TMW-5 Well Diameter: 2 in Casing Type: PVC Initial Depth to Water: 3.59 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 6 ft Estimated Total Volume Pumped: 4050 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0.02 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:
Pump on at 1334

Weather Conditions:
Rain 50F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
4/18/2022 1:35 PM	00:00	6.33 pH	52.70 °F	2.09 mS/cm	10.93 mg/L	216.97 NTU	104.8 mV	3.59 ft	150.00 ml/min
4/18/2022 1:38 PM	03:00	7.40 pH	52.73 °F	2.50 mS/cm	0.78 mg/L	0.00 NTU	-21.9 mV	3.59 ft	150.00 ml/min
4/18/2022 1:41 PM	06:00	7.44 pH	52.77 °F	2.33 mS/cm	0.20 mg/L	0.00 NTU	-42.6 mV	3.59 ft	150.00 ml/min
4/18/2022 1:44 PM	09:00	7.46 pH	52.48 °F	2.24 mS/cm	0.11 mg/L	0.00 NTU	-53.7 mV	3.59 ft	150.00 ml/min
4/18/2022 1:47 PM	12:00	7.47 pH	52.52 °F	2.16 mS/cm	0.08 mg/L	0.00 NTU	-64.1 mV	3.59 ft	150.00 ml/min
4/18/2022 1:50 PM	15:00	7.48 pH	52.56 °F	2.11 mS/cm	0.08 mg/L	0.00 NTU	-71.8 mV	3.59 ft	150.00 ml/min
4/18/2022 1:53 PM	18:00	7.48 pH	52.57 °F	2.02 mS/cm	0.06 mg/L	0.00 NTU	-77.7 mV	3.59 ft	150.00 ml/min
4/18/2022 1:56 PM	21:00	7.48 pH	52.53 °F	1.98 mS/cm	0.04 mg/L	0.00 NTU	-83.0 mV	3.59 ft	150.00 ml/min
4/18/2022 1:59 PM	24:00	7.49 pH	52.54 °F	1.96 mS/cm	0.03 mg/L	0.00 NTU	-87.5 mV	3.59 ft	150.00 ml/min
4/18/2022 2:02 PM	27:00	7.48 pH	52.60 °F	1.93 mS/cm	0.03 mg/L	0.00 NTU	-91.1 mV	3.59 ft	150.00 ml/min

Samples

Sample ID:	Description:
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TMW-5	Sample time: 1405 Final DTW: 2.71 ft
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Created using VuSitu from In-Situ, Inc.

Low-Flow Test Report:

Test Date / Time: 4/18/2022 2:22:24 PM
Project: Kinder Morgan Harbor Island (22)
Operator Name: Joseph Sepiol

Location Name: 12 Well Diameter: 4 in Casing Type: PVC Initial Depth to Water: 1.53 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 6 ft Estimated Total Volume Pumped: 2700 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:
Pump on at 1415

Weather Conditions:
50F rain

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
4/18/2022 2:22 PM	00:00	7.09 pH	49.60 °F	2.49 mS/cm	0.87 mg/L	6.29 NTU	-62.5 mV	1.53 ft	150.00 ml/min
4/18/2022 2:25 PM	03:00	7.06 pH	50.82 °F	2.50 mS/cm	0.35 mg/L	1.47 NTU	-70.2 mV	1.53 ft	150.00 ml/min
4/18/2022 2:28 PM	06:00	7.06 pH	50.76 °F	2.50 mS/cm	0.13 mg/L	0.42 NTU	-77.2 mV	1.53 ft	150.00 ml/min
4/18/2022 2:31 PM	09:00	7.06 pH	50.83 °F	2.50 mS/cm	0.07 mg/L	0.65 NTU	-83.5 mV	1.53 ft	150.00 ml/min
4/18/2022 2:34 PM	12:00	7.06 pH	50.78 °F	2.50 mS/cm	0.06 mg/L	0.50 NTU	-88.7 mV	1.53 ft	150.00 ml/min
4/18/2022 2:37 PM	15:00	7.06 pH	50.77 °F	2.50 mS/cm	0.04 mg/L	0.52 NTU	-93.6 mV	1.53 ft	150.00 ml/min
4/18/2022 2:40 PM	18:00	7.06 pH	50.89 °F	2.50 mS/cm	0.04 mg/L	0.64 NTU	-98.4 mV	1.53 ft	150.00 ml/min

Samples

Sample ID:	Description:
12	Final DTW: 2.60 ft Sample Time: 1445

Low-Flow Test Report:

Test Date / Time: 4/18/2022 2:54:21 PM
Project: Kinder Morgan Harbor Island (23)
Operator Name: Joseph Sepiol

Location Name: MW-7 Well Diameter: 4 in Casing Type: PVC Initial Depth to Water: 2.01 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 6 ft Estimated Total Volume Pumped: 1800 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:
Pump on at 1453

Weather Conditions:
45F rain

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
4/18/2022 2:54 PM	00:00	7.31 pH	51.31 °F	1.69 mS/cm	5.13 mg/L	0.00 NTU	-67.8 mV	2.01 ft	150.00 ml/min
4/18/2022 2:57 PM	03:00	7.05 pH	51.79 °F	1.68 mS/cm	0.71 mg/L	0.00 NTU	-55.5 mV	2.01 ft	150.00 ml/min
4/18/2022 3:00 PM	06:00	7.02 pH	51.80 °F	1.67 mS/cm	0.24 mg/L	0.00 NTU	-54.8 mV	2.01 ft	150.00 ml/min
4/18/2022 3:03 PM	09:00	7.00 pH	51.77 °F	1.67 mS/cm	0.18 mg/L	0.00 NTU	-55.2 mV	2.01 ft	150.00 ml/min
4/18/2022 3:06 PM	12:00	7.00 pH	51.87 °F	1.68 mS/cm	0.12 mg/L	5.22 NTU	-56.1 mV	2.01 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW-7	Sample time: 1508 DUP-1 collected Final DTW: 2.37 ft

Low-Flow Test Report:

Test Date / Time: 4/18/2022 3:24:44 PM
Project: Kinder Morgan Harbor Island (24)
Operator Name: Joseph Sepiol

Location Name: TMW-3 Well Diameter: 2 in Casing Type: PVC Initial Depth to Water: 2.89 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 6 ft Estimated Total Volume Pumped: 3600 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
4/18/2022 3:24 PM	00:00	7.02 pH	51.31 °F	0.01 mS/cm	9.21 mg/L	9.69 NTU	-31.3 mV	2.89 ft	150.00 ml/min
4/18/2022 3:27 PM	03:00	7.00 pH	50.32 °F	1.40 mS/cm	6.61 mg/L	2.27 NTU	-6.9 mV	2.89 ft	150.00 ml/min
4/18/2022 3:30 PM	06:00	6.98 pH	50.52 °F	1.46 mS/cm	6.16 mg/L	2.93 NTU	0.0 mV	2.89 ft	150.00 ml/min
4/18/2022 3:33 PM	09:00	6.99 pH	50.83 °F	1.84 mS/cm	2.23 mg/L	0.00 NTU	-20.0 mV	2.89 ft	150.00 ml/min
4/18/2022 3:36 PM	12:00	7.10 pH	51.01 °F	1.93 mS/cm	0.65 mg/L	0.00 NTU	-36.1 mV	2.89 ft	150.00 ml/min
4/18/2022 3:39 PM	15:00	7.18 pH	51.20 °F	2.00 mS/cm	0.30 mg/L	0.00 NTU	-48.0 mV	2.89 ft	150.00 ml/min
4/18/2022 3:42 PM	18:00	7.23 pH	51.26 °F	2.03 mS/cm	0.17 mg/L	0.00 NTU	-55.4 mV	2.89 ft	150.00 ml/min
4/18/2022 3:45 PM	21:00	7.26 pH	51.24 °F	2.04 mS/cm	0.12 mg/L	0.00 NTU	-61.0 mV	2.89 ft	150.00 ml/min
4/18/2022 3:48 PM	24:00	7.27 pH	51.29 °F	2.05 mS/cm	0.09 mg/L	0.00 NTU	-65.1 mV	2.89 ft	150.00 ml/min

Samples

Sample ID:	Description:
TMW-3	Sample time: 1550 Final DTW: 2.95 ft

Low-Flow Test Report:

Test Date / Time: 4/19/2022 8:43:42 AM
Project: Kinder Morgan Harbor Island (25)
Operator Name: Joseph Sepiol

Location Name: MW-9 Well Diameter: 4 in Casing Type: PVC Initial Depth to Water: 2.4 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 6 ft Estimated Total Volume Pumped: 3600 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:
Pump on at 0842

Weather Conditions:
38F partly cloudy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
4/19/2022 8:43 AM	00:00	7.27 pH	47.08 °F	162.96 µS/cm	9.58 mg/L	10.62 NTU	137.0 mV	2.40 ft	150.00 ml/min
4/19/2022 8:46 AM	03:00	6.87 pH	48.00 °F	156.54 µS/cm	5.20 mg/L	0.00 NTU	135.3 mV	2.40 ft	150.00 ml/min
4/19/2022 8:49 AM	06:00	6.72 pH	48.74 °F	152.28 µS/cm	4.98 mg/L	7.34 NTU	133.6 mV	2.40 ft	150.00 ml/min
4/19/2022 8:52 AM	09:00	6.66 pH	48.64 °F	151.67 µS/cm	4.89 mg/L	4.66 NTU	135.0 mV	2.40 ft	150.00 ml/min
4/19/2022 8:55 AM	12:00	6.63 pH	48.77 °F	151.50 µS/cm	4.88 mg/L	1.58 NTU	135.0 mV	2.40 ft	150.00 ml/min
4/19/2022 8:58 AM	15:00	6.61 pH	48.94 °F	151.52 µS/cm	4.85 mg/L	1.71 NTU	133.2 mV	2.40 ft	150.00 ml/min
4/19/2022 9:01 AM	18:00	6.60 pH	48.89 °F	151.31 µS/cm	4.84 mg/L	0.00 NTU	132.8 mV	2.40 ft	150.00 ml/min
4/19/2022 9:04 AM	21:00	6.58 pH	49.00 °F	151.18 µS/cm	4.85 mg/L	1.04 NTU	131.5 mV	2.40 ft	150.00 ml/min
4/19/2022 9:07 AM	24:00	6.57 pH	49.12 °F	151.48 µS/cm	4.99 mg/L	1.25 NTU	129.4 mV	2.40 ft	150.00 ml/min

Samples

Sample ID:	Description:
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MW-9

Final DTW: 2.48 ft
Sample Time: 0910

Created using VuSitu from In-Situ, Inc.

Low-Flow Test Report:

Test Date / Time: 4/19/2022 09:18:35 AM

Project: KMLT Harbor Island

Operator Name: L. Selleck

Location Name: TMW-2 Well Diameter: 2 in Casing Type: PVC Initial Depth to Water: 2.67 ft	Pump Type: Peri pump Tubing Type: PVC Pump Intake From TOC: 6 ft Estimated Total Volume Pumped: 4050 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466619
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Test Notes:

Last test stopped due to equipment issues with pump and turbidity meter.

Final DTW 2.65

Weather Conditions:

50, partly cloudy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
4/19/2022 09:18 AM	00:00	7.34 pH	66.58 °F	1,784.0 µS/cm	4.34 mg/L	0.00 NTU	21.6 mV	2.67 ft	150.00 ml/min
4/19/2022 09:21 AM	03:00	7.52 pH	56.95 °F	1,925.2 µS/cm	1.10 mg/L	0.00 NTU	-59.7 mV	2.67 ft	150.00 ml/min
4/19/2022 09:24 AM	06:00	7.57 pH	55.98 °F	2,010.1 µS/cm	0.40 mg/L	0.00 NTU	-84.6 mV	2.67 ft	150.00 ml/min
4/19/2022 09:27 AM	09:00	7.59 pH	55.96 °F	2,002.6 µS/cm	0.48 mg/L	0.00 NTU	-98.0 mV	2.67 ft	150.00 ml/min
4/19/2022 09:30 AM	12:00	7.60 pH	55.94 °F	2,014.8 µS/cm	0.30 mg/L	0.00 NTU	-107.1 mV	2.67 ft	150.00 ml/min
4/19/2022 09:33 AM	15:00	7.61 pH	55.92 °F	2,006.2 µS/cm	0.33 mg/L	0.00 NTU	-114.9 mV	2.67 ft	150.00 ml/min
4/19/2022 09:36 AM	18:00	7.62 pH	55.40 °F	2,006.9 µS/cm	0.20 mg/L	0.00 NTU	-123.3 mV	2.67 ft	150.00 ml/min
4/19/2022 09:39 AM	21:00	7.62 pH	55.14 °F	2,014.8 µS/cm	0.19 mg/L	0.00 NTU	-128.8 mV	2.67 ft	150.00 ml/min
4/19/2022 09:42 AM	24:00	7.63 pH	54.90 °F	2,012.4 µS/cm	0.10 mg/L	0.00 NTU	-133.6 mV	2.67 ft	150.00 ml/min
4/19/2022 09:45 AM	27:00	7.63 pH	55.09 °F	2,017.6 µS/cm	0.14 mg/L	0.00 NTU	-137.7 mV	2.67 ft	150.00 ml/min

Samples

Sample ID:	Description:
TMW-2	ST 0945

Created using VuSitu from In-Situ, Inc.

Low-Flow Test Report:

Test Date / Time: 4/19/2022 9:42:22 AM
Project: Kinder Morgan Harbor Island (27)
Operator Name: Joseph Sepiol

Location Name: TMW-6 Well Diameter: 2 in Casing Type: PVC Initial Depth to Water: 2.48 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 6 ft Estimated Total Volume Pumped: 1350 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0.07 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:

Weather Conditions:
40F partly cloudy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
4/19/2022 9:42 AM	00:00	6.93 pH	51.28 °F	748.24 µS/cm	0.46 mg/L	9.34 NTU	-35.1 mV	2.48 ft	150.00 ml/min
4/19/2022 9:45 AM	03:00	6.95 pH	51.23 °F	740.89 µS/cm	0.35 mg/L	9.03 NTU	-41.1 mV	2.48 ft	150.00 ml/min
4/19/2022 9:48 AM	06:00	6.97 pH	51.01 °F	744.00 µS/cm	0.31 mg/L	9.34 NTU	-46.2 mV	2.48 ft	150.00 ml/min
4/19/2022 9:51 AM	09:00	6.97 pH	51.11 °F	736.22 µS/cm	0.47 mg/L	7.81 NTU	-50.1 mV	2.48 ft	150.00 ml/min

Samples

Sample ID:	Description:
TMW-6	Sample time: 0958 Final DTW: 2.55 ft

Low-Flow Test Report:

Test Date / Time: 4/19/2022 10:02:17 AM

Project: KMLT Harbor Island

Operator Name: L. Selleck

Location Name: TMW-1 Well Diameter: 2 in Casing Type: PVC Initial Depth to Water: 2.54 ft	Pump Type: Peri pump Tubing Type: PVC Pump Intake From TOC: 6 ft Estimated Total Volume Pumped: 64864712 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466619
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Test Notes:

Final DTW 2.54 ft

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
4/19/2022 10:02 AM	00:00:00	8.07 pH	61.92 °F	92.90 µS/cm	9.11 mg/L	0.00 NTU	63.6 mV	2.54 ft	150.00 ml/min
4/19/2022 10:05 AM	06:47:00	7.70 pH	55.53 °F	134.55 µS/cm	10.42 mg/L	0.00 NTU	105.0 mV	2.54 ft	150.00 ml/min
4/19/2022 10:08 AM	06:49:46	7.24 pH	55.15 °F	259.84 µS/cm	10.28 mg/L	0.00 NTU	137.5 mV	2.54 ft	150.00 ml/min
4/19/2022 10:11 AM	06:52:46	6.98 pH	54.88 °F	903.57 µS/cm	9.81 mg/L	0.00 NTU	163.2 mV	2.54 ft	150.00 ml/min
4/19/2022 10:14 AM	06:55:46	6.89 pH	54.19 °F	1,326.4 µS/cm	9.30 mg/L	0.00 NTU	177.7 mV	2.54 ft	150.00 ml/min
4/19/2022 10:14 AM	06:56:25	6.87 pH	54.21 °F	1,409.2 µS/cm	8.98 mg/L	0.00 NTU	178.4 mV	2.54 ft	150.00 ml/min
4/19/2022 10:17 AM	06:59:25	6.83 pH	54.18 °F	1,495.8 µS/cm	8.14 mg/L	0.00 NTU	187.7 mV	2.54 ft	150.00 ml/min
4/19/2022 10:20 AM	07:02:25	6.83 pH	53.42 °F	1,521.1 µS/cm	8.16 mg/L	0.00 NTU	192.4 mV	2.54 ft	150.00 ml/min
4/19/2022 10:23 AM	07:05:25	6.82 pH	53.16 °F	1,537.4 µS/cm	8.09 mg/L	0.00 NTU	199.8 mV	2.54 ft	150.00 ml/min
4/19/2022 10:26 AM	07:08:25	6.82 pH	52.47 °F	1,540.4 µS/cm	8.06 mg/L	0.00 NTU	204.5 mV	2.54 ft	150.00 ml/min
4/19/2022 10:29 AM	07:11:25	6.82 pH	53.32 °F	1,560.8 µS/cm	8.06 mg/L	0.00 NTU	209.0 mV	2.54 ft	150.00 ml/min

Samples

Sample ID:	Description:
TMW-1	ST 1030

Low-Flow Test Report:

Test Date / Time: 4/19/2022 10:22:45 AM

Project: Kinder Morgan Harbor Island (28)

Operator Name: Joseph Sepiol

Location Name: MW-21 Well Diameter: 2 in Casing Type: PVC Initial Depth to Water: 2.53 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 6 ft Estimated Total Volume Pumped: 4050 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:

Pump on at 1021

Weather Conditions:

Wind. Partly cloudy. 40F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
4/19/2022 10:22 AM	00:00	7.40 pH	52.50 °F	40.69 µS/cm	4.81 mg/L	16.83 NTU	-18.5 mV	2.53 ft	150.00 ml/min
4/19/2022 10:25 AM	03:00	6.35 pH	52.41 °F	34.98 µS/cm	1.06 mg/L	12.81 NTU	51.5 mV	2.53 ft	150.00 ml/min
4/19/2022 10:28 AM	06:00	6.04 pH	52.54 °F	34.90 µS/cm	0.87 mg/L	8.44 NTU	70.9 mV	2.53 ft	150.00 ml/min
4/19/2022 10:31 AM	09:00	5.91 pH	52.57 °F	34.27 µS/cm	0.80 mg/L	7.99 NTU	81.1 mV	2.53 ft	150.00 ml/min
4/19/2022 10:34 AM	12:00	5.84 pH	52.70 °F	35.17 µS/cm	1.11 mg/L	8.31 NTU	87.3 mV	2.53 ft	150.00 ml/min
4/19/2022 10:37 AM	15:00	5.81 pH	52.60 °F	34.63 µS/cm	1.34 mg/L	9.92 NTU	91.4 mV	2.53 ft	150.00 ml/min
4/19/2022 10:40 AM	18:00	5.78 pH	52.48 °F	45.09 µS/cm	1.12 mg/L	8.82 NTU	95.0 mV	2.53 ft	150.00 ml/min
4/19/2022 10:43 AM	21:00	5.77 pH	52.55 °F	45.26 µS/cm	1.25 mg/L	8.89 NTU	97.9 mV	2.53 ft	150.00 ml/min
4/19/2022 10:46 AM	24:00	5.75 pH	52.71 °F	45.50 µS/cm	1.22 mg/L	8.50 NTU	100.7 mV	2.53 ft	150.00 ml/min
4/19/2022 10:49 AM	27:00	5.74 pH	52.70 °F	45.32 µS/cm	1.28 mg/L	8.79 NTU	103.0 mV	2.53 ft	150.00 ml/min

Samples

Sample ID:	Description:
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MW-21

Sample Time : 1056
Final DTW: 2.85 t

Created using VuSitu from In-Situ, Inc.

Low-Flow Test Report:

Test Date / Time: 4/19/2022 11:07:20 AM

Project: KMLT Harbor Island

Operator Name: L. Selleck

Location Name: A-21 Well Diameter: 4 in Casing Type: PVC Initial Depth to Water: 7.56 ft	Pump Type: Peri pump Tubing Type: PVC Pump Intake From TOC: 10 ft Estimated Total Volume Pumped: 5400 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466619
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Test Notes:

Final DTW 7.55

Weather Conditions:

55 partly cloudy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
4/19/2022 11:07 AM	00:00	6.67 pH	57.71 °F	626.79 µS/cm	6.61 mg/L	6.03 NTU	201.5 mV	7.56 ft	150.00 ml/min
4/19/2022 11:10 AM	03:00	6.54 pH	56.52 °F	631.01 µS/cm	2.15 mg/L	0.00 NTU	200.4 mV	7.56 ft	150.00 ml/min
4/19/2022 11:13 AM	06:00	6.53 pH	56.41 °F	628.62 µS/cm	2.21 mg/L	10.11 NTU	202.5 mV	7.56 ft	150.00 ml/min
4/19/2022 11:16 AM	09:00	6.52 pH	56.44 °F	629.59 µS/cm	1.90 mg/L	0.51 NTU	196.7 mV	7.56 ft	150.00 ml/min
4/19/2022 11:19 AM	12:00	6.52 pH	56.28 °F	628.91 µS/cm	1.91 mg/L	0.00 NTU	192.4 mV	7.56 ft	150.00 ml/min
4/19/2022 11:22 AM	15:00	6.52 pH	56.36 °F	628.66 µS/cm	1.87 mg/L	0.00 NTU	185.5 mV	7.56 ft	150.00 ml/min
4/19/2022 11:25 AM	18:00	6.52 pH	56.29 °F	622.63 µS/cm	1.99 mg/L	0.00 NTU	175.3 mV	7.56 ft	150.00 ml/min
4/19/2022 11:28 AM	21:00	6.52 pH	56.27 °F	625.26 µS/cm	2.00 mg/L	0.00 NTU	167.4 mV	7.56 ft	150.00 ml/min
4/19/2022 11:31 AM	24:00	6.52 pH	56.19 °F	624.31 µS/cm	1.97 mg/L	0.12 NTU	165.3 mV	7.56 ft	150.00 ml/min
4/19/2022 11:34 AM	27:00	6.51 pH	56.20 °F	625.25 µS/cm	1.78 mg/L	0.00 NTU	159.5 mV	7.56 ft	150.00 ml/min
4/19/2022 11:37 AM	30:00	6.50 pH	56.23 °F	615.89 µS/cm	1.88 mg/L	0.00 NTU	140.1 mV	7.56 ft	150.00 ml/min
4/19/2022 11:40 AM	33:00	6.50 pH	56.16 °F	611.39 µS/cm	1.86 mg/L	0.00 NTU	136.8 mV	7.56 ft	150.00 ml/min
4/19/2022 11:43 AM	36:00	6.50 pH	56.21 °F	617.44 µS/cm	1.80 mg/L	0.00 NTU	134.1 mV	7.56 ft	150.00 ml/min

Samples

Sample ID:	Description:
A-21	ST 1145

Low-Flow Test Report:

Test Date / Time: 4/19/2022 11:44:55 AM

Project: Kinder Morgan Harbor Island (29)

Operator Name: Joseph Sepiol

Location Name: 11 Well Diameter: 4 in Casing Type: PVC Initial Depth to Water: 3.85 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 6 ft Estimated Total Volume Pumped: 3600 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:

Pump on at 1144

Weather Conditions:

Partly cloudy. 50F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
4/19/2022 11:44 AM	00:00	5.78 pH	56.68 °F	303.39 µS/cm	7.65 mg/L	0.00 NTU	94.5 mV	3.85 ft	150.00 ml/min
4/19/2022 11:47 AM	03:00	5.67 pH	55.99 °F	306.59 µS/cm	6.31 mg/L	0.00 NTU	94.7 mV	3.85 ft	150.00 ml/min
4/19/2022 11:50 AM	06:00	5.56 pH	55.86 °F	306.67 µS/cm	6.17 mg/L	0.00 NTU	92.6 mV	3.85 ft	150.00 ml/min
4/19/2022 11:53 AM	09:00	5.44 pH	56.00 °F	310.62 µS/cm	5.66 mg/L	0.00 NTU	89.9 mV	3.85 ft	150.00 ml/min
4/19/2022 11:56 AM	12:00	5.30 pH	55.86 °F	310.94 µS/cm	5.63 mg/L	0.00 NTU	84.4 mV	3.85 ft	150.00 ml/min
4/19/2022 11:59 AM	15:00	5.18 pH	55.91 °F	312.90 µS/cm	5.46 mg/L	0.00 NTU	79.8 mV	3.85 ft	150.00 ml/min
4/19/2022 12:02 PM	18:00	5.05 pH	55.83 °F	312.59 µS/cm	5.26 mg/L	0.00 NTU	76.4 mV	3.85 ft	150.00 ml/min
4/19/2022 12:05 PM	21:00	4.98 pH	55.81 °F	319.91 µS/cm	5.14 mg/L	0.00 NTU	74.0 mV	3.85 ft	150.00 ml/min
4/19/2022 12:08 PM	24:00	5.05 pH	56.09 °F	319.76 µS/cm	4.94 mg/L	0.00 NTU	71.6 mV	3.85 ft	150.00 ml/min

Samples

Sample ID:	Description:
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11

Sample Time: 1212
Final DTW: 4.19 ft

Created using VuSitu from In-Situ, Inc.

Low-Flow Test Report:

Test Date / Time: 4/19/2022 12:24:22 PM

Project: KMLT Harbor Island

Operator Name: L. Selleck

Location Name: A-27 Well Diameter: 4 in Casing Type: PVC Initial Depth to Water: 10.22 ft	Pump Type: Peri pump Tubing Type: PVC Pump Intake From TOC: 12 ft Estimated Total Volume Pumped: 4050 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466619
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Test Notes:

Final DTW 10.27

Weather Conditions:

50 sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
4/19/2022 12:24 PM	00:00	6.50 pH	55.51 °F	263.02 µS/cm	3.19 mg/L	9.83 NTU	-10.8 mV	10.22 ft	150.00 ml/min
4/19/2022 12:27 PM	03:00	6.40 pH	54.49 °F	263.13 µS/cm	0.39 mg/L	4.69 NTU	-70.1 mV	10.22 ft	150.00 ml/min
4/19/2022 12:30 PM	06:00	6.38 pH	54.52 °F	263.22 µS/cm	0.13 mg/L	4.50 NTU	-87.2 mV	10.22 ft	150.00 ml/min
4/19/2022 12:33 PM	09:00	6.38 pH	54.75 °F	261.77 µS/cm	0.15 mg/L	4.61 NTU	-96.7 mV	10.22 ft	150.00 ml/min
4/19/2022 12:36 PM	12:00	6.37 pH	54.80 °F	257.88 µS/cm	0.09 mg/L	4.12 NTU	-104.5 mV	10.22 ft	150.00 ml/min
4/19/2022 12:39 PM	15:00	6.37 pH	54.87 °F	256.09 µS/cm	0.11 mg/L	4.61 NTU	-112.1 mV	10.22 ft	150.00 ml/min
4/19/2022 12:42 PM	18:00	6.37 pH	55.12 °F	255.77 µS/cm	0.07 mg/L	3.57 NTU	-119.0 mV	10.22 ft	150.00 ml/min
4/19/2022 12:45 PM	21:00	6.37 pH	55.11 °F	252.54 µS/cm	0.10 mg/L	3.62 NTU	-124.5 mV	10.22 ft	150.00 ml/min
4/19/2022 12:48 PM	24:00	6.38 pH	55.21 °F	248.02 µS/cm	0.06 mg/L	2.43 NTU	-131.1 mV	10.22 ft	150.00 ml/min
4/19/2022 12:51 PM	27:00	6.39 pH	55.37 °F	248.87 µS/cm	0.10 mg/L	2.83 NTU	-134.1 mV	10.22 ft	150.00 ml/min

Samples

Sample ID:	Description:
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Low-Flow Test Report:

Test Date / Time: 4/19/2022 12:32:30 PM

Project: Kinder Morgan Harbor Island (30)

Operator Name: Joseph Sepiol

Location Name: TMW-4 Well Diameter: 2 in Casing Type: PVC Initial Depth to Water: 2.67 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 6 ft Estimated Total Volume Pumped: 2700 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:

Pump on at 1231

Weather Conditions:

50F partly cloudy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
4/19/2022 12:32 PM	00:00	6.43 pH	68.05 °F	0.18 µS/cm	4.20 mg/L	0.83 NTU	30.9 mV	2.67 ft	150.00 ml/min
4/19/2022 12:35 PM	03:00	7.33 pH	66.24 °F	0.43 µS/cm	0.33 mg/L	2.11 NTU	-23.8 mV	2.67 ft	150.00 ml/min
4/19/2022 12:38 PM	06:00	7.37 pH	64.44 °F	0.80 µS/cm	0.20 mg/L	1.37 NTU	-32.1 mV	2.67 ft	150.00 ml/min
4/19/2022 12:41 PM	09:00	7.38 pH	65.65 °F	1.31 µS/cm	0.24 mg/L	0.68 NTU	-38.8 mV	2.67 ft	150.00 ml/min
4/19/2022 12:44 PM	12:00	7.40 pH	65.37 °F	2.16 µS/cm	0.18 mg/L	1.64 NTU	-45.0 mV	2.67 ft	150.00 ml/min
4/19/2022 12:47 PM	15:00	7.40 pH	65.58 °F	2.16 µS/cm	0.20 mg/L	2.44 NTU	-48.6 mV	2.67 ft	150.00 ml/min
4/19/2022 12:50 PM	18:00	7.41 pH	65.87 °F	2.15 µS/cm	0.12 mg/L	3.47 NTU	-53.0 mV	2.67 ft	150.00 ml/min

Samples

Sample ID:	Description:
TMW-4	Sample Time: 1255 Final DTW: 2.84 ft

Low-Flow Test Report:

Test Date / Time: 4/19/2022 1:26:54 PM

Project: KMLT Harbor Island

Operator Name: L. Selleck

Location Name: A-28R Well Diameter: 2 in Casing Type: PVC Initial Depth to Water: 7.73 ft	Pump Type: Peri pump Tubing Type: PVC Pump Intake From TOC: 10 ft Estimated Total Volume Pumped: 2250 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466619
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Test Notes:

Weather Conditions:

55 cloudy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
4/19/2022 1:26 PM	00:00	6.48 pH	62.46 °F	569.72 µS/cm	4.37 mg/L	0.05 NTU	-18.5 mV	7.73 ft	150.00 ml/min
4/19/2022 1:29 PM	03:00	6.55 pH	57.46 °F	597.32 µS/cm	0.26 mg/L	0.37 NTU	-64.6 mV	7.73 ft	150.00 ml/min
4/19/2022 1:32 PM	06:00	6.55 pH	56.52 °F	600.78 µS/cm	0.13 mg/L	0.00 NTU	-76.1 mV	7.73 ft	150.00 ml/min
4/19/2022 1:35 PM	09:00	6.57 pH	56.28 °F	598.96 µS/cm	0.14 mg/L	0.00 NTU	-83.6 mV	7.73 ft	150.00 ml/min
4/19/2022 1:38 PM	12:00	6.56 pH	55.99 °F	602.28 µS/cm	0.09 mg/L	0.00 NTU	-88.2 mV	7.73 ft	150.00 ml/min
4/19/2022 1:41 PM	15:00	6.56 pH	55.86 °F	599.18 µS/cm	0.13 mg/L	0.00 NTU	-91.3 mV	7.73 ft	150.00 ml/min

Samples

Sample ID:	Description:
A-28R	ST 1345

Low-Flow Test Report:

Test Date / Time: 4/19/2022 1:37:33 PM
Project: Kinder Morgan Harbor Island (31)
Operator Name: Joseph Sepiol

Location Name: MW-19 Well Diameter: 2 in Casing Type: PVC Initial Depth to Water: 2.06 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 6 ft Estimated Total Volume Pumped: 1800 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:
Pump on at 1334

Weather Conditions:
60F partly cloudy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
4/19/2022 1:37 PM	00:00	7.11 pH	64.28 °F	293.67 µS/cm	4.14 mg/L	3.68 NTU	-50.8 mV	2.06 ft	150.00 ml/min
4/19/2022 1:40 PM	03:00	6.88 pH	57.39 °F	240.91 µS/cm	0.60 mg/L	1.48 NTU	-61.7 mV	2.06 ft	150.00 ml/min
4/19/2022 1:43 PM	06:00	6.86 pH	56.56 °F	238.49 µS/cm	0.36 mg/L	1.40 NTU	-64.3 mV	2.06 ft	150.00 ml/min
4/19/2022 1:46 PM	09:00	6.87 pH	55.81 °F	233.64 µS/cm	0.28 mg/L	1.36 NTU	-66.1 mV	2.06 ft	150.00 ml/min
4/19/2022 1:49 PM	12:00	6.86 pH	55.77 °F	234.89 µS/cm	0.21 mg/L	1.23 NTU	-67.1 mV	2.06 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW-19	Sample Time: 1355 Final DTW: 2.09 ft

Low-Flow Test Report:

Test Date / Time: 4/19/2022 2:36:51 PM

Project: KMLT Harbor Island

Operator Name: L. Selleck

Location Name: MW-23 Well Diameter: 4 in Casing Type: PVC Initial Depth to Water: 7.3 ft	Pump Type: Peri pump Tubing Type: PVC Pump Intake From TOC: 10 ft Estimated Total Volume Pumped: 2250 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466619
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Test Notes:

Final DTW 7.32

Weather Conditions:

55 partly cloudy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
4/19/2022 2:36 PM	00:00	6.56 pH	60.03 °F	894.71 µS/cm	5.41 mg/L	0.00 NTU	-5.7 mV	7.30 ft	150.00 ml/min
4/19/2022 2:39 PM	03:00	6.59 pH	57.48 °F	918.55 µS/cm	0.20 mg/L	0.00 NTU	-55.1 mV	7.30 ft	150.00 ml/min
4/19/2022 2:42 PM	06:00	6.58 pH	57.01 °F	920.59 µS/cm	0.10 mg/L	0.00 NTU	-64.1 mV	7.30 ft	150.00 ml/min
4/19/2022 2:45 PM	09:00	6.60 pH	56.88 °F	921.49 µS/cm	0.12 mg/L	0.00 NTU	-70.7 mV	7.30 ft	150.00 ml/min
4/19/2022 2:48 PM	12:00	6.58 pH	56.76 °F	922.09 µS/cm	0.10 mg/L	0.00 NTU	-74.4 mV	7.30 ft	150.00 ml/min
4/19/2022 2:51 PM	15:00	6.60 pH	56.84 °F	925.13 µS/cm	0.09 mg/L	0.00 NTU	-78.1 mV	7.30 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW-23	ST 1455

Low-Flow Test Report:

Test Date / Time: 4/19/2022 2:37:43 PM
Project: Kinder Morgan Harbor Island (32)
Operator Name: Joseph Sepiol

Location Name: MW-24 Well Diameter: 4 in Casing Type: PVC Initial Depth to Water: 7.28 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 10 ft Estimated Total Volume Pumped: 6750 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:
Pump on at 1436

Weather Conditions:
60F partly cloudy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
4/19/2022 2:37 PM	00:00	6.31 pH	64.38 °F	0.06 µS/cm	4.63 mg/L	16.49 NTU	17.5 mV	7.28 ft	150.00 ml/min
4/19/2022 2:40 PM	03:00	5.79 pH	63.43 °F	0.09 µS/cm	0.74 mg/L	7.73 NTU	41.1 mV	7.28 ft	150.00 ml/min
4/19/2022 2:43 PM	06:00	5.62 pH	62.59 °F	0.18 µS/cm	0.50 mg/L	8.15 NTU	53.6 mV	7.28 ft	150.00 ml/min
4/19/2022 2:46 PM	09:00	5.57 pH	61.98 °F	0.21 µS/cm	0.39 mg/L	11.04 NTU	60.8 mV	7.28 ft	150.00 ml/min
4/19/2022 2:49 PM	12:00	5.55 pH	61.49 °F	0.26 µS/cm	0.31 mg/L	30.88 NTU	66.0 mV	7.28 ft	150.00 ml/min
4/19/2022 2:52 PM	15:00	5.53 pH	61.09 °F	0.28 µS/cm	0.28 mg/L	31.65 NTU	70.0 mV	7.28 ft	150.00 ml/min
4/19/2022 2:55 PM	18:00	5.51 pH	60.73 °F	0.31 µS/cm	0.25 mg/L	51.68 NTU	73.0 mV	7.28 ft	150.00 ml/min
4/19/2022 2:58 PM	21:00	5.51 pH	60.44 °F	0.32 µS/cm	0.21 mg/L	47.85 NTU	75.6 mV	7.28 ft	150.00 ml/min
4/19/2022 3:01 PM	24:00	5.50 pH	60.22 °F	0.33 µS/cm	0.23 mg/L	62.52 NTU	77.9 mV	7.28 ft	150.00 ml/min
4/19/2022 3:04 PM	27:00	5.49 pH	60.03 °F	0.34 µS/cm	0.31 mg/L	4.20 NTU	80.0 mV	7.28 ft	150.00 ml/min
4/19/2022 3:07 PM	30:00	6.35 pH	57.40 °F	377.84 µS/cm	0.59 mg/L	1.17 NTU	-9.7 mV	7.28 ft	150.00 ml/min
4/19/2022 3:10 PM	33:00	6.39 pH	57.50 °F	333.33 µS/cm	0.52 mg/L	1.37 NTU	-49.1 mV	7.28 ft	150.00 ml/min
4/19/2022 3:13 PM	36:00	6.40 pH	57.50 °F	280.56 µS/cm	0.32 mg/L	1.07 NTU	-61.9 mV	7.28 ft	150.00 ml/min

4/19/2022 3:16 PM	39:00	6.40 pH	56.81 °F	401.08 µS/cm	0.31 mg/L	0.94 NTU	-68.5 mV	7.28 ft	150.00 ml/min
4/19/2022 3:19 PM	42:00	6.41 pH	56.73 °F	372.39 µS/cm	0.25 mg/L	1.02 NTU	-72.9 mV	7.28 ft	150.00 ml/min
4/19/2022 3:22 PM	45:00	6.41 pH	56.86 °F	347.41 µS/cm	0.16 mg/L	1.58 NTU	-76.0 mV	7.28 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW-24	Sample Time: 1525 Final DTW: 7.33 ft Conductivity not stable

Low-Flow Test Report:

Test Date / Time: 4/20/2022 9:16:04 AM
Project: Kinder Morgan Harbor Island (33)
Operator Name: Joseph Sepiol

Location Name: A-5 Well Diameter: 4 in Casing Type: PVC Initial Depth to Water: 7.49 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 10 ft Estimated Total Volume Pumped: 9000 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0.02 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:
Pump on at 0913

Weather Conditions:
58F overcast

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
4/20/2022 9:16 AM	00:00	6.71 pH	51.11 °F	0.30 µS/cm	6.53 mg/L	0.00 NTU	109.4 mV	7.49 ft	150.00 ml/min
4/20/2022 9:19 AM	03:00	6.68 pH	53.08 °F	0.40 µS/cm	1.01 mg/L	0.00 NTU	15.3 mV	7.49 ft	150.00 ml/min
4/20/2022 9:22 AM	06:00	6.68 pH	54.19 °F	0.47 µS/cm	0.76 mg/L	4.56 NTU	-13.7 mV	7.49 ft	150.00 ml/min
4/20/2022 9:25 AM	09:00	6.67 pH	54.77 °F	2.00 µS/cm	0.83 mg/L	0.00 NTU	-26.9 mV	7.49 ft	150.00 ml/min
4/20/2022 9:28 AM	12:00	6.67 pH	55.17 °F	2.04 µS/cm	1.60 mg/L	0.00 NTU	-34.6 mV	7.49 ft	150.00 ml/min
4/20/2022 9:31 AM	15:00	6.67 pH	55.47 °F	2.10 µS/cm	1.71 mg/L	0.00 NTU	-40.0 mV	7.49 ft	150.00 ml/min
4/20/2022 9:34 AM	18:00	6.67 pH	55.71 °F	2.12 µS/cm	1.59 mg/L	0.00 NTU	-43.8 mV	7.49 ft	150.00 ml/min
4/20/2022 9:37 AM	21:00	6.67 pH	55.97 °F	2.11 µS/cm	2.13 mg/L	0.00 NTU	-47.1 mV	7.49 ft	150.00 ml/min
4/20/2022 9:40 AM	24:00	6.66 pH	56.16 °F	2.08 µS/cm	2.07 mg/L	0.00 NTU	-50.2 mV	7.49 ft	150.00 ml/min
4/20/2022 9:43 AM	27:00	6.66 pH	56.31 °F	1.99 µS/cm	2.03 mg/L	0.00 NTU	-52.6 mV	7.49 ft	150.00 ml/min
4/20/2022 9:46 AM	30:00	6.67 pH	56.45 °F	1.96 µS/cm	2.26 mg/L	0.00 NTU	-54.5 mV	7.49 ft	150.00 ml/min
4/20/2022 9:49 AM	33:00	6.66 pH	56.54 °F	1.88 µS/cm	2.14 mg/L	0.00 NTU	-55.9 mV	7.49 ft	150.00 ml/min
4/20/2022 9:52 AM	36:00	6.67 pH	56.60 °F	1.85 µS/cm	1.95 mg/L	0.00 NTU	-57.8 mV	7.49 ft	150.00 ml/min

4/20/2022 9:55 AM	39:00	6.66 pH	56.65 °F	1.72 µS/cm	1.54 mg/L	0.00 NTU	-59.6 mV	7.49 ft	150.00 ml/min
4/20/2022 9:58 AM	42:00	6.66 pH	56.67 °F	1.66 µS/cm	1.39 mg/L	0.00 NTU	-61.0 mV	7.49 ft	150.00 ml/min
4/20/2022 10:01 AM	45:00	6.66 pH	56.68 °F	1.58 µS/cm	1.34 mg/L	0.06 NTU	-62.0 mV	7.49 ft	150.00 ml/min
4/20/2022 10:04 AM	48:00	6.66 pH	56.74 °F	1.50 µS/cm	1.16 mg/L	1.40 NTU	-63.3 mV	7.49 ft	150.00 ml/min
4/20/2022 10:07 AM	51:00	6.66 pH	56.82 °F	1.44 µS/cm	1.05 mg/L	1.10 NTU	-64.7 mV	7.49 ft	150.00 ml/min
4/20/2022 10:10 AM	54:00	6.66 pH	56.89 °F	1.40 µS/cm	1.01 mg/L	1.88 NTU	-66.5 mV	7.49 ft	150.00 ml/min
4/20/2022 10:13 AM	57:00	6.67 pH	56.97 °F	1.34 µS/cm	1.15 mg/L	2.66 NTU	-67.8 mV	7.49 ft	150.00 ml/min
4/20/2022 10:16 AM	01:00:00	6.67 pH	57.01 °F	1.26 µS/cm	1.46 mg/L	5.03 NTU	-69.1 mV	7.49 ft	150.00 ml/min

Samples

Sample ID:	Description:
A-5	Conductivity and DO not stable Sample Time: 1020 Final DTW: 7.51 ft

Low-Flow Test Report:

Test Date / Time: 9/19/2022 3:07:30 PM
Project: Kinder Morgan Harbor Island (34)
Operator Name: Joseph Sepiol

Location Name: A-23R Well Diameter: 2 in Casing Type: PVC Screen Length: 13 ft Top of Screen: 3 ft Total Depth: 15 ft Initial Depth to Water: 9.1 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 12 ft Estimated Total Volume Pumped: 4050 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466586
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Test Notes:
Pump on at 1501

Weather Conditions:
75F clear

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/19/2022 3:07 PM	00:00	6.76 pH	69.77 °F	1,201.5 µS/cm	2.43 mg/L	59.98 NTU	109.9 mV	9.10 ft	150.00 ml/min
9/19/2022 3:10 PM	03:00	6.85 pH	63.30 °F	1,203.3 µS/cm	0.22 mg/L	7.39 NTU	17.5 mV	9.10 ft	150.00 ml/min
9/19/2022 3:13 PM	06:00	6.86 pH	63.22 °F	980.35 µS/cm	0.17 mg/L	16.03 NTU	-12.9 mV	9.10 ft	150.00 ml/min
9/19/2022 3:16 PM	09:00	6.86 pH	63.44 °F	793.82 µS/cm	0.16 mg/L	6.28 NTU	-26.8 mV	9.10 ft	150.00 ml/min
9/19/2022 3:19 PM	12:00	6.87 pH	63.47 °F	178.33 µS/cm	0.15 mg/L	8.04 NTU	-37.8 mV	9.10 ft	150.00 ml/min
9/19/2022 3:22 PM	15:00	6.88 pH	63.55 °F	162.30 µS/cm	0.14 mg/L	7.41 NTU	-49.1 mV	9.10 ft	150.00 ml/min
9/19/2022 3:25 PM	18:00	6.89 pH	63.52 °F	163.00 µS/cm	0.13 mg/L	7.44 NTU	-53.3 mV	9.10 ft	150.00 ml/min
9/19/2022 3:28 PM	21:00	6.89 pH	63.48 °F	154.54 µS/cm	0.13 mg/L	7.97 NTU	-57.5 mV	9.10 ft	150.00 ml/min
9/19/2022 3:31 PM	24:00	6.90 pH	63.66 °F	152.06 µS/cm	0.12 mg/L	5.69 NTU	-62.6 mV	9.10 ft	150.00 ml/min
9/19/2022 3:34 PM	27:00	6.91 pH	63.54 °F	153.96 µS/cm	0.12 mg/L	6.28 NTU	-66.1 mV	9.10 ft	150.00 ml/min

Samples

Sample ID:	Description:
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A-23R

Sample Time: 1540

Created using VuSitu from In-Situ, Inc.

Low-Flow Test Report:

Test Date / Time: 9/19/2022 4:28:33 PM
Project: Kinder Morgan Harbor Island (35)
Operator Name: Joseph Sepiol

Location Name: MW-1 Well Diameter: 4 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 3 ft Total Depth: 13 ft Initial Depth to Water: 6.15 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 12 ft Estimated Total Volume Pumped: 2700 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466586
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Test Notes:

Pump on at 16:24
Final depth to water 6.23

Weather Conditions:

70F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/19/2022 4:28 PM	00:00	6.68 pH	64.79 °F	312.04 µS/cm	3.92 mg/L	104.44 NTU	-31.5 mV	6.15 ft	150.00 ml/min
9/19/2022 4:31 PM	03:00	6.52 pH	63.91 °F	313.12 µS/cm	0.17 mg/L	69.97 NTU	-19.2 mV	6.15 ft	150.00 ml/min
9/19/2022 4:34 PM	06:00	6.51 pH	63.94 °F	312.59 µS/cm	0.14 mg/L	41.84 NTU	-19.3 mV	6.15 ft	150.00 ml/min
9/19/2022 4:37 PM	09:00	6.49 pH	63.85 °F	311.81 µS/cm	0.12 mg/L	40.05 NTU	-21.5 mV	6.15 ft	150.00 ml/min
9/19/2022 4:40 PM	12:00	6.48 pH	63.81 °F	309.31 µS/cm	0.11 mg/L	36.34 NTU	-23.6 mV	6.15 ft	150.00 ml/min
9/19/2022 4:43 PM	15:00	6.50 pH	63.71 °F	305.11 µS/cm	0.10 mg/L	48.07 NTU	-26.7 mV	6.15 ft	150.00 ml/min
9/19/2022 4:46 PM	18:00	6.52 pH	63.83 °F	301.93 µS/cm	0.10 mg/L	35.97 NTU	-29.3 mV	6.15 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW-1	Sample time at 16:50

Low-Flow Test Report:

Test Date / Time: 9/20/2022 9:00:19 AM
Project: Kinder Morgan Harbor Island (36)
Operator Name: Joseph Sepiol

Location Name: MW-20 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 3 ft Total Depth: 13 ft Initial Depth to Water: 3.99 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 10 ft Estimated Total Volume Pumped: 4500 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466586
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Test Notes:
Pump on at 0858
Final DTW: 4.20

Weather Conditions:
70F clear

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/20/2022 9:00 AM	00:00	6.95 pH	67.66 °F	153.31 µS/cm	2.07 mg/L	71.85 NTU	223.2 mV	3.99 ft	150.00 ml/min
9/20/2022 9:03 AM	03:00	6.81 pH	67.41 °F	152.45 µS/cm	0.25 mg/L	34.40 NTU	-29.6 mV	3.99 ft	150.00 ml/min
9/20/2022 9:06 AM	06:00	6.83 pH	67.52 °F	151.83 µS/cm	0.21 mg/L	31.58 NTU	-62.1 mV	3.99 ft	150.00 ml/min
9/20/2022 9:09 AM	09:00	6.85 pH	67.56 °F	152.01 µS/cm	0.20 mg/L	31.01 NTU	-76.2 mV	3.99 ft	150.00 ml/min
9/20/2022 9:12 AM	12:00	6.88 pH	67.50 °F	145.59 µS/cm	0.18 mg/L	31.36 NTU	-83.3 mV	3.99 ft	150.00 ml/min
9/20/2022 9:15 AM	15:00	6.86 pH	67.57 °F	141.12 µS/cm	0.15 mg/L	329.59 NTU	-89.6 mV	3.99 ft	150.00 ml/min
9/20/2022 9:18 AM	18:00	6.87 pH	67.64 °F	138.28 µS/cm	0.13 mg/L	358.03 NTU	-98.9 mV	3.99 ft	150.00 ml/min
9/20/2022 9:21 AM	21:00	6.88 pH	67.68 °F	118.85 µS/cm	0.13 mg/L	128.69 NTU	-103.7 mV	3.99 ft	150.00 ml/min
9/20/2022 9:24 AM	24:00	6.87 pH	67.67 °F	125.63 µS/cm	0.12 mg/L	133.04 NTU	-105.1 mV	3.99 ft	150.00 ml/min
9/20/2022 9:27 AM	27:00	6.88 pH	67.73 °F	124.62 µS/cm	0.12 mg/L	133.39 NTU	-106.2 mV	3.99 ft	150.00 ml/min
9/20/2022 9:30 AM	30:00	6.90 pH	67.73 °F	124.58 µS/cm	0.12 mg/L	132.05 NTU	-107.0 mV	3.99 ft	150.00 ml/min

Samples

Sample ID:	Description:
MA-20	Sample Time: 0935

Low-Flow Test Report:

Test Date / Time: 9/20/2022 9:15:01 AM

Project: KMLT Harbor Island

Operator Name: ES

Location Name: TMW-5 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 3 ft Total Depth: 13 ft Initial Depth to Water: 3.73 m	Pump Type: Geopump Tubing Type: 1/4 polyethylene Estimated Total Volume Pumped: 6750 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 m	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:

Pump on at 0914

Specific conductivity, RDO, and ORP did not stabilize

Final DTW 3.90

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/20/2022 9:15 AM	00:00	7.02 pH	65.02 °F	1,570.0 µS/cm	2.75 mg/L	253.28 NTU	-22.3 mV	3.73 m	150.00 ml/min
9/20/2022 9:18 AM	03:00	7.12 pH	66.13 °F	1,548.4 µS/cm	0.29 mg/L	251.58 NTU	-119.3 mV	3.73 m	150.00 ml/min
9/20/2022 9:21 AM	06:00	7.11 pH	66.46 °F	1,500.8 µS/cm	0.21 mg/L	243.71 NTU	-154.4 mV	3.73 m	150.00 ml/min
9/20/2022 9:24 AM	09:00	7.08 pH	66.63 °F	1,433.2 µS/cm	0.15 mg/L	229.04 NTU	-173.0 mV	3.73 m	150.00 ml/min
9/20/2022 9:27 AM	12:00	7.05 pH	66.66 °F	1,383.5 µS/cm	0.15 mg/L	211.99 NTU	-183.6 mV	3.73 m	150.00 ml/min
9/20/2022 9:30 AM	15:00	7.03 pH	66.63 °F	1,333.6 µS/cm	0.13 mg/L	193.88 NTU	-193.0 mV	3.73 m	150.00 ml/min
9/20/2022 9:33 AM	18:00	7.02 pH	66.67 °F	1,308.3 µS/cm	0.10 mg/L	180.62 NTU	-198.8 mV	3.73 m	150.00 ml/min
9/20/2022 9:36 AM	21:00	7.01 pH	66.62 °F	1,267.3 µS/cm	0.09 mg/L	163.76 NTU	-203.5 mV	3.73 m	150.00 ml/min
9/20/2022 9:39 AM	24:00	7.01 pH	66.57 °F	1,242.4 µS/cm	0.15 mg/L	158.02 NTU	-206.3 mV	3.73 m	150.00 ml/min
9/20/2022 9:42 AM	27:00	7.01 pH	66.48 °F	1,245.1 µS/cm	0.11 mg/L	149.58 NTU	-210.8 mV	3.73 m	150.00 ml/min
9/20/2022 9:45 AM	30:00	7.01 pH	66.43 °F	1,209.1 µS/cm	0.08 mg/L	138.47 NTU	-215.9 mV	3.73 m	150.00 ml/min
9/20/2022 9:48 AM	33:00	7.02 pH	66.41 °F	1,213.4 µS/cm	0.12 mg/L	130.57 NTU	-223.6 mV	3.73 m	150.00 ml/min
9/20/2022 9:51 AM	36:00	6.99 pH	66.40 °F	1,180.7 µS/cm	0.10 mg/L	157.40 NTU	-229.0 mV	3.73 m	150.00 ml/min
9/20/2022 9:54 AM	39:00	7.00 pH	66.42 °F	1,186.7 µS/cm	0.10 mg/L	150.80 NTU	-237.0 mV	3.73 m	150.00 ml/min
9/20/2022 9:57 AM	42:00	7.01 pH	66.40 °F	1,199.9 µS/cm	0.08 mg/L	141.22 NTU	-243.9 mV	3.73 m	150.00 ml/min

9/20/2022 10:00 AM	45:00	7.01 pH	66.42 °F	1,161.8 μS/cm	0.09 mg/L	142.81 NTU	-249.7 mV	3.73 m	150.00 ml/min
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Samples

Sample ID:	Description:
TMW-5	Sample time 10:05

Low-Flow Test Report:

Test Date / Time: 9/20/2022 9:57:21 AM
Project: Kinder Morgan Harbor Island (37)
Operator Name: Joseph Sepiol

Location Name: MW-3 Well Diameter: 4 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 3 ft Total Depth: 13 ft Initial Depth to Water: 3.92 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 10 ft Estimated Total Volume Pumped: 1800 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466586
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Test Notes:

Pump on at 0955
Final DTW: 4.02 ft

Weather Conditions:

75 F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/20/2022 9:57 AM	00:00	6.95 pH	66.72 °F	164.46 µS/cm	1.35 mg/L	5.26 NTU	22.6 mV	3.92 ft	150.00 ml/min
9/20/2022 10:00 AM	03:00	6.93 pH	62.26 °F	167.19 µS/cm	0.85 mg/L	3.77 NTU	29.0 mV	3.92 ft	150.00 ml/min
9/20/2022 10:03 AM	06:00	6.90 pH	61.81 °F	167.20 µS/cm	0.82 mg/L	2.73 NTU	34.3 mV	3.92 ft	150.00 ml/min
9/20/2022 10:06 AM	09:00	6.85 pH	61.69 °F	167.18 µS/cm	0.84 mg/L	3.83 NTU	40.7 mV	3.92 ft	150.00 ml/min
9/20/2022 10:09 AM	12:00	6.83 pH	61.80 °F	167.25 µS/cm	0.85 mg/L	2.33 NTU	44.1 mV	3.92 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW-3	Sample Time: 1015

Low-Flow Test Report:

Test Date / Time: 9/20/2022 10:48:41 AM

Project: KMLT Harbor Island

Operator Name: ES

Location Name: 12 Well Diameter: 2 in Casing Type: PVC Top of Screen: 3 m Initial Depth to Water: 2.45 m	Pump Type: Geopump Tubing Type: 1/4 polyethylene Estimated Total Volume Pumped: 6750 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 m	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:

Pump on at 10:47

Sample time 11:35

RDO and specific conductivity did not stabilize

Final DTW 6.42

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/20/2022 10:48 AM	00:00	7.28 pH	63.94 °F	1,350.6 µS/cm	2.15 mg/L	265.14 NTU	-225.3 mV	2.45 m	150.00 ml/min
9/20/2022 10:51 AM	03:00	7.22 pH	63.16 °F	1,293.1 µS/cm	0.27 mg/L	176.24 NTU	-293.4 mV	2.45 m	150.00 ml/min
9/20/2022 10:54 AM	06:00	7.25 pH	63.97 °F	420.04 µS/cm	0.24 mg/L	119.41 NTU	-292.2 mV	2.45 m	150.00 ml/min
9/20/2022 10:57 AM	09:00	7.20 pH	64.18 °F	322.00 µS/cm	0.22 mg/L	111.55 NTU	-293.4 mV	2.45 m	150.00 ml/min
9/20/2022 11:00 AM	12:00	7.15 pH	64.20 °F	288.91 µS/cm	0.21 mg/L	110.78 NTU	-294.7 mV	2.45 m	150.00 ml/min
9/20/2022 11:03 AM	15:00	7.14 pH	64.19 °F	249.60 µS/cm	0.26 mg/L	104.29 NTU	-293.7 mV	2.45 m	150.00 ml/min
9/20/2022 11:06 AM	18:00	7.09 pH	64.25 °F	237.29 µS/cm	0.25 mg/L	103.01 NTU	-291.4 mV	2.45 m	150.00 ml/min
9/20/2022 11:09 AM	21:00	7.08 pH	64.25 °F	224.40 µS/cm	0.33 mg/L	105.92 NTU	-288.0 mV	2.45 m	150.00 ml/min
9/20/2022 11:12 AM	24:00	7.07 pH	64.33 °F	225.63 µS/cm	0.44 mg/L	123.04 NTU	-283.7 mV	2.45 m	150.00 ml/min
9/20/2022 11:15 AM	27:00	7.20 pH	64.66 °F	243.37 µS/cm	1.91 mg/L	137.68 NTU	-268.3 mV	2.45 m	150.00 ml/min
9/20/2022 11:18 AM	30:00	7.25 pH	65.15 °F	238.81 µS/cm	1.69 mg/L	141.54 NTU	-268.5 mV	2.45 m	150.00 ml/min
9/20/2022 11:21 AM	33:00	7.04 pH	63.28 °F	1,254.6 µS/cm	0.29 mg/L	158.72 NTU	-285.2 mV	2.45 m	150.00 ml/min
9/20/2022 11:24 AM	36:00	7.06 pH	63.06 °F	1,165.2 µS/cm	0.15 mg/L	143.56 NTU	-306.7 mV	2.45 m	150.00 ml/min
9/20/2022 11:27 AM	39:00	7.08 pH	63.35 °F	986.80 µS/cm	0.13 mg/L	134.29 NTU	-311.0 mV	2.45 m	150.00 ml/min

9/20/2022 11:30 AM	42:00	7.09 pH	63.54 °F	825.28 µS/cm	0.11 mg/L	128.72 NTU	-312.3 mV	2.45 m	150.00 ml/min
9/20/2022 11:33 AM	45:00	7.16 pH	63.50 °F	733.02 µS/cm	0.20 mg/L	127.80 NTU	-313.9 mV	2.45 m	150.00 ml/min

Samples

Sample ID:	Description:
12	Sample time 11:35

Low-Flow Test Report:

Test Date / Time: 9/20/2022 11:13:31 AM

Project: Kinder Morgan Harbor Island (38)

Operator Name: Joseph Sepiol

Location Name: TMW-1 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 3 ft Total Depth: 13 ft Initial Depth to Water: 4.07 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 10 ft Estimated Total Volume Pumped: 2700 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466586
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Test Notes:

Pump on at 1112

Final DTW: 4.10 ft

Weather Conditions:

75 F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/20/2022 11:13 AM	00:00	6.86 pH	67.87 °F	1,229.2 µS/cm	3.10 mg/L	34.64 NTU	123.4 mV	4.07 ft	150.00 ml/min
9/20/2022 11:16 AM	03:00	6.86 pH	66.48 °F	1,267.0 µS/cm	0.41 mg/L	19.10 NTU	119.5 mV	4.07 ft	150.00 ml/min
9/20/2022 11:19 AM	06:00	6.86 pH	66.59 °F	1,267.6 µS/cm	0.31 mg/L	11.69 NTU	116.5 mV	4.07 ft	150.00 ml/min
9/20/2022 11:22 AM	09:00	6.87 pH	66.72 °F	1,261.8 µS/cm	0.26 mg/L	19.16 NTU	114.1 mV	4.07 ft	150.00 ml/min
9/20/2022 11:25 AM	12:00	6.88 pH	66.81 °F	1,252.4 µS/cm	0.27 mg/L	11.76 NTU	112.1 mV	4.07 ft	150.00 ml/min
9/20/2022 11:28 AM	15:00	6.88 pH	67.16 °F	1,267.9 µS/cm	0.30 mg/L	6.25 NTU	110.5 mV	4.07 ft	150.00 ml/min
9/20/2022 11:31 AM	18:00	6.88 pH	67.25 °F	1,274.3 µS/cm	0.29 mg/L	4.19 NTU	108.9 mV	4.07 ft	150.00 ml/min

Samples

Sample ID:	Description:
TMW-1	Sample Time: 11:35

Low-Flow Test Report:

Test Date / Time: 9/20/2022 12:15:09 PM

Project: Kinder Morgan Harbor Island (39)

Operator Name: Joseph Sepiol

Location Name: TMW-2 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 3 ft Total Depth: 13 ft Initial Depth to Water: 4.18 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 10 ft Estimated Total Volume Pumped: 5400 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466586
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Test Notes:

Pump on at 1214

Final DTW: 4.20 ft

Weather Conditions:

75 F light wind

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/20/2022 12:15 PM	00:00	7.24 pH	72.04 °F	1,435.8 µS/cm	4.13 mg/L	4.34 NTU	143.4 mV	4.18 ft	150.00 ml/min
9/20/2022 12:18 PM	03:00	7.48 pH	66.53 °F	1,546.6 µS/cm	0.30 mg/L	3.59 NTU	117.7 mV	4.18 ft	150.00 ml/min
9/20/2022 12:21 PM	06:00	7.53 pH	66.51 °F	1,547.3 µS/cm	0.24 mg/L	2.03 NTU	88.9 mV	4.18 ft	150.00 ml/min
9/20/2022 12:24 PM	09:00	7.57 pH	66.74 °F	1,554.1 µS/cm	0.22 mg/L	1.92 NTU	49.4 mV	4.18 ft	150.00 ml/min
9/20/2022 12:27 PM	12:00	7.60 pH	66.79 °F	1,562.8 µS/cm	0.19 mg/L	2.25 NTU	8.6 mV	4.18 ft	150.00 ml/min
9/20/2022 12:30 PM	15:00	7.63 pH	66.93 °F	1,566.2 µS/cm	0.18 mg/L	1.89 NTU	-27.4 mV	4.18 ft	150.00 ml/min
9/20/2022 12:33 PM	18:00	7.65 pH	67.20 °F	1,567.9 µS/cm	0.17 mg/L	1.86 NTU	-51.1 mV	4.18 ft	150.00 ml/min
9/20/2022 12:36 PM	21:00	7.67 pH	67.15 °F	1,570.2 µS/cm	0.17 mg/L	1.98 NTU	-66.7 mV	4.18 ft	150.00 ml/min
9/20/2022 12:39 PM	24:00	7.68 pH	67.14 °F	1,573.9 µS/cm	0.16 mg/L	1.78 NTU	-78.3 mV	4.18 ft	150.00 ml/min
9/20/2022 12:42 PM	27:00	7.69 pH	67.34 °F	1,578.8 µS/cm	0.15 mg/L	1.86 NTU	-86.3 mV	4.18 ft	150.00 ml/min
9/20/2022 12:45 PM	30:00	7.70 pH	67.49 °F	1,581.2 µS/cm	0.15 mg/L	1.75 NTU	-92.6 mV	4.18 ft	150.00 ml/min
9/20/2022 12:48 PM	33:00	7.70 pH	67.48 °F	1,584.7 µS/cm	0.14 mg/L	1.74 NTU	-97.7 mV	4.18 ft	150.00 ml/min

9/20/2022 12:51 PM	36:00	7.71 pH	67.54 °F	1,586.7 µS/cm	0.14 mg/L	1.78 NTU	-101.8 mV	4.18 ft	150.00 ml/min
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Samples

Sample ID:	Description:
TMW-2	Sample Time: 1255

Low-Flow Test Report:

Test Date / Time: 9/20/2022 12:34:13 PM

Project: KMLT Harbor Island (2)

Operator Name: ES

Location Name: MW-7 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 m Top of Screen: 3 m Total Depth: 13 m Initial Depth to Water: 3.26 m	Pump Type: Geopump Tubing Type: 1/4 polyethylene Estimated Total Volume Pumped: 6750 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 m	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:

Pump on at 12:34

Specific conductivity and RDO did not stabilize

Final DTW 3.82

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/20/2022 12:34 PM	00:00	7.17 pH	70.94 °F	316.54 µS/cm	1.29 mg/L	400.03 NTU	-209.8 mV	3.26 m	150.00 ml/min
9/20/2022 12:37 PM	03:00	7.18 pH	66.51 °F	248.05 µS/cm	0.29 mg/L	393.95 NTU	-228.2 mV	3.26 m	150.00 ml/min
9/20/2022 12:40 PM	06:00	7.17 pH	66.07 °F	212.59 µS/cm	0.20 mg/L	392.50 NTU	-232.0 mV	3.26 m	150.00 ml/min
9/20/2022 12:43 PM	09:00	7.14 pH	65.99 °F	205.38 µS/cm	0.18 mg/L	375.83 NTU	-236.4 mV	3.26 m	150.00 ml/min
9/20/2022 12:46 PM	12:00	7.10 pH	66.48 °F	199.82 µS/cm	0.19 mg/L	366.65 NTU	-237.5 mV	3.26 m	150.00 ml/min
9/20/2022 12:49 PM	15:00	7.06 pH	66.42 °F	196.94 µS/cm	0.15 mg/L	360.62 NTU	-232.9 mV	3.26 m	150.00 ml/min
9/20/2022 12:52 PM	18:00	7.03 pH	66.47 °F	190.53 µS/cm	0.15 mg/L	351.70 NTU	-233.3 mV	3.26 m	150.00 ml/min
9/20/2022 12:55 PM	21:00	7.01 pH	66.43 °F	187.88 µS/cm	0.13 mg/L	344.18 NTU	-237.9 mV	3.26 m	150.00 ml/min
9/20/2022 12:58 PM	24:00	6.98 pH	66.32 °F	1,238.4 µS/cm	0.11 mg/L	371.29 NTU	-257.9 mV	3.26 m	150.00 ml/min
9/20/2022 1:01 PM	27:00	6.95 pH	66.54 °F	1,220.8 µS/cm	0.13 mg/L	368.30 NTU	-259.9 mV	3.26 m	150.00 ml/min
9/20/2022 1:04 PM	30:00	6.95 pH	67.89 °F	1,220.4 µS/cm	0.15 mg/L	357.58 NTU	-263.2 mV	3.26 m	150.00 ml/min
9/20/2022 1:07 PM	33:00	6.92 pH	66.46 °F	1,181.7 µS/cm	0.12 mg/L	360.26 NTU	-261.6 mV	3.26 m	150.00 ml/min
9/20/2022 1:10 PM	36:00	6.90 pH	66.33 °F	1,173.4 µS/cm	0.12 mg/L	343.94 NTU	-261.0 mV	3.26 m	150.00 ml/min
9/20/2022 1:13 PM	39:00	6.91 pH	66.25 °F	1,168.5 µS/cm	0.11 mg/L	329.88 NTU	-266.8 mV	3.26 m	150.00 ml/min
9/20/2022 1:16 PM	42:00	6.90 pH	66.50 °F	1,150.4 µS/cm	0.09 mg/L	314.34 NTU	-268.8 mV	3.26 m	150.00 ml/min

9/20/2022 1:19 PM	45:00	6.91 pH	66.38 °F	1,106.3 µS/cm	0.07 mg/L	305.19 NTU	-269.4 mV	3.26 m	150.00 ml/min
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Samples

Sample ID:	Description:
MW-7	Sample time 1325

Low-Flow Test Report:

Test Date / Time: 9/20/2022 1:16:38 PM
Project: Kinder Morgan Harbor Island (40)
Operator Name: Joseph Sepiol

Location Name: MW-5 Well Diameter: 4 in Casing Type: PVC Screen Length: 7 m Top of Screen: 3 m Total Depth: 10 m Initial Depth to Water: 3.7 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 8 ft Estimated Total Volume Pumped: 4950 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466586
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Test Notes:
Pump on at 1315
Final DTW: 3.81 ft

Weather Conditions:
75 F light wind

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/20/2022 1:16 PM	00:00	7.50 pH	66.52 °F	215.11 µS/cm	2.78 mg/L	3.32 NTU	-57.5 mV	3.70 ft	150.00 ml/min
9/20/2022 1:19 PM	03:00	7.00 pH	64.01 °F	202.22 µS/cm	0.32 mg/L	2.32 NTU	-94.0 mV	3.70 ft	150.00 ml/min
9/20/2022 1:22 PM	06:00	6.89 pH	64.02 °F	202.38 µS/cm	0.25 mg/L	2.25 NTU	-99.4 mV	3.70 ft	150.00 ml/min
9/20/2022 1:25 PM	09:00	6.87 pH	64.28 °F	203.06 µS/cm	0.19 mg/L	2.51 NTU	-103.7 mV	3.70 ft	150.00 ml/min
9/20/2022 1:28 PM	12:00	6.89 pH	64.17 °F	203.84 µS/cm	0.16 mg/L	2.66 NTU	-107.9 mV	3.70 ft	150.00 ml/min
9/20/2022 1:31 PM	15:00	6.91 pH	64.22 °F	204.97 µS/cm	0.14 mg/L	2.50 NTU	-110.7 mV	3.70 ft	150.00 ml/min
9/20/2022 1:34 PM	18:00	6.92 pH	64.17 °F	206.37 µS/cm	0.13 mg/L	2.65 NTU	-112.9 mV	3.70 ft	150.00 ml/min
9/20/2022 1:37 PM	21:00	6.94 pH	64.07 °F	206.77 µS/cm	0.12 mg/L	3.04 NTU	-114.9 mV	3.70 ft	150.00 ml/min
9/20/2022 1:40 PM	24:00	6.94 pH	64.25 °F	207.39 µS/cm	0.11 mg/L	14.03 NTU	-116.0 mV	3.70 ft	150.00 ml/min
9/20/2022 1:43 PM	27:00	6.95 pH	64.29 °F	208.09 µS/cm	0.10 mg/L	2.39 NTU	-117.6 mV	3.70 ft	150.00 ml/min
9/20/2022 1:46 PM	30:00	6.95 pH	64.52 °F	209.21 µS/cm	0.10 mg/L	2.25 NTU	-118.5 mV	3.70 ft	150.00 ml/min
9/20/2022 1:49 PM	33:00	6.96 pH	64.44 °F	209.88 µS/cm	0.10 mg/L	2.27 NTU	-119.4 mV	3.70 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW-5	Sample Time: 1355

Low-Flow Test Report:

Test Date / Time: 9/20/2022 2:06:22 PM

Project: KMLT Harbor Island

Operator Name: ES

Location Name: TMW-3 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 3 ft Total Depth: 13 ft Initial Depth to Water: 4.16 m	Pump Type: Geopump Tubing Type: 1/4 polyethylene Estimated Total Volume Pumped: 3600 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 m	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:

Pump on at 1405

Final DTW 4.25

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/20/2022 2:06 PM	00:00	7.24 pH	67.95 °F	1,195.2 µS/cm	0.40 mg/L	336.01 NTU	-122.6 mV	4.16 m	150.00 ml/min
9/20/2022 2:09 PM	03:00	7.30 pH	67.00 °F	1,230.7 µS/cm	0.18 mg/L	326.26 NTU	-128.1 mV	4.16 m	150.00 ml/min
9/20/2022 2:12 PM	06:00	7.32 pH	66.55 °F	1,245.2 µS/cm	0.15 mg/L	321.31 NTU	-138.3 mV	4.16 m	150.00 ml/min
9/20/2022 2:15 PM	09:00	7.33 pH	66.51 °F	1,237.2 µS/cm	0.13 mg/L	378.38 NTU	-143.6 mV	4.16 m	150.00 ml/min
9/20/2022 2:18 PM	12:00	7.33 pH	66.38 °F	1,232.1 µS/cm	0.12 mg/L	382.91 NTU	-154.3 mV	4.16 m	150.00 ml/min
9/20/2022 2:21 PM	15:00	7.32 pH	66.39 °F	1,214.4 µS/cm	0.13 mg/L	386.04 NTU	-149.8 mV	4.16 m	150.00 ml/min
9/20/2022 2:24 PM	18:00	7.31 pH	66.50 °F	1,226.8 µS/cm	0.11 mg/L	396.35 NTU	-153.5 mV	4.16 m	150.00 ml/min
9/20/2022 2:27 PM	21:00	7.30 pH	66.44 °F	1,215.4 µS/cm	0.11 mg/L	402.03 NTU	-156.8 mV	4.16 m	150.00 ml/min
9/20/2022 2:30 PM	24:00	7.30 pH	66.50 °F	1,195.9 µS/cm	0.10 mg/L	400.42 NTU	-158.3 mV	4.16 m	150.00 ml/min

Samples

Sample ID:	Description:
TMW-3	Sample time at 14:35

Low-Flow Test Report:

Test Date / Time: 9/20/2022 2:17:05 PM
Project: Kinder Morgan Harbor Island (41)
Operator Name: Joseph Sepiol

Location Name: MW-14 Well Diameter: 4 in Casing Type: PVC Screen Length: 7 ft Top of Screen: 3 ft Total Depth: 10 ft Initial Depth to Water: 4.12 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 8 ft Estimated Total Volume Pumped: 3600 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466586
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Test Notes:
Final DTW: 4.32 ft

Weather Conditions:
75 F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/20/2022 2:17 PM	00:00	6.94 pH	69.68 °F	167.32 µS/cm	4.04 mg/L	13.46 NTU	5.8 mV	4.12 ft	150.00 ml/min
9/20/2022 2:20 PM	03:00	6.79 pH	65.44 °F	170.45 µS/cm	0.33 mg/L	13.12 NTU	-24.9 mV	4.12 ft	150.00 ml/min
9/20/2022 2:23 PM	06:00	6.73 pH	65.34 °F	170.32 µS/cm	0.21 mg/L	13.63 NTU	-47.8 mV	4.12 ft	150.00 ml/min
9/20/2022 2:26 PM	09:00	6.79 pH	65.84 °F	170.22 µS/cm	0.15 mg/L	8.35 NTU	-62.0 mV	4.12 ft	150.00 ml/min
9/20/2022 2:29 PM	12:00	6.81 pH	66.19 °F	170.12 µS/cm	0.14 mg/L	8.72 NTU	-69.8 mV	4.12 ft	150.00 ml/min
9/20/2022 2:32 PM	15:00	6.84 pH	66.30 °F	169.96 µS/cm	0.12 mg/L	7.64 NTU	-74.9 mV	4.12 ft	150.00 ml/min
9/20/2022 2:35 PM	18:00	6.85 pH	66.29 °F	169.13 µS/cm	0.11 mg/L	9.71 NTU	-77.4 mV	4.12 ft	150.00 ml/min
9/20/2022 2:38 PM	21:00	6.85 pH	66.24 °F	169.49 µS/cm	0.10 mg/L	7.39 NTU	-79.6 mV	4.12 ft	150.00 ml/min
9/20/2022 2:41 PM	24:00	6.90 pH	66.58 °F	169.87 µS/cm	0.10 mg/L	6.49 NTU	-83.3 mV	4.12 ft	150.00 ml/min

Samples

Sample ID:	Description:
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MW-14

Sample Time: 1430

Created using VuSitu from In-Situ, Inc.

Low-Flow Test Report:

Test Date / Time: 9/20/2022 3:04:59 PM
Project: Kinder Morgan Harbor Island (42)
Operator Name: Joseph Sepiol

Location Name: MW-19 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 3 ft Total Depth: 13 ft Initial Depth to Water: 3.61 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 7 ft Estimated Total Volume Pumped: 4500 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466586
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Test Notes:
Final DTW: 3.67 ft

Weather Conditions:
75 F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/20/2022 3:04 PM	00:00	7.02 pH	75.14 °F	129.38 µS/cm	4.79 mg/L	25.91 NTU	-4.5 mV	3.61 ft	150.00 ml/min
9/20/2022 3:07 PM	03:00	7.17 pH	67.88 °F	108.79 µS/cm	0.30 mg/L	15.83 NTU	-31.4 mV	3.61 ft	150.00 ml/min
9/20/2022 3:10 PM	06:00	7.13 pH	67.77 °F	87.25 µS/cm	0.24 mg/L	16.39 NTU	-44.3 mV	3.61 ft	150.00 ml/min
9/20/2022 3:13 PM	09:00	7.14 pH	67.43 °F	84.28 µS/cm	0.20 mg/L	14.52 NTU	-55.4 mV	3.61 ft	150.00 ml/min
9/20/2022 3:16 PM	12:00	7.14 pH	67.70 °F	77.46 µS/cm	0.18 mg/L	13.06 NTU	-64.2 mV	3.61 ft	150.00 ml/min
9/20/2022 3:19 PM	15:00	7.12 pH	67.81 °F	73.50 µS/cm	0.17 mg/L	10.61 NTU	-70.2 mV	3.61 ft	150.00 ml/min
9/20/2022 3:22 PM	18:00	7.12 pH	67.99 °F	71.49 µS/cm	0.16 mg/L	9.52 NTU	-74.7 mV	3.61 ft	150.00 ml/min
9/20/2022 3:25 PM	21:00	7.14 pH	67.92 °F	70.11 µS/cm	0.14 mg/L	9.50 NTU	-77.7 mV	3.61 ft	150.00 ml/min
9/20/2022 3:28 PM	24:00	7.13 pH	67.70 °F	70.27 µS/cm	0.13 mg/L	9.18 NTU	-77.4 mV	3.61 ft	150.00 ml/min
9/20/2022 3:31 PM	27:00	7.17 pH	67.83 °F	70.42 µS/cm	0.13 mg/L	9.17 NTU	-79.9 mV	3.61 ft	150.00 ml/min
9/20/2022 3:34 PM	30:00	7.16 pH	67.83 °F	70.64 µS/cm	0.12 mg/L	8.75 NTU	-79.6 mV	3.61 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW-19	Sample Time: 1540

Low-Flow Test Report:

Test Date / Time: 9/20/2022 3:20:33 PM

Project: KMLT Harbor Island

Operator Name: ES

Location Name: TMW-4 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 3 ft Total Depth: 13 ft Initial Depth to Water: 3.9 m	Pump Type: Geopump Tubing Type: 1/4 polyethylene Estimated Total Volume Pumped: 6750 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 m	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:

Pump on at 15:19

RDO did not stabilize

Final DTW 4.04

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/20/2022 3:20 PM	00:00	7.32 pH	67.02 °F	1,426.0 µS/cm	2.50 mg/L	358.67 NTU	-175.8 mV	3.90 m	150.00 ml/min
9/20/2022 3:23 PM	03:00	7.33 pH	64.68 °F	1,413.4 µS/cm	0.43 mg/L	566.52 NTU	-219.6 mV	3.90 m	150.00 ml/min
9/20/2022 3:26 PM	06:00	7.32 pH	64.74 °F	1,419.5 µS/cm	0.45 mg/L	570.55 NTU	-228.2 mV	3.90 m	150.00 ml/min
9/20/2022 3:29 PM	09:00	7.31 pH	64.92 °F	1,425.7 µS/cm	0.36 mg/L	560.26 NTU	-232.3 mV	3.90 m	150.00 ml/min
9/20/2022 3:32 PM	12:00	7.29 pH	64.85 °F	1,435.9 µS/cm	0.26 mg/L	548.80 NTU	-241.3 mV	3.90 m	150.00 ml/min
9/20/2022 3:35 PM	15:00	7.28 pH	64.76 °F	1,441.9 µS/cm	0.21 mg/L	529.90 NTU	-245.9 mV	3.90 m	150.00 ml/min
9/20/2022 3:38 PM	18:00	7.26 pH	64.76 °F	1,446.5 µS/cm	0.21 mg/L	518.29 NTU	-252.4 mV	3.90 m	150.00 ml/min
9/20/2022 3:41 PM	21:00	7.24 pH	64.83 °F	1,444.0 µS/cm	0.15 mg/L	506.28 NTU	-254.9 mV	3.90 m	150.00 ml/min
9/20/2022 3:44 PM	24:00	7.22 pH	64.89 °F	1,446.8 µS/cm	0.19 mg/L	500.27 NTU	-258.6 mV	3.90 m	150.00 ml/min
9/20/2022 3:47 PM	27:00	7.21 pH	64.82 °F	1,440.9 µS/cm	0.27 mg/L	478.18 NTU	-261.9 mV	3.90 m	150.00 ml/min
9/20/2022 3:50 PM	30:00	7.20 pH	64.85 °F	1,444.4 µS/cm	0.21 mg/L	465.12 NTU	-265.7 mV	3.90 m	150.00 ml/min
9/20/2022 3:53 PM	33:00	7.20 pH	64.70 °F	1,440.6 µS/cm	0.16 mg/L	454.29 NTU	-267.6 mV	3.90 m	150.00 ml/min
9/20/2022 3:56 PM	36:00	7.19 pH	64.73 °F	1,436.4 µS/cm	0.15 mg/L	444.46 NTU	-269.5 mV	3.90 m	150.00 ml/min
9/20/2022 3:59 PM	39:00	7.19 pH	64.78 °F	1,441.9 µS/cm	0.24 mg/L	437.03 NTU	-272.1 mV	3.90 m	150.00 ml/min
9/20/2022 4:02 PM	42:00	7.19 pH	64.74 °F	1,442.6 µS/cm	0.17 mg/L	426.01 NTU	-273.9 mV	3.90 m	150.00 ml/min

9/20/2022 4:05 PM	45:00	7.19 pH	64.86 °F	1,440.0 µS/cm	0.21 mg/L	418.13 NTU	-275.4 mV	3.90 m	150.00 ml/min
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Samples

Sample ID:	Description:
TMW-4	Sample time at 16:10

Low-Flow Test Report:

Test Date / Time: 9/21/2022 8:18:24 AM
Project: Kinder Morgan Harbor Island (43)
Operator Name: Joseph Sepiol

Location Name: MW-6 Well Diameter: 4 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 3 ft Total Depth: 13.07 ft Initial Depth to Water: 7.72 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 7 ft Estimated Total Volume Pumped: 6750 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466586
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Test Notes:
Final DTW: 7.74 ft

Weather Conditions:
60F clear. Smoke from wildfires.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/21/2022 8:18 AM	00:00	7.05 pH	61.13 °F	360.05 µS/cm	6.12 mg/L	35.71 NTU	290.1 mV	7.72 ft	150.00 ml/min
9/21/2022 8:21 AM	03:00	6.82 pH	63.49 °F	351.41 µS/cm	0.36 mg/L	18.89 NTU	272.6 mV	7.72 ft	150.00 ml/min
9/21/2022 8:24 AM	06:00	6.82 pH	63.60 °F	349.67 µS/cm	0.29 mg/L	18.52 NTU	258.8 mV	7.72 ft	150.00 ml/min
9/21/2022 8:27 AM	09:00	6.82 pH	63.59 °F	348.97 µS/cm	0.26 mg/L	17.66 NTU	250.8 mV	7.72 ft	150.00 ml/min
9/21/2022 8:30 AM	12:00	6.83 pH	63.78 °F	348.87 µS/cm	0.24 mg/L	16.36 NTU	239.1 mV	7.72 ft	150.00 ml/min
9/21/2022 8:33 AM	15:00	6.84 pH	63.73 °F	348.64 µS/cm	0.23 mg/L	15.77 NTU	226.8 mV	7.72 ft	150.00 ml/min
9/21/2022 8:36 AM	18:00	6.85 pH	63.74 °F	348.36 µS/cm	0.21 mg/L	14.32 NTU	214.7 mV	7.72 ft	150.00 ml/min
9/21/2022 8:39 AM	21:00	6.86 pH	63.83 °F	348.12 µS/cm	0.21 mg/L	13.40 NTU	202.9 mV	7.72 ft	150.00 ml/min
9/21/2022 8:42 AM	24:00	6.87 pH	63.76 °F	347.93 µS/cm	0.21 mg/L	12.63 NTU	192.0 mV	7.72 ft	150.00 ml/min
9/21/2022 8:45 AM	27:00	6.89 pH	63.92 °F	347.78 µS/cm	0.20 mg/L	12.24 NTU	181.7 mV	7.72 ft	150.00 ml/min
9/21/2022 8:48 AM	30:00	6.91 pH	64.00 °F	347.70 µS/cm	0.20 mg/L	11.98 NTU	169.3 mV	7.72 ft	150.00 ml/min
9/21/2022 8:51 AM	33:00	6.92 pH	64.01 °F	347.08 µS/cm	0.20 mg/L	11.74 NTU	157.5 mV	7.72 ft	150.00 ml/min
9/21/2022 8:54 AM	36:00	6.93 pH	63.82 °F	347.15 µS/cm	0.20 mg/L	11.22 NTU	146.2 mV	7.72 ft	150.00 ml/min

9/21/2022 8:57 AM	39:00	6.94 pH	63.97 °F	347.29 µS/cm	0.20 mg/L	10.88 NTU	135.4 mV	7.72 ft	150.00 ml/min
9/21/2022 9:00 AM	42:00	6.97 pH	63.86 °F	348.00 µS/cm	0.20 mg/L	10.79 NTU	123.8 mV	7.72 ft	150.00 ml/min
9/21/2022 9:03 AM	45:00	6.99 pH	63.82 °F	347.59 µS/cm	0.20 mg/L	10.19 NTU	110.2 mV	7.72 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW-6	Sample Time: 0905 ORP did not stabilize after 45 min

Low-Flow Test Report:

Test Date / Time: 9/21/2022 8:24:31 AM

Project: KMLT Harbor Island (2)

Operator Name: ES

Location Name: MW-18 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 3 ft Total Depth: 13 ft Initial Depth to Water: 7.71 m	Pump Type: Geopump Tubing Type: 1/4 polyethylene Estimated Total Volume Pumped: 5850 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 m	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:

Pump on at 8:21

Sample time 0910

Final DTW 7.74

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/21/2022 8:24 AM	00:00	6.95 pH	63.43 °F	421.04 µS/cm	1.77 mg/L	928.05 NTU	-65.8 mV	7.71 m	150.00 ml/min
9/21/2022 8:27 AM	03:00	6.43 pH	63.69 °F	389.40 µS/cm	0.31 mg/L	866.90 NTU	-65.7 mV	7.71 m	150.00 ml/min
9/21/2022 8:30 AM	06:00	6.43 pH	63.63 °F	360.15 µS/cm	0.22 mg/L	833.88 NTU	-72.6 mV	7.71 m	150.00 ml/min
9/21/2022 8:33 AM	09:00	6.48 pH	63.45 °F	327.90 µS/cm	0.17 mg/L	875.40 NTU	-79.6 mV	7.71 m	150.00 ml/min
9/21/2022 8:36 AM	12:00	6.51 pH	63.49 °F	312.20 µS/cm	0.20 mg/L	846.23 NTU	-84.8 mV	7.71 m	150.00 ml/min
9/21/2022 8:39 AM	15:00	6.52 pH	63.43 °F	312.25 µS/cm	0.17 mg/L	863.77 NTU	-87.1 mV	7.71 m	150.00 ml/min
9/21/2022 8:42 AM	18:00	6.54 pH	63.46 °F	304.48 µS/cm	0.16 mg/L	842.87 NTU	-86.8 mV	7.71 m	150.00 ml/min
9/21/2022 8:45 AM	21:00	6.56 pH	63.52 °F	301.85 µS/cm	0.14 mg/L	747.34 NTU	-89.3 mV	7.71 m	150.00 ml/min
9/21/2022 8:48 AM	24:00	6.56 pH	63.45 °F	309.70 µS/cm	0.12 mg/L	738.27 NTU	-89.9 mV	7.71 m	150.00 ml/min
9/21/2022 8:51 AM	27:00	6.57 pH	63.57 °F	303.49 µS/cm	0.13 mg/L	723.75 NTU	-92.7 mV	7.71 m	150.00 ml/min
9/21/2022 8:54 AM	30:00	6.58 pH	63.47 °F	287.02 µS/cm	0.16 mg/L	762.48 NTU	-93.8 mV	7.71 m	150.00 ml/min
9/21/2022 8:57 AM	33:00	6.57 pH	63.63 °F	298.63 µS/cm	0.14 mg/L	779.15 NTU	-91.8 mV	7.71 m	150.00 ml/min
9/21/2022 9:00 AM	36:00	6.57 pH	63.65 °F	304.94 µS/cm	0.13 mg/L	778.79 NTU	-95.4 mV	7.71 m	150.00 ml/min
9/21/2022 9:03 AM	39:00	6.58 pH	63.59 °F	302.02 µS/cm	0.13 mg/L	854.98 NTU	-95.7 mV	7.71 m	150.00 ml/min

Samples

Sample ID:	Description:
MW-18	Sample time 09:10

Low-Flow Test Report:

Test Date / Time: 9/21/2022 9:22:59 AM
Project: Kinder Morgan Harbor Island (44)
Operator Name: Joseph Sepiol

Location Name: TMW-B1 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 5 ft Total Depth: 15 ft Initial Depth to Water: 8.33 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 12 ft Estimated Total Volume Pumped: 4500 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466586
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Test Notes:
Final DTW: 8.39 ft

Weather Conditions:
65 F clear. Smoke from wildfires.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/21/2022 9:22 AM	00:00	6.94 pH	62.64 °F	206.48 µS/cm	4.36 mg/L	15.36 NTU	106.9 mV	8.33 ft	150.00 ml/min
9/21/2022 9:25 AM	03:00	6.71 pH	62.79 °F	206.02 µS/cm	0.36 mg/L	11.71 NTU	40.4 mV	8.33 ft	150.00 ml/min
9/21/2022 9:28 AM	06:00	6.69 pH	63.14 °F	202.28 µS/cm	0.26 mg/L	11.21 NTU	17.6 mV	8.33 ft	150.00 ml/min
9/21/2022 9:31 AM	09:00	6.68 pH	63.49 °F	203.16 µS/cm	0.22 mg/L	10.91 NTU	4.7 mV	8.33 ft	150.00 ml/min
9/21/2022 9:34 AM	12:00	6.68 pH	63.56 °F	206.18 µS/cm	0.19 mg/L	10.70 NTU	-5.0 mV	8.33 ft	150.00 ml/min
9/21/2022 9:37 AM	15:00	6.70 pH	63.79 °F	202.76 µS/cm	0.18 mg/L	10.24 NTU	-13.4 mV	8.33 ft	150.00 ml/min
9/21/2022 9:40 AM	18:00	6.72 pH	63.90 °F	199.64 µS/cm	0.18 mg/L	9.89 NTU	-20.2 mV	8.33 ft	150.00 ml/min
9/21/2022 9:43 AM	21:00	6.74 pH	63.84 °F	202.75 µS/cm	0.17 mg/L	9.69 NTU	-25.7 mV	8.33 ft	150.00 ml/min
9/21/2022 9:46 AM	24:00	6.76 pH	64.05 °F	201.76 µS/cm	0.17 mg/L	9.69 NTU	-31.5 mV	8.33 ft	150.00 ml/min
9/21/2022 9:49 AM	27:00	6.77 pH	64.01 °F	201.93 µS/cm	0.16 mg/L	9.70 NTU	-35.8 mV	8.33 ft	150.00 ml/min
9/21/2022 9:52 AM	30:00	6.77 pH	64.04 °F	198.56 µS/cm	0.15 mg/L	9.65 NTU	-38.6 mV	8.33 ft	150.00 ml/min

Samples

Sample ID:	Description:
TMW-B1	Sample Time: 1000

Low-Flow Test Report:

Test Date / Time: 9/21/2022 9:41:28 AM

Project: KMLT Harbor Island

Operator Name: ES

Location Name: MW-16 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 3 ft Total Depth: 13 ft Initial Depth to Water: 7.66 m	Pump Type: Geopump Tubing Type: 1/4 polyethylene Estimated Total Volume Pumped: 2700 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 m	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:

Pump on at 9:40

Final DTW 7.69

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/21/2022 9:41 AM	00:00	6.14 pH	70.97 °F	290.69 µS/cm	4.35 mg/L	421.23 NTU	39.4 mV	7.66 m	150.00 ml/min
9/21/2022 9:44 AM	03:00	6.15 pH	68.21 °F	310.91 µS/cm	2.98 mg/L	410.32 NTU	78.1 mV	7.66 m	150.00 ml/min
9/21/2022 9:47 AM	06:00	6.16 pH	68.04 °F	316.29 µS/cm	2.49 mg/L	451.66 NTU	85.7 mV	7.66 m	150.00 ml/min
9/21/2022 9:50 AM	09:00	6.15 pH	67.91 °F	320.11 µS/cm	2.34 mg/L	464.04 NTU	88.8 mV	7.66 m	150.00 ml/min
9/21/2022 9:53 AM	12:00	6.15 pH	67.91 °F	321.48 µS/cm	2.20 mg/L	483.26 NTU	85.5 mV	7.66 m	150.00 ml/min
9/21/2022 9:56 AM	15:00	6.15 pH	67.89 °F	322.32 µS/cm	2.04 mg/L	486.15 NTU	87.5 mV	7.66 m	150.00 ml/min
9/21/2022 9:59 AM	18:00	6.14 pH	67.80 °F	322.56 µS/cm	2.04 mg/L	485.87 NTU	82.0 mV	7.66 m	150.00 ml/min

Samples

Sample ID:	Description:
MW-16	Sample time 10:05

Low-Flow Test Report:

Test Date / Time: 9/21/2022 10:26:25 AM

Project: Kinder Morgan Harbor Island (45)

Operator Name: Joseph Sepiol

Location Name: A-27 Well Diameter: 4 in Casing Type: PVC Screen Length: 13 ft Top of Screen: 5 ft Total Depth: 18.07 ft Initial Depth to Water: 10.73 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 12 ft Estimated Total Volume Pumped: 4050 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466586
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Test Notes:

Final DTW: 10.81 ft

Weather Conditions:

65F clear. Smoke from wildfire

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/21/2022 10:26 AM	00:00	6.47 pH	62.38 °F	197.83 µS/cm	4.26 mg/L	18.11 NTU	26.4 mV	10.73 ft	150.00 ml/min
9/21/2022 10:29 AM	03:00	6.33 pH	61.59 °F	197.24 µS/cm	0.49 mg/L	14.18 NTU	9.2 mV	10.73 ft	150.00 ml/min
9/21/2022 10:32 AM	06:00	6.34 pH	61.76 °F	195.18 µS/cm	0.37 mg/L	13.35 NTU	-0.9 mV	10.73 ft	150.00 ml/min
9/21/2022 10:35 AM	09:00	6.32 pH	61.90 °F	191.91 µS/cm	0.31 mg/L	12.96 NTU	-6.0 mV	10.73 ft	150.00 ml/min
9/21/2022 10:38 AM	12:00	6.31 pH	61.93 °F	189.40 µS/cm	0.28 mg/L	12.35 NTU	-8.9 mV	10.73 ft	150.00 ml/min
9/21/2022 10:41 AM	15:00	6.30 pH	61.92 °F	187.08 µS/cm	0.23 mg/L	11.88 NTU	-11.5 mV	10.73 ft	150.00 ml/min
9/21/2022 10:44 AM	18:00	6.30 pH	62.01 °F	185.59 µS/cm	0.21 mg/L	11.45 NTU	-13.5 mV	10.73 ft	150.00 ml/min
9/21/2022 10:47 AM	21:00	6.29 pH	62.17 °F	184.76 µS/cm	0.19 mg/L	11.12 NTU	-15.0 mV	10.73 ft	150.00 ml/min
9/21/2022 10:50 AM	24:00	6.31 pH	62.34 °F	183.77 µS/cm	0.19 mg/L	10.89 NTU	-17.1 mV	10.73 ft	150.00 ml/min
9/21/2022 10:53 AM	27:00	6.31 pH	62.53 °F	183.13 µS/cm	0.18 mg/L	10.82 NTU	-18.5 mV	10.73 ft	150.00 ml/min

Samples

Sample ID:	Description:
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A-27

Sample Time: 1100

Created using VuSitu from In-Situ, Inc.

Low-Flow Test Report:

Test Date / Time: 9/21/2022 10:39:10 AM

Project: KMLT Harbor Island (4)

Operator Name: ES

Location Name: A-28R Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 3 ft Total Depth: 13 ft Initial Depth to Water: 8.4 m	Pump Type: Geopump Tubing Type: 1/4 polyethylene Estimated Total Volume Pumped: 6750 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 m	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:

Pump on at 10:367

Temp and specific conductivity did not stabilize

Final DTW 8.41

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/21/2022 10:39 AM	00:00	6.27 pH	70.56 °F	525.94 µS/cm	0.60 mg/L	589.97 NTU	-70.2 mV	8.40 m	150.00 ml/min
9/21/2022 10:42 AM	03:00	6.42 pH	67.17 °F	540.49 µS/cm	0.19 mg/L	639.71 NTU	-96.6 mV	8.40 m	150.00 ml/min
9/21/2022 10:45 AM	06:00	6.43 pH	67.07 °F	543.13 µS/cm	0.18 mg/L	695.08 NTU	-103.0 mV	8.40 m	150.00 ml/min
9/21/2022 10:48 AM	09:00	6.43 pH	67.05 °F	556.19 µS/cm	0.14 mg/L	718.01 NTU	-104.5 mV	8.40 m	150.00 ml/min
9/21/2022 10:51 AM	12:00	6.44 pH	66.66 °F	580.68 µS/cm	0.15 mg/L	741.77 NTU	-106.7 mV	8.40 m	150.00 ml/min
9/21/2022 10:54 AM	15:00	6.42 pH	66.73 °F	596.44 µS/cm	0.11 mg/L	677.74 NTU	-107.3 mV	8.40 m	150.00 ml/min
9/21/2022 10:57 AM	18:00	6.42 pH	66.64 °F	604.87 µS/cm	0.09 mg/L	683.70 NTU	-107.5 mV	8.40 m	150.00 ml/min
9/21/2022 11:00 AM	21:00	6.41 pH	66.69 °F	614.53 µS/cm	0.12 mg/L	695.83 NTU	-106.4 mV	8.40 m	150.00 ml/min
9/21/2022 11:03 AM	24:00	6.40 pH	66.67 °F	608.22 µS/cm	0.10 mg/L	705.49 NTU	-107.2 mV	8.40 m	150.00 ml/min
9/21/2022 11:06 AM	27:00	6.40 pH	66.77 °F	626.10 µS/cm	0.12 mg/L	710.87 NTU	-108.7 mV	8.40 m	150.00 ml/min
9/21/2022 11:09 AM	30:00	6.40 pH	66.66 °F	628.51 µS/cm	0.08 mg/L	717.30 NTU	-110.4 mV	8.40 m	150.00 ml/min
9/21/2022 11:12 AM	33:00	6.40 pH	66.79 °F	636.15 µS/cm	0.09 mg/L	733.10 NTU	-112.5 mV	8.40 m	150.00 ml/min
9/21/2022 11:15 AM	36:00	6.40 pH	66.89 °F	633.49 µS/cm	0.10 mg/L	731.08 NTU	-113.9 mV	8.40 m	150.00 ml/min
9/21/2022 11:18 AM	39:00	6.39 pH	68.94 °F	641.39 µS/cm	0.10 mg/L	742.46 NTU	-114.4 mV	8.40 m	150.00 ml/min
9/21/2022 11:21 AM	42:00	6.41 pH	66.65 °F	666.24 µS/cm	0.09 mg/L	778.30 NTU	-112.1 mV	8.40 m	150.00 ml/min

9/21/2022 11:24 AM	45:00	6.41 pH	67.22 °F	654.02 µS/cm	0.10 mg/L	807.74 NTU	-111.8 mV	8.40 m	150.00 ml/min
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Samples

Sample ID:	Description:
A-28R	Sample time 11:30

Low-Flow Test Report:

Test Date / Time: 9/21/2022 11:23:38 AM

Project: Kinder Morgan Harbor Island (46)

Operator Name: Joseph Sepiol

Location Name: MW-24 Well Diameter: 4 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 5 ft Total Depth: 15 ft Initial Depth to Water: 7.63 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 12 ft Estimated Total Volume Pumped: 4050 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466586
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Test Notes:

Final DTW: 7.65 ft

Weather Conditions:

75F clear

AQI 140. Wildfire smoke

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/21/2022 11:23 AM	00:00	6.64 pH	63.82 °F	876.59 µS/cm	0.86 mg/L	15.70 NTU	-47.9 mV	7.63 ft	150.00 ml/min
9/21/2022 11:26 AM	03:00	6.66 pH	63.53 °F	878.49 µS/cm	0.23 mg/L	12.70 NTU	-91.6 mV	7.63 ft	150.00 ml/min
9/21/2022 11:29 AM	06:00	6.67 pH	63.46 °F	877.60 µS/cm	0.18 mg/L	13.23 NTU	-102.0 mV	7.63 ft	150.00 ml/min
9/21/2022 11:32 AM	09:00	6.68 pH	63.41 °F	875.57 µS/cm	0.16 mg/L	14.35 NTU	-106.8 mV	7.63 ft	150.00 ml/min
9/21/2022 11:35 AM	12:00	6.68 pH	63.65 °F	874.59 µS/cm	0.14 mg/L	18.82 NTU	-110.0 mV	7.63 ft	150.00 ml/min
9/21/2022 11:38 AM	15:00	6.69 pH	63.76 °F	872.01 µS/cm	0.13 mg/L	21.58 NTU	-112.2 mV	7.63 ft	150.00 ml/min
9/21/2022 11:41 AM	18:00	6.69 pH	63.72 °F	862.46 µS/cm	0.12 mg/L	21.70 NTU	-114.0 mV	7.63 ft	150.00 ml/min
9/21/2022 11:44 AM	21:00	6.70 pH	63.81 °F	859.99 µS/cm	0.11 mg/L	24.26 NTU	-115.3 mV	7.63 ft	150.00 ml/min
9/21/2022 11:47 AM	24:00	6.70 pH	63.80 °F	846.91 µS/cm	0.10 mg/L	19.86 NTU	-116.2 mV	7.63 ft	150.00 ml/min
9/21/2022 11:50 AM	27:00	6.71 pH	65.34 °F	856.65 µS/cm	0.11 mg/L	21.33 NTU	-118.0 mV	7.63 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW-24	Sample Time: 1200

Created using VuSitu from In-Situ, Inc.

Low-Flow Test Report:

Test Date / Time: 9/21/2022 12:22:24 PM

Project: Kinder Morgan Harbor Island (47)

Operator Name: Joseph Sepiol

Location Name: MW-23 Well Diameter: 4 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 5 ft Total Depth: 15 ft Initial Depth to Water: 7.65 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 12 ft Estimated Total Volume Pumped: 2700 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466586
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Test Notes:

Final DTW: 7.68 ft

Weather Conditions:

75F clear

Smoke from wildfires

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/21/2022 12:22 PM	00:00	6.72 pH	65.52 °F	896.05 µS/cm	1.25 mg/L	180.39 NTU	-17.1 mV	7.65 ft	150.00 ml/min
9/21/2022 12:25 PM	03:00	6.68 pH	64.92 °F	903.56 µS/cm	0.27 mg/L	186.12 NTU	-48.7 mV	7.65 ft	150.00 ml/min
9/21/2022 12:28 PM	06:00	6.69 pH	65.30 °F	902.88 µS/cm	0.23 mg/L	176.36 NTU	-62.3 mV	7.65 ft	150.00 ml/min
9/21/2022 12:31 PM	09:00	6.70 pH	65.07 °F	903.15 µS/cm	0.20 mg/L	169.86 NTU	-69.1 mV	7.65 ft	150.00 ml/min
9/21/2022 12:34 PM	12:00	6.71 pH	65.04 °F	902.65 µS/cm	0.18 mg/L	166.10 NTU	-73.1 mV	7.65 ft	150.00 ml/min
9/21/2022 12:37 PM	15:00	6.71 pH	65.10 °F	903.27 µS/cm	0.17 mg/L	165.27 NTU	-75.9 mV	7.65 ft	150.00 ml/min
9/21/2022 12:40 PM	18:00	6.72 pH	65.07 °F	904.18 µS/cm	0.16 mg/L	160.54 NTU	-77.8 mV	7.65 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW-23	Sample Time:1250

Low-Flow Test Report:

Test Date / Time: 9/21/2022 12:35:04 PM

Project: KMLT Harbor Island (5)

Operator Name: ES

Location Name: A-21 Well Diameter: 4 in Casing Type: PsVC Screen Length: 10 ft Top of Screen: 3 ft Total Depth: 13 ft Initial Depth to Water: 7.88 m	Pump Type: Geopump Tubing Type: 1/4 polyethylene Estimated Total Volume Pumped: 6750 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 m	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:

Pump on at 12:33

RDO did not stabilize

Final DTW 7.91

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/21/2022 12:35 PM	00:00	6.73 pH	69.01 °F	870.89 µS/cm	1.43 mg/L	516.45 NTU	-73.4 mV	7.88 m	150.00 ml/min
9/21/2022 12:38 PM	03:00	6.95 pH	66.23 °F	779.28 µS/cm	0.27 mg/L	549.00 NTU	-102.7 mV	7.88 m	150.00 ml/min
9/21/2022 12:41 PM	06:00	6.90 pH	65.82 °F	754.27 µS/cm	0.18 mg/L	568.38 NTU	-103.1 mV	7.88 m	150.00 ml/min
9/21/2022 12:44 PM	09:00	6.84 pH	65.85 °F	741.22 µS/cm	0.16 mg/L	580.27 NTU	-101.2 mV	7.88 m	150.00 ml/min
9/21/2022 12:47 PM	12:00	6.81 pH	65.84 °F	748.72 µS/cm	0.16 mg/L	591.25 NTU	-101.1 mV	7.88 m	150.00 ml/min
9/21/2022 12:50 PM	15:00	6.76 pH	65.96 °F	755.87 µS/cm	0.14 mg/L	621.97 NTU	-100.5 mV	7.88 m	150.00 ml/min
9/21/2022 12:53 PM	18:00	6.72 pH	66.04 °F	762.28 µS/cm	0.17 mg/L	629.21 NTU	-99.1 mV	7.88 m	150.00 ml/min
9/21/2022 12:56 PM	21:00	6.69 pH	66.16 °F	788.18 µS/cm	0.14 mg/L	676.00 NTU	-97.3 mV	7.88 m	150.00 ml/min
9/21/2022 12:59 PM	24:00	6.65 pH	66.25 °F	810.99 µS/cm	0.12 mg/L	707.53 NTU	-94.0 mV	7.88 m	150.00 ml/min
9/21/2022 1:02 PM	27:00	6.64 pH	66.12 °F	839.62 µS/cm	0.13 mg/L	812.12 NTU	-92.0 mV	7.88 m	150.00 ml/min
9/21/2022 1:05 PM	30:00	6.63 pH	65.90 °F	879.75 µS/cm	0.11 mg/L	1,036.3 NTU	-90.2 mV	7.88 m	150.00 ml/min
9/21/2022 1:08 PM	33:00	6.62 pH	65.96 °F	918.62 µS/cm	0.15 mg/L	1,197.8 NTU	-87.1 mV	7.88 m	150.00 ml/min
9/21/2022 1:11 PM	36:00	6.61 pH	66.15 °F	961.28 µS/cm	0.22 mg/L	1,311.1 NTU	-82.8 mV	7.88 m	150.00 ml/min
9/21/2022 1:14 PM	39:00	6.59 pH	66.12 °F	985.89 µS/cm	0.21 mg/L	1,401.3 NTU	-80.2 mV	7.88 m	150.00 ml/min
9/21/2022 1:17 PM	42:00	6.59 pH	66.07 °F	1,000.3 µS/cm	0.28 mg/L	1,685.7 NTU	-77.5 mV	7.88 m	150.00 ml/min

9/21/2022 1:20 PM	45:00	6.59 pH	66.10 °F	1,015.6 μS/cm	0.34 mg/L	1,711.0 NTU	-73.9 mV	7.88 m	150.00 ml/min
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Samples

Sample ID:	Description:
A-21	Sample time 13:25

Low-Flow Test Report:

Test Date / Time: 9/21/2022 1:52:37 PM
Project: Kinder Morgan Harbor Island (48)
Operator Name: Joseph Sepiol

Location Name: MW-22 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 3 ft Total Depth: 13.27 ft Initial Depth to Water: 8.85 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 10 ft Estimated Total Volume Pumped: 3150 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466586
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Test Notes:
Final DTW: 8.85 ft

Weather Conditions:
80F clear. Smoke from wildfires

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/21/2022 1:52 PM	00:00	6.53 pH	85.50 °F	216.85 µS/cm	1.62 mg/L	13.51 NTU	30.7 mV	8.85 ft	150.00 ml/min
9/21/2022 1:55 PM	03:00	6.40 pH	69.57 °F	184.01 µS/cm	0.24 mg/L	17.49 NTU	-11.9 mV	8.85 ft	150.00 ml/min
9/21/2022 1:58 PM	06:00	6.29 pH	70.41 °F	172.15 µS/cm	0.24 mg/L	11.63 NTU	-20.0 mV	8.85 ft	150.00 ml/min
9/21/2022 2:01 PM	09:00	6.28 pH	70.82 °F	166.76 µS/cm	0.22 mg/L	9.11 NTU	-26.3 mV	8.85 ft	150.00 ml/min
9/21/2022 2:04 PM	12:00	6.30 pH	70.69 °F	165.01 µS/cm	0.21 mg/L	8.58 NTU	-31.3 mV	8.85 ft	150.00 ml/min
9/21/2022 2:07 PM	15:00	6.34 pH	71.10 °F	164.30 µS/cm	0.20 mg/L	8.74 NTU	-37.6 mV	8.85 ft	150.00 ml/min
9/21/2022 2:10 PM	18:00	6.35 pH	71.67 °F	166.44 µS/cm	0.20 mg/L	8.81 NTU	-40.1 mV	8.85 ft	150.00 ml/min
9/21/2022 2:13 PM	21:00	6.39 pH	73.78 °F	166.61 µS/cm	0.27 mg/L	8.06 NTU	-44.0 mV	8.85 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW-22	Sample Time: 1420

Low-Flow Test Report:

Test Date / Time: 9/21/2022 1:53:53 PM

Project: KMLT Harbor Island

Operator Name: ES

Location Name: MW-2 Well Diameter: 4 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 3 ft Total Depth: 13 ft Initial Depth to Water: 7.85 m	Pump Type: Geopump Tubing Type: 1/4 polyethylene Estimated Total Volume Pumped: 3150 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 m	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:

Pump on at 13:53

Final DTW 7.87

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/21/2022 1:53 PM	00:00	6.81 pH	66.90 °F	87.77 µS/cm	2.73 mg/L	560.84 NTU	19.8 mV	7.85 m	150.00 ml/min
9/21/2022 1:56 PM	03:00	5.88 pH	65.58 °F	81.91 µS/cm	1.28 mg/L	696.70 NTU	84.2 mV	7.85 m	150.00 ml/min
9/21/2022 1:59 PM	06:00	5.84 pH	65.96 °F	81.69 µS/cm	1.33 mg/L	706.50 NTU	97.7 mV	7.85 m	150.00 ml/min
9/21/2022 2:02 PM	09:00	5.83 pH	65.93 °F	81.13 µS/cm	1.33 mg/L	724.52 NTU	103.7 mV	7.85 m	150.00 ml/min
9/21/2022 2:05 PM	12:00	5.83 pH	66.13 °F	80.80 µS/cm	1.51 mg/L	739.88 NTU	107.4 mV	7.85 m	150.00 ml/min
9/21/2022 2:08 PM	15:00	5.82 pH	66.02 °F	79.83 µS/cm	1.29 mg/L	768.95 NTU	110.7 mV	7.85 m	150.00 ml/min
9/21/2022 2:11 PM	18:00	5.82 pH	66.19 °F	79.14 µS/cm	1.40 mg/L	780.62 NTU	113.1 mV	7.85 m	150.00 ml/min
9/21/2022 2:14 PM	21:00	5.82 pH	66.10 °F	77.74 µS/cm	1.35 mg/L	791.95 NTU	114.1 mV	7.85 m	150.00 ml/min

Samples

Sample ID:	Description:
MW-2	Sample time 14:20

Low-Flow Test Report:

Test Date / Time: 9/21/2022 3:05:57 PM
Project: Kinder Morgan Harbor Island (49)
Operator Name: Joseph Sepiol

Location Name: 12 Well Diameter: 4 in Casing Type: PVC Screen Length: 7 ft Top of Screen: 0 ft Total Depth: 7.47 ft Initial Depth to Water: 3.4 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 10 ft Estimated Total Volume Pumped: 0 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466586
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Test Notes:

Grab sample 24 hours after well went dry on 9/20.

Weather Conditions:

80F clear

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/21/2022 3:05 PM	00:00	7.61 pH	67.05 °F	2,353.4 µS/cm	1.63 mg/L	11.74 NTU	-64.8 mV	3.40 ft	150.00 ml/min

Samples

Sample ID:	Description:
12	Sample Time: 1510

Low-Flow Test Report:

Test Date / Time: 9/22/2022 8:57:43 AM

Project: KMLT Harbor Island (6)

Operator Name: ES

Location Name: MW-9 Well Diameter: 4 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 3 ft Total Depth: 13 ft Initial Depth to Water: 3.3 m	Pump Type: Geopump Tubing Type: 1/4 polyethylene Estimated Total Volume Pumped: 4050 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 m	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:

Pump on at 8:55

Final DTW 3.46

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/22/2022 8:57 AM	00:00	6.41 pH	62.96 °F	93.37 µS/cm	0.67 mg/L	494.64 NTU	91.4 mV	3.30 m	150.00 ml/min
9/22/2022 9:00 AM	03:00	6.37 pH	63.14 °F	93.30 µS/cm	0.32 mg/L	517.17 NTU	75.6 mV	3.30 m	150.00 ml/min
9/22/2022 9:03 AM	06:00	6.37 pH	63.17 °F	93.00 µS/cm	0.27 mg/L	524.38 NTU	70.3 mV	3.30 m	150.00 ml/min
9/22/2022 9:06 AM	09:00	6.36 pH	63.31 °F	93.08 µS/cm	0.25 mg/L	531.45 NTU	63.1 mV	3.30 m	150.00 ml/min
9/22/2022 9:09 AM	12:00	6.34 pH	63.33 °F	93.24 µS/cm	0.22 mg/L	533.87 NTU	52.8 mV	3.30 m	150.00 ml/min
9/22/2022 9:12 AM	15:00	6.33 pH	63.48 °F	92.79 µS/cm	0.20 mg/L	537.10 NTU	45.6 mV	3.30 m	150.00 ml/min
9/22/2022 9:15 AM	18:00	6.32 pH	63.60 °F	92.88 µS/cm	0.20 mg/L	542.04 NTU	39.9 mV	3.30 m	150.00 ml/min
9/22/2022 9:18 AM	21:00	6.31 pH	63.72 °F	92.28 µS/cm	0.25 mg/L	544.37 NTU	33.7 mV	3.30 m	150.00 ml/min
9/22/2022 9:21 AM	24:00	6.31 pH	63.81 °F	92.20 µS/cm	0.25 mg/L	553.27 NTU	29.2 mV	3.30 m	150.00 ml/min
9/22/2022 9:24 AM	27:00	6.30 pH	63.77 °F	92.25 µS/cm	0.26 mg/L	546.07 NTU	24.8 mV	3.30 m	150.00 ml/min

Samples

Sample ID:	Description:
MW-9	Sample time @ 0930

Low-Flow Test Report:

Test Date / Time: 9/22/2022 9:24:00 AM
Project: Kinder Morgan Harbor Island (50)
Operator Name: Joseph Sepiol

Location Name: SH-05R Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 5 ft Total Depth: 15 ft Initial Depth to Water: 7.2 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 10 ft Estimated Total Volume Pumped: 6750 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466586
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Test Notes:
Final DTW: 7.41 ft

Weather Conditions:
60F overcast. Wind.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/22/2022 9:24 AM	00:00	6.47 pH	63.15 °F	168.72 µS/cm	0.66 mg/L	10.68 NTU	246.8 mV	7.20 ft	150.00 ml/min
9/22/2022 9:27 AM	03:00	6.10 pH	63.17 °F	160.43 µS/cm	0.29 mg/L	6.85 NTU	239.8 mV	7.20 ft	150.00 ml/min
9/22/2022 9:30 AM	06:00	6.07 pH	63.54 °F	158.13 µS/cm	0.25 mg/L	6.84 NTU	237.4 mV	7.20 ft	150.00 ml/min
9/22/2022 9:33 AM	09:00	6.07 pH	63.73 °F	157.52 µS/cm	0.22 mg/L	4.44 NTU	234.4 mV	7.20 ft	150.00 ml/min
9/22/2022 9:36 AM	12:00	6.07 pH	63.96 °F	155.05 µS/cm	0.21 mg/L	5.46 NTU	231.6 mV	7.20 ft	150.00 ml/min
9/22/2022 9:39 AM	15:00	6.09 pH	64.09 °F	148.83 µS/cm	0.20 mg/L	10.48 NTU	225.1 mV	7.20 ft	150.00 ml/min
9/22/2022 9:42 AM	18:00	6.11 pH	64.14 °F	142.46 µS/cm	0.20 mg/L	12.13 NTU	218.2 mV	7.20 ft	150.00 ml/min
9/22/2022 9:45 AM	21:00	6.15 pH	64.39 °F	137.04 µS/cm	0.22 mg/L	9.73 NTU	208.9 mV	7.20 ft	150.00 ml/min
9/22/2022 9:48 AM	24:00	6.17 pH	64.41 °F	134.60 µS/cm	0.24 mg/L	8.56 NTU	198.2 mV	7.20 ft	150.00 ml/min
9/22/2022 9:51 AM	27:00	6.19 pH	64.38 °F	133.01 µS/cm	0.25 mg/L	9.60 NTU	187.4 mV	7.20 ft	150.00 ml/min
9/22/2022 9:54 AM	30:00	6.18 pH	64.45 °F	132.42 µS/cm	0.25 mg/L	8.36 NTU	178.0 mV	7.20 ft	150.00 ml/min
9/22/2022 9:57 AM	33:00	6.17 pH	64.59 °F	131.79 µS/cm	0.26 mg/L	8.62 NTU	169.5 mV	7.20 ft	150.00 ml/min
9/22/2022 10:00 AM	36:00	6.19 pH	64.56 °F	130.81 µS/cm	0.26 mg/L	8.52 NTU	160.5 mV	7.20 ft	150.00 ml/min

9/22/2022 10:03 AM	39:00	6.19 pH	64.57 °F	130.42 µS/cm	0.26 mg/L	5.65 NTU	153.0 mV	7.20 ft	150.00 ml/min
9/22/2022 10:06 AM	42:00	6.19 pH	64.55 °F	130.18 µS/cm	0.26 mg/L	5.48 NTU	146.3 mV	7.20 ft	150.00 ml/min
9/22/2022 10:09 AM	45:00	6.19 pH	64.58 °F	129.92 µS/cm	0.26 mg/L	5.08 NTU	139.6 mV	7.20 ft	150.00 ml/min

Samples

Sample ID:	Description:
SH-05R	Sample Time: 1010 ORP did not stabilize after 45 min of purge.

Low-Flow Test Report:

Test Date / Time: 9/22/2022 10:04:34 AM

Project: KMLT Harbor Island

Operator Name: ES

Location Name: TMW-6 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 3 ft Total Depth: 13 ft Initial Depth to Water: 3.16 m	Pump Type: Geopump Tubing Type: 1/4 polyethylene Estimated Total Volume Pumped: 4500 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 m	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:

Pump on at 10:03

Final DTW 3.63

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/22/2022 10:04 AM	00:00	6.68 pH	63.06 °F	1,080.4 µS/cm	3.57 mg/L	550.40 NTU	-53.3 mV	3.16 m	150.00 ml/min
9/22/2022 10:07 AM	03:00	6.87 pH	62.96 °F	1,088.0 µS/cm	0.31 mg/L	576.63 NTU	-114.3 mV	3.16 m	150.00 ml/min
9/22/2022 10:10 AM	06:00	6.89 pH	62.95 °F	1,098.4 µS/cm	0.23 mg/L	589.75 NTU	-136.1 mV	3.16 m	150.00 ml/min
9/22/2022 10:13 AM	09:00	6.90 pH	62.88 °F	1,103.3 µS/cm	0.19 mg/L	590.53 NTU	-153.7 mV	3.16 m	150.00 ml/min
9/22/2022 10:16 AM	12:00	6.91 pH	62.94 °F	1,115.5 µS/cm	0.16 mg/L	592.83 NTU	-169.2 mV	3.16 m	150.00 ml/min
9/22/2022 10:19 AM	15:00	6.92 pH	62.99 °F	1,125.6 µS/cm	0.13 mg/L	593.36 NTU	-181.6 mV	3.16 m	150.00 ml/min
9/22/2022 10:22 AM	18:00	6.93 pH	62.90 °F	1,139.1 µS/cm	0.12 mg/L	595.53 NTU	-191.2 mV	3.16 m	150.00 ml/min
9/22/2022 10:25 AM	21:00	6.94 pH	62.88 °F	1,146.3 µS/cm	0.11 mg/L	596.92 NTU	-197.8 mV	3.16 m	150.00 ml/min
9/22/2022 10:28 AM	24:00	6.94 pH	62.85 °F	1,151.7 µS/cm	0.12 mg/L	597.26 NTU	-202.8 mV	3.16 m	150.00 ml/min
9/22/2022 10:31 AM	27:00	6.95 pH	62.89 °F	1,168.6 µS/cm	0.13 mg/L	597.40 NTU	-208.2 mV	3.16 m	150.00 ml/min
9/22/2022 10:34 AM	30:00	6.96 pH	62.91 °F	1,181.0 µS/cm	0.13 mg/L	577.17 NTU	-211.9 mV	3.16 m	150.00 ml/min

Samples

Sample ID:	Description:
TMW-6	Sample time at 10:40

Low-Flow Test Report:

Test Date / Time: 9/22/2022 10:32:32 AM

Project: Kinder Morgan Harbor Island (51)

Operator Name: Joseph Sepiol

Location Name: MW-07R Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 5 ft Total Depth: 15 ft Initial Depth to Water: 6.75 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 10 ft Estimated Total Volume Pumped: 6750 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466586
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Test Notes:

Final DTW: 6.83 ft

Weather Conditions:

60 overcast. Wind

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/22/2022 10:32 AM	00:00	6.19 pH	65.71 °F	69.25 µS/cm	2.97 mg/L	7.52 NTU	144.7 mV	6.75 ft	150.00 ml/min
9/22/2022 10:35 AM	03:00	6.22 pH	65.83 °F	69.36 µS/cm	0.37 mg/L	12.91 NTU	137.3 mV	6.75 ft	150.00 ml/min
9/22/2022 10:38 AM	06:00	6.29 pH	65.94 °F	75.12 µS/cm	0.27 mg/L	39.38 NTU	133.9 mV	6.75 ft	150.00 ml/min
9/22/2022 10:41 AM	09:00	6.34 pH	66.02 °F	78.64 µS/cm	0.23 mg/L	16.85 NTU	129.4 mV	6.75 ft	150.00 ml/min
9/22/2022 10:44 AM	12:00	6.37 pH	65.99 °F	82.17 µS/cm	0.21 mg/L	7.84 NTU	122.8 mV	6.75 ft	150.00 ml/min
9/22/2022 10:47 AM	15:00	6.40 pH	66.02 °F	85.29 µS/cm	0.20 mg/L	6.11 NTU	111.7 mV	6.75 ft	150.00 ml/min
9/22/2022 10:50 AM	18:00	6.43 pH	66.06 °F	89.13 µS/cm	0.19 mg/L	3.79 NTU	98.2 mV	6.75 ft	150.00 ml/min
9/22/2022 10:53 AM	21:00	6.45 pH	66.07 °F	101.63 µS/cm	0.18 mg/L	5.71 NTU	84.4 mV	6.75 ft	150.00 ml/min
9/22/2022 10:56 AM	24:00	6.47 pH	66.13 °F	107.77 µS/cm	0.18 mg/L	3.83 NTU	71.1 mV	6.75 ft	150.00 ml/min
9/22/2022 10:59 AM	27:00	6.49 pH	66.09 °F	80.84 µS/cm	0.18 mg/L	5.86 NTU	58.6 mV	6.75 ft	150.00 ml/min
9/22/2022 11:02 AM	30:00	6.50 pH	66.21 °F	74.80 µS/cm	0.19 mg/L	4.77 NTU	48.4 mV	6.75 ft	150.00 ml/min
9/22/2022 11:05 AM	33:00	6.52 pH	66.20 °F	59.53 µS/cm	0.18 mg/L	5.78 NTU	38.7 mV	6.75 ft	150.00 ml/min
9/22/2022 11:08 AM	36:00	6.52 pH	66.22 °F	29.45 µS/cm	0.17 mg/L	5.00 NTU	31.4 mV	6.75 ft	150.00 ml/min

9/22/2022 11:11 AM	39:00	6.54 pH	66.23 °F	68.84 µS/cm	0.18 mg/L	8.21 NTU	23.9 mV	6.75 ft	150.00 ml/min
9/22/2022 11:14 AM	42:00	6.55 pH	66.22 °F	56.61 µS/cm	0.17 mg/L	6.86 NTU	18.1 mV	6.75 ft	150.00 ml/min
9/22/2022 11:17 AM	45:00	6.55 pH	66.23 °F	29.44 µS/cm	0.16 mg/L	9.60 NTU	13.4 mV	6.75 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW-07R	Sample Time: 1120 Conductivity and ORP not stabile after 45 min purge

Low-Flow Test Report:

Test Date / Time: 9/22/2022 11:14:23 AM

Project: KMLT Harbor Island (7)

Operator Name: ES

Location Name: MW-21 Well Diameter: 4 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 3 ft Total Depth: 13 ft Initial Depth to Water: 3.19 m	Pump Type: Geopump Tubing Type: 1/4 polyethylene Estimated Total Volume Pumped: 3600 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 m	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:

Pump on at 11:12

Final DTW 4.15

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/22/2022 11:14 AM	00:00	7.15 pH	64.13 °F	77.49 µS/cm	2.92 mg/L	561.85 NTU	-106.8 mV	3.19 m	150.00 ml/min
9/22/2022 11:17 AM	03:00	6.24 pH	64.49 °F	76.83 µS/cm	0.46 mg/L	574.52 NTU	-87.4 mV	3.19 m	150.00 ml/min
9/22/2022 11:20 AM	06:00	6.14 pH	64.78 °F	74.26 µS/cm	0.32 mg/L	581.12 NTU	-82.0 mV	3.19 m	150.00 ml/min
9/22/2022 11:23 AM	09:00	6.10 pH	64.88 °F	72.67 µS/cm	0.32 mg/L	584.11 NTU	-79.4 mV	3.19 m	150.00 ml/min
9/22/2022 11:26 AM	12:00	6.06 pH	64.97 °F	71.92 µS/cm	0.23 mg/L	584.11 NTU	-79.1 mV	3.19 m	150.00 ml/min
9/22/2022 11:29 AM	15:00	6.04 pH	65.25 °F	71.38 µS/cm	0.26 mg/L	587.54 NTU	-78.0 mV	3.19 m	150.00 ml/min
9/22/2022 11:32 AM	18:00	6.03 pH	65.40 °F	71.23 µS/cm	0.23 mg/L	591.59 NTU	-75.4 mV	3.19 m	150.00 ml/min
9/22/2022 11:35 AM	21:00	6.02 pH	65.53 °F	71.04 µS/cm	0.23 mg/L	591.92 NTU	-73.8 mV	3.19 m	150.00 ml/min
9/22/2022 11:38 AM	24:00	6.02 pH	65.67 °F	71.36 µS/cm	0.24 mg/L	597.25 NTU	-72.1 mV	3.19 m	150.00 ml/min

Samples

Sample ID:	Description:
MW-21	Sample time 11:45 DUP-2

Low-Flow Test Report:

Test Date / Time: 9/22/2022 11:41:18 AM

Project: Kinder Morgan Harbor Island (52)

Operator Name: Joseph Sepiol

Location Name: MW-4 Well Diameter: 4 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 5 ft Total Depth: 15 ft Initial Depth to Water: 7.17 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 10 ft Estimated Total Volume Pumped: 2700 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466586
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Test Notes:

Final DTW: 7.60 ft

Weather Conditions:

60F overcast. Wind

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/22/2022 11:41 AM	00:00	6.31 pH	69.97 °F	131.25 µS/cm	1.36 mg/L	4.70 NTU	41.3 mV	7.17 ft	150.00 ml/min
9/22/2022 11:44 AM	03:00	6.30 pH	70.40 °F	131.07 µS/cm	0.33 mg/L	2.93 NTU	25.3 mV	7.17 ft	150.00 ml/min
9/22/2022 11:47 AM	06:00	6.30 pH	70.68 °F	130.61 µS/cm	0.25 mg/L	3.46 NTU	17.2 mV	7.17 ft	150.00 ml/min
9/22/2022 11:50 AM	09:00	6.30 pH	70.63 °F	130.26 µS/cm	0.23 mg/L	10.24 NTU	12.3 mV	7.17 ft	150.00 ml/min
9/22/2022 11:53 AM	12:00	6.29 pH	70.79 °F	130.14 µS/cm	0.21 mg/L	3.84 NTU	9.7 mV	7.17 ft	150.00 ml/min
9/22/2022 11:56 AM	15:00	6.29 pH	70.78 °F	130.18 µS/cm	0.19 mg/L	3.98 NTU	7.1 mV	7.17 ft	150.00 ml/min
9/22/2022 11:59 AM	18:00	6.29 pH	70.55 °F	130.11 µS/cm	0.20 mg/L	3.60 NTU	5.5 mV	7.17 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW-4	Sample Time: 1205

Low-Flow Test Report:

Test Date / Time: 9/22/2022 12:20:53 PM

Project: KMLT Harbor Island

Operator Name: ES

Location Name: MW-8 Well Diameter: 4 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 3 ft Total Depth: 13 ft Initial Depth to Water: 4.17 m	Pump Type: Geopump Tubing Type: 1/4 polyethylene Estimated Total Volume Pumped: 4050 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 m	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:

Pump on at 12:19

Final DTW 4.92

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/22/2022 12:20 PM	00:00	6.04 pH	67.82 °F	49.37 µS/cm	1.92 mg/L	612.79 NTU	13.9 mV	4.17 m	150.00 ml/min
9/22/2022 12:23 PM	03:00	5.85 pH	68.11 °F	48.23 µS/cm	0.37 mg/L	608.65 NTU	40.6 mV	4.17 m	150.00 ml/min
9/22/2022 12:26 PM	06:00	5.82 pH	68.06 °F	47.35 µS/cm	0.40 mg/L	614.78 NTU	45.5 mV	4.17 m	150.00 ml/min
9/22/2022 12:29 PM	09:00	5.82 pH	68.15 °F	46.65 µS/cm	0.50 mg/L	621.10 NTU	50.3 mV	4.17 m	150.00 ml/min
9/22/2022 12:32 PM	12:00	5.82 pH	68.32 °F	46.19 µS/cm	0.68 mg/L	621.94 NTU	49.7 mV	4.17 m	150.00 ml/min
9/22/2022 12:35 PM	15:00	5.83 pH	68.34 °F	45.52 µS/cm	0.82 mg/L	631.47 NTU	50.6 mV	4.17 m	150.00 ml/min
9/22/2022 12:38 PM	18:00	5.83 pH	68.42 °F	45.42 µS/cm	1.03 mg/L	624.02 NTU	54.5 mV	4.17 m	150.00 ml/min
9/22/2022 12:41 PM	21:00	5.83 pH	68.56 °F	45.34 µS/cm	1.08 mg/L	624.36 NTU	58.8 mV	4.17 m	150.00 ml/min
9/22/2022 12:44 PM	24:00	5.84 pH	68.65 °F	45.55 µS/cm	1.14 mg/L	625.92 NTU	59.8 mV	4.17 m	150.00 ml/min
9/22/2022 12:47 PM	27:00	5.84 pH	68.65 °F	46.07 µS/cm	1.08 mg/L	627.50 NTU	61.4 mV	4.17 m	150.00 ml/min

Samples

Sample ID:	Description:
MW-8	Sample time at 12:50

Low-Flow Test Report:

Test Date / Time: 9/22/2022 12:20:57 PM

Project: Kinder Morgan Harbor Island (53)

Operator Name: Joseph Sepiol

Location Name: MW-12R Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 5 ft Total Depth: 15 ft Initial Depth to Water: 7.99 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 10 ft Estimated Total Volume Pumped: 2700 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466586
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Test Notes:

Final DTW:7.99 ft

Weather Conditions:

65F overcast. Light wind.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/22/2022 12:20 PM	00:00	6.75 pH	66.30 °F	681.40 µS/cm	2.42 mg/L	2.07 NTU	5.0 mV	7.99 ft	150.00 ml/min
9/22/2022 12:23 PM	03:00	7.01 pH	66.05 °F	684.03 µS/cm	0.37 mg/L	1.83 NTU	-69.5 mV	7.99 ft	150.00 ml/min
9/22/2022 12:26 PM	06:00	7.05 pH	66.19 °F	678.92 µS/cm	0.31 mg/L	1.83 NTU	-87.4 mV	7.99 ft	150.00 ml/min
9/22/2022 12:29 PM	09:00	7.06 pH	66.19 °F	688.02 µS/cm	0.27 mg/L	1.87 NTU	-95.3 mV	7.99 ft	150.00 ml/min
9/22/2022 12:32 PM	12:00	7.07 pH	66.32 °F	690.00 µS/cm	0.23 mg/L	1.83 NTU	-100.8 mV	7.99 ft	150.00 ml/min
9/22/2022 12:35 PM	15:00	7.08 pH	66.47 °F	689.66 µS/cm	0.25 mg/L	1.87 NTU	-104.1 mV	7.99 ft	150.00 ml/min
9/22/2022 12:38 PM	18:00	7.09 pH	66.51 °F	688.76 µS/cm	0.25 mg/L	1.81 NTU	-106.8 mV	7.99 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW-12R	Sample Time: 12:45

Low-Flow Test Report:

Test Date / Time: 9/22/2022 1:22:39 PM
Project: Kinder Morgan Harbor Island (54)
Operator Name: Joseph Sepiol

Location Name: SH-02R Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 5 ft Total Depth: 15 ft Initial Depth to Water: 6.1 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 10 ft Estimated Total Volume Pumped: 2250 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466586
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Test Notes:

Final DTW: 6.10 ft
iPad updated at 18:00 min reading.

Weather Conditions:

70F. Partly cloudy. Light wind.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/22/2022 1:22 PM	00:00	6.82 pH	70.58 °F	240.66 µS/cm	1.02 mg/L	3.70 NTU	-53.0 mV	6.10 ft	150.00 ml/min
9/22/2022 1:25 PM	03:00	6.80 pH	70.80 °F	239.60 µS/cm	0.53 mg/L	2.28 NTU	-81.6 mV	6.10 ft	150.00 ml/min
9/22/2022 1:28 PM	06:00	6.81 pH	70.83 °F	239.70 µS/cm	0.47 mg/L	2.71 NTU	-91.6 mV	6.10 ft	150.00 ml/min
9/22/2022 1:31 PM	09:00	6.82 pH	70.77 °F	239.46 µS/cm	0.44 mg/L	3.73 NTU	-96.2 mV	6.10 ft	150.00 ml/min
9/22/2022 1:34 PM	12:00	6.82 pH	71.09 °F	238.73 µS/cm	0.40 mg/L	2.76 NTU	-98.9 mV	6.10 ft	150.00 ml/min
9/22/2022 1:37 PM	15:00	6.83 pH	71.38 °F	238.72 µS/cm	0.40 mg/L	2.90 NTU	-101.1 mV	6.10 ft	150.00 ml/min

Samples

Sample ID:	Description:
SH-02R	Sample Time: 1345

Low-Flow Test Report:

Test Date / Time: 9/22/2022 1:48:21 PM

Project: KMLT Harbor Island (8)

Operator Name: ES

Location Name: 12 Well Diameter: 4 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 3 ft Total Depth: 7.5 ft Initial Depth to Water: 3.06 m	Pump Type: Geopump Tubing Type: 1/4 polyethylene Estimated Total Volume Pumped: 0 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 m	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:

Pump on at 13:46

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/22/2022 1:48 PM	00:00	7.45 pH	66.94 °F	2,141.1 µS/cm	3.32 mg/L	471.46 NTU	-260.2 mV	3.06 m	150.00 ml/min

Samples

Sample ID:	Description:
12	Sample time 13:50

Low-Flow Test Report:

Test Date / Time: 9/22/2022 2:48:02 PM

Project: KMLT Harbor Island

Operator Name: ES

Location Name: 11 Well Diameter: 4 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 3 ft Total Depth: 13 ft Initial Depth to Water: 5.21 m	Pump Type: Geopump Tubing Type: 1/4 polyethylene Estimated Total Volume Pumped: 2700 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 m	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:

Pump on at 14:42

Final DTW 5.42

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/22/2022 2:48 PM	00:00	7.47 pH	74.87 °F	357.70 µS/cm	3.82 mg/L	823.18 NTU	-63.1 mV	5.21 m	150.00 ml/min
9/22/2022 2:51 PM	03:00	6.99 pH	73.81 °F	349.77 µS/cm	2.58 mg/L	589.22 NTU	-61.4 mV	5.21 m	150.00 ml/min
9/22/2022 2:54 PM	06:00	6.97 pH	73.55 °F	347.97 µS/cm	2.54 mg/L	596.00 NTU	-57.1 mV	5.21 m	150.00 ml/min
9/22/2022 2:57 PM	09:00	6.92 pH	73.37 °F	363.83 µS/cm	1.38 mg/L	607.80 NTU	-55.8 mV	5.21 m	150.00 ml/min
9/22/2022 3:00 PM	12:00	6.92 pH	73.22 °F	364.25 µS/cm	1.35 mg/L	618.93 NTU	-65.1 mV	5.21 m	150.00 ml/min
9/22/2022 3:03 PM	15:00	6.91 pH	73.23 °F	362.47 µS/cm	1.33 mg/L	623.95 NTU	-66.6 mV	5.21 m	150.00 ml/min
9/22/2022 3:06 PM	18:00	6.90 pH	73.22 °F	361.91 µS/cm	1.41 mg/L	627.49 NTU	-66.2 mV	5.21 m	150.00 ml/min

Samples

Sample ID:	Description:
11	Sample time 15:10

Low-Flow Test Report:

Test Date / Time: 9/22/2022 3:08:07 PM
Project: Kinder Morgan Harbor Island (55)
Operator Name: Joseph Sepiol

<p>Location Name: A-14R Well Diameter: 2 in Casing Type: PVC Screen Length: 13 ft Top of Screen: 3 ft Total Depth: 15 ft Initial Depth to Water: 7.75 ft</p>	<p>Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 10 ft Estimated Total Volume Pumped: 3600 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft</p>	<p>Instrument Used: Aqua TROLL 600 Vented Serial Number: 466586</p>
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Test Notes:
 Final DTW: 7.77 ft

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/22/2022 3:08 PM	00:00	7.14 pH	72.05 °F	2,759.5 µS/cm	1.40 mg/L	10.59 NTU	-24.9 mV	7.75 ft	150.00 ml/min
9/22/2022 3:11 PM	03:00	7.14 pH	71.15 °F	2,635.4 µS/cm	0.56 mg/L	4.74 NTU	-41.3 mV	7.75 ft	150.00 ml/min
9/22/2022 3:14 PM	06:00	7.14 pH	70.51 °F	2,581.8 µS/cm	0.42 mg/L	3.88 NTU	-45.0 mV	7.75 ft	150.00 ml/min
9/22/2022 3:17 PM	09:00	7.15 pH	70.71 °F	2,561.9 µS/cm	0.35 mg/L	3.53 NTU	-44.3 mV	7.75 ft	150.00 ml/min
9/22/2022 3:20 PM	12:00	7.16 pH	70.74 °F	2,531.6 µS/cm	0.28 mg/L	5.60 NTU	-42.5 mV	7.75 ft	150.00 ml/min
9/22/2022 3:23 PM	15:00	7.15 pH	70.64 °F	2,545.5 µS/cm	0.25 mg/L	5.73 NTU	-41.1 mV	7.75 ft	150.00 ml/min
9/22/2022 3:26 PM	18:00	7.14 pH	70.68 °F	2,527.6 µS/cm	0.22 mg/L	6.77 NTU	-40.0 mV	7.75 ft	150.00 ml/min
9/22/2022 3:29 PM	21:00	7.12 pH	70.44 °F	2,544.5 µS/cm	0.21 mg/L	6.98 NTU	-38.6 mV	7.75 ft	150.00 ml/min
9/22/2022 3:32 PM	24:00	7.14 pH	70.57 °F	2,563.1 µS/cm	0.20 mg/L	9.05 NTU	-38.4 mV	7.75 ft	150.00 ml/min

Samples

Sample ID:	Description:
A-14R	Sample Time: 1540

Low-Flow Test Report:

Test Date / Time: 9/22/2022 3:54:59 PM
Project: Kinder Morgan Harbor Island (56)
Operator Name: Joseph Sepiol

Location Name: A-10 Well Diameter: 4 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 5 ft Total Depth: 15 ft Initial Depth to Water: 7.02 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 10 ft Estimated Total Volume Pumped: 6750 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466586
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Test Notes:

Weather Conditions:

75 F partly cloudy. Light wind.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/22/2022 3:54 PM	00:00	6.73 pH	73.25 °F	1,008.4 µS/cm	2.28 mg/L	2.61 NTU	-1.5 mV	7.02 ft	150.00 ml/min
9/22/2022 3:57 PM	03:00	6.69 pH	71.27 °F	1,121.5 µS/cm	0.34 mg/L	14.36 NTU	-3.4 mV	7.02 ft	150.00 ml/min
9/22/2022 4:00 PM	06:00	6.70 pH	70.96 °F	1,165.2 µS/cm	0.25 mg/L	2.16 NTU	-13.7 mV	7.02 ft	150.00 ml/min
9/22/2022 4:03 PM	09:00	6.72 pH	70.95 °F	1,226.5 µS/cm	0.22 mg/L	2.17 NTU	-23.7 mV	7.02 ft	150.00 ml/min
9/22/2022 4:06 PM	12:00	6.74 pH	70.71 °F	1,298.0 µS/cm	0.19 mg/L	2.13 NTU	-31.2 mV	7.02 ft	150.00 ml/min
9/22/2022 4:09 PM	15:00	6.76 pH	70.92 °F	1,340.5 µS/cm	0.19 mg/L	2.18 NTU	-37.2 mV	7.02 ft	150.00 ml/min
9/22/2022 4:12 PM	18:00	6.77 pH	70.76 °F	1,364.4 µS/cm	0.18 mg/L	2.24 NTU	-41.1 mV	7.02 ft	150.00 ml/min
9/22/2022 4:15 PM	21:00	6.78 pH	70.67 °F	1,391.0 µS/cm	0.17 mg/L	2.30 NTU	-43.4 mV	7.02 ft	150.00 ml/min
9/22/2022 4:18 PM	24:00	6.79 pH	70.61 °F	1,411.8 µS/cm	0.17 mg/L	3.30 NTU	-45.7 mV	7.02 ft	150.00 ml/min
9/22/2022 4:21 PM	27:00	6.79 pH	70.63 °F	1,436.6 µS/cm	0.16 mg/L	2.55 NTU	-48.0 mV	7.02 ft	150.00 ml/min
9/22/2022 4:24 PM	30:00	6.80 pH	70.76 °F	1,467.0 µS/cm	0.16 mg/L	2.23 NTU	-50.5 mV	7.02 ft	150.00 ml/min
9/22/2022 4:27 PM	33:00	6.81 pH	70.82 °F	1,512.9 µS/cm	0.16 mg/L	2.26 NTU	-52.8 mV	7.02 ft	150.00 ml/min
9/22/2022 4:30 PM	36:00	6.82 pH	70.85 °F	1,564.3 µS/cm	0.15 mg/L	3.07 NTU	-55.1 mV	7.02 ft	150.00 ml/min

9/22/2022 4:33 PM	39:00	6.83 pH	70.86 °F	1,624.4 µS/cm	0.15 mg/L	2.58 NTU	-57.5 mV	7.02 ft	150.00 ml/min
9/22/2022 4:36 PM	42:00	6.84 pH	70.72 °F	1,677.7 µS/cm	0.15 mg/L	2.28 NTU	-59.9 mV	7.02 ft	150.00 ml/min
9/22/2022 4:39 PM	45:00	6.84 pH	70.82 °F	1,730.8 µS/cm	0.15 mg/L	2.36 NTU	-62.2 mV	7.02 ft	150.00 ml/min

Samples

Sample ID:	Description:
A-10	Sample Time: 1640 Conductivity did not stabilize after 45 min purge

Low-Flow Test Report:

Test Date / Time: 9/22/2022 4:23:17 PM

Project: KMLT Harbor Island

Operator Name: ES

Location Name: A-8 Well Diameter: 4 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 3 ft Total Depth: 13 ft Initial Depth to Water: 7.99 m	Pump Type: Geopump Tubing Type: 1/4 polyethylene Estimated Total Volume Pumped: 6750 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 m	Instrument Used: Aqua TROLL 600 Vented Serial Number: 457166
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Test Notes:

Pump on 1620

RDO and Specifically conductivity did not stabilize

Final DTW 7.98

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/22/2022 4:23 PM	00:00	6.60 pH	76.93 °F	799.57 µS/cm	1.26 mg/L	676.28 NTU	-117.0 mV	7.99 m	150.00 ml/min
9/22/2022 4:26 PM	03:00	6.65 pH	74.07 °F	808.39 µS/cm	0.34 mg/L	591.83 NTU	-120.6 mV	7.99 m	150.00 ml/min
9/22/2022 4:29 PM	06:00	6.66 pH	73.44 °F	763.98 µS/cm	0.28 mg/L	600.71 NTU	-116.0 mV	7.99 m	150.00 ml/min
9/22/2022 4:32 PM	09:00	6.67 pH	73.23 °F	430.58 µS/cm	0.22 mg/L	599.13 NTU	-109.8 mV	7.99 m	150.00 ml/min
9/22/2022 4:35 PM	12:00	6.67 pH	72.88 °F	533.41 µS/cm	0.20 mg/L	601.00 NTU	-110.7 mV	7.99 m	150.00 ml/min
9/22/2022 4:38 PM	15:00	6.67 pH	72.93 °F	489.96 µS/cm	0.23 mg/L	606.85 NTU	-118.9 mV	7.99 m	150.00 ml/min
9/22/2022 4:41 PM	18:00	6.67 pH	72.87 °F	54.43 µS/cm	0.18 mg/L	617.96 NTU	-119.3 mV	7.99 m	150.00 ml/min
9/22/2022 4:44 PM	21:00	6.67 pH	72.89 °F	3.77 µS/cm	0.17 mg/L	636.13 NTU	-122.8 mV	7.99 m	150.00 ml/min
9/22/2022 4:47 PM	24:00	6.67 pH	72.01 °F	528.66 µS/cm	0.21 mg/L	622.01 NTU	-124.4 mV	7.99 m	150.00 ml/min
9/22/2022 4:50 PM	27:00	6.68 pH	72.11 °F	165.69 µS/cm	0.17 mg/L	622.86 NTU	-126.1 mV	7.99 m	150.00 ml/min
9/22/2022 4:53 PM	30:00	6.68 pH	72.06 °F	54.39 µS/cm	0.15 mg/L	643.22 NTU	-129.1 mV	7.99 m	150.00 ml/min
9/22/2022 4:56 PM	33:00	6.68 pH	72.14 °F	2.81 µS/cm	0.16 mg/L	654.26 NTU	-126.0 mV	7.99 m	150.00 ml/min
9/22/2022 4:59 PM	36:00	6.68 pH	72.12 °F	3.32 µS/cm	0.13 mg/L	677.43 NTU	-129.5 mV	7.99 m	150.00 ml/min
9/22/2022 5:02 PM	39:00	6.68 pH	71.92 °F	3.70 µS/cm	0.14 mg/L	745.83 NTU	-131.5 mV	7.99 m	150.00 ml/min
9/22/2022 5:05 PM	42:00	6.68 pH	71.51 °F	491.85 µS/cm	0.17 mg/L	1,041.3 NTU	-127.1 mV	7.99 m	150.00 ml/min

9/22/2022 5:08 PM	45:00	6.68 pH	71.55 °F	419.27 µS/cm	0.18 mg/L	1,126.5 NTU	-129.1 mV	7.99 m	150.00 ml/min
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Samples

Sample ID:	Description:
A-8	Sample time 17:10

Low-Flow Test Report:

Test Date / Time: 9/22/2022 5:02:09 PM
Project: Kinder Morgan Harbor Island (57)
Operator Name: Joseph Sepiol

Location Name: A-5 Well Diameter: 4 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 5 ft Total Depth: 15 ft Initial Depth to Water: 7.9 ft	Pump Type: Peristaltic Tubing Type: .170x1/4 polyethylene Pump Intake From TOC: 10 ft Estimated Total Volume Pumped: 6750 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 466586
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Test Notes:
Final DTW: 7.05 ft

Weather Conditions:
75F clear. Light wind.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
9/22/2022 5:02 PM	00:00	7.20 pH	75.60 °F	772.88 µS/cm	4.17 mg/L	4.37 NTU	-28.5 mV	7.90 ft	150.00 ml/min
9/22/2022 5:05 PM	03:00	7.02 pH	74.69 °F	808.55 µS/cm	0.32 mg/L	2.31 NTU	-46.5 mV	7.90 ft	150.00 ml/min
9/22/2022 5:08 PM	06:00	7.00 pH	74.03 °F	786.70 µS/cm	0.27 mg/L	2.27 NTU	-61.2 mV	7.90 ft	150.00 ml/min
9/22/2022 5:11 PM	09:00	7.01 pH	71.63 °F	667.05 µS/cm	0.26 mg/L	2.35 NTU	-73.3 mV	7.90 ft	150.00 ml/min
9/22/2022 5:14 PM	12:00	7.08 pH	71.75 °F	608.06 µS/cm	0.23 mg/L	2.30 NTU	-81.0 mV	7.90 ft	150.00 ml/min
9/22/2022 5:17 PM	15:00	7.10 pH	71.63 °F	552.52 µS/cm	0.22 mg/L	2.32 NTU	-83.1 mV	7.90 ft	150.00 ml/min
9/22/2022 5:20 PM	18:00	7.11 pH	71.55 °F	568.13 µS/cm	0.21 mg/L	2.34 NTU	-83.3 mV	7.90 ft	150.00 ml/min
9/22/2022 5:23 PM	21:00	7.13 pH	71.38 °F	622.33 µS/cm	0.21 mg/L	2.31 NTU	-82.7 mV	7.90 ft	150.00 ml/min
9/22/2022 5:26 PM	24:00	7.14 pH	71.12 °F	697.61 µS/cm	0.20 mg/L	2.25 NTU	-81.9 mV	7.90 ft	150.00 ml/min
9/22/2022 5:29 PM	27:00	7.16 pH	70.99 °F	709.91 µS/cm	0.20 mg/L	2.28 NTU	-81.7 mV	7.90 ft	150.00 ml/min
9/22/2022 5:32 PM	30:00	7.15 pH	70.90 °F	599.65 µS/cm	0.20 mg/L	2.27 NTU	-80.9 mV	7.90 ft	150.00 ml/min
9/22/2022 5:35 PM	33:00	7.14 pH	70.79 °F	619.81 µS/cm	0.19 mg/L	2.21 NTU	-80.1 mV	7.90 ft	150.00 ml/min
9/22/2022 5:38 PM	36:00	7.12 pH	70.67 °F	681.58 µS/cm	0.19 mg/L	2.77 NTU	-79.5 mV	7.90 ft	150.00 ml/min

9/22/2022 5:41 PM	39:00	7.11 pH	70.45 °F	677.79 µS/cm	0.19 mg/L	3.38 NTU	-79.4 mV	7.90 ft	150.00 ml/min
9/22/2022 5:44 PM	42:00	7.09 pH	70.64 °F	718.21 µS/cm	0.18 mg/L	2.79 NTU	-79.6 mV	7.90 ft	150.00 ml/min
9/22/2022 5:47 PM	45:00	7.06 pH	70.45 °F	717.17 µS/cm	0.18 mg/L	2.81 NTU	-80.8 mV	7.90 ft	150.00 ml/min

Samples

Sample ID:	Description:
A-5	Sample time: 1750 Conductivity did not stabilize after 45 min purge

Well ID: TMW-5
Date: 4.18.22

Elapsed Time	NTU	Elapsed Time	NTU
0	0.08	24	0.02
3	0.02	27	0.02
6	0.02	30	
9	0.02	33	
12	0.02	36	
15	0.02	39	
18	0.02	42	
21	0.02	45	

Well ID: TMW-3
Date: 4.18.22

Elapsed Time	NTU	Elapsed Time	NTU
0	8.59	24	0.02
3	3.68	27	
6	2.76	30	
9	0.02	33	
12	0.02	36	
15	0.02	39	
18	0.02	42	
21	0.02	45	

Well ID: TMW-12
Date: 4.18.22

meter
broken

Elapsed Time	NTU	Elapsed Time	NTU
0	4.90	24	
3	-	27	
6	0.05	30	
9	0.13	33	
12	0.38	36	
15	0.66	39	
18	0.02	42	
21		45	

Well ID: _____
Date: _____

Elapsed Time	NTU	Elapsed Time	NTU
0		24	
3		27	
6		30	
9		33	
12		36	
15		39	
18		42	
21		45	

Well ID: MW-7 / DUP-1
Date: 4.18.22

Elapsed Time	NTU	Elapsed Time	NTU
0	0.02	24	
3	2.16	27	
6	0.02	30	
9	0.02	33	
12	0.02	36	
15		39	
18		42	
21		45	

Well ID: _____
Date: _____

Elapsed Time	NTU	Elapsed Time	NTU
0		24	
3		27	
6		30	
9		33	
12		36	
15		39	
18		42	
21		45	

Well ID: TMW-2
Date: 4.19.22

Elapsed Time	NTU	Elapsed Time	NTU
0	0.37	24	0.02
3	0.02	27	
6	0.02	30	
9	0.02	33	
12	0.02	36	
15	0.02	39	
18	0.02	42	
21	0.02	45	

Well ID: A-27
Date: 4.19.22

Elapsed Time	NTU	Elapsed Time	NTU
0	9.34	24	2.48
3	4.13	27	3.17
6	3.98	30	
9	4.37	33	
12	3.07	36	
15	2.94	39	
18	3.57	42	
21	3.13	45	

Well ID: TMW-1
Date: 4.19.22

Elapsed Time	NTU	Elapsed Time	NTU
0	0.02	24	0.02
3	0.02	27	0.02
6	0.02	30	
9	0.02	33	
12	0.02	36	
15	0.02	39	
18	0.02	42	
21	0.02	45	

AT times switched to hours

Well ID: A-28R
Date: 4.19.22

Elapsed Time	NTU	Elapsed Time	NTU
0	0.02	24	
3	0.02	27	
6	0.02	30	
9	0.02	33	
12	0.02	36	
15	0.02	39	
18	0.02	42	
21		45	

final DTW 7.73'

Well ID: A-21
Date: 4.19.22

Elapsed Time	NTU	Elapsed Time	NTU
0	2.00	24	0.02
3	0.43	27	0.08
6	0.47	30	0.02
9	0.38	33	0.02
12	0.02	36	0.02
15	0.02	39	
18	0.49	42	
21	0.75	45	

Well ID: A-5 MW-23
Date: 4.19.22

Elapsed Time	NTU	Elapsed Time	NTU
0	0.02	24	
3	0.02	27	
6	0.02	30	
9	0.02	33	
12	0.02	36	
15	0.02	39	
18		42	
21		45	

Turbidity Readings

Well ID: MW-9
Date: 4-19

Elapsed Time	NTU	Elapsed Time	NTU
0	25.1	24	0.43
3	13.8	27	
6	6.16	30	
9	2.98	33	
12	3.82	36	
15	3.00	39	
18	0.82	42	
21	1.31	45	

FLOATING SUSPENDED PARTICLES IN DISCHARGE.
NTUS WITHIN ± 2 NTUS. RANGE OF READINGS
ON EACH SAMPLE

Well ID: TMW-6
Date: 4/19

Elapsed Time	NTU	Elapsed Time	NTU
0	9.34	24	
3	9.00	27	
6	9.34	30	
9	8.42	33	
12		36	
15		39	
18		42	
21		45	

Well ID: 11
Date: 4/19

Elapsed Time	NTU	Elapsed Time	NTU
0	0.00	24	0.00
3	0.00	27	
6	0.00	30	
9	0.00	33	
12	0.00	36	
15	0.00	39	
18	0.00	42	
21	0.00	45	

Well ID: TMW-4 (1255)
Date: 4/19

Elapsed Time	NTU	Elapsed Time	NTU
0	0.83	24	
3	2.11	27	
6	1.37	30	
9	0.68	33	
12	1.64	36	
15	2.44	39	
18	3.47	42	
21		45	

Well ID: MW-21
Date: 4/19

Elapsed Time	NTU	Elapsed Time	NTU
0	16.83	24	8.50
3	12.81	27	8.79
6	8.44	30	
9	7.99	33	
12	8.31	36	
15	9.92	39	
18	8.82	42	
21	8.89	45	

Well ID: MW-19 (1355)
Date: 4/19

Elapsed Time	NTU	Elapsed Time	NTU
0	3.68	24	
3	1.48	27	
6	1.40	30	
9	1.36	33	
12	1.23	36	
15		39	
18		42	
21		45	

[Signature]
4/19/22

Well ID: MW-24
Date: 4/19

Elapsed Time	NTU	Elapsed Time	NTU
0	16.49	24	6.09
3	7.73	27	6.99
6	8.15	30	7.28
9	11.04	33	6.21
12	7.04	36	7.25
15	7.44	39	5.73
18	7.68	42	5.68
21	7.67	45	5.50

Well ID: _____
Date: _____

Elapsed Time	NTU	Elapsed Time	NTU
0		24	
3		27	
6		30	
9		33	
12		36	
15		39	
18		42	
21		45	

Well ID: _____
Date: _____

Elapsed Time	NTU	Elapsed Time	NTU
0		24	
3		27	
6		30	
9		33	
12		36	
15		39	
18		42	
21		45	

Well ID: _____
Date: _____

Elapsed Time	NTU	Elapsed Time	NTU
0		24	
3		27	
6		30	
9		33	
12		36	
15		39	
18		42	
21		45	

Well ID: _____
Date: _____

Elapsed Time	NTU	Elapsed Time	NTU
0		24	
3		27	
6		30	
9		33	
12		36	
15		39	
18		42	
21		45	

Well ID: _____
Date: _____

Elapsed Time	NTU	Elapsed Time	NTU
0		24	
3		27	
6		30	
9		33	
12		36	
15		39	
18		42	
21		45	

[Handwritten signature]
4/19/22

Well ID: A-5
 Date: 4.20.22

Elapsed Time	NTU	Elapsed Time	NTU
0	7.78	24	0.02
3	1.04	27	0.02
6	0.02	30	0.02
9	0.02	33	0.02
12	0.02	36	0.02
15	0.02	39	0.02
18	0.02	42	0.02
21	0.02	45	0.02

Well ID: _____
 Date: _____

Elapsed Time	NTU	Elapsed Time	NTU
0		24	
3		27	
6		30	
9		33	
12		36	
15		39	
18		42	
21		45	

Well ID: A-5 (cont.)
 Date: 4.20.22

Elapsed Time	NTU	Elapsed Time	NTU
48	0.02	24	
51	0.02	27	
54	0.02	30	
57	0.02	33	
60	0.02	36	
15		39	
18		42	
21		45	

Well ID: _____
 Date: _____

Elapsed Time	NTU	Elapsed Time	NTU
0		24	
3		27	
6		30	
9		33	
12		36	
15		39	
18		42	
21		45	

Well ID: _____
 Date: _____

Elapsed Time	NTU	Elapsed Time	NTU
0		24	
3		27	
6		30	
9		33	
12		36	
15		39	
18		42	
21		45	

Well ID: _____
 Date: _____

Elapsed Time	NTU	Elapsed Time	NTU
0		24	
3		27	
6		30	
9		33	
12		36	
15		39	
18		42	
21		45	

Well ID: A-23R
 Date: 9/19/2022

Elapsed Time	NTU	Elapsed Time	NTU
0	44.2	24	1.82
3	4.5	27	2.25
6	4.56	30	
9	2.53	33	
12	1.92	36	
15	2.60	39	
18	2.99	42	
21	1.66	45	

Well ID: MW-3
 Date: 9/20/2022

Elapsed Time	NTU	Elapsed Time	NTU
0	26.6	24	
3	3.15	27	
6	2.37	30	
9	1.53	33	
12	1.30	36	
15		39	
18		42	
21		45	

Well ID: MW-1
 Date: 9/19/2022

Elapsed Time	NTU	Elapsed Time	NTU
0	2.25	24	
3	40.8	27	
6	33.7	30	
9	30.4	33	
12	26.8	36	
15	23.3	39	
18	23.2	42	
21		45	

Well ID: TMW-1
 Date: 9/20

Elapsed Time	NTU	Elapsed Time	NTU
0	45.9	24	
3	14.1	27	
6	13.8	30	
9	11.7	33	
12	10.7	36	
15	4.87	39	
18		42	
21		45	

Well ID: MW-20
 Date: 9/20/2022

Elapsed Time	NTU	Elapsed Time	NTU
0	22.4	24	7.60
3	15.2	27	7.33
6	9.52	30	7.23
9	11.2	33	
12	10.3	36	
15	9.49	39	
18	8.47	42	
21	7.78	45	

Well ID: TMW-2
 Date: 9/20/22

Elapsed Time	NTU	Elapsed Time	NTU
0	8.97	24	1.52
3	1.15	27	1.60
6	0.63	30	1.48
9	1.33	33	1.52
12	1.30	36	1.46
15	1.22	39	
18	1.16	42	
21	1.96	45	

Well ID: TMW-5
Date: 09-20-22

Elapsed Time	NTU	Elapsed Time	NTU
0	4.80	24	0.02
3	7.67	27	0.02
6	1.37	30	0.02
9	0.71	33	0.02
12	8.38	36	0.02
15	0.02	39	0.02
18	0.02	42	0.02
21	0.02	45	

Well ID: 12
Date: 09-20-22

Elapsed Time	NTU	Elapsed Time	NTU
0	10.6	24	2.2
3	7.65	27	
6	4.03	30	7.51
9	4.67	33	7.23
12	3.17	36	4.77
15	1.17	39	3.75
18	2.15	42	2.20
21	3.31	45	5.52

Well ID: MW-7
Date: 9-20-22

Elapsed Time	NTU	Elapsed Time	NTU
0	3.97	24	2.98
3	2.65	27	0.91
6	1.29	30	1.67
9	0.63	33	2.53
12	3.53	36	1.76
15	1.61	39	1.57
18	0.37	42	1.83
21	1.54	45	1.51

Well ID: 1MW-3
Date: 9-20-22

Elapsed Time	NTU	Elapsed Time	NTU
0	1.47	24	0.02
3	0.02	27	
6	0.02	30	
9	0.02	33	
12	0.02	36	
15	0.02	39	
18	0.02	42	
21	0.02	45	

Well ID: TMW-4
Date: 9-20-22

Elapsed Time	NTU	Elapsed Time	NTU
0	1.24	24	1.73
3	2.41	27	1.93
6	1.35	30	0.90
9	1.94	33	1.40
12	3.14	36	2.46
15	1.50	39	0.94
18	0.83	42	0.84
21	1.92	45	1.01

Well ID: MW-18
Date: 9-21-22

Elapsed Time	NTU	Elapsed Time	NTU
0	63.2	24	8.28
3	55.4	27	5.55
6	42.1	30	4.37
9	31.4	33	3.10
12	21.7	36	4.02
15	20.1	39	3.89
18	14.7	42	
21	10.1	45	

Well ID: MW-5
Date: 9/20/22

Elapsed Time	NTU	Elapsed Time	NTU
0	11.3	24	1.14
3	0.74	27	1.03
6	1.24	30	0.97
9	1.06	33	
12	0.99	36	
15	0.72	39	
18	1.10	42	
21	1.12	45	

Well ID: MW-19
Date: 9/20/22

Elapsed Time	NTU	Elapsed Time	NTU
0	25.5	24	12.7
3	14.0	27	12.8
6	13.2	30	12.5
9	16.0	33	
12	12.9	36	
15	12.8	39	
18	12.7	42	
21	12.8	45	

Well ID: MW-14
Date: 9/20/22

Elapsed Time	NTU	Elapsed Time	NTU
0	9.37	24	7.13
3	7.99	27	
6	7.43	30	
9	7.16	33	
12	7.98	36	
15	7.58	39	
18	7.63	42	
21	7.42	45	

Well ID: TMW-B1
Date: 9/21/22

Elapsed Time	NTU	Elapsed Time	NTU
0	18.9	24	8.85
3	13.2	27	8.38
6	12.2	30	7.91
9	12.9	33	
12	10.7	36	
15	9.81	39	
18	9.19	42	
21	8.95	45	

Well ID: MW-6
Date: 9/21/22

Elapsed Time	NTU	Elapsed Time	NTU
0	21.3	24	10.1
3	28.4	27	9.98
6	11.0	30	9.63
9	12.4	33	9.74
12	11.1	36	9.20
15	10.8	39	9.91
18	10.2	42	10.1
21	9.80	45	9.84

Well ID: A-27
Date: 9/21/22

Elapsed Time	NTU	Elapsed Time	NTU
0	19.5	24	11.1
3	13.2	27	11.5
6	14.6	30	
9	11.2	33	
12	11.6	36	
15	11.1	39	
18	11.1	42	
21	11.2	45	

Well ID: VN-16
Date: 09-21-22

Elapsed Time	NTU	Elapsed Time	NTU
0	2.93	24	
3	0.02	27	
6	0.02	30	
9	0.02	33	
12	0.02	36	
15	0.02	39	
18	0.02	42	
21		45	

Well ID: A-28R
Date: 09-21-22

Elapsed Time	NTU	Elapsed Time	NTU
0	0.11	24	0.02
3	0.02	27	0.02
6	0.02	30	1.00
9	0.02	33	0.02
12	0.02	36	4.52 0.02
15	0.02	39	0.53
18	0.02	42	0.79
21	0.02	45	

Well ID: A-21
Date: 09-21-22

Elapsed Time	NTU	Elapsed Time	NTU
0	5.09	24	1.86
3	1.58	27	2.12
6	1.94	30	1.68
9	0.04	33	0.41
12	0.76	36	0.31
15	0.02	39	0.62
18	0.96	42	0.02
21	1.24	45	0.02

Well ID: MW-2
Date: 09-21-22

Elapsed Time	NTU	Elapsed Time	NTU
0	2.63	24	
3	2.59	27	
6	6.20	30	
9	6.42	33	
12	6.42 5.78	36	
15	4.77	39	
18	3.96	42	
21	0.93	45	

Well ID: MW-9
Date: 09-22-22

Elapsed Time	NTU	Elapsed Time	NTU
0	8.82	24	2.38
3	4.81	27	3.02
6	3.82	30	
9	4.47	33	
12	4.52	36	
15	4.99	39	
18	3.57	42	
21	3.60	45	

Well ID: TMW-6
Date: 9-22-22

Elapsed Time	NTU	Elapsed Time	NTU
0	1.73	24	8.10
3	10.2	27	8.43
6	12.00	30	9.20
9	7.60	33	
12	5.71	36	
15	6.22	39	
18	6.40	42	
21	7.26	45	

Well ID: MW-24
Date: 9/21/22

Elapsed Time	NTU	Elapsed Time	NTU
0	12.3	24	10.6
3	10.5	27	10.3
6	9.29	30	
9	8.91	33	
12	10.3	36	
15	9.77	39	
18	10.6	42	
21	9.91	45	

Well ID: SH-05R
Date: 9/22/22

Elapsed Time	NTU	Elapsed Time	NTU
0	20.3	24	8.11
3	15.6	27	7.91
6	12.8	30	7.76
9	12.5	33	7.71
12	11.8	36	7.57
15	11.5	39	7.71
18	9.26	42	7.53
21	8.53	45	7.62

Well ID: MW-23
Date: 9/21

Elapsed Time	NTU	Elapsed Time	NTU
0	6.44	24	
3	7.24	27	
6	7.62	30	
9	7.14	33	
12	7.74	36	
15	7.12	39	
18	7.75	42	
21		45	

Well ID: MW-07R
Date: 9/22/22

Elapsed Time	NTU	Elapsed Time	NTU
0	10.1	24	8.55
3	17.2	27	8.87
6	26.7	30	9.00
9	18.7	33	8.83
12	13.0	36	9.43
15	9.38	39	9.12
18	8.98	42	8.72
21	9.27	45	9.04

Well ID: MW-22
Date: 9/21

Elapsed Time	NTU	Elapsed Time	NTU
0	27.3	24	
3	10.7	27	
6	14.5	30	
9	11.4	33	
12	10.7	36	
15	9.91	39	
18	10.1	42	
21		45	

Well ID: MW-4
Date: 9/22/22

Elapsed Time	NTU	Elapsed Time	NTU
0	21.6	24	
3	10.5	27	
6	8.06	30	
9	8.14	33	
12	7.77	36	
15	7.56	39	
18	7.42	42	
21		45	

Well ID: MW-21

Date: 09-22-22

Elapsed Time	NTU	Elapsed Time	NTU
0	15.1	24	14.6
3	16.3	27	
6	16.9	30	
9	15.2	33	
12	17.3	36	
15	15.3	39	
18	16.5	42	
21	15.8	45	

Well ID: MW-8

Date: 09-22-22

Elapsed Time	NTU	Elapsed Time	NTU
0	33.1	24	23.8
3	26.6	27	27.8
6	25.7	30	
9	26.4	33	
12	25.6	36	
15	29.4	39	
18	26.1	42	
21	26.2	45	

Well ID: 11

Date: 09-22-22

Elapsed Time	NTU	Elapsed Time	NTU
0	17.6	24	
3	15.9	27	
6	31.0	30	
9	35.0	33	
12	38.0	36	
15	29.4	39	
18	27.5	42	
21		45	

Well ID: A-B

Date: 09-22-22

Elapsed Time	NTU	Elapsed Time	NTU
0	5.92	24	2.57
3	0.62	27	3.71
6	0.02	30	8.02
9	0.02	33	1.27
12	0.62	36	3.17
15	0.02	39	0.55
18	6.41	42	1.17
21	0.83	45	0.26

Well ID: _____

Date: _____

Elapsed Time	NTU	Elapsed Time	NTU
0		24	
3		27	
6		30	
9		33	
12		36	
15		39	
18		42	
21		45	

Well ID: _____

Date: _____

Elapsed Time	NTU	Elapsed Time	NTU
0		24	
3		27	
6		30	
9		33	
12		36	
15		39	
18		42	
21		45	

Well ID: MW-12R

Date: 9/22/22

Elapsed Time	NTU	Elapsed Time	NTU
0	8.02	24	
3	5.05	27	
6	5.11	30	
9	4.82	33	
12	4.45	36	
15	4.77	39	
18	4.63	42	
21		45	

Well ID: A-10

Date: 9/22/22

Elapsed Time	NTU	Elapsed Time	NTU
0	8.14	24	6.04
3	5.04	27	5.97
6	5.64	30	5.68
9	6.77	33	4.92
12	6.37	36	5.16
15	5.95	39	5.70
18	6.12	42	5.92
21	5.83	45	5.84

Well ID: SH-02R

Date: 9/22/22

Elapsed Time	NTU	Elapsed Time	NTU
0	6.03	24	
3	3.31	27	
6	5.08	30	
9	4.99	33	
12	4.37	36	
15	4.62	39	
18	4.84	42	
21		45	

Well ID: A-5

Date: 9/22/22

Elapsed Time	NTU	Elapsed Time	NTU
0	7.36	24	2.54
3	4.31	27	2.60
6	3.65	30	2.61
9	2.50	33	2.54
12	2.46	36	2.80
15	2.33	39	2.62
18	2.42	42	2.51
21	2.67	45	2.71

Well ID: A-14R

Date: 9/22/22

Elapsed Time	NTU	Elapsed Time	NTU
0	12.9	24	5.22
3	10.8	27	
6	8.09	30	
9	9.15	33	
12	5.72	36	
15	5.38	39	
18	5.46	42	
21	5.03	45	

Well ID: _____

Date: _____

Elapsed Time	NTU	Elapsed Time	NTU
0		24	
3		27	
6		30	
9		33	
12		36	
15		39	
18		42	
21		45	

Site ID: KMLT Harbor Island Terminal
 Site Address: 2720 13th Ave SW, Seattle, WA

Project #: 30050809

 Date: ~~10/19/2020~~ 4/18-22

Well ID	Time	Sheen/ Odor	LNAPL Depth (ft btoc)	LNAPL Thickness (feet)	DTW (feet btoc)	TD (feet btoc)	Notes
A-4	1007	—	—	—	6.73		
A-5	1010	—	—	—	7.52		
A-6	1003	—	—	—	6.33		
A-8	1001	odor	—	—	7.54		
A-10	0945	—	—	—	6.70		
A-11	1010	—	—	—	7.50	24.55	
A-12	0943	—	—	—	12.26	23.26	
A-14R	0942	—	—	—	7.44		
A-16	1010	strong odor, detectable sheen	—	—	7.09	13.95	
A-18	0948	—	—	—	7.87		
A-19	1029	—	—	—	7.80	14:00	
A-20	1030	—	—	—	7.45		
A-21	1033	—	—	—	7.50		
A-22R	1034	strong odor sheen on probe	—	—	7.22	14.66	
A-23R	1155	—	—	—	8.80	15.90	
A-25	1019	—	—	—	7.09		sherwood cover
A-26R	1039	strong odor sheen on probe	—	—	7.22	14.66	
A-27	1045	mild odor	—	—	10.20	18.08	soft bottom, biofilm on probe. replaced - J-plug - 4"
A-28R	1048	—	—	—	7.76		
11	0926	—	—	—	3.93		
12	0901	moderate odor + sheen	—	—	1.55	7.53	
MW-07R	1120	—	—	—	5.83	12.74	
MW-1	1135	—	—	—	4.99		
MW-2	1108	—	—	—	8.30	12.66	
MW-3	0855	—	—	—	2.39		

Site ID: **KMLT Harbor Island Terminal**

Project #: 30050809

 Site Address: **2720 13th Ave SW, Seattle, WA**

 Date: **04/18/2022**

Well ID	Time	Sheen/ Odor	LNAPL Depth (ft btoc)	LNAPL Thickness (feet)	DTW (feet btoc)	TD (feet btoc)	Notes
MW-4	1126	—	—	—	5.92		
MW-5	0839	—	—	—	2.22		
MW-6	1102	—	—	—	6.37	13.10	
MW-7	0847	—	—	—	2.10	12.78	
MW-8	0917	—	—	—	3.05	13.10	casing split & bent at 1.3 ft interval
MW-9	0911	—	—	—	2.40	12.93	
MW-12R	1126	—	—	—	7.02	14.31	destroyed vault
MW-14	0837	—	—	—	2.65		
MW-16	1058	—	—	—	6.14		
MW-18	1109	—	—	—	6.13		
MW-19	0851	odor	—	—	2.15		
MW-20	0900	—	—	—	2.61		
MW-21	0923	—	—	—	2.55	11.61	
MW-22	1101	—	—	—	7.36		
MW-23	1037	—	—	—	7.29		
MW-24	1043	—	—	—	7.28		
MW-25	MW cover could not be removed.						
SH-02R	1131	—	—	—	4.89	14.50	soft bottom biofilm
SH-05R	1119	—	—	—	6.67		
TMW-B1	1057	sheen on probe, strong odor	—	—	7.20	14.77	
TMW-1	0846	—	—	—	2.64		
TMW-2	0843	—	—	—	2.74		
TMW-3	0852	—	—	—	2.97	10.61	
TMW-4	0856	mild odor & sheen	—	—	2.55	15.43	
TMW-5	0837	moderate odor & sheen	—	—	2.69	13.89	visible sheen on well and on probe
TMW-6	0906	mild odor & sheen	—	—	1.75	14.19	

Site ID: KMLT Harbor Island Terminal
 Site Address: 2720 13th Ave SW, Seattle, WA

Project #: 30050809

Date: 09/19/2022

Well ID	Time	Sheen/ Odor	LNAPL Depth (ft btoc)	LNAPL Thickness (feet)	DTW (feet btoc)	TD (feet btoc)	Notes
A-4	1150	—	—	—	7.02	12.53	14 PPM
A-5	1145	—	—	—	7.81	14.79	114 PPM
A-6	16:03		6.81		6.81	13.90	09/20/2022
A-8	1140	ODOR	—	—	8.95	24.85	SOFT BOTTOM 15. PPM ODOR ON PROBE
A-10	1135	—	—	—	7.10	23.98	0.0 PPM
A-11	1130	—	—	—	7.85	24.52	0.0 PPM
A-12	1125	—	—	—	6.60	23.23	0.0 PPM
A-14R	1120	—	—	—	8.74	14.90	0.0 PPM
A-16	16:13		8.05		8.05	13.95	09/20/2022
A-18	1115	—	—	—	8.18	13.76	0 PPM
A-19							
A-20							
A-21							
A-22R	1245	STRONG ODOR	—	—	7.63	14.64	13 PPM
A-23R	1455	—	—	—	9.10	15.86	0.0 PPM
A-25	1110	—	—	—	7.51	13.85	14 PPM
A-26R	1248	—	—	—	8.72	14.43	57 PPM
A-27	1255	STRONG ODOR	—	—	10.72	18.07	481 PPM
A-28R	1326	—	—	—	8.35	14.28	38
11							
12							
MW-07R							
MW-1	1616	—	—	—	6.15	12.88	0 PPM
MW-2	1316	—	—	—	7.81	12.79	0 PPM UNEVEN BOTTOM
MW-3	1030	—	—	—	3.97	13.30	0.0 PPM

Site ID: KMLT Harbor Island Terminal
 Site Address: 2720 13th Ave SW, Seattle, WA

Project #: 30050809
 Date: 09/19/2022

Well ID	Time	Sheen/ Odor	LNAPL Depth (ft btoc)	LNAPL Thickness (feet)	DTW (feet btoc)	TD (feet btoc)	Notes
MW-4	1343	—	—	—	7.13	14.17	34 PPM
MW-5	1011	—	—	—	3.69	13.12	0.0 PPM
MW-6	1307	—	—	—	7.69	13.07	0 PPM
MW-7							
MW-8							15.0 PPM
MW-9							
MW-12R							
MW-14	0955	—	—	—	4.10	13.60	0.0 PPM
MW-16							
MW-18							
MW-19	1004	—	—	—	3.63	12.94	5.0 PPM
MW-20	1020	—	—	—	5.97	11.66	0.0 PPM
MW-21							
MW-22	1314	—	—	—	8.83	13.27	8.83 PPM 0 PPM
MW-23							
MW-24	1230	ODOR	—	—	8.64	14.76	331 PPM
MW-25							CANNOT OPEN VAULT
SH-02R	1336	—	—	—	6.05	14.58	0 PPM
SH-05R							
TMW-B1	1302	ODOR	—	—	8.31	14.75	188 PPM
TMW-1							
TMW-2							
TMW-3							
TMW-4							
TMW-5							
TMW-6							

Site ID: KMLT Harbor Island Terminal
 Site Address: 2720 13th Ave SW, Seattle, WA

Project #: 30050809

Date: 09/19/2022

Well ID	Time	Sheen/ Odor	LNAPL Depth (ft btoc)	LNAPL Thickness (feet)	DTW (feet btoc)	TD (feet btoc)	Notes
A-4							
A-5							
A-6							
A-8							
A-10							
A-11							
A-12							
A-14R							
A-16							
A-18							
A-19	12:41	—	—	—	8.1	14.07	
A-20	12:46	—	—	—	7.76	13.56	
A-21	12:52	—	—	—	7.86	14.54	
A-22R							
A-23R							
A-25							
A-26R							
A-27							
A-28R							
11	11:47	—	—	—	5.19	10.82	
12	11:30	—	—	—	2.57	7.47	
MW-07R	13:55	—	—	—	6.67	12.68	
MW-1							
MW-2	11:10				7.67	13.56	
MW-3							

Sampler 1

Design & Consultant
for natural and
built assets

Site ID: KMLT Harbor Island Terminal
Site Address: 2720 13th Ave SW, Seattle, WA

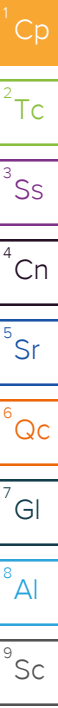
Project #: 30050809

Date: 09/19/2022

Well ID	Time	Sheen/ Odor	LNAPL Depth (ft btoc)	LNAPL Thickness (feet)	DTW (feet btoc)	TD (feet btoc)	Notes
MW-4							
MW-5	10:50	—	—	—	4.19	15.32	
MW-6							
MW-7	10:45	—	—	—	3.30	12.81	
MW-8	11:19	—	—	—	4.13	13.06	
MW-9	11:29	—	—	—	3.29	13.03	
MW-12R	13:46	—	—	—	7.95	14.22	3 TRM
MW-14	13:19	—	—	—	7.63	14.02	
MW-16	13:19	—	—	—	7.63	14.05	
MW-18	13:10	—	—	—	7.67	13.56	
MW-19							
MW-20							
MW-21	11:32	—	—	—	3.19	11.58	
MW-22	11:19	—	—	—	7.63	14.05	
MW-23	12:35	—	—	—	7.61	14.82	189 TRM
MW-24							
MW-25							
SH-02R							
SH-05R	13:39	—	—	—	7.17	13.66	
TMW-B1							
TMW-1	10:15	—	—	—	4.05	13.31	
TMW-2	10:07	—	—	—	4.19	15.32	
TMW-3	10:52	—	—	—	4.21	15.48	
TMW-4	10:50	—	—	—	3.94	15.42	
TMW-5	10:27	—	—	—	3.71	13.85	
TMW-6	10:24	—	—	—	3.03	14.17	

Appendix C

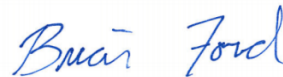
Laboratory Reports and Chain-of-Custody Documentation



Kinder Morgan- Houston, TX(Scott Martin)

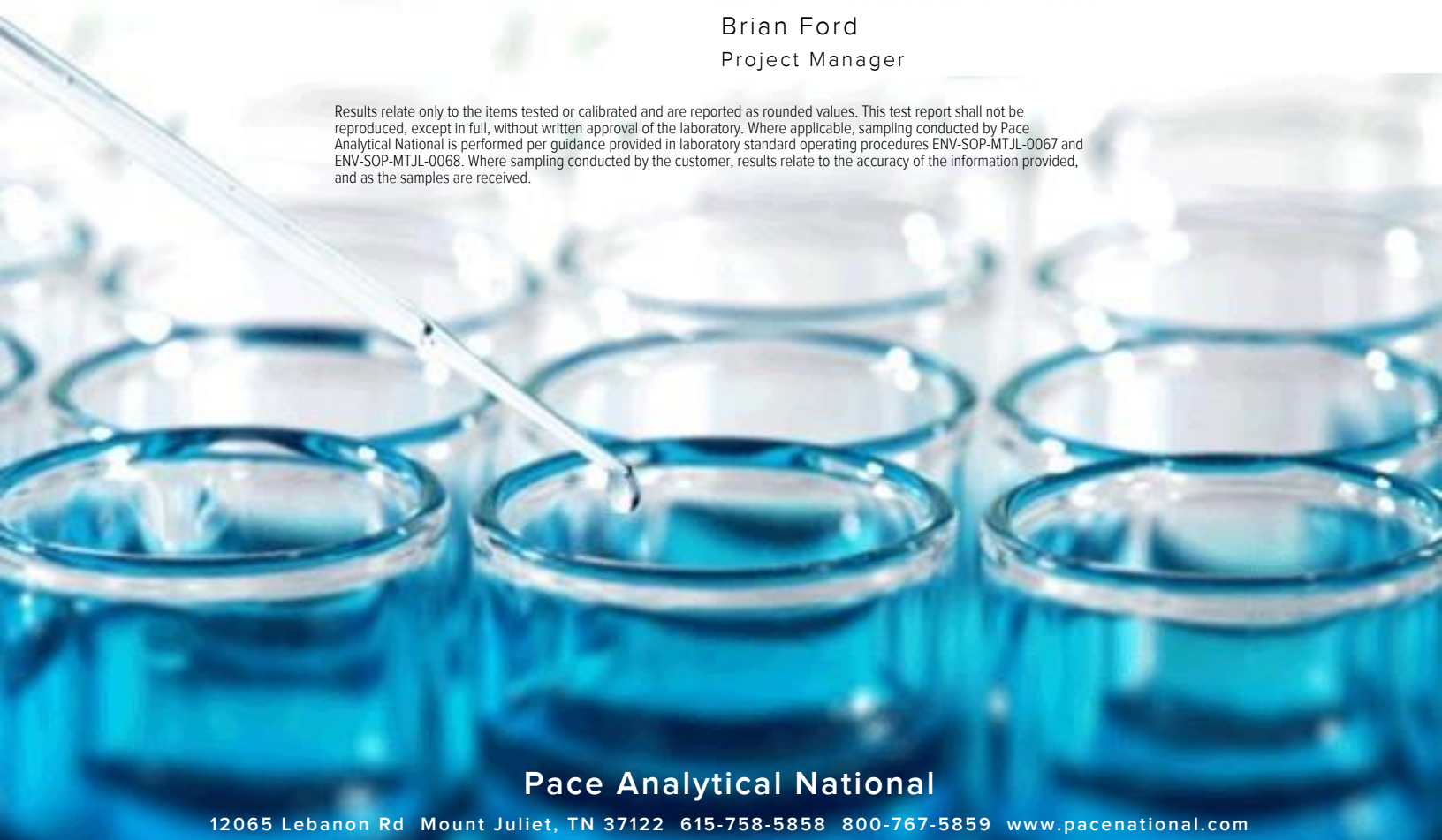
Sample Delivery Group: L1485500
Samples Received: 04/21/2022
Project Number: 30111526
Description: KMEP Harbor Island
Site: 2720 13TH AVENUE SW SEATTLE,WA
Report To: Kyle Haslam
1100 Olive Way, Suite 800
Seattle, WA 98101

Entire Report Reviewed By:



Brian Ford
Project Manager

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Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

SAMPLE SUMMARY

TMW-6 L1485500-01 GW

Collected by JS/LS Collected date/time 04/19/22 09:58 Received date/time 04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1854521	10	04/26/22 22:37	04/26/22 22:37	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1853227	1	04/23/22 15:48	04/23/22 15:48	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1853160	10	04/23/22 13:05	04/23/22 13:05	ACG	Mt. Juliet, TN

1 Cp

2 Tc

3 Ss

A-5 L1485500-02 GW

Collected by JS/LS Collected date/time 04/20/22 10:20 Received date/time 04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1853331	1	04/25/22 07:57	04/25/22 07:57	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1853160	1	04/23/22 07:40	04/23/22 07:40	ACG	Mt. Juliet, TN

4 Cn

5 Sr

6 Qc

A-21 L1485500-03 GW

Collected by JS/LS Collected date/time 04/19/22 11:45 Received date/time 04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1853331	1	04/25/22 08:19	04/25/22 08:19	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1853160	1	04/23/22 08:00	04/23/22 08:00	ACG	Mt. Juliet, TN

7 Gl

8 Al

9 Sc

A-27 L1485500-04 GW

Collected by JS/LS Collected date/time 04/19/22 12:55 Received date/time 04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1853331	1	04/25/22 08:40	04/25/22 08:40	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1853160	1	04/23/22 08:21	04/23/22 08:21	ACG	Mt. Juliet, TN

A-28R L1485500-05 GW

Collected by JS/LS Collected date/time 04/19/22 13:45 Received date/time 04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1853331	1	04/25/22 09:02	04/25/22 09:02	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1853160	1	04/23/22 08:41	04/23/22 08:41	ACG	Mt. Juliet, TN

MW-23 L1485500-06 GW

Collected by JS/LS Collected date/time 04/19/22 14:55 Received date/time 04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1853331	5	04/25/22 10:06	04/25/22 10:06	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1853160	5	04/23/22 13:26	04/23/22 13:26	ACG	Mt. Juliet, TN

MW-24 L1485500-07 GW

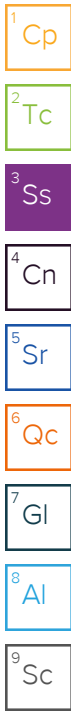
Collected by JS/LS Collected date/time 04/19/22 15:25 Received date/time 04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1853331	5	04/25/22 10:28	04/25/22 10:28	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1853160	10	04/23/22 13:46	04/23/22 13:46	ACG	Mt. Juliet, TN

SAMPLE SUMMARY

MW-21 L1485500-08 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Collected by JS/LS Collected date/time 04/19/22 10:56 Received date/time 04/21/22 09:30						
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1853331	1	04/25/22 09:23	04/25/22 09:23	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1853160	1	04/23/22 09:01	04/23/22 09:01	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1855899	1	04/28/22 17:02	04/29/22 14:07	JAS	Mt. Juliet, TN



DRUM-1 L1485500-09 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Collected by JS/LS Collected date/time 04/20/22 10:39 Received date/time 04/21/22 09:30						
Mercury by Method 7470A	WG1853775	1	05/04/22 10:22	05/05/22 11:03	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1853661	1	04/27/22 18:14	04/27/22 22:09	LD	Mt. Juliet, TN

11 L1485500-10 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Collected by JS/LS Collected date/time 04/19/22 12:12 Received date/time 04/21/22 09:30						
Wet Chemistry by Method 9056A	WG1854521	5	04/26/22 22:50	04/26/22 22:50	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1853331	1	04/25/22 09:45	04/25/22 09:45	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1853160	1	04/23/22 09:22	04/23/22 09:22	ACG	Mt. Juliet, TN

12 L1485500-11 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Collected by JS/LS Collected date/time 04/18/22 14:55 Received date/time 04/21/22 09:30						
Wet Chemistry by Method 9056A	WG1854521	20	04/26/22 23:03	04/26/22 23:03	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1853703	1	04/25/22 14:55	04/25/22 14:55	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1853160	1	04/23/22 09:42	04/23/22 09:42	ACG	Mt. Juliet, TN

MW-7 L1485500-12 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Collected by JS/LS Collected date/time 04/18/22 15:08 Received date/time 04/21/22 09:30						
Wet Chemistry by Method 9056A	WG1854521	10	04/26/22 23:16	04/26/22 23:16	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1853703	1	04/25/22 15:16	04/25/22 15:16	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1853160	1	04/23/22 10:02	04/23/22 10:02	ACG	Mt. Juliet, TN

MW-9 L1485500-13 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Collected by JS/LS Collected date/time 04/19/22 09:10 Received date/time 04/21/22 09:30						
Wet Chemistry by Method 9056A	WG1854521	1	04/26/22 23:29	04/26/22 23:29	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1853703	1	04/25/22 15:38	04/25/22 15:38	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1853160	1	04/23/22 10:23	04/23/22 10:23	ACG	Mt. Juliet, TN

MW-19 L1485500-14 GW

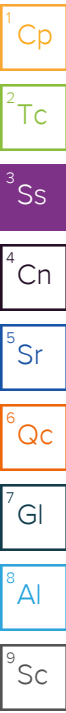
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Collected by JS/LS Collected date/time 04/19/22 13:55 Received date/time 04/21/22 09:30						
Wet Chemistry by Method 9056A	WG1855677	1	04/28/22 11:59	04/28/22 11:59	RAF	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1853703	1	04/25/22 15:59	04/25/22 15:59	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1853160	1	04/23/22 10:43	04/23/22 10:43	ACG	Mt. Juliet, TN

SAMPLE SUMMARY

TMW-1 L1485500-15 GW

Collected by JS/LS Collected date/time 04/19/22 10:30 Received date/time 04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1854521	10	04/27/22 00:20	04/27/22 00:20	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1853703	1	04/25/22 16:21	04/25/22 16:21	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1853160	1	04/23/22 11:03	04/23/22 11:03	ACG	Mt. Juliet, TN



TMW-2 L1485500-16 GW

Collected by JS/LS Collected date/time 04/19/22 09:45 Received date/time 04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1854521	20	04/27/22 00:33	04/27/22 00:33	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1853703	1	04/25/22 16:42	04/25/22 16:42	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1853160	1	04/23/22 11:24	04/23/22 11:24	ACG	Mt. Juliet, TN

TMW-3 L1485500-17 GW

Collected by JS/LS Collected date/time 04/18/22 15:50 Received date/time 04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1854521	20	04/27/22 00:45	04/27/22 00:45	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1853703	1	04/25/22 17:04	04/25/22 17:04	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1853160	1	04/23/22 11:44	04/23/22 11:44	ACG	Mt. Juliet, TN

TMW-4 L1485500-18 GW

Collected by JS/LS Collected date/time 04/19/22 12:55 Received date/time 04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1854521	10	04/27/22 00:58	04/27/22 00:58	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1853703	1	04/25/22 17:25	04/25/22 17:25	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1854649	1	04/26/22 19:32	04/26/22 19:32	BMB	Mt. Juliet, TN

TMW-5 L1485500-19 GW

Collected by JS/LS Collected date/time 04/18/22 14:05 Received date/time 04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1854521	20	04/27/22 01:11	04/27/22 01:11	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1853703	1	04/25/22 17:47	04/25/22 17:47	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1853160	1	04/23/22 12:04	04/23/22 12:04	ACG	Mt. Juliet, TN

DUP-1 L1485500-20 GW

Collected by JS/LS Collected date/time 04/18/22 00:00 Received date/time 04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1854521	10	04/27/22 01:24	04/27/22 01:24	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1853703	1	04/25/22 18:08	04/25/22 18:08	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1853160	1	04/23/22 12:25	04/23/22 12:25	ACG	Mt. Juliet, TN

SAMPLE SUMMARY

DUP-2 L1485500-21 GW

Collected by: JS/LS
 Collected date/time: 04/19/22 00:00
 Received date/time: 04/21/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1853703	1	04/25/22 18:29	04/25/22 18:29	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1853160	1	04/23/22 12:45	04/23/22 12:45	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1855899	1	04/28/22 17:02	04/29/22 14:33	JAS	Mt. Juliet, TN

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	269000		50000	10	04/26/2022 22:37	WG1854521

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	6950		100	1	04/23/2022 15:48	WG1853227
(S) a,a,a-Trifluorotoluene(FID)	83.9		78.0-120		04/23/2022 15:48	WG1853227

3 Ss

4 Cn

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		10.0	10	04/23/2022 13:05	WG1853160
Toluene	ND		10.0	10	04/23/2022 13:05	WG1853160
Ethylbenzene	357		10.0	10	04/23/2022 13:05	WG1853160
Total Xylenes	604		30.0	10	04/23/2022 13:05	WG1853160
(S) Toluene-d8	104		80.0-120		04/23/2022 13:05	WG1853160
(S) 4-Bromofluorobenzene	92.4		77.0-126		04/23/2022 13:05	WG1853160
(S) 1,2-Dichloroethane-d4	100		70.0-130		04/23/2022 13:05	WG1853160

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Sample Narrative:

L1485500-01 WG1853160: Non-target compounds too high to run at a lower dilution.

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	510	<u>B</u>	100	1	04/25/2022 07:57	WG1853331
(S) a,a,a-Trifluorotoluene(FID)	95.4		78.0-120		04/25/2022 07:57	WG1853331

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	1.08		1.00	1	04/23/2022 07:40	WG1853160
Toluene	1.28		1.00	1	04/23/2022 07:40	WG1853160
Ethylbenzene	ND		1.00	1	04/23/2022 07:40	WG1853160
Total Xylenes	ND		3.00	1	04/23/2022 07:40	WG1853160
(S) Toluene-d8	103		80.0-120		04/23/2022 07:40	WG1853160
(S) 4-Bromofluorobenzene	97.1		77.0-126		04/23/2022 07:40	WG1853160
(S) 1,2-Dichloroethane-d4	102		70.0-130		04/23/2022 07:40	WG1853160

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	04/25/2022 08:19	WG1853331
(S) a,a,a-Trifluorotoluene(FID)	99.0		78.0-120		04/25/2022 08:19	WG1853331

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	04/23/2022 08:00	WG1853160
Toluene	ND		1.00	1	04/23/2022 08:00	WG1853160
Ethylbenzene	ND		1.00	1	04/23/2022 08:00	WG1853160
Total Xylenes	ND		3.00	1	04/23/2022 08:00	WG1853160
(S) Toluene-d8	103		80.0-120		04/23/2022 08:00	WG1853160
(S) 4-Bromofluorobenzene	95.9		77.0-126		04/23/2022 08:00	WG1853160
(S) 1,2-Dichloroethane-d4	107		70.0-130		04/23/2022 08:00	WG1853160

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	1190		100	1	04/25/2022 08:40	WG1853331
(S) a,a,a-Trifluorotoluene(FID)	104		78.0-120		04/25/2022 08:40	WG1853331

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	22.8		1.00	1	04/23/2022 08:21	WG1853160
Toluene	ND		1.00	1	04/23/2022 08:21	WG1853160
Ethylbenzene	31.7		1.00	1	04/23/2022 08:21	WG1853160
Total Xylenes	ND		3.00	1	04/23/2022 08:21	WG1853160
(S) Toluene-d8	97.2		80.0-120		04/23/2022 08:21	WG1853160
(S) 4-Bromofluorobenzene	92.6		77.0-126		04/23/2022 08:21	WG1853160
(S) 1,2-Dichloroethane-d4	103		70.0-130		04/23/2022 08:21	WG1853160

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	2280		100	1	04/25/2022 09:02	WG1853331
(S) a,a,a-Trifluorotoluene(FID)	107		78.0-120		04/25/2022 09:02	WG1853331

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	16.6		1.00	1	04/23/2022 08:41	WG1853160
Toluene	1.44		1.00	1	04/23/2022 08:41	WG1853160
Ethylbenzene	5.62		1.00	1	04/23/2022 08:41	WG1853160
Total Xylenes	ND		3.00	1	04/23/2022 08:41	WG1853160
(S) Toluene-d8	95.6		80.0-120		04/23/2022 08:41	WG1853160
(S) 4-Bromofluorobenzene	99.2		77.0-126		04/23/2022 08:41	WG1853160
(S) 1,2-Dichloroethane-d4	102		70.0-130		04/23/2022 08:41	WG1853160

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	3220		500	5	04/25/2022 10:06	WG1853331
(S) a,a,a-Trifluorotoluene(FID)	96.1		78.0-120		04/25/2022 10:06	WG1853331

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	173		5.00	5	04/23/2022 13:26	WG1853160
Toluene	6.09		5.00	5	04/23/2022 13:26	WG1853160
Ethylbenzene	6.33		5.00	5	04/23/2022 13:26	WG1853160
Total Xylenes	ND		15.0	5	04/23/2022 13:26	WG1853160
(S) Toluene-d8	105		80.0-120		04/23/2022 13:26	WG1853160
(S) 4-Bromofluorobenzene	96.9		77.0-126		04/23/2022 13:26	WG1853160
(S) 1,2-Dichloroethane-d4	98.4		70.0-130		04/23/2022 13:26	WG1853160

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	11100		500	5	04/25/2022 10:28	WG1853331
(S) a,a,a-Trifluorotoluene(FID)	110		78.0-120		04/25/2022 10:28	WG1853331

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	552		10.0	10	04/23/2022 13:46	WG1853160
Toluene	30.3		10.0	10	04/23/2022 13:46	WG1853160
Ethylbenzene	776		10.0	10	04/23/2022 13:46	WG1853160
Total Xylenes	263		30.0	10	04/23/2022 13:46	WG1853160
(S) Toluene-d8	103		80.0-120		04/23/2022 13:46	WG1853160
(S) 4-Bromofluorobenzene	94.4		77.0-126		04/23/2022 13:46	WG1853160
(S) 1,2-Dichloroethane-d4	100		70.0-130		04/23/2022 13:46	WG1853160

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	04/25/2022 09:23	WG1853331
(S) a,a,a-Trifluorotoluene(FID)	98.6		78.0-120		04/25/2022 09:23	WG1853331

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	04/23/2022 09:01	WG1853160
Toluene	ND		1.00	1	04/23/2022 09:01	WG1853160
Ethylbenzene	ND		1.00	1	04/23/2022 09:01	WG1853160
Total Xylenes	ND		3.00	1	04/23/2022 09:01	WG1853160
(S) Toluene-d8	104		80.0-120		04/23/2022 09:01	WG1853160
(S) 4-Bromofluorobenzene	96.9		77.0-126		04/23/2022 09:01	WG1853160
(S) 1,2-Dichloroethane-d4	102		70.0-130		04/23/2022 09:01	WG1853160

4 Cn

5 Sr

6 Qc

7 Gl

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	594		200	1	04/29/2022 14:07	WG1855899
Residual Range Organics (RRO)	ND		250	1	04/29/2022 14:07	WG1855899
(S) o-Terphenyl	69.0		52.0-156		04/29/2022 14:07	WG1855899

8 Al

9 Sc

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND		0.200	1	05/05/2022 11:03	WG1853775

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	7.73		2.00	1	04/27/2022 22:09	WG1853661
Barium	12.9		2.00	1	04/27/2022 22:09	WG1853661
Cadmium	ND		1.00	1	04/27/2022 22:09	WG1853661
Chromium	2.69		2.00	1	04/27/2022 22:09	WG1853661
Lead	10.1		2.00	1	04/27/2022 22:09	WG1853661
Selenium	ND		2.00	1	04/27/2022 22:09	WG1853661
Silver	ND		2.00	1	04/27/2022 22:09	WG1853661

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	113000		25000	5	04/26/2022 22:50	WG1854521

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	04/25/2022 09:45	WG1853331
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	99.0		78.0-120		04/25/2022 09:45	WG1853331

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	04/23/2022 09:22	WG1853160
Toluene	ND		1.00	1	04/23/2022 09:22	WG1853160
Ethylbenzene	ND		1.00	1	04/23/2022 09:22	WG1853160
Total Xylenes	ND		3.00	1	04/23/2022 09:22	WG1853160
(S) <i>Toluene-d8</i>	103		80.0-120		04/23/2022 09:22	WG1853160
(S) <i>4-Bromofluorobenzene</i>	94.3		77.0-126		04/23/2022 09:22	WG1853160
(S) <i>1,2-Dichloroethane-d4</i>	104		70.0-130		04/23/2022 09:22	WG1853160

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
Sulfate	1340000		100000	20	04/26/2022 23:03	WG1854521

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	2070		100	1	04/25/2022 14:55	WG1853703
(S) a,a,a-Trifluorotoluene(FID)	103		78.0-120		04/25/2022 14:55	WG1853703

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
Benzene	13.9		1.00	1	04/23/2022 09:42	WG1853160
Toluene	4.63		1.00	1	04/23/2022 09:42	WG1853160
Ethylbenzene	94.0		1.00	1	04/23/2022 09:42	WG1853160
Total Xylenes	23.8		3.00	1	04/23/2022 09:42	WG1853160
(S) Toluene-d8	98.3		80.0-120		04/23/2022 09:42	WG1853160
(S) 4-Bromofluorobenzene	93.4		77.0-126		04/23/2022 09:42	WG1853160
(S) 1,2-Dichloroethane-d4	99.6		70.0-130		04/23/2022 09:42	WG1853160

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	876000		50000	10	04/26/2022 23:16	WG1854521

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	109	<u>B</u>	100	1	04/25/2022 15:16	WG1853703
(S) a,a,a-Trifluorotoluene(FID)	98.9		78.0-120		04/25/2022 15:16	WG1853703

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	04/23/2022 10:02	WG1853160
Toluene	ND		1.00	1	04/23/2022 10:02	WG1853160
Ethylbenzene	ND		1.00	1	04/23/2022 10:02	WG1853160
Total Xylenes	ND		3.00	1	04/23/2022 10:02	WG1853160
(S) Toluene-d8	104		80.0-120		04/23/2022 10:02	WG1853160
(S) 4-Bromofluorobenzene	93.0		77.0-126		04/23/2022 10:02	WG1853160
(S) 1,2-Dichloroethane-d4	101		70.0-130		04/23/2022 10:02	WG1853160

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	35800		5000	1	04/26/2022 23:29	WG1854521

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	110	<u>B</u>	100	1	04/25/2022 15:38	WG1853703
(S) a,a,a-Trifluorotoluene(FID)	98.6		78.0-120		04/25/2022 15:38	WG1853703

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	04/23/2022 10:23	WG1853160
Toluene	ND		1.00	1	04/23/2022 10:23	WG1853160
Ethylbenzene	ND		1.00	1	04/23/2022 10:23	WG1853160
Total Xylenes	ND		3.00	1	04/23/2022 10:23	WG1853160
(S) Toluene-d8	105		80.0-120		04/23/2022 10:23	WG1853160
(S) 4-Bromofluorobenzene	91.7		77.0-126		04/23/2022 10:23	WG1853160
(S) 1,2-Dichloroethane-d4	102		70.0-130		04/23/2022 10:23	WG1853160

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	29700		5000	1	04/28/2022 11:59	WG1855677

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	1320		100	1	04/25/2022 15:59	WG1853703
(S) a,a,a-Trifluorotoluene(FID)	104		78.0-120		04/25/2022 15:59	WG1853703

3 Ss

4 Cn

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	04/23/2022 10:43	WG1853160
Toluene	1.93		1.00	1	04/23/2022 10:43	WG1853160
Ethylbenzene	18.3		1.00	1	04/23/2022 10:43	WG1853160
Total Xylenes	ND		3.00	1	04/23/2022 10:43	WG1853160
(S) Toluene-d8	97.2		80.0-120		04/23/2022 10:43	WG1853160
(S) 4-Bromofluorobenzene	90.8		77.0-126		04/23/2022 10:43	WG1853160
(S) 1,2-Dichloroethane-d4	97.3		70.0-130		04/23/2022 10:43	WG1853160

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	989000		50000	10	04/27/2022 00:20	WG1854521

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	04/25/2022 16:21	WG1853703
(S) a,a,a-Trifluorotoluene(FID)	98.4		78.0-120		04/25/2022 16:21	WG1853703

3 Ss

4 Cn

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	04/23/2022 11:03	WG1853160
Toluene	ND		1.00	1	04/23/2022 11:03	WG1853160
Ethylbenzene	ND		1.00	1	04/23/2022 11:03	WG1853160
Total Xylenes	ND		3.00	1	04/23/2022 11:03	WG1853160
(S) Toluene-d8	107		80.0-120		04/23/2022 11:03	WG1853160
(S) 4-Bromofluorobenzene	92.6		77.0-126		04/23/2022 11:03	WG1853160
(S) 1,2-Dichloroethane-d4	100		70.0-130		04/23/2022 11:03	WG1853160

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	1330000		100000	20	04/27/2022 00:33	WG1854521

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	04/25/2022 16:42	WG1853703
(S) a,a,a-Trifluorotoluene(FID)	99.4		78.0-120		04/25/2022 16:42	WG1853703

3 Ss

4 Cn

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	04/23/2022 11:24	WG1853160
Toluene	ND		1.00	1	04/23/2022 11:24	WG1853160
Ethylbenzene	ND		1.00	1	04/23/2022 11:24	WG1853160
Total Xylenes	ND		3.00	1	04/23/2022 11:24	WG1853160
(S) Toluene-d8	104		80.0-120		04/23/2022 11:24	WG1853160
(S) 4-Bromofluorobenzene	91.4		77.0-126		04/23/2022 11:24	WG1853160
(S) 1,2-Dichloroethane-d4	104		70.0-130		04/23/2022 11:24	WG1853160

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	1170000		100000	20	04/27/2022 00:45	WG1854521

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	123	<u>B</u>	100	1	04/25/2022 17:04	WG1853703
(S) a,a,a-Trifluorotoluene(FID)	98.1		78.0-120		04/25/2022 17:04	WG1853703

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	04/23/2022 11:44	WG1853160
Toluene	ND		1.00	1	04/23/2022 11:44	WG1853160
Ethylbenzene	ND		1.00	1	04/23/2022 11:44	WG1853160
Total Xylenes	ND		3.00	1	04/23/2022 11:44	WG1853160
(S) Toluene-d8	101		80.0-120		04/23/2022 11:44	WG1853160
(S) 4-Bromofluorobenzene	92.8		77.0-126		04/23/2022 11:44	WG1853160
(S) 1,2-Dichloroethane-d4	102		70.0-130		04/23/2022 11:44	WG1853160

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	638000		50000	10	04/27/2022 00:58	WG1854521

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	1870		100	1	04/25/2022 17:25	WG1853703
(S) a,a,a-Trifluorotoluene(FID)	102		78.0-120		04/25/2022 17:25	WG1853703

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	1.35		1.00	1	04/26/2022 19:32	WG1854649
Toluene	1.56		1.00	1	04/26/2022 19:32	WG1854649
Ethylbenzene	1.24		1.00	1	04/26/2022 19:32	WG1854649
Total Xylenes	ND		3.00	1	04/26/2022 19:32	WG1854649
(S) Toluene-d8	94.3		80.0-120		04/26/2022 19:32	WG1854649
(S) 4-Bromofluorobenzene	96.3		77.0-126		04/26/2022 19:32	WG1854649
(S) 1,2-Dichloroethane-d4	92.0		70.0-130		04/26/2022 19:32	WG1854649

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	958000		100000	20	04/27/2022 01:11	WG1854521

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	896		100	1	04/25/2022 17:47	WG1853703
(S) a,a,a-Trifluorotoluene(FID)	102		78.0-120		04/25/2022 17:47	WG1853703

3 Ss

4 Cn

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	3.08		1.00	1	04/23/2022 12:04	WG1853160
Toluene	ND		1.00	1	04/23/2022 12:04	WG1853160
Ethylbenzene	ND		1.00	1	04/23/2022 12:04	WG1853160
Total Xylenes	ND		3.00	1	04/23/2022 12:04	WG1853160
(S) Toluene-d8	97.1		80.0-120		04/23/2022 12:04	WG1853160
(S) 4-Bromofluorobenzene	93.9		77.0-126		04/23/2022 12:04	WG1853160
(S) 1,2-Dichloroethane-d4	98.6		70.0-130		04/23/2022 12:04	WG1853160

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	870000		50000	10	04/27/2022 01:24	WG1854521

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	120	<u>B</u>	100	1	04/25/2022 18:08	WG1853703
(S) a,a,a-Trifluorotoluene(FID)	98.4		78.0-120		04/25/2022 18:08	WG1853703

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	04/23/2022 12:25	WG1853160
Toluene	ND		1.00	1	04/23/2022 12:25	WG1853160
Ethylbenzene	ND		1.00	1	04/23/2022 12:25	WG1853160
Total Xylenes	ND		3.00	1	04/23/2022 12:25	WG1853160
(S) Toluene-d8	105		80.0-120		04/23/2022 12:25	WG1853160
(S) 4-Bromofluorobenzene	95.3		77.0-126		04/23/2022 12:25	WG1853160
(S) 1,2-Dichloroethane-d4	101		70.0-130		04/23/2022 12:25	WG1853160

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	04/25/2022 18:29	WG1853703
(S) a,a,a-Trifluorotoluene(FID)	98.4		78.0-120		04/25/2022 18:29	WG1853703

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	04/23/2022 12:45	WG1853160
Toluene	ND		1.00	1	04/23/2022 12:45	WG1853160
Ethylbenzene	ND		1.00	1	04/23/2022 12:45	WG1853160
Total Xylenes	ND		3.00	1	04/23/2022 12:45	WG1853160
(S) Toluene-d8	108		80.0-120		04/23/2022 12:45	WG1853160
(S) 4-Bromofluorobenzene	93.5		77.0-126		04/23/2022 12:45	WG1853160
(S) 1,2-Dichloroethane-d4	102		70.0-130		04/23/2022 12:45	WG1853160

4 Cn

5 Sr

6 Qc

7 Gl

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	633		200	1	04/29/2022 14:33	WG1855899
Residual Range Organics (RRO)	ND		250	1	04/29/2022 14:33	WG1855899
(S) o-Terphenyl	75.5		52.0-156		04/29/2022 14:33	WG1855899

8 Al

9 Sc

Method Blank (MB)

(MB) R3785782-1 04/26/22 19:12

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Sulfate	U		594	5000

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1483339-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1483339-01 04/26/22 19:38 • (DUP) R3785782-3 04/26/22 19:50

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	79000	78700	1	0.408		15

L1485439-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1485439-06 04/26/22 21:07 • (DUP) R3785782-6 04/26/22 21:46

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	ND	ND	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3785782-2 04/26/22 19:25

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Sulfate	40000	40600	102	80.0-120	

L1483339-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1483339-01 04/26/22 19:38 • (MS) R3785782-4 04/26/22 20:03 • (MSD) R3785782-5 04/26/22 20:16

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Sulfate	50000	79000	126000	126000	94.5	94.4	1	80.0-120	E	E	0.0548	15

L1485439-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1485439-06 04/26/22 21:07 • (MS) R3785782-7 04/26/22 21:59

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Sulfate	50000	ND	51400	103	1	80.0-120	

Method Blank (MB)

(MB) R3786585-1 04/28/22 10:10

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Sulfate	U		594	5000

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1485660-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1485660-03 04/28/22 13:07 • (DUP) R3786585-3 04/28/22 13:21

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	ND	ND	1	200	P1	15

L1485500-14 Original Sample (OS) • Duplicate (DUP)

(OS) L1485500-14 04/28/22 11:59 • (DUP) R3786585-6 04/28/22 20:08

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	29700	30000	1	0.903		15

Laboratory Control Sample (LCS)

(LCS) R3786585-2 04/28/22 10:24

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Sulfate	40000	38000	95.1	80.0-120	

L1485660-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1485660-03 04/28/22 13:07 • (MS) R3786585-4 04/28/22 13:34 • (MSD) R3786585-5 04/28/22 13:48

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Sulfate	50000	ND	48900	49000	96.5	96.8	1	80.0-120			0.332	15

L1485500-14 Original Sample (OS) • Matrix Spike (MS)

(OS) L1485500-14 04/28/22 11:59 • (MS) R3786585-7 04/28/22 20:22

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Sulfate	50000	29700	78500	97.6	1	80.0-120	

Method Blank (MB)

(MB) R3788449-1 05/05/22 10:10

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Mercury	U		0.100	0.200

Laboratory Control Sample (LCS)

(LCS) R3788449-2 05/05/22 10:12

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	3.00	3.17	106	80.0-120	

L1485553-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1485553-05 05/05/22 10:19 • (MS) R3788449-3 05/05/22 10:21 • (MSD) R3788449-4 05/05/22 10:23

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	3.00	ND	3.23	3.16	108	105	1	75.0-125			2.19	20

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3785760-1 04/27/22 20:58

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Arsenic	0.197	U	0.180	2.00
Barium	U		0.381	2.00
Cadmium	U		0.150	1.00
Chromium	U		1.24	2.00
Lead	U		0.849	2.00
Selenium	U		0.300	2.00
Silver	U		0.0700	2.00

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS)

(LCS) R3785760-2 04/27/22 21:01

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Arsenic	50.0	47.1	94.2	80.0-120	
Barium	50.0	43.1	86.1	80.0-120	
Cadmium	50.0	50.8	102	80.0-120	
Chromium	50.0	49.4	98.8	80.0-120	
Lead	50.0	47.6	95.3	80.0-120	
Selenium	50.0	48.6	97.2	80.0-120	
Silver	50.0	49.1	98.2	80.0-120	

L1485553-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1485553-02 04/27/22 21:04 • (MS) R3785760-4 04/27/22 21:11 • (MSD) R3785760-5 04/27/22 21:14

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Arsenic	50.0	2.48	50.3	49.1	95.6	93.3	1	75.0-125			2.25	20
Barium	50.0	736	806	775	141	79.0	1	75.0-125	U		3.92	20
Cadmium	50.0	ND	51.7	52.5	103	105	1	75.0-125			1.60	20
Chromium	50.0	ND	50.5	48.3	101	96.6	1	75.0-125			4.50	20
Lead	50.0	ND	50.2	47.8	100	95.7	1	75.0-125			4.74	20
Selenium	50.0	ND	50.7	50.0	101	100	1	75.0-125			1.26	20
Silver	50.0	ND	50.7	51.9	101	104	1	75.0-125			2.36	20

Method Blank (MB)

(MB) R3784443-2 04/23/22 06:59

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	36.9	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	100			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3784443-1 04/23/22 06:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5590	102	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			106	78.0-120	

L1485032-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1485032-13 04/23/22 16:08 • (MS) R3784443-3 04/23/22 18:37 • (MSD) R3784443-4 04/23/22 19:22

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	55000	37400	90200	88800	96.0	93.5	10	10.0-155			1.56	21
(S) a,a,a-Trifluorotoluene(FID)					105	105		78.0-120				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3784588-3 04/25/22 01:39

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	61.7	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	97.5			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3784588-2 04/24/22 23:55

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5090	92.5	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			103	78.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3785464-2 04/25/22 12:37

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	51.3	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	98.8			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3785464-1 04/25/22 11:36

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	4760	86.5	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			103	78.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3785214-3 04/23/22 07:20

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Benzene	U		0.0941	1.00
Toluene	U		0.278	1.00
Ethylbenzene	U		0.137	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	103			80.0-120
(S) 4-Bromofluorobenzene	93.5			77.0-126
(S) 1,2-Dichloroethane-d4	107			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3785214-1 04/23/22 06:19 • (LCSD) R3785214-2 04/23/22 06:39

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Benzene	5.00	5.22	5.16	104	103	70.0-123			1.16	20
Toluene	5.00	5.03	5.04	101	101	79.0-120			0.199	20
Ethylbenzene	5.00	4.80	4.96	96.0	99.2	79.0-123			3.28	20
Xylenes, Total	15.0	14.8	14.4	98.7	96.0	79.0-123			2.74	20
(S) Toluene-d8				102	103	80.0-120				
(S) 4-Bromofluorobenzene				96.9	94.4	77.0-126				
(S) 1,2-Dichloroethane-d4				105	103	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3785341-3 04/26/22 18:25

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Benzene	U		0.0941	1.00
Toluene	U		0.278	1.00
Ethylbenzene	U		0.137	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	103			80.0-120
(S) 4-Bromofluorobenzene	101			77.0-126
(S) 1,2-Dichloroethane-d4	95.6			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3785341-1 04/26/22 17:27 • (LCSD) R3785341-2 04/26/22 17:47

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Benzene	5.00	4.34	4.32	86.8	86.4	70.0-123			0.462	20
Toluene	5.00	4.55	4.40	91.0	88.0	79.0-120			3.35	20
Ethylbenzene	5.00	4.64	4.55	92.8	91.0	79.0-123			1.96	20
Xylenes, Total	15.0	13.5	13.1	90.0	87.3	79.0-123			3.01	20
(S) Toluene-d8				102	104	80.0-120				
(S) 4-Bromofluorobenzene				98.9	101	77.0-126				
(S) 1,2-Dichloroethane-d4				98.9	99.3	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3786722-1 04/29/22 09:21

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Diesel Range Organics (DRO)	U		66.7	200
Residual Range Organics (RRO)	U		83.3	250
<i>(S) o-Terphenyl</i>	67.5			52.0-156

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3786722-2 04/29/22 09:47 • (LCSD) R3786722-3 04/29/22 10:13

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Diesel Range Organics (DRO)	1500	1410	1220	94.0	81.3	50.0-150			14.4	20
<i>(S) o-Terphenyl</i>				96.0	75.0	52.0-156				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

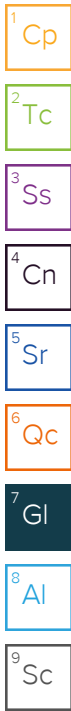
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



Company Name/Address:
Kinder Morgan- Houston, TX (Scott Martin)
 1100 Olive Way, Suite 800

Billing Information:
 Accounts Payable-Scott Martin
 1001 Louisiana St.
 Houston, TX 77002

Analysis / Container / Preservative
 Pres Chk



MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubs/pas-standard-terms.pdf>

Report to:
 Kyle Haslam

Email To:
 Kyle.Haslam@arcadis.com; Matt.Annis@arcadis.

Project Description:
 KMEP Harbor Island

City/State Collected: SEATTLE, WA

Please Circle:
 PT MT CT ET

Phone: 206-726-4713

Client Project #
 30111526

Lab Project #
 KINMOROCA-HARBORISLA

Collected by (print):
 J. SEPIDOL, L. SELLECK

Site/Facility ID #
 2720 13TH AVENUE SW

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)
 ___ Same Day ___ Five Day
 ___ Next Day ___ 5 Day (Rad Only)
 ___ Two Day ___ 10 Day (Rad Only)
 ___ Three Day

Quote #
 Date Results Needed

No. of Cntrs

Immediately Packed on Ice N ___ Y ___

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEX 8260D 40mlAmb-HCl	NWTPHDX w/ silica 40mlAmb-HCl-BT	NWTPHGX 40mlAmb HCl	Sulfate 125mlHDPE-NoPres	Total RCRA8 Metals 250mlHDPE-HNO3
TMW-6	-	GW	-	4/19/22	0958	7	X		X	X	
A-5		GW		4/20/22	1020	6	X		X		
A-21		GW		4/19/22	1145	6	X		X		
A-27		GW		4/19/22	1255	6	X		X		
A-28R		GW		4/19/22	1345	6	X		X		
MW-18		GW				6	X		X		
MW-23		GW		4/19/22	1455	6	X		X		
MW-24		GW		4/19/22	1525	6	X		X		
MW-21		GW		4/19/22	1050	8	X	X	X		
DRUM-1		GW		4/20/22	1039	1					X

SDG # U485500
 E078

Acctnum: KINMOROCA
 Template: T205589
 Prelogin: P912119
 PM: 110 - Brian Ford
 PB:

Shipped Via:
 Remarks Sample # (lab only)

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 pH _____ Temp _____
 Flow _____ Other _____
 Samples returned via:
 ___ UPS FedEx ___ Courier _____
 Tracking # 56715377 0290

Sample Receipt Checklist
 COC Seal Present/Intact: NP Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headpace: Y N
 Preservation Correct/Checked: Y N
 RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature)


Date: 4/20/22
 Time: 1200

Received by: (Signature)

Trip Blank Received: Yes/No No
 HCL / MeOH TBR
 Temp: DRUM C
 Bottles Received: 2.850=2.8 142

If preservation required by Login: Date/Time
 Hold: 04/21/22 0930
 Condition: NCF / OK

Company Name/Address: Kinder Morgan- Houston, TX (Scott Martin) 1100 Olive Way, Suite 800		Billing Information: Accounts Payable-Scott Martin 1001 Louisiana St. Houston, TX 77002		Pres Chk	Analysis / Container / Preservative					Chain of Custody Page 3 of 3
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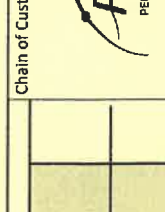
Report to: Kyle Haslam	Email To: Kyle.Haslam@arcadis.com; Matt.Annis@arcadis.	City/State Collected: SEATTLE, WA	Please Circle: <input checked="" type="radio"/> PT <input type="radio"/> MT <input type="radio"/> CT <input type="radio"/> ET	BTEX 8260D 40mlAmb-HCl NWTPHDX w/ silica 40mlAmb-HCl-BT NWTPHGX 40mlAmb HCl Sulfate 125mlHDPE-NoPres Total RCRA8 Metals 250mlHDPE-HNO3							 PEOPLE ADVANCING SCIENCE MT JULIET, TN 12065 Lebanon Rd Mount Juliet, TN 37122 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubs/pas-standard-terms.pdf
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Project Description: KMEP Harbor Island	Client Project # 30111526	Lab Project # KINMOROCA-HARBORISLA	SDG # 2485500 Table # Acctnum: KINMOROCA Template: T205589 Prelogin: P912119 PM: 110 - Brian Ford PB:						
Phone: 206-726-4713	Site/Facility ID # 2720 13TH AVENUE SW	P.O. #							
Collected by (print): L. SELWICK	Rush? (Lab MUST Be Notified) <input type="checkbox"/> Same Day <input type="checkbox"/> Five Day <input type="checkbox"/> Next Day <input type="checkbox"/> 5 Day (Rad Only) <input type="checkbox"/> Two Day <input type="checkbox"/> 10 Day (Rad Only) <input type="checkbox"/> Three Day	Quote #	Shipped Via: Remarks Sample # (lab only)						
Collected by (signature): <i>[Signature]</i>	Date Results Needed	No. of Cntrs							

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEX 8260D 40mlAmb-HCl	NWTPHDX w/ silica 40mlAmb-HCl-BT	NWTPHGX 40mlAmb HCl	Sulfate 125mlHDPE-NoPres	Total RCRA8 Metals 250mlHDPE-HNO3	Remarks		Sample # (lab only)
DUP-1		GW				10	X	X	X	X	X			
 		GW				10	X	X	X	X	X			
 		GW				10	X	X	X	X	X			
 		GW				10	X	X	X	X	X			
 		GW				10	X	X	X	X	X			
DUP-1		GW		4/18/22	—	7	X		X	X				-20
DUP-2		GW		4/19/22	—	8	X	X	X					-21

* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other	Remarks:	pH _____ Temp _____ Flow _____ Other _____	Sample Receipt Checklist COC Seal Present/Intact: <input type="checkbox"/> NP <input type="checkbox"/> Y <input type="checkbox"/> N COC Signed/Accurate: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Bottles arrive intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Correct bottles used: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Sufficient volume sent: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If Applicable VOA Zero Headspace: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Preservation Correct/Checked: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N RAD Screen <0.5 mR/hr: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier	Tracking # 5671 5377 0290		

Relinquished by: (Signature) <i>[Signature]</i>	Date: 4/20/22	Time: 1200	Received by: (Signature) <i>[Signature]</i>	Trip Blank Received: Yes/No <input checked="" type="checkbox"/> HCL / MeOH <input type="checkbox"/> TBR	If preservation required by Login: Date/Time	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 28±0.28 °C	Bottles Received: 142	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) <i>[Signature]</i>	Date: 04/21/22	Time: 0930	Hold: Condition: NCF / OK



MT JULIET, TN
 12065 Lebanon Rd Mount Juliet, TN 37122
 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/pub/c/pas-standard-terms.pdf>

Kindler Morgan- Houston, TX (Scott Martin)
 1100 Olive Way, Suite 800
 Houston, TX 77002

Accounts Payable-Scott Martin
 1001 Louisiana St.
 Houston, TX 77002

Billing Information:
 Kyle Haslam@arcadis.com; Matt-Annis@arcadis.com

City/State Collected: SEATTLE WA
 Please Circle: (P) (M) (C) (E) (T)

Client Project #
 30111526

Lab Project #
 KINMOROCA-HARBORISLA

Site/Facility ID #
 2720 13TH AVENUE SW

Quote #
 Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Analysis / Container / Preservative
11		GW		4/19/22	1212	7	Total RCRA8 Metals 250mIHDP-HNO3
12		GW		4/18/22	1455	7	Sulfate 125mIHDP-E-NoPres
MMW-7		GW		4/18/22	1608	7	NWTPHGX 40mlamb HCl
MMW-9		GW		4/19/22	0910	7	NWTPHDX w/ silica 40mlamb-HCl-BT
MMW-19		GW		4/19/22	1355	7	BTEX 8260D 40mlamb-HCl
TMW-1		GW		4/19/22	1630	7	
TMW-2		GW		4/19/22	0945	7	
TMW-3		GW		4/16/22	1550	7	
TMW-4		GW		4/19/22	1255	7	
TMW-5		GW		4/18/22	1405	7	

Remarks:
 * Matrix: SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - Waste Water
 DW - Drinking Water
 OT - Other

Sample returned via:
 UPS FedEx Courier

Tracking #
 Received by: (Signature)
 Date: 4/20/22 Time: 1200

Temp _____ **pH** _____ **Flow** _____ **Other** _____

Temp: _____ **°C** **Bottles Received:** _____ **HCl/MeOH TBR**

Relinquished by: (Signature) _____ **Date:** _____ **Time:** _____

Relinquished by: (Signature) _____ **Date:** _____ **Time:** _____

Relinquished by: (Signature) _____ **Date:** _____ **Time:** _____

Sample Receipt Checklist
 COC Seal Present/Intact: NP Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N
 RAD Screen <0.5 mR/hr: Y N

if preservation required by Login: Date/Time

Hold: _____ **Condition:** NCF / OK

Company Name/Address:
Kinder Morgan- Houston, TX (Scott Martin)
 1100 Olive Way, Suite 800
 Houston, TX 77002

Billing Information:
Accounts Payable-Scott Martin
 1001 Louisiana St.
 Houston, TX 77002

Report to:
Kyle Haslam
 Email To: **Kyle.Haslam@arcadis.com; Matt.Annis@arcadis.**

Project Description:
KMEP Harbor Island
 City/State Collected: **SEATTLE, WA**

Client Project #
30111526
 Lab Project #
KINMOROCA-HARBORISLA

Site/Facility ID #
2720 13TH AVENUE SW
 P.O. #

Quote #

Rush? (Lab MUST Be Notified)
 ___ Same Day ___ Five Day
 ___ Next Day ___ 5 Day (Rad Only)
 ___ Two Day ___ 10 Day (Rad Only)
 ___ Three Day

Date Results Needed

No. of Cntrs

Chain of Custody Page 3 of 5

Pace
 PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubb/pas-standard-terms.pdf>

SDG #

Table #

Acctnum: **KINMOROCA**

Template: **T205589**

Prelogin: **P912119**

PM: **110 - Brian Ford**

PB:

Shipped Via:

Remarks

Sample # (lab only)

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Analysis / Container / Preservative	Pres Chk
ALP-1	GW	GW			10	BTEX 8260D 40mlamb-HCl	
	GW	GW			10	NWTPHDX w/ silica 40mlamb-HCl-BT	
	GW	GW			10	NWTPHGX 40mlamb HCl	
	GW	GW			10	Sulfate 125mlHDFE-NoPres	
	GW	GW			10	Total RCRA8 Metals 250mlHDFE-HNO3	
DUP-1	GW	GW		11/18/11	7		
DUP-2	GW	GW		11/19/11	8		

Remarks:

* Matrix: SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - Waste Water
 DW - Drinking Water
 OT - Other

Samples returned via: UPS FedEx Courier

Tracking #

Received by: (Signature) _____ Time: 11/20/11 1200

Received by: (Signature) _____ Time: _____

Received for lab by: (Signature) _____ Time: _____

Temp: _____ °C

pH _____ Temp _____

Flow _____ Other _____

Sample Receipt Checklist

COC Seal Present/Intact: ___ NP ___ Y ___ N ___ Y ___ N ___
 COC Signed/Accurate: ___ Y ___ N ___ Y ___ N ___
 Bottles arrive intact: ___ Y ___ N ___ Y ___ N ___
 Correct bottles used: ___ Y ___ N ___ Y ___ N ___
 Sufficient volume sent: ___ Y ___ N ___ Y ___ N ___
 If Applicable

VOA Zero Headspace: ___ Y ___ N ___
 Preservation Correct/Checked: ___ Y ___ N ___
 RAD Screen <0.5 mkr/hr: ___ Y ___ N ___

If preservation required by Login: Date/Time

Hold: _____ Condition: NCF / OK

October 13, 2022

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

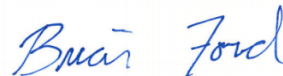
8 Al

9 Sc

Kinder Morgan- Houston, TX(Scott Martin)

Sample Delivery Group: L1538381
Samples Received: 09/22/2022
Project Number: 30111526
Description: KMEP Harbor Island
Site: 2720 13TH AVENUE SW SEATTLE,WA
Report To: Kyle Haslam
1100 Olive Way, Suite 800
Seattle, WA 98101

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

ACCOUNT:

Kinder Morgan- Houston, TX(Scott Martin)

PROJECT:

30111526

SDG:

L1538381

DATE/TIME:

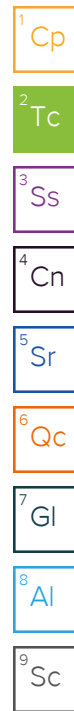
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53

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

SAMPLE SUMMARY

A-23R L1538381-01 GW

Collected by JS/ES Collected date/time 09/19/22 15:40 Received date/time 09/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931534	1	09/23/22 21:56	09/23/22 21:56	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931655	1	09/24/22 01:19	09/24/22 01:19	JHH	Mt. Juliet, TN



MW-1 L1538381-02 GW

Collected by JS/ES Collected date/time 09/19/22 16:50 Received date/time 09/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG1934271	1	10/12/22 11:28	10/12/22 19:16	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1935073	1	10/12/22 09:45	10/12/22 13:24	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931534	1	09/23/22 22:18	09/23/22 22:18	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931655	1	09/24/22 01:37	09/24/22 01:37	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1932053	1	09/25/22 10:20	09/27/22 22:32	DMG	Mt. Juliet, TN

MW-20 L1538381-03 GW

Collected by JS/ES Collected date/time 09/20/22 09:35 Received date/time 09/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931534	1	09/23/22 22:40	09/23/22 22:40	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931655	1	09/24/22 01:56	09/24/22 01:56	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1932053	1	09/25/22 10:20	09/27/22 22:53	DMG	Mt. Juliet, TN

MW-3 L1538381-04 GW

Collected by JS/ES Collected date/time 09/20/22 10:15 Received date/time 09/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG1934271	1	10/12/22 11:28	10/12/22 19:19	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1935073	1	10/12/22 09:45	10/12/22 13:28	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931534	1	09/23/22 23:02	09/23/22 23:02	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931655	1	09/24/22 02:14	09/24/22 02:14	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1932053	1	09/25/22 10:20	09/27/22 23:13	DMG	Mt. Juliet, TN

TMW-1 L1538381-05 GW

Collected by JS/ES Collected date/time 09/20/22 13:35 Received date/time 09/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1930714	10	09/23/22 02:38	09/23/22 02:38	GEB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931534	1	09/23/22 23:24	09/23/22 23:24	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931655	1	09/24/22 02:33	09/24/22 02:33	JHH	Mt. Juliet, TN

TMW-2 L1538381-06 GW

Collected by JS/ES Collected date/time 09/20/22 12:55 Received date/time 09/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1930714	10	09/23/22 02:52	09/23/22 02:52	GEB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931534	1	09/23/22 23:46	09/23/22 23:46	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931655	1	09/24/22 02:51	09/24/22 02:51	JHH	Mt. Juliet, TN

SAMPLE SUMMARY

MW-5 L1538381-07 GW

Collected by JS/ES Collected date/time 09/20/22 13:55 Received date/time 09/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG1934271	1	10/12/22 11:28	10/12/22 19:31	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1935073	1	10/12/22 09:45	10/12/22 13:34	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931534	1	09/24/22 00:08	09/24/22 00:08	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931655	1	09/24/22 03:10	09/24/22 03:10	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1932053	1	09/25/22 10:20	09/27/22 23:33	DMG	Mt. Juliet, TN



MW-14 L1538381-08 GW

Collected by JS/ES Collected date/time 09/20/22 14:45 Received date/time 09/22/22 09:00

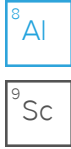
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931534	1	09/24/22 00:30	09/24/22 00:30	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931655	1	09/24/22 03:29	09/24/22 03:29	JHH	Mt. Juliet, TN



MW-19 L1538381-09 GW

Collected by JS/ES Collected date/time 09/20/22 15:40 Received date/time 09/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1930714	1	09/23/22 03:05	09/23/22 03:05	GEB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931534	1	09/24/22 00:51	09/24/22 00:51	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931655	1	09/24/22 03:47	09/24/22 03:47	JHH	Mt. Juliet, TN



MW-6 L1538381-10 GW

Collected by JS/ES Collected date/time 09/21/22 09:05 Received date/time 09/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG1934271	1	10/12/22 11:28	10/12/22 19:34	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1935073	1	10/12/22 09:45	10/12/22 13:38	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931534	1	09/24/22 01:13	09/24/22 01:13	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931727	1	09/24/22 14:09	09/24/22 14:09	DWR	Mt. Juliet, TN

TMW-B1 L1538381-11 GW

Collected by JS/ES Collected date/time 09/21/22 10:00 Received date/time 09/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 3500Fe B-2011	WG1932908	2	09/27/22 15:08	09/27/22 15:08	ARS	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1930672	1	09/22/22 18:38	09/22/22 18:38	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931899	1	09/26/22 07:46	09/26/22 07:46	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1932181	10	09/26/22 10:50	09/26/22 10:50	JAP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931727	1	09/24/22 14:30	09/24/22 14:30	DWR	Mt. Juliet, TN

A-27 L1538381-12 GW

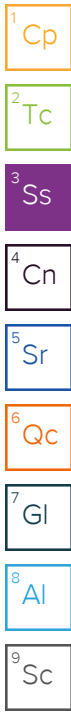
Collected by JS/ES Collected date/time 09/21/22 11:00 Received date/time 09/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 3500Fe B-2011	WG1932908	5	09/27/22 15:09	09/27/22 15:09	ARS	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1930672	1	09/22/22 19:50	09/22/22 19:50	LBR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931899	1	09/26/22 08:08	09/26/22 08:08	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1931168	1	09/25/22 15:22	09/25/22 15:22	JAP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931727	1	09/24/22 14:51	09/24/22 14:51	DWR	Mt. Juliet, TN

SAMPLE SUMMARY

MW-24 L1538381-13 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location	Collected by	Collected date/time	Received date/time
							JS/ES	09/21/22 12:00	09/22/22 09:00
Wet Chemistry by Method 3500Fe B-2011	WG1932908	20	09/27/22 15:10	09/27/22 15:10	ARS	Mt. Juliet, TN			
Wet Chemistry by Method 9056A	WG1930672	1	09/22/22 20:08	09/22/22 20:08	LBR	Mt. Juliet, TN			
Metals (ICPMS) by Method 6020B	WG1934271	1	10/12/22 11:28	10/12/22 19:37	LD	Mt. Juliet, TN			
Metals (ICPMS) by Method 6020B	WG1935073	1	10/12/22 09:45	10/12/22 13:41	JPD	Mt. Juliet, TN			
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931899	10	09/26/22 09:36	09/26/22 09:36	BAM	Mt. Juliet, TN			
Volatile Organic Compounds (GC) by Method RSK175	WG1932181	10	09/26/22 10:52	09/26/22 10:52	JAP	Mt. Juliet, TN			
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931727	10	09/24/22 21:25	09/24/22 21:25	DWR	Mt. Juliet, TN			



MW-23 L1538381-14 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location	Collected by	Collected date/time	Received date/time
							JS/ES	09/21/22 12:50	09/22/22 09:00
Wet Chemistry by Method 3500Fe B-2011	WG1932908	10	09/27/22 15:11	09/27/22 15:11	ARS	Mt. Juliet, TN			
Wet Chemistry by Method 9056A	WG1930672	1	09/22/22 20:26	09/22/22 20:26	LBR	Mt. Juliet, TN			
Metals (ICPMS) by Method 6020B	WG1934271	1	10/12/22 11:28	10/12/22 18:56	LD	Mt. Juliet, TN			
Metals (ICPMS) by Method 6020B	WG1935073	1	10/12/22 09:45	10/12/22 13:44	JPD	Mt. Juliet, TN			
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931899	5	09/26/22 09:14	09/26/22 09:14	BAM	Mt. Juliet, TN			
Volatile Organic Compounds (GC) by Method RSK175	WG1932181	10	09/26/22 10:58	09/26/22 10:58	JAP	Mt. Juliet, TN			
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931727	5	09/24/22 21:45	09/24/22 21:45	DWR	Mt. Juliet, TN			

MW-22 L1538381-15 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location	Collected by	Collected date/time	Received date/time
							JS/ES	09/21/22 14:20	09/22/22 09:00
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931899	1	09/26/22 08:30	09/26/22 08:30	BAM	Mt. Juliet, TN			
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931727	1	09/24/22 15:12	09/24/22 15:12	DWR	Mt. Juliet, TN			
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1932053	1	09/25/22 10:20	09/27/22 23:53	DMG	Mt. Juliet, TN			

MW-2 L1538381-16 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location	Collected by	Collected date/time	Received date/time
							JS/ES	09/21/22 14:20	09/22/22 09:00
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931899	1	09/26/22 08:52	09/26/22 08:52	BAM	Mt. Juliet, TN			
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931727	1	09/24/22 15:32	09/24/22 15:32	DWR	Mt. Juliet, TN			
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1932053	1	09/25/22 10:20	09/28/22 00:14	DMG	Mt. Juliet, TN			

A-28R L1538381-17 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location	Collected by	Collected date/time	Received date/time
							JS/ES	09/21/22 11:30	09/22/22 09:00
Wet Chemistry by Method 3500Fe B-2011	WG1932908	20	09/27/22 15:11	09/27/22 15:11	ARS	Mt. Juliet, TN			
Wet Chemistry by Method 9056A	WG1930672	1	09/22/22 21:19	09/22/22 21:19	LBR	Mt. Juliet, TN			
Metals (ICPMS) by Method 6020B	WG1934271	1	10/12/22 11:28	10/12/22 19:41	LD	Mt. Juliet, TN			
Metals (ICPMS) by Method 6020B	WG1935073	1	10/12/22 09:45	10/12/22 14:00	JPD	Mt. Juliet, TN			
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931902	1	09/26/22 04:59	09/26/22 04:59	MGF	Mt. Juliet, TN			
Volatile Organic Compounds (GC) by Method RSK175	WG1931168	1	09/25/22 15:31	09/25/22 15:31	JAP	Mt. Juliet, TN			
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931727	1	09/24/22 15:53	09/24/22 15:53	DWR	Mt. Juliet, TN			

SAMPLE SUMMARY

A-21 L1538381-18 GW

Collected by JS/ES Collected date/time 09/21/22 13:25 Received date/time 09/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG1934271	1	10/12/22 11:28	10/12/22 19:44	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1935073	1	10/12/22 09:45	10/12/22 14:04	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931902	1	09/26/22 05:46	09/26/22 05:46	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931727	1	09/24/22 16:14	09/24/22 16:14	DWR	Mt. Juliet, TN



MW-16 L1538381-19 GW

Collected by JS/ES Collected date/time 09/21/22 10:05 Received date/time 09/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931902	1	09/26/22 06:07	09/26/22 06:07	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931727	1	09/24/22 16:35	09/24/22 16:35	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1932053	1	09/25/22 10:20	09/28/22 00:34	DMG	Mt. Juliet, TN

MW-18 L1538381-20 GW

Collected by JS/ES Collected date/time 09/21/22 09:10 Received date/time 09/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931902	1	09/26/22 06:29	09/26/22 06:29	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931727	1	09/24/22 16:56	09/24/22 16:56	DWR	Mt. Juliet, TN

MW-7 L1538381-21 GW

Collected by JS/ES Collected date/time 09/20/22 13:25 Received date/time 09/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1930714	10	09/23/22 03:19	09/23/22 03:19	GEB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1934271	1	10/12/22 11:28	10/12/22 19:47	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1935073	1	10/12/22 09:45	10/12/22 14:07	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931902	1	09/26/22 06:58	09/26/22 06:58	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931727	1	09/24/22 17:16	09/24/22 17:16	DWR	Mt. Juliet, TN

TMW-4 L1538381-22 GW

Collected by JS/ES Collected date/time 09/20/22 16:10 Received date/time 09/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1930714	5	09/23/22 03:32	09/23/22 03:32	GEB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931902	1	09/26/22 07:19	09/26/22 07:19	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931727	1	09/24/22 17:37	09/24/22 17:37	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1932134	5	09/26/22 03:19	09/26/22 03:19	JAH	Mt. Juliet, TN

TMW-5 L1538381-23 GW

Collected by JS/ES Collected date/time 09/20/22 10:05 Received date/time 09/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1930714	5	09/23/22 03:46	09/23/22 03:46	GEB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931902	1	09/26/22 07:41	09/26/22 07:41	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931727	1	09/24/22 17:58	09/24/22 17:58	DWR	Mt. Juliet, TN

SAMPLE SUMMARY

TMW-3 L1538381-24 GW

Collected by JS/ES Collected date/time 09/20/22 14:35 Received date/time 09/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1930714	10	09/23/22 03:59	09/23/22 03:59	GEB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931902	1	09/26/22 08:02	09/26/22 08:02	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931727	1	09/24/22 18:19	09/24/22 18:19	DWR	Mt. Juliet, TN

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

DUP-1 L1538381-25 GW

Collected by JS/ES Collected date/time 09/20/22 00:00 Received date/time 09/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1930714	10	09/23/22 04:40	09/23/22 04:40	GEB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1934271	1	10/12/22 11:28	10/12/22 19:51	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1935073	1	10/12/22 09:45	10/12/22 14:10	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931902	1	09/26/22 08:24	09/26/22 08:24	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931727	1	09/24/22 18:39	09/24/22 18:39	DWR	Mt. Juliet, TN

TRIP BLANK L1538381-26 GW

Collected by JS/ES Collected date/time 09/20/22 00:00 Received date/time 09/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1931902	1	09/26/22 04:37	09/26/22 04:37	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1931727	1	09/24/22 13:28	09/24/22 13:28	DWR	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	09/23/2022 21:56	WG1931534
(S) a,a,a-Trifluorotoluene(FID)	90.8		78.0-120		09/23/2022 21:56	WG1931534

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/24/2022 01:19	WG1931655
Toluene	ND		1.00	1	09/24/2022 01:19	WG1931655
Ethylbenzene	ND		1.00	1	09/24/2022 01:19	WG1931655
Total Xylenes	ND		3.00	1	09/24/2022 01:19	WG1931655
(S) Toluene-d8	109		80.0-120		09/24/2022 01:19	WG1931655
(S) 4-Bromofluorobenzene	102		77.0-126		09/24/2022 01:19	WG1931655
(S) 1,2-Dichloroethane-d4	112		70.0-130		09/24/2022 01:19	WG1931655

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Lead	ND		2.00	1	10/12/2022 19:16	WG1934271
Lead,Dissolved	ND		2.00	1	10/12/2022 13:24	WG1935073

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	09/23/2022 22:18	WG1931534
(S) a,a,a-Trifluorotoluene(FID)	98.6		78.0-120		09/23/2022 22:18	WG1931534

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	09/24/2022 01:37	WG1931655
Toluene	ND		1.00	1	09/24/2022 01:37	WG1931655
Ethylbenzene	ND		1.00	1	09/24/2022 01:37	WG1931655
Total Xylenes	ND		3.00	1	09/24/2022 01:37	WG1931655
(S) Toluene-d8	108		80.0-120		09/24/2022 01:37	WG1931655
(S) 4-Bromofluorobenzene	96.3		77.0-126		09/24/2022 01:37	WG1931655
(S) 1,2-Dichloroethane-d4	106		70.0-130		09/24/2022 01:37	WG1931655

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	ND		200	1	09/27/2022 22:32	WG1932053
Residual Range Organics (RRO)	ND		250	1	09/27/2022 22:32	WG1932053
(S) o-Terphenyl	92.1		52.0-156		09/27/2022 22:32	WG1932053

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	09/23/2022 22:40	WG1931534
(S) a,a,a-Trifluorotoluene(FID)	99.1		78.0-120		09/23/2022 22:40	WG1931534

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/24/2022 01:56	WG1931655
Toluene	ND		1.00	1	09/24/2022 01:56	WG1931655
Ethylbenzene	ND		1.00	1	09/24/2022 01:56	WG1931655
Total Xylenes	ND		3.00	1	09/24/2022 01:56	WG1931655
(S) Toluene-d8	113		80.0-120		09/24/2022 01:56	WG1931655
(S) 4-Bromofluorobenzene	98.1		77.0-126		09/24/2022 01:56	WG1931655
(S) 1,2-Dichloroethane-d4	106		70.0-130		09/24/2022 01:56	WG1931655

4 Cn

5 Sr

6 Qc

7 Gl

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		200	1	09/27/2022 22:53	WG1932053
Residual Range Organics (RRO)	ND		250	1	09/27/2022 22:53	WG1932053
(S) o-Terphenyl	90.0		52.0-156		09/27/2022 22:53	WG1932053

8 Al

9 Sc

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Lead	ND		2.00	1	10/12/2022 19:19	WG1934271
Lead,Dissolved	ND		2.00	1	10/12/2022 13:28	WG1935073

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	09/23/2022 23:02	WG1931534
(S) a,a,a-Trifluorotoluene(FID)	98.6		78.0-120		09/23/2022 23:02	WG1931534

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	09/24/2022 02:14	WG1931655
Toluene	ND		1.00	1	09/24/2022 02:14	WG1931655
Ethylbenzene	ND		1.00	1	09/24/2022 02:14	WG1931655
Total Xylenes	ND		3.00	1	09/24/2022 02:14	WG1931655
(S) Toluene-d8	110		80.0-120		09/24/2022 02:14	WG1931655
(S) 4-Bromofluorobenzene	95.3		77.0-126		09/24/2022 02:14	WG1931655
(S) 1,2-Dichloroethane-d4	103		70.0-130		09/24/2022 02:14	WG1931655

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	ND		200	1	09/27/2022 23:13	WG1932053
Residual Range Organics (RRO)	ND		250	1	09/27/2022 23:13	WG1932053
(S) o-Terphenyl	99.5		52.0-156		09/27/2022 23:13	WG1932053

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	708000		50000	10	09/23/2022 02:38	WG1930714

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	09/23/2022 23:24	WG1931534
(S) a,a,a-Trifluorotoluene(FID)	98.6		78.0-120		09/23/2022 23:24	WG1931534

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/24/2022 02:33	WG1931655
Toluene	ND		1.00	1	09/24/2022 02:33	WG1931655
Ethylbenzene	ND		1.00	1	09/24/2022 02:33	WG1931655
Total Xylenes	ND		3.00	1	09/24/2022 02:33	WG1931655
(S) Toluene-d8	114		80.0-120		09/24/2022 02:33	WG1931655
(S) 4-Bromofluorobenzene	103		77.0-126		09/24/2022 02:33	WG1931655
(S) 1,2-Dichloroethane-d4	110		70.0-130		09/24/2022 02:33	WG1931655

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	868000		50000	10	09/23/2022 02:52	WG1930714

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	09/23/2022 23:46	WG1931534
(S) a,a,a-Trifluorotoluene(FID)	97.3		78.0-120		09/23/2022 23:46	WG1931534

3 Ss

4 Cn

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/24/2022 02:51	WG1931655
Toluene	ND		1.00	1	09/24/2022 02:51	WG1931655
Ethylbenzene	ND		1.00	1	09/24/2022 02:51	WG1931655
Total Xylenes	ND		3.00	1	09/24/2022 02:51	WG1931655
(S) Toluene-d8	110		80.0-120		09/24/2022 02:51	WG1931655
(S) 4-Bromofluorobenzene	98.5		77.0-126		09/24/2022 02:51	WG1931655
(S) 1,2-Dichloroethane-d4	105		70.0-130		09/24/2022 02:51	WG1931655

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Lead	2.53		2.00	1	10/12/2022 19:31	WG1934271
Lead,Dissolved	ND		2.00	1	10/12/2022 13:34	WG1935073

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	09/24/2022 00:08	WG1931534
(S) a,a,a-Trifluorotoluene(FID)	98.1		78.0-120		09/24/2022 00:08	WG1931534

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	09/24/2022 03:10	WG1931655
Toluene	ND		1.00	1	09/24/2022 03:10	WG1931655
Ethylbenzene	ND		1.00	1	09/24/2022 03:10	WG1931655
Total Xylenes	ND		3.00	1	09/24/2022 03:10	WG1931655
(S) Toluene-d8	114		80.0-120		09/24/2022 03:10	WG1931655
(S) 4-Bromofluorobenzene	102		77.0-126		09/24/2022 03:10	WG1931655
(S) 1,2-Dichloroethane-d4	110		70.0-130		09/24/2022 03:10	WG1931655

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	ND		200	1	09/27/2022 23:33	WG1932053
Residual Range Organics (RRO)	ND		250	1	09/27/2022 23:33	WG1932053
(S) o-Terphenyl	85.8		52.0-156		09/27/2022 23:33	WG1932053

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	09/24/2022 00:30	WG1931534
(S) a,a,a-Trifluorotoluene(FID)	97.3		78.0-120		09/24/2022 00:30	WG1931534

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/24/2022 03:29	WG1931655
Toluene	ND		1.00	1	09/24/2022 03:29	WG1931655
Ethylbenzene	ND		1.00	1	09/24/2022 03:29	WG1931655
Total Xylenes	ND		3.00	1	09/24/2022 03:29	WG1931655
(S) Toluene-d8	110		80.0-120		09/24/2022 03:29	WG1931655
(S) 4-Bromofluorobenzene	103		77.0-126		09/24/2022 03:29	WG1931655
(S) 1,2-Dichloroethane-d4	108		70.0-130		09/24/2022 03:29	WG1931655

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	ND		5000	1	09/23/2022 03:05	WG1930714

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	1780		100	1	09/24/2022 00:51	WG1931534
(S) a,a,a-Trifluorotoluene(FID)	88.3		78.0-120		09/24/2022 00:51	WG1931534

3 Ss

4 Cn

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/24/2022 03:47	WG1931655
Toluene	2.50		1.00	1	09/24/2022 03:47	WG1931655
Ethylbenzene	22.3		1.00	1	09/24/2022 03:47	WG1931655
Total Xylenes	182		3.00	1	09/24/2022 03:47	WG1931655
(S) Toluene-d8	107		80.0-120		09/24/2022 03:47	WG1931655
(S) 4-Bromofluorobenzene	102		77.0-126		09/24/2022 03:47	WG1931655
(S) 1,2-Dichloroethane-d4	109		70.0-130		09/24/2022 03:47	WG1931655

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lead	ND		2.00	1	10/12/2022 19:34	WG1934271
Lead,Dissolved	ND		2.00	1	10/12/2022 13:38	WG1935073

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	232		100	1	09/24/2022 01:13	WG1931534
(S) a,a,a-Trifluorotoluene(FID)	94.8		78.0-120		09/24/2022 01:13	WG1931534

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/24/2022 14:09	WG1931727
Toluene	ND		1.00	1	09/24/2022 14:09	WG1931727
Ethylbenzene	ND		1.00	1	09/24/2022 14:09	WG1931727
Total Xylenes	ND		3.00	1	09/24/2022 14:09	WG1931727
(S) Toluene-d8	111		80.0-120		09/24/2022 14:09	WG1931727
(S) 4-Bromofluorobenzene	93.3		77.0-126		09/24/2022 14:09	WG1931727
(S) 1,2-Dichloroethane-d4	90.5		70.0-130		09/24/2022 14:09	WG1931727

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 3500Fe B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Ferrous Iron	5700	T8	100	2	09/27/2022 15:08	WG1932908

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Nitrate	ND		100	1	09/22/2022 18:38	WG1930672
Sulfate	ND		5000	1	09/22/2022 18:38	WG1930672

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	5050		100	1	09/26/2022 07:46	WG1931899
(S) a,a,a-Trifluorotoluene(FID)	87.3		78.0-120		09/26/2022 07:46	WG1931899

6 Qc

7 Gl

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Methane	9310		100	10	09/26/2022 10:50	WG1932181

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	19.0		1.00	1	09/24/2022 14:30	WG1931727
Toluene	2.42		1.00	1	09/24/2022 14:30	WG1931727
Ethylbenzene	15.6		1.00	1	09/24/2022 14:30	WG1931727
Total Xylenes	6.85		3.00	1	09/24/2022 14:30	WG1931727
(S) Toluene-d8	112		80.0-120		09/24/2022 14:30	WG1931727
(S) 4-Bromofluorobenzene	92.4		77.0-126		09/24/2022 14:30	WG1931727
(S) 1,2-Dichloroethane-d4	132	J1	70.0-130		09/24/2022 14:30	WG1931727

Wet Chemistry by Method 3500Fe B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Ferrous Iron	9040	T8	250	5	09/27/2022 15:09	WG1932908

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Nitrate	ND		100	1	09/22/2022 19:50	WG1930672
Sulfate	19800		5000	1	09/22/2022 19:50	WG1930672

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	835		100	1	09/26/2022 08:08	WG1931899
(S) a,a,a-Trifluorotoluene(FID)	84.9		78.0-120		09/26/2022 08:08	WG1931899

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Methane	2560		10.0	1	09/25/2022 15:22	WG1931168

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	34.3		1.00	1	09/24/2022 14:51	WG1931727
Toluene	ND		1.00	1	09/24/2022 14:51	WG1931727
Ethylbenzene	10.8		1.00	1	09/24/2022 14:51	WG1931727
Total Xylenes	ND		3.00	1	09/24/2022 14:51	WG1931727
(S) Toluene-d8	102		80.0-120		09/24/2022 14:51	WG1931727
(S) 4-Bromofluorobenzene	94.1		77.0-126		09/24/2022 14:51	WG1931727
(S) 1,2-Dichloroethane-d4	88.3		70.0-130		09/24/2022 14:51	WG1931727

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 3500Fe B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Ferrous Iron	52200	T8	1000	20	09/27/2022 15:10	WG1932908

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Nitrate	ND		100	1	09/22/2022 20:08	WG1930672
Sulfate	ND		5000	1	09/22/2022 20:08	WG1930672

3 Ss

4 Cn

5 Sr

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lead	3.03		2.00	1	10/12/2022 19:37	WG1934271
Lead,Dissolved	ND		2.00	1	10/12/2022 13:41	WG1935073

6 Qc

7 Gl

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	8240		1000	10	09/26/2022 09:36	WG1931899
(S) a,a,a-Trifluorotoluene(FID)	85.7		78.0-120		09/26/2022 09:36	WG1931899

8 Al

9 Sc

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Methane	11600		100	10	09/26/2022 10:52	WG1932181

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	407		10.0	10	09/24/2022 21:25	WG1931727
Toluene	21.7		10.0	10	09/24/2022 21:25	WG1931727
Ethylbenzene	772		10.0	10	09/24/2022 21:25	WG1931727
Total Xylenes	201		30.0	10	09/24/2022 21:25	WG1931727
(S) Toluene-d8	101		80.0-120		09/24/2022 21:25	WG1931727
(S) 4-Bromofluorobenzene	95.4		77.0-126		09/24/2022 21:25	WG1931727
(S) 1,2-Dichloroethane-d4	93.9		70.0-130		09/24/2022 21:25	WG1931727

Wet Chemistry by Method 3500Fe B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Ferrous Iron	15400	T8	500	10	09/27/2022 15:11	WG1932908

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Nitrate	ND		100	1	09/22/2022 20:26	WG1930672
Sulfate	ND		5000	1	09/22/2022 20:26	WG1930672

3 Ss

4 Cn

5 Sr

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lead	ND		2.00	1	10/12/2022 18:56	WG1934271
Lead,Dissolved	ND		2.00	1	10/12/2022 13:44	WG1935073

6 Qc

7 Gl

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	2660		500	5	09/26/2022 09:14	WG1931899
(S) a,a,a-Trifluorotoluene(FID)	85.6		78.0-120		09/26/2022 09:14	WG1931899

8 Al

9 Sc

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Methane	12400		100	10	09/26/2022 10:58	WG1932181

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	140		5.00	5	09/24/2022 21:45	WG1931727
Toluene	6.25		5.00	5	09/24/2022 21:45	WG1931727
Ethylbenzene	8.42		5.00	5	09/24/2022 21:45	WG1931727
Total Xylenes	ND		15.0	5	09/24/2022 21:45	WG1931727
(S) Toluene-d8	107		80.0-120		09/24/2022 21:45	WG1931727
(S) 4-Bromofluorobenzene	95.8		77.0-126		09/24/2022 21:45	WG1931727
(S) 1,2-Dichloroethane-d4	93.8		70.0-130		09/24/2022 21:45	WG1931727

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	09/26/2022 08:30	WG1931899
(S) a,a,a-Trifluorotoluene(FID)	92.9		78.0-120		09/26/2022 08:30	WG1931899

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/24/2022 15:12	WG1931727
Toluene	ND		1.00	1	09/24/2022 15:12	WG1931727
Ethylbenzene	ND		1.00	1	09/24/2022 15:12	WG1931727
Total Xylenes	ND		3.00	1	09/24/2022 15:12	WG1931727
(S) Toluene-d8	107		80.0-120		09/24/2022 15:12	WG1931727
(S) 4-Bromofluorobenzene	94.4		77.0-126		09/24/2022 15:12	WG1931727
(S) 1,2-Dichloroethane-d4	91.5		70.0-130		09/24/2022 15:12	WG1931727

4 Cn

5 Sr

6 Qc

7 Gl

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	485		200	1	09/27/2022 23:53	WG1932053
Residual Range Organics (RRO)	ND		250	1	09/27/2022 23:53	WG1932053
(S) o-Terphenyl	96.8		52.0-156		09/27/2022 23:53	WG1932053

8 Al

9 Sc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	09/26/2022 08:52	WG1931899
(S) a,a,a-Trifluorotoluene(FID)	93.0		78.0-120		09/26/2022 08:52	WG1931899

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/24/2022 15:32	WG1931727
Toluene	ND		1.00	1	09/24/2022 15:32	WG1931727
Ethylbenzene	ND		1.00	1	09/24/2022 15:32	WG1931727
Total Xylenes	ND		3.00	1	09/24/2022 15:32	WG1931727
(S) Toluene-d8	108		80.0-120		09/24/2022 15:32	WG1931727
(S) 4-Bromofluorobenzene	94.1		77.0-126		09/24/2022 15:32	WG1931727
(S) 1,2-Dichloroethane-d4	91.1		70.0-130		09/24/2022 15:32	WG1931727

4 Cn

5 Sr

6 Qc

7 Gl

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		200	1	09/28/2022 00:14	WG1932053
Residual Range Organics (RRO)	ND		250	1	09/28/2022 00:14	WG1932053
(S) o-Terphenyl	88.9		52.0-156		09/28/2022 00:14	WG1932053

8 Al

9 Sc

Wet Chemistry by Method 3500Fe B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Ferrous Iron	31900	T8	1000	20	09/27/2022 15:11	WG1932908

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Nitrate	ND		100	1	09/22/2022 21:19	WG1930672
Sulfate	31900		5000	1	09/22/2022 21:19	WG1930672

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lead	ND		2.00	1	10/12/2022 19:41	WG1934271
Lead,Dissolved	ND		2.00	1	10/12/2022 14:00	WG1935073

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	1040		100	1	09/26/2022 04:59	WG1931902
(S) a,a,a-Trifluorotoluene(FID)	115		78.0-120		09/26/2022 04:59	WG1931902

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Methane	3200		10.0	1	09/25/2022 15:31	WG1931168

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	6.31		1.00	1	09/24/2022 15:53	WG1931727
Toluene	1.60		1.00	1	09/24/2022 15:53	WG1931727
Ethylbenzene	2.63		1.00	1	09/24/2022 15:53	WG1931727
Total Xylenes	ND		3.00	1	09/24/2022 15:53	WG1931727
(S) Toluene-d8	105		80.0-120		09/24/2022 15:53	WG1931727
(S) 4-Bromofluorobenzene	94.1		77.0-126		09/24/2022 15:53	WG1931727
(S) 1,2-Dichloroethane-d4	92.6		70.0-130		09/24/2022 15:53	WG1931727

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lead	ND		2.00	1	10/12/2022 19:44	WG1934271
Lead,Dissolved	ND		2.00	1	10/12/2022 14:04	WG1935073

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	111		100	1	09/26/2022 05:46	WG1931902
(S) a,a,a-Trifluorotoluene(FID)	107		78.0-120		09/26/2022 05:46	WG1931902

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/24/2022 16:14	WG1931727
Toluene	ND		1.00	1	09/24/2022 16:14	WG1931727
Ethylbenzene	ND		1.00	1	09/24/2022 16:14	WG1931727
Total Xylenes	ND		3.00	1	09/24/2022 16:14	WG1931727
(S) Toluene-d8	109		80.0-120		09/24/2022 16:14	WG1931727
(S) 4-Bromofluorobenzene	99.7		77.0-126		09/24/2022 16:14	WG1931727
(S) 1,2-Dichloroethane-d4	92.8		70.0-130		09/24/2022 16:14	WG1931727

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	09/26/2022 06:07	WG1931902
(S) a,a,a-Trifluorotoluene(FID)	108		78.0-120		09/26/2022 06:07	WG1931902

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/24/2022 16:35	WG1931727
Toluene	ND		1.00	1	09/24/2022 16:35	WG1931727
Ethylbenzene	ND		1.00	1	09/24/2022 16:35	WG1931727
Total Xylenes	ND		3.00	1	09/24/2022 16:35	WG1931727
(S) Toluene-d8	109		80.0-120		09/24/2022 16:35	WG1931727
(S) 4-Bromofluorobenzene	95.2		77.0-126		09/24/2022 16:35	WG1931727
(S) 1,2-Dichloroethane-d4	90.1		70.0-130		09/24/2022 16:35	WG1931727

4 Cn

5 Sr

6 Qc

7 Gl

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		200	1	09/28/2022 00:34	WG1932053
Residual Range Organics (RRO)	ND		250	1	09/28/2022 00:34	WG1932053
(S) o-Terphenyl	92.6		52.0-156		09/28/2022 00:34	WG1932053

8 Al

9 Sc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	09/26/2022 06:29	WG1931902
(S) a,a,a-Trifluorotoluene(FID)	109		78.0-120		09/26/2022 06:29	WG1931902

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/24/2022 16:56	WG1931727
Toluene	ND		1.00	1	09/24/2022 16:56	WG1931727
Ethylbenzene	ND		1.00	1	09/24/2022 16:56	WG1931727
Total Xylenes	ND		3.00	1	09/24/2022 16:56	WG1931727
(S) Toluene-d8	108		80.0-120		09/24/2022 16:56	WG1931727
(S) 4-Bromofluorobenzene	95.1		77.0-126		09/24/2022 16:56	WG1931727
(S) 1,2-Dichloroethane-d4	90.6		70.0-130		09/24/2022 16:56	WG1931727

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	604000		50000	10	09/23/2022 03:19	WG1930714

Metals (ICPMS) by Method 6020B

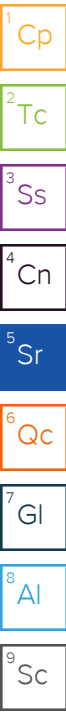
Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lead	4.06		2.00	1	10/12/2022 19:47	WG1934271
Lead,Dissolved	2.44	<u>B</u>	2.00	1	10/12/2022 14:07	WG1935073

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	119		100	1	09/26/2022 06:58	WG1931902
(S) a,a,a-Trifluorotoluene(FID)	101		78.0-120		09/26/2022 06:58	WG1931902

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/24/2022 17:16	WG1931727
Toluene	ND		1.00	1	09/24/2022 17:16	WG1931727
Ethylbenzene	2.33		1.00	1	09/24/2022 17:16	WG1931727
Total Xylenes	ND		3.00	1	09/24/2022 17:16	WG1931727
(S) Toluene-d8	108		80.0-120		09/24/2022 17:16	WG1931727
(S) 4-Bromofluorobenzene	95.9		77.0-126		09/24/2022 17:16	WG1931727
(S) 1,2-Dichloroethane-d4	89.9		70.0-130		09/24/2022 17:16	WG1931727



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	382000		25000	5	09/23/2022 03:32	WG1930714

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	2060		100	1	09/26/2022 07:19	WG1931902
(S) a,a,a-Trifluorotoluene(FID)	111		78.0-120		09/26/2022 07:19	WG1931902

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/24/2022 17:37	WG1931727
Toluene	15.8		1.00	1	09/24/2022 17:37	WG1931727
Ethylbenzene	193		5.00	5	09/26/2022 03:19	WG1932134
Total Xylenes	192		3.00	1	09/24/2022 17:37	WG1931727
(S) Toluene-d8	93.0		80.0-120		09/24/2022 17:37	WG1931727
(S) Toluene-d8	105		80.0-120		09/26/2022 03:19	WG1932134
(S) 4-Bromofluorobenzene	88.9		77.0-126		09/24/2022 17:37	WG1931727
(S) 4-Bromofluorobenzene	92.3		77.0-126		09/26/2022 03:19	WG1932134
(S) 1,2-Dichloroethane-d4	91.3		70.0-130		09/24/2022 17:37	WG1931727
(S) 1,2-Dichloroethane-d4	91.0		70.0-130		09/26/2022 03:19	WG1932134

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	417000		25000	5	09/23/2022 03:46	WG1930714

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	439		100	1	09/26/2022 07:41	WG1931902
(S) a,a,a-Trifluorotoluene(FID)	108		78.0-120		09/26/2022 07:41	WG1931902

3 Ss

4 Cn

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	5.85		1.00	1	09/24/2022 17:58	WG1931727
Toluene	3.09		1.00	1	09/24/2022 17:58	WG1931727
Ethylbenzene	ND		1.00	1	09/24/2022 17:58	WG1931727
Total Xylenes	ND		3.00	1	09/24/2022 17:58	WG1931727
(S) Toluene-d8	106		80.0-120		09/24/2022 17:58	WG1931727
(S) 4-Bromofluorobenzene	97.2		77.0-126		09/24/2022 17:58	WG1931727
(S) 1,2-Dichloroethane-d4	90.3		70.0-130		09/24/2022 17:58	WG1931727

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	627000		50000	10	09/23/2022 03:59	WG1930714

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	09/26/2022 08:02	WG1931902
(S) a,a,a-Trifluorotoluene(FID)	109		78.0-120		09/26/2022 08:02	WG1931902

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/24/2022 18:19	WG1931727
Toluene	ND		1.00	1	09/24/2022 18:19	WG1931727
Ethylbenzene	ND		1.00	1	09/24/2022 18:19	WG1931727
Total Xylenes	ND		3.00	1	09/24/2022 18:19	WG1931727
(S) Toluene-d8	106		80.0-120		09/24/2022 18:19	WG1931727
(S) 4-Bromofluorobenzene	96.9		77.0-126		09/24/2022 18:19	WG1931727
(S) 1,2-Dichloroethane-d4	89.3		70.0-130		09/24/2022 18:19	WG1931727

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	591000		50000	10	09/23/2022 04:40	WG1930714

Metals (ICPMS) by Method 6020B

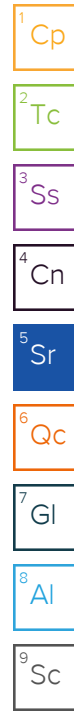
Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lead	3.99		2.00	1	10/12/2022 19:51	WG1934271
Lead,Dissolved	ND		2.00	1	10/12/2022 14:10	WG1935073

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	146		100	1	09/26/2022 08:24	WG1931902
(S) a,a,a-Trifluorotoluene(FID)	106		78.0-120		09/26/2022 08:24	WG1931902

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/24/2022 18:39	WG1931727
Toluene	ND		1.00	1	09/24/2022 18:39	WG1931727
Ethylbenzene	2.44		1.00	1	09/24/2022 18:39	WG1931727
Total Xylenes	ND		3.00	1	09/24/2022 18:39	WG1931727
(S) Toluene-d8	107		80.0-120		09/24/2022 18:39	WG1931727
(S) 4-Bromofluorobenzene	95.9		77.0-126		09/24/2022 18:39	WG1931727
(S) 1,2-Dichloroethane-d4	90.9		70.0-130		09/24/2022 18:39	WG1931727



Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	09/26/2022 04:37	WG1931902
(S) a,a,a-Trifluorotoluene(FID)	106		78.0-120		09/26/2022 04:37	WG1931902

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/24/2022 13:28	WG1931727
Toluene	ND		1.00	1	09/24/2022 13:28	WG1931727
Ethylbenzene	ND		1.00	1	09/24/2022 13:28	WG1931727
Total Xylenes	ND		3.00	1	09/24/2022 13:28	WG1931727
(S) Toluene-d8	112		80.0-120		09/24/2022 13:28	WG1931727
(S) 4-Bromofluorobenzene	97.1		77.0-126		09/24/2022 13:28	WG1931727
(S) 1,2-Dichloroethane-d4	92.6		70.0-130		09/24/2022 13:28	WG1931727

Method Blank (MB)

(MB) R3841925-1 09/27/22 15:03

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Ferrous Iron	U		15.0	50.0

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1537951-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1537951-02 09/27/22 15:04 • (DUP) R3841925-3 09/27/22 15:04

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Ferrous Iron	320	354	1	10.1		20

L1538598-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1538598-01 09/27/22 15:12 • (DUP) R3841925-4 09/27/22 15:13

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Ferrous Iron	ND	ND	1	16.7		20

Laboratory Control Sample (LCS)

(LCS) R3841925-2 09/27/22 15:03

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Ferrous Iron	1000	954	95.4	85.0-115	

L1538598-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1538598-05 09/27/22 15:15 • (MS) R3841925-5 09/27/22 15:15 • (MSD) R3841925-6 09/27/22 15:16

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Ferrous Iron	1000	ND	948	957	94.8	95.7	1	80.0-120			0.945	20

Method Blank (MB)

(MB) R3840854-1 09/22/22 17:44

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Nitrate	U		48.0	100
Sulfate	U		594	5000

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1538381-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1538381-11 09/22/22 18:38 • (DUP) R3840854-3 09/22/22 18:56

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Nitrate	ND	ND	1	0.000		15
Sulfate	ND	ND	1	0.000		15

L1538389-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1538389-03 09/22/22 22:49 • (DUP) R3840854-6 09/22/22 23:07

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Nitrate	116	110	1	5.33		15
Sulfate	21900	21600	1	1.28		15

Laboratory Control Sample (LCS)

(LCS) R3840854-2 09/22/22 18:02

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Nitrate	8000	7920	99.0	80.0-120	
Sulfate	40000	40200	101	80.0-120	

L1538381-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1538381-11 09/22/22 18:38 • (MS) R3840854-4 09/22/22 19:14 • (MSD) R3840854-5 09/22/22 19:32

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Nitrate	5000	ND	4780	4850	95.6	97.0	1	80.0-120			1.45	15
Sulfate	50000	ND	49800	49900	99.5	99.8	1	80.0-120			0.312	15

L1538389-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1538389-03 09/22/22 22:49 • (MS) R3840854-7 09/22/22 23:25 • (MSD) R3840854-8 09/22/22 23:43

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Nitrate	5000	116	4680	4780	91.3	93.3	1	80.0-120			2.06	15
Sulfate	50000	21900	70200	71000	96.5	98.1	1	80.0-120			1.13	15

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Method Blank (MB)

(MB) R3841535-1 09/22/22 23:27

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Sulfate	U		594	5000

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1538380-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1538380-01 09/23/22 01:00 • (DUP) R3841535-3 09/23/22 01:17

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	23900	23600	1	1.06		15

L1538463-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1538463-04 09/23/22 06:14 • (DUP) R3841535-6 09/23/22 06:28

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	7440	7370	1	1.03		15

Laboratory Control Sample (LCS)

(LCS) R3841535-2 09/22/22 23:40

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Sulfate	40000	40000	100	80.0-120	

L1538380-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1538380-01 09/23/22 01:00 • (MS) R3841535-4 09/23/22 01:58 • (MSD) R3841535-5 09/23/22 02:11

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Sulfate	50000	23900	77200	76100	107	105	1	80.0-120			1.34	15

L1538463-04 Original Sample (OS) • Matrix Spike (MS)

(OS) L1538463-04 09/23/22 06:14 • (MS) R3841535-7 09/23/22 06:41

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Sulfate	50000	7440	58400	102	1	80.0-120	

Method Blank (MB)

(MB) R3847810-3 10/12/22 18:49

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Lead	U		0.849	2.00

¹Cp

²Tc

³Ss

Laboratory Control Sample (LCS)

(LCS) R3847810-4 10/12/22 18:52

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lead	50.0	46.8	93.5	80.0-120	

⁴Cn

⁵Sr

L1538381-14 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1538381-14 10/12/22 18:56 • (MS) R3847810-6 10/12/22 19:02 • (MSD) R3847810-7 10/12/22 19:06

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lead	50.0	ND	47.4	47.4	94.7	94.8	1	75.0-125			0.0505	20

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3847606-1 10/12/22 12:35

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Lead,Dissolved	1.96	⬇	0.849	2.00

1 Cp

2 Tc

3 Ss

Laboratory Control Sample (LCS)

(LCS) R3847606-2 10/12/22 12:39

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Lead,Dissolved	50.0	48.8	97.6	80.0-120	

4 Cn

5 Sr

L1538324-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1538324-03 10/12/22 12:42 • (MS) R3847606-4 10/12/22 12:49 • (MSD) R3847606-5 10/12/22 12:52

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Lead,Dissolved	50.0	ND	46.6	46.5	93.2	92.9	10	75.0-125			0.281	20

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3841456-2 09/23/22 16:24

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	98.7			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3841456-1 09/23/22 15:12

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	4790	87.1	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			91.7	78.0-120	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3842893-2 09/26/22 02:10

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	42.1	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	92.1			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3842893-1 09/26/22 01:01

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	4930	89.6	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			85.7	78.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3842764-2 09/26/22 04:16

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	106			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3842764-1 09/26/22 01:44

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	4830	87.8	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			118	78.0-120	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3841093-2 09/25/22 14:06

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Methane	U		2.91	10.0

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1538378-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1538378-05 09/25/22 14:33 • (DUP) R3841093-3 09/25/22 15:10

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	ND	ND	1	0.000		20

L1538383-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1538383-03 09/25/22 15:57 • (DUP) R3841093-4 09/25/22 15:59

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3841093-1 09/25/22 14:03 • (LCSD) R3841093-9 09/25/22 16:18

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Methane	67.8	62.7	65.8	92.5	97.1	85.0-115			4.82	20

L1538378-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1538378-03 09/25/22 14:30 • (MS) R3841093-5 09/25/22 16:03 • (MSD) R3841093-6 09/25/22 16:05

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Methane	67.8	ND	86.7	87.5	128	129	1	50.0-150			0.918	20

L1538383-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1538383-01 09/25/22 15:49 • (MS) R3841093-7 09/25/22 16:08 • (MSD) R3841093-8 09/25/22 16:14

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Methane	67.8	ND	79.3	87.3	117	129	1	50.0-150			9.60	20

Method Blank (MB)

(MB) R3841260-2 09/26/22 10:30

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Methane	U		2.91	10.0

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1538381-14 Original Sample (OS) • Duplicate (DUP)

(OS) L1538381-14 09/26/22 10:58 • (DUP) R3841260-3 09/26/22 11:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	12400	12400	10	0.000		20

L1538505-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1538505-05 09/26/22 11:37 • (DUP) R3841260-4 09/26/22 11:40

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3841260-1 09/26/22 10:27 • (LCSD) R3841260-9 09/26/22 11:52

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Methane	67.8	64.0	67.4	94.4	99.4	85.0-115			5.18	20

L1538387-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1538387-01 09/26/22 11:16 • (MS) R3841260-5 09/26/22 11:42 • (MSD) R3841260-6 09/26/22 11:45

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Methane	67.8	ND	92.0	82.6	136	122	1	50.0-150			10.8	20

L1538505-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1538505-04 09/26/22 11:35 • (MS) R3841260-7 09/26/22 11:47 • (MSD) R3841260-8 09/26/22 11:50

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Methane	67.8	1260	1600	1490	501	339	1	50.0-150	∇	∇	7.12	20

Method Blank (MB)

(MB) R3843487-2 09/23/22 20:38

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.0941	1.00
Toluene	U		0.278	1.00
Ethylbenzene	U		0.137	1.00
Xylenes, Total	U		0.174	3.00
<i>(S) Toluene-d8</i>	111			80.0-120
<i>(S) 4-Bromofluorobenzene</i>	108			77.0-126
<i>(S) 1,2-Dichloroethane-d4</i>	101			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3843487-1 09/23/22 20:00

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	4.97	99.4	70.0-123	
Toluene	5.00	5.65	113	79.0-120	
Ethylbenzene	5.00	5.96	119	79.0-123	
Xylenes, Total	15.0	17.3	115	79.0-123	
<i>(S) Toluene-d8</i>			111	80.0-120	
<i>(S) 4-Bromofluorobenzene</i>			103	77.0-126	
<i>(S) 1,2-Dichloroethane-d4</i>			95.8	70.0-130	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3841067-3 09/24/22 12:47

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Benzene	U		0.0941	1.00
Toluene	U		0.278	1.00
Ethylbenzene	U		0.137	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	107			80.0-120
(S) 4-Bromofluorobenzene	91.8			77.0-126
(S) 1,2-Dichloroethane-d4	89.8			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3841067-1 09/24/22 11:44 • (LCSD) R3841067-2 09/24/22 12:05

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Benzene	5.00	4.48	4.47	89.6	89.4	70.0-123			0.223	20
Toluene	5.00	4.41	4.49	88.2	89.8	79.0-120			1.80	20
Ethylbenzene	5.00	4.81	4.58	96.2	91.6	79.0-123			4.90	20
Xylenes, Total	15.0	13.7	13.8	91.3	92.0	79.0-123			0.727	20
(S) Toluene-d8				110	106	80.0-120				
(S) 4-Bromofluorobenzene				95.4	91.5	77.0-126				
(S) 1,2-Dichloroethane-d4				91.4	89.8	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3841622-3 09/25/22 23:03

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.137	1.00
(S) Toluene-d8	112			80.0-120
(S) 4-Bromofluorobenzene	94.5			77.0-126
(S) 1,2-Dichloroethane-d4	89.1			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3841622-1 09/25/22 22:01 • (LCSD) R3841622-2 09/25/22 22:22

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethylbenzene	5.00	4.24	4.54	84.8	90.8	79.0-123			6.83	20
(S) Toluene-d8				108	107	80.0-120				
(S) 4-Bromofluorobenzene				94.4	94.5	77.0-126				
(S) 1,2-Dichloroethane-d4				89.8	88.1	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3842365-1 09/27/22 18:09

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Diesel Range Organics (DRO)	U		66.7	200
Residual Range Organics (RRO)	U		83.3	250
<i>(S) o-Terphenyl</i>	95.0			52.0-156

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3842365-2 09/27/22 18:29 • (LCSD) R3842365-3 09/27/22 18:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	1500	1560	1650	104	110	50.0-150			5.61	20
<i>(S) o-Terphenyl</i>				92.0	100	52.0-156				

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

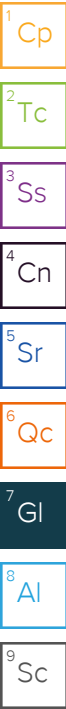
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



1100 Olive Way, Suite 800
 Report to: **Kyle Haslam**
 Project Description: **KMEP Harbor Island**

City/State Collected: **SEATTLE, WA**
 Email To: **Kyle.Haslam@arcadis.com; Matt.Annis@arcadis.**
 Please Circle: PT MT CT ET

Phone: **206-726-4713**
 Client Project #: **30111526**
 Collected by (print): **J. SEPIOL E. SCHELLER**
 Collected by (signature):
 Immediately Packed on Ice N Y

Lab Project #: **KINMOROCA-HARBORISLA**
 Site/Facility ID #: **2720 13TH AVENUE SW**
 P.O. #:
 Quote #:
 Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day
 Date Results Needed: **STANDARD**

Sample ID

Comp/Grab Matrix * Depth Date Time Cntrs

* Nitrate 125mlHDPE-NoPres	BTEX 8260D, NWTPHGX 40mlAmb-HCI	Diss Pb 6020 250mlHDPE-NoPres	Ferrous Fe 250mlAmb-HCI	Methane RSK175 40mlAmb HCl	NWTPHDX w/ silica 40mlAmb-HCI-BT	Sulfate 125mlHDPE-NoPres	Sulfide 250mlAmb-S-NaOH+ZnAc NWTPH - 5x	Total Pb 6020 250mlHDPE-HNO3	Total RCRA8 6020 250mlHDPE-HNO3
A-23R	X						X		
MW-1	X	X			X		X	X	
MW-20	X				X		X		
MW-3	X	X			X		X	X	
TMW-1	X					X	X		
TMW-2	X					X	X		
MW-5	X	X			X		X	X	
MW-14	X						X		
MW-19	X					X	X		
MW-6	X	X					X	X	

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D140

Acctnum: **KINMOROCA**
 Template: **T196897**
 Prelogin: **P950113**
 PM: **110 - Brian Ford**
 PB: **KP 9/19/22**
 Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Cntrs	* Nitrate 125mlHDPE-NoPres	BTEX 8260D, NWTPHGX 40mlAmb-HCI	Diss Pb 6020 250mlHDPE-NoPres	Ferrous Fe 250mlAmb-HCI	Methane RSK175 40mlAmb HCl	NWTPHDX w/ silica 40mlAmb-HCI-BT	Sulfate 125mlHDPE-NoPres	Sulfide 250mlAmb-S-NaOH+ZnAc NWTPH - 5x	Total Pb 6020 250mlHDPE-HNO3	Total RCRA8 6020 250mlHDPE-HNO3	Remarks	Sample # (lab only)	
A-23R	G	GW	-	9/19/22	1540	6	X							X					-01
MW-1	G	GW	-	9/19/22	1650	10	X	X				X		X	X				-02
MW-20	G	GW	-	9/20/22	0935	8	X					X		X					-03
MW-3	G	GW	-	9/20/22	1015	10	X	X				X		X	X				-04
TMW-1	G	GW	-	9/20/22	1135	7	X						X	X					-05
TMW-2	G	GW	-	9/20/22	1255	7	X						X	X					-06
MW-5	G	GW	-	9/20/22	1355	10	X	X				X		X	X				-07
MW-14	G	GW	-	9/20/22	1445	6	X							X					-08
MW-19	G	GW	-	9/20/22	1540	7	X						X	X					-09
MW-6	G	GW	-	9/21/22	0905	8	X	X						X	X				-10

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks: ***Nitrate has a 48 hour holding time.**
 pH _____ Temp _____
 Flow _____ Other _____
 Samples returned via: UPS FedEx Courier _____ Tracking # _____

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y	N
COC Signed/Accurate:		X	N
Bottles arrive intact:		X	N
Correct bottles used:		X	N
Sufficient volume sent:		X	N
If Applicable			
VOA Zero Headspace:		X	N
Preservation Correct/Checked:		X	N
RAD Screen <0.5 mR/hr:		X	N

Relinquished by: (Signature) <i>[Signature]</i>	Date: 09-21-22	Time: 16:40	Received by: (Signature)	Trip Blank Received: 6 Yes/No HCL/ MeOH TBR
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 22.7 °C Bottles Received: 1.5+0.15 221
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) D. Ramsey	Date: 09-21-22 Time: 0900 Hold: Condition: NCF 1-OK

1100 Olive Way, Suite 800

Pres Chk

Report to: **Kyle Haslam**

Email To: **Kyle.Haslam@arcadis.com;Matt.Annis@arcadis.**

Project Description: **KMEP Harbor Island**

City/State Collected: **Seattle, WA** Please Circle: **PT** MT CT ET

Phone: **206-726-4713**

Client Project # **30111526**

Lab Project # **KINMOROCA-HARBORISLA**

Collected by (print): **J. SEPIOR E. SCHEUER**

Site/Facility ID # **2720 13TH AVENUE SW**

P.O. #

Collected by (signature):
Immediately Packed on Ice N Y

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #
Date Results Needed
STANDARD TAT

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
-----------	-----------	----------	-------	------	------	--------------

* Nitrate 125mlHDPE-NoPres	BTEX 8260D, NWTPHGX 40mlAmb-HCl	Diss Pb 6020 250mlHDPE-NoPres	Ferrous Fe 250mlAmb-HCl	Methane RSK175 40mlAmb HCl	NWTPHDX w/ silica 40mlAmb-HCl-BT	Sulfate 125mlHDPE-NoPres	Sulfide 250mlAmb-S-NaOH+ZnAc NWTPH - GX	Total Pb 6020 250mlHDPE-HNO3	Total RCRAB 6020 250mlHDPE-HNO3
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SDG # **L153881**

Table #

Acctnum: **KINMOROCA**

Template: **T196897**

Prelogin: **P950113**

PM: **110 - Brian Ford**

PB: **KP 9/9/22**

Shipped Via:

Remarks	Sample # (lab only)
	-11
	-12
	-13
	-14
	-15
	-16
	-17
	-18
	-19
	-20

TMW-B1	G	GW	—	9/21/22	1000	10	X	X		X	X	X	X						
A-27	G	GW	—	9/21/22	1100	10	X	X		X	X	X	X						
MW-24	G	GW	—	9/21/22	1200	12	X	X	X	X	X	X	X	X					
MW-23	G	GW	—	9/21/22	1250	12	X	X	X	X	X	X	X	X					
MW-22	G	GW	—	9/21/22	1420	8		X			X	X	X						
MW-2	G	GW	—	9/21/22	1420	8		X	X		X	X	X						
A-28R	G	GW	—	9/21/22	1130	12	X	X	X	X	X	X	X	X					
A-21	G	GW	—	9/21/22	1325	8		X	X			X	X						
MW-16	G	GW	—	9/21/22	1005	8		X			X	X	X						
MW-18	G	GW	—	9/21/22	0910	6		X				X	X						

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks: *Nitrate has a 48 hour holding time.

pH _____ Temp _____
 Flow _____ Other _____

Sample Receipt Checklist

COC Seal Present/Intact:	NP	<input checked="" type="checkbox"/>	Y	<input type="checkbox"/>	N
COC Signed/Accurate:		<input checked="" type="checkbox"/>	Y	<input type="checkbox"/>	N
Bottles arrive intact:		<input checked="" type="checkbox"/>	Y	<input type="checkbox"/>	N
Correct bottles used:		<input checked="" type="checkbox"/>	Y	<input type="checkbox"/>	N
Sufficient volume sent:		<input checked="" type="checkbox"/>	Y	<input type="checkbox"/>	N
If Applicable					
VOA Zero Headspace:		<input checked="" type="checkbox"/>	Y	<input type="checkbox"/>	N
Preservation Correct/Checked:		<input checked="" type="checkbox"/>	Y	<input type="checkbox"/>	N
RAD Screen <0.5 mR/hr:		<input checked="" type="checkbox"/>	Y	<input type="checkbox"/>	N

Samples returned via: UPS FedEx Courier

Tracking #

Relinquished by: (Signature)

Date: **09-21-22**

Time: **16:30**

Received by: (Signature)

Trip Blank Received: Yes / No
HCL / MeOH
TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

6.5+0.7 J °C Bottles Received:

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: **09-22-22** Time: **0900**

Hold: Condition: **NCF / OK**

D. Ramsey

Company Name/Address: **Kinder Morgan- Houston, TX(Scott Martin)**
 1100 Olive Way, Suite 800

Billing Information: **Accounts Payable-Scott Martin**
 1001 Louisiana St.
 Houston, TX 77002

Report to: **Kyle Haslam**

Project Description: **KMEP Harbor Island**

City/State Collected: **SEATTLE, WA**

Please Circle: PT MT CT ET

Client Project #: **30111526**

Lab Project #: **KINMOROCA-HARBORISLA**

Site/Facility ID #: **2720 13TH AVENUE SW**

P.O. #

Quote #

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Date Results Needed: **STANDARD TAT**

Immediately Packed on Ice N Y X

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 3 of 3



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SDG # **U538381**

Table #

Acctnum: **KINMOROCA**

Template: **T196897**

Prelogin: **P950113**

PM: **110 - Brian Ford**

PB: **KP 9/9/22**

Shipped Via:

Remarks | Sample # (lab only)

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	* Nitrate 125mlHDPE-NoPres	BTEX 8260D, NWTPhGX 40mlAmb-HCl	Diss Pb 6020 250mlHDPE-NoPres	Ferrous Fe 250mlAmb-HCl	Methane RSK175 40mlAmb HCl	NWTPhDX w/ silica 40mlAmb-HCl-BT	Sulfate 125mlHDPE-NoPres	Sulfide 250mlAmb-S-NaOH+ZnAc-NWTPh - 60X	Total Pb 6020 250mlHDPE-HNO3	Total RCRA8 6020 250mlHDPE-HNO3	Remarks	Sample # (lab only)
MW-7	G	GW	—	9/20/22	1325	9	X	X					X	X	X			-4
MW-5	G	GW	—	9/20/22	1355	10												
TMW-4	G	GW	—	9/20/22	1610	7	X						X	X				-4
TMW-5	G	GW	—	9/20/22	1005	7	X						X	X				-23
TMW-3	G	GW	—	9/20/22	1435	7	X						X	X				-24
DUP-1	G	GW	—	9/20/22	—	9	X	X					X	X	X			-25
TRIP BLANK	—	GW	—	—	—	6	X							X				-26
		GW																
		GW																
		GW																

* Matrix: **SS - Soil AIR - Air F - Filter**
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks: ***Nitrate has a 48 hour holding time.**

Flow _____ Other _____

Temp _____

Sample Receipt Checklist

COC Seal Present/Intact: Y N

COC Signed/Accurate: Y N

Bottles arrive intact: Y N

Correct bottles used: Y N

Sufficient volume sent: Y N

If Applicable

VOA Zero Headspace: Y N

Preservation Correct/Checked: Y N

RAD Screen <0.5 mR/hr: Y N

Samples returned via: UPS FedEx Courier

Tracking #

Relinquished by: (Signature) **[Signature]** Date: **09-21-22** Time: **16:30**

Received by: (Signature) _____ Trip Blank Received: Yes/No HCL/MeOH TBR

Relinquished by: (Signature) _____ Date: _____ Time: _____

Received by: (Signature) _____ Temp: **17.17 °C** Bottles Received: **105+0-105**

If preservation required by Login: Date/Time

Relinquished by: (Signature) _____ Date: _____ Time: _____

Received for lab by: (Signature) **D. Ramsey** Date: **09-22-22** Time: **0900**

Hold: _____ Condition: **NCF / 16**

W53981

Tracking Numbers	Temperature
5829 6697 0562	2247 5.10=1.5
5913 6209 1429	2240 5.15=0.5

9/22-NCF-L1538381 KINMOROCA TD

R5

Time estimate: oh

Time spent: oh

Members

- Troy Dunlap (responsible)
- Brian Ford

- Login Clarification needed
- Chain of custody is incomplete
- Please specify Metals requested
- Please specify TCLP requested
- Received additional samples not listed on COC
- Sample IDs on containers do not match IDs on COC
- Client did not "X" analysis
- Chain of Custody is missing
- If no COC: Received by: _____
- If no COC: Date/Time: _____
- If no COC: Temp./Cont.Rec./pH: _____
- If no COC: Carrier: _____
- If no COC: Tracking #: _____
- Client informed by call
- Client informed by Email
- Client informed by Voicemail
- Date/Time: _____
- PM initials: bjf
- Client Contact: _____

Comments

<i>Troy Dunlap</i>	<i>22 September 2022 2:04 PM</i>
1.) Did not receive Diss. or Total metals container for MW-2. 2.) 1 of 8 40ml vials received broken for MW-2.	
<i>Brian Ford</i>	<i>22 September 2022 3:02 PM</i>
is -17 also missing metals containers? COc is marked for total and dissolved, but not logged.	
<i>Troy Dunlap</i>	<i>22 September 2022 3:11 PM</i>
We received them. added.	
<i>Brian Ford</i>	<i>22 September 2022 3:42 PM</i>
for mw-2: 1) proceed without the total and dissolved metals 2) proceed with remaining containers.	

Troy Dunlap

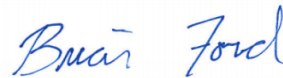
Done.

22 September 2022 5:04 PM

Kinder Morgan- Houston, TX(Scott Martin)

Sample Delivery Group: L1538521
Samples Received: 09/22/2022
Project Number: 30111526
Description: KMEP Harbor Island
Site: 2720 13TH AVENUE SW SEATTLE,WA
Report To: Kyle Haslam
1100 Olive Way, Suite 800
Seattle, WA 98101

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	4
Gl: Glossary of Terms	5
Al: Accreditations & Locations	6
Sc: Sample Chain of Custody	7

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Gl

⁶ Al

⁷ Sc

SAMPLE SUMMARY

TMW-B1 L1538521-01 GW

Collected by JS/ES Collected date/time 09/21/22 10:00 Received date/time 09/22/22 16:37

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Subcontracted Analyses	WG1930878	1	09/30/22 00:00	09/30/22 00:00	-	Subcontract

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Gl

⁶ Al

⁷ Sc

A-27 L1538521-02 GW

Collected by JS/ES Collected date/time 09/21/22 11:00 Received date/time 09/22/22 16:37

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Subcontracted Analyses	WG1930878	1	09/30/22 00:00	09/30/22 00:00	-	Subcontract

A-28R L1538521-03 GW

Collected by JS/ES Collected date/time 09/21/22 11:30 Received date/time 09/22/22 16:37

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Subcontracted Analyses	WG1930878	1	09/30/22 00:00	09/30/22 00:00	-	Subcontract

MW-23 L1538521-04 GW

Collected by JS/ES Collected date/time 09/21/22 12:50 Received date/time 09/22/22 16:37

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Subcontracted Analyses	WG1930878	1	09/30/22 00:00	09/30/22 00:00	-	Subcontract


MW-24 L1538521-05 GW

Collected by JS/ES Collected date/time 09/21/22 12:00 Received date/time 09/22/22 16:37

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Subcontracted Analyses	WG1930878	1	09/30/22 00:00	09/30/22 00:00	-	Subcontract

CASE NARRATIVE

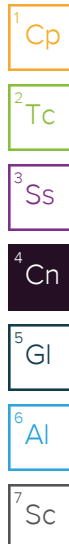
All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager

Project Narrative

L1538521 -01, -02, -03, -04, -05 contains subout data that is included after the chain of custody.



GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

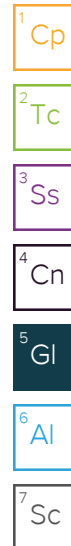
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

SDG	Sample Delivery Group.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
-----------	-------------

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.



ACCREDITATIONS & LOCATIONS

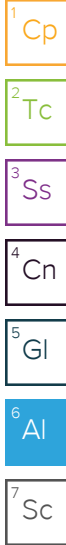
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



Pace National - Mt Juliet, TN

Billing Information:
 Pace National - Mt Juliet, TN
 MTJLSuboutTeam@pacelabs.com

Pres
 Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1



12065 Lebanon Rd
 Mount Juliet, TN 37122
 Phone: 615-758-5858
 Phone: 800-767-5859
 Fax: 615-758-5859



L# U538521

Table #

Acctnum:

Template:

Prelogin:

TSR:

PB:

Shipped Via:

Remarks Sample # (lab only)

Report to: _____ Email To: MTJLSuboutTeam@pacelabs.com

Project Description: **KINMOROCA-HARBORISLA** City/State Collected: _____

Phone: _____ Client Project # _____ Lab Project # _____

Fax: _____ Site/Facility ID # _____ P.O. # _____

Collected by (print): **J. SEPIOL E. SCHELLER** Quote # _____

Collected by (signature): _____

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Immediately Packed on Ice N Y X Date Results Needed _____ No. of Cntrs _____

Sulfide (SM 4500-S2 D)

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
TMW-B1	G	GW	—	9/21/22	1000	1
A-27	G	GW	—	9/21/22	1100	1
A-28R	G	GW	—	9/21/22	1130	1
MW-23	G	GW	—	9/21/22	1250	1
MW-24	G	GW	—	9/21/22	1200	1

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other _____

Remarks:
Excel EDD.

Samples returned via:
 UPS FedEx Courier _____ Tracking # _____

pH _____ Temp _____
 Flow _____ Other _____

Sample Receipt Checklist

COC Seal Present/Intact: Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N

Relinquished by: (Signature) <i>[Signature]</i>	Date: 09-21-22	Time: 16:40	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeOH TBR
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: _____
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: _____ Time: _____ Hold: _____ Condition: NCF / OK



September 29, 2022

Service Request No:K2211045

James Huckaba
Pace Analytical- Mt. Juliet, TN
12065 Lebanon Road
Mt. Juliet, TN 37122

Laboratory Results for: WG1930878

Dear James,

Enclosed are the results of the sample(s) submitted to our laboratory September 22, 2022
For your reference, these analyses have been assigned our service request number **K2211045**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3377. You may also contact me via email at Sydney.Wolf@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Sydney A. Wolf
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental



Narrative Documents

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com



Client: Pace Analytical Services
Project: WG1930878
Sample Matrix: Water

Service Request: K2211045
Date Received: 09/22/2022

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier I level requested by the client.

Sample Receipt:

Five water samples were received for analysis at ALS Environmental on 09/22/2022. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by 

Date 09/29/2022



SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting levels. For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: TMW-B1	Lab ID: K2211045-001
--------------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
Sulfide	0.166			0.020	mg/L	SM 4500-S2- D

CLIENT ID: A-27	Lab ID: K2211045-002
------------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
Sulfide	1.08			0.10	mg/L	SM 4500-S2- D

CLIENT ID: A-28R	Lab ID: K2211045-003
-------------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
Sulfide	0.178			0.010	mg/L	SM 4500-S2- D

CLIENT ID: MW-23	Lab ID: K2211045-004
-------------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
Sulfide	0.090			0.010	mg/L	SM 4500-S2- D

CLIENT ID: MW-24	Lab ID: K2211045-005
-------------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
Sulfide	0.099			0.010	mg/L	SM 4500-S2- D



Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Pace Analytical Services
Project: WG1930878

Service Request:K2211045

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
K2211045-001	TMW-B1	9/21/2022	1000
K2211045-002	A-27	9/21/2022	1100
K2211045-003	A-28R	9/21/2022	1130
K2211045-004	MW-23	9/21/2022	1250
K2211045-005	MW-24	9/21/2022	1200

122211045

Sub-Contract Chain of Custody

Batch Date/Time: 09/22/22 16:45
 Sub-Contract Lab: COLKWA
 Address: 1317 South 13th Ave
 City/State: Kelso, WA 98626
 Contact:
 Sydney.Wolf@alsglobal.com
 Owner Lab: PACEMTJL
 Address: 12065 Lebanon Rd.
 City/State: Mt. Juliet, TN 37122
 Phone: (615) 773-9756
 Fax: (615) 758-5859

WO: WG1930878
 Email: MTJLSuboutTeam@pacelabs.com
 Results Due Date: 10/06/22
 ESC Purchase Order #: L1538521
 Send Reports to: James C Huckaba



12065 Lebanon Rd.
 Mt. Juliet, TN 37122
 Phone:(615) 773-9756
 Fax:(615) 758-5859

Sample ID Container ID	Matrix	State	Collect Date	Description	Sample Number Lab Use Only	Sample Comments Lab Use Only
TMW-B1	GW	WA	09/21/22 10:00	Sulfide SM 4500-S2 D	1. L1538521-01	Sulfide SM 4500-S2 D
A-27	GW	WA	09/21/22 11:00	Sulfide SM 4500-S2 D	2. L1538521-02	Sulfide SM 4500-S2 D
A-28R	GW	WA	09/21/22 11:30	Sulfide SM 4500-S2 D	3. L1538521-03	Sulfide SM 4500-S2 D
MW-23	GW	WA	09/21/22 12:50	Sulfide SM 4500-S2 D	4. L1538521-04	Sulfide SM 4500-S2 D
MW-24	GW	WA	09/21/22 12:00	Sulfide SM 4500-S2 D	5. L1538521-05	Sulfide SM 4500-S2 D

*= Container used for multiple Samples and/or Analyses

Relinquished by: _____ Date _____

Received by: Jessica Phelps Date 9/22/22 1040

Relinquished by: _____ Date _____

Received by: _____ Date _____

K2211045

Pace National - Mt Juliet, TN		Billing Information: Pace National - Mt Juliet, TN MTJLSuboutTeam@pacelabs.com		Analysis / Container / Preservative		
Report to:		Email To: MTJLSuboutTeam@pacelabs.com		Pres Chk		
Project Description: KINMOROCA-HARBORISLA		City/State Collected:		Sulfide (SM 4500-S2 D)		
Phone:	Client Project #	Lab Project #				
Fax:	Site/Facility ID #	P.O. #				
Collected by (print): J. SEPIOL E. SCHELLER	Rush? (Lab MUST Be Notified)		Quote #			
Collected by (signature):	Date Results Needed		No. of Cntrs			
Immediately Packed on Ice: N ___ Y <input checked="" type="checkbox"/>	<input type="checkbox"/> Same Day <input type="checkbox"/> Five Day <input type="checkbox"/> Next Day <input type="checkbox"/> 5 Day (Rad Only) <input type="checkbox"/> Two Day <input type="checkbox"/> 10 Day (Rad Only) <input type="checkbox"/> Three Day					
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
TMW-B1	G	GW	—	9/21/22	1000	1
A-27	G	GW	—	9/21/22	1100	1
A-2BR	G	GW	—	9/21/22	1130	1
MW-23	G	GW	—	9/21/22	1250	1
MW-24	G	GW	—	9/21/22	1200	1
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other _____		Remarks: Excel EDD.		pH _____ Temp _____ Flow _____ Other _____		
Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier _____		Tracking # _____				
Relinquished by: (Signature) 		Date: 09-21-22	Time: 16:40	Received by: (Signature)		
				Trip Blank Received: Yes / No HCL / MeOH TBR		

Thanks,

Jimmy Huckaba
 Subout Coordinator / National
 12065 Lebanon Road | Mt. Juliet, TN 37122
 615.773.9775
 jimmy.huckaba@pacelabs.com



22211045

Pace National - Mt Juliet, TN	Billing Information: Pace National - Mt Juliet, TN MTJLSuboutTeam@pacelabs.com	Pres Chk	Analysis / Container / Preservative	Chain of Custody Page 1 of 1
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Pace Analytical
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Report to:	Email To: MTJLSuboutTeam@pacelabs.com
------------	--

Project Description: KINMOROCA-HARBORISLA	City/State Collected:
---	-----------------------

Phone: Fax:	Client Project #	Lab Project #
----------------	------------------	---------------

Collected by (print): J. SEPIOL E. SCHELLER	Site/Facility ID #	P.O. #
---	--------------------	--------

Collected by (signature):	Rush? (Lab MUST Be Notified) <input type="checkbox"/> Same Day <input type="checkbox"/> Five Day <input type="checkbox"/> Next Day <input type="checkbox"/> 5 Day (Rad Only) <input type="checkbox"/> Two Day <input type="checkbox"/> 10 Day (Rad Only) <input type="checkbox"/> Three Day	Quote #	Date Results Needed	No. of Cntrs
Immediately Packed on Ice N ___ Y <u>X</u>				

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs							
TMW-B1	G	GW	—	9/21/22	1000	1	X						
A-27	G	GW	—	9/21/22	1100	1	X						
A-28R	G	GW	—	9/21/22	1130	1	X						
MW-23	G	GW	—	9/21/22	1250	1	X						
MW-24	G	GW	—	9/21/22	1200	1	X						

Sulfide (SM 4500-S2 D)

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other _____

Remarks: Excel EDD.	pH _____ Temp _____ Flow _____ Other _____	Tracking #
Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier	Date: 09-21-22 Time: 16:40	Received by: (Signature) <i>[Signature]</i> 9/21/22 1640

Sample Receipt Checklist	
COC Seal Present/Intact: <input type="checkbox"/> NP <input type="checkbox"/> Y <input type="checkbox"/> N	
COC Signed/Accurate: <input type="checkbox"/> Y <input type="checkbox"/> N	
Bottles arrive intact: <input type="checkbox"/> Y <input type="checkbox"/> N	
Correct bottles used: <input type="checkbox"/> Y <input type="checkbox"/> N	
Sufficient volume sent: <input type="checkbox"/> Y <input type="checkbox"/> N	
If Applicable	
VOA Zero HeadSpace: <input type="checkbox"/> Y <input type="checkbox"/> N	
Preservation Correct/Checked: <input type="checkbox"/> Y <input type="checkbox"/> N	

Relinquished by: (Signature) <i>[Signature]</i>	Date: 09-21-22	Time: 16:40	Received by: (Signature) <i>[Signature]</i> 9/21/22 1640	Trip Blank Received: Yes/No HCL/MeOH TBR	Temp: _____ °C Bottles Received: _____	If preservation required by Login: Date/Time
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: _____ °C	Bottles Received: _____	If preservation required by Login: Date/Time
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date:	Time:	Hold: _____ Condition: NCF / OK

Cooler Receipt and Preservation Form

Client: Arcadis JP Pace Analytical Service Request K22 11045
 Received: 9/22/22 Opened: 9/22/22 By: JS Unloaded: 9/22/22 By: JP

1. Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
 2. Samples were received in: (circle) Cooler Box Envelope Other NA
 3. Were custody seals on coolers? NA Y N If yes, how many and where? _____
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with 'X'	PM Notified If out of temp	Tracking Number NA	Filed
	<u>4.9</u>	<u>1201</u>				<u>2782 6314 4818</u>	

4. Was a Temperature Blank present in cooler? NA Y N If yes, note the temperature in the appropriate column above:
 If no, take the temperature of a representative sample bottle contained within the cooler; note in the column "Sample Temp":
 5. Were samples received within the method specified temperature ranges? NA Y N
 If no, were they received on ice and same day as collected? If not, note the cooler # below and notify the PM. NA Y N

If applicable, tissue samples were received: Frozen Partially Thawed Thawed

6. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves _____
 7. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
 8. Were samples received in good condition (unbroken) NA Y N
 9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA Y N
 10. Did all sample labels and tags agree with custody papers? NA Y N
 11. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
 12. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA Y N
 13. Were VOA vials received without headspace? Indicate in the table below. NA Y N
 14. Was C12/Res negative? NA Y N
 15. Were 100ml sterile microbiology bottles filled exactly to the 100ml mark? NA Y N Under filled Overfilled

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Head-space	Broken	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time
<u>Trip blanks</u>	<u>3 of 3</u>	<u>Ventrip</u>	<u>✓</u>							

Notes, Discrepancies, Resolutions: _____



Miscellaneous Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
 - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
 - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses**

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjllabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdwlabservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client: Pace Analytical Services
Project: WG1930878/

Service Request: K2211045

Sample Name: TMW-B1
Lab Code: K2211045-001
Sample Matrix: Water

Date Collected: 09/21/22
Date Received: 09/22/22

Analysis Method
SM 4500-S2- D

Extracted/Digested By

Analyzed By
MSPECHT

Sample Name: A-27
Lab Code: K2211045-002
Sample Matrix: Water

Date Collected: 09/21/22
Date Received: 09/22/22

Analysis Method
SM 4500-S2- D

Extracted/Digested By

Analyzed By
MSPECHT

Sample Name: A-28R
Lab Code: K2211045-003
Sample Matrix: Water

Date Collected: 09/21/22
Date Received: 09/22/22

Analysis Method
SM 4500-S2- D

Extracted/Digested By

Analyzed By
MSPECHT

Sample Name: MW-23
Lab Code: K2211045-004
Sample Matrix: Water

Date Collected: 09/21/22
Date Received: 09/22/22

Analysis Method
SM 4500-S2- D

Extracted/Digested By

Analyzed By
MSPECHT

Sample Name: MW-24
Lab Code: K2211045-005
Sample Matrix: Water

Date Collected: 09/21/22
Date Received: 09/22/22

Analysis Method
SM 4500-S2- D

Extracted/Digested By

Analyzed By
MSPECHT



Sample Results

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com



General Chemistry

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Pace Analytical Services
Project: WG1930878
Sample Matrix: Water
Sample Name: TMW-B1
Lab Code: K2211045-001

Service Request: K2211045
Date Collected: 09/21/22 10:00
Date Received: 09/22/22 10:40
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Sulfide	SM 4500-S2- D	0.166	mg/L	0.020	2	09/28/22 20:20	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Pace Analytical Services
Project: WG1930878
Sample Matrix: Water
Sample Name: A-27
Lab Code: K2211045-002

Service Request: K2211045
Date Collected: 09/21/22 11:00
Date Received: 09/22/22 10:40
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Sulfide	SM 4500-S2- D	1.08	mg/L	0.10	10	09/28/22 20:20	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Pace Analytical Services
Project: WG1930878
Sample Matrix: Water
Sample Name: A-28R
Lab Code: K2211045-003

Service Request: K2211045
Date Collected: 09/21/22 11:30
Date Received: 09/22/22 10:40
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Sulfide	SM 4500-S2- D	0.178	mg/L	0.010	1	09/28/22 20:20	

ALS Group USA, Corp.
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Analytical Report

Client: Pace Analytical Services
Project: WG1930878
Sample Matrix: Water
Sample Name: MW-23
Lab Code: K2211045-004

Service Request: K2211045
Date Collected: 09/21/22 12:50
Date Received: 09/22/22 10:40
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Sulfide	SM 4500-S2- D	0.090	mg/L	0.010	1	09/28/22 20:20	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Pace Analytical Services
Project: WG1930878
Sample Matrix: Water
Sample Name: MW-24
Lab Code: K2211045-005

Service Request: K2211045
Date Collected: 09/21/22 12:00
Date Received: 09/22/22 10:40
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Sulfide	SM 4500-S2- D	0.099	mg/L	0.010	1	09/28/22 20:20	



QC Summary Forms

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General Chemistry

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www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Pace Analytical Services
Project: WG1930878
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: K2211045-MB

Service Request: K2211045
Date Collected: NA
Date Received: NA
Basis: NA

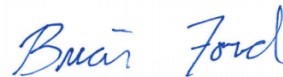
General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Sulfide	SM 4500-S2- D	ND U	mg/L	0.010	1	09/28/22 20:20	

Kinder Morgan- Houston, TX(Scott Martin)

Sample Delivery Group: L1539403
Samples Received: 09/24/2022
Project Number: 30111526
Description: KMEP Harbor Island
Site: 2720 13TH AVENUE SW SEATTLE,WA
Report To: Kyle Haslam
1100 Olive Way, Suite 800
Seattle, WA 98101

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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SAMPLE SUMMARY

DRUM-1 L1539403-01 GW

Collected by: J. Sepiol
 Collected date/time: 09/22/22 09:00
 Received date/time: 09/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1933921	1	10/10/22 11:05	10/11/22 11:31	SRT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1936086	1	10/05/22 08:56	10/05/22 18:13	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1933633	1	09/28/22 16:57	09/28/22 16:57	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1934817	1	09/30/22 02:29	09/30/22 02:29	ACG	Mt. Juliet, TN

- 1
Cp
- 2
Tc
- 3
Ss
- 4
Cn
- 5
Sr
- 6
Qc
- 7
Gl
- 8
Al
- 9
Sc

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND		0.200	1	10/11/2022 11:31	WG1933921

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	7.18		2.00	1	10/05/2022 18:13	WG1936086
Barium	35.3		2.00	1	10/05/2022 18:13	WG1936086
Cadmium	ND		1.00	1	10/05/2022 18:13	WG1936086
Chromium	ND		2.00	1	10/05/2022 18:13	WG1936086
Lead	3.92		2.00	1	10/05/2022 18:13	WG1936086
Selenium	ND		2.00	1	10/05/2022 18:13	WG1936086
Silver	ND		2.00	1	10/05/2022 18:13	WG1936086

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	212		100	1	09/28/2022 16:57	WG1933633
(S) a,a,a-Trifluorotoluene(FID)	92.8		78.0-120		09/28/2022 16:57	WG1933633

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/30/2022 02:29	WG1934817
Toluene	ND		1.00	1	09/30/2022 02:29	WG1934817
Ethylbenzene	2.92		1.00	1	09/30/2022 02:29	WG1934817
Total Xylenes	10.9		3.00	1	09/30/2022 02:29	WG1934817
(S) Toluene-d8	110		80.0-120		09/30/2022 02:29	WG1934817
(S) 4-Bromofluorobenzene	95.0		77.0-126		09/30/2022 02:29	WG1934817
(S) 1,2-Dichloroethane-d4	86.3		70.0-130		09/30/2022 02:29	WG1934817

Method Blank (MB)

(MB) R3847084-1 10/11/22 10:52

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Mercury	U		0.100	0.200

1 Cp

2 Tc

3 Ss

Laboratory Control Sample (LCS)

(LCS) R3847084-2 10/11/22 10:54

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Mercury	3.00	2.86	95.3	80.0-120	

4 Cn

5 Sr

L1539265-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1539265-06 10/11/22 11:00 • (MS) R3847084-3 10/11/22 11:03 • (MSD) R3847084-4 10/11/22 11:05

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Mercury	3.00	ND	3.03	2.83	101	94.3	1	75.0-125			6.83	20

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3845173-1 10/05/22 16:45

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Arsenic	U		0.180	2.00
Barium	U		0.381	2.00
Cadmium	U		0.150	1.00
Chromium	U		1.24	2.00
Lead	U		0.849	2.00
Selenium	U		0.300	2.00
Silver	U		0.0700	2.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3845173-2 10/05/22 16:48

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Arsenic	50.0	52.0	104	80.0-120	
Barium	50.0	50.4	101	80.0-120	
Cadmium	50.0	52.4	105	80.0-120	
Chromium	50.0	52.4	105	80.0-120	
Lead	50.0	50.8	102	80.0-120	
Selenium	50.0	53.9	108	80.0-120	
Silver	50.0	50.7	101	80.0-120	

L1539265-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1539265-01 10/05/22 16:52 • (MS) R3845173-4 10/05/22 16:58 • (MSD) R3845173-5 10/05/22 17:01

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Arsenic	50.0	3.12	56.5	56.7	107	107	1	75.0-125			0.268	20
Barium	50.0	45.6	99.9	103	109	114	1	75.0-125			2.84	20
Cadmium	50.0	ND	53.2	56.1	106	112	1	75.0-125			5.25	20
Chromium	50.0	2.75	55.7	58.4	106	111	1	75.0-125			4.72	20
Lead	50.0	3.28	53.6	56.0	101	105	1	75.0-125			4.28	20
Selenium	50.0	ND	55.6	54.4	111	109	1	75.0-125			2.10	20
Silver	50.0	ND	51.7	54.0	103	108	1	75.0-125			4.45	20

Method Blank (MB)

(MB) R3842836-2 09/28/22 11:58

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	99.0			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3842836-1 09/28/22 10:48

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5550	101	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			93.0	78.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3843790-3 09/29/22 21:39

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Benzene	U		0.0941	1.00
Toluene	U		0.278	1.00
Ethylbenzene	U		0.137	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	104			80.0-120
(S) 4-Bromofluorobenzene	88.1			77.0-126
(S) 1,2-Dichloroethane-d4	86.3			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3843790-1 09/29/22 20:31 • (LCSD) R3843790-2 09/29/22 20:51

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Benzene	5.00	4.30	4.31	86.0	86.2	70.0-123			0.232	20
Toluene	5.00	4.41	4.11	88.2	82.2	79.0-120			7.04	20
Ethylbenzene	5.00	4.49	4.31	89.8	86.2	79.0-123			4.09	20
Xylenes, Total	15.0	13.3	12.2	88.7	81.3	79.0-123			8.63	20
(S) Toluene-d8				107	106	80.0-120				
(S) 4-Bromofluorobenzene				95.4	91.8	77.0-126				
(S) 1,2-Dichloroethane-d4				90.9	87.8	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

GLOSSARY OF TERMS

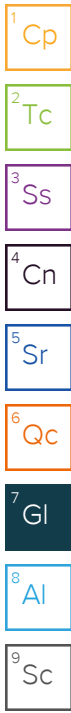
Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.



Qualifier Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		


¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



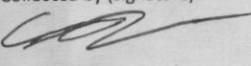
Company Name/Address: Kinder Morgan- Houston, TX(Scott Martin) 1100 Olive Way, Suite 800		Billing Information: Accounts Payable-Scott Martin 1001 Louisiana St. Houston, TX 77002		Pres Chk	Analysis / Container / Preservative								Chain of Custody Page <u>1</u> of <u>1</u>
---	--	--	--	----------	-------------------------------------	--	--	--	--	--	--	--	--

Report to: Kyle Haslam		Email To: Kyle.Haslam@arcadis.com;Matt.Annis@arcadis.										 MT JULIET, TN <small>1206S Lebanon Rd Mount Juliet, TN 37122 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubs/pas-standard-terms.pdf</small>
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Project Description: KMEP Harbor Island		City/State Collected: SEATTLE, WA	Please Circle: <input checked="" type="radio"/> PT <input type="radio"/> MT <input type="radio"/> CT <input type="radio"/> ET										
--	--	---	--	--	--	--	--	--	--	--	--	--	--

Phone: 206-726-4713	Client Project # 30111526	Lab Project # KINMOROCA-HARBORISLA									SDG # 1539403
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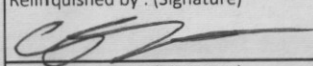
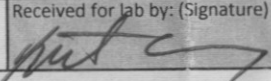
Collected by (print): J. SEPIOL	Site/Facility ID # 2720 13TH AVENUE SW	P.O. #									F133
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Collected by (signature): 	Rush? (Lab MUST Be Notified) <input type="checkbox"/> Same Day <input type="checkbox"/> Five Day <input type="checkbox"/> Next Day <input type="checkbox"/> 5 Day (Rad Only) <input type="checkbox"/> Two Day <input type="checkbox"/> 10 Day (Rad Only) <input type="checkbox"/> Three Day		Quote #	Date Results Needed									Acctnum: KINMOROCA
---	--	--	---------	---------------------	--	--	--	--	--	--	--	--	---------------------------

Immediately Packed on Ice N <input type="checkbox"/> Y <input checked="" type="checkbox"/>													No. of Cntrs		Shipped Via:	
--	--	--	--	--	--	--	--	--	--	--	--	--	--------------	--	--------------	--

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*Nitrate 125mlHDPE-NoPres	BTEX 8260D, NWTPHGX 40mlAmb-HCI	Diss Pb 6020 250mlHDPE-NoPres	Ferrous Fe 250mlAmb-HCI	Methane RSK175 40mlAmb HCl	NWTPHDX w/ silica 40mlAmb-HCI-BT	Sulfate 125mlHDPE-NoPres	Sulfide 250mlAmb-S-NaOH+ZnAc NWTPH - 6X	Total Pb 6020 250mlHDPE-HNO3	Total RCRA8 6020 250mlHDPE-HNO3	Remarks	Sample # (lab only)
DRUM - 1	C	GW	-	09-22	09:00	7		X						X		X		
		GW																
		GW																
		GW																
		GW																

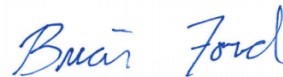
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other	Remarks: *Nitrate has a 48 hour holding time.	pH _____ Temp _____ Flow _____ Other _____	Sample Receipt Checklist COC Seal Present/Intact: <input type="checkbox"/> NP <input checked="" type="checkbox"/> Y <input type="checkbox"/> N COC Signed/Accurate: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Bottles arrive intact: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Correct bottles used: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Sufficient volume sent: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N If Applicable VOA Zero Headspace: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Preservation Correct/Checked: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N RAD Screen <0.5 mR/hr: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	
--	---	---	--	--

Relinquished by: (Signature) 	Date: 09-23-22	Time: 11:00	Received by: (Signature)	Trip Blank Received: Yes/No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No HCL/MeOH TBR	Bottles Received: 7	If preservation required by Login: Date/Time	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: RRAC 5.970=5.9			
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) 	Date: 9/24/22	Time: 9:00	Hold:	Condition: NCF / <input checked="" type="checkbox"/> OK

Kinder Morgan- Houston, TX(Scott Martin)

Sample Delivery Group: L1539417
Samples Received: 09/24/2022
Project Number: 30111526
Description: KMEP Harbor Island
Site: 2720 13TH AVENUE SW SEATTLE,WA
Report To: Kyle Haslam
1100 Olive Way, Suite 800
Seattle, WA 98101

Entire Report Reviewed By:



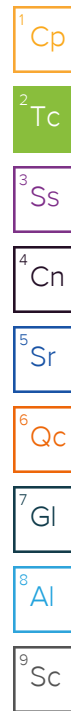
Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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SAMPLE SUMMARY

A-14R L1539417-01 GW

Collected by
JS/ES Collected date/time
09/22/22 15:40 Received date/time
09/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG1936086	1	10/05/22 08:56	10/05/22 18:16	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1936087	1	10/03/22 13:19	10/04/22 03:00	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1933633	1	09/28/22 17:19	09/28/22 17:19	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1933716	1	09/28/22 16:19	09/28/22 16:19	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1932053	1	09/25/22 10:20	10/03/22 09:16	DMG	Mt. Juliet, TN



SH-05R L1539417-02 GW

Collected by
JS/ES Collected date/time
09/22/22 10:10 Received date/time
09/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG1936086	1	10/05/22 08:56	10/05/22 18:19	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1936087	1	10/03/22 13:19	10/04/22 03:16	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1933633	1	09/28/22 17:41	09/28/22 17:41	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1933716	1	09/28/22 16:40	09/28/22 16:40	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1932053	1	09/25/22 10:20	09/28/22 01:56	DMG	Mt. Juliet, TN

SH-02R L1539417-03 GW

Collected by
JS/ES Collected date/time
09/22/22 13:45 Received date/time
09/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG1936086	1	10/05/22 08:56	10/05/22 18:23	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1936087	1	10/03/22 13:19	10/04/22 03:20	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1933633	1	09/28/22 18:03	09/28/22 18:03	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1933716	5	09/28/22 17:41	09/28/22 17:41	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1932053	1	09/25/22 10:20	09/28/22 02:16	DMG	Mt. Juliet, TN

MW-07R L1539417-04 GW

Collected by
JS/ES Collected date/time
09/22/22 11:20 Received date/time
09/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG1936086	1	10/05/22 08:56	10/05/22 18:26	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1936087	1	10/03/22 13:19	10/04/22 03:23	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1933633	1	09/28/22 18:25	09/28/22 18:25	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1933716	1	09/28/22 17:00	09/28/22 17:00	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1936781	1	10/05/22 14:45	10/05/22 23:27	DMG	Mt. Juliet, TN

MW-12R L1539417-05 GW

Collected by
JS/ES Collected date/time
09/22/22 12:45 Received date/time
09/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG1936087	1	10/03/22 13:19	10/04/22 03:33	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1938491	1	10/06/22 23:22	10/07/22 10:57	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1933882	1	09/29/22 04:55	09/29/22 04:55	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1933716	1	09/28/22 17:21	09/28/22 17:21	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1936781	1	10/05/22 14:45	10/05/22 23:53	DMG	Mt. Juliet, TN

SAMPLE SUMMARY

A-10 L1539417-06 GW

Collected by JS/ES Collected date/time 09/22/22 16:40 Received date/time 09/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1933882	1	09/29/22 05:17	09/29/22 05:17	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1934102	1	09/29/22 04:57	09/29/22 04:57	MGF	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1936781	1	10/05/22 14:45	10/06/22 00:20	DMG	Mt. Juliet, TN



A-5 L1539417-07 GW

Collected by JS/ES Collected date/time 09/22/22 17:50 Received date/time 09/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1933882	1	09/29/22 06:10	09/29/22 06:10	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1934102	1	09/29/22 05:18	09/29/22 05:18	MGF	Mt. Juliet, TN

MW-4 L1539417-08 GW

Collected by JS/ES Collected date/time 09/22/22 12:05 Received date/time 09/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1933882	1	09/29/22 06:33	09/29/22 06:33	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1934102	1	09/29/22 05:38	09/29/22 05:38	MGF	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1936781	1	10/05/22 14:45	10/06/22 04:19	DMG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1936781	1	10/05/22 14:45	10/06/22 11:52	DMG	Mt. Juliet, TN

12 L1539417-09 GW

Collected by JS/ES Collected date/time 09/22/22 13:50 Received date/time 09/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1932696	20	09/28/22 05:44	09/28/22 05:44	GEB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1936087	1	10/03/22 13:19	10/04/22 03:36	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1938491	1	10/06/22 23:22	10/07/22 13:13	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1933882	1	09/29/22 06:55	09/29/22 06:55	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1934102	1	09/29/22 05:59	09/29/22 05:59	MGF	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1936781	1	10/05/22 14:45	10/06/22 04:46	DMG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1936781	1	10/05/22 14:45	10/06/22 11:25	DMG	Mt. Juliet, TN

MW-9 L1539417-10 GW

Collected by JS/ES Collected date/time 09/22/22 09:30 Received date/time 09/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1932696	1	09/28/22 06:00	09/28/22 06:00	GEB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1936087	1	10/03/22 13:19	10/04/22 03:39	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1938491	1	10/06/22 23:22	10/07/22 13:16	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1933882	1	09/29/22 07:16	09/29/22 07:16	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1934671	1	09/29/22 18:49	09/29/22 18:49	MGF	Mt. Juliet, TN

TMW-6 L1539417-11 GW

Collected by JS/ES Collected date/time 09/22/22 10:40 Received date/time 09/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1933882	10	09/29/22 09:28	09/29/22 09:28	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1934102	10	09/29/22 12:25	09/29/22 12:25	MGF	Mt. Juliet, TN

SAMPLE SUMMARY

11 L1539417-12 GW

Collected by JS/ES Collected date/time 09/22/22 15:10 Received date/time 09/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1932696	1	09/28/22 06:47	09/28/22 06:47	GEB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1933882	1	09/29/22 07:38	09/29/22 07:38	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1934102	1	09/29/22 06:40	09/29/22 06:40	MGF	Mt. Juliet, TN



A-8 L1539417-13 GW

Collected by JS/ES Collected date/time 09/22/22 17:10 Received date/time 09/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1933882	1	09/29/22 08:00	09/29/22 08:00	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1934102	1	09/29/22 07:01	09/29/22 07:01	MGF	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1936781	1	10/05/22 14:45	10/06/22 05:12	DMG	Mt. Juliet, TN

MW-8 L1539417-14 GW

Collected by JS/ES Collected date/time 09/22/22 12:50 Received date/time 09/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG1936087	1	10/03/22 13:19	10/04/22 03:43	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1938491	1	10/06/22 23:22	10/07/22 13:23	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1933882	1	09/29/22 08:22	09/29/22 08:22	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1934102	1	09/29/22 07:21	09/29/22 07:21	MGF	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1936781	1	10/05/22 14:45	10/06/22 05:39	DMG	Mt. Juliet, TN

MW-21 L1539417-15 GW

Collected by JS/ES Collected date/time 09/22/22 11:45 Received date/time 09/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1933882	1	09/29/22 08:44	09/29/22 08:44	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1934102	1	09/29/22 07:42	09/29/22 07:42	MGF	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1936781	2	10/05/22 14:45	10/06/22 06:05	DMG	Mt. Juliet, TN

MW-2 L1539417-16 GW

Collected by JS/ES Collected date/time 09/22/22 15:50 Received date/time 09/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG1936087	1	10/03/22 13:19	10/04/22 03:46	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1938491	1	10/06/22 23:22	10/07/22 13:26	JPD	Mt. Juliet, TN

DUP-2 L1539417-17 GW

Collected by JS/ES Collected date/time 09/22/22 00:00 Received date/time 09/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1933882	1	09/29/22 09:06	09/29/22 09:06	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1934102	1	09/29/22 08:02	09/29/22 08:02	MGF	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1936781	2	10/05/22 14:45	10/06/22 06:32	DMG	Mt. Juliet, TN

SAMPLE SUMMARY

TRIP BLANK L1539417-18 GW

Collected by JS/ES Collected date/time 09/22/22 00:00 Received date/time 09/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1933882	1	09/28/22 23:05	09/28/22 23:05	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1934102	1	09/29/22 00:13	09/29/22 00:13	MGF	Mt. Juliet, TN

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lead	ND		2.00	1	10/05/2022 18:16	WG1936086
Lead,Dissolved	ND		2.00	1	10/04/2022 03:00	WG1936087

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	09/28/2022 17:19	WG1933633
(S) a,a,a-Trifluorotoluene(FID)	99.7		78.0-120		09/28/2022 17:19	WG1933633

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/28/2022 16:19	WG1933716
Toluene	ND		1.00	1	09/28/2022 16:19	WG1933716
Ethylbenzene	ND		1.00	1	09/28/2022 16:19	WG1933716
Total Xylenes	ND		3.00	1	09/28/2022 16:19	WG1933716
(S) Toluene-d8	107		80.0-120		09/28/2022 16:19	WG1933716
(S) 4-Bromofluorobenzene	89.7		77.0-126		09/28/2022 16:19	WG1933716
(S) 1,2-Dichloroethane-d4	95.2		70.0-130		09/28/2022 16:19	WG1933716

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		200	1	10/03/2022 09:16	WG1932053
Residual Range Organics (RRO)	ND		250	1	10/03/2022 09:16	WG1932053
(S) o-Terphenyl	179	J1	52.0-156		10/03/2022 09:16	WG1932053

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Lead	ND		2.00	1	10/05/2022 18:19	WG1936086
Lead,Dissolved	ND		2.00	1	10/04/2022 03:16	WG1936087

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	09/28/2022 17:41	WG1933633
(S) a,a,a-Trifluorotoluene(FID)	98.5		78.0-120		09/28/2022 17:41	WG1933633

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	09/28/2022 16:40	WG1933716
Toluene	ND		1.00	1	09/28/2022 16:40	WG1933716
Ethylbenzene	ND		1.00	1	09/28/2022 16:40	WG1933716
Total Xylenes	ND		3.00	1	09/28/2022 16:40	WG1933716
(S) Toluene-d8	107		80.0-120		09/28/2022 16:40	WG1933716
(S) 4-Bromofluorobenzene	92.5		77.0-126		09/28/2022 16:40	WG1933716
(S) 1,2-Dichloroethane-d4	89.1		70.0-130		09/28/2022 16:40	WG1933716

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	455		200	1	09/28/2022 01:56	WG1932053
Residual Range Organics (RRO)	ND		250	1	09/28/2022 01:56	WG1932053
(S) o-Terphenyl	99.5		52.0-156		09/28/2022 01:56	WG1932053

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Lead	ND		2.00	1	10/05/2022 18:23	WG1936086
Lead,Dissolved	ND		2.00	1	10/04/2022 03:20	WG1936087

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	09/28/2022 18:03	WG1933633
(S) a,a,a-Trifluorotoluene(FID)	99.0		78.0-120		09/28/2022 18:03	WG1933633

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		5.00	5	09/28/2022 17:41	WG1933716
Toluene	ND		5.00	5	09/28/2022 17:41	WG1933716
Ethylbenzene	ND		5.00	5	09/28/2022 17:41	WG1933716
Total Xylenes	ND		15.0	5	09/28/2022 17:41	WG1933716
(S) Toluene-d8	106		80.0-120		09/28/2022 17:41	WG1933716
(S) 4-Bromofluorobenzene	95.9		77.0-126		09/28/2022 17:41	WG1933716
(S) 1,2-Dichloroethane-d4	87.3		70.0-130		09/28/2022 17:41	WG1933716

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	271		200	1	09/28/2022 02:16	WG1932053
Residual Range Organics (RRO)	ND		250	1	09/28/2022 02:16	WG1932053
(S) o-Terphenyl	88.4		52.0-156		09/28/2022 02:16	WG1932053

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Lead	ND		2.00	1	10/05/2022 18:26	WG1936086
Lead,Dissolved	ND		2.00	1	10/04/2022 03:23	WG1936087

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	09/28/2022 18:25	WG1933633
(S) a,a,a-Trifluorotoluene(FID)	97.6		78.0-120		09/28/2022 18:25	WG1933633

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	09/28/2022 17:00	WG1933716
Toluene	ND		1.00	1	09/28/2022 17:00	WG1933716
Ethylbenzene	ND		1.00	1	09/28/2022 17:00	WG1933716
Total Xylenes	ND		3.00	1	09/28/2022 17:00	WG1933716
(S) Toluene-d8	108		80.0-120		09/28/2022 17:00	WG1933716
(S) 4-Bromofluorobenzene	92.5		77.0-126		09/28/2022 17:00	WG1933716
(S) 1,2-Dichloroethane-d4	88.6		70.0-130		09/28/2022 17:00	WG1933716

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	ND		200	1	10/05/2022 23:27	WG1936781
Residual Range Organics (RRO)	ND		250	1	10/05/2022 23:27	WG1936781
(S) o-Terphenyl	83.7		52.0-156		10/05/2022 23:27	WG1936781

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lead	ND		2.00	1	10/07/2022 10:57	WG1938491
Lead,Dissolved	ND		2.00	1	10/04/2022 03:33	WG1936087

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	09/29/2022 04:55	WG1933882
(S) a,a,a-Trifluorotoluene(FID)	98.7		78.0-120		09/29/2022 04:55	WG1933882

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/28/2022 17:21	WG1933716
Toluene	ND		1.00	1	09/28/2022 17:21	WG1933716
Ethylbenzene	ND		1.00	1	09/28/2022 17:21	WG1933716
Total Xylenes	ND		3.00	1	09/28/2022 17:21	WG1933716
(S) Toluene-d8	108		80.0-120		09/28/2022 17:21	WG1933716
(S) 4-Bromofluorobenzene	93.6		77.0-126		09/28/2022 17:21	WG1933716
(S) 1,2-Dichloroethane-d4	88.9		70.0-130		09/28/2022 17:21	WG1933716

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		200	1	10/05/2022 23:53	WG1936781
Residual Range Organics (RRO)	ND		250	1	10/05/2022 23:53	WG1936781
(S) o-Terphenyl	81.1		52.0-156		10/05/2022 23:53	WG1936781

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	09/29/2022 05:17	WG1933882
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	98.6		78.0-120		09/29/2022 05:17	WG1933882

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/29/2022 04:57	WG1934102
Toluene	ND		1.00	1	09/29/2022 04:57	WG1934102
Ethylbenzene	ND		1.00	1	09/29/2022 04:57	WG1934102
Total Xylenes	ND		3.00	1	09/29/2022 04:57	WG1934102
(S) <i>Toluene-d8</i>	91.9		80.0-120		09/29/2022 04:57	WG1934102
(S) <i>4-Bromofluorobenzene</i>	102		77.0-126		09/29/2022 04:57	WG1934102
(S) <i>1,2-Dichloroethane-d4</i>	112		70.0-130		09/29/2022 04:57	WG1934102

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	446		200	1	10/06/2022 00:20	WG1936781
Residual Range Organics (RRO)	ND		250	1	10/06/2022 00:20	WG1936781
(S) <i>o</i> -Terphenyl	88.9		52.0-156		10/06/2022 00:20	WG1936781

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	258		100	1	09/29/2022 06:10	WG1933882
(S) a,a,a-Trifluorotoluene(FID)	94.0		78.0-120		09/29/2022 06:10	WG1933882

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/29/2022 05:18	WG1934102
Toluene	ND		1.00	1	09/29/2022 05:18	WG1934102
Ethylbenzene	ND		1.00	1	09/29/2022 05:18	WG1934102
Total Xylenes	ND		3.00	1	09/29/2022 05:18	WG1934102
(S) Toluene-d8	92.5		80.0-120		09/29/2022 05:18	WG1934102
(S) 4-Bromofluorobenzene	104		77.0-126		09/29/2022 05:18	WG1934102
(S) 1,2-Dichloroethane-d4	110		70.0-130		09/29/2022 05:18	WG1934102

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	179		100	1	09/29/2022 06:33	WG1933882
(S) a,a,a-Trifluorotoluene(FID)	98.8		78.0-120		09/29/2022 06:33	WG1933882

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/29/2022 05:38	WG1934102
Toluene	ND		1.00	1	09/29/2022 05:38	WG1934102
Ethylbenzene	ND		1.00	1	09/29/2022 05:38	WG1934102
Total Xylenes	ND		3.00	1	09/29/2022 05:38	WG1934102
(S) Toluene-d8	92.6		80.0-120		09/29/2022 05:38	WG1934102
(S) 4-Bromofluorobenzene	102		77.0-126		09/29/2022 05:38	WG1934102
(S) 1,2-Dichloroethane-d4	111		70.0-130		09/29/2022 05:38	WG1934102

4 Cn

5 Sr

6 Qc

7 Gl

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	793		200	1	10/06/2022 04:19	WG1936781
Residual Range Organics (RRO)	ND		250	1	10/06/2022 11:52	WG1936781
(S) o-Terphenyl	87.9		52.0-156		10/06/2022 11:52	WG1936781
(S) o-Terphenyl	82.1		52.0-156		10/06/2022 04:19	WG1936781

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	1040000		100000	20	09/28/2022 05:44	WG1932696

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lead	13.0		2.00	1	10/07/2022 13:13	WG1938491
Lead,Dissolved	5.84		2.00	1	10/04/2022 03:36	WG1936087

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	2430		100	1	09/29/2022 06:55	WG1933882
(S) a,a,a-Trifluorotoluene(FID)	80.0		78.0-120		09/29/2022 06:55	WG1933882

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	169		1.00	1	09/29/2022 05:59	WG1934102
Toluene	10.8		1.00	1	09/29/2022 05:59	WG1934102
Ethylbenzene	91.2		1.00	1	09/29/2022 05:59	WG1934102
Total Xylenes	60.4		3.00	1	09/29/2022 05:59	WG1934102
(S) Toluene-d8	86.8		80.0-120		09/29/2022 05:59	WG1934102
(S) 4-Bromofluorobenzene	102		77.0-126		09/29/2022 05:59	WG1934102
(S) 1,2-Dichloroethane-d4	106		70.0-130		09/29/2022 05:59	WG1934102

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	729		200	1	10/06/2022 04:46	WG1936781
Residual Range Organics (RRO)	ND		250	1	10/06/2022 11:25	WG1936781
(S) o-Terphenyl	83.7		52.0-156		10/06/2022 04:46	WG1936781
(S) o-Terphenyl	85.3		52.0-156		10/06/2022 11:25	WG1936781

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	7290	P1	5000	1	09/28/2022 06:00	WG1932696

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lead	ND		2.00	1	10/07/2022 13:16	WG1938491
Lead,Dissolved	ND		2.00	1	10/04/2022 03:39	WG1936087

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	105		100	1	09/29/2022 07:16	WG1933882
(S) a,a,a-Trifluorotoluene(FID)	92.5		78.0-120		09/29/2022 07:16	WG1933882

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/29/2022 18:49	WG1934671
Toluene	ND		1.00	1	09/29/2022 18:49	WG1934671
Ethylbenzene	ND		1.00	1	09/29/2022 18:49	WG1934671
Total Xylenes	ND		3.00	1	09/29/2022 18:49	WG1934671
(S) Toluene-d8	93.1		80.0-120		09/29/2022 18:49	WG1934671
(S) 4-Bromofluorobenzene	103		77.0-126		09/29/2022 18:49	WG1934671
(S) 1,2-Dichloroethane-d4	112		70.0-130		09/29/2022 18:49	WG1934671

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	8370		1000	10	09/29/2022 09:28	WG1933882
(S) a,a,a-Trifluorotoluene(FID)	91.8		78.0-120		09/29/2022 09:28	WG1933882

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		10.0	10	09/29/2022 12:25	WG1934102
Toluene	17.4		10.0	10	09/29/2022 12:25	WG1934102
Ethylbenzene	528		10.0	10	09/29/2022 12:25	WG1934102
Total Xylenes	811		30.0	10	09/29/2022 12:25	WG1934102
(S) Toluene-d8	89.4		80.0-120		09/29/2022 12:25	WG1934102
(S) 4-Bromofluorobenzene	103		77.0-126		09/29/2022 12:25	WG1934102
(S) 1,2-Dichloroethane-d4	106		70.0-130		09/29/2022 12:25	WG1934102

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	103000		5000	1	09/28/2022 06:47	WG1932696

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	09/29/2022 07:38	WG1933882
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	99.2		78.0-120		09/29/2022 07:38	WG1933882

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/29/2022 06:40	WG1934102
Toluene	ND		1.00	1	09/29/2022 06:40	WG1934102
Ethylbenzene	ND		1.00	1	09/29/2022 06:40	WG1934102
Total Xylenes	ND		3.00	1	09/29/2022 06:40	WG1934102
(S) <i>Toluene-d8</i>	91.4		80.0-120		09/29/2022 06:40	WG1934102
(S) <i>4-Bromofluorobenzene</i>	100		77.0-126		09/29/2022 06:40	WG1934102
(S) <i>1,2-Dichloroethane-d4</i>	108		70.0-130		09/29/2022 06:40	WG1934102

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	09/29/2022 08:00	WG1933882
(S) a,a,a-Trifluorotoluene(FID)	97.5		78.0-120		09/29/2022 08:00	WG1933882

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/29/2022 07:01	WG1934102
Toluene	ND		1.00	1	09/29/2022 07:01	WG1934102
Ethylbenzene	ND		1.00	1	09/29/2022 07:01	WG1934102
Total Xylenes	ND		3.00	1	09/29/2022 07:01	WG1934102
(S) Toluene-d8	92.1		80.0-120		09/29/2022 07:01	WG1934102
(S) 4-Bromofluorobenzene	104		77.0-126		09/29/2022 07:01	WG1934102
(S) 1,2-Dichloroethane-d4	111		70.0-130		09/29/2022 07:01	WG1934102

4 Cn

5 Sr

6 Qc

7 Gl

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		200	1	10/06/2022 05:12	WG1936781
Residual Range Organics (RRO)	ND		250	1	10/06/2022 05:12	WG1936781
(S) o-Terphenyl	76.3		52.0-156		10/06/2022 05:12	WG1936781

8 Al

9 Sc

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Lead	11.0		2.00	1	10/07/2022 13:23	WG1938491
Lead,Dissolved	3.25		2.00	1	10/04/2022 03:43	WG1936087

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	09/29/2022 08:22	WG1933882
(S) a,a,a-Trifluorotoluene(FID)	99.1		78.0-120		09/29/2022 08:22	WG1933882

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	09/29/2022 07:21	WG1934102
Toluene	ND		1.00	1	09/29/2022 07:21	WG1934102
Ethylbenzene	ND		1.00	1	09/29/2022 07:21	WG1934102
Total Xylenes	ND		3.00	1	09/29/2022 07:21	WG1934102
(S) Toluene-d8	92.5		80.0-120		09/29/2022 07:21	WG1934102
(S) 4-Bromofluorobenzene	104		77.0-126		09/29/2022 07:21	WG1934102
(S) 1,2-Dichloroethane-d4	108		70.0-130		09/29/2022 07:21	WG1934102

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	523		200	1	10/06/2022 05:39	WG1936781
Residual Range Organics (RRO)	508		250	1	10/06/2022 05:39	WG1936781
(S) o-Terphenyl	82.6		52.0-156		10/06/2022 05:39	WG1936781

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	09/29/2022 08:44	WG1933882
(S) a,a,a-Trifluorotoluene(FID)	99.0		78.0-120		09/29/2022 08:44	WG1933882

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/29/2022 07:42	WG1934102
Toluene	ND		1.00	1	09/29/2022 07:42	WG1934102
Ethylbenzene	ND		1.00	1	09/29/2022 07:42	WG1934102
Total Xylenes	ND		3.00	1	09/29/2022 07:42	WG1934102
(S) Toluene-d8	93.1		80.0-120		09/29/2022 07:42	WG1934102
(S) 4-Bromofluorobenzene	104		77.0-126		09/29/2022 07:42	WG1934102
(S) 1,2-Dichloroethane-d4	110		70.0-130		09/29/2022 07:42	WG1934102

4 Cn

5 Sr

6 Qc

7 Gl

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	1960		400	2	10/06/2022 06:05	WG1936781
Residual Range Organics (RRO)	ND		500	2	10/06/2022 06:05	WG1936781
(S) o-Terphenyl	72.1		52.0-156		10/06/2022 06:05	WG1936781

8 Al

9 Sc

Sample Narrative:

L1539417-15 WG1936781: Dilution due to matrix impact during extraction procedure

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lead	ND		2.00	1	10/07/2022 13:26	WG1938491
Lead,Dissolved	ND		2.00	1	10/04/2022 03:46	WG1936087

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	09/29/2022 09:06	WG1933882
(S) a,a,a-Trifluorotoluene(FID)	99.8		78.0-120		09/29/2022 09:06	WG1933882

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/29/2022 08:02	WG1934102
Toluene	ND		1.00	1	09/29/2022 08:02	WG1934102
Ethylbenzene	ND		1.00	1	09/29/2022 08:02	WG1934102
Total Xylenes	ND		3.00	1	09/29/2022 08:02	WG1934102
(S) Toluene-d8	91.9		80.0-120		09/29/2022 08:02	WG1934102
(S) 4-Bromofluorobenzene	104		77.0-126		09/29/2022 08:02	WG1934102
(S) 1,2-Dichloroethane-d4	110		70.0-130		09/29/2022 08:02	WG1934102

4 Cn

5 Sr

6 Qc

7 Gl

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	1580		400	2	10/06/2022 06:32	WG1936781
Residual Range Organics (RRO)	ND		500	2	10/06/2022 06:32	WG1936781
(S) o-Terphenyl	72.1		52.0-156		10/06/2022 06:32	WG1936781

8 Al

9 Sc

Sample Narrative:

L1539417-17 WG1936781: Dilution due to matrix impact during extraction procedure

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	09/28/2022 23:05	WG1933882
(S) a,a,a-Trifluorotoluene(FID)	98.9		78.0-120		09/28/2022 23:05	WG1933882

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/29/2022 00:13	WG1934102
Toluene	ND		1.00	1	09/29/2022 00:13	WG1934102
Ethylbenzene	ND		1.00	1	09/29/2022 00:13	WG1934102
Total Xylenes	ND		3.00	1	09/29/2022 00:13	WG1934102
(S) Toluene-d8	93.8		80.0-120		09/29/2022 00:13	WG1934102
(S) 4-Bromofluorobenzene	100		77.0-126		09/29/2022 00:13	WG1934102
(S) 1,2-Dichloroethane-d4	111		70.0-130		09/29/2022 00:13	WG1934102

Method Blank (MB)

(MB) R3842442-1 09/27/22 20:11

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Sulfate	U		594	5000

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1539165-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1539165-01 09/27/22 23:32 • (DUP) R3842442-3 09/28/22 00:09

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	78600	77400	1	1.56		15

L1539417-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1539417-10 09/28/22 06:00 • (DUP) R3842442-6 09/28/22 06:15

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	7290	5220	1	33.1	P1	15

Laboratory Control Sample (LCS)

(LCS) R3842442-2 09/27/22 20:28

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Sulfate	40000	41800	105	80.0-120	

L1539165-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1539165-01 09/27/22 23:32 • (MS) R3842442-4 09/28/22 00:25 • (MSD) R3842442-5 09/28/22 00:41

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Sulfate	50000	78600	123000	119000	89.3	81.6	1	80.0-120			3.18	15

L1539417-10 Original Sample (OS) • Matrix Spike (MS)

(OS) L1539417-10 09/28/22 06:00 • (MS) R3842442-7 09/28/22 06:31

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Sulfate	50000	7290	53200	91.8	1	80.0-120	

Method Blank (MB)

(MB) R3845173-1 10/05/22 16:45

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Lead	U		0.849	2.00

1 Cp

2 Tc

3 Ss

Laboratory Control Sample (LCS)

(LCS) R3845173-2 10/05/22 16:48

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lead	50.0	50.8	102	80.0-120	

4 Cn

5 Sr

L1539265-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1539265-01 10/05/22 16:52 • (MS) R3845173-4 10/05/22 16:58 • (MSD) R3845173-5 10/05/22 17:01

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lead	50.0	3.28	53.6	56.0	101	105	1	75.0-125			4.28	20

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3844323-1 10/04/22 02:54

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Lead,Dissolved	U		0.849	2.00

1 Cp

2 Tc

3 Ss

Laboratory Control Sample (LCS)

(LCS) R3844323-2 10/04/22 02:57

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Lead,Dissolved	50.0	49.1	98.2	80.0-120	

4 Cn

5 Sr

L1539417-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1539417-01 10/04/22 03:00 • (MS) R3844323-4 10/04/22 03:07 • (MSD) R3844323-5 10/04/22 03:10

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Lead,Dissolved	50.0	ND	50.7	50.9	101	102	1	75.0-125			0.347	20

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3845839-1 10/07/22 10:51

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Lead	U		0.849	2.00

1 Cp

2 Tc

3 Ss

Laboratory Control Sample (LCS)

(LCS) R3845839-2 10/07/22 10:54

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lead	50.0	47.1	94.2	80.0-120	

4 Cn

5 Sr

L1539417-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1539417-05 10/07/22 10:57 • (MS) R3845839-4 10/07/22 11:04 • (MSD) R3845839-5 10/07/22 11:07

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lead	50.0	ND	47.7	48.6	95.3	97.1	1	75.0-125			1.86	20

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3842836-2 09/28/22 11:58

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	99.0			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3842836-1 09/28/22 10:48

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5550	101	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			93.0	78.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3843810-2 09/28/22 22:43

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	99.2			78.0-120

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3843810-1 09/28/22 21:45 • (LCSD) R3843810-3 09/29/22 03:42

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	4840	5280	88.0	96.0	70.0-124			8.70	20
(S) a,a,a-Trifluorotoluene(FID)				95.9	94.2	78.0-120				

L1539438-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1539438-01 09/29/22 01:17 • (MS) R3843810-4 09/29/22 12:07 • (MSD) R3843810-5 09/29/22 12:29

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	1090	2930	3350	33.5	41.1	1	10.0-155			13.4	21
(S) a,a,a-Trifluorotoluene(FID)					96.4	93.2		78.0-120				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3844031-2 09/28/22 09:02

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.0941	1.00
Toluene	U		0.278	1.00
Ethylbenzene	U		0.137	1.00
Xylenes, Total	U		0.174	3.00
<i>(S) Toluene-d8</i>	110			80.0-120
<i>(S) 4-Bromofluorobenzene</i>	93.4			77.0-126
<i>(S) 1,2-Dichloroethane-d4</i>	91.1			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3844031-1 09/28/22 08:20

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	4.48	89.6	70.0-123	
Toluene	5.00	4.23	84.6	79.0-120	
Ethylbenzene	5.00	4.81	96.2	79.0-123	
Xylenes, Total	15.0	12.8	85.3	79.0-123	
<i>(S) Toluene-d8</i>			108	80.0-120	
<i>(S) 4-Bromofluorobenzene</i>			97.6	77.0-126	
<i>(S) 1,2-Dichloroethane-d4</i>			91.8	70.0-130	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3842884-2 09/28/22 23:53

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.0941	1.00
Toluene	U		0.278	1.00
Ethylbenzene	U		0.137	1.00
Xylenes, Total	U		0.174	3.00
<i>(S) Toluene-d8</i>	93.4			80.0-120
<i>(S) 4-Bromofluorobenzene</i>	101			77.0-126
<i>(S) 1,2-Dichloroethane-d4</i>	111			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3842884-1 09/28/22 23:01

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	5.99	120	70.0-123	
Toluene	5.00	4.56	91.2	79.0-120	
Ethylbenzene	5.00	4.34	86.8	79.0-123	
Xylenes, Total	15.0	12.6	84.0	79.0-123	
<i>(S) Toluene-d8</i>			90.4	80.0-120	
<i>(S) 4-Bromofluorobenzene</i>			99.7	77.0-126	
<i>(S) 1,2-Dichloroethane-d4</i>			111	70.0-130	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Method Blank (MB)

(MB) R3843140-3 09/29/22 14:07

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Benzene	U		0.0941	1.00
Toluene	0.392	U	0.278	1.00
Ethylbenzene	U		0.137	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	92.6			80.0-120
(S) 4-Bromofluorobenzene	103			77.0-126
(S) 1,2-Dichloroethane-d4	110			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3843140-1 09/29/22 13:06 • (LCSD) R3843140-2 09/29/22 13:26

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Benzene	5.00	5.75	5.86	115	117	70.0-123			1.89	20
Toluene	5.00	5.04	4.92	101	98.4	79.0-120			2.41	20
Ethylbenzene	5.00	4.26	4.21	85.2	84.2	79.0-123			1.18	20
Xylenes, Total	15.0	12.8	12.7	85.3	84.7	79.0-123			0.784	20
(S) Toluene-d8				91.2	90.1	80.0-120				
(S) 4-Bromofluorobenzene				102	99.8	77.0-126				
(S) 1,2-Dichloroethane-d4				109	108	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3842365-1 09/27/22 18:09

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Diesel Range Organics (DRO)	U		66.7	200
Residual Range Organics (RRO)	U		83.3	250
<i>(S) o-Terphenyl</i>	95.0			52.0-156

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3842365-2 09/27/22 18:29 • (LCSD) R3842365-3 09/27/22 18:49

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Diesel Range Organics (DRO)	1500	1560	1650	104	110	50.0-150			5.61	20
<i>(S) o-Terphenyl</i>				92.0	100	52.0-156				

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3845260-1 10/05/22 19:01

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Diesel Range Organics (DRO)	U		66.7	200
Residual Range Organics (RRO)	U		83.3	250
<i>(S) o-Terphenyl</i>	75.0			52.0-156

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3845260-2 10/05/22 19:27 • (LCSD) R3845260-3 10/05/22 19:54

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Diesel Range Organics (DRO)	1500	1350	1520	90.0	101	50.0-150			11.8	20
<i>(S) o-Terphenyl</i>				90.0	105	52.0-156				

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

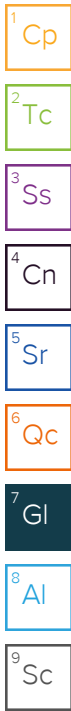
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

1100 Olive Way, Suite 800
 Report to: **Kyle Haslam** Email To: **Kyle.Haslam@arcadis.com;Matt.Annis@arcadis.**
 Project Description: **KMEP Harbor Island** City/State Collected: **SEATTLE, WA** Please Circle: PT MT CT ET

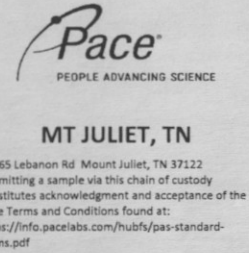
Phone: **206-726-4713** Client Project #: **30111526** Lab Project #: **KINMOROCA-HARBORISLA**
 Collected by (print): **J. SEPUL E. SCHEUER** Site/Facility ID #: **2720 13TH AVENUE SW** P.O. #
 Collected by (signature): *[Signature]* Rush? (Lab MUST Be Notified)
 ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day Date Results Needed
 Immediately Packed on Ice N ___ Y No. of Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*Nitrate 125mlHDPE-NoPres	BTEX 8260D, NWTPHGX 40mlAmb-HCI	Diss Pb 6020 250mlHDPE-NoPres	Ferrous Fe 250mlAmb-HCI	Methane RSK175 40mlAmb HCl	NWTPHDX w/ silica 40mlAmb-HCI-BT	Sulfate 125mlHDPE-NoPres	Sulfide 250mlAmb-S-NaOH+ZnAc	Total Pb 6020 250mlHDPE-HNO3	Total PCBs 6020 250mlHDPE-HNO3	Remarks	Sample # (lab only)
A-14R	G	GW	—	09-22	15:40	10	X	X				X			X	X		21
SH-05R	G	GW	—	09-22	10:10	10	X	X				X			X	X		22
SH-02R	G	GW	—	09-22	13:45	10	X	X				X			X	X		23
MW-07R	G	GW	—	09-22	11:20	10	X	X				X			X	X		24
MW-12R	G	GW	—	09-22	12:45	10	X	X				X			X	X		25
A-10	G	GW	—	09-22	16:40	8	X					X				X		26
A-5	G	GW	—	09-22	17:50	6	X									X		27
MW-4	G	GW	—	09-22	12:05	8	X					X			X	X		28
12	G	GW	—	09-22	13:50	11	X	X				X	X		X	X		29
MW-9	G	GW	—	09-22	09:30	9	X	X				X			X	X		30

Acctnum: **KINMOROCA** Template: **T196897** Prelogin: **P950113** PM: **110 - Brian Ford** PB: **KP 9/9/22**
 Shipped Via: **UPS** Table # **F134 11535417**

* Matrix: **SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other**
 Remarks: ***Nitrate has a 48 hour holding time.**
 pH _____ Temp _____ Flow _____ Other _____
 Samples returned via: UPS FedEx Courier Tracking # _____

Relinquished by: (Signature) *[Signature]* Date: **09-23-22** Time: **11:00** Received by: (Signature) *[Signature]* Trip Blank Received: **6** Yes/No **HCL/MeOH TBR**
 Relinquished by: (Signature) Date: Time: Received by: (Signature) Temp: °C Bottles Received: **142** If preservation required by Login: Date/Time
 Relinquished by: (Signature) Date: Time: Received for lab by: (Signature) *[Signature]* Date: **9/24/22** Time: **9:00** Hold: Condition: **NCE 100K**



Company Name/Address: **Kinder Morgan- Houston, TX (Scott Martin)**
 1100 Olive Way, Suite 800

Billing Information: **Accounts Payable-Scott Martin**
 1001 Louisiana St.
 Houston, TX 77002

Report to: **Kyle Haslam**

Project Description: **KMEP Harbor Island**

City/State: **SEATTLE, WA**

Client Project #: **30111526**

Lab Project #: **KINMOROCA-HARBORISLA**

Collected by (print): **J. SEPIOL, E. SCHELER**

Site/Facility ID #: **2720 13TH AVENUE SW**

Collected by (signature): *[Signature]*

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative										
*Nitrate 125mlHDPE-NoPres	BTEX 8260D, NWTPhGX 40mlAmb-HCl	Diss Pb 6020 250mlHDPE-NoPres	Ferrous Fe 250mlAmb-HCl	Methane RSK175 40mlAmb HCl	NWTPhDX w/ silica 40mlAmb-HCl-BT	Sulfate 125mlHDPE-NoPres	Sulfide 250mlAmb-S-NaOH+ZnAc	Total Pb 6020 250mlHDPE-HNO3	Total PCBs 6020 250mlHDPE-HNO3	NWTPH - GIX

Chain of Custody Page **2** of **2**

Pace
 PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>

Email To: **Kyle.Haslam@arcadis.com; Matt.Annis@arcadis.com**

Please Circle: **PT** MT CT ET

Phone: **206-726-4713**

Project Description: **KMEP Harbor Island**

City/State: **SEATTLE, WA**

Client Project #: **30111526**

Lab Project #: **KINMOROCA-HARBORISLA**

Collected by (print): **J. SEPIOL, E. SCHELER**

Site/Facility ID #: **2720 13TH AVENUE SW**

Collected by (signature): *[Signature]*

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #

Date Results Needed

No. of Cntrs

SDG # **U1539417**

Table #

Acctnum: **KINMOROCA**

Template: **T196897**

Prelogin: **P950113**

PM: **110 - Brian Ford**

PB: **KP 9/9/22**

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*Nitrate 125mlHDPE-NoPres	BTEX 8260D, NWTPhGX 40mlAmb-HCl	Diss Pb 6020 250mlHDPE-NoPres	Ferrous Fe 250mlAmb-HCl	Methane RSK175 40mlAmb HCl	NWTPhDX w/ silica 40mlAmb-HCl-BT	Sulfate 125mlHDPE-NoPres	Sulfide 250mlAmb-S-NaOH+ZnAc	Total Pb 6020 250mlHDPE-HNO3	Total PCBs 6020 250mlHDPE-HNO3	NWTPH - GIX	Remarks	Sample # (lab only)
TMW-6	G	GW	—	09-22	10:40	7		X					X			X			11
11	G	GW	—	09-22	15:10	7		X					X			X			77
A-8	G	GW	—	09-22	17:10	8		X				X				X			77
MW-8	G	GW	—	09-22	12:50	10		X	X			X			X	X			74
MW-21	G	GW	—	09-22	11:45	8		X				X				X			75
MW-2	G	GW	—	09-22	15:50	2			X						X				24
DUP-2	G	GW	—	09-22	—	8		X				X				X			77
TRIP BLANK	—	GW	—	—	—	8		X								X			78
		GW																	
		GW																	

* Matrix: **SS - Soil AIR - Air F - Filter**
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks: ***Nitrate has a 48 hour holding time.**

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: UPS FedEx Courier

Tracking #

Relinquished by: (Signature) *[Signature]* Date: **09-23-22** Time: **11:00**

Received by: (Signature) _____ Trip Blank Received: Yes / No
 HCL / MeOH
 TBR

Relinquished by: (Signature) _____ Date: _____ Time: _____

Received by: (Signature) _____ Temp: _____ °C Bottles Received: _____

If preservation required by Login: Date/Time

Relinquished by: (Signature) _____ Date: _____ Time: _____

Received for lab by: (Signature) *[Signature]* Date: **9/24/22** Time: **9:00**

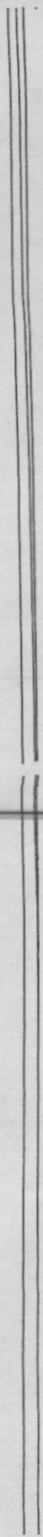
Hold: _____ Condition: **NCF / OK**

Sample Receipt Checklist
 COC Seal Present/Intact: Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N
 RAD Screen <0.5 mR/hr: Y N

U1539417

U1539417

<u>Tracking Numbers</u>	<u>Temperature</u>
58296697 3642	RRA7 5.9 to = 5.9
4873	JAA6 3.4 to = 3.4



09/24-L1539417-NCF KINMOROCA

R5

Time estimate: oh

Time spent: oh

Grouping date: 28 September 2022

Members



Cole Medley (responsible)



Brian Ford

Due on ~~28 September 2022 5:00 PM~~ for target ~~Done~~ (Was done by Cole Medley at 28 September 2022 4:37 PM)

- Login Clarification needed
- Chain of custody is incomplete
- Please specify Metals requested
- Please specify TCLP requested
- Received additional samples not listed on COC
- Sample IDs on containers do not match IDs on COC
- Client did not "X" analysis
- Chain of Custody is missing
- If no COC: Received by: _____
- If no COC: Date/Time: _____
- If no COC: Temp./Cont.Rec./pH: _____
- If no COC: Carrier: _____
- If no COC: Tracking #: _____
- Client informed by call
- Client informed by Email
- Client informed by Voicemail
- Date/Time: _____
- PM initials: bjf
- Client Contact: _____

Comments

Cole Medley

24 September 2022 6:22 PM

For ID:TMW-6 client "X" analysis for SULFATE, but we received a 250mlHDPE-HNO3 container instead.

Brian Ford

28 September 2022 4:35 PM

proceed without SULFATE for TMW-6

Cole Medley

28 September 2022 4:37 PM

Done.

Kinder Morgan- Houston, TX(Scott Martin)

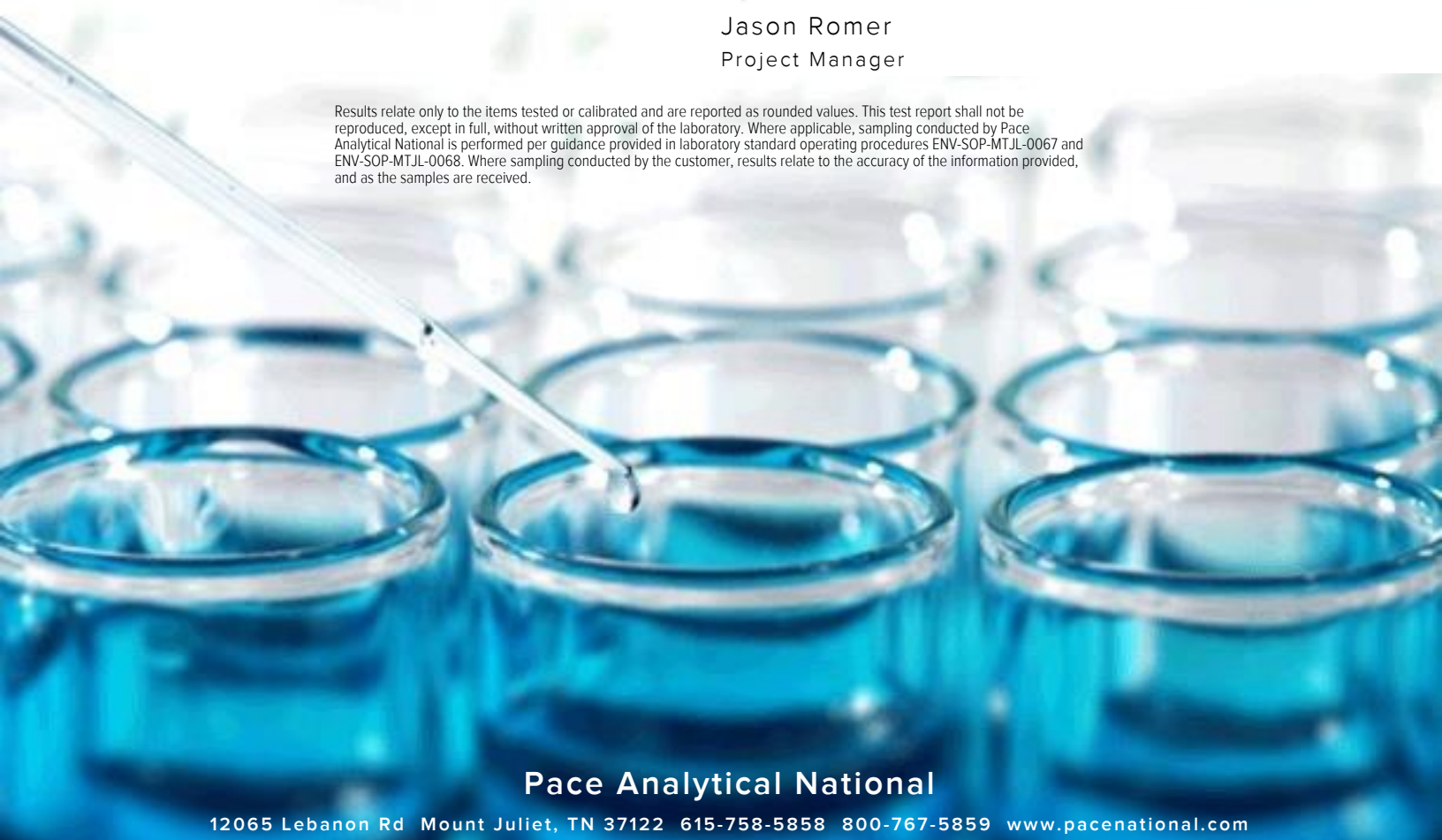
Sample Delivery Group: L1541049
Samples Received: 09/29/2022
Project Number: 30111526
Description: KMEP Harbor Island
Site: 2720 13TH AVENUE SW SEATTLE,WA
Report To: Kyle Haslam
1100 Olive Way, Suite 800
Seattle, WA 98101

Entire Report Reviewed By:



Jason Romer
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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SAMPLE SUMMARY

TMW-6 L1541049-01 GW

Collected by: J. Sepiol
 Collected date/time: 09/28/22 09:15
 Received date/time: 09/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1935036	5	10/04/22 03:38	10/04/22 03:38	GEB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1936677	1	10/04/22 13:23	10/04/22 13:23	BAM	Mt. Juliet, TN

TRIP BLANK L1541049-02 GW

Collected by: J. Sepiol
 Collected date/time: 09/28/22 09:15
 Received date/time: 09/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1936677	1	10/04/22 09:43	10/04/22 09:43	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1936614	1	10/04/22 01:30	10/04/22 01:30	JAH	Mt. Juliet, TN

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Jason Romer
Project Manager

Sample Delivery Group (SDG) Narrative

Analyzed from headspace vial.

<u>Lab Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L1541049-02	TRIP BLANK	NWTPHGX

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	326000		25000	5	10/04/2022 03:38	WG1935036

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	10/04/2022 13:23	WG1936677
(S) a,a,a-Trifluorotoluene(FID)	106		78.0-120		10/04/2022 13:23	WG1936677

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	10/04/2022 09:43	WG1936677
(S) a,a,a-Trifluorotoluene(FID)	106		78.0-120		10/04/2022 09:43	WG1936677

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	10/04/2022 01:30	WG1936614
Toluene	ND		1.00	1	10/04/2022 01:30	WG1936614
Ethylbenzene	ND		1.00	1	10/04/2022 01:30	WG1936614
Total Xylenes	ND		3.00	1	10/04/2022 01:30	WG1936614
(S) Toluene-d8	120		80.0-120		10/04/2022 01:30	WG1936614
(S) 4-Bromofluorobenzene	93.4		77.0-126		10/04/2022 01:30	WG1936614
(S) 1,2-Dichloroethane-d4	110		70.0-130		10/04/2022 01:30	WG1936614

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3844361-1 10/03/22 20:02

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Sulfate	U		594	5000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1541043-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1541043-01 10/04/22 00:27 • (DUP) R3844361-5 10/04/22 00:43

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	113000	113000	1	0.0451		15

L1541726-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1541726-01 10/04/22 06:33 • (DUP) R3844361-6 10/04/22 06:49

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	7890	7800	1	1.22		15

Laboratory Control Sample (LCS)

(LCS) R3844361-2 10/03/22 20:18

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Sulfate	40000	41600	104	80.0-120	

L1540948-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1540948-03 10/03/22 23:40 • (MS) R3844361-3 10/03/22 23:56 • (MSD) R3844361-4 10/04/22 00:11

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Sulfate	50000	ND	54000	53800	101	100	1	80.0-120			0.462	15

L1541726-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1541726-01 10/04/22 06:33 • (MS) R3844361-7 10/04/22 07:05

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Sulfate	50000	7890	58800	102	1	80.0-120	

Method Blank (MB)

(MB) R3845171-2 10/04/22 05:30

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	46.3	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	106			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3845171-1 10/04/22 04:21

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5410	98.4	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			109	78.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3845104-3 10/04/22 00:40

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.0941	1.00
Toluene	U		0.278	1.00
Ethylbenzene	U		0.137	1.00
Xylenes, Total	U		0.174	3.00
<i>(S) Toluene-d8</i>	117			80.0-120
<i>(S) 4-Bromofluorobenzene</i>	90.5			77.0-126
<i>(S) 1,2-Dichloroethane-d4</i>	91.8			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3845104-1 10/03/22 23:38 • (LCSD) R3845104-2 10/03/22 23:59

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	4.40	4.33	88.0	86.6	70.0-123			1.60	20
Toluene	5.00	4.62	4.74	92.4	94.8	79.0-120			2.56	20
Ethylbenzene	5.00	4.86	5.15	97.2	103	79.0-123			5.79	20
Xylenes, Total	15.0	14.4	14.4	96.0	96.0	79.0-123			0.000	20
<i>(S) Toluene-d8</i>				113	112	80.0-120				
<i>(S) 4-Bromofluorobenzene</i>				91.4	90.6	77.0-126				
<i>(S) 1,2-Dichloroethane-d4</i>				90.5	90.1	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

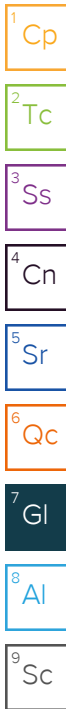
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
---	---



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Company Name/Address: **Kinder Morgan- Houston, TX(Scott Martin)**
 1100 Olive Way, Suite 800

Billing Information: **Accounts Payable-Scott Martin**
 1001 Louisiana St.
 Houston, TX 77002

Report to: **Kyle Haslam**

Project Description: **KMEP Harbor Island**

City/State Collected: **SEATTLE, WA**

Chain of Custody Page 1 of 1

Email To: **Kyle.Haslam@arcadis.com; Matt.Annis@arcadis.**

Please Circle: **PT** MT CT ET

Client Project #: **30111526**

Lab Project #: **KINMOROCA-HARBORISLA**

Site/Facility ID #: **2720 13TH AVENUE SW**

Collected by (signature): **J. SEPUL**

Quote #

Rush? (Lab MUST Be Notified)

Immediatly Packed on Ice N Y X

Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Date Results Needed

No. of Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*Nitrate 125mlHDPE-NoPres	BTEX 8260D, NWTPHGX 40mlAmb-HCl	Diss Pb 6020 250mlHDPE-NoPres	Ferrous Fe 250mlAmb-HCl	Methane RSK175 40mlAmb HCl	NWTPHDX w/ silica 40mlAmb-HCl-BT	Sulfate 125mlHDPE-NoPres	Sulfide 250mlAmb-S-NaOH+ZnAc	Total Pb 6020 250mlHDPE-HNO3	Total RCRA8-6020 250mlHDPE-HNO3
TMW-6	G	GW	-	9/28/22	0915	1										
TRIP BLANK	-	GW	-	-	-	3		X								
		GW														
		GW														
		GW														

Remarks: *Nitrate has a 48 hour holding time.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: UPS X FedEx Courier

Tracking # **5913 6269 1392**

Relinquished by: (Signature) *[Signature]* Date: **9/28/22** Time: **1615** Received by: (Signature) Trip Blank Received: **Yes/No** **MeOH** **TBR**

Relinquished by: (Signature) Date: _____ Time: _____ Received by: (Signature) Temp: **6047 °C** Bottles Received: **0.5+0=0.5** If preservation required by Login: Date/Time

Relinquished by: (Signature) Date: _____ Time: _____ Received for lab by: (Signature) Date: **9/29/22** Time: **0900** Hold: _____ Condition: **NCF / OK**

Pace
 PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>

SDG # **1541099**

B078

Acctnum: **KINMOROCA**

Template: **T196897**

Prelogin: **P950113**

PM: **110 - Brian Ford**

PB: **KP 9/19/22**

Shipped Via:

Remarks | Sample # (lab only)

-01

-02

Sample Receipt Checklist

COC Seal Present/Intact: NP X Y N

COC Signed/Accurate: Y X N

Bottles arrive intact: Y X N

Correct bottles used: Y X N

Sufficient volume sent: Y X N

If Applicable

VOA Zero Headspace: Y X N

Preservation Correct/Checked: Y X N

RAD Screen <0.5 mR/hr: Y X N

Appendix D

Historical Groundwater Elevations

Appendix D
 Historical Groundwater Elevation Data
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
A-1	02/11/02	10.93	7.47	--	3.46	
A-1	05/20/02	10.93	9.99	--	0.94	
A-1	08/27/02	10.93	4.72	--	6.21	
A-1	11/04/02	10.93	8.95	--	1.98	
A-1	02/18/03	10.93	7.92	--	3.01	
A-1	06/09/03	10.93	8.47	--	2.46	
A-1	09/15/03	14.64	8.83	--	5.81	
A-1	11/18/03	14.64	8.45	--	6.19	
A-1	02/24/04	14.64	7.89	--	6.75	
A-1	05/10/04	14.64	8.53	--	6.11	
A-1	08/24/04	14.64	8.73	--	5.91	
A-1	12/13/04	14.64	8.45	--	6.19	
A-1	03/08/05	14.64	8.59	--	6.05	
A-1	06/06/05	14.64	8.41	--	6.23	
A-1	09/19/05	14.64	8.87	--	5.77	
A-1	12/12/05	14.64	8.63	--	6.01	
A-1	03/13/06	14.64	7.95	--	6.69	
A-1	06/05/06	14.64	8.37	--	6.27	
A-1	09/11/06	14.64	8.81	--	5.83	
A-1	12/11/06	14.64	7.95	--	6.69	
A-2	02/11/02	10.85	7.41	--	3.44	
A-2	05/20/02	10.85	9.28	--	1.57	
A-2	08/27/02	10.85	4.66	--	6.19	
A-2	11/04/02	10.85	8.90	--	1.95	
A-2	02/18/03	10.85	7.98	--	2.87	
A-2	06/09/03	10.85	8.41	--	2.44	
A-2	09/15/03	14.66	8.77	--	5.89	
A-2	11/18/03	14.66	8.35	--	6.31	
A-2	02/24/04	14.66	7.80	--	6.86	
A-2	05/10/04	14.66	8.51	--	6.15	
A-2	08/24/04	14.66	8.55	--	6.11	
A-2	12/13/04	14.66	8.38	--	6.28	
A-2	03/08/05	14.66	8.77	--	5.89	
A-2	06/06/05	14.66	8.45	--	6.21	
A-2	09/19/05	14.66	8.79	--	5.87	
A-2	12/12/05	14.66	8.58	--	6.08	
A-2	03/13/06	14.66	7.81	--	6.85	
A-2	06/05/06	14.66	8.29	--	6.37	
A-2	09/11/06	14.66	8.76	--	5.90	
A-2	12/11/06	14.66	7.96	--	6.70	
A-3	02/11/02	10.50	7.30	<0.01	3.20	
A-3	05/20/02	10.50	9.03	--	1.47	
A-3	08/27/02	10.50	8.43	--	2.07	
A-3	11/04/02	10.50	8.64	--	1.86	
A-3	02/18/03	10.50	7.61	--	2.89	
A-3	06/09/03	10.50	8.19	--	2.31	
A-3	09/15/03	14.32	8.50	--	5.82	
A-3	11/18/03	14.32	7.56	--	6.76	
A-3	02/24/04	14.32	7.56	--	6.76	
A-3	05/10/04	14.32	8.12	--	6.20	
A-3	08/24/04	14.32	8.23	--	6.09	
A-3	12/13/04	14.32	7.85	--	6.47	
A-3	03/08/05	14.32	8.20	--	6.12	
A-3	06/06/05	14.32	8.03	--	6.29	
A-3	09/19/05	14.32	8.50	--	5.82	
A-3	12/12/05	14.32	8.32	--	6.00	
A-3	03/13/06	14.32	7.51	--	6.81	
A-3	06/05/06	14.32	7.96	--	6.36	
A-3	09/11/06	14.32	8.46	--	5.86	
A-3	12/11/06	14.32	7.56	--	6.76	
A-4	02/11/02	10.74	7.38	0.14	3.47	
A-4	05/20/02	10.74	8.20	0.02	2.56	
A-4	08/27/02	10.74	7.62	0.04	3.15	
A-4	11/04/02	10.74	7.92	Sheen	2.82	Product recovery pump in well
A-4	02/18/03	10.74	7.84	Sheen	2.90	Product recovery pump in well
A-4	06/09/03	10.74	6.40	0.10	4.42	Product recovery pump in well
A-4	09/15/03	13.22	8.38	0.10	4.92	Product recovery pump in well
A-4	11/18/03	13.22	6.65	0.01	6.58	Product recovery pump in well
A-4	02/24/04	13.22	7.00	--	6.22	Product recovery pump in well
A-4	05/10/04	13.22	6.79	--	6.43	Product recovery pump in well

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
A-4	08/24/04	13.22	7.76	--	5.46	Product recovery pump in well
A-4	12/13/04	13.22	6.10	Sheen	7.12	
A-4	03/08/05	13.22	7.21	Sheen	6.01	
A-4	06/06/05	13.22	7.23	Sheen	5.99	
A-4	09/19/05	13.22	7.78	--	5.44	
A-4	12/12/05	13.22	7.77	--	5.45	
A-4	03/13/06	13.22	6.85	--	6.37	
A-4	06/05/06	13.22	7.30	Sheen	5.92	
A-4	09/11/06	13.22	8.02	0.01	5.21	
A-4	12/11/06	13.22	7.04	--	6.18	
A-4	03/26/07	13.22	6.90	--	6.32	
A-4	06/18/07	13.22	7.29	--	5.93	
A-4	09/24/07	13.22	7.48	Sheen	5.74	
A-4	12/10/07	13.22	6.83	--	6.39	
A-4	03/03/08	13.22	7.11	0.01	6.12	
A-4	06/02/08	13.22	7.52	Sheen	5.70	
A-4	09/04/08	13.22	7.57	Sheen	5.65	
A-4	12/04/08	13.22	7.44	--	5.78	
A-4	03/04/09	13.22	7.09	--	6.13	
A-4	06/01/09	13.22	7.32	Sheen	5.90	
A-4	09/21/09	13.22	7.61	Sheen	5.61	
A-4	11/16/09	13.22	6.97	Sheen	6.25	
A-4	03/08/10	13.22	6.54	--	6.68	
A-4	06/07/10	13.22	6.92	Sheen	6.30	
A-4	09/09/10	13.22	7.59	--	5.63	
A-4	11/16/10	13.22	7.11	--	6.11	
A-4	03/01/11	13.22	6.66	--	6.56	
A-4	05/23/11	13.22	6.84	Sheen	6.38	
A-4	08/29/11	13.22	7.50	--	5.72	
A-4	12/01/11	13.22	7.16	--	6.06	
A-4	03/01/12	13.22	--	--	--	Not Measured
A-4	05/30/12	13.22	6.88	--	6.34	
A-4	08/25/12	13.22	7.17	--	6.05	
A-4	11/07/12	13.22	6.77	--	6.45	
A-4	02/28/13	13.22	6.69	--	6.53	
A-4	04/08/13	13.22	6.83	--	6.39	
A-4	07/29/13	13.22	7.23	--	5.99	
A-4	10/02/13	13.22	5.10	--	8.12	
A-4	01/21/14	13.22	7.12	--	6.10	
A-4	04/22/14	13.22	6.71	--	6.51	
A-4	07/15/14	13.22	7.09	--	6.13	
A-4	03/17/15	13.22	3.74	--	9.48	
A-4	09/29/15	13.22	--	--	--	Not Measured
A-4	03/29/16	13.22	6.02	--	7.20	
A-4	10/11/16	13.22	7.32	--	5.90	
A-4	03/28/17	13.22	5.97	--	7.25	
A-4	10/10/17	13.22	7.31	--	5.91	
A-4	03/28/18	13.22	6.70	--	6.52	
A-4	10/02/18	13.22	7.22	--	6.00	
A-4	04/02/19	13.22	6.67	--	6.55	
A-4	10/01/19	13.22	7.25	--	5.97	
A-4	03/25/20	13.22	6.71	--	6.51	
A-4	10/19/20	13.22	7.10	--	6.12	
A-4	04/12/21	13.22	6.89	--	6.33	
A-4	10/11/21	13.22	7.28	--	5.94	
A-4	04/18/22	13.22	6.73	--	6.49	
A-4	09/19/22	13.22	7.02	--	6.20	
A-5	02/11/02	10.42	7.00	--	3.42	
A-5	05/20/02	10.42	8.89	--	1.53	
A-5	08/27/02	10.42	8.25	--	2.17	
A-5	11/04/02	10.42	8.43	--	1.99	
A-5	02/18/03	10.42	7.35	--	3.07	
A-5	06/09/03	10.42	7.99	--	2.43	
A-5	09/15/03	14.13	8.33	Sheen	5.80	
A-5	11/18/03	14.13	7.82	--	6.31	
A-5	02/24/04	14.13	6.45	--	7.68	
A-5	05/10/04	14.13	8.04	--	6.09	
A-5	08/24/04	14.13	8.02	--	6.11	
A-5	12/13/04	14.13	7.88	--	6.25	
A-5	03/08/05	14.13	8.00	--	6.13	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
A-5	06/06/05	14.13	7.89	--	6.24	
A-5	09/19/05	14.13	8.37	--	5.76	
A-5	12/12/05	14.13	8.15	--	5.98	
A-5	03/13/06	14.13	7.39	--	6.74	
A-5	06/05/06	14.13	7.82	--	6.31	
A-5	09/11/06	14.13	8.34	--	5.79	
A-5	12/11/06	14.13	7.41	--	6.72	
A-5	03/26/07	14.13	7.41	--	6.72	
A-5	06/18/07	14.13	8.32	--	5.81	
A-5	09/24/07	14.13	8.32	--	5.81	
A-5	12/10/07	14.13	7.66	--	6.47	
A-5	03/03/08	14.13	7.78	--	6.35	
A-5	06/02/08	14.13	8.21	--	5.92	
A-5	09/04/08	14.13	8.10	--	6.03	
A-5	12/04/08	14.13	8.15	--	5.98	
A-5	03/04/09	14.13	7.76	--	6.37	
A-5	06/01/09	14.13	8.03	--	6.10	
A-5	09/21/09	14.13	8.35	--	5.78	
A-5	11/16/09	14.13	7.70	--	6.43	
A-5	03/08/10	14.13	7.21	--	6.92	
A-5	06/07/10	14.13	7.74	--	6.39	
A-5	09/09/10	14.13	8.26	--	5.87	
A-5	11/15/10	14.13	7.85	--	6.28	
A-5	03/01/11	14.13	7.47	--	6.66	
A-5	05/23/11	14.13	7.58	--	6.55	
A-5	08/29/11	14.13	8.17	--	5.96	
A-5	12/01/11	14.13	7.89	--	6.24	
A-5	03/01/12	14.13	7.62	--	6.51	
A-5	05/30/12	14.13	7.67	--	6.46	
A-5	08/25/12	14.13	7.91	--	6.22	
A-5	11/07/12	14.13	7.54	--	6.59	
A-5	02/27/13	14.13	7.59	--	6.54	
A-5	04/08/13	14.13	7.56	--	6.57	
A-5	07/29/13	14.13	7.88	--	6.25	
A-5	10/02/13	14.13	7.64	--	6.49	
A-5	01/21/14	14.13	7.92	--	6.21	
A-5	04/22/14	14.13	7.50	--	6.63	
A-5	07/15/14	14.13	7.85	--	6.28	
A-5	03/17/15	14.13	7.45	--	6.68	
A-5	09/29/15	14.13	7.80	--	6.33	
A-5	03/29/16	14.13	6.89	--	7.24	
A-5	10/11/16	14.13	8.05	--	6.08	
A-5	03/28/17	14.13	6.76	--	7.37	
A-5	10/10/17	14.13	8.05	--	6.08	
A-5	03/28/18	14.13	7.51	--	6.62	
A-5	10/02/18	14.13	7.99	--	6.14	
A-5	04/02/19	14.13	7.46	--	6.67	
A-5	10/01/19	14.13	7.99	--	6.14	
A-5	03/25/20	14.13	7.52	--	6.61	
A-5	10/19/20	14.13	7.89	--	6.24	
A-5	04/12/21	14.13	7.64	--	6.49	
A-5	10/11/21	14.13	8.06	--	6.07	
A-5	04/18/22	14.13	7.52	--	6.61	
A-5	09/19/22	14.13	7.81	--	6.32	
A-6	02/11/02	--	6.40	0.13	--	Not Measured-Casing Broken
A-6	05/20/02	--	8.13	0.14	--	Not Measured-Casing Broken
A-6	08/27/02	--	7.80	0.45	--	Not Measured-Casing Broken
A-6	11/04/02	--	7.33	0.01	--	Not Measured-Product recovery pump in well, Casing Broken
A-6	02/18/03	--	8.50	Sheen	--	Not Measured-Product recovery pump in well, Casing Broken
A-6	06/09/03	--	7.45	0.01	--	Not Measured-Re-cut TOC; repaired
A-6	09/15/03	12.81	7.77	0.01	5.05	Product recovery pump in well
A-6	11/18/03	12.81	7.46	0.54	5.78	Product recovery pump in well
A-6	02/24/04	12.81	6.65	0.40	6.48	Product recovery pump in well
A-6	05/10/04	12.81	6.95	0.10	5.94	Product recovery pump in well
A-6	08/24/04	12.81	7.21	0.21	5.77	Product recovery pump in well
A-6	12/13/04	12.81	6.80	0.14	6.12	
A-6	03/08/05	12.81	6.98	0.32	6.09	
A-6	06/06/05	12.81	6.81	0.04	6.03	
A-6	09/19/05	12.81	7.81	0.59	5.47	
A-6	10/12/05	12.81	7.95	0.50	5.26	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
A-6	12/12/05	12.81	8.20	0.95	5.37	
A-6	03/13/06	12.81	6.68	0.08	6.19	
A-6	06/05/06	12.81	7.10	0.13	5.81	
A-6	09/11/06	12.81	7.82	0.27	5.21	
A-6	12/11/06	12.81	6.58	0.02	6.25	
A-6	03/26/07	12.81	6.51	--	6.30	
A-6	06/18/07	12.81	7.00	--	5.81	
A-6	09/24/07	12.81	7.20	Sheen	5.61	
A-6	12/10/07	12.81	6.58	--	6.23	
A-6	03/03/08	12.81	6.59	--	6.22	
A-6	06/02/08	12.81	7.05	Sheen	5.76	
A-6	09/04/08	12.81	7.19	Sheen	5.62	
A-6	12/04/08	12.81	7.15	Sheen	5.66	
A-6	03/04/09	12.81	6.51	Sheen	6.30	
A-6	06/01/09	12.81	7.00	Sheen	5.81	
A-6	09/21/09	12.81	7.24	Sheen	5.57	
A-6	11/16/09	12.81	6.50	Sheen	6.31	
A-6	03/08/10	12.81	6.14	--	6.67	
A-6	06/07/10	12.81	6.71	Sheen	6.10	
A-6	09/09/10	12.81	7.12	--	5.69	
A-6	11/15/10	12.81	6.79	Sheen	6.02	
A-6	03/01/11	12.81	6.38	Sheen	6.43	
A-6	05/23/11	12.81	6.52	Sheen	6.29	
A-6	08/29/11	12.81	7.04	0.03	5.79	
A-6	12/01/11	12.81	6.95	Sheen	5.86	
A-6	03/01/12	12.81	6.60	--	6.21	
A-6	05/30/12	12.81	6.58	--	6.23	
A-6	08/25/12	12.81	7.18	--	5.63	
A-6	11/07/12	12.81	6.61	--	6.20	
A-6	02/27/13	12.81	6.54	--	6.27	
A-6	04/08/13	12.81	6.46	--	6.35	
A-6	07/29/13	12.81	6.83	--	5.98	
A-6	10/02/13	12.81	6.66	Sheen	6.15	0.04 ft of SPH observed. Absorbent sock placed in well.
A-6	01/21/14	12.81	6.80	--	6.01	
A-6	04/22/14	12.81	6.32	--	6.49	
A-6	07/15/14	12.81	6.69	--	6.12	
A-6	03/17/15	12.81	6.30	0.10	6.59	Absorbent sock placed in well
A-6	06/08/15	12.81	6.70	--	6.11	
A-6	09/29/15	12.81	7.79	0.05	5.06	Absorbent sock placed in well
A-6	12/21/15	12.81	5.20	--	7.61	
A-6	03/29/16	12.81	5.77	<0.01	7.04	Sheen. Absorbent sock placed in well
A-6	06/16/16	12.81	6.79	--	6.02	
A-6	09/01/16	12.81	7.01	0.05	5.80	Absorbent sock placed in well
A-6	10/11/16	12.81	7.09	--	5.72	
A-6	03/28/17	12.81	5.77	--	7.04	Sheen
A-6	10/10/17	12.81	6.96	0.01	5.85	
A-6	03/28/18	12.81	6.47	0.02	6.36	
A-6	10/02/18	12.81	6.91	--	5.90	
A-6	04/02/19	12.81	6.30	--	6.51	
A-6	10/01/19	12.81	6.96	0.06	5.90	Absorbent sock placed in well
A-6	03/25/20	12.81	6.44	--	6.37	
A-6	10/19/20	12.81	6.81	--	6.00	
A-6	04/12/21	12.81	6.65	0.03	6.18	
A-6	10/11/21	12.81	7.07	0.01	5.75	
A-6	04/18/22	12.81	6.33	--	6.48	
A-6	09/20/22	12.81	6.81	--	6.00	
A-6	12/07/22	12.81	6.39	--	6.42	Absorbent sock placed in well
A-7	02/11/02	9.50	6.25	--	3.25	
A-7	05/20/02	9.50	8.10	--	1.40	
A-7	08/27/02	9.50	7.40	--	2.10	
A-7	11/04/02	9.50	7.55	--	1.95	
A-7	02/18/03	9.50	7.53	--	1.97	
A-7	06/09/03	9.50	7.12	--	2.38	
A-7	09/15/03	13.43	7.45	--	5.98	
A-7	11/18/03	13.43	6.78	--	6.65	
A-7	02/24/04	13.43	6.89	--	6.54	
A-7	05/10/04	13.43	6.66	--	6.77	
A-7	08/24/04	13.43	7.67	--	5.76	
A-7	12/13/04	13.43	6.88	--	6.55	
A-7	03/08/05	13.43	4.45	--	8.98	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
A-7	06/06/05	13.43	6.84	--	6.59	
A-7	09/19/05	13.43	7.47	--	5.96	
A-7	12/12/05	13.43	7.22	--	6.21	
A-7	03/13/06	13.43	6.41	--	7.02	
A-7	06/05/06	13.43	6.90	--	6.53	
A-7	09/11/06	13.43	7.53	--	5.90	
A-7	12/11/06	13.43	6.69	--	6.74	
A-8	02/11/02	10.46	6.98	--	3.48	
A-8	05/20/02	10.46	8.87	--	1.59	
A-8	08/27/02	10.46	7.26	--	3.20	
A-8	11/04/02	10.46	8.51	--	1.95	
A-8	02/18/03	10.46	4.83	--	5.63	
A-8	06/09/03	10.46	8.11	--	2.35	
A-8	09/15/03	14.61	8.38	--	6.23	
A-8	11/18/03	14.61	7.87	Sheen	6.74	
A-8	02/24/04	14.61	7.43	--	7.18	
A-8	05/10/04	14.61	8.04	--	6.57	
A-8	08/24/04	14.61	8.18	--	6.43	
A-8	12/13/04	14.61	7.90	--	6.71	
A-8	03/08/05	14.61	8.11	--	6.50	
A-8	06/06/05	14.61	7.98	--	6.63	
A-8	09/19/05	14.61	8.44	--	6.17	
A-8	12/12/05	14.61	8.22	--	6.39	
A-8	03/13/06	14.61	7.49	--	7.12	
A-8	06/05/06	14.61	7.89	--	6.72	
A-8	09/11/06	14.61	8.45	--	6.16	
A-8	12/11/06	14.61	7.66	--	6.95	
A-8	03/26/07	14.61	7.71	--	6.90	
A-8	06/18/07	14.61	8.27	--	6.34	
A-8	09/24/07	14.61	8.50	--	6.11	
A-8	12/10/07	14.61	7.44	--	7.17	
A-8	03/03/08	14.61	7.83	--	6.78	
A-8	06/02/08	14.61	8.20	--	6.41	
A-8	09/04/08	14.61	--	--	--	Inaccessible
A-8	12/04/08	14.61	8.20	--	6.41	
A-8	03/04/09	14.61	7.70	--	6.91	
A-8	06/01/09	14.61	8.11	--	6.50	
A-8	09/21/09	14.61	8.37	--	6.24	
A-8	11/16/09	14.61	7.70	--	6.91	
A-8	03/08/10	14.61	7.31	--	7.30	
A-8	06/07/10	14.61	7.85	--	6.76	
A-8	09/09/10	14.61	8.28	--	6.33	
A-8	11/15/10	14.61	7.94	--	6.67	
A-8	03/01/11	14.61	7.56	--	7.05	
A-8	05/23/11	14.61	7.70	--	6.91	
A-8	08/29/11	14.61	8.21	--	6.40	
A-8	12/01/11	14.61	8.06	--	6.55	
A-8	03/01/12	14.61	7.74	--	6.87	
A-8	05/30/12	14.61	7.87	--	6.74	
A-8	08/25/12	14.61	7.97	--	6.64	
A-8	11/07/12	14.61	7.63	--	6.98	
A-8	02/27/13	14.61	8.71	--	5.90	
A-8	04/08/13	14.61	7.67	--	6.94	
A-8	07/29/13	14.61	7.98	--	6.63	
A-8	10/02/13	14.61	7.75	--	6.86	
A-8	01/21/14	14.61	7.98	--	6.63	
A-8	04/22/14	14.61	7.52	--	7.09	
A-8	07/15/14	14.61	7.89	--	6.72	
A-8	03/17/15	14.61	7.41	--	7.20	
A-8	09/29/15	14.61	7.92	--	6.69	
A-8	03/29/16	14.61	6.96	--	7.65	
A-8	10/11/16	14.61	8.21	--	6.40	
A-8	03/28/17	14.61	6.95	--	7.66	
A-8	10/10/17	14.61	8.14	--	6.47	
A-8	03/28/18	14.61	7.61	--	7.00	
A-8	10/02/18	14.61	8.11	--	6.50	
A-8	04/02/19	14.61	4.50	--	10.11	
A-8	10/01/19	14.61	8.06	--	6.55	
A-8	03/25/20	14.61	7.63	--	6.98	
A-8	10/19/20	14.61	7.97	--	6.64	

Appendix D
 Historical Groundwater Elevation Data
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
A-8	04/12/21	14.61	7.77	--	6.84	
A-8	10/11/21	14.61	8.22	--	6.39	
A-8	04/18/22	14.61	7.54	--	7.07	
A-8	09/19/22	14.61	8.95	--	5.66	
A-9	02/11/02	10.35	7.20	0.01	3.16	
A-9	05/20/02	10.35	8.86	--	1.49	
A-9	08/27/02	10.35	8.27	Sheen	2.08	
A-9	11/04/02	10.35	8.39	0.01	1.97	
A-9	02/18/03	10.35	7.45	--	2.90	
A-9	06/09/03	10.35	8.06	--	2.29	
A-9	09/15/03	14.42	8.03	--	6.39	
A-9	11/18/03	14.42	7.62	--	6.80	
A-9	02/24/04	14.42	7.21	--	7.21	
A-9	05/10/04	14.42	8.00	--	6.42	
A-9	08/24/04	14.42	8.18	--	6.24	
A-9	12/13/04	14.42	7.73	--	6.69	
A-9	03/08/05	14.42	8.00	--	6.42	
A-9	06/06/05	14.42	7.89	--	6.53	
A-9	09/19/05	14.42	8.28	--	6.14	
A-9	12/12/05	14.42	8.04	--	6.38	
A-9	03/13/06	14.42	7.37	--	7.05	
A-9	06/05/06	14.42	7.79	--	6.63	
A-9	09/11/06	14.42	8.36	--	6.06	
A-9	12/11/06	14.42	7.46	--	6.96	
A-10	02/11/02	9.48	6.15	--	3.33	
A-10	05/20/02	9.48	7.98	--	1.50	
A-10	08/27/02	9.48	7.34	Sheen	2.14	
A-10	11/04/02	9.48	7.54	Sheen	1.94	
A-10	02/18/03	9.48	6.57	--	2.91	
A-10	06/09/03	9.48	7.15	--	2.33	
A-10	09/15/03	13.51	7.45	Sheen	6.06	
A-10	11/18/03	13.51	6.95	Sheen	6.56	
A-10	02/24/04	13.51	6.50	Sheen	7.01	
A-10	05/10/04	13.51	7.15	Sheen	6.36	
A-10	08/24/04	13.51	7.31	--	6.20	
A-10	12/13/04	13.51	6.95	--	6.56	
A-10	03/08/05	13.51	7.17	--	6.34	
A-10	06/06/05	13.51	7.01	--	6.50	
A-10	09/19/05	13.51	7.54	--	5.97	
A-10	12/12/05	13.51	7.25	--	6.26	
A-10	03/13/06	13.51	6.58	--	6.93	
A-10	06/05/06	13.51	6.92	--	6.59	
A-10	09/11/06	13.51	7.43	--	6.08	
A-10	12/11/06	13.51	6.59	--	6.92	
A-10	03/26/07	13.51	6.83	--	6.68	
A-10	06/18/07	13.51	7.29	--	6.22	
A-10	09/24/07	13.51	7.44	--	6.07	
A-10	12/10/07	13.51	6.79	--	6.72	
A-10	03/03/08	13.51	7.83	--	5.68	
A-10	06/02/08	13.51	7.31	--	6.20	
A-10	09/04/08	13.51	7.23	--	6.28	
A-10	12/04/08	13.51	6.87	--	6.64	
A-10	03/04/09	13.51	6.90	--	6.61	
A-10	06/01/09	13.51	7.18	--	6.33	
A-10	09/21/09	13.51	7.39	--	6.12	
A-10	11/16/09	13.51	6.84	--	6.67	
A-10	03/08/10	13.51	6.34	--	7.17	
A-10	06/07/10	13.51	6.84	--	6.67	
A-10	09/09/10	13.51	7.34	--	6.17	
A-10	11/15/10	13.51	6.93	--	6.58	
A-10	03/01/11	13.51	6.60	--	6.91	
A-10	05/23/11	13.51	6.68	--	6.83	
A-10	08/29/11	13.51	7.25	--	6.26	
A-10	12/01/11	13.51	6.96	--	6.55	
A-10	03/01/12	13.51	6.72	--	6.79	
A-10	05/30/12	13.51	6.72	--	6.79	
A-10	08/25/12	13.51	7.30	--	6.21	
A-10	11/07/12	13.51	7.08	--	6.43	
A-10	02/27/13	13.51	6.64	--	6.87	
A-10	04/08/13	13.51	6.61	--	6.90	

Appendix D
 Historical Groundwater Elevation Data
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
A-10	07/29/13	13.51	6.95	--	6.56	
A-10	10/02/13	13.51	6.46	--	7.05	
A-10	01/21/14	13.51	7.05	--	6.46	
A-10	04/22/14	13.51	6.65	--	6.86	
A-10	07/15/14	13.51	7.50	--	6.01	
A-10	03/17/15	13.51	6.48	--	7.03	
A-10	09/29/15	13.51	6.97	--	6.54	
A-10	03/29/16	13.51	5.96	--	7.55	
A-10	10/11/16	13.51	7.21	--	6.30	
A-10	03/28/17	13.51	6.02	--	7.49	
A-10	10/10/17	13.51	7.20	--	6.31	
A-10	03/28/18	13.51	6.60	--	6.91	
A-10	10/02/18	13.51	7.19	--	6.32	
A-10	04/02/19	13.51	6.65	--	6.86	
A-10	10/01/19	13.51	7.10	--	6.41	
A-10	03/25/20	13.51	6.69	--	6.82	
A-10	10/19/20	13.51	7.02	--	6.49	
A-10	04/12/21	13.51	6.74	--	6.77	
A-10	10/11/21	13.51	7.19	--	6.32	
A-10	04/18/22	13.51	6.70	--	6.81	
A-10	09/19/22	13.51	7.10	--	6.41	
A-11	02/11/02	10.36	7.01	--	3.35	
A-11	05/20/02	10.36	8.83	--	1.53	
A-11	08/27/02	10.36	8.21	--	2.15	
A-11	11/04/02	10.36	8.73	--	1.63	
A-11	02/18/03	10.36	5.42	--	4.94	
A-11	06/09/03	10.36	8.01	--	2.35	
A-11	09/15/03	14.40	8.32	--	6.08	
A-11	11/18/03	14.40	6.71	--	7.69	
A-11	02/24/04	14.40	7.35	--	7.05	
A-11	05/10/04	14.40	8.10	--	6.30	
A-11	08/24/04	14.40	8.17	--	6.23	
A-11	12/13/04	14.40	7.85	--	6.55	
A-11	03/08/05	14.40	7.90	--	6.50	
A-11	06/06/05	14.40	7.88	--	6.52	
A-11	09/19/05	14.40	8.34	0.01	6.07	
A-11	10/12/05	14.40	8.24	--	6.16	
A-11	12/12/05	14.40	8.10	--	6.30	
A-11	03/13/06	14.40	7.40	--	7.00	
A-11	06/05/06	14.40	7.80	--	6.60	
A-11	09/11/06	14.40	8.32	--	6.08	
A-11	12/11/06	14.40	7.42	--	6.98	
A-11	12/10/07	14.40	7.64	--	6.76	
A-11	03/03/08	14.40	7.39	--	7.01	
A-11	03/04/09	14.40	7.70	--	6.70	
A-11	06/01/09	14.40	8.00	--	6.40	
A-11	09/21/09	14.40	8.26	--	6.14	
A-11	11/16/09	14.40	7.65	--	6.75	
A-11	03/08/10	14.40	7.20	--	7.20	
A-11	06/07/10	14.40	7.69	--	6.71	
A-11	09/09/10	14.40	8.20	--	6.20	
A-11	11/15/10	14.40	7.78	--	6.62	
A-11	03/01/11	14.40	7.43	--	6.97	
A-11	05/23/11	14.40	7.52	--	6.88	
A-11	08/29/11	14.40	8.09	--	6.31	
A-11	12/01/11	14.40	7.82	--	6.58	
A-11	03/01/12	14.40	7.55	--	6.85	
A-11	05/30/12	14.40	7.42	--	6.98	
A-11	08/25/12	14.40	7.63	--	6.77	
A-11	11/07/12	14.40	7.41	--	6.99	
A-11	02/27/13	14.40	7.42	--	6.98	
A-11	04/08/13	14.40	7.42	--	6.98	
A-11	07/29/13	14.40	7.75	--	6.65	
A-11	10/02/13	14.40	7.66	--	6.74	
A-11	01/21/14	14.40	7.93	--	6.47	
A-11	04/22/14	14.40	7.56	--	6.84	
A-11	07/15/14	14.40	7.91	--	6.49	
A-11	03/17/15	14.40	7.35	--	7.05	
A-11	09/29/15	14.40	7.89	--	6.51	
A-11	03/29/16	14.40	6.91	--	7.49	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
A-11	10/11/16	14.40	8.08	--	6.32	
A-11	03/28/17	14.40	6.92	--	7.48	
A-11	10/10/17	14.40	8.06	--	6.34	
A-11	03/28/18	14.40	7.45	--	6.95	
A-11	10/02/18	14.40	8.04	--	6.36	
A-11	04/02/19	14.40	7.47	--	6.93	
A-11	10/01/19	14.40	7.95	--	6.45	
A-11	03/25/20	14.40	7.51	--	6.89	
A-11	10/19/20	14.40	7.87	--	6.53	
A-11	04/12/21	14.40	7.57	--	6.83	
A-11	10/11/21	14.40	8.07	--	6.33	
A-11	04/18/22	14.40	7.50	--	6.90	
A-11	09/19/22	14.40	7.85	--	6.55	
A-12	02/11/02	9.10	5.80	--	3.30	
A-12	05/20/02	9.10	8.68	--	0.42	
A-12	08/27/02	9.10	7.04	--	2.06	
A-12	11/04/02	9.10	7.23	--	1.87	
A-12	02/18/03	9.10	6.38	--	2.72	
A-12	06/09/03	9.10	6.83	--	2.27	
A-12	09/15/03	12.92	7.15	--	5.77	
A-12	11/18/03	12.92	6.60	--	6.32	
A-12	02/24/04	12.92	6.12	--	6.80	
A-12	05/10/04	12.92	6.74	--	6.18	
A-12	08/24/04	12.92	6.95	--	5.97	
A-12	12/13/04	12.92	6.57	--	6.35	
A-12	03/08/05	12.92	6.75	Sheen	6.17	
A-12	06/06/05	12.95	6.39	--	6.56	
A-12	09/19/05	12.95	7.09	--	5.86	
A-12	12/12/05	12.95	6.89	--	6.06	
A-12	03/13/06	12.95	6.23	--	6.72	
A-12	06/05/06	12.95	6.60	--	6.35	
A-12	09/11/06	12.95	7.14	--	5.81	
A-12	12/11/06	12.95	6.28	--	6.67	
A-12	12/10/07	12.95	6.43	--	6.52	
A-12	03/03/08	12.95	6.50	--	6.45	
A-12	03/04/09	12.95	6.39	--	6.56	
A-12	06/01/09	12.95	6.86	--	6.09	
A-12	09/21/09	12.95	7.02	--	5.93	
A-12	11/16/09	12.95	6.38	--	6.57	
A-12	03/08/10	12.95	6.00	--	6.95	
A-12	06/07/10	12.95	6.54	--	6.41	
A-12	09/09/10	12.95	6.95	--	6.00	
A-12	11/15/10	12.95	6.60	--	6.35	
A-12	03/01/11	12.95	6.24	--	6.71	
A-12	05/23/11	12.95	6.34	--	6.61	
A-12	08/29/11	12.95	6.87	--	6.08	
A-12	12/01/11	12.95	6.66	--	6.29	
A-12	03/01/12	12.95	6.46	--	6.49	
A-12	05/30/12	12.95	6.35	--	6.60	
A-12	08/25/12	12.95	6.57	--	6.38	
A-12	11/07/12	12.95	6.27	--	6.68	
A-12	02/27/13	12.95	6.32	--	6.63	
A-12	04/08/13	12.95	6.28	--	6.67	
A-12	07/29/13	12.95	6.58	--	6.37	
A-12	10/02/13	12.95	6.41	--	6.54	
A-12	01/21/14	12.95	6.67	--	6.28	
A-12	04/22/14	12.95	6.29	--	6.66	
A-12	07/15/14	12.95	6.62	--	6.33	
A-12	03/17/15	12.95	6.13	--	6.82	
A-12	09/29/15	12.95	6.62	--	6.33	
A-12	03/29/16	12.95	5.64	--	7.31	
A-12	10/11/16	12.95	6.90	--	6.05	
A-12	03/28/17	12.95	5.67	--	7.28	
A-12	10/10/17	12.95	6.82	--	6.13	
A-12	03/28/18	12.95	6.28	--	6.67	
A-12	10/02/18	12.95	6.81	--	6.14	
A-12	04/02/19	12.95	6.24	--	6.71	
A-12	10/01/19	12.95	6.72	--	6.23	
A-12	03/25/20	12.95	6.31	--	6.64	
A-12	10/19/20	12.95	6.65	--	6.30	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
A-12	04/12/21	12.95	6.43	--	6.52	
A-12	10/11/21	12.95	6.83	--	6.12	
A-12	04/18/22	12.95	12.26	--	0.69	
A-12	09/19/22	12.95	6.60	--	6.35	
A-13	03/27/01	--	--	--	--	
A-13						Destroyed during construction activities
A-14	03/27/01	--	--	--	--	
A-14						Destroyed during construction activities
A-14R	02/11/02	12.62	6.90	--	5.72	
A-14R	05/20/02	12.62	9.77	--	2.85	
A-14R	08/27/02	12.62	8.10	--	4.52	
A-14R	11/04/02	12.62	8.30	--	4.32	
A-14R	02/18/03	10.17	7.31	--	2.86	
A-14R	06/09/03	10.17	4.82	--	5.35	
A-14R	09/15/03	14.21	8.20	--	6.01	
A-14R	11/18/03	14.21	6.10	Sheen	8.11	
A-14R	02/24/04	14.21	7.23	--	6.98	
A-14R	05/10/04	14.21	7.89	--	6.32	
A-14R	08/24/04	14.21	8.01	--	6.20	
A-14R	12/13/04	14.21	7.75	--	6.46	
A-14R	03/08/05	14.21	7.87	--	6.34	
A-14R	06/06/05	14.21	7.71	--	6.50	
A-14R	09/19/05	14.21	8.16	0.15	6.17	
A-14R	10/12/05	14.21	8.01	--	6.20	
A-14R	12/12/05	14.21	7.95	--	6.26	
A-14R	03/13/06	14.21	7.26	--	6.95	
A-14R	06/05/06	14.21	7.64	--	6.57	
A-14R	09/11/06	14.21	8.15	--	6.06	
A-14R	12/11/06	14.21	7.30	--	6.91	
A-14R	03/26/07	14.21	7.51	--	6.70	
A-14R	06/18/07	14.21	7.98	--	6.23	
A-14R	09/24/07	14.21	8.18	--	6.03	
A-14R	12/10/07	14.21	7.51	--	6.70	
A-14R	03/03/08	14.21	7.56	--	6.65	
A-14R	06/02/08	14.21	8.02	--	6.19	
A-14R	09/04/08	14.21	7.71	--	6.50	
A-14R	12/04/08	14.21	7.92	--	6.29	
A-14R	03/04/09	14.21	7.62	--	6.59	
A-14R	06/01/09	14.21	7.91	--	6.30	
A-14R	09/21/09	14.21	8.08	--	6.13	
A-14R	11/16/09	14.21	7.57	--	6.64	
A-14R	03/08/10	14.21	7.05	--	7.16	
A-14R	06/07/10	14.21	7.56	--	6.65	
A-14R	09/09/10	14.21	8.05	--	6.16	
A-14R	11/15/10	14.21	7.63	--	6.58	
A-14R	03/01/11	14.21	7.31	--	6.90	
A-14R	05/23/11	14.21	7.40	--	6.81	
A-14R	08/29/11	14.21	7.97	--	6.24	
A-14R	12/01/11	14.21	7.68	--	6.53	
A-14R	03/01/12	14.21	7.42	--	6.79	
A-14R	05/30/12	14.21	7.44	--	6.77	
A-14R	08/25/12	14.21	7.59	--	6.62	
A-14R	11/07/12	14.21	7.33	--	6.88	
A-14R	02/27/13	14.21	7.38	--	6.83	
A-14R	04/08/13	14.21	7.34	--	6.87	
A-14R	07/29/13	14.21	7.67	--	6.54	
A-14R	10/02/13	14.21	7.51	--	6.70	
A-14R	01/21/14	14.21	7.76	--	6.45	
A-14R	04/22/14	14.21	7.36	--	6.85	
A-14R	07/15/14	14.21	7.76	--	6.45	
A-14R	03/17/15	14.21	7.22	--	6.99	
A-14R	09/29/15	14.21	7.74	--	6.47	
A-14R	03/29/16	14.21	7.33	--	6.88	
A-14R	10/11/16	14.21	7.92	--	6.29	
A-14R	03/28/17	14.21	6.76	--	7.45	
A-14R	10/10/17	14.21	7.93	--	6.28	
A-14R	03/28/18	14.21	7.33	--	6.88	
A-14R	10/02/18	14.21	7.92	--	6.29	
A-14R	04/02/19	14.21	7.39	--	6.82	
A-14R	10/01/19	14.21	7.83	--	6.38	
A-14R	03/25/20	14.21	7.43	--	6.78	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
A-14R	10/19/20	14.21	7.76	--	6.45	
A-14R	04/12/21	14.21	7.50	--	6.71	
A-14R	10/11/21	14.21	7.93	--	6.28	
A-14R	04/18/22	14.21	7.44	--	6.77	
A-14R	09/19/22	14.21	8.74	--	5.47	
A-15	03/27/01	--	--	--	--	
A-15						Destroyed during construction activities
A-16	02/11/02	10.49	7.23	0.01	3.27	
A-16	05/20/02	10.49	9.03	--	1.46	
A-16	08/27/02	10.49	8.41	0.04	2.11	
A-16	11/04/02	10.49	8.81	0.28	1.90	
A-16	02/18/03	10.49	7.51	Sheen	2.98	
A-16	06/09/03	10.49	8.16	--	2.33	
A-16	09/15/03	14.39	8.80	0.01	5.60	
A-16	11/18/03	14.39	7.74	--	6.65	
A-16	02/24/04	14.39	7.54	--	6.85	
A-16	05/10/04	14.39	8.50	0.31	6.14	
A-16	08/24/04	14.39	9.03	0.82	6.02	
A-16	12/13/04	14.39	8.08	Sheen	6.31	
A-16	03/08/05	14.39	7.90	Sheen	6.49	
A-16	06/06/05	14.39	8.05	Sheen	6.34	
A-16	09/19/05	14.39	9.24	0.90	5.87	
A-16	10/12/05	14.39	9.38	1.20	5.97	
A-16	12/12/05	14.39	8.22	--	6.17	
A-16	03/13/06	14.39	7.75	--	6.64	
A-16	06/05/06	14.39	7.98	--	6.41	
A-16	09/11/06	14.39	9.20	0.90	5.91	
A-16	12/11/06	14.39	7.69	Sheen	6.70	
A-16	03/26/07	14.39	7.78	Sheen	6.61	
A-16	06/18/07	14.39	8.45	0.34	6.21	
A-16	09/24/07	14.39	8.45	0.02	5.96	
A-16	12/10/07	14.39	7.65	0.01	6.75	
A-16	03/03/08	14.39	7.88	Sheen	6.51	
A-16	06/02/08	14.39	8.77	0.04	5.65	
A-16	09/04/08	14.39	7.38	0.04	7.04	
A-16	12/04/08	14.39	8.27	--	6.12	
A-16	03/04/09	14.39	7.95	--	6.44	
A-16	06/01/09	14.39	8.50	Sheen	5.89	
A-16	09/21/09	14.39	8.80	0.35	5.87	
A-16	11/16/09	14.39	7.95	Sheen	6.44	
A-16	03/08/10	14.39	7.40	--	6.99	
A-16	06/07/10	14.39	7.91	Sheen	6.48	
A-16	09/09/10	14.39	8.92	0.09	5.54	
A-16	11/15/10	14.39	8.21	Sheen	6.18	
A-16	03/01/11	14.39	7.65	--	6.74	
A-16	05/23/11	14.39	7.79	--	6.60	
A-16	08/29/11	14.39	8.52	0.10	5.95	
A-16	12/01/11	14.39	8.24	Sheen	6.15	
A-16	03/01/12	14.39	7.94	Sheen	6.45	
A-16	05/30/12	14.39	7.67	--	6.72	
A-16	08/25/12	14.39	7.79	--	6.60	
A-16	11/07/12	14.39	7.56	--	6.83	
A-16	02/27/13	14.39	7.66	--	6.73	
A-16	04/08/13	14.39	7.56	--	6.83	
A-16	07/29/13	14.39	7.88	--	6.51	
A-16	10/02/13	14.39	7.46	--	6.93	
A-16	01/21/14	14.39	8.05	--	6.34	
A-16	04/22/14	14.39	7.66	--	6.73	
A-16	07/15/14	14.39	8.04	--	6.35	
A-16	03/17/15	14.39	7.55	--	6.84	
A-16	09/29/15	14.39	8.19	0.17	6.34	Absorbent sock placed in well
A-16	12/21/15	14.39	6.98	--	7.41	
A-16	03/29/16	14.39	7.07	--	7.32	
A-16	06/16/16	14.39	7.96	--	6.43	
A-16	09/01/16	14.39	8.01	0.01	6.38	Absorbent sock placed in well
A-16	10/11/16	14.39	8.65	0.40	6.06	Absorbent sock placed in well
A-16	03/28/17	14.39	7.08	--	7.31	
A-16	10/10/17	14.39	8.60	0.44	6.14	Sheen, saturated sock removed prior to gauging
A-16	03/28/18	14.39	7.62	--	6.77	
A-16	10/02/18	14.39	8.64	0.45	6.11	

Appendix D
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 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
A-16	04/02/19	14.39	7.64	--	6.75	
A-16	10/01/19	14.39	8.32	0.24	6.26	Absorbent sock placed in well
A-16	03/25/20	14.39	7.69		6.70	
A-16	10/19/20	14.39	8.03	0.01	6.37	
A-16	04/12/21	14.39	7.76	--	6.63	
A-16	10/11/21	14.39	8.22	0.01	6.18	
A-16	04/18/22	14.39	7.69	--	6.70	
A-16	09/20/22	14.39	8.05	--	6.34	
A-16	12/07/22	14.39	7.71	--	6.68	
A-17	02/11/02	9.51	6.09	--	3.42	
A-17	05/20/02	9.51	7.92	--	1.59	
A-17	08/27/02	9.51	7.33	--	2.18	
A-17	11/04/02	9.51	8.52	--	0.99	
A-17	02/18/03	9.51	6.51	--	3.00	
A-17	06/09/03	9.51	7.19	--	2.32	
A-17	09/15/03	13.41	7.43	--	5.98	
A-17	11/18/03	13.41	7.85	--	5.56	
A-17	02/24/04	13.41	6.47	--	6.94	
A-17	05/10/04	13.41	7.11	--	6.30	
A-17	08/24/04	13.41	7.12	--	6.29	
A-17	12/13/04	13.41	6.90	--	6.51	
A-17	03/08/05	13.41	7.15	--	6.26	
A-17	06/06/05	13.41	6.89	--	6.52	
A-17	09/19/05	13.41	7.55	--	5.86	
A-17	12/12/05	13.41	7.24	--	6.17	
A-17	03/13/06	13.41	6.50	--	6.91	
A-17	06/05/06	13.41	6.94	--	6.47	
A-17	09/11/06	13.41	8.34	--	5.07	
A-17	12/11/06	13.41	6.79	--	6.62	
A-18	02/11/02	10.72	7.42	--	3.30	
A-18	05/20/02	10.72	9.22	--	1.50	
A-18	08/27/02	10.72	8.59	--	2.13	
A-18	11/04/02	10.72	9.80	--	0.92	
A-18	02/18/03	10.72	8.36	--	2.36	
A-18	06/09/03	10.72	8.36	--	2.36	
A-18	09/15/03	14.74	8.65	--	6.09	
A-18	11/18/03	14.74	8.22	--	6.52	
A-18	02/24/04	14.74	7.06	--	7.68	
A-18	05/10/04	14.74	8.50	--	6.24	
A-18	08/24/04	14.74	8.56	--	6.18	
A-18	12/13/04	14.74	8.23	--	6.51	
A-18	03/08/05	14.74	8.33	--	6.41	
A-18	06/06/05	14.74	8.21	--	6.53	
A-18	09/19/05	14.74	8.67	0.02	6.09	
A-18	10/12/05	14.74	8.55	--	6.19	
A-18	12/12/05	14.74	8.42	--	6.32	
A-18	03/13/06	14.74	7.74	--	7.00	
A-18	06/05/06	14.74	8.14	--	6.60	
A-18	09/11/06	14.74	8.63	--	6.11	
A-18	12/11/06	14.74	7.78	--	6.96	
A-18	12/10/07	14.74	7.81	--	6.93	
A-18	03/03/08	14.74	8.03	--	6.71	
A-18	03/04/09	14.74	8.07	--	6.67	
A-18	06/01/09	14.74	8.34	--	6.40	
A-18	09/21/09	14.74	8.57	--	6.17	
A-18	11/16/09	14.74	8.07	--	6.67	
A-18	03/08/10	14.74	7.54	--	7.20	
A-18	06/07/10	14.74	8.00	--	6.74	
A-18	09/09/10	14.74	8.53	--	6.21	
A-18	11/15/10	14.74	8.11	--	6.63	
A-18	03/01/11	14.74	7.75	--	6.99	
A-18	05/23/11	14.74	7.85	--	6.89	
A-18	08/29/11	14.74	8.44	--	6.30	
A-18	12/01/11	14.74	8.11	--	6.63	
A-18	03/01/12	14.74	7.83	--	6.91	
A-18	05/30/12	14.74	7.75	--	6.99	
A-18	08/25/12	14.74	7.89	--	6.85	
A-18	11/07/12	14.74	7.68	--	7.06	
A-18	02/27/13	14.74	7.72	--	7.02	
A-18	04/08/13	14.74	7.05	--	7.69	

Appendix D
 Historical Groundwater Elevation Data
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
A-18	07/29/13	14.74	7.99	--	6.75	
A-18	10/02/13	14.74	7.93	--	6.81	
A-18	01/21/14	14.74	8.27	--	6.47	
A-18	04/22/14	14.74	7.84	--	6.90	
A-18	07/15/14	14.74	8.21	--	6.53	
A-18	03/17/15	14.74	7.70	--	7.04	
A-18	09/29/15	14.74	8.24	--	6.50	
A-18	03/29/16	14.74	7.33	--	7.41	
A-18	10/11/16	14.74	8.40	--	6.34	
A-18	03/28/17	14.74	7.33	--	7.41	
A-18	10/10/17	14.74	8.42	--	6.32	
A-18	03/28/18	14.74	7.79	--	6.95	
A-18	10/02/18	14.74	8.38	--	6.36	
A-18	04/02/19	14.74	7.84	--	6.90	
A-18	10/01/19	14.74	8.28	--	6.46	
A-18	03/25/20	14.74	7.85	--	6.89	
A-18	10/19/20	14.74	8.21	--	6.53	
A-18	04/12/21	14.74	7.91	--	6.83	
A-18	10/11/21	14.74	8.36	--	6.38	
A-18	04/18/22	14.74	7.87	--	6.87	
A-18	09/19/22	14.74	8.18	--	6.56	
A-19	02/11/02	10.76	7.52	0.07	3.30	
A-19	05/20/02	10.76	9.19	--	1.57	
A-19	08/27/02	10.76	7.61	Sheen	3.15	
A-19	11/04/02	10.76	8.79	0.01	1.98	
A-19	02/18/03	10.76	7.70	Sheen	3.06	
A-19	06/09/03	10.76	8.35	0.01	2.42	
A-19	09/15/03	14.57	8.71	0.01	5.87	
A-19	11/18/03	14.57	7.69	0.01	6.89	
A-19	02/24/04	14.57	7.81	Sheen	6.76	
A-19	05/10/04	14.57	8.35	Sheen	6.22	
A-19	08/24/04	14.57	8.68	Sheen	5.89	
A-19	12/13/04	14.57	7.98	Sheen	6.59	
A-19	03/08/05	14.57	8.28	--	6.29	
A-19	06/06/05	14.57	7.26	--	7.31	
A-19	09/19/05	14.57	8.66	0.03	5.93	
A-19	10/12/05	14.57	8.55	0.02	6.04	
A-19	12/12/05	14.57	8.46	0.06	6.16	
A-19	03/13/06	14.57	7.65	--	6.92	
A-19	06/05/06	14.57	8.10	--	6.47	
A-19	09/11/06	14.57	8.63	0.03	5.96	
A-19	12/11/06	14.57	7.65	--	6.92	
A-19	03/26/07	14.57	7.89	--	6.68	
A-19	06/18/07	14.57	8.36	--	6.21	
A-19	09/25/07	14.57	8.64	--	5.93	
A-19	12/10/07	14.57	7.82	--	6.75	
A-19	03/03/08	14.57	7.95	--	6.62	
A-19	06/02/08	14.57	9.84	--	4.73	
A-19	09/04/08	14.57	8.30	--	6.27	
A-19	12/04/08	14.57	8.99	--	5.58	
A-19	03/04/09	14.57	7.89	--	6.68	
A-19	06/01/09	14.57	10.47	--	4.10	
A-19	09/21/09	14.57	8.53	--	6.04	
A-19	11/16/09	14.57	7.87	--	6.70	
A-19	03/08/10	14.57	7.45	--	7.12	
A-19	06/07/10	14.57	7.19	--	7.38	
A-19	09/09/10	14.57	8.41	--	6.16	
A-19	11/15/10	14.57	7.94	--	6.63	
A-19	03/01/11	14.57	7.72	--	6.85	
A-19	05/23/11	14.57	7.82	--	6.75	
A-19	08/29/11	14.57	8.39	--	6.18	
A-19	12/01/11	14.57	8.14	--	6.43	
A-19	03/01/12	14.57	7.82	--	6.75	
A-19	05/30/12	14.57	7.75	--	6.82	
A-19	08/25/12	14.57	7.88	--	6.69	
A-19	11/07/12	14.57	7.22	--	7.35	
A-19	02/27/13	14.57	7.68	--	6.89	
A-19	04/08/13	14.57	7.68	--	6.89	
A-19	07/29/13	14.57	7.93	--	6.64	
A-19	10/02/13	14.57	7.78	--	6.79	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
A-19	01/21/14	14.57	8.86	--	5.71	
A-19	04/22/14	14.57	7.72	--	6.85	
A-19	07/15/14	14.57	8.01	--	6.56	
A-19	03/17/15	14.57	7.61	--	6.96	
A-19	09/28/15	14.57	8.16	--	6.41	
A-19	03/29/16	14.57	7.19	--	7.38	
A-19	10/11/16	14.57	8.35	--	6.22	
A-19	03/28/17	14.57	7.29	--	7.28	
A-19	10/10/17	14.57	8.34	--	6.23	
A-19	03/28/18	14.57	7.76	--	6.81	
A-19	10/02/18	14.57	8.30	--	6.27	
A-19	04/02/19	14.57	7.76	--	6.81	
A-19	10/01/19	14.57	8.25	--	6.32	
A-19	03/25/20	14.57	7.79	--	6.78	
A-19	10/19/20	14.57	8.14	--	6.43	
A-19	04/12/21	14.57	7.89	--	6.68	
A-19	10/11/21	14.57	8.30	--	6.27	
A-19	04/18/22	14.57	7.80	--	6.77	
A-19	09/19/22	14.57	8.10	--	6.47	
A-20	02/11/02	10.30	7.16	--	3.14	
A-20	05/20/02	10.30	9.76	--	0.54	
A-20	08/27/02	10.30	5.19	--	5.11	
A-20	11/04/02	10.30	8.39	--	1.91	
A-20	02/18/03	10.30	7.38	--	2.92	
A-20	06/09/03	10.30	7.95	--	2.35	
A-20	09/15/03	14.19	8.25	--	5.94	
A-20	11/18/03	14.19	7.70	--	6.49	
A-20	02/24/04	14.19	7.29	0.02	6.92	
A-20	05/10/04	14.19	7.99	--	6.20	
A-20	08/24/04	14.19	8.18	--	6.01	
A-20	12/13/04	14.19	7.65	--	6.54	
A-20	03/08/05	14.19	7.89	--	6.30	
A-20	06/06/05	14.19	7.81	--	6.38	
A-20	09/19/05	14.19	8.25	0.01	5.95	
A-20	10/12/05	14.19	8.12	--	6.07	
A-20	12/12/05	14.19	8.00	--	6.19	
A-20	03/13/06	14.19	7.25	--	6.94	
A-20	06/05/06	14.19	7.72	--	6.47	
A-20	09/11/06	14.19	8.22	--	5.97	
A-20	12/11/06	14.19	7.28	--	6.91	
A-20	03/26/07	14.19	7.51	--	6.68	
A-20	06/18/07	14.19	7.98	--	6.21	
A-20	09/25/07	14.19	8.19	--	6.00	
A-20	12/10/07	14.19	7.45	--	6.74	
A-20	03/03/08	14.19	7.55	--	6.64	
A-20	06/02/08	14.19	8.48	--	5.71	
A-20	09/04/08	14.19	7.92	--	6.27	
A-20	12/04/08	14.19	7.99	--	6.20	
A-20	03/04/09	14.19	7.19	--	7.00	
A-20	06/01/09	14.19	8.38	--	5.81	
A-20	09/21/09	14.19	8.11	--	6.08	
A-20	11/16/09	14.19	7.43	--	6.76	
A-20	03/08/10	14.19	7.15	--	7.04	
A-20	06/07/10	14.19	7.54	--	6.65	
A-20	09/09/10	14.19	8.03	--	6.16	
A-20	11/15/10	14.19	7.51	--	6.68	
A-20	03/01/11	14.19	7.34	--	6.85	
A-20	05/23/11	14.19	7.45	--	6.74	
A-20	08/29/11	14.19	8.03	--	6.16	
A-20	12/01/11	14.19	7.70	--	6.49	
A-20	03/01/12	14.19	7.41	--	6.78	
A-20	05/30/12	14.19	7.30	--	6.89	
A-20	08/25/12	14.19	7.46	--	6.73	
A-20	11/07/12	14.19	6.61	--	7.58	
A-20	02/27/13	14.19	7.21	--	6.98	
A-20	04/08/13	14.19	6.96	--	7.23	
A-20	07/29/13	14.19	7.46	--	6.73	
A-20	10/02/13	14.19	7.40	--	6.79	
A-20	01/21/14	14.19	7.77	--	6.42	
A-20	04/22/14	14.19	7.38	--	6.81	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
A-20	07/15/14	14.19	7.66	--	6.53	
A-20	03/17/15	14.19	7.27	--	6.92	
A-20	09/28/15	14.19	7.81	--	6.38	
A-20	03/29/16	14.19	6.96	--	7.23	
A-20	10/11/16	14.19	7.97	--	6.22	
A-20	03/28/17	14.19	7.11	--	7.08	
A-20	10/10/17	14.19	7.93	--	6.26	
A-20	03/28/18	14.19	7.40	--	6.79	
A-20	10/02/18	14.19	7.96	--	6.23	
A-20	04/02/19	14.19	7.45	--	6.74	
A-20	10/01/19	14.19	8.17	--	6.02	
A-20	03/25/20	14.19	7.42	--	6.77	
A-20	10/19/20	14.19	7.78	--	6.41	
A-20	04/12/21	14.19	7.51	--	6.68	
A-20	10/11/21	14.19	7.86	--	6.33	
A-20	04/18/22	14.19	7.45	--	6.74	
A-20	09/19/22	14.19	7.76	--	6.43	
A-21	02/11/02	10.40	7.18	--	3.22	
A-21	05/20/02	10.40	9.88	Sheen	0.52	
A-21	08/27/02	10.40	8.28	--	2.12	
A-21	11/04/02	10.40	8.50	--	1.90	
A-21	02/18/03	10.40	7.47	--	2.93	
A-21	06/09/03	10.40	8.01	--	2.39	
A-21	09/15/03	14.35	8.65	--	5.70	
A-21	11/18/03	14.35	7.86	--	6.49	
A-21	02/24/04	14.35	7.43	--	6.92	
A-21	05/10/04	14.35	8.10	--	6.25	
A-21	08/24/04	14.35	8.29	--	6.06	
A-21	12/13/04	14.35	7.75	--	6.60	
A-21	03/08/05	14.35	8.00	--	6.35	
A-21	06/06/05	14.35	7.90	--	6.45	
A-21	09/19/05	14.35	8.24	--	6.11	
A-21	12/12/05	14.35	8.15	--	6.20	
A-21	03/13/06	14.35	7.38	--	6.97	
A-21	06/05/06	14.35	7.21	--	7.14	
A-21	09/11/06	14.35	8.31	--	6.04	
A-21	12/11/06	14.35	7.44	--	6.91	
A-21	03/26/07	14.35	7.64	--	6.71	
A-21	06/18/07	14.35	8.15	--	6.20	
A-21	09/25/07	14.35	8.30	--	6.05	
A-21	12/10/07	14.35	7.62	--	6.73	
A-21	03/03/08	14.35	7.67	--	6.68	
A-21	06/02/08	14.35	8.18	--	6.17	
A-21	09/04/08	14.35	8.09	--	6.26	
A-21	12/04/08	14.35	8.07	--	6.28	
A-21	03/04/09	14.35	7.51	--	6.84	
A-21	06/01/09	14.35	8.03	--	6.32	
A-21	09/21/09	14.35	8.27	--	6.08	
A-21	11/16/09	14.35	7.68	--	6.67	
A-21	03/08/10	14.35	7.26	--	7.09	
A-21	06/07/10	14.35	7.66	--	6.69	
A-21	09/09/10	14.35	8.19	--	6.16	
A-21	11/15/10	14.35	7.73	--	6.62	
A-21	03/01/11	14.35	7.42	--	6.93	
A-21	05/23/11	14.35	7.56	--	6.79	
A-21	08/29/11	14.35	8.11	--	6.24	
A-21	12/01/11	14.35	7.81	--	6.54	
A-21	03/01/12	14.35	7.53	--	6.82	
A-21	05/30/12	14.35	7.37	--	6.98	
A-21	08/25/12	14.35	7.49	--	6.86	
A-21	11/07/12	14.35	7.04	--	7.31	
A-21	02/27/13	14.35	7.32	--	7.03	
A-21	04/08/13	14.35	7.23	--	7.12	
A-21	07/29/13	14.35	7.59	--	6.76	
A-21	10/02/13	14.35	7.57	--	6.78	
A-21	01/21/14	14.35	8.71	--	5.64	
A-21	04/22/14	14.35	7.59	--	6.76	
A-21	07/15/14	14.35	7.82	--	6.53	
A-21	03/17/15	14.35	7.40	--	6.95	
A-21	09/28/15	14.35	7.91	--	6.44	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
A-21	03/29/16	14.35	6.94	--	7.41	
A-21	10/11/16	14.35	8.11	--	6.24	
A-21	03/28/17	14.35	7.11	--	7.24	
A-21	10/10/17	14.35	8.08	--	6.27	
A-21	03/28/18	14.35	7.48	--	6.87	
A-21	10/02/18	14.35	8.06	--	6.29	
A-21	04/02/19	14.35	7.54	--	6.81	
A-21	10/01/19	14.35	7.96	--	6.39	
A-21	03/25/20	14.35	7.53	--	6.82	
A-21	10/19/20	14.35	7.89	--	6.46	
A-21	04/12/21	14.35	7.60	--	6.75	
A-21	10/11/21	14.35	8.02	--	6.33	
A-21	04/18/22	14.35	7.56	--	6.79	
A-21	09/19/22	14.35	7.86	--	6.49	
A-22	09/21/01	10.69	--	--	--	
A-22					Destroyed	
A-22R	02/11/02	10.22	7.10	0.13	3.22	
A-22R	05/20/02	10.22	9.72	0.08	0.56	
A-22R	08/27/02	10.22	8.20	0.16	2.15	
A-22R	11/04/02	10.22	8.30	0.15	2.04	
A-22R	02/18/03	10.22	7.14	0.02	3.10	
A-22R	06/09/03	10.22	7.82	--	2.40	
A-22R	09/15/03	14.11	8.40	0.01	5.72	
A-22R	11/18/03	14.11	7.70	0.05	6.45	
A-22R	02/24/04	14.11	7.01	Sheen	7.10	
A-22R	05/10/04	14.11	7.68	<0.01	6.43	
A-22R	08/24/04	14.11	7.90	0.18	6.35	
A-22R	12/13/04	14.11	7.40	Sheen	6.71	
A-22R	03/08/05	14.11	7.08	--	7.03	
A-22R	06/06/05	14.11	7.21	--	6.90	
A-22R	09/19/05	14.11	8.11	0.01	6.01	
A-22R	10/12/05	14.11	8.22	0.20	6.05	
A-22R	12/12/05	14.11	7.87	--	6.24	
A-22R	03/13/06	14.11	7.15	--	6.96	
A-22R	06/05/06	14.11	7.75	--	6.36	
A-22R	09/11/06	14.11	8.16	--	5.95	
A-22R	12/11/06	14.11	7.14	--	6.97	
A-22R	03/26/07	14.11	7.34	--	6.77	
A-22R	06/18/07	14.11	7.86	--	6.25	
A-22R	12/10/07	14.11	7.38	--	6.73	
A-22R	03/03/08	14.11	7.47	--	6.64	
A-22R	06/02/08	14.11	8.90	--	5.21	
A-22R	09/04/08	14.11	--	--	--	Not Measured-Sock in well
A-22R	12/04/08	14.11	--	--	--	Not Measured-Sock in well
A-22R	03/04/09	14.11	--	--	--	Not Measured-Sock in well
A-22R	06/01/09	14.11	--	--	--	Not Measured-Sock in well
A-22R	09/21/09	14.11	--	--	--	Not Measured-Sock in well
A-22R	11/16/09	14.11	7.36	--	6.75	
A-22R	03/08/10	14.11	6.95	--	7.16	
A-22R	06/07/10	14.11	7.52	--	6.59	
A-22R	09/09/10	14.11	7.94	--	6.17	
A-22R	11/15/10	14.11	7.92	--	6.19	
A-22R	03/01/11	14.11	7.21	--	6.90	
A-22R	05/23/11	14.11	7.35	--	6.76	
A-22R	08/29/11	14.11	7.87	--	6.24	
A-22R	12/01/11	14.11	7.75	--	6.36	
A-22R	03/01/12	14.11	7.37	--	6.74	
A-22R	05/30/12	14.11	7.48	--	6.63	
A-22R	08/25/12	14.11	7.62	--	6.49	
A-22R	11/07/12	14.11	7.18	--	6.93	
A-22R	02/27/13	14.11	7.38	--	6.73	
A-22R	04/08/13	14.11	7.31	--	6.80	
A-22R	07/29/13	14.11	7.64	--	6.47	
A-22R	10/02/13	14.11	7.01	--	7.10	
A-22R	01/21/14	14.11	7.63	--	6.48	
A-22R	04/22/14	14.11	7.11	--	7.00	
A-22R	07/15/14	14.11	7.46	--	6.65	
A-22R	03/17/15	14.11	7.04	--	7.07	
A-22R	09/28/15	14.11	7.52	--	6.59	
A-22R	03/29/16	14.11	6.59	--	7.52	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
A-22R	10/11/16	14.11	7.92	--	6.19	
A-22R	03/28/17	14.11	6.67	--	7.44	
A-22R	10/10/17	14.11	7.82	--	6.29	
A-22R	03/28/18	14.11	7.31	--	6.8	
A-22R	10/02/18	14.11	7.79	--	6.32	
A-22R	04/02/19	14.11	7.17	--	6.94	
A-22R	10/01/19	14.11	7.74	--	6.37	
A-22R	03/25/20	14.11	7.29	--	6.82	
A-22R	10/19/20	14.11	7.65	--	6.46	
A-22R	04/12/21	14.11	7.45	--	6.66	
A-22R	10/11/21	14.11	7.91	--	6.20	
A-22R	04/18/22	14.11	7.22	--	6.89	
A-22R	09/19/22	14.11	7.63	--	6.48	
A-23	06/14/01	--	--	--	--	
A-23						Destroyed during construction activities
A-23R	02/11/02	11.73	8.53	--	3.20	
A-23R	05/20/02	11.73	10.23	--	1.50	
A-23R	08/27/02	11.73	6.63	--	5.10	
A-23R	11/04/02	11.73	9.81	--	1.92	
A-23R	02/18/03	11.73	8.75	--	2.98	
A-23R	06/09/03	11.73	9.35	--	2.38	
A-23R	09/15/03	15.57	10.03	--	5.54	
A-23R	11/18/03	15.57	7.85	--	7.72	
A-23R	02/24/04	15.57	8.05	--	7.52	
A-23R	05/10/04	15.57	8.69	--	6.88	
A-23R	08/24/04	15.57	7.69	--	7.88	
A-23R	12/13/04	15.57	9.22	--	6.35	
A-23R	03/08/05	15.57	9.38	--	6.19	
A-23R	06/07/05	15.57	9.35	--	6.22	
A-23R	09/20/05	15.57	9.68	--	5.89	
A-23R	12/12/05	15.57	9.20	--	6.37	
A-23R	03/13/06	15.57	8.69	--	6.88	
A-23R	06/08/06	15.57	9.13	--	6.44	
A-23R	09/11/06	15.57	10.03	--	5.54	
A-23R	12/11/06	15.57	8.72	--	6.85	
A-23R	03/26/07	15.57	8.94	--	6.63	
A-23R	06/18/07	15.57	9.37	--	6.20	
A-23R	09/25/07	--	--	--	--	Not Measured-Inaccessible
A-23R	12/10/07	15.57	8.91	--	6.66	
A-23R	03/03/08	15.57	9.00	--	6.57	
A-23R	06/02/08	15.57	9.22	--	6.35	
A-23R	09/04/08	15.57	--	--	--	Not Measured-Inaccessible
A-23R	12/04/08	15.57	9.34	--	6.23	
A-23R	03/04/09	15.57	9.81	--	5.76	
A-23R	06/01/09	15.57	9.26	--	6.31	
A-23R	09/21/09	15.57	9.51	--	6.06	
A-23R	11/16/09	15.57	8.94	--	6.63	
A-23R	03/08/10	15.57	8.48	--	7.09	
A-23R	06/07/10	15.57	8.95	--	6.62	
A-23R	09/09/10	15.57	9.45	--	6.12	
A-23R	11/16/10	15.57	9.01	--	6.56	
A-23R	03/01/11	15.57	8.68	--	6.89	
A-23R	05/24/11	15.57	8.85	--	6.72	
A-23R	08/29/11	15.57	9.41	--	6.16	
A-23R	12/01/11	15.57	9.09	--	6.48	
A-23R	03/01/12	15.57	8.79	--	6.78	
A-23R	05/30/12	15.57	8.73	--	6.84	
A-23R	08/25/12	15.57	--	--	--	Inaccessible due to site access issues
A-23R	11/07/12	15.57	8.52	--	7.05	
A-23R	02/27/13	15.57	8.45	--	7.12	
A-23R	04/08/13	15.57	8.63	--	6.94	
A-23R	07/29/13	15.57	8.92	--	6.65	
A-23R	10/02/13	15.57	8.81	--	6.76	
A-23R	01/21/14	15.57	9.16	--	6.41	
A-23R	04/22/14	15.57	5.74	--	9.83	
A-23R	07/15/14	15.57	9.11	--	6.46	
A-23R	03/17/15	15.57	6.33	--	9.24	
A-23R	09/28/15	15.57	9.19	--	6.38	
A-23R	03/29/16	15.57	8.33	--	7.24	
A-23R	10/11/16	15.57	9.28	--	6.29	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
A-23R	03/28/17	15.57	8.30	--	7.27	
A-23R	10/10/17	15.57	9.34	--	6.23	
A-23R	03/28/18	15.57	8.79	--	6.78	
A-23R	10/02/18	15.57	9.21	--	6.36	
A-23R	--	15.57	--	--	--	Not Measured-Inaccessible
A-23R	10/03/19	15.57	9.23	--	6.34	Gauged when accessed for sampling
A-23R	03/25/20	15.57	--	--	--	Not Measured-Inaccessible
A-23R	10/19/20	15.57	9.13	--	6.44	
A-23R	04/12/21	15.57	8.87	--	6.70	
A-23R	10/11/21	15.57	9.28	--	6.29	
A-23R	04/18/22	15.57	8.80	--	6.77	
A-23R	09/19/22	15.57	9.10	--	6.47	
A-24	10/06/00	--	--	--	--	
A-24						Destroyed during construction activities
A-25	02/11/02	10.12	6.78	--	3.34	
A-25	05/20/02	10.12	8.56	--	1.56	
A-25	08/27/02	10.12	7.99	--	2.13	
A-25	11/04/02	10.12	8.18	--	1.94	
A-25	02/18/03	10.12	7.08	--	3.04	
A-25	06/09/03	10.12	8.71	--	1.41	
A-25	09/15/03	13.90	8.05	--	5.85	
A-25	11/18/03	13.90	7.50	Sheen	6.40	
A-25	02/24/04	13.90	7.00	--	6.90	
A-25	05/10/04	13.90	7.75	--	6.15	
A-25	08/24/04	13.90	7.82	--	6.08	
A-25	12/13/04	13.90	7.46	--	6.44	
A-25	03/08/05	13.90	7.70	--	6.20	
A-25	06/06/05	13.90	7.53	--	6.37	
A-25	09/19/05	13.90	8.07	0.01	5.84	
A-25	10/12/05	13.90	7.95	--	5.95	
A-25	12/12/05	13.90	7.79	--	6.11	
A-25	03/13/06	13.90	6.98	--	6.92	
A-25	06/05/06	13.90	7.43	--	6.47	
A-25	09/11/06	13.90	8.10	--	5.80	
A-25	12/11/06	13.90	7.05	--	6.85	
A-25	12/10/07	13.90	7.23	--	6.67	
A-25	03/03/08	13.90	7.36	--	6.54	
A-25	03/04/09	13.90	7.37	--	6.53	
A-25	06/01/09	13.90	7.81	--	6.09	
A-25	09/21/09	13.90	8.00	--	5.90	
A-25	11/16/09	13.90	7.16	--	6.74	
A-25	03/08/10	13.90	6.83	--	7.07	
A-25	06/07/10	13.90	7.36	--	6.54	
A-25	09/09/10	13.90	7.97	--	5.93	
A-25	11/15/10	13.90	7.44	Sheen	6.46	
A-25	03/01/11	13.90	7.04	--	6.86	
A-25	05/23/11	13.90	7.18	--	6.72	
A-25	08/29/11	13.90	7.81	--	6.09	
A-25	12/01/11	13.90	7.52	--	6.38	
A-25	03/01/12	13.90	7.75	--	6.15	
A-25	05/30/12	13.90	7.30	--	6.60	
A-25	08/25/12	13.90	7.56	--	6.34	
A-25	11/07/12	13.90	7.11	--	6.79	
A-25	02/27/13	13.90	7.18	--	6.72	
A-25	04/08/13	13.90	7.08	--	6.82	
A-25	07/29/13	13.90	7.52	--	6.38	
A-25	10/02/13	13.90	7.23	--	6.67	
A-25	01/21/14	13.90	7.51	--	6.39	
A-25	04/22/14	13.90	7.03	--	6.87	
A-25	07/15/14	13.90	7.51	--	6.39	
A-25	03/17/15	13.90	6.87	--	7.03	
A-25	09/29/15	13.90	7.55	--	6.35	
A-25	03/29/16	13.90	6.36	--	7.54	
A-25	10/11/16	13.90	7.77	--	6.13	
A-25	03/28/17	13.90	6.30	--	7.60	
A-25	10/10/17	13.90	7.75	--	6.15	
A-25	03/28/18	13.90	7.10	--	6.80	
A-25	10/02/18	13.90	7.69	--	6.21	
A-25	04/02/19	13.90	7.06	--	6.84	
A-25	10/01/19	13.90	7.67	--	6.23	

Appendix D
 Historical Groundwater Elevation Data
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
A-25	03/25/20	13.90	7.13	--	6.77	
A-25	10/19/20	13.90	7.56	--	6.34	
A-25	04/12/21	13.90	7.26	--	6.64	
A-25	10/11/21	13.90	7.79	--	6.11	
A-25	04/18/22	13.90	7.09	--	6.81	
A-25	09/19/22	13.90	7.51	--	6.39	
A-26	03/27/01	--	--	--	--	
A-26						Destroyed during construction activities of utility trench
A-26R	02/11/02	10.39	7.13	0.02	3.28	
A-26R	05/20/02	10.39	9.79	--	0.60	
A-26R	08/27/02	10.39	8.23	0.02	2.18	
A-26R	11/04/02	10.39	8.41	0.04	2.01	
A-26R	02/18/03	10.39	7.29	--	3.10	
A-26R	06/09/03	10.39	7.92	--	2.47	
A-26R	09/15/03	14.19	8.31	--	5.88	
A-26R	11/18/03	14.19	7.64	Sheen	6.55	
A-26R	02/24/04	14.19	7.17	--	7.02	
A-26R	05/10/04	14.19	7.93	--	6.26	
A-26R	08/24/04	14.19	8.10	--	6.09	
A-26R	12/13/04	14.19	7.55	--	6.64	
A-26R	03/08/05	14.19	7.80	--	6.39	
A-26R	06/06/05	14.19	7.18	--	7.01	
A-26R	09/19/05	14.19	8.25	0.01	5.95	
A-26R	10/12/05	14.19	8.20	--	5.99	
A-26R	12/12/05	14.19	7.98	--	6.21	
A-26R	03/13/06	14.19	7.21	--	6.98	
A-26R	06/05/06	14.19	7.66	--	6.53	
A-26R	09/11/06	14.19	8.25	--	5.94	
A-26R	12/11/06	14.19	7.22	--	6.97	
A-26R	12/10/07	14.19	7.48	--	6.71	
A-26R	03/03/08	14.19	7.58	--	6.61	
A-26R	03/04/09	14.19	7.56	--	6.63	
A-26R	06/01/09	14.19	--	--	--	Not Measured-Inaccessible
A-26R	09/21/09	14.19	8.21	--	5.98	
A-26R	11/16/09	14.19	7.48	--	6.71	
A-26R	03/08/10	14.19	7.04	--	7.15	
A-26R	06/07/10	14.19	7.57	--	6.62	
A-26R	09/09/10	14.19	8.17	--	6.02	
A-26R	11/15/10	14.19	7.69	--	6.50	
A-26R	03/01/11	14.19	7.28	--	6.91	
A-26R	05/23/11	14.19	7.40	--	6.79	
A-26R	08/29/11	14.19	7.99	--	6.20	
A-26R	12/01/11	14.19	7.81	--	6.38	
A-26R	03/01/12	14.19	7.47	--	6.72	
A-26R	05/30/12	14.19	7.55	--	6.64	
A-26R	08/25/12	14.19	7.73	--	6.46	
A-26R	11/07/12	14.19	7.37	--	6.82	
A-26R	02/27/13	14.19	7.42	--	6.77	
A-26R	04/08/13	14.19	7.34	--	6.85	
A-26R	07/29/13	14.19	7.69	--	6.50	
A-26R	10/02/13	14.19	7.41	--	6.78	
A-26R	01/21/14	14.19	7.69	--	6.50	
A-26R	04/22/14	14.19	7.23	--	6.96	
A-26R	07/15/14	14.19	7.71	--	6.48	
A-26R	03/17/15	14.19	7.09	--	7.10	
A-26R	09/28/15	14.19	7.62	--	6.57	
A-26R	03/29/16	14.19	6.56	--	7.63	
A-26R	10/11/16	14.19	7.99	--	6.20	
A-26R	03/28/17	14.19	6.62	--	7.57	
A-26R	10/10/17	14.19	7.93	--	6.26	
A-26R	03/28/18	14.19	7.36	--	6.83	
A-26R	10/02/18	14.19	7.91	--	6.28	
A-26R	04/02/19	14.19	7.25	--	6.94	
A-26R	10/01/19	14.19	7.85	--	6.34	
A-26R	03/25/20	14.19	7.35	--	6.84	
A-26R	10/19/20	14.19	7.75	--	6.44	
A-26R	04/12/21	14.19	7.50	--	6.69	
A-26R	10/11/21	14.19	8.00	--	6.19	
A-26R	04/18/22	14.19	7.22	--	6.97	
A-26R	09/19/22	14.19	8.72	--	5.47	

Appendix D
 Historical Groundwater Elevation Data
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
A-27	02/11/02	13.45	10.05	--	3.40	
A-27	05/20/02	13.45	12.84	--	0.61	
A-27	08/27/02	13.45	11.31	--	2.14	
A-27	11/04/02	13.45	11.46	--	1.99	
A-27	02/18/03	13.45	10.32	--	3.13	
A-27	06/09/03	13.45	10.97	--	2.48	
A-27	09/15/03	17.22	11.38	--	5.84	
A-27	11/18/03	17.22	10.75	--	6.47	
A-27	02/24/04	17.22	10.15	--	7.07	
A-27	05/10/04	17.22	8.00	--	9.22	
A-27	08/24/04	17.22	11.15	--	6.07	
A-27	12/13/04	17.22	7.80	--	9.42	
A-27	03/08/05	17.22	10.83	--	6.39	
A-27	06/06/05	17.22	10.80	--	6.42	
A-27	09/19/05	17.22	11.32	--	5.90	
A-27	12/12/05	17.22	11.01	--	6.21	
A-27	03/13/06	17.22	10.17	--	7.05	
A-27	06/05/06	17.22	10.69	--	6.53	
A-27	09/11/06	17.22	11.30	--	5.92	
A-27	12/11/06	17.22	10.16	--	7.06	
A-27	03/26/07	17.22	10.41	--	6.81	
A-27	06/18/07	17.22	11.00	--	6.22	
A-27	09/24/07	17.22	11.20	--	6.02	
A-27	12/10/07	17.22	10.41	--	6.81	
A-27	03/03/08	17.22	10.54	--	6.68	
A-27	06/02/08	17.22	11.06	--	6.16	
A-27	09/04/08	17.22	11.50	--	5.72	
A-27	12/04/08	17.22	11.05	--	6.17	
A-27	03/04/09	17.22	10.64	--	6.58	
A-27	06/01/09	17.22	10.87	--	6.35	
A-27	09/21/09	17.22	11.25	--	5.97	
A-27	11/16/09	17.22	10.50	--	6.72	
A-27	03/08/10	17.22	10.01	--	7.21	
A-27	06/07/10	17.22	10.54	--	6.68	
A-27	09/09/10	17.22	11.19	--	6.03	
A-27	11/15/10	17.22	10.61	--	6.61	
A-27	03/01/11	17.22	10.20	--	7.02	
A-27	05/23/11	17.22	10.30	--	6.92	
A-27	08/29/11	17.22	11.03	--	6.19	
A-27	12/01/11	17.22	10.72	--	6.50	
A-27	03/01/12	17.22	10.44	--	6.78	
A-27	05/30/12	17.22	10.47	--	6.75	
A-27	08/25/12	17.22	10.78	--	6.44	
A-27	11/07/12	17.22	10.33	--	6.89	
A-27	02/27/13	17.22	10.28	--	6.94	
A-27	04/08/13	17.22	10.24	--	6.98	
A-27	06/21/13	17.22	10.68	--	6.54	Baseline monitoring event
A-27	07/29/13	17.22	10.69	--	6.53	
A-27	08/26/13	17.22	10.71	--	6.51	Two-month monitoring event
A-27	10/02/13	17.22	10.40	--	6.82	
A-27	01/21/14	17.22	10.63	--	6.59	
A-27	04/22/14	17.22	10.11	--	7.11	
A-27	07/15/14	17.22	10.68	--	6.54	
A-27	03/17/15	17.22	9.96	--	7.26	
A-27	09/28/15	17.22	10.68	--	6.54	
A-27	03/29/16	17.22	9.37	--	7.85	
A-27	10/11/16	17.22	10.99	--	6.23	
A-27	03/28/17	17.22	9.36	--	7.86	
A-27	10/10/17	17.22	10.95	--	6.27	
A-27	03/28/18	17.22	10.23	--	6.99	
A-27	10/02/18	17.22	10.92	--	6.30	
A-27	04/02/19	17.22	10.23	--	6.99	
A-27	10/01/19	17.22	10.86	--	6.36	
A-27	03/25/20	17.22	10.23	--	6.99	
A-27	10/19/20	17.22	10.74	--	6.48	
A-27	04/12/21	17.22	10.36	--	6.86	
A-27	10/11/21	17.22	10.97	--	6.25	
A-27	04/18/22	17.22	10.2	--	7.02	
A-27	09/19/22	17.22	10.72	--	6.50	
A-28	06/14/01	--	--	--	--	

Appendix D
 Historical Groundwater Elevation Data
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
A-28						Destroyed during construction activities
A-28R	02/11/02	11.19	7.72	--	3.47	
A-28R	05/20/02	11.19	9.51	--	1.68	
A-28R	08/27/02	11.19	8.97	--	2.22	
A-28R	11/04/02	11.19	9.20	--	1.99	
A-28R	02/18/03	11.19	8.20	--	2.99	
A-28R	06/09/03	11.19	8.67	--	2.52	
A-28R	09/15/03	14.93	9.05	--	5.88	
A-28R	11/18/03	14.93	8.45	--	6.48	
A-28R	02/24/04	14.93	7.91	--	7.02	
A-28R	05/10/04	14.93	8.66	--	6.27	
A-28R	08/24/04	14.93	7.90	--	7.03	
A-28R	12/13/04	14.93	8.58	--	6.35	
A-28R	03/08/05	14.93	8.67	--	6.26	
A-28R	06/06/05	14.93	8.47	--	6.46	
A-28R	09/19/05	14.93	8.99	--	5.94	
A-28R	12/12/05	14.93	7.71	--	7.22	
A-28R	03/13/06	14.93	7.79	--	7.14	
A-28R	06/05/06	14.93	9.13	--	5.80	
A-28R	09/11/06	14.93	9.00	--	5.93	
A-28R	12/11/06	14.93	7.89	--	7.04	
A-28R	03/26/07	14.93	8.05	--	6.88	
A-28R	06/18/07	14.93	8.64	--	6.29	
A-28R	09/24/07	14.93	8.81	--	6.12	
A-28R	12/10/07	14.93	8.01	--	6.92	
A-28R	03/03/08	14.93	8.17	--	6.76	
A-28R	06/02/08	14.93	8.64	--	6.29	
A-28R	09/04/08	14.93	8.73	--	6.20	
A-28R	12/04/08	14.93	8.69	--	6.24	
A-28R	03/04/09	14.93	8.29	--	6.64	
A-28R	06/01/09	14.93	8.51	--	6.42	
A-28R	09/21/09	14.93	8.92	--	6.01	
A-28R	11/16/09	14.93	8.21	--	6.72	
A-28R	03/08/10	14.93	7.61	--	7.32	
A-28R	06/07/10	14.93	8.14	--	6.79	
A-28R	09/09/10	14.93	8.73	--	6.20	
A-28R	11/15/10	14.93	8.22	--	6.71	
A-28R	03/01/11	14.93	7.80	--	7.13	
A-28R	05/23/11	14.93	7.89	--	7.04	
A-28R	08/29/11	14.93	8.70	--	6.23	
A-28R	12/01/11	14.93	8.32	--	6.61	
A-28R	03/01/12	14.93	7.95	--	6.98	
A-28R	05/30/12	14.93	8.04	--	6.89	
A-28R	08/25/12	14.93	8.35	--	6.58	
A-28R	11/07/12	14.93	7.89	--	7.04	
A-28R	02/27/13	14.93	7.78	--	7.15	
A-28R	04/08/13	14.93	7.67	--	7.26	
A-28R	07/29/13	14.93	8.20	--	6.73	
A-28R	10/02/13	14.93	7.88	--	7.05	
A-28R	01/21/14	14.93	8.20	--	6.73	
A-28R	04/22/14	14.93	7.59	--	7.34	
A-28R	07/15/14	14.93	8.35	--	6.58	
A-28R	03/17/15	14.93	7.26	--	7.67	
A-28R	09/28/15	14.93	8.33	--	6.60	
A-28R	03/29/16	14.93	6.91	--	8.02	
A-28R	10/11/16	14.93	8.66	--	6.27	
A-28R	03/28/17	14.93	6.90	--	8.03	
A-28R	10/10/17	14.93	8.63	--	6.30	
A-28R	03/28/18	14.93	7.78	--	7.15	
A-28R	10/02/18	14.93	8.61	--	6.32	
A-28R	04/02/19	14.93	7.67	--	7.26	
A-28R	10/01/19	14.93	8.50	--	6.43	
A-28R	03/25/20	14.93	7.70	--	7.23	
A-28R	10/19/20	14.93	8.33	--	6.60	
A-28R	04/12/21	14.93	7.90	--	7.03	
A-28R	10/11/21	14.93	8.57	--	6.36	
A-28R	04/18/22	14.93	7.76	--	7.17	
A-28R	09/19/22	14.93	8.35	--	6.58	
A-29	03/27/01	--	--	--	--	
A-29						Destroyed during construction activities of utility trench
A-29R	02/11/02	10.12	6.78	--	3.34	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
A-29R	05/20/02	10.12	8.53	--	1.59	
A-29R	08/27/02	10.12	7.92	--	2.20	
A-29R	11/04/02	10.12	8.09	--	2.03	
A-29R	02/18/03	10.12	7.05	--	3.07	
A-29R	02/19/03	10.12	7.05	--	3.07	
A-29R	06/09/03	10.12	7.61	--	2.51	
A-29R	09/15/03	13.85	8.00	--	5.85	
A-29R	11/18/03	13.85	7.50	--	6.35	
A-29R	02/24/04	13.85	6.97	--	6.88	
A-29R	05/10/04	13.85	7.66	--	6.19	
A-29R	08/24/04	13.85	7.43	--	6.42	
A-29R	12/13/04	13.85	7.46	--	6.39	
A-29R	03/08/05	13.85	7.65	--	6.20	
A-29R	06/06/05	13.85	7.51	--	6.34	
A-29R	09/19/05	13.85	8.02	--	5.83	
A-29R	12/12/05	13.85	7.75	--	6.10	
A-29R	03/13/06	13.85	--	--	--	Not Measured-Inaccessible
A-29R	06/05/06	13.85	7.44	--	6.41	
A-29R	09/11/06	13.85	8.00	--	5.85	
A-29R	12/11/06	13.85	7.07	--	6.78	
A-29R	03/26/07	13.85	7.25	--	6.60	
A-29R	06/18/07	13.85	7.58	--	6.27	
A-29R	09/24/07	13.85	8.03	--	5.82	
A-29R	12/10/07	13.85	7.21	--	6.64	
A-29R	06/02/08	13.85	8.46	--	5.39	
A-29R	09/04/08	13.85	7.82	--	6.03	
A-29R	12/04/08	13.85	7.78	--	6.07	
A-29R	05/23/11	13.85	7.22	--	6.63	
3	02/11/02	9.78	5.71	--	4.07	Casing Damaged
3	05/20/02	9.78	7.97	--	1.81	Casing Damaged
3	08/27/02	9.78	7.57	--	2.21	Casing Damaged
3	11/04/02	9.78	7.82	--	1.96	Casing Damaged
3	02/18/03	9.78	6.02	--	3.76	Casing Damaged
3	06/09/03	9.78	7.16	--	2.62	Casing Damaged
3	06/11/03	--	--	--	--	
3					Abandoned	
4	02/11/02	7.97	3.86	--	4.11	
4	05/20/02	7.97	6.07	--	1.90	
4	08/27/02	7.97	5.17	--	2.80	
4	11/04/02	7.97	5.40	--	2.57	
4	02/18/03	7.97	3.78	--	4.19	
4	02/19/03	7.97	3.78	--	4.19	
4	06/09/03	7.97	4.75	--	3.22	
4	09/15/03	11.01	5.37	--	5.64	Casing Broken
4	11/18/03	11.01	4.33	--	6.68	Casing Broken
4	02/24/04	11.01	3.91	--	7.10	Casing Broken
4	05/10/04	11.01	4.75	--	6.26	Casing Broken
4	08/24/04	11.01	4.94	--	6.07	Casing Broken
4	12/13/04	11.01	4.17	--	6.84	Casing Broken
4	03/08/05	11.01	3.80	--	7.21	Casing Broken
4	06/06/05	11.01	4.63	--	6.38	Casing Broken
4	09/19/05	11.01	--	--	--	Not Measured-Casing Broken
4	12/12/05	11.01	4.76	--	6.25	Casing Broken
4	03/13/06	11.01	3.82	--	7.19	Casing Broken
4	06/05/06	11.01	--	--	--	Not Measured-Casing Broken
4	09/11/06	11.01	--	--	--	Not Measured-Casing Broken
4	12/11/06	11.01	--	--	--	Not Measured-Casing Broken
5	02/11/02	8.30	3.73	--	4.57	Casing Damaged
5	05/20/02	8.30	5.89	--	2.41	Casing Damaged
5	08/27/02	8.30	5.40	--	2.90	Casing Damaged
5	11/04/02	8.30	5.74	--	2.56	Casing Damaged
5	02/18/03	8.30	4.20	--	4.10	Casing Damaged
5	06/11/03	--	--	--	--	
5					Abandoned	
6	02/11/02	9.15	4.50	--	4.65	
6	05/20/02	9.15	6.88	--	2.27	
6	08/27/02	9.15	6.65	--	2.50	
6	11/04/02	9.15	6.99	--	2.16	
6	02/18/03	9.15	5.14	--	4.01	
6	06/09/03	9.15	6.24	--	2.91	

Appendix D
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 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
6	09/15/03	12.76	6.95	--	5.81	
6	11/18/03	12.76	5.56	--	7.20	
6	02/24/04	12.76	5.31	--	7.45	
6	05/10/04	12.76	6.24	--	6.52	
6	08/24/04	12.76	6.41	--	6.35	
6	12/13/04	12.76	4.28	--	8.48	
6	03/08/05	12.76	6.28	--	6.48	
6	06/06/05	12.76	5.94	--	6.82	
6	09/19/05	12.76	6.87	--	5.89	
6	12/12/05	12.76	6.13	--	6.63	
6	03/13/06	12.76	5.13	--	7.63	
6	06/05/06	12.76	5.68	--	7.08	
6	09/11/06	12.76	6.78	--	5.98	
6	12/11/06	12.76	5.52	--	7.24	
7	01/13/97	9.09	3.90	--	5.19	
7	10/06/00	9.09	6.80	--	2.29	
7	12/18/00	9.09	6.02	--	3.07	
7	03/27/01	9.09	6.44	--	2.65	
7	06/14/01	9.09	6.49	--	2.60	
7	09/21/01	9.09	6.91	--	2.18	
7	02/11/02	9.09	5.23	--	3.86	
7	05/20/02	9.09	7.31	--	1.78	
7	08/27/02	9.09	6.85	--	2.24	
7	11/04/02	9.09	7.07	--	2.02	
7	02/18/03	9.09	7.74	--	1.35	
7	06/09/03	9.09	6.45	--	2.64	
7	09/15/03	12.72	7.04	--	5.68	
7	11/18/03	12.72	6.11	--	6.61	
7	02/24/04	12.72	5.96	--	6.76	
7	05/10/04	12.72	6.62	--	6.10	
7	08/24/04	12.72	6.56	--	6.16	
7	12/13/04	12.72	6.00	--	6.72	
7	03/08/05	12.72	5.66	--	7.06	
7	06/06/05	12.72	6.45	--	6.27	
7	09/19/05	12.72	7.04	--	5.68	
7	12/12/05	12.72	6.69	--	6.03	
7	03/13/06	12.72	5.07	--	7.65	
7	06/05/06	12.72	7.40	--	5.32	
7	09/11/06	12.72	6.98	--	5.74	
7	12/11/06	12.72	5.62	--	7.10	
8	02/11/02	9.42	5.20	--	4.22	
8	05/20/02	9.42	7.52	--	1.90	Casing Tilted
8	08/27/02	9.42	7.12	--	2.30	Casing Tilted
8	11/04/02	9.42	7.25	--	2.17	Casing Tilted
8	02/18/03	9.42	5.79	--	3.63	Casing Tilted
8	06/11/03	--	--	--	--	
8					Abandoned	
9	02/11/02	9.36	4.26	--	5.10	
9	05/20/02	9.36	6.76	--	2.60	
9	08/27/02	9.36	6.38	--	2.98	
9	11/04/02	9.36	7.00	--	2.36	
9	02/18/03	9.36	4.94	--	4.42	
9	06/09/03	9.36	6.11	--	3.25	
9	09/15/03	12.89	6.96	--	5.93	
9	11/18/03	12.89	5.51	--	7.38	
9	02/24/04	12.89	5.19	--	7.70	
9	05/10/04	12.89	6.18	--	6.71	
9	08/24/04	12.89	3.46	--	9.43	
9	12/13/04	12.89	5.48	--	7.41	
9	03/08/05	12.89	6.36	--	6.53	
9	06/06/05	12.89	5.82	--	7.07	
9	09/19/05	12.89	6.87	--	6.02	
9	12/12/05	12.89	6.15	--	6.74	
9	03/13/06	12.89	5.02	--	7.87	
9	06/05/06	12.89	5.51	--	7.38	
9	09/11/06	12.89	6.80	--	6.09	
9	12/11/06	12.89	4.79	--	8.10	
10	02/11/02	9.57	4.39	--	5.18	
10	05/20/02	9.57	6.98	--	2.59	
10	08/27/02	9.57	6.95	--	2.62	

Appendix D
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Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
10	11/04/02	9.57	7.29	--	2.28	
10	02/18/03	9.57	5.05	--	4.52	
10	06/09/03	9.57	6.34	--	3.23	
10	09/15/03	13.20	7.21	--	5.99	
10	11/18/03	13.20	5.62	--	7.58	
10	02/24/04	13.20	5.21	--	7.99	
10	05/10/04	13.20	6.47	--	6.73	
10	08/24/04	13.20	6.61	--	6.59	
10	12/13/04	13.20	5.48	--	7.72	
10	03/08/05	13.20	6.41	--	6.79	
10	06/06/05	13.20	6.09	--	7.11	
10	09/19/05	13.20	7.17	--	6.03	
10	12/12/05	13.20	6.29	--	6.91	
10	03/13/06	13.20	5.15	--	8.05	
10	06/05/06	13.20	5.70	--	7.50	
10	09/11/06	13.20	7.06	--	6.14	
10	12/11/06	13.20	4.88	--	8.32	
11	02/11/02	8.57	3.01	--	5.56	
11	05/20/02	8.57	5.61	--	2.96	
11	08/27/02	8.57	5.76	--	2.81	
11	11/04/02	8.57	6.03	--	2.54	
11	02/18/03	8.57	3.57	--	5.00	
11	06/09/03	8.57	4.98	--	3.59	
11	09/15/03	12.08	6.00	--	6.08	
11	11/18/03	12.08	2.38	--	9.70	
11	02/24/04	12.08	3.70	--	8.38	
11	05/10/04	12.08	5.07	--	7.01	
11	08/24/04	12.08	5.02	--	7.06	
11	12/13/04	12.08	4.12	--	7.96	
11	03/08/05	12.08	4.99	--	7.09	
11	06/06/05	12.08	4.74	--	7.34	
11	09/19/05	12.08	5.93	--	6.15	
11	12/12/05	12.08	4.95	--	7.13	
11	03/13/06	12.08	3.64	--	8.44	
11	06/05/06	12.08	4.32	--	7.76	
11	09/11/06	12.08	5.82	--	6.26	
11	12/11/06	12.08	3.91	--	8.17	
11	06/21/13	12.08	4.57	--	7.51	Baseline monitoring event
11	07/29/13	12.08	4.99	--	7.09	
11	08/26/13	12.08	4.99	--	7.09	Two-month monitoring event
11	10/02/13	12.08	3.96	--	8.12	
11	01/21/14	12.08	4.60	--	7.48	
11	04/22/14	12.08	3.29	--	8.79	
11	07/15/14	12.08	4.90	--	7.18	
11	03/17/15	12.08	2.41	--	9.67	
11	09/28/15	12.08	5.15	--	6.93	
11	03/29/16	12.08	2.91	--	9.17	
11	10/11/16	12.08	5.03	--	7.05	
11	03/28/17	12.08	2.58	--	9.50	
11	10/10/17	12.08	5.19	--	6.89	
11	03/28/18	12.08	3.94	--	8.14	
11	10/02/18	12.08	5.32	--	6.76	
11	04/02/19	12.08	4.33	--	7.75	
11	10/01/19	12.08	5.02	--	7.06	
11	03/25/20	12.08	3.86	--	8.22	
11	10/19/20	12.08	4.79	--	7.29	
11	04/12/21	12.08	4.02	--	8.06	
11	10/11/21	12.08	5.11	--	6.97	
11	04/18/22	12.08	3.93	--	8.15	
11	09/19/22	12.08	5.19	--	6.89	
12	02/11/02	9.06	3.57	0.04	5.52	
12	05/20/02	9.06	6.14	0.04	2.95	Casing Damaged
12	08/27/02	9.06	3.41	0.01	5.66	Casing Damaged
12	11/04/02	9.06	3.80	0.01	5.27	Casing Damaged
12	02/18/03	9.06	0.80	Sheen	8.26	Casing Damaged
12	06/09/03	9.06	2.99	Sheen	6.07	Casing Damaged
12	09/15/03	9.79	--	--	--	Not Measured-Not Located
12	11/18/03	9.79	--	--	--	Not Measured-surface water covering well
12	02/24/04	9.79	1.20	0.03	8.61	
12	05/10/04	9.79	2.80	--	6.99	

Appendix D
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 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
12	08/24/04	9.79	2.51	Sheen	7.28	
12	12/13/04	9.79	1.12	--	8.67	
12	03/08/05	9.79	2.87	--	6.92	
12	06/06/05	9.79	5.16	--	4.63	
12	09/19/05	9.79	3.49	0.01	6.31	
12	12/12/05	9.79	2.40	--	7.39	
12	03/13/06	9.79	1.00	--	8.79	
12	06/05/06	9.79	1.27	--	8.52	
12	09/11/06	9.79	3.63	--	6.16	
12	12/11/06	9.79	1.31	--	8.48	
12	03/26/07	9.79	1.40	--	8.39	
12	06/18/07	9.79	2.74	--	7.05	
12	09/24/07	9.79	3.43	--	6.36	
12	12/10/07	9.79	1.88	Sheen	7.91	
12	03/03/08	9.79	2.04	Sheen	7.75	
12	06/02/08	9.79	2.98	--	6.81	
12	09/04/08	9.79	3.74	--	6.05	
12	12/04/08	9.79	2.79	Sheen	7.00	
12	03/04/09	9.79	2.25	Sheen	7.54	
12	06/01/09	9.79	2.31	Sheen	7.48	
12	09/21/09	9.79	3.30	Sheen	6.49	
12	11/16/09	9.79	1.62	Sheen	8.17	
12	03/08/10	9.79	1.34	Sheen	8.45	
12	06/07/10	9.79	1.62	Sheen	8.17	
12	09/09/10	9.79	3.28	Sheen	6.51	
12	11/15/10	9.79	1.92	--	7.87	
12	03/01/11	9.79	1.35	Sheen	8.44	
12	05/23/11	9.79	2.15	Sheen	7.64	
12	08/29/11	9.79	3.03	0.03	6.78	
12	12/01/11	9.79	2.13	--	7.66	
12	03/01/12	9.79	1.65	Sheen	8.14	
12	05/30/12	9.79	1.63	Sheen	8.16	
12	08/25/12	9.79	2.89	--	6.90	
12	11/07/12	9.79	1.46	--	8.33	
12	02/27/13	9.79	1.43	--	8.36	
12	04/08/13	9.79	0.24	--	9.55	
12	06/21/13	9.79	2.84	--	6.95	Baseline monitoring event
12	07/29/13	9.79	3.95	--	5.84	
12	08/26/13	9.79	1.91	--	7.88	Two-month monitoring event
12	10/02/13	9.79	1.14	--	8.65	
12	01/21/14	9.79	2.11	--	7.68	
12	04/22/14	9.79	0.88	Sheen	8.91	
12	07/15/14	9.79	2.61	--	7.18	
12	03/17/15	9.79	0.07	--	9.72	
12	09/28/15	9.79	2.55	--	7.24	
12	03/30/16	9.79	0.70	--	9.09	Gauged on March 30, 2016
12	10/11/16	9.79	2.18	--	7.61	
12	03/28/17	9.79	0.12	--	9.67	
12	10/10/17	9.79	2.57	--	7.22	
12	03/28/18	9.79	1.44	--	8.35	
12	10/02/18	9.79	2.79	--	7.00	
12	04/02/19	9.79	1.95	--	7.84	
12	10/01/19	9.79	2.09	--	7.70	
12	03/25/20	9.79	1.50	--	8.29	
12	10/19/20	9.79	2.35	--	7.44	
12	04/12/21	9.79	1.67	--	8.12	
12	10/11/21	9.79	2.60	--	7.19	
12	04/18/22	9.79	1.55	--	8.24	
12	09/19/22	9.79	2.57	--	7.22	
13	02/11/02	9.77	5.06	--	4.71	
13	05/20/02	9.77	7.30	--	2.47	
13	08/27/02	9.77	7.15	--	2.62	
13	11/04/02	--	--	--	--	Not Measured-Recently destroyed
13	06/11/03	--	--	--	--	
13					Abandoned	
14	06/11/03	--	--	--	--	
14					Abandoned	
15	02/11/02	8.69	3.45	--	5.24	Casing Damaged
15	05/20/02	8.69	6.12	--	2.57	Casing Broken
15	08/27/02	8.69	5.94	--	2.75	Casing Broken
15	11/04/02	8.69	6.25	--	2.44	Casing Broken
15	02/18/03	8.69	3.71	--	4.98	Casing Broken

Appendix D
 Historical Groundwater Elevation Data
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
15	06/11/03	--	--	--	--	
15					Abandoned	
16	02/11/02	9.73	4.50	--	5.23	
16	05/20/02	9.73	7.12	--	2.61	
16	08/27/02	9.73	7.14	--	2.59	
16	11/04/02	9.73	7.46	--	2.27	
16	02/18/03	9.73	5.12	--	4.61	
16	06/09/03	9.73	6.51	--	3.22	
16	09/15/03	13.29	7.37	--	5.92	
16	11/18/03	13.29	5.60	--	7.69	
16	02/24/04	13.29	5.46	--	7.83	
16	05/10/04	13.29	6.42	--	6.87	
16	08/24/04	13.29	6.81	--	6.48	
16	12/13/04	13.29	5.94	--	7.35	
16	03/08/05	13.29	6.51	--	6.78	
16	06/06/05	13.29	6.24	--	7.05	
16	09/19/05	13.29	7.30	--	5.99	
16	12/12/05	13.29	6.46	--	6.83	
16	03/13/06	13.29	5.20	--	8.09	
16	06/05/06	13.29	5.76	--	7.53	
16	09/11/06	13.29	7.21	--	6.08	
16	12/11/06	13.29	4.88	--	8.41	
17	02/11/02	11.48	6.39	--	5.09	
17	05/20/02	11.48	8.61	--	2.87	
17	08/27/02	11.48	8.68	--	2.80	
17	11/04/02	11.48	9.06	--	2.42	
17	02/18/03	11.48	6.92	--	4.56	
17	06/09/03	11.48	7.95	--	3.53	
17	09/15/03	15.06	8.89	--	6.17	
17	11/18/03	15.06	8.51	--	6.55	
17	02/24/04	15.06	6.45	--	8.61	
17	05/10/04	15.06	7.90	--	7.16	
17	08/24/04	15.06	8.45	--	6.61	
17	12/13/04	15.06	7.83	--	7.23	
17	03/08/05	15.06	7.81	--	7.25	
17	06/06/05	15.06	7.73	--	7.33	
17	09/19/05	15.06	8.75	--	6.31	
17	12/12/05	15.06	8.03	--	7.03	
17	03/13/06	15.06	6.57	--	8.49	
17	06/05/06	15.06	6.22	--	8.84	
17	09/11/06	15.06	8.68	--	6.38	
17	12/11/06	15.06	6.53	--	8.53	
19	02/11/02	9.13	3.75	--	5.38	
19	05/20/02	9.13	6.10	--	3.03	
19	08/27/02	9.13	6.28	--	2.85	
19	11/04/02	9.13	6.66	--	2.47	
19	02/18/03	9.13	4.33	--	4.80	
19	06/09/03	9.13	5.41	--	3.72	
19	09/15/03	12.74	6.51	--	6.23	
19	11/18/03	12.74	3.67	--	9.07	
19	02/24/04	12.74	4.25	--	8.49	
19	05/10/04	12.74	5.48	--	7.26	
19	08/24/04	12.74	5.87	--	6.87	
19	12/13/04	12.74	5.15	--	7.59	
19	03/08/05	12.74	5.45	--	7.29	
19	06/06/05	12.74	5.24	--	7.50	
19	09/19/05	12.74	6.36	--	6.38	
19	12/12/05	12.74	5.60	--	7.14	
19	03/13/06	12.74	4.02	--	8.72	
19	06/05/06	12.74	4.89	--	7.85	
19	09/11/06	12.74	6.31	--	6.43	
19	12/11/06	12.74	3.78	--	8.96	
20	02/11/02	8.88	3.15	--	5.73	
20	05/20/02	8.88	5.67	--	3.21	
20	08/27/02	8.88	5.91	--	2.97	
20	11/04/02	8.88	6.32	--	2.56	
20	02/18/03	8.88	3.77	--	5.11	
20	06/09/03	8.88	5.04	--	3.84	
20	09/15/03	12.49	6.16	--	6.33	
20	11/18/03	12.49	5.10	--	7.39	

Appendix D
 Historical Groundwater Elevation Data
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
20	02/24/04	12.49	3.81	--	8.68	
20	05/10/04	12.49	5.12	--	7.37	
20	08/24/04	12.49	5.45	--	7.04	
20	12/13/04	12.49	4.64	--	7.85	
20	03/08/05	12.49	5.11	--	7.38	
20	06/06/05	12.49	4.90	--	7.59	
20	09/19/05	12.49	6.08	--	6.41	
20	12/12/05	12.49	5.32	--	7.17	
20	03/13/06	12.49	3.64	--	8.85	
20	06/05/06	12.49	4.44	--	8.05	
20	09/11/06	12.49	5.98	--	6.51	
20	12/11/06	12.49	3.47	--	9.02	
21	02/11/02	9.42	3.58	--	5.84	
21	05/20/02	9.42	6.18	--	3.24	
21	08/27/02	9.42	6.43	--	2.99	
21	11/04/02	9.42	6.81	--	2.61	
21	02/18/03	9.42	4.18	--	5.24	
21	06/09/03	9.42	5.56	--	3.86	
21	09/15/03	13.04	6.68	--	6.36	
21	11/18/03	13.04	5.03	--	8.01	
21	02/24/04	13.04	4.30	--	8.74	
21	05/10/04	13.04	6.56	--	6.48	
21	08/24/04	13.04	6.04	--	7.00	
21	12/13/04	13.04	5.02	--	8.02	
21	03/08/05	13.04	5.62	--	7.42	
21	06/06/05	13.04	5.43	--	7.61	
21	09/19/05	13.04	6.63	--	6.41	
21	12/12/05	13.04	5.70	--	7.34	
21	03/13/06	13.04	4.19	--	8.85	
21	06/05/06	13.04	4.96	--	8.08	
21	09/11/06	13.04	6.50	--	6.54	
21	12/11/06	13.04	3.99	--	9.05	
22	02/11/02	9.57	3.72	--	5.85	
22	05/20/02	9.57	6.21	--	3.36	
22	08/27/02	9.57	6.55	--	3.02	
22	11/04/02	9.57	6.89	--	2.68	
22	02/18/03	9.57	4.27	--	5.30	
22	06/09/03	9.57	5.60	--	3.97	
22	09/15/03	13.19	6.75	--	6.44	
22	11/18/03	13.19	5.07	--	8.12	
22	02/24/04	13.19	4.39	--	8.80	
22	05/10/04	13.19	5.75	--	7.44	
22	08/24/04	13.19	6.23	--	6.96	
22	12/13/04	13.19	5.04	--	8.15	
22	03/08/05	13.19	5.77	--	7.42	
22	06/06/05	13.19	5.55	--	7.64	
22	09/19/05	13.19	6.75	--	6.44	
22	12/12/05	13.19	5.80	--	7.39	
22	03/13/06	13.19	4.35	--	8.84	
22	06/05/06	13.19	5.04	--	8.15	
22	09/11/06	13.19	6.66	--	6.53	
22	12/11/06	13.19	4.11	--	9.08	
23	02/11/02	8.94	3.51	--	5.43	
23	05/20/02	8.94	5.93	--	3.01	
23	08/27/02	8.94	5.93	--	3.01	
23	11/04/02	8.94	6.29	--	2.65	
23	02/18/03	8.94	4.04	--	4.90	
23	06/09/03	8.94	5.26	--	3.68	
23	09/15/03	12.55	6.19	--	6.36	
23	11/18/03	12.55	6.11	--	6.44	
23	02/24/04	12.55	4.20	--	8.35	
23	05/10/04	12.55	5.35	--	7.20	
23	08/24/04	12.55	5.78	--	6.77	
23	12/13/04	12.55	4.73	--	7.82	
23	03/08/05	12.55	5.37	--	7.18	
23	06/06/05	12.55	5.16	--	7.39	
23	09/19/05	12.55	6.46	--	6.09	
23	12/12/05	12.55	5.40	--	7.15	
23	03/13/06	12.55	4.03	--	8.52	
23	06/05/06	12.55	4.79	--	7.76	

Appendix D
 Historical Groundwater Elevation Data
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
23	09/11/06	12.55	6.13	--	6.42	
23	12/11/06	12.55	4.01	--	8.54	
24	06/11/03	--	--	--	--	
24					Abandoned	
25	02/11/02	9.48	3.76	--	5.72	
25	05/20/02	9.48	6.19	--	3.29	
25	08/27/02	9.48	6.33	--	3.15	
25	11/04/02	9.48	6.74	--	2.74	Casing Tilted
25	02/18/03	9.48	4.13	--	5.35	Casing Tilted
25	06/11/03	--	--	--	--	
25					Abandoned	
26	02/11/02	9.43	3.70	--	5.73	
26	05/20/02	9.43	--	--	--	Not Measured-Dry
26	08/27/02	9.43	6.02	--	3.41	
26	11/04/02	9.43	5.97	--	3.46	
26	02/18/03	9.43	5.11	--	4.32	
26	06/09/03	9.43	6.02	--	3.41	
26	09/15/03	13.87	6.01	--	7.86	
26	11/18/03	13.87	4.32	--	9.55	
26	02/24/04	13.87	5.14	--	8.73	
26	05/10/04	13.87	6.05	--	7.82	
26	08/24/04	13.87	5.19	--	8.68	
26	12/13/04	13.87	5.99	--	7.88	
26	03/08/05	13.87	6.02	--	7.85	
26	06/06/05	13.87	6.02	--	7.85	
26	09/19/05	13.87	4.51	--	9.36	
26	12/12/05	13.87	6.05	--	7.82	
26	03/13/06	13.87	5.00	--	8.87	
26	06/05/06	13.87	5.78	--	8.09	
26	09/11/06	13.87	7.01	--	6.86	
26	12/11/06	13.87	4.81	--	9.06	
27	02/11/02	9.20	3.57	--	5.63	
27	05/20/02	9.20	6.00	--	3.20	
27	08/27/02	9.20	6.21	--	2.99	
27	11/04/02	9.20	6.63	--	2.57	
27	02/18/03	9.20	4.03	--	5.17	
27	06/09/03	9.01	5.22	--	3.79	
27	09/15/03	12.65	6.36	--	6.29	
27	11/18/03	12.65	5.84	--	6.81	
27	02/24/04	12.65	4.04	--	8.61	
27	05/10/04	12.65	5.31	--	7.34	
27	08/24/04	12.65	5.71	--	6.94	
27	12/13/04	12.65	4.91	--	7.74	
27	03/08/05	12.65	5.28	--	7.37	
27	06/06/05	12.65	5.13	--	7.52	
27	09/19/05	12.65	6.22	--	6.43	
27	12/12/05	12.65	5.40	--	7.25	
27	03/13/06	12.65	3.82	--	8.83	
27	06/05/06	12.65	4.66	--	7.99	
27	09/11/06	12.65	6.16	--	6.49	
27	12/11/06	12.65	3.60	--	9.05	
MW-1	02/11/02	9.37	4.60	--	4.77	
MW-1	05/20/02	9.37	6.75	--	2.62	
MW-1	08/27/02	9.37	6.51	--	2.86	
MW-1	11/04/02	9.37	6.90	--	2.47	
MW-1	02/18/03	9.37	5.10	--	4.27	
MW-1	06/09/03	9.37	5.94	--	3.43	
MW-1	09/15/03	13.21	6.72	--	6.49	
MW-1	11/18/03	13.21	5.91	--	7.30	
MW-1	02/24/04	13.21	5.05	--	8.16	
MW-1	05/10/04	13.21	6.06	--	7.15	
MW-1	08/24/04	13.21	6.45	--	6.76	
MW-1	12/13/04	13.21	5.63	--	7.58	
MW-1	03/08/05	13.21	6.09	--	7.12	
MW-1	06/06/05	13.21	6.93	--	6.28	
MW-1	09/19/05	13.21	6.74	--	6.47	
MW-1	12/12/05	13.21	6.16	--	7.05	
MW-1	03/13/06	13.21	4.96	--	8.25	
MW-1	06/05/06	13.21	5.72	--	7.49	
MW-1	09/11/06	13.21	6.72	--	6.49	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
MW-1	12/11/06	13.21	5.20	--	8.01	
MW-1	03/26/07	13.21	5.24	--	7.97	
MW-1	06/18/07	13.21	5.98	--	7.23	
MW-1	09/25/07	13.21	6.72	--	6.49	
MW-1	12/10/07	13.21	5.34	--	7.87	
MW-1	03/03/08	13.21	5.70	--	7.51	
MW-1	06/02/08	13.21	6.30	--	6.91	
MW-1	09/04/08	13.21	6.48	--	6.73	
MW-1	12/04/08	13.21	6.33	--	6.88	
MW-1	03/04/09	13.21	--	--	--	Not Measured-Inaccessible
MW-1	06/01/09	13.21	6.00	--	7.21	
MW-1	09/21/09	13.21	6.75	--	6.46	
MW-1	11/16/09	13.21	5.62	--	7.59	
MW-1	03/08/10	13.21	5.05	--	8.16	
MW-1	06/07/10	13.21	5.48	--	7.73	
MW-1	09/09/10	13.21	6.55	--	6.66	
MW-1	11/15/10	13.21	5.71	--	7.50	
MW-1	03/01/11	13.21	4.97	--	8.24	
MW-1	05/23/11	13.21	5.04	--	8.17	
MW-1	08/29/11	13.21	6.35	--	6.86	
MW-1	12/01/11	13.21	5.80	--	7.41	
MW-1	03/01/12	13.21	5.59	--	7.62	
MW-1	05/30/12	13.21	5.55	--	7.66	
MW-1	08/25/12	13.21	6.25	--	6.96	
MW-1	11/07/12	13.21	5.58	--	7.63	
MW-1	02/27/13	13.21	5.24	--	7.97	
MW-1	04/08/13	13.21	5.12	--	8.09	
MW-1	07/29/13	13.21	6.19	--	7.02	
MW-1	10/02/13	13.21	5.83	--	7.38	
MW-1	01/21/14	13.21	5.96	--	7.25	
MW-1	04/22/14	13.21	5.05	--	8.16	
MW-1	07/15/14	13.21	5.90	--	7.31	
MW-1	03/17/15	13.21	4.73	--	8.48	
MW-1	09/28/15	13.21	6.30	--	6.91	
MW-1	03/29/16	13.21	4.18	--	9.03	
MW-1	10/11/16	13.21	6.35	--	6.86	
MW-1	03/28/17	13.21	3.67	--	9.54	
MW-1	10/10/17	13.21	6.03	--	7.18	
MW-1	03/28/18	13.21	5.08	--	8.13	
MW-1	10/02/18	13.21	6.44	--	6.77	
MW-1	04/02/19	13.21	6.35	--	6.86	
MW-1	10/01/19	13.21	6.21	--	7.00	
MW-1	03/25/20	13.21	5.07	--	8.14	
MW-1	10/19/20	13.21	5.89	--	7.32	
MW-1	04/12/21	13.21	5.03	--	8.18	
MW-1	10/11/21	13.21	6.30	--	6.91	
MW-1	04/18/22	13.21	4.99	--	8.22	
MW-1	09/19/22	13.21	6.15	--	7.06	
MW-2	02/11/02	11.33	6.13	--	5.20	
MW-2	05/20/02	11.33	8.40	--	2.93	
MW-2	08/27/02	11.33	8.50	--	2.83	
MW-2	11/04/02	11.33	8.85	--	2.48	
MW-2	02/18/03	11.33	6.10	--	5.23	
MW-2	06/09/03	11.33	7.68	--	3.65	
MW-2	09/15/03	15.22	8.71	--	6.51	
MW-2	11/18/03	15.22	7.60	--	7.62	
MW-2	02/24/04	15.22	6.56	--	8.66	
MW-2	05/10/04	15.22	7.78	--	7.44	
MW-2	08/24/04	15.22	8.33	--	6.89	
MW-2	12/13/04	15.22	7.69	--	7.53	
MW-2	03/08/05	15.22	7.72	--	7.50	
MW-2	06/06/05	15.22	7.61	--	7.61	
MW-2	09/19/05	15.22	8.58	--	6.64	
MW-2	12/12/05	15.22	7.86	--	7.36	
MW-2	03/13/06	15.22	6.38	--	8.84	
MW-2	06/05/06	15.22	7.39	--	7.83	
MW-2	09/11/06	15.22	8.50	--	6.72	
MW-2	12/11/06	15.22	6.37	--	8.85	
MW-2	03/26/07	15.22	6.71	--	8.51	
MW-2	06/18/07	15.22	7.68	--	7.54	

Appendix D
 Historical Groundwater Elevation Data
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
MW-2	09/24/07	15.22	8.84	--	6.38	
MW-2	12/10/07	15.22	6.85	--	8.37	
MW-2	03/03/08	15.22	7.14	--	8.08	
MW-2	06/02/08	15.22	7.91	--	7.31	
MW-2	09/04/08	15.22	8.33	--	6.89	
MW-2	12/04/08	15.22	8.01	--	7.21	
MW-2	03/04/09	15.22	7.43	--	7.79	
MW-2	06/01/09	15.22	7.54	--	7.68	
MW-2	09/21/09	15.22	8.52	--	6.70	
MW-2	11/16/09	15.22	7.28	--	7.94	
MW-2	03/08/10	15.22	6.42	--	8.80	
MW-2	06/07/10	15.22	7.00	--	8.22	
MW-2	09/09/10	15.22	8.26	--	6.96	
MW-2	11/15/10	15.22	7.21	--	8.01	
MW-2	03/01/11	15.22	6.26	--	8.96	
MW-2	05/23/11	15.22	6.39	--	8.83	
MW-2	08/29/11	15.22	8.01	--	7.21	
MW-2	12/01/11	15.22	7.56	--	7.66	
MW-2	03/01/12	15.22	7.03	--	8.19	
MW-2	05/30/12	15.22	6.97	--	8.25	
MW-2	08/25/12	15.22	7.88	--	7.34	
MW-2	11/07/12	15.22	7.34	--	7.88	
MW-2	02/27/13	15.22	6.59	--	8.63	
MW-2	04/08/13	15.22	6.36	--	8.86	
MW-2	07/29/13	15.22	7.82	--	7.40	
MW-2	10/02/13	15.22	7.44	--	7.78	
MW-2	01/21/14	15.22	7.55	--	7.67	
MW-2	04/22/14	15.22	6.21	--	9.01	
MW-2	07/15/14	15.22	7.47	--	7.75	
MW-2	03/17/15	15.22	5.35	--	9.87	
MW-2	09/28/15	15.22	7.99	--	7.23	
MW-2	03/29/16	15.22	5.29	--	9.93	
MW-2	10/11/16	15.22	8.20	--	7.02	
MW-2	03/28/17	15.22	4.51	--	10.71	
MW-2	10/10/17	15.22	8.12	--	7.10	
MW-2	03/28/18	15.22	6.47	--	8.75	
MW-2	10/02/18	15.22	8.29	--	6.93	
MW-2	04/02/19	15.22	6.81	--	8.41	
MW-2	10/01/19	15.22	8.08	--	7.14	
MW-2	03/25/20	15.22	6.43	--	8.79	
MW-2	10/19/20	15.22	7.63	--	7.59	
MW-2	04/12/21	15.22	6.47	--	8.75	
MW-2	10/11/21	15.22	8.06	--	7.16	
MW-2	04/18/22	15.22	8.30	--	6.92	
MW-2	09/19/22	15.22	7.81	--	7.41	
MW-3	02/11/02	7.49	1.82	--	5.67	
MW-3	05/20/02	7.49	4.27	--	3.22	
MW-3	08/27/02	7.49	4.50	--	2.99	
MW-3	11/04/02	7.49	4.92	--	2.57	
MW-3	02/18/03	7.49	2.38	--	5.11	
MW-3	06/09/03	7.49	3.67	--	3.82	
MW-3	09/15/03	11.39	4.81	--	6.58	
MW-3	11/18/03	11.39	2.97	--	8.42	
MW-3	02/24/04	11.39	2.45	--	8.94	
MW-3	05/10/04	11.39	3.64	--	7.75	
MW-3	08/24/04	11.39	4.14	--	7.25	
MW-3	12/13/04	11.39	3.22	--	8.17	
MW-3	03/08/05	11.39	3.70	--	7.69	
MW-3	06/06/05	11.39	3.51	--	7.88	
MW-3	09/19/05	11.39	4.65	--	6.74	
MW-3	12/12/05	11.39	3.81	--	7.58	
MW-3	03/13/06	11.39	2.43	--	8.96	
MW-3	06/05/06	11.39	3.05	--	8.34	
MW-3	09/11/06	11.39	4.58	--	6.81	
MW-3	12/11/06	11.39	2.00	--	9.39	
MW-3	03/26/07	11.39	2.46	--	8.93	
MW-3	06/18/07	11.39	3.81	--	7.58	
MW-3	09/24/07	11.39	4.58	--	6.81	
MW-3	12/10/07	11.39	2.53	--	8.86	
MW-3	03/03/08	11.39	3.10	--	8.29	

Appendix D
 Historical Groundwater Elevation Data
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
MW-3	06/02/08	11.39	3.88	--	7.51	
MW-3	09/04/08	11.39	4.27	--	7.12	
MW-3	12/04/08	11.39	3.99	--	7.40	
MW-3	03/04/09	11.39	3.28	--	8.11	
MW-3	06/01/09	11.39	3.48	--	7.91	
MW-3	09/21/09	11.39	4.51	--	6.88	
MW-3	11/16/09	11.39	2.97	--	8.42	
MW-3	03/08/10	11.39	2.32	--	9.07	
MW-3	06/07/10	11.39	2.86	--	8.53	
MW-3	09/09/10	11.39	4.23	--	7.16	
MW-3	11/15/10	11.39	2.99	--	8.40	
MW-3	03/01/11	11.39	1.86	--	9.53	
MW-3	05/23/11	11.39	2.03	--	9.36	
MW-3	08/29/11	11.39	4.02	--	7.37	
MW-3	12/01/11	11.39	3.27	--	8.12	
MW-3	03/01/12	11.39	2.99	--	8.40	
MW-3	05/30/12	11.39	2.93	--	8.46	
MW-3	08/25/12	11.39	3.90	--	7.49	
MW-3	11/07/12	11.39	3.10	--	8.29	
MW-3	02/27/13	11.39	2.23	--	9.16	
MW-3	04/08/13	11.39	2.04	--	9.35	
MW-3	07/29/13	11.39	3.78	--	7.61	
MW-3	10/02/13	11.39	3.06	--	8.33	
MW-3	01/21/14	11.39	3.43	--	7.96	
MW-3	04/22/14	11.39	2.06	--	9.33	
MW-3	07/15/14	11.39	3.51	--	7.88	
MW-3	03/17/15	11.39	1.30	--	10.09	
MW-3	09/28/15	11.39	4.02	--	7.37	
MW-3	03/29/16	11.39	1.47	--	9.92	
MW-3	10/11/16	11.39	4.01	--	7.38	
MW-3	03/28/17	11.39	0.65	--	10.74	
MW-3	10/10/17	11.39	4.09	--	7.30	
MW-3	03/28/18	11.39	2.44	--	8.95	
MW-3	10/02/18	11.39	4.48	--	6.91	
MW-3	04/02/19	11.39	2.88	--	8.51	
MW-3	10/01/19	11.39	4.00	--	7.39	
MW-3	03/25/20	11.39	2.44	--	8.95	
MW-3	10/19/20	11.39	3.57	--	7.82	
MW-3	04/12/21	11.39	2.49	--	8.90	
MW-3	10/11/21	11.39	4.10	--	7.29	
MW-3	04/18/22	11.39	2.39	--	9.00	
MW-3	09/19/22	11.39	3.97	--	7.42	
MW-4	02/11/02	10.44	5.24	--	5.20	
MW-4	05/20/02	10.44	7.60	--	2.84	
MW-4	08/27/02	10.44	7.40	--	3.04	
MW-4	11/04/02	10.44	7.90	0.15	2.66	
MW-4	02/18/03	10.44	5.79	--	4.65	
MW-4	06/09/03	10.44	6.81	--	3.63	
MW-4	09/15/03	14.69	7.70	0.01	7.00	
MW-4	11/18/03	14.69	6.71	Sheen	7.98	
MW-4	02/24/04	14.69	5.82	Sheen	8.87	
MW-4	05/10/04	14.69	6.93	Sheen	7.76	
MW-4	08/24/04	14.69	7.24	--	7.45	
MW-4	12/13/04	14.69	6.45	Sheen	8.24	
MW-4	03/08/05	14.69	6.94	--	7.75	
MW-4	06/06/05	14.69	6.71	--	7.98	
MW-4	09/19/05	14.69	7.67	--	7.02	
MW-4	12/12/05	14.69	6.97	--	7.72	
MW-4	03/13/06	14.69	5.77	--	8.92	
MW-4	06/05/06	14.69	6.42	--	8.27	
MW-4	09/11/06	14.69	7.61	--	7.08	
MW-4	12/11/06	14.69	5.81	--	8.88	
MW-4	03/26/07	14.69	5.96	--	8.73	
MW-4	06/18/07	14.69	6.99	--	7.70	
MW-4	09/25/07	14.69	7.46	--	7.23	
MW-4	12/10/07	14.69	5.93	--	8.76	
MW-4	03/03/08	14.69	6.44	--	8.25	
MW-4	06/02/08	14.69	7.37	--	7.32	
MW-4	09/04/08	14.69	7.20	--	7.49	
MW-4	12/04/08	14.69	7.77	--	6.92	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
MW-4	03/04/09	14.69	6.68	--	8.01	
MW-4	06/01/09	14.69	6.78	--	7.91	
MW-4	09/21/09	14.69	7.56	--	7.13	
MW-4	11/16/09	14.69	6.34	--	8.35	
MW-4	03/08/10	14.69	5.86	--	8.83	
MW-4	06/07/10	14.69	6.27	--	8.42	
MW-4	09/09/10	14.69	7.40	--	7.29	
MW-4	11/15/10	14.69	6.39	--	8.30	
MW-4	03/01/11	14.69	5.70	--	8.99	
MW-4	05/23/11	14.69	5.74	--	8.95	
MW-4	08/29/11	14.69	7.25	--	7.44	
MW-4	12/01/11	14.69	6.52	--	8.17	
MW-4	03/01/12	14.69	6.38	--	8.31	
MW-4	05/30/12	14.69	6.33	--	8.36	
MW-4	08/25/12	14.69	7.05	--	7.64	
MW-4	11/07/12	14.69	6.31	--	8.38	
MW-4	02/27/13	14.69	6.02	--	8.67	
MW-4	04/08/13	14.69	5.74	--	8.95	
MW-4	07/29/13	14.69	7.02	--	7.67	
MW-4	10/02/13	14.69	6.53	--	8.16	
MW-4	01/21/14	14.69	6.75	--	7.94	
MW-4	04/22/14	14.69	5.84	--	8.85	
MW-4	07/15/14	14.69	6.85	--	7.84	
MW-4	03/17/15	14.69	5.21	--	9.48	
MW-4	09/28/15	14.69	7.05	--	7.64	
MW-4	03/29/16	14.69	4.31	--	10.38	
MW-4	10/11/16	14.69	7.21	--	7.48	
MW-4	03/28/17	14.69	4.55	--	10.14	
MW-4	10/10/17	14.69	7.16	--	7.53	
MW-4	03/28/18	14.69	5.93	--	8.76	
MW-4	10/02/18	14.69	7.40	--	7.29	
MW-4	04/02/19	14.69	6.26	--	8.43	
MW-4	10/01/19	14.69	7.14	--	7.55	
MW-4	03/25/20	14.69	6.02	--	8.67	
MW-4	10/19/20	14.69	6.79	--	7.90	
MW-4	04/12/21	14.69	5.59	--	9.10	
MW-4	10/11/21	14.69	7.21	--	7.48	
MW-4	04/18/22	14.69	5.92	--	8.77	
MW-4	09/19/22	14.69	7.13	--	7.56	
MW-5	02/11/02	7.10	1.50	--	5.60	
MW-5	05/20/02	7.10	4.06	--	3.04	
MW-5	08/27/02	7.10	4.23	--	2.87	
MW-5	11/04/02	7.10	4.63	--	2.47	
MW-5	02/18/03	7.10	1.98	--	5.12	
MW-5	06/09/03	7.10	3.47	--	3.63	
MW-5	09/15/03	11.13	4.49	--	6.64	
MW-5	11/18/03	11.13	2.81	--	8.32	
MW-5	02/24/04	11.13	2.11	--	9.02	
MW-5	05/10/04	11.13	3.50	--	7.63	
MW-5	08/24/04	11.13	3.71	--	7.42	
MW-5	12/13/04	11.13	2.75	--	8.38	
MW-5	03/08/05	11.13	3.53	--	7.60	
MW-5	06/06/05	11.13	3.22	--	7.91	
MW-5	09/19/05	11.13	4.33	--	6.80	
MW-5	12/12/05	11.13	3.43	--	7.70	
MW-5	03/13/06	11.13	2.10	--	9.03	
MW-5	06/05/06	11.13	2.59	--	8.54	
MW-5	09/11/06	11.13	4.33	--	6.80	
MW-5	12/11/06	11.13	1.70	--	9.43	
MW-5	03/26/07	11.13	2.22	--	8.91	
MW-5	06/18/07	11.13	--	--	--	Not Measured-No Access due to construction
MW-5	09/24/07	11.13	4.28	--	6.85	
MW-5	12/10/07	11.13	2.06	--	9.07	
MW-5	03/03/08	11.13	2.81	--	8.32	
MW-5	06/02/08	11.13	3.36	--	7.77	
MW-5	09/04/08	11.13	3.91	--	7.22	
MW-5	12/04/08	11.13	3.64	--	7.49	
MW-5	03/04/09	11.13	2.98	--	8.15	
MW-5	06/01/09	11.13	3.21	--	7.92	
MW-5	09/21/09	11.13	4.23	--	6.90	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
MW-5	11/16/09	11.13	2.50	--	8.63	
MW-5	03/08/10	11.13	2.11	--	9.02	
MW-5	06/07/10	11.13	2.55	--	8.58	
MW-5	09/09/10	11.13	3.93	--	7.20	
MW-5	11/15/10	11.13	2.55	--	8.58	
MW-5	03/01/11	11.13	1.63	--	9.50	
MW-5	05/23/11	11.13	2.00	--	9.13	
MW-5	08/29/11	11.13	3.82	--	7.31	
MW-5	12/01/11	11.13	2.80	--	8.33	
MW-5	03/01/12	11.13	2.66	--	8.47	
MW-5	05/30/12	11.13	2.73	--	8.40	
MW-5	08/25/12	11.13	3.54	--	7.59	
MW-5	11/07/12	11.13	2.56	--	8.57	
MW-5	02/27/13	11.13	2.20	--	8.93	
MW-5	04/08/13	11.13	1.69	--	9.44	
MW-5	07/29/13	11.13	3.41	--	7.72	
MW-5	10/02/13	11.13	2.51	--	8.62	
MW-5	01/21/14	11.13	3.11	--	8.02	
MW-5	04/22/14	11.13	1.79	--	9.34	
MW-5	07/15/14	11.13	3.29	--	7.84	
MW-5	03/17/15	11.13	1.04	--	10.09	
MW-5	09/28/15	11.13	3.65	--	7.48	
MW-5	03/29/16	11.13	1.26	--	9.87	
MW-5	10/11/16	11.13	3.56	--	7.57	
MW-5	03/28/17	11.13	0.96	--	10.17	
MW-5	10/10/17	11.13	3.70	--	7.43	Biofilm
MW-5	03/28/18	11.13	2.31	--	8.82	
MW-5	10/02/18	11.13	3.88	--	7.25	
MW-5	04/02/19	11.13	2.71	--	8.42	
MW-5	10/01/19	11.13	3.53	--	7.60	
MW-5	03/25/20	11.13	2.21	--	8.92	
MW-5	10/19/20	11.13	3.25	--	7.88	
MW-5	04/12/21	11.13	2.33	--	8.80	
MW-5	10/11/21	11.13	3.65	--	7.48	
MW-5	04/18/22	11.13	2.22	--	8.91	
MW-5	09/19/22	11.13	3.69	--	7.44	
MW-6	02/11/02	11.15	6.35	--	4.80	
MW-6	05/20/02	11.15	8.48	--	2.67	
MW-6	08/27/02	11.15	8.45	--	2.70	
MW-6	11/04/02	11.15	8.80	--	2.35	
MW-6	02/18/03	11.15	6.85	--	4.30	
MW-6	06/09/03	11.15	7.74	--	3.41	
MW-6	09/15/03	15.17	8.65	--	6.52	
MW-6	11/18/03	15.17	7.60	--	7.57	
MW-6	02/24/04	15.17	6.61	--	8.56	
MW-6	05/10/04	15.17	7.76	--	7.41	
MW-6	08/24/04	15.17	8.28	--	6.89	
MW-6	12/13/04	15.17	7.67	--	7.50	
MW-6	03/08/05	15.17	7.70	--	7.47	
MW-6	06/06/05	15.17	7.55	--	7.62	
MW-6	09/19/05	15.17	8.48	--	6.69	
MW-6	12/12/05	15.17	7.89	--	7.28	
MW-6	03/13/06	15.17	6.46	--	8.71	
MW-6	06/05/06	15.17	7.25	--	7.92	
MW-6	09/11/06	15.17	8.43	--	6.74	
MW-6	12/11/06	15.17	6.50	--	8.67	
MW-6	03/26/07	15.17	6.61	--	8.56	
MW-6	06/18/07	15.17	7.76	--	7.41	
MW-6	09/24/07	15.17	8.43	--	6.74	
MW-6	12/10/07	15.17	6.93	--	8.24	
MW-6	03/03/08	15.17	7.09	--	8.08	
MW-6	06/02/08	15.17	7.88	--	7.29	
MW-6	09/04/08	15.17	8.19	--	6.98	
MW-6	12/04/08	15.17	7.95	--	7.22	
MW-6	03/04/09	15.17	7.41	--	7.76	
MW-6	06/01/09	15.17	7.54	--	7.63	
MW-6	09/21/09	15.17	8.42	--	6.75	
MW-6	11/16/09	15.17	7.30	--	7.87	
MW-6	03/08/10	15.17	6.45	--	8.72	
MW-6	06/07/10	15.17	7.09	--	8.08	

Appendix D
 Historical Groundwater Elevation Data
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
MW-6	09/09/10	15.17	8.10	--	7.07	
MW-6	11/15/10	15.17	7.21	--	7.96	
MW-6	03/01/11	15.17	6.24	--	8.93	
MW-6	05/23/11	15.17	6.42	--	8.75	
MW-6	08/29/11	15.17	7.92	--	7.25	
MW-6	12/01/11	15.17	7.45	--	7.72	
MW-6	03/01/12	15.17	6.97	--	8.20	
MW-6	05/30/12	15.17	6.91	--	8.26	
MW-6	08/25/12	15.17	7.09	--	8.08	
MW-6	11/07/12	15.17	7.12	--	8.05	
MW-6	02/27/13	15.17	6.59	--	8.58	
MW-6	04/08/13	15.17	6.22	--	8.95	
MW-6	07/29/13	15.17	7.34	--	7.83	
MW-6	10/02/13	15.17	6.98	--	8.19	
MW-6	01/21/14	15.17	7.21	--	7.96	
MW-6	04/22/14	15.17	6.71	--	8.46	
MW-6	07/15/14	15.17	7.39	--	7.78	
MW-6	03/17/15	15.17	5.72	--	9.45	
MW-6	09/28/15	15.17	7.68	--	7.49	
MW-6	03/29/16	15.17	5.38	--	9.79	
MW-6	10/11/16	15.17	7.94	--	7.23	
MW-6	03/28/17	15.17	4.97	--	10.20	
MW-6	10/10/17	15.17	7.89	--	7.28	
MW-6	03/28/18	15.17	6.93	--	8.24	
MW-6	10/02/18	15.17	8.00	--	7.17	
MW-6	04/02/19	15.17	6.77	--	8.40	
MW-6	10/01/19	15.17	7.81	--	7.36	
MW-6	03/25/20	15.17	6.34	--	8.83	
MW-6	10/19/20	15.17	7.57	--	7.60	
MW-6	04/12/21	15.17	6.52	--	8.65	
MW-6	10/11/21	15.17	7.90	--	7.27	
MW-6	04/18/22	15.17	6.37	--	8.80	
MW-6	09/19/22	15.17	7.69	--	7.48	
MW-7	02/11/02	6.78	1.49	--	5.29	
MW-7	05/20/02	6.78	3.91	--	2.87	
MW-7	08/27/02	6.78	4.03	--	2.75	
MW-7	11/04/02	6.78	4.44	--	2.34	
MW-7	02/18/03	6.78	1.82	Sheen	4.96	
MW-7	06/09/03	6.78	3.29	--	3.49	
MW-7	09/15/03	10.62	4.30	--	6.32	
MW-7	11/18/03	10.62	2.83	--	7.79	
MW-7	02/24/04	10.62	2.16	--	8.46	
MW-7	05/10/04	10.62	3.32	--	7.30	
MW-7	08/24/04	10.62	3.31	--	7.31	
MW-7	12/13/04	10.62	2.27	--	8.35	
MW-7	03/08/05	10.62	3.23	--	7.39	
MW-7	06/06/05	10.62	3.03	--	7.59	
MW-7	09/19/05	10.62	4.16	Sheen	6.46	
MW-7	12/12/05	10.62	3.17	--	7.45	
MW-7	03/13/06	10.62	1.88	--	8.74	
MW-7	06/05/06	10.62	2.34	--	8.28	
MW-7	09/11/06	10.62	4.10	--	6.52	
MW-7	12/11/06	10.62	1.72	--	8.90	
MW-7	03/26/07	10.62	2.00	--	8.62	
MW-7	06/18/07	10.62	3.34	--	7.28	
MW-7	09/24/07	10.62	4.00	--	6.62	
MW-7	12/10/07	10.62	1.12	Sheen	9.50	
MW-7	03/03/08	10.62	2.49	Sheen	8.13	
MW-7	06/02/08	10.62	3.41	Sheen	7.21	
MW-7	09/04/08	10.62	3.60	--	7.02	
MW-7	12/04/08	10.62	3.36	--	7.26	
MW-7	03/04/09	10.62	2.90	--	7.72	
MW-7	06/01/09	10.62	3.08	Sheen	7.54	
MW-7	09/21/09	10.62	1.91	--	8.71	
MW-7	11/16/09	10.62	2.54	Sheen	8.08	
MW-7	03/08/10	10.62	2.31	--	8.31	
MW-7	06/07/10	10.62	2.67	--	7.95	
MW-7	09/09/10	10.62	3.79	--	6.83	
MW-7	11/15/10	10.62	2.58	--	8.04	
MW-7	03/01/11	10.62	2.51	--	8.11	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
MW-7	05/23/11	10.62	2.24	--	8.38	
MW-7	08/29/11	10.62	3.87	--	6.75	
MW-7	12/01/11	10.62	2.67	--	7.95	
MW-7	03/01/12	10.62	2.80	--	7.82	
MW-7	05/30/12	10.62	2.82	--	7.80	
MW-7	08/25/12	10.62	3.35	--	7.27	
MW-7	11/07/12	10.62	2.23	--	8.39	
MW-7	02/27/13	10.62	2.33	--	8.29	
MW-7	04/08/13	10.62	1.88	--	8.74	
MW-7	06/21/13	10.62	3.10	--	7.52	Baseline monitoring event
MW-7	07/29/13	10.62	3.16	--	7.46	
MW-7	08/26/13	10.62	2.82	--	7.80	Two-month monitoring event
MW-7	10/02/13	10.62	2.08	--	8.54	
MW-7	01/21/14	10.62	2.78	--	7.84	
MW-7	04/22/14	10.62	1.45	--	9.17	
MW-7	07/15/14	10.62	3.02	--	7.60	
MW-7	03/17/15	10.62	0.76	--	9.86	
MW-7	09/28/15	10.62	3.59	--	7.03	
MW-7	03/29/16	10.62	1.10	--	9.52	
MW-7	10/11/16	10.62	2.95	--	7.67	
MW-7	03/28/17	10.62	0.70	--	9.92	
MW-7	10/10/17	10.62	3.49	--	7.13	
MW-7	03/28/18	10.62	2.06	--	8.56	
MW-7	10/02/18	10.62	3.50	--	7.12	
MW-7	04/02/19	10.62	2.52	--	8.10	
MW-7	10/01/19	10.62	3.18	--	7.44	
MW-7	03/25/20	10.62	2.03	--	8.59	
MW-7	10/19/20	10.62	3.05	--	7.57	
MW-7	04/12/21	10.62	2.22	--	8.40	
MW-7	10/11/21	10.62	3.26	--	7.36	
MW-7	04/18/22	10.62	2.10	--	8.52	
MW-7	09/19/22	10.62	3.30	--	7.32	
MW-8	02/11/02	6.42	1.38	--	5.04	
MW-8	05/20/02	6.42	3.87	0.01	2.56	
MW-8	08/27/02	6.42	5.83	--	0.59	
MW-8	11/04/02	6.42	4.23	--	2.19	
MW-8	02/18/03	6.42	1.37	--	5.05	
MW-8	06/09/03	6.42	3.33	--	3.09	
MW-8	09/15/03	10.63	4.10	--	6.53	
MW-8	11/18/03	10.63	2.25	--	8.38	
MW-8	02/24/04	10.63	2.15	--	8.48	
MW-8	05/10/04	10.63	3.37	--	7.26	
MW-8	08/24/04	10.63	3.51	--	7.12	
MW-8	12/13/04	10.63	2.40	--	8.23	
MW-8	03/08/05	10.63	3.25	--	7.38	
MW-8	06/06/05	10.63	3.01	--	7.62	
MW-8	09/19/05	10.63	4.05	--	6.58	
MW-8	12/12/05	10.63	3.20	--	7.43	
MW-8	03/13/06	10.63	2.22	--	8.41	
MW-8	06/05/06	10.63	2.59	--	8.04	
MW-8	09/11/06	10.63	3.96	--	6.67	
MW-8	12/11/06	10.63	1.81	--	8.82	
MW-8	03/26/07	10.63	4.01	--	6.62	
MW-8	06/18/07	10.63	4.55	--	6.08	
MW-8	09/24/07	10.63	5.05	--	5.58	
MW-8	12/10/07	10.63	4.18	--	6.45	
MW-8	03/03/08	10.63	4.25	--	6.38	
MW-8	06/02/08	10.63	4.65	--	5.98	
MW-8	09/04/08	10.63	4.69	--	5.94	
MW-8	12/04/08	10.63	--	--	--	Not Measured-Inaccessible
MW-8	03/04/09	10.63	3.36	--	7.27	
MW-8	06/01/09	10.63	3.67	--	6.96	
MW-8	09/21/09	10.63	4.42	--	6.21	
MW-8	11/16/09	10.63	2.85	--	7.78	
MW-8	03/08/10	10.63	2.65	--	7.98	
MW-8	06/07/10	10.63	3.10	--	7.53	
MW-8	09/09/10	10.63	4.29	--	6.34	
MW-8	11/15/10	10.63	3.12	--	7.51	
MW-8	03/01/11	10.63	2.22	--	8.41	
MW-8	05/23/11	10.63	2.76	--	7.87	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
MW-8	08/29/11	10.63	4.22	--	6.41	
MW-8	12/01/11	10.63	3.11	--	7.52	
MW-8	03/01/12	10.63	3.18	--	7.45	
MW-8	05/30/12	10.63	3.27	--	7.36	
MW-8	08/25/12	10.63	4.02	--	6.61	
MW-8	11/07/12	10.63	2.93	--	7.70	
MW-8	02/27/13	10.63	2.98	--	7.65	
MW-8	04/08/13	10.63	2.41	--	8.22	
MW-8	07/29/13	10.63	3.98	--	6.65	
MW-8	10/02/13	10.63	2.86	--	7.77	
MW-8	01/21/14	10.63	3.56	--	7.07	
MW-8	04/22/14	10.63	2.68	--	7.95	
MW-8	07/15/14	10.63	3.83	--	6.80	
MW-8	03/17/15	10.63	1.62	--	9.01	
MW-8	09/28/15	10.63	3.99	--	6.64	
MW-8	03/29/16	10.63	1.95	--	8.68	
MW-8	10/11/16	10.63	4.05	--	6.58	
MW-8	03/28/17	10.63	1.55	--	9.08	
MW-8	10/10/17	10.63	4.23	--	6.40	
MW-8	03/28/18	10.63	3.05	--	7.58	
MW-8	10/02/18	10.63	4.29	--	6.34	
MW-8	04/02/19	10.63	3.36	--	7.27	
MW-8	10/01/19	10.63	4.06	--	6.57	
MW-8	03/25/20	10.63	3.18	--	7.45	
MW-8	10/19/20	10.63	3.71	--	6.92	
MW-8	04/12/21	10.63	3.12	--	7.51	
MW-8	10/11/21	10.63	4.17	--	6.46	
MW-8	04/18/22	10.63	3.05	--	7.58	
MW-8	09/19/22	10.63	4.13	--	6.50	
MW-9	02/11/02	6.14	2.03	0.02	4.13	
MW-9	05/20/02	6.14	4.16	0.01	1.99	
MW-9	08/27/02	6.14	5.85	0.01	0.30	
MW-9	11/04/02	6.14	4.07	0.01	2.08	
MW-9	02/18/03	6.14	2.35	0.01	3.80	
MW-9	06/09/03	6.14	3.53	--	2.61	
MW-9	09/15/03	9.75	3.99	Sheen	5.76	
MW-9	11/18/03	9.75	2.95	Sheen	6.80	
MW-9	02/24/04	9.75	2.41	Sheen	7.34	
MW-9	05/10/04	9.75	3.36	--	6.39	
MW-9	08/24/04	9.75	3.46	--	6.29	
MW-9	12/13/04	9.75	2.73	--	7.02	
MW-9	03/08/05	9.75	3.24	--	6.51	
MW-9	06/06/05	9.75	3.13	--	6.62	
MW-9	09/19/05	9.75	3.91	--	5.84	
MW-9	12/12/05	9.75	3.27	--	6.48	
MW-9	03/13/06	9.75	2.30	--	7.45	
MW-9	06/05/06	9.75	2.74	--	7.01	
MW-9	09/11/06	9.75	3.85	--	5.90	
MW-9	12/11/06	9.75	2.09	--	7.66	
MW-9	03/26/07	9.75	2.44	--	7.31	
MW-9	06/18/07	9.75	2.44	--	7.31	
MW-9	09/24/07	9.75	3.88	--	5.87	
MW-9	12/10/07	9.75	2.24	Sheen	7.51	
MW-9	03/03/08	9.75	2.82	Sheen	6.93	
MW-9	06/02/08	9.75	3.52	--	6.23	
MW-9	09/04/08	9.75	3.54	--	6.21	
MW-9	12/04/08	9.75	3.34	--	6.41	
MW-9	03/04/09	9.75	2.89	--	6.86	
MW-9	06/01/09	9.75	3.19	--	6.56	
MW-9	09/21/09	9.75	3.76	Sheen	5.99	
MW-9	11/16/09	9.75	2.63	--	7.12	
MW-9	03/08/10	9.75	2.31	Sheen	7.44	
MW-9	06/07/10	9.75	2.72	Sheen	7.03	
MW-9	09/09/10	9.75	3.69	Sheen	6.06	
MW-9	11/15/10	9.75	2.71	Sheen	7.04	
MW-9	03/01/11	9.75	2.39	Sheen	7.36	
MW-9	05/23/11	9.75	2.58	Sheen	7.17	
MW-9	08/29/11	9.75	3.57	--	6.18	
MW-9	12/01/11	9.75	2.90	--	6.85	
MW-9	03/01/12	9.75	2.96	--	6.79	

Appendix D
 Historical Groundwater Elevation Data
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
MW-9	05/30/12	9.75	2.66	--	7.09	
MW-9	08/25/12	9.75	3.28	--	6.47	
MW-9	11/07/12	9.75	2.49	--	7.26	
MW-9	02/27/13	9.75	2.71	--	7.04	
MW-9	04/08/13	9.75	2.02	--	7.73	
MW-9	06/21/13	9.75	3.01	--	6.74	Baseline monitoring event
MW-9	07/29/13	9.75	3.19	--	6.56	
MW-9	08/26/13	9.75	3.11	--	6.64	Two-month monitoring event
MW-9	10/02/13	9.75	2.40	--	7.35	
MW-9	01/21/14	9.75	2.85	--	6.90	
MW-9	04/22/14	9.75	2.07	--	7.68	
MW-9	07/15/14	9.75	3.06	--	6.69	
MW-9	03/17/15	9.75	0.87	--	8.88	
MW-9	09/28/15	9.75	3.20	--	6.55	
MW-9	03/29/16	9.75	1.28	--	8.47	
MW-9	10/11/16	9.75	3.29	--	6.46	
MW-9	03/28/17	9.75	1.09	--	8.66	
MW-9	10/10/17	9.75	3.39	--	6.36	
MW-9	03/28/18	9.75	2.40	--	7.35	
MW-9	10/02/18	9.75	3.49	--	6.26	
MW-9	04/02/19	9.75	2.60	--	7.15	
MW-9	10/01/19	9.75	3.24	--	6.51	
MW-9	03/25/20	9.75	2.36	--	7.39	
MW-9	10/19/20	9.75	3.02	--	6.73	
MW-9	04/12/21	9.75	2.49	--	7.26	
MW-9	10/11/21	9.75	3.33	--	6.42	
MW-9	04/18/22	9.75	2.40	--	7.35	
MW-9	09/19/22	9.75	3.29	--	6.46	
MW-10D	03/27/01	--	--	--	--	Not Measured-Damaged
MW-10D	09/24/07	9.75	3.88	--	5.87	
MW-10D						Destroyed during construction activities in 2000
MW-11D	02/11/02	6.81	3.75	--	3.06	
MW-11D	05/20/02	6.81	5.27	0.02	1.56	
MW-11D	08/27/02	6.81	4.70	0.01	2.12	
MW-11D	11/04/02	6.81	4.93	--	1.88	
MW-11D	02/18/03	6.81	3.59	--	3.22	
MW-11D	06/09/03	6.81	4.55	--	2.26	
MW-11D	09/15/03	10.78	4.91	--	5.87	
MW-11D	11/18/03	10.78	4.28	--	6.50	
MW-11D	02/24/04	10.78	3.71	--	7.07	
MW-11D	05/10/04	10.78	4.35	--	6.43	
MW-11D	08/24/04	10.78	4.13	--	6.65	
MW-11D	12/13/04	10.78	4.26	--	6.52	
MW-11D	03/08/05	10.78	4.58	--	6.20	
MW-11D	06/06/05	10.78	4.43	--	6.35	
MW-11D	09/19/05	10.78	4.89	--	5.89	
MW-11D	12/12/05	10.78	4.64	--	6.14	
MW-11D	03/13/06	10.78	3.84	--	6.94	
MW-11D	06/05/06	10.78	4.31	--	6.47	
MW-11D	09/11/06	10.78	4.91	--	5.87	
MW-11D	12/11/06	10.78	3.63	--	7.15	
MW-12	02/11/02	--	--	--	--	
MW-12						Destroyed during construction activities
MW-12R	02/11/02	11.15	6.12	--	5.03	
MW-12R	05/20/02	11.15	8.36	--	2.79	
MW-12R	08/27/02	11.15	8.19	--	2.96	
MW-12R	11/04/02	11.15	8.56	--	2.59	
MW-12R	02/18/03	11.15	7.85	--	3.30	
MW-12R	06/09/03	11.15	7.67	--	3.48	
MW-12R	09/15/03	15.47	8.45	--	7.02	
MW-12R	11/18/03	15.47	7.87	--	7.60	
MW-12R	02/24/04	15.47	6.98	--	8.49	
MW-12R	05/10/04	15.47	7.79	--	7.68	
MW-12R	08/24/04	15.47	8.11	--	7.36	
MW-12R	12/13/04	15.47	7.54	--	7.93	
MW-12R	03/08/05	15.47	7.93	--	7.54	
MW-12R	06/06/05	15.47	6.41	--	9.06	
MW-12R	09/19/05	15.47	8.41	--	7.06	
MW-12R	12/12/05	15.47	7.92	--	7.55	
MW-12R	03/13/06	15.47	6.85	--	8.62	
MW-12R	06/05/06	15.47	7.43	--	8.04	

Appendix D
 Historical Groundwater Elevation Data
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
MW-12R	09/11/06	15.47	8.39	--	7.08	
MW-12R	12/11/06	15.47	6.95	--	8.52	
MW-12R	03/26/07	15.47	7.02	--	8.45	
MW-12R	06/18/07	15.47	7.84	--	7.63	
MW-12R	09/25/07	15.47	8.38	--	7.09	
MW-12R	12/10/07	15.47	7.02	--	8.45	
MW-12R	03/03/08	15.47	7.11	--	8.36	
MW-12R	06/02/08	15.47	7.98	--	7.49	
MW-12R	09/04/08	15.47	8.13	--	7.34	
MW-12R	12/04/08	15.47	7.98	--	7.49	
MW-12R	03/04/09	15.47	7.54	--	7.93	
MW-12R	06/01/09	15.47	7.71	--	7.76	
MW-12R	09/21/09	15.47	8.39	--	7.08	
MW-12R	11/16/09	15.47	7.40	--	8.07	
MW-12R	03/08/10	15.47	6.86	--	8.61	
MW-12R	06/07/10	15.47	7.23	--	8.24	
MW-12R	09/09/10	15.47	8.22	--	7.25	
MW-12R	11/15/10	15.47	7.40	--	8.07	
MW-12R	03/01/11	15.47	6.76	--	8.71	
MW-12R	05/23/11	15.47	6.87	--	8.60	
MW-12R	08/29/11	15.47	8.07	--	7.40	
MW-12R	12/01/11	15.47	7.51	--	7.96	
MW-12R	03/01/12	15.47	7.31	--	8.16	
MW-12R	05/30/12	15.47	7.30	--	8.17	
MW-12R	08/25/12	15.47	7.89	--	7.58	
MW-12R	11/07/12	15.47	7.34	--	8.13	
MW-12R	02/27/13	15.47	7.02	--	8.45	
MW-12R	04/08/13	15.47	6.88	--	8.59	
MW-12R	07/29/13	15.47	7.84	--	7.63	
MW-12R	10/02/13	15.47	7.42	--	8.05	
MW-12R	01/21/14	15.47	7.70	--	7.77	
MW-12R	04/22/14	15.47	6.90	--	8.57	
MW-12R	07/15/14	15.47	7.73	--	7.74	
MW-12R	03/17/15	15.47	6.49	--	8.98	
MW-12R	09/28/15	15.47	7.96	--	7.51	
MW-12R	03/29/16	15.47	5.98	--	9.49	
MW-12R	10/11/16	15.47	8.04	--	7.43	
MW-12R	03/28/17	15.47	5.81	--	9.66	
MW-12R	10/10/17	15.47	8.05	--	7.42	
MW-12R	03/28/18	15.47	7.00	--	8.47	
MW-12R	10/02/18	15.47	8.22	--	7.25	
MW-12R	04/02/19	15.47	7.30	--	8.17	
MW-12R	10/01/19	15.47	8.00	--	7.47	
MW-12R	03/25/20	15.47	7.08	--	8.39	
MW-12R	10/19/20	15.47	7.74	--	7.73	
MW-12R	04/12/21	15.47	7.06	--	8.41	
MW-12R	10/11/21	15.47	8.10	--	7.37	
MW-12R	04/18/22	15.47	7.02	--	8.45	
MW-12R	09/19/22	15.47	7.95	--	7.52	
MW-13	02/11/02	--	--	--	--	
MW-13						Destroyed during construction activities
MW-13R	02/11/02	10.99	5.95	--	5.04	
MW-13R	05/20/02	10.99	8.08	--	2.91	
MW-13R	08/27/02	10.99	7.93	--	3.06	
MW-13R	11/04/02	10.99	8.30	--	2.69	
MW-13R	02/18/03	10.99	6.55	--	4.44	
MW-13R	06/09/03	10.99	7.37	--	3.62	
MW-13R	09/15/03	15.15	8.19	--	6.96	
MW-13R	11/18/03	15.15	7.56	--	7.59	
MW-13R	02/24/04	15.15	6.50	--	8.65	
MW-13R	05/10/04	15.15	7.45	--	7.70	
MW-13R	08/24/04	15.15	8.13	--	7.02	
MW-13R	12/13/04	15.15	7.10	--	8.05	
MW-13R	03/08/05	15.15	7.62	--	7.53	
MW-13R	06/06/05	15.15	7.37	--	7.78	
MW-13R	09/19/05	15.15	8.22	--	6.93	
MW-13R	12/12/05	15.15	7.61	--	7.54	
MW-13R	03/13/06	15.15	6.50	--	8.65	
MW-13R	06/05/06	15.15	7.03	--	8.12	
MW-13R	09/11/06	15.15	8.13	--	7.02	
MW-13R	12/11/06	15.15	6.60	--	8.55	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
MW-13R	03/26/07	15.15	6.60	--	8.55	
MW-13R	06/18/07	15.15	7.53	--	7.62	
MW-13R	09/25/07	15.15	8.10	--	7.05	
MW-13R	12/10/07	15.15	6.74	--	8.41	
MW-13R	03/03/08	15.15	7.45	--	7.70	
MW-13R	06/02/08	15.15	7.70	--	7.45	
MW-13R	09/04/08	15.15	7.86	--	7.29	
MW-13R	12/04/08	15.15	7.72	--	7.43	
MW-13R	03/04/09	15.15	7.30	--	7.85	
MW-13R	06/01/09	15.15	7.43	--	7.72	
MW-13R	09/21/09	15.15	8.12	--	7.03	
MW-13R	11/16/09	15.15	7.07	--	8.08	
MW-13R	03/08/10	15.15	6.57	--	8.58	
MW-13R	06/07/10	15.15	6.95	--	8.20	
MW-13R	09/09/10	15.15	7.94	--	7.21	
MW-13R	11/15/10	15.15	7.12	--	8.03	
MW-13R	03/01/11	15.15	6.42	--	8.73	
MW-13R	05/23/11	15.15	6.52	--	8.63	
MW-13R	08/29/11	15.15	7.79	--	7.36	
MW-13R	12/01/11	15.15	7.21	--	7.94	
MW-13R	03/01/12	15.15	6.99	--	8.16	
MW-13R	05/25/12	--	--	--	--	
MW-13R					Abandoned on 5/25/2012	
MW-14	02/11/02	7.55	1.65	--	5.90	
MW-14	05/20/02	7.55	4.46	--	3.09	
MW-14	08/27/02	7.55	4.58	--	2.97	
MW-14	11/04/02	7.55	5.95	--	1.60	
MW-14	02/18/03	7.55	2.60	--	4.95	
MW-14	06/09/03	7.55	3.86	--	3.69	
MW-14	09/15/03	11.44	5.11	--	6.33	
MW-14	11/18/03	11.44	3.30	--	8.14	
MW-14	02/24/04	11.44	2.55	--	8.89	
MW-14	05/10/04	11.44	3.92	--	7.52	
MW-14	08/24/04	11.44	4.23	--	7.21	
MW-14	12/13/04	11.44	3.28	--	8.16	
MW-14	03/08/05	11.44	3.71	--	7.73	
MW-14	06/06/05	11.44	3.37	--	8.07	
MW-14	09/19/05	11.44	4.79	--	6.65	
MW-14	12/12/05	11.44	3.72	--	7.72	
MW-14	03/13/06	11.44	2.40	--	9.04	
MW-14	06/05/06	11.44	3.07	--	8.37	
MW-14	09/11/06	11.44	4.90	--	6.54	
MW-14	12/11/06	11.44	2.02	--	9.42	
MW-14	03/26/07	11.44	2.61	--	8.83	
MW-14	06/18/07	11.44	3.91	--	7.53	
MW-14	09/24/07	11.44	4.64	--	6.80	
MW-14	12/10/07	11.44	2.44	--	9.00	
MW-14	03/03/08	11.44	3.19	--	8.25	
MW-14	06/02/08	11.44	3.82	--	7.62	
MW-14	09/04/08	11.44	4.22	--	7.22	
MW-14	12/04/08	11.44	4.04	--	7.40	
MW-14	03/04/09	11.44	3.37	--	8.07	
MW-14	06/01/09	11.44	3.61	--	7.83	
MW-14	09/21/09	11.44	4.59	--	6.85	
MW-14	11/16/09	11.44	2.82	--	8.62	
MW-14	03/08/10	11.44	2.48	--	8.96	
MW-14	06/07/10	11.44	2.99	--	8.45	
MW-14	09/09/10	11.44	4.33	--	7.11	
MW-14	11/15/10	11.44	3.01	--	8.43	
MW-14	03/01/11	11.44	2.03	--	9.41	
MW-14	05/23/11	11.44	2.36	--	9.08	
MW-14	08/29/11	11.44	4.20	--	7.24	
MW-14	12/01/11	11.44	3.17	--	8.27	
MW-14	03/01/12	11.44	3.05	--	8.39	
MW-14	05/30/12	11.44	3.09	--	8.35	
MW-14	08/25/12	11.44	4.04	--	7.40	
MW-14	11/07/12	11.44	2.92	--	8.52	
MW-14	02/27/13	11.44	2.66	--	8.78	
MW-14	04/08/13	11.44	2.18	--	9.26	
MW-14	07/29/13	11.44	3.90	--	7.54	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
MW-14	10/02/13	11.44	3.08	--	8.36	
MW-14	01/21/14	11.44	5.59	--	5.85	
MW-14	04/22/14	11.44	2.19	--	9.25	
MW-14	07/15/14	11.44	3.71	--	7.73	
MW-14	03/17/15	11.44	1.47	--	9.97	
MW-14	09/28/15	11.44	4.06	--	7.38	
MW-14	03/29/16	11.44	1.67	--	9.77	
MW-14	10/11/16	11.44	4.01	--	7.43	
MW-14	03/28/17	11.44	1.42	--	10.02	
MW-14	10/10/17	11.44	4.01	--	7.43	No LNAPL/sheen
MW-14	03/28/18	11.44	2.69	--	8.75	
MW-14	10/02/18	11.44	4.36	--	7.08	
MW-14	04/02/19	11.44	3.11	--	8.33	
MW-14	10/01/19	11.44	3.98	--	7.46	
MW-14	03/25/20	11.44	2.56	--	8.88	
MW-14	10/19/20	11.44	3.65	--	7.79	
MW-14	04/12/21	11.44	2.75	--	8.69	
MW-14	10/11/21	11.44	4.10	--	7.34	
MW-14	04/18/22	11.44	2.65	--	8.79	
MW-14	09/19/22	11.44	4.10	--	7.34	
MW-15	02/11/02	9.03	3.94	--	5.09	
MW-15	05/20/02	9.03	6.18	--	2.85	
MW-15	08/27/02	9.03	6.10	--	2.93	
MW-15	11/04/02	9.03	6.48	--	2.55	
MW-15	02/18/03	9.03	4.50	--	4.53	
MW-15	06/09/03	9.03	5.49	--	3.54	
MW-15	09/15/03	12.86	6.35	--	6.51	
MW-15	11/18/03	12.86	5.49	--	7.37	
MW-15	02/24/04	12.86	4.67	--	8.19	
MW-15	05/10/04	12.86	5.56	Sheen	7.30	
MW-15	08/24/04	12.86	6.10	--	6.76	
MW-15	12/13/04	12.86	4.34	--	8.52	
MW-15	03/08/05	12.86	5.58	--	7.28	
MW-15	06/06/05	12.86	5.42	--	7.44	
MW-15	09/19/05	12.86	6.34	--	6.52	
MW-15	12/12/05	12.86	5.63	--	7.23	
MW-15	03/13/06	12.86	4.33	--	8.53	
MW-15	06/05/06	12.86	5.15	--	7.71	
MW-15	09/11/06	12.86	6.30	--	6.56	
MW-15	12/11/06	12.86	4.43	--	8.43	
MW-15	03/26/07	12.86	4.60	--	8.26	
MW-15	06/18/07	12.86	5.61	--	7.25	
MW-15	06/02/08	12.86	5.80	--	7.06	
MW-15	09/04/08	12.86	6.02	--	6.84	
MW-15	12/04/08	12.86	5.82	--	7.04	
MW-16	02/11/02	11.19	6.19	--	5.00	
MW-16	05/20/02	11.19	8.23	--	2.96	
MW-16	08/27/02	11.19	8.32	--	2.87	
MW-16	11/04/02	11.19	8.72	--	2.47	
MW-16	02/18/03	11.19	7.65	--	3.54	
MW-16	06/09/03	11.19	7.46	--	3.73	
MW-16	09/15/03	15.23	8.55	--	6.68	
MW-16	11/18/03	15.23	7.69	--	7.54	
MW-16	02/24/04	15.23	6.40	--	8.83	
MW-16	05/10/04	15.23	7.60	--	7.63	
MW-16	08/24/04	15.23	8.21	--	7.02	
MW-16	12/13/04	15.23	7.80	--	7.43	
MW-16	03/08/05	15.23	7.55	--	7.68	
MW-16	06/06/05	15.23	7.38	--	7.85	
MW-16	09/19/05	15.23	8.40	--	6.83	
MW-16	12/12/05	15.23	7.69	--	7.54	
MW-16	03/13/06	15.23	6.16	--	9.07	
MW-16	06/05/06	15.23	7.22	--	8.01	
MW-16	09/11/06	15.23	8.32	--	6.91	
MW-16	12/11/06	15.23	6.40	--	8.83	
MW-16	03/26/07	15.23	6.53	--	8.70	
MW-16	06/18/07	15.23	7.60	--	7.63	
MW-16	09/24/07	15.23	8.36	--	6.87	
MW-16	12/10/07	15.23	6.85	--	8.38	
MW-16	03/03/08	15.23	6.95	--	8.28	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
MW-16	06/02/08	15.23	7.62	--	7.61	
MW-16	09/04/08	15.23	8.07	--	7.16	
MW-16	12/04/08	15.23	7.82	--	7.41	
MW-16	03/04/09	15.23	7.47	--	7.76	
MW-16	06/01/09	15.23	7.37	--	7.86	
MW-16	09/21/09	15.23	8.33	--	6.90	
MW-16	11/16/09	15.23	7.30	--	7.93	
MW-16	03/08/10	15.23	6.34	--	8.89	
MW-16	06/07/10	15.23	6.87	--	8.36	
MW-16	09/09/10	15.23	8.04	--	7.19	
MW-16	11/15/10	15.23	7.14	--	8.09	
MW-16	03/01/11	15.23	6.12	--	9.11	
MW-16	05/23/11	15.23	6.22	--	9.01	
MW-16	08/29/11	15.23	7.97	--	7.26	
MW-16	12/01/11	15.23	7.45	--	7.78	
MW-16	03/01/12	15.23	6.81	--	8.42	
MW-16	05/30/12	15.23	6.71	--	8.52	
MW-16	08/25/12	15.23	7.57	--	7.66	
MW-16	11/07/12	15.23	7.20	--	8.03	
MW-16	02/27/13	15.23	6.18	--	9.05	
MW-16	04/08/13	15.23	6.28	--	8.95	
MW-16	07/29/13	15.23	7.31	--	7.92	
MW-16	10/02/13	15.23	7.21	--	8.02	
MW-16	01/21/14	15.23	7.19	--	8.04	
MW-16	04/22/14	15.23	6.12	--	9.11	
MW-16	07/15/14	15.23	7.22	--	8.01	
MW-16	03/17/15	15.23	5.78	--	9.45	
MW-16	09/28/15	15.23	7.71	--	7.52	
MW-16	03/29/16	15.23	5.02	--	10.21	
MW-16	10/11/16	15.23	8.06	--	7.17	
MW-16	03/28/17	15.23	4.66	--	10.57	
MW-16	10/10/17	15.23	7.89	--	7.34	
MW-16	03/28/18	15.23	6.28	--	8.95	
MW-16	10/02/18	15.23	8.06	--	7.17	
MW-16	04/02/19	15.23	6.60	--	8.63	
MW-16	10/01/19	15.23	7.87	--	7.36	
MW-16	03/25/20	15.23	6.22	--	9.01	
MW-16	10/19/20	15.23	7.56	--	7.67	
MW-16	04/12/21	15.23	6.27	--	8.96	
MW-16	10/11/21	15.23	--	--	--	
MW-16	04/18/22	15.23	6.14	--	9.09	
MW-16	09/19/22	15.23	7.63	--	7.60	
MW-17	02/11/02	11.43	6.13	--	5.30	
MW-17	05/20/02	11.43	8.38	--	3.05	
MW-17	08/27/02	11.43	8.50	--	2.93	
MW-17	11/04/02	11.43	8.91	--	2.52	
MW-17	02/18/03	11.43	6.70	--	4.73	
MW-17	06/09/03	11.43	7.71	--	3.72	
MW-17	09/15/03	15.38	8.71	--	6.67	
MW-17	11/18/03	15.38	11.83	--	3.55	
MW-17	02/24/04	15.38	7.20	--	8.18	
MW-17	05/10/04	15.38	7.77	--	7.61	
MW-17	08/24/04	15.38	8.36	--	7.02	
MW-17	12/13/04	15.38	7.85	--	7.53	
MW-17	03/08/05	15.38	7.65	--	7.73	
MW-17	06/06/05	15.38	7.55	--	7.83	
MW-17	09/19/05	15.38	8.56	--	6.82	
MW-17	12/12/05	15.38	7.85	--	7.53	
MW-17	03/13/06	15.38	6.30	--	9.08	
MW-17	06/05/06	15.38	7.44	--	7.94	
MW-17	09/11/06	15.38	8.52	--	6.86	
MW-17	12/11/06	15.38	6.49	--	8.89	
MW-17	05/23/11	15.38	6.30	--	9.08	
MW-17	08/29/11	15.38	6.30	--	9.08	
MW-18	02/11/02	11.29	5.97	--	5.32	
MW-18	05/20/02	11.29	8.20	--	3.09	
MW-18	08/27/02	11.29	7.34	--	3.95	
MW-18	11/04/02	11.29	8.73	--	2.56	
MW-18	02/18/03	11.29	6.45	--	4.84	
MW-18	06/09/03	11.29	7.59	--	3.70	

Appendix D
 Historical Groundwater Elevation Data
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
MW-18	09/15/03	15.49	8.65	--	6.84	
MW-18	11/18/03	15.49	7.68	--	7.81	
MW-18	02/24/04	15.49	6.38	--	9.11	
MW-18	05/10/04	15.49	7.65	--	7.84	
MW-18	08/24/04	15.49	8.17	--	7.32	
MW-18	12/13/04	15.49	7.61	--	7.88	
MW-18	03/08/05	15.49	7.47	--	8.02	
MW-18	06/06/05	15.49	7.41	--	8.08	
MW-18	09/19/05	15.49	8.43	--	7.06	
MW-18	12/12/05	15.49	7.70	--	7.79	
MW-18	03/13/06	15.49	6.23	--	9.26	
MW-18	06/05/06	15.49	7.31	--	8.18	
MW-18	09/11/06	15.49	8.34	--	7.15	
MW-18	12/11/06	15.49	6.34	--	9.15	
MW-18	03/26/07	15.49	6.59	--	8.90	
MW-18	06/18/07	15.49	7.66	--	7.83	
MW-18	09/24/07	15.49	8.40	--	7.09	
MW-18	12/10/07	15.49	6.68	--	8.81	
MW-18	03/03/08	15.49	6.98	--	8.51	
MW-18	06/02/08	15.49	7.70	--	7.79	
MW-18	09/04/08	15.49	8.11	--	7.38	
MW-18	12/04/08	15.49	7.84	--	7.65	
MW-18	03/04/09	15.49	7.34	--	8.15	
MW-18	06/01/09	15.49	7.36	--	8.13	
MW-18	09/21/09	15.49	8.40	--	7.09	
MW-18	11/16/09	15.49	7.18	--	8.31	
MW-18	03/08/10	15.49	6.23	--	9.26	
MW-18	06/07/10	15.49	6.89	--	8.60	
MW-18	09/09/10	15.49	8.11	--	7.38	
MW-18	11/15/10	15.49	7.12	--	8.37	
MW-18	03/01/11	15.49	6.11	--	9.38	
MW-18	05/23/11	15.49	6.25	--	9.24	
MW-18	08/29/11	15.49	7.87	--	7.62	
MW-18	12/01/11	15.49	7.38	--	8.11	
MW-18	03/01/12	15.49	6.88	--	8.61	
MW-18	05/30/12	15.49	6.75	--	8.74	
MW-18	08/25/12	15.49	--	--	--	Inaccessible due to truck parked on top
MW-18	11/07/12	15.49	7.21	--	8.28	
MW-18	02/27/13	15.49	6.43	--	9.06	
MW-18	04/08/13	15.49	6.39	--	9.10	
MW-18	07/29/13	15.49	7.63	--	7.86	
MW-18	10/02/13	15.49	7.39	--	8.10	
MW-18	01/21/14	15.49	7.35	--	8.14	
MW-18	04/22/14	15.49	0.20	--	15.29	
MW-18	07/15/14	15.49	7.31	--	8.18	
MW-18	03/17/15	15.49	5.62	--	9.87	
MW-18	09/28/15	15.49	7.84	--	7.65	
MW-18	03/29/16	15.49	5.06	--	10.43	
MW-18	10/11/16	15.49	8.14	--	7.35	
MW-18	03/28/17	15.49	4.49	--	11.00	
MW-18	10/10/17	15.49	7.99	--	7.50	
MW-18	03/28/18	15.49	6.33	--	9.16	
MW-18	10/02/18	15.49	8.17	--	7.32	
MW-18	04/02/19	15.49	6.67	--	8.82	
MW-18	10/01/19	15.49	7.97	--	7.52	
MW-18	03/25/20	15.49	6.33	--	9.16	
MW-18	10/19/20	15.49	7.52	--	7.97	
MW-18	04/12/21	15.49	6.31	--	9.18	
MW-18	10/11/21	15.49	7.99	--	7.50	
MW-18	04/18/22	15.49	6.13	--	9.36	
MW-18	09/19/22	15.49	7.67	--	7.82	
MW-19	02/11/02	7.16	1.63	--	5.53	
MW-19	05/20/02	7.16	4.08	Sheen	3.08	
MW-19	08/27/02	7.16	4.25	--	2.91	
MW-19	11/04/02	7.16	4.65	--	2.51	
MW-19	02/18/03	7.16	2.14	--	5.02	
MW-19	06/09/03	7.16	3.45	--	3.71	
MW-19	09/15/03	11.39	4.50	--	6.89	
MW-19	11/18/03	11.39	2.51	--	8.88	
MW-19	02/24/04	11.39	2.36	--	9.03	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
MW-19	05/10/04	11.39	3.41	--	7.98	
MW-19	08/24/04	11.39	8.13	--	3.26	
MW-19	12/13/04	11.39	2.98	--	8.41	
MW-19	03/08/05	11.39	3.40	--	7.99	
MW-19	06/06/05	11.39	3.24	--	8.15	
MW-19	09/19/05	11.39	--	--	--	Not Measured-Inaccessible, under pipe stockpile
MW-19	12/12/05	11.39	--	--	--	Not Measured-Inaccessible, under pipe stockpile
MW-19	03/13/06	11.39	--	--	--	Not Measured-Inaccessible, under pipe stockpile
MW-19	06/05/06	11.39	2.91	--	8.48	
MW-19	09/11/06	11.39	4.72	--	6.67	
MW-19	12/11/06	11.39	2.00	--	9.39	
MW-19	03/26/07	11.39	2.22	--	9.17	
MW-19	06/18/07	11.39	3.56	--	7.83	
MW-19	09/24/07	11.39	4.31	--	7.08	
MW-19	12/10/07	11.39	2.38	--	9.01	
MW-19	03/03/08	11.39	2.98	--	8.41	
MW-19	06/02/08	11.39	3.67	--	7.72	
MW-19	09/04/08	11.39	3.98	--	7.41	
MW-19	12/04/08	11.39	3.68	--	7.71	
MW-19	03/04/09	11.39	3.03	--	8.36	
MW-19	06/01/09	11.39	3.23	--	8.16	
MW-19	09/21/09	11.39	4.23	--	7.16	
MW-19	11/16/09	11.39	2.85	--	8.54	
MW-19	03/08/10	11.39	2.25	--	9.14	
MW-19	06/07/10	11.39	2.67	--	8.72	
MW-19	09/09/10	11.39	3.97	--	7.42	
MW-19	11/15/10	11.39	2.75	--	8.64	
MW-19	03/01/11	11.39	1.82	--	9.57	
MW-19	05/23/11	11.39	2.02	--	9.37	
MW-19	08/29/11	11.39	3.77	--	7.62	
MW-19	12/01/11	11.39	3.03	--	8.36	
MW-19	03/01/12	11.39	2.82	--	8.57	
MW-19	05/30/12	11.39	2.79	--	8.60	
MW-19	08/25/12	11.39	3.62	--	7.77	
MW-19	11/07/12	11.39	2.77	--	8.62	
MW-19	02/27/13	11.39	2.18	--	9.21	
MW-19	04/08/13	11.39	1.82	--	9.57	
MW-19	06/21/13	11.39	3.05	--	8.34	Baseline monitoring event
MW-19	07/29/13	11.39	3.56	--	7.83	
MW-19	08/26/13	11.39	3.45	--	7.94	Two-month monitoring event
MW-19	10/02/13	11.39	2.72	--	8.67	
MW-19	01/21/14	11.39	3.12	--	8.27	
MW-19	04/22/14	11.39	1.81	--	9.58	
MW-19	07/15/14	11.39	3.30	--	8.09	
MW-19	03/17/15	11.39	1.11	--	10.28	
MW-19	09/28/15	11.39	3.69	--	7.70	
MW-19	03/29/16	11.39	1.18	--	10.21	
MW-19	10/11/16	11.39	3.59	--	7.80	
MW-19	03/28/17	11.39	0.65	--	10.74	
MW-19	10/10/17	11.39	3.69	--	7.70	
MW-19	03/28/18	11.39	2.22	--	9.17	
MW-19	10/02/18	11.39	3.81	--	7.58	
MW-19	04/02/19	11.39	2.59	--	8.80	
MW-19	10/01/19	11.39	3.54	--	7.85	
MW-19	03/25/20	11.39	2.11	--	9.28	
MW-19	10/19/20	11.39	3.32	--	8.07	
MW-19	04/12/21	11.39	2.24	--	9.15	
MW-19	10/11/21	11.39	3.65	--	7.74	
MW-19	04/18/22	11.39	2.15	--	9.24	
MW-19	09/19/22	11.39	3.63	--	7.76	
MW-20	02/11/02	7.37	1.73	--	5.64	
MW-20	05/20/02	7.37	4.25	--	3.12	
MW-20	08/27/02	7.37	4.31	--	3.06	
MW-20	11/04/02	7.37	4.04	--	3.33	
MW-20	02/18/03	7.37	--	--	--	Not Measured-Overflowed when well cap removed
MW-20	06/09/03	7.37	--	--	--	Not Measured-Overflowed when well cap removed
MW-20	09/15/03	11.72	--	--	--	Not Measured-Overflowed when well cap removed
MW-20	11/18/03	11.72	--	--	--	Not Measured-Overflowed when well cap removed
MW-20	02/24/04	11.72	--	--	--	Not Measured-Overflowed when well cap removed
MW-20	05/10/04	11.72	--	--	--	Not Measured-Overflowed when well cap removed

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
MW-20	08/24/04	11.72	4.04	--	7.68	
MW-20	12/13/04	11.72	2.29	--	9.43	
MW-20	03/08/05	11.72	3.64	--	8.08	
MW-20	06/06/05	11.72	3.43	--	8.29	
MW-20	09/19/05	11.72	4.55	--	7.17	
MW-20	12/12/05	11.72	3.67	--	8.05	
MW-20	03/13/06	11.72	2.21	--	9.51	
MW-20	06/05/06	11.72	3.00	--	8.72	
MW-20	09/11/06	11.72	4.49	--	7.23	
MW-20	12/11/06	11.72	2.36	--	9.36	
MW-20	03/26/07	11.72	2.49	--	9.23	
MW-20	06/18/07	11.72	4.44	--	7.28	
MW-20	09/24/07	11.72	4.61	--	7.11	
MW-20	12/10/07	11.72	2.56	--	9.16	
MW-20	03/03/08	11.72	2.97	--	8.75	
MW-20	06/02/08	11.72	3.90	--	7.82	
MW-20	09/04/08	11.72	4.14	--	7.58	
MW-20	12/04/08	11.72	3.89	--	7.83	
MW-20	03/04/09	11.72	4.99	--	6.73	
MW-20	06/01/09	11.72	3.46	--	8.26	
MW-20	09/21/09	11.72	4.42	--	7.30	
MW-20	11/16/09	11.72	2.91	--	8.81	
MW-20	03/08/10	11.72	2.40	--	9.32	
MW-20	06/07/10	11.72	2.76	--	8.96	
MW-20	09/09/10	11.72	4.22	--	7.50	
MW-20	11/15/10	11.72	3.03	--	8.69	
MW-20	03/01/11	11.72	2.18	--	9.54	
MW-20	05/23/11	11.72	2.11	--	9.61	
MW-20	08/29/11	11.72	4.05	--	7.67	
MW-20	12/01/11	11.72	3.08	--	8.64	
MW-20	03/01/12	11.72	3.09	--	8.63	
MW-20	05/30/12	11.72	2.89	--	8.83	
MW-20	08/25/12	11.72	3.88	--	7.84	
MW-20	11/07/12	11.72	2.98	--	8.74	
MW-20	02/27/13	11.72	2.60	--	9.12	
MW-20	04/08/13	11.72	2.23	--	9.49	
MW-20	07/29/13	11.72	4.93	--	6.79	
MW-20	10/02/13	11.72	4.64	--	7.08	
MW-20	01/21/14	11.72	3.44	--	8.28	
MW-20	04/22/14	11.72	2.33	--	9.39	
MW-20	07/15/14	11.72	3.51	--	8.21	
MW-20	03/17/15	11.72	1.49	--	10.23	
MW-20	09/28/15	11.72	3.95	--	7.77	
MW-20	03/29/16	11.72	1.65	--	10.07	
MW-20	10/11/16	11.72	3.87	--	7.85	
MW-20	03/28/17	11.72	0.98	--	10.74	
MW-20	10/10/17	11.72	4.03	--	7.69	
MW-20	03/28/18	11.72	2.69	--	9.03	
MW-20	10/02/18	11.72	4.25	--	7.47	
MW-20	04/02/19	11.72	3.25	--	8.47	
MW-20	10/01/19	11.72	3.97	--	7.75	
MW-20	03/25/20	11.72	2.75	--	8.97	
MW-20	10/19/20	11.72	3.50	--	8.22	
MW-20	04/12/21	11.72	2.65	--	9.07	
MW-20	10/11/21	11.72	4.01	--	7.71	
MW-20	04/18/22	11.72	2.61	--	9.11	
MW-20	09/19/22	11.72	5.97	--	5.75	
MW-21	02/11/02	10.53	3.80	0.46	7.10	
MW-21	05/20/02	10.53	5.98	0.43	4.89	
MW-21	08/27/02	10.53	3.95	0.43	6.92	
MW-21	11/04/02	10.53	4.95	0.01	5.59	Product recovery pump in well
MW-21	02/18/03	10.53	3.59	0.01	6.95	Product recovery pump in well
MW-21	06/09/03	10.53	3.53	Sheen	7.00	Product recovery pump in well
MW-21	09/15/03	9.41	3.98	0.01	5.44	Product recovery pump in well
MW-21	11/18/03	9.41	3.08	Sheen	6.33	Product recovery pump in well
MW-21	02/24/04	9.41	2.47	Sheen	6.94	Product recovery pump in well
MW-21	05/10/04	9.41	3.65	Sheen	5.76	Product recovery pump in well
MW-21	08/24/04	9.41	3.81	Sheen	5.60	Product recovery pump in well
MW-21	12/13/04	9.41	3.24	Sheen	6.17	
MW-21	03/08/05	9.41	3.72	--	5.69	

Appendix D
 Historical Groundwater Elevation Data
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
MW-21	06/06/05	9.41	3.58	Sheen	5.83	
MW-21	09/19/05	9.41	4.19	--	5.22	
MW-21	12/12/05	9.41	4.04	--	5.37	
MW-21	03/13/06	9.41	2.48	--	6.93	
MW-21	06/05/06	9.41	3.27	--	6.14	
MW-21	09/11/06	9.41	3.90	0.08	5.57	
MW-21	12/11/06	9.41	2.34	0.04	7.10	
MW-21	03/26/07	9.41	2.87	--	6.54	
MW-21	06/18/07	9.41	3.75	--	5.66	
MW-21	09/24/07	9.41	3.81	Sheen	5.60	
MW-21	12/10/07	9.41	2.14	--	7.27	
MW-21	03/03/08	9.41	3.18	--	6.23	
MW-21	06/02/08	9.41	3.63	Sheen	5.78	
MW-21	09/04/08	9.41	3.60	--	5.81	
MW-21	12/04/08	9.41	3.48	Sheen	5.93	
MW-21	03/04/09	9.41	2.84	Sheen	6.57	
MW-21	06/01/09	9.41	3.34	--	6.07	
MW-21	09/21/09	9.41	3.74	Sheen	5.67	
MW-21	11/16/09	9.41	2.59	--	6.82	
MW-21	03/08/10	9.41	2.23	--	7.18	
MW-21	06/07/10	9.41	--	--	--	Not Measured
MW-21	09/09/10	9.41	3.66	--	5.75	
MW-21	11/15/10	9.41	2.79	--	6.62	
MW-21	03/01/11	9.41	2.21	--	7.20	
MW-21	05/23/11	9.41	2.47	--	6.94	
MW-21	08/29/11	9.41	3.53	--	5.88	
MW-21	12/01/11	9.41	2.77	Sheen	6.64	
MW-21	03/01/12	9.41	2.27	Sheen	7.14	
MW-21	05/30/12	9.41	2.86	--	6.55	
MW-21	08/25/12	9.41	3.20	--	6.21	
MW-21	11/07/12	9.41	2.53	--	6.88	
MW-21	02/27/13	9.41	2.61	--	6.80	
MW-21	04/08/13	9.41	1.99	--	7.42	
MW-21	07/29/13	9.41	3.31	--	6.10	
MW-21	10/02/13	9.41	2.49	--	6.92	
MW-21	01/21/14	9.41	3.02	--	6.39	
MW-21	04/22/14	9.41	2.37	--	7.04	
MW-21	07/15/14	9.41	3.12	--	6.29	
MW-21	03/17/15	9.41	1.74	--	7.67	
MW-21	09/28/15	9.41	3.23	--	6.18	
MW-21	03/29/16	9.41	1.62	--	7.79	
MW-21	10/11/16	9.41	3.00	--	6.41	
MW-21	03/28/17	9.41	1.28	--	8.13	
MW-21	10/10/17	9.41	3.41	--	6.00	
MW-21	03/28/18	9.41	2.49	--	6.92	
MW-21	10/02/18	9.41	3.41	--	6.00	
MW-21	04/02/19	9.41	2.65	--	6.76	
MW-21	10/01/19	9.41	3.25	--	6.16	
MW-21	03/25/20	9.41	2.55	--	6.86	
MW-21	10/19/20	9.41	2.99	--	6.42	
MW-21	04/12/21	9.41	2.58	--	6.83	
MW-21	10/11/21	9.41	3.34	--	6.07	
MW-21	04/18/22	9.41	2.55	--	6.86	
MW-21	09/19/22	9.41	3.19	--	6.22	
MW-22	02/11/02	12.39	7.18	--	5.21	
MW-22	05/20/02	12.39	9.44	--	2.95	
MW-22	08/27/02	12.39	9.55	--	2.84	
MW-22	11/04/02	12.39	9.91	--	2.48	
MW-22	02/18/03	12.39	7.75	--	4.64	
MW-22	06/09/03	12.39	8.71	--	3.68	
MW-22	09/15/03	16.32	9.75	--	6.57	
MW-22	11/18/03	16.32	8.55	--	7.77	
MW-22	02/24/04	16.32	7.56	--	8.76	
MW-22	05/10/04	16.32	8.76	--	7.56	
MW-22	08/24/04	16.32	9.25	--	7.07	
MW-22	12/13/04	16.32	8.70	--	7.62	
MW-22	03/08/05	16.32	8.72	--	7.60	
MW-22	06/06/05	16.32	8.58	--	7.74	
MW-22	09/19/05	16.32	9.61	--	6.71	
MW-22	12/12/05	16.32	8.90	--	7.42	

Appendix D
 Historical Groundwater Elevation Data
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
MW-22	03/13/06	16.32	4.37	--	11.95	
MW-22	06/05/06	16.32	8.31	--	8.01	
MW-22	09/11/06	16.32	9.54	--	6.78	
MW-22	12/11/06	16.32	7.44	--	8.88	
MW-22	03/26/07	16.32	7.68	--	8.64	
MW-22	06/18/07	16.32	8.78	--	7.54	
MW-22	09/24/07	16.32	9.55	--	6.77	
MW-22	12/10/07	16.32	7.84	--	8.48	
MW-22	03/03/08	16.32	8.12	--	8.20	
MW-22	06/02/08	16.32	8.85	--	7.47	
MW-22	09/04/08	16.32	9.22	--	7.10	
MW-22	12/04/08	16.32	9.00	--	7.32	
MW-22	03/04/09	16.32	8.43	--	7.89	
MW-22	06/01/09	16.32	8.56	--	7.76	
MW-22	09/21/09	16.32	9.51	--	6.81	
MW-22	11/16/09	16.32	8.31	--	8.01	
MW-22	03/08/10	16.32	7.40	--	8.92	
MW-22	06/07/10	16.32	8.00	--	8.32	
MW-22	09/09/10	16.32	9.22	--	7.10	
MW-22	11/15/10	16.32	8.20	--	8.12	
MW-22	03/01/11	16.32	7.18	--	9.14	
MW-22	05/23/11	16.32	7.35	--	8.97	
MW-22	08/29/11	16.32	9.01	--	7.31	
MW-22	12/01/11	16.32	8.48	--	7.84	
MW-22	03/01/12	16.32	7.98	--	8.34	
MW-22	05/30/12	16.32	7.92	--	8.40	
MW-22	08/25/12	16.32	8.79	--	7.53	
MW-22	11/07/12	16.32	8.24	--	8.08	
MW-22	02/27/13	16.32	7.42	--	8.90	
MW-22	04/08/13	16.32	7.28	--	9.04	
MW-22	07/29/13	16.32	8.59	--	7.73	
MW-22	10/02/13	16.32	8.29	--	8.03	
MW-22	01/21/14	16.32	8.39	--	7.93	
MW-22	04/22/14	16.32	7.22	--	9.10	
MW-22	07/15/14	16.32	8.45	--	7.87	
MW-22	03/17/15	16.32	6.65	--	9.67	
MW-22	09/28/15	16.32	8.88	--	7.44	
MW-22	03/29/16	16.32	6.41	--	9.91	
MW-22	10/12/16	16.32	9.04	--	7.28	Re-gauged on 10/12/16
MW-22	03/28/17	16.32	5.87	--	10.45	
MW-22	10/10/17	16.32	9.05	--	7.27	
MW-22	03/28/18	16.32	7.46	--	8.86	
MW-22	10/02/18	16.32	9.22	--	7.10	
MW-22	04/02/19	16.32	7.81	--	8.51	
MW-22	10/01/19	16.32	8.98	--	7.34	
MW-22	03/25/20	16.32	7.41	--	8.91	
MW-22	10/19/20	16.32	8.68	--	7.64	
MW-22	04/12/21	16.32	7.49	--	8.83	
MW-22	10/11/21	16.32	9.02	--	7.30	
MW-22	04/18/22	16.32	7.36	--	8.96	
MW-22	09/19/22	16.32	8.83	--	7.49	
MW-23	11/18/03	14.15	7.66	Sheen	6.49	
MW-23	02/24/04	14.15	7.18	Sheen	6.97	
MW-23	05/10/04	14.15	7.89	<0.01	6.26	
MW-23	08/24/04	14.15	8.89	--	5.26	
MW-23	12/13/04	14.15	7.49	Sheen	6.66	
MW-23	03/08/05	14.15	7.57	Sheen	6.58	
MW-23	06/06/05	14.15	7.72	Sheen	6.43	
MW-23	09/19/05	14.15	8.17	0.17	6.12	
MW-23	10/12/05	14.15	8.10	Sheen	6.05	
MW-23	12/12/05	14.15	7.93	--	6.22	
MW-23	03/13/06	14.15	7.17	--	6.98	
MW-23	06/05/06	14.15	7.62	--	6.53	
MW-23	09/11/06	14.15	8.22	0.02	5.95	
MW-23	12/11/06	14.15	7.17	--	6.98	
MW-23	03/26/07	14.15	7.41	--	6.74	
MW-23	06/18/07	14.15	7.90	--	6.25	
MW-23	09/25/07	14.15	8.14	Sheen	6.01	
MW-23	12/10/07	14.15	7.38	Sheen	6.77	
MW-23	03/03/08	14.15	7.49	Sheen	6.66	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
MW-23	06/02/08	14.15	8.71	Sheen	5.44	
MW-23	09/04/08	14.15	8.04	--	6.11	
MW-23	12/04/08	14.15	8.05	--	6.10	
MW-23	03/04/09	14.15	7.48	--	6.67	
MW-23	06/01/09	14.15	7.98	--	6.17	
MW-23	09/21/09	14.15	8.13	--	6.02	
MW-23	11/16/09	14.15	7.50	Sheen	6.65	
MW-23	03/08/10	14.15	7.01	--	7.14	
MW-23	06/07/10	14.15	7.49	Sheen	6.66	
MW-23	09/09/10	14.15	8.02	Sheen	6.13	
MW-23	11/15/10	14.15	7.60	--	6.55	
MW-23	03/01/11	14.15	7.26	Sheen	6.89	
MW-23	05/23/11	14.15	7.38	Sheen	6.77	
MW-23	08/29/11	14.15	7.91	Sheen	6.24	
MW-23	12/01/11	14.15	7.58	--	6.57	
MW-23	03/01/12	14.15	7.35	--	6.80	
MW-23	05/30/12	14.15	7.29	--	6.86	
MW-23	08/25/12	14.15	7.41	--	6.74	
MW-23	11/07/12	14.15	7.19	--	6.96	
MW-23	02/27/13	14.15	7.23	--	6.92	
MW-23	04/08/13	14.15	7.15	--	7.00	
MW-23	07/29/13	14.15	7.47	--	6.68	
MW-23	10/02/13	14.15	7.34	--	6.81	
MW-23	01/21/14	14.15	7.72	--	6.43	
MW-23	04/22/14	14.15	7.25	--	6.90	
MW-23	07/15/14	14.15	7.60	--	6.55	
MW-23	03/17/15	14.15	7.11	--	7.04	
MW-23	09/29/15	14.15	7.65	--	6.50	
MW-23	03/29/16	14.15	6.69	--	7.46	
MW-23	10/11/16	14.15	7.88	--	6.27	
MW-23	03/28/17	14.15	6.80	--	7.35	
MW-23	10/10/17	14.15	7.89	--	6.26	
MW-23	03/28/18	14.15	7.29	--	6.86	
MW-23	10/02/18	14.15	7.81	--	6.34	
MW-23	04/02/19	14.15	7.25	--	6.90	
MW-23	10/01/19	14.15	7.75	--	6.40	
MW-23	03/25/20	14.15	7.29	--	6.86	
MW-23	10/19/20	14.15	7.66	--	6.49	
MW-23	04/12/21	14.15	7.41	--	6.74	
MW-23	10/11/21	14.15	7.83	--	6.32	
MW-23	04/18/22	14.15	7.29	--	6.86	
MW-23	09/19/22	14.15	7.61	--	6.54	
MW-24	11/18/03	14.34	7.65	Sheen	6.69	
MW-24	02/24/04	14.34	7.07	Sheen	7.27	
MW-24	05/10/04	14.34	7.73	0.02	6.63	
MW-24	08/24/04	14.34	7.90	0.10	6.52	
MW-24	12/13/04	14.34	7.47	Sheen	6.87	
MW-24	03/08/05	14.34	7.57	Sheen	6.77	
MW-24	06/06/05	14.34	7.24	0.02	7.12	
MW-24	09/19/05	14.34	8.39	0.29	6.18	
MW-24	10/12/05	14.34	8.45	0.47	6.27	
MW-24	12/12/05	14.34	8.01	0.11	6.42	
MW-24	03/13/06	14.34	7.19	--	7.15	
MW-24	06/05/06	14.34	7.59	--	6.75	
MW-24	09/11/06	14.34	8.31	0.20	6.19	
MW-24	12/11/06	14.34	7.37	--	6.97	
MW-24	03/26/07	14.34	7.42	--	6.92	
MW-24	06/18/07	14.34	7.89	--	6.45	
MW-24	09/25/07	14.34	8.00	Sheen	6.34	
MW-24	12/10/07	14.34	7.42	--	6.92	
MW-24	03/03/08	14.34	7.51	Sheen	6.83	
MW-24	06/02/08	14.34	8.92	--	5.42	
MW-24	09/04/08	14.34	7.99	--	6.35	
MW-24	12/04/08	14.34	7.96	--	6.38	
MW-24	03/04/09	14.34	7.51	--	6.83	
MW-24	06/01/09	14.34	7.87	Sheen	6.47	
MW-24	09/21/09	14.34	8.09	--	6.25	
MW-24	11/16/09	14.34	7.46	Sheen	6.88	
MW-24	03/08/10	14.34	7.03	--	7.31	
MW-24	06/07/10	14.34	7.51	Sheen	6.83	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
MW-24	09/09/10	14.34	8.01	Sheen	6.33	
MW-24	11/15/10	14.34	7.61	Sheen	6.73	
MW-24	03/01/11	14.34	7.26	Sheen	7.08	
MW-24	05/23/11	14.34	7.37	--	6.97	
MW-24	08/29/11	14.34	7.92	Sheen	6.42	
MW-24	12/01/11	14.34	7.73	--	6.61	
MW-24	03/01/12	14.34	7.39	--	6.95	
MW-24	05/30/12	14.34	7.41	--	6.93	
MW-24	08/25/12	14.34	7.59	--	6.75	
MW-24	11/07/12	14.34	7.26	--	7.08	
MW-24	02/27/13	14.34	7.34	--	7.00	
MW-24	04/08/13	14.34	7.27	--	7.07	
MW-24	07/29/13	14.34	7.58	--	6.76	
MW-24	10/02/13	14.34	7.34	--	7.00	
MW-24	01/21/14	14.34	7.66	--	6.68	
MW-24	04/22/14	14.34	7.20	--	7.14	
MW-24	07/15/14	14.34	7.59	--	6.75	
MW-24	03/17/15	14.34	7.06	--	7.28	
MW-24	09/29/15	14.34	7.65	--	6.69	
MW-24	03/29/16	14.34	6.61	--	7.73	
MW-24	10/11/16	14.34	7.91	--	6.43	
MW-24	03/28/17	14.34	6.71	--	7.63	
MW-24	10/10/17	14.34	7.88	--	6.46	
MW-24	03/28/18	14.34	7.30	--	7.04	
MW-24	10/02/18	14.34	7.80	--	6.54	
MW-24	04/02/19	14.34	7.22	--	7.12	
MW-24	10/01/19	14.34	7.76	--	6.58	
MW-24	03/25/20	14.34	7.29	--	7.05	
MW-24	10/19/20	14.34	7.66	--	6.68	
MW-24	04/12/21	14.34	7.44	--	6.90	
MW-24	10/11/21	14.34	7.91	--	6.43	
MW-24	04/18/22	14.34	7.28	--	7.06	
MW-24	09/19/22	14.34	8.64	--	5.70	
MW-25	11/18/03	13.05	7.50	Sheen	5.55	
MW-25	02/24/04	13.05	6.48	Sheen	6.57	
MW-25	05/10/04	13.05	7.61	--	5.44	
MW-25	08/24/04	13.05	7.11	--	5.94	
MW-25	12/13/04	13.05	7.49	--	5.56	
MW-25	03/08/05	13.05	7.61	--	5.44	
MW-25	06/06/05	13.05	7.47	--	5.58	
MW-25	09/19/05	13.05	7.93	--	5.12	
MW-25	12/12/05	13.05	7.71	--	5.34	
MW-25	03/13/06	13.05	7.02	--	6.03	
MW-25	06/05/06	13.05	7.38	--	5.67	
MW-25	09/11/06	13.05	7.88	--	5.17	
MW-25	12/11/06	13.05	7.03	--	6.02	
MW-25	06/18/07	13.05	6.77	--	6.28	
MW-25	03/03/08	13.05	7.28	--	5.77	
MW-25	06/02/08	13.05	7.71	--	5.34	
MW-25	09/04/08	13.05	7.33	--	5.72	
MW-25	12/04/08	13.05	--	--	--	Not Measured
MW-25	06/01/09	13.05	7.60	--	5.45	
MW-25	06/07/10	13.05	7.31	--	5.74	
MW-25	05/23/11	13.05	7.13	--	5.92	
MW-25	04/22/14	13.05	7.09	--	5.96	
MW-25	03/17/15	13.05	6.92	--	6.13	
MW-25	09/29/15	13.05	7.49	--	5.56	
MW-25	03/29/16	13.05	6.38	--	6.67	
MW-25	10/11/16	13.05	7.65	--	5.40	
MW-25	03/28/17	13.05	6.44	--	6.61	
MW-25	10/10/17	13.05	7.65	--	5.40	
MW-25	03/28/18	13.05	7.03	--	6.02	
MW-25	10/02/18	13.05	7.68	--	5.37	
MW-25	04/02/19	13.05	7.07	--	5.98	
MW-25	10/01/19	13.05	7.54	--	5.51	
MW-25	03/25/20	13.05	7.11	--	5.94	
MW-25	10/19/20	13.05	7.47	--	5.58	
MW-25	04/12/21	13.05	7.16	--	5.89	
MW-25	10/11/21	13.05	7.63	--	5.42	
MW-25	04/18/22	13.05	--	--	--	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
MW-25	09/19/22	13.05	--	--	--	
E-1	02/11/02	9.04	3.65	--	5.39	
E-1	05/20/02	9.04	4.59	--	4.45	
E-1	08/27/02	9.04	--	--	--	Not Measured-Dry
E-1	11/04/02	--	--	--	--	Not Measured-Dry/Damaged
E-1	06/11/03	--	--	--	--	Not Measured-Damaged
E-1	05/30/12	13.05	7.12	--	5.93	
E-1					Abandoned	
SF-01	12/18/00	--	--	--	--	
SF-01					Abandoned	
SF-01R	02/11/02	10.68	7.11	--	3.57	
SF-01R	05/20/02	10.68	9.07	Sheen	1.61	
SF-01R	08/27/02	10.68	8.44	0.01	2.25	
SF-01R	11/04/02	10.68	9.63	--	1.05	
SF-01R	02/18/03	10.68	7.72	--	2.96	
SF-01R	06/09/03	10.68	8.30	--	2.38	
SF-01R	09/15/03	14.74	8.60	--	6.14	
SF-01R	11/18/03	14.74	7.45	--	7.29	
SF-01R	02/24/04	14.74	7.76	--	6.98	
SF-01R	05/10/04	14.74	8.11	--	6.63	
SF-01R	08/24/04	14.74	8.49	--	6.25	
SF-01R	12/13/04	14.74	--	--	--	Inaccessible, under construction trailer
SF-01R	03/08/05	14.74	8.16	--	6.58	
SF-01R	06/06/05	14.74	8.16	--	6.58	
SF-01R	09/19/05	14.74	--	--	--	Inaccessible, under construction trailer
SF-01R	12/12/05	14.74	8.39	--	6.35	
SF-01R	03/13/06	14.74	7.70	--	7.04	
SF-01R	06/05/06	14.74	8.09	--	6.65	
SF-01R	09/11/06	14.74	8.60	--	6.14	
SF-01R	12/11/06	14.74	7.73	--	7.01	
SH-02	02/11/02					Destroyed during construction activities
SH-02R	02/11/02	9.35	5.45	--	3.90	
SH-02R	05/20/02	9.35	6.49	--	2.86	
SH-02R	08/27/02	9.35	6.27	--	3.08	
SH-02R	11/04/02	9.35	6.62	--	2.73	
SH-02R	02/18/03	9.35	4.85	--	4.50	
SH-02R	06/09/03	9.35	4.75	--	4.60	
SH-02R	09/15/03	13.40	6.50	--	6.90	
SH-02R	11/18/03	13.40	6.03	--	7.37	
SH-02R	02/24/04	13.40	4.62	--	8.78	
SH-02R	05/10/04	13.40	5.88	--	7.52	
SH-02R	08/24/04	13.40	6.21	--	7.19	
SH-02R	12/13/04	13.40	5.14	--	8.26	
SH-02R	03/08/05	13.40	5.90	--	7.50	
SH-02R	06/06/05	13.40	5.72	--	7.68	
SH-02R	09/19/05	13.40	6.56	--	6.84	
SH-02R	12/12/05	13.40	5.94	--	7.46	
SH-02R	03/13/06	13.40	4.80	--	8.60	
SH-02R	06/05/06	13.40	5.41	--	7.99	
SH-02R	09/11/06	13.40	6.54	--	6.86	
SH-02R	12/11/06	13.40	4.82	--	8.58	
SH-02R	03/26/07	13.40	4.98	--	8.42	
SH-02R	06/18/07	13.40	5.94	--	7.46	
SH-02R	09/25/07	13.40	6.54	--	6.86	
SH-02R	12/10/07	13.40	5.13	--	8.27	
SH-02R	03/03/08	13.40	5.45	--	7.95	
SH-02R	06/02/08	13.40	6.10	--	7.30	
SH-02R	09/04/08	13.40	6.19	--	7.21	
SH-02R	12/04/08	13.40	6.08	--	7.32	
SH-02R	03/04/09	13.40	5.63	--	7.77	
SH-02R	06/01/09	13.40	5.79	--	7.61	
SH-02R	09/21/09	13.40	6.49	--	6.91	
SH-02R	11/16/09	13.40	5.37	--	8.03	
SH-02R	03/08/10	13.40	4.88	--	8.52	
SH-02R	06/07/10	13.40	5.25	--	8.15	
SH-02R	09/09/10	13.40	6.31	--	7.09	
SH-02R	11/15/10	13.40	5.42	--	7.98	
SH-02R	03/01/11	13.40	4.71	--	8.69	
SH-02R	05/23/11	13.40	4.78	--	8.62	
SH-02R	08/29/11	13.40	6.16	--	7.24	

Appendix D
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 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
SH-02R	12/01/11	13.40	5.50	--	7.90	
SH-02R	03/01/12	13.40	5.34	--	8.06	
SH-02R	05/30/12	13.40	5.32	--	8.08	
SH-02R	08/25/12	13.40	6.03	--	7.37	
SH-02R	11/07/12	13.40	5.37	--	8.03	
SH-02R	02/27/13	13.40	5.01	--	8.39	
SH-02R	04/08/13	13.40	4.77	--	8.63	
SH-02R	07/29/13	13.40	5.98	--	7.42	
SH-02R	10/02/13	13.40	5.54	--	7.86	
SH-02R	01/21/14	13.40	5.76	--	7.64	
SH-02R	04/22/14	13.40	4.76	--	8.64	
SH-02R	07/15/14	13.40	5.78	--	7.62	
SH-02R	03/17/15	13.40	4.43	--	8.97	
SH-02R	09/28/15	13.40	6.00	--	7.40	
SH-02R	03/29/16	13.40	3.96	--	9.44	
SH-02R	10/11/16	13.40	6.11	--	7.29	
SH-02R	03/28/17	13.40	3.65	--	9.75	
SH-02R	10/10/17	13.40	6.09	--	7.31	
SH-02R	03/28/18	13.40	4.92	--	8.48	
SH-02R	10/02/18	13.40	6.27	--	7.13	
SH-02R	04/02/19	13.40	5.20	--	8.20	
SH-02R	10/01/19	13.40	6.02	--	7.38	
SH-02R	03/25/20	13.40	4.90	--	8.50	
SH-02R	10/19/20	13.40	5.69	--	7.71	
SH-02R	04/12/21	13.40	4.90	--	8.50	
SH-02R	10/11/21	13.40	6.13	--	7.27	
SH-02R	04/18/22	13.40	4.89	--	8.51	
SH-02R	09/19/22	13.40	6.05	--	7.35	
SH-04	02/11/02	13.45	9.40	--	4.05	
SH-04	05/20/02	13.45	11.24	--	2.21	
SH-04	08/27/02	13.45	11.02	--	2.43	
SH-04	11/04/02	13.45	9.31	--	4.14	
SH-04	02/18/03	13.45	9.80	--	3.65	
SH-04	06/09/03	13.45	10.41	--	3.04	
SH-04	09/15/03	17.41	11.15	--	6.26	
SH-04	11/18/03	17.41	7.61	--	9.80	
SH-04	02/24/04	17.41	6.62	--	10.79	
SH-04	05/10/04	17.41	11.40	--	6.01	
SH-04	08/24/04	17.41	10.88	--	6.53	
SH-04	12/13/04	17.41	10.68	--	6.73	
SH-04	03/08/05	17.41	10.33	--	7.08	
SH-04	06/06/05	17.41	10.23	--	7.18	
SH-04	09/19/05	17.41	11.03	--	6.38	
SH-04	12/12/05	17.41	10.53	--	6.88	
SH-04	03/13/06	17.41	9.22	--	8.19	
SH-04	06/05/06	17.41	10.05	--	7.36	
SH-04	09/11/06	17.41	11.00	--	6.41	
SH-04	12/11/06	17.41	9.50	--	7.91	
SH-05	10/27/93	8.77	6.66	--	2.11	
SH-05	01/19/94	8.77	5.92	--	2.85	
SH-05	06/07/94	8.77	6.30	--	2.47	
SH-05	08/17/94	8.77	6.58	--	2.19	
SH-05	11/21/94	8.77	6.03	--	2.74	
SH-05	03/07/96	8.77	4.67	--	4.10	
SH-05	01/13/97	8.77	3.84	--	4.93	
SH-05	10/06/00	8.77	5.23	--	3.54	
SH-05	12/18/00	8.77	5.80	--	2.97	
SH-05	03/27/01					Destroyed during construction activities
SH-05R	05/20/02	9.83	8.07	Sheen	1.76	
SH-05R	08/27/02	9.83	7.59	--	2.24	
SH-05R	11/04/02	9.83	7.81	Sheen	2.02	
SH-05R	02/18/03	9.83	7.60	--	2.23	
SH-05R	06/09/03	9.83	7.29	--	2.54	
SH-05R	09/15/03	13.89	7.42	Sheen	6.47	
SH-05R	11/18/03	13.89	7.21	Sheen	6.68	
SH-05R	02/24/04	13.89	6.41	--	7.48	

Appendix D
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 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
SH-05R	05/10/04	13.89	7.33	--	6.56	
SH-05R	08/24/04	13.89	7.60	--	6.29	
SH-05R	12/13/04	13.89	7.15	--	6.74	
SH-05R	03/08/05	13.89	7.62	--	6.27	
SH-05R	06/06/05	13.89	7.24	--	6.65	
SH-05R	09/19/05	13.89	7.80	--	6.09	
SH-05R	12/12/05	13.89	7.49	--	6.40	
SH-05R	03/13/06	13.89	6.38	--	7.51	
SH-05R	06/05/06	13.89	7.10	--	6.79	
SH-05R	09/11/06	13.89	7.72	--	6.17	
SH-05R	12/11/06	13.89	6.61	--	7.28	
SH-05R	03/26/07	13.89	6.82	--	7.07	
SH-05R	06/18/07	13.89	7.43	--	6.46	
SH-05R	09/25/07	13.89	7.72	--	6.17	
SH-05R	12/10/07	13.89	6.70	--	7.19	
SH-05R	03/03/08	13.89	7.01	--	6.88	
SH-05R	06/02/08	13.89	7.50	--	6.39	
SH-05R	09/04/08	13.89	7.55	--	6.34	
SH-05R	12/04/08	13.89	7.12	--	6.77	
SH-05R	03/04/09	13.89	7.02	--	6.87	
SH-05R	06/01/09	13.89	7.36	--	6.53	
SH-05R	09/21/09	13.89	7.73	--	6.16	
SH-05R	11/16/09	13.89	6.93	--	6.96	
SH-05R	03/08/10	13.89	6.47	--	7.42	
SH-05R	06/07/10	13.89	6.63	--	7.26	
SH-05R	09/09/10	13.89	7.58	--	6.31	
SH-05R	11/16/10	13.89	7.04	--	6.85	
SH-05R	03/01/11	13.89	6.58	--	7.31	
SH-05R	05/23/11	13.89	6.74	--	7.15	
SH-05R	08/29/11	13.89	7.52	--	6.37	
SH-05R	12/01/11	13.89	7.09	--	6.80	
SH-05R	03/01/12	13.89	6.89	--	7.00	
SH-05R	05/30/12	13.89	6.91	--	6.98	
SH-05R	08/25/12	13.89	7.29	--	6.60	
SH-05R	11/07/12	13.89	6.79	--	7.10	
SH-05R	02/27/13	13.89	6.77	--	7.12	
SH-05R	04/08/13	13.89	5.59	--	8.30	
SH-05R	07/29/13	13.89	7.25	--	6.64	
SH-05R	10/02/13	13.89	6.82	--	7.07	
SH-05R	01/21/14	13.89	7.18	--	6.71	
SH-05R	04/22/14	13.89	6.59	--	7.30	
SH-05R	07/15/14	13.89	7.17	--	6.72	
SH-05R	03/17/15	13.89	6.30	--	7.59	
SH-05R	09/28/15	13.89	7.23	--	6.66	
SH-05R	03/29/16	13.89	--	--	--	Inaccessible
SH-05R	10/11/16	13.89	7.38	--	6.51	
SH-05R	03/28/17	13.89	5.76	--	8.13	
SH-05R	10/10/17	13.89	7.49	--	6.40	
SH-05R	03/28/18	13.89	6.65	--	7.24	
SH-05R	10/02/18	13.89	7.40	--	6.49	
SH-05R	04/02/19	13.89	6.75	--	7.14	
SH-05R	10/01/19	13.89	7.33	--	6.56	
SH-05R	03/25/20	13.89	6.70	--	7.19	
SH-05R	10/19/20	13.89	7.18	--	6.71	
SH-05R	04/12/21	13.89	6.79	--	7.10	
SH-05R	10/11/21	13.89	7.40	--	6.49	
SH-05R	04/18/22	13.89	6.67	--	7.22	
SH-05R	09/19/22	13.89	7.17	--	6.72	
MW-07	01/13/97	7.66	--	--	--	
MW-07						Destroyed during construction activities
MW-07R	02/11/02	9.93	4.95	--	4.98	
MW-07R	05/20/02	9.93	7.29	--	2.64	
MW-07R	08/27/02	9.93	7.17	--	2.76	
MW-07R	11/04/02	9.93	7.53	--	2.40	
MW-07R	02/18/03	--	--	--	--	Not Measured-Inaccessible; covered with asphalt
MW-07R	06/09/03	--	--	--	--	Not Measured-Inaccessible; covered with asphalt
MW-07R	06/11/03	--	--	--	--	Not Measured-Located & cleaned out
MW-07R	09/15/03	13.92	8.40	--	5.52	
MW-07R	11/18/03	13.92	8.17	--	5.75	
MW-07R	02/24/04	13.92	5.64	--	8.28	

Appendix D
 Historical Groundwater Elevation Data
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
MW-07R	05/10/04	13.92	6.70	--	7.22	
MW-07R	08/24/04	13.92	6.95	--	6.97	
MW-07R	12/13/04	13.92	6.43	--	7.49	
MW-07R	03/08/05	13.92	6.67	--	7.25	
MW-07R	06/06/05	13.92	6.48	--	7.44	
MW-07R	09/19/05	13.92	7.35	--	6.57	
MW-07R	12/12/05	13.92	6.71	--	7.21	
MW-07R	03/13/06	13.92	5.59	--	8.33	
MW-07R	06/05/06	13.92	7.20	--	6.72	
MW-07R	09/11/06	13.92	7.30	--	6.62	
MW-07R	12/11/06	13.92	5.50	--	8.42	
MW-07R	03/26/07	13.92	5.84	--	8.08	
MW-07R	06/18/07	13.92	6.80	--	7.12	
MW-07R	09/25/07	13.92	7.27	--	6.65	
MW-07R	12/10/07	13.92	5.60	--	8.32	
MW-07R	03/03/08	13.92	6.20	--	7.72	
MW-07R	06/02/08	13.92	6.88	--	7.04	
MW-07R	09/04/08	13.92	6.94	--	6.98	
MW-07R	12/04/08	13.92	7.84	--	6.08	
MW-07R	03/04/09	13.92	6.30	--	7.62	
MW-07R	06/01/09	13.92	6.57	--	7.35	
MW-07R	09/21/09	13.92	7.24	--	6.68	
MW-07R	11/16/09	13.92	6.04	--	7.88	
MW-07R	03/08/10	13.92	5.63	--	8.29	
MW-07R	06/07/10	13.92	6.04	--	7.88	
MW-07R	09/09/10	13.92	7.05	--	6.87	
MW-07R	11/15/10	13.92	6.11	--	7.81	
MW-07R	03/01/11	13.92	5.43	--	8.49	
MW-07R	05/23/11	13.92	5.66	--	8.26	
MW-07R	08/29/11	13.92	6.97	--	6.95	
MW-07R	12/01/11	13.92	6.24	--	7.68	
MW-07R	03/01/12	13.92	6.10	--	7.82	
MW-07R	05/30/12	13.92	6.12	--	7.80	
MW-07R	08/25/12	13.92	--	--	--	Not Measured
MW-07R	11/07/12	13.92	6.02	--	7.90	
MW-07R	02/27/13	13.92	5.84	--	8.08	
MW-07R	04/08/13	13.92	5.49	--	8.43	
MW-07R	07/29/13	13.92	6.70	--	7.22	
MW-07R	10/02/13	13.92	6.06	--	7.86	
MW-07R	01/21/14	13.92	6.49	--	7.43	
MW-07R	04/22/14	13.92	5.56	--	8.36	
MW-07R	07/15/14	13.92	6.60	--	7.32	
MW-07R	03/17/15	13.92	5.06	--	8.86	
MW-07R	09/28/15	13.92	6.73	--	7.19	
MW-07R	03/29/16	13.92	4.75	--	9.17	
MW-07R	10/11/16	13.92	6.86	--	7.06	
MW-07R	03/28/17	13.92	4.54	--	9.38	
MW-07R	10/10/17	13.92	6.95	--	6.97	
MW-07R	03/28/18	13.92	5.75	--	8.17	
MW-07R	10/02/18	13.92	7.05	--	6.87	
MW-07R	04/02/19	13.92	6.09	--	7.83	
MW-07R	10/01/19	13.92	6.84	--	7.08	
MW-07R	03/25/20	13.92	5.82	--	8.10	
MW-07R	10/19/20	13.92	6.54	--	7.38	
MW-07R	04/12/21	13.92	5.89	--	8.03	
MW-07R	10/11/21	13.92	6.90	--	7.02	
MW-07R	04/18/22	13.92	5.83	--	8.09	
MW-07R	09/19/22	13.92	6.67	--	7.25	
TMW-B1	09/09/10	--	--	--	--	Not Measured-SPH recovery unit in well
TMW-B1	05/23/11	--	7.37	--	--	Not Measured-SPH recovery unit in well
TMW-B1	12/01/11	--	8.17	--	--	Not Measured-SPH recovery unit in well
TMW-B1	03/01/12	--	7.75	--	--	Not Measured-SPH recovery unit in well
TMW-B1	08/25/12	--	8.37	--	--	Not Measured
TMW-B1	07/29/13	--	7.80	--	--	
TMW-B1	10/02/13	--	7.47	--	--	
TMW-B1	01/21/14	--	7.78	--	--	
TMW-B1	04/22/14	--	6.99	--	--	
TMW-B1	07/15/14	--	--	--	--	See SW/KH notes
TMW-B1	03/17/15	--	6.57	--	--	
TMW-B1	09/28/15	--	8.26	--	--	

Appendix D
 Historical Groundwater Elevation Data
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
TMW-B1	03/29/16	--	6.12	--	--	
TMW-B1	10/11/16	--	8.49	--	--	
TMW-B1	03/28/17	--	5.88	--	--	
TMW-B1	10/10/17	--	8.49	--	--	
TMW-B1	03/28/18	--	7.28	--	--	
TMW-B1	10/02/18	--	8.60	--	--	
TMW-B1	04/02/19	--	7.53	--	--	
TMW-B1	10/01/19	--	8.42	--	--	
TMW-B1	03/25/20	--	7.12	--	--	
TMW-B1	10/19/20	--	8.24	--	--	
TMW-B1	04/12/21	--	7.37	--	--	
TMW-B1	10/11/21	--	8.51	--	--	
TMW-B1	04/18/22	--	7.20	--	--	
TMW-B1	09/19/22	--	8.31	--	--	
TMW-1	06/21/13	--	3.44	--	--	Baseline monitoring event
TMW-1	07/29/13	--	3.72	--	--	
TMW-1	08/26/13	--	3.74	--	--	Two-month monitoring event
TMW-1	10/02/13	--	2.97	--	--	
TMW-1	01/21/14	--	3.48	--	--	
TMW-1	04/22/14	--	2.09	--	--	
TMW-1	07/15/14	--	--	--	--	Not done due to no TOC elev datum
TMW-1	03/17/15	--	1.65	--	--	
TMW-1	09/29/15	--	4.06	--	--	
TMW-1	03/29/16	--	1.69	--	--	
TMW-1	10/11/16	--	3.95	--	--	
TMW-1	03/28/17	--	1.23	--	--	
TMW-1	10/10/17	--	4.10	--	--	
TMW-1	03/28/18	--	2.72	--	--	
TMW-1	10/02/18	--	4.21	--	--	
TMW-1	04/02/19	--	3.06	--	--	
TMW-1	10/01/19	--	3.95	--	--	
TMW-1	03/25/20	--	2.53	--	--	
TMW-1	10/19/20	--	3.77	--	--	
TMW-1	04/12/21	--	2.79	--	--	
TMW-1	10/11/21	--	4.11	--	--	
TMW-1	04/18/22	--	2.64	--	--	
TMW-1	09/19/22	--	4.05	--	--	
TMW-2	06/21/13	--	3.83	--	--	Baseline monitoring event
TMW-2	07/29/13	--	3.94	--	--	
TMW-2	08/26/13	--	3.91	--	--	Two-month monitoring event
TMW-2	10/02/13	--	3.15	--	--	
TMW-2	01/21/14	--	3.63	--	--	
TMW-2	04/22/14	--	2.36	--	--	
TMW-2	07/15/14	--	--	--	--	Not done due to no TOC elev datum
TMW-2	03/17/15	--	1.68	--	--	
TMW-2	10/01/15	--	4.16	--	--	
TMW-2	03/29/16	--	1.84	--	--	
TMW-2	10/11/16	--	4.01	--	--	
TMW-2	03/28/17	--	1.41	--	--	
TMW-2	10/10/17	--	4.15	--	--	
TMW-2	03/28/18	--	2.86	--	--	
TMW-2	10/02/18	--	4.30	--	--	
TMW-2	04/02/19	--	3.20	--	--	
TMW-2	10/01/19	--	4.02	--	--	
TMW-2	03/25/20	--	2.74	--	--	
TMW-2	10/19/20	--	3.86	--	--	
TMW-2	04/12/21	--	2.91	--	--	
TMW-2	10/11/21	--	4.15	--	--	
TMW-2	04/18/22	--	2.74	--	--	
TMW-2	09/19/22	--	4.19	--	--	
TMW-3	06/21/13	--	3.81	--	--	Baseline monitoring event
TMW-3	07/29/13	--	3.91	--	--	
TMW-3	08/26/13	--	3.88	--	--	Two-month monitoring event
TMW-3	10/02/13	--	3.14	--	--	
TMW-3	01/21/14	--	3.76	--	--	
TMW-3	04/22/14	--	2.41	--	--	
TMW-3	07/15/14	--	--	--	--	Not done due to no TOC elev datum
TMW-3	03/17/15	--	1.67	--	--	
TMW-3	09/30/15	--	4.21	--	--	
TMW-3	03/29/16	--	2.20	--	--	

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 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
TMW-3	10/11/16	--	4.02	--	--	
TMW-3	03/28/17	--	1.66	--	--	
TMW-3	10/10/17	--	4.21	--	--	
TMW-3	03/28/18	--	3.01	--	--	
TMW-3	10/02/18	--	4.31	--	--	
TMW-3	04/02/19	--	3.42	--	--	
TMW-3	10/01/19	--	4.01	--	--	
TMW-3	03/25/20	--	2.88	--	--	
TMW-3	10/19/20	--	3.96	--	--	
TMW-3	04/12/21	--	3.11	--	--	
TMW-3	10/11/21	--	4.16	--	--	
TMW-3	04/18/22	--	2.97	--	--	
TMW-3	09/19/22	--	4.21	--	--	
TMW-4	06/21/13	--	3.50	--	--	Baseline monitoring event
TMW-4	07/29/13	--	3.75	--	--	
TMW-4	08/26/13	--	3.80	--	--	Two-month monitoring event
TMW-4	10/02/13	--	2.99	--	--	
TMW-4	01/21/14	--	3.45	--	--	
TMW-4	04/22/14	--	2.20	--	--	
TMW-4	07/15/14	--	--	--	--	Not done due to no TOC elev datum
TMW-4	03/17/15	--	1.30	--	--	
TMW-4	09/30/15	--	3.89	--	--	
TMW-4	03/29/16	--	1.22	--	--	
TMW-4	10/11/16	--	3.71	--	--	
TMW-4	03/28/17	--	1.37	--	--	
TMW-4	10/10/17	--	3.95	--	--	
TMW-4	03/28/18	--	2.75	--	--	
TMW-4	10/02/18	--	4.01	--	--	
TMW-4	04/02/19	--	2.90	--	--	
TMW-4	10/01/19	--	3.76	--	--	
TMW-4	03/25/20	--	2.66	--	--	
TMW-4	10/19/20	--	3.64	--	--	
TMW-4	04/12/21	--	2.83	--	--	
TMW-4	10/11/21	--	3.87	--	--	
TMW-4	04/18/22	--	2.55	--	--	
TMW-4	09/19/22	--	3.94	--	--	
TMW-5	06/21/13	--	3.24	--	--	Baseline monitoring event
TMW-5	07/29/13	--	3.31	--	--	
TMW-5	08/26/13	--	3.39	--	--	Two-month monitoring event
TMW-5	10/02/13	--	2.80	--	--	
TMW-5	01/21/14	--	3.22	--	--	
TMW-5	04/22/14	--	2.42	--	--	
TMW-5	07/15/14	--	--	--	--	Not done due to no TOC elev datum
TMW-5	03/17/15	--	1.84	--	--	
TMW-5	09/30/15	--	3.71	--	--	
TMW-5	03/29/16	--	1.57	--	--	
TMW-5	10/11/16	--	3.76	--	--	
TMW-5	03/28/17	--	1.30	--	--	
TMW-5	10/10/17	--	3.75	--	--	
TMW-5	03/28/18	--	2.67	--	--	
TMW-5	10/02/18	--	3.93	--	--	
TMW-5	04/02/19	--	2.82	--	--	
TMW-5	10/01/19	--	3.75	--	--	
TMW-5	03/25/20	--	2.55	--	--	
TMW-5	10/19/20	--	3.65	--	--	
TMW-5	04/12/21	--	2.70	--	--	
TMW-5	10/11/21	--	3.87	--	--	
TMW-5	04/18/22	--	2.69	--	--	
TMW-5	09/19/22	--	3.71	--	--	
TMW-6	06/21/13	--	2.93	--	--	Baseline monitoring event
TMW-6	07/29/13	--	2.91	--	--	
TMW-6	08/26/13	--	2.92	--	--	Two-month monitoring event
TMW-6	10/02/13	--	2.12	--	--	
TMW-6	01/21/14	--	2.74	--	--	
TMW-6	04/22/14	--	1.72	--	--	
TMW-6	07/15/14	--	--	--	--	Not done due to no TOC elev datum
TMW-6	03/17/15	--	1.48	--	--	
TMW-6	09/30/15	--	3.21	--	--	
TMW-6	03/29/16	--	1.00	--	--	
TMW-6	10/11/16	--	3.12	--	--	

Appendix D
Historical Groundwater Elevation Data
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Measured	Casing Elevation ¹ (feet NAVD88)	Depth to Groundwater (feet BTOC)	Separate Phase Hydrocarbons (feet)	Groundwater Elevation ^{1, 2} (feet NAVD88)	Comments
TMW-6	03/28/17	--	0.68	--	--	
TMW-6	10/10/17	--	3.24	--	--	
TMW-6	03/28/18	--	1.81	--	--	
TMW-6	10/02/18	--	3.17	--	--	
TMW-6	04/02/19	--	2.00	--	--	
TMW-6	10/01/19	--	3.01	--	--	
TMW-6	03/25/20	--	2.01	--	--	
TMW-6	10/19/20	--	2.71	--	--	
TMW-6	04/12/21	--	2.01	--	--	
TMW-6	10/11/21	--	3.21	--	--	
TMW-6	04/18/22	--	1.75	--	--	
TMW-6	09/19/22	--	3.03	--	--	

Notes:

Highlighted = data from most recent monitoring event

-- = not measured/not applicable

BTOC = below top of casing (TOC); depth to groundwater measured from TOC

SPH = separate phase hydrocarbons

Wells MW-10D and MW-11D were deep wells, screened from 30 to 35 feet below grade

* Well MW-9

1. Prior to the September 2003 monitoring event, TOC elevations were relative to National Geodetic Vertical Datum (N.G.V.D.) 1929 TIDAL 2 (survey benchmark elev=10.617). All TOC elevations were resurveyed in July 2003, relative to North American Vertical Datum 1988 (NAVD88) with modified benchmark elevations to account for shifts from February 2001 earthquake.

2. Groundwater elevation corrected for separate phase hydrocarbon thickness using the specific gravity of diesel (0.8), when present.

Appendix E

Historical Groundwater Analytical Results

Appendix E
 Historical Groundwater Analytical Results
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
A-5	02/14/02	<0.25	2.3	--	<0.5	--	0.00055	0.0017	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-5	05/22/02	<0.25	2.0	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-5	08/29/02	<0.25	1.2	--	<0.5	--	0.0017	0.00062	<0.0005	0.00099	--	--	--	--	--	--	--	--	--	--	
A-5	11/06/02	<0.25	1.2	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-5	02/20/03	<0.25	<0.25	--	<0.5	--	0.00086	0.0019	<0.0005	0.001	--	--	--	--	--	--	--	--	--	--	
A-5	06/10/03	0.26	0.40	--	<0.25	--	<0.0005	0.00067	<0.0005	0.0007	--	--	--	--	--	--	--	--	--	--	
A-5	09/17/03	<0.25	0.60	--	<0.50	--	0.0042	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-5	11/20/03	<0.25	0.53	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-5	02/26/04	<0.25	3.3	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-5	05/12/04	0.27	0.43	--	<0.50	--	<0.0005	<0.0005	<0.0005	0.00057	--	--	--	--	--	--	--	--	--	--	
A-5	08/25/04	<0.25	1.1	--	<0.50	--	0.0029	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-5	12/14/04	<0.25	0.43	--	<0.50	--	0.021	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	
A-5	03/10/05	0.43	5.2	--	<0.50	--	0.12	0.0025	<0.001	0.0012	--	--	--	--	--	--	--	--	--	--	
A-5	06/07/05	0.54	2.4	--	1.7	--	0.12	0.0028	<0.001	0.0013	--	--	--	--	--	--	--	--	--	--	
A-5	09/20/05	0.37	1.2	--	<0.50	--	0.037	0.0017	<0.001	0.0011	--	--	--	--	--	--	--	--	--	--	
A-5	12/13/05	0.44	0.31	--	<0.50	--	0.049	0.0021	<0.0005	0.0013	--	--	--	--	--	--	--	--	--	--	
A-5	03/15/06	0.36	0.45	--	<0.50	--	0.052	0.0017	<0.001	0.0017	--	--	--	--	--	--	--	--	--	--	
A-5	06/08/06	0.91	0.55	--	<0.50	--	0.099	0.0036	0.00076	0.0034	--	--	--	--	--	--	--	--	--	--	
A-5	09/12/06	0.46	0.43	--	<0.50	--	0.031	0.0016	<0.001	0.0014	--	--	--	--	--	--	--	--	--	--	
A-5	12/12/06	0.7	0.53	--	<0.50	--	0.079	0.0028	<0.001	0.0025	--	--	--	--	--	--	--	--	--	--	
A-5	03/27/07	1.4	--	--	--	--	0.19	0.0045	0.0014	0.0050	--	--	0.8	--	--	--	--	--	--	--	
A-5	06/19/07	1.1	1.9	--	<0.50	--	0.09	0.0027	0.00072	0.0039	--	--	--	--	--	--	--	--	--	--	
A-5	09/24/07	0.72	--	--	--	--	0.039	0.0019	<0.0005	0.0018	--	--	2.70	--	--	--	--	--	--	--	
A-5	12/11/07	0.31	--	--	--	--	0.017	0.00096	<0.0005	0.00088	--	--	1.46	--	--	--	--	--	--	--	
A-5	03/04/08	1.4	--	--	--	--	0.12	0.0040	<0.0010	0.0040	--	--	0.10	--	--	--	--	--	--	--	
A-5	06/03/08	0.85	--	--	--	--	0.048	<0.0015	<0.0015	0.0029	--	--	1.90	--	--	--	--	--	--	--	
A-5	09/08/08	1.5	--	--	--	--	0.15	0.0032	0.0031	0.0076	--	--	1.13	--	--	--	--	--	--	--	
A-5	12/05/08	0.64	--	--	--	--	0.089	<0.0010	<0.0010	0.0038	--	--	0.41	--	--	--	--	--	--	--	
A-5	03/04/09	<0.25	--	--	--	--	0.0011	<0.0010	0.002	0.0071	--	--	0.41	--	--	--	--	--	--	--	
A-5	06/03/09	0.45	--	--	--	--	0.022	<0.0010	<0.0010	0.0027	--	--	0.61	--	--	--	--	--	--	--	
A-5	09/22/09	0.75	--	--	--	--	0.063	0.0012	0.0041	0.021	--	--	0.69	--	--	--	--	--	--	--	
A-5	11/17/09	0.43	--	--	--	--	0.011	<0.0010	<0.0010	0.0038	--	--	0.24	--	--	--	--	--	--	--	
A-5	03/08/10	0.34	--	--	--	--	0.0059	<0.0010	0.0012	0.0051	--	--	0.61	--	--	--	--	--	--	--	
A-5	06/09/10	<0.25	--	--	--	--	0.0063	<0.0010	<0.0010	0.0019	--	--	0.00	--	--	--	--	--	--	--	
A-5	09/10/10	0.80	--	--	--	--	0.031	0.0017	0.0047	0.025	--	--	3.32	--	--	--	--	--	--	--	
A-5	11/16/10	0.35	--	--	--	--	0.0025	<0.0010	0.0011	0.0086	--	--	0.30	--	--	--	--	--	--	--	
A-5	03/02/11	0.34	--	--	--	--	0.0042	<0.0010	<0.0010	0.0019	--	--	0.00	--	--	--	--	--	--	--	
A-5	05/25/11	0.39	--	--	--	--	0.0078	0.00057	<0.0005	0.0014	--	--	1.28	--	--	--	--	--	--	--	
A-5	08/30/11	0.47	--	--	--	--	0.0027	0.00070	<0.0005	0.0013	--	--	0.58	--	--	--	--	--	--	--	
A-5	12/02/11	0.29	--	--	--	--	0.0017	<0.0010	<0.0010	<0.0020	--	--	1.41	--	--	--	--	--	--	--	
A-5	03/02/12	<0.25	--	--	--	--	0.00094	<0.0005	<0.0005	<0.0005	--	--	0.37	--	--	--	--	--	--	--	
A-5	06/01/12	<0.25	--	--	--	--	0.012	<0.0010	<0.0010	0.0010	--	--	0.00	--	--	--	--	--	--	--	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
A-5 (DUP)	06/01/12	<0.25	--	--	--	--	0.011	<0.0010	<0.0010	0.0010	--	--	--	--	--	--	--	--	--	--	Duplicate of A-5
A-5	08/25/12	0.57	--	--	--	--	0.02	0.0012	<0.0010	0.0014	--	--	--	--	--	--	--	--	--	--	
A-5	11/08/12	0.27	--	--	--	--	0.028	<0.001	<0.001	0.0011	--	--	--	--	--	--	--	--	--	--	
A-5	02/28/13	0.66	--	--	--	--	0.062	0.0017	<0.0005	0.0013	--	--	--	--	--	--	--	--	--	--	
A-5	04/10/13	0.46	--	--	--	--	0.014	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	
A-5	07/29/13	0.54	--	--	--	--	0.033	0.0022	<0.0005	0.0022	--	--	--	--	--	--	--	--	--	--	
A-5	10/03/13	0.47	--	--	--	--	0.049	0.0014	<0.001	0.0016	--	--	0.00	--	--	--	--	--	--	--	
A-5	01/21/14	0.51	--	--	--	--	0.051	0.0012	<0.001	<0.001	--	--	6.00	--	--	--	--	--	--	--	
A-5	04/23/14	0.60	--	--	--	--	0.025	0.0015	<0.0005	0.0011	--	--	--	--	--	--	--	--	--	--	
A-5	07/15/14	0.61	--	--	--	--	0.017	0.0011	<0.0005	0.00095	--	--	0.37	--	--	--	--	--	--	--	
A-5	03/18/15	0.40	--	--	--	--	0.0045	0.0013	<0.0005	0.0012	--	--	--	--	--	--	--	--	--	--	
A-5	10/02/15	0.495	--	--	--	--	0.00161	<0.005	<0.001	<0.003	--	--	0.10	--	--	--	--	--	--	--	
A-5 (DUP)	10/02/15	0.553	--	--	--	--	0.00168	<0.005	<0.001	<0.003	--	--	--	--	--	--	--	--	--	--	Duplicate of A-5
A-5	03/29/16	0.413	--	--	--	--	0.00809	<0.005	<0.001	<0.003	--	--	0.33	--	--	--	--	--	--	--	
A-5	10/13/16	0.498	--	--	--	--	<0.001	<0.005	<0.001	<0.003	--	--	0.57	--	--	--	--	--	--	--	
A-5	03/29/17	0.277	--	--	--	--	0.00508	<0.001	<0.001	<0.003	--	--	0.27	--	--	--	--	--	--	--	
A-5	10/11/17	0.576	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.53	--	--	--	--	--	--	--	
A-5	03/28/18	1.04	--	--	--	--	0.00814	0.00201	<0.001	<0.003	--	--	0.13	--	--	--	--	--	--	--	
A-5	10/02/18	0.905 B	--	--	--	--	0.0014	0.00171	<0.001	<0.003	--	--	0.09	--	--	--	--	--	--	--	
A-5	04/03/19	0.591	--	--	--	--	0.00169	0.00145	<0.00100	<0.00300	--	--	0.10	--	--	--	--	--	--	--	
A-5	10/03/19	0.355	--	--	--	--	<0.00100	0.00141	<0.00100	<0.00300	--	--	0.17	--	--	--	--	--	--	--	
A-5	03/27/20	<0.500	--	--	--	--	0.00195	0.00146	<0.00100	<0.00300	--	--	0.17	--	--	--	--	--	--	--	
A-5	10/23/20	0.585 B	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	-- ^d	--	--	--	--	--	--	--	
A-5	04/13/21	1.42	--	--	--	--	0.00355	0.00295	<0.00100	0.00355	--	--	0.16	--	--	--	--	--	--	--	
A-5	10/12/21	0.524	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.00	--	--	--	--	--	--	--	
A-5	04/20/22	0.510 B	--	--	--	--	0.00108	0.00128	<0.00100	<0.00300	--	--	1.46	--	--	--	--	--	--	--	
A-5	09/22/22	0.258	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.18	--	--	--	--	--	--	--	
A-8	02/14/02	<0.25	1.6	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-8	05/22/02	<0.25	0.51	--	<0.5	--	<0.0005	0.00058	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-8	08/28/02	<0.25	<0.5	--	<0.5	--	<0.0005	0.0014	<0.0005	0.00066	--	--	--	--	--	--	--	--	--	--	
A-8	11/06/02	<0.25	0.43	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-8	02/20/03	<0.25	<0.25	--	<0.5	--	<0.0005	0.00083	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-8	06/10/03	<0.25	<0.25	--	<0.25	--	<0.0005	0.00056	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-8	09/17/03	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-8	11/20/03	<0.25	1.4	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-8	02/26/04	0.35	1.0000	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-8	05/12/04	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-8	08/25/04	<0.25	4.9	--	<0.50	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	
A-8	12/14/04	<0.25	1.7	--	<0.50	--	0.00056	0.00052	<0.0005	0.00094	--	--	--	--	--	--	--	--	--	--	
A-8	03/10/05	<0.25	2.1	--	<0.50	--	<0.0005	<0.0005	<0.0005	0.00055	--	--	--	--	--	--	--	--	--	--	
A-8	06/07/05	<0.25	1.2	--	1.5	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-8	09/20/05	<0.25	3.5	--	0.83	--	0.0012	<0.001	<0.001	0.0012	--	--	--	--	--	--	--	--	--	--	

Appendix E
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Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
A-8	12/13/05	<0.25	0.54	--	<0.50	--	<0.0005	<0.0005	<0.0005	0.0011	--	--	--	--	--	--	--	--	--	--	
A-8	03/15/06	<0.25	0.55	--	<0.50	--	<0.0010	<0.0010	<0.0010	0.0010	--	--	--	--	--	--	--	--	--	--	
A-8	06/08/06	<0.25	0.47	--	<0.50	--	<0.0010	<0.0010	<0.0010	0.0010	--	--	--	--	--	--	--	--	--	--	
A-8	09/12/06	<0.25	0.76	--	<0.50	--	<0.0010	<0.0010	<0.0010	0.0011	--	--	--	--	--	--	--	--	--	--	
A-8	12/12/06	0.27	0.87	--	<0.50	--	<0.0010	0.0011	<0.0010	0.0015	--	--	--	--	--	--	--	--	--	--	
A-8	06/19/07	<0.25	2.4	--	0.58	--	<0.0010	<0.0010	<0.0010	0.0010	--	--	--	--	--	--	--	--	--	--	
A-8	06/03/08	<0.30	0.46	--	<0.50	--	<0.0015	<0.0015	<0.0015	<0.0015	--	--	--	--	--	--	--	--	--	--	
A-8	06/03/09	<0.25	1.6	--	<0.50	--	<0.0010	<0.0010	<0.0010	<0.0010	--	--	0.55	--	--	--	--	--	--	--	
A-8	06/09/10	<0.25	0.45	--	<0.50	--	0.0054	<0.0010	<0.0010	<0.0010	--	--	0.00	--	--	--	--	--	--	--	
A-8	05/25/11	<0.25	1.2	--	<0.50	--	<0.0010	<0.0010	<0.0010	<0.0010	--	--	1.32	--	--	--	--	--	--	--	
A-8	06/01/12	<0.50	0.90	--	<0.50	--	<0.0025	<0.0025	<0.0025	<0.0025	--	--	0.00	--	--	--	--	--	--	--	
A-8	04/10/13	0.25	--	<0.25	<0.50	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	
A-8	04/23/14	<0.25	1.5	<0.25	<0.50	<0.50	<0.0005	0.00061	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-8	10/02/15	0.382	--	4.97	--	0.475	<0.001	<0.005	<0.001	<0.003	--	--	0.37	--	--	--	--	--	--	--	
A-8	10/13/16	0.341	--	0.498	--	<0.50	<0.001	<0.005	<0.001	<0.003	--	--	0.63	--	--	--	--	--	--	--	
A-8	10/11/17	0.143 B	--	0.438	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.48	--	--	--	--	--	--	--	
A-8	10/02/18	0.196	--	0.472	--	<0.25	<0.001	<0.001	<0.001	<0.003	--	--	0.07	--	--	--	--	--	--	--	
A-8	10/02/19	<0.100	--	0.794	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.13	--	--	--	--	--	--	--	
A-8	10/23/20	0.249 B	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.14	--	--	--	--	--	--	--	
A-8	10/12/21	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.00	--	--	--	--	--	--	--	
A-8	09/22/22	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.18	--	--	--	--	--	--	--	
A-10	02/14/02	<0.25	9.2	--	<0.5	--	<0.0005	0.00062	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-10	05/22/02	0.31	8.8	--	<0.5	--	<0.0005	0.00086	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-10	08/28/02	0.30	15	--	<0.5	--	<0.001	<0.001	<0.001	<0.001	--	--	1.40	5.7	--	--	16	<0.25	30.00	0.6	
A-10	11/06/02	0.37	13	--	<0.50	--	<0.0005	0.00057	<0.0005	<0.0005	--	--	2.00	5.9	--	--	15	<0.25	10.00	0.3	
A-10	02/20/03	<0.25	6.0	--	<0.5	--	0.0013	<0.0005	<0.0005	0.00055	--	--	2.70	1.0	--	--	22	6.1	86	<0.1	
A-10	06/10/03	0.45	19	--	<0.25	--	<0.001	<0.001	<0.001	<0.001	--	--	1.40	1.60	--	--	17.00	0.54	63.00	0.1	
A-10	09/17/03	0.68	30	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	1.70	3.20	--	--	47.00	<0.25 c	12.00	0.6	
A-10	11/20/03	1.1	89	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	1.40	0.10	--	--	4.90	<0.25 c	3.70	0.3	
A-10	02/26/04	<0.25	35	--	0.74	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	1.50	0.24	--	--	5.10	<0.25 b	61.00	0.2	
A-10	05/12/04	<0.25	3.5	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.60	--*d	--	--	30.00	<0.25	10.00	<0.10	
A-10	08/25/04	<0.25	5.1	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	1.65	0.75	--	--	6.20	<0.25	57.00	0.12	
A-10	12/14/04	<0.25	1.1	--	<0.50	--	0.0030	<0.001	<0.001	<0.001	--	--	2.50	0.093	--	--	<0.050	<0.25	8.80	<0.10	
A-10	03/10/05	<0.25	4.6	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	2.58	6.60	--	--	12.00	<0.25	260.00	<0.10	
A-10	06/07/05	0.30	68	--	2.1	--	0.00069	<0.0005	<0.0005	<0.0005	--	--	1.51	1.00	--	--	3.40	<0.25	480.00	16	
A-10	09/20/05	0.60	1.5	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	2.10	2.40	--	--	5.60	<0.25	320.00	0.23	
A-10	12/13/05	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	2.20	0.067	--	--	<0.050	14.00	56.00	<0.10	
A-10	03/15/06	<0.25	1.7	--	<0.50	--	<0.0005	<0.0005	<0.0005	0.00050	--	--	2.20	2.50	--	--	42.00	<0.25	60.00	0.18	
A-10	06/08/06	<0.25	0.66	--	<0.50	--	<0.0005	<0.0005	<0.0005	0.00050	--	--	1.00	1.60	--	--	7.80	<0.25	4.30	0.22	
A-10	09/12/06	<0.25	0.65	--	<0.50	--	<0.0005	<0.0005	<0.0005	0.00050	--	--	1.60	1.40	--	--	15.00	<0.25	140.00	0.18	
A-10	12/12/06	<0.25	0.98	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	2.00	0.088	--	--	2.00	<0.25	7.90	<0.10	
A-10	06/19/07	<0.25	1.2	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	2.70	--	--	--	--	--	--	--	

Appendix E
 Historical Groundwater Analytical Results
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
A-10	06/03/09	<0.25	2.4	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	2.40	--	--	--	--	--	--	--	
A-10	06/09/10	<0.25	0.56	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.00	--	--	--	--	--	--	--	
A-10	05/25/11	<0.25	0.80	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.97	--	--	--	--	--	--	--	
A-10	06/01/12	<0.25	0.62	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.00	--	--	--	--	--	--	--	
A-10	04/10/13	<0.25	--	0.36	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-10	04/23/14	<0.25	0.27	<0.25	<0.50	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-10	10/02/15	<0.100	--	0.723	--	<0.25	<0.001	<0.005	<0.001	<0.003	--	--	0.43	--	--	--	--	--	--	--	
A-10	10/13/16	<0.100	--	0.640	--	<0.500	<0.001	<0.005	<0.001	<0.003	--	--	0.61	--	--	--	--	--	--	--	
A-10	10/10/17	<0.100	--	1.15	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.50	--	--	--	--	--	--	--	
A-10	10/02/18	<0.1	--	1.38	--	0.261	<0.001	<0.001	<0.001	<0.003	--	--	0.04	--	--	--	--	--	--	--	
A-10	10/02/19	<0.100	--	0.441	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.13	--	--	--	--	--	--	--	
A-10	10/23/20	<0.100	--	0.704	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.16	--	--	--	--	--	--	--	
A-10	10/12/21	<0.100	--	0.360	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.07	--	--	--	--	--	--	--	
A-10	09/22/22	<0.100	--	0.446	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.15	--	--	--	--	--	--	--	
A-12	12/12/06	<0.25	0.98	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-12	06/03/08	<0.25	0.63	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-12	05/25/11	<0.025	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-14R	02/14/02	<0.25	<0.25	--	<0.5	--	0.00061	0.0021	<0.0005	<0.0005	0.005*	--	--	--	--	--	--	--	--	--	
A-14R	05/22/02	<0.25	<0.5	--	<0.5	--	0.00053	0.0021	<0.0005	0.00054	0.02*	--	--	--	--	--	--	--	--	--	
A-14R	08/28/02	<0.25	<0.5	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*	--	1.50	0.034	--	--	0.7	9.5	290.00	<0.1	
A-14R	11/06/02	<0.25	<0.25	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*	--	2.30	0.054	--	--	0.4	5.7	290.00	0.1	
A-14R	02/20/03	<0.25	<0.25	--	<0.25	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*	--	2.90	0.26	--	--	<0.2	2.4	300	<0.1	
A-14R	06/10/03	<0.25	<0.25	--	<0.25	--	<0.0005	<0.0005	<0.0005	<0.0005	0.02	--	2.00	0.21	--	--	2.20	6.00	220.00	0.3	
A-14R	09/17/03	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.025*	--	1.90	2.40	--	--	3.40	0.86 a	240.00	0.2	
A-14R	11/20/03	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.032*	--	1.80	0.45	--	--	2.40	0.63 c	250.00	<0.1	
A-14R	02/26/04	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.018*	--	1.40	3.30	--	--	0.31	0.69 b	190.00	0.1	
A-14R	05/12/04	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.30	1.40	--	--	<0.050	3.00	130.00	<0.10	
A-14R	08/25/04	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	3.22	4.30	--	--	0.66	0.42	200.00	<0.10	
A-14R	12/14/04	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.0072*	--	3.00	3.50	--	--	1.00	<0.25	230.00	<0.10	
A-14R	03/10/05	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.15	1.30	--	--	2.40	<0.25	290.00	<0.10	
A-14R	06/07/05	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.00	0.28	--	--	0.16	0.36	220.00	<0.2	
A-14R	09/20/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
A-14R	12/13/05	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.10	1.60	--	--	3.70	<0.25	150.00	<0.10	
A-14R	03/15/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.10	0.82	--	--	0.14	<0.25	80.00	<0.10	
A-14R	06/08/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.40	1.50	--	--	0.53	<0.25	38.00	<0.10	
A-14R	09/12/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.00	0.19	--	--	0.80	<0.25	110.00	<0.10	
A-14R	12/12/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	--	--	--	--	--	--	--	--	
A-14R	06/19/07	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	1.90	--	--	--	--	--	--	--	
A-14R	12/12/07	--	--	--	--	--	--	--	--	--	--	--	2.90	1.2	--	--	0.76	<0.25	99.00	<0.10	
A-14R	06/03/08	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	1.90	--	--	--	--	--	--	--	
A-14R	06/03/09	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	1.00	--	--	--	--	--	--	--	
A-14R	06/09/10	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	0.00	--	--	--	--	--	--	--	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
A-14R	05/25/11	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	1.05	--	--	--	--	--	--	--	
A-14R	06/01/12	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	0.00	--	--	--	--	--	--	--	
A-14R	04/10/13	<0.25	--	<0.25	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	--	--	--	--	--	--	--	
A-14R	04/23/14	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	--	--	--	--	--	--	--	
A-14R	10/01/15	<0.100	--	<0.100	--	<0.25	<0.001	<0.005	<0.001	<0.003	<0.002	<0.002	0.35	--	--	--	--	--	--	--	
A-14R	10/13/16	<0.100	--	<0.250	--	<0.500	<0.001	<0.005	<0.001	<0.003	<0.002	<0.002	0.69	--	--	--	--	--	--	--	
A-14R	10/10/17	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00100	0.63	--	--	--	--	--	--	--	
A-14R	10/02/18	<0.1	--	<0.2	--	<0.25	<0.001	<0.001	<0.001	<0.003	<0.002	<0.002	0.16	--	--	--	--	--	--	--	
A-14R	10/02/19	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.15	--	--	--	--	--	--	--	
A-14R	10/23/20	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00500	<0.00500	0.11	--	--	--	--	--	--	--	
A-14R	10/12/21	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.15	--	--	--	--	--	--	--	
A-14R	09/22/22	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.20	--	--	--	--	--	--	--	
A-18	05/25/11	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	--	--	--	--	--	--	--	
A-19	05/25/11	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	--	--	--	--	--	--	--	
A-20	05/25/11	2.5	--	--	--	--	<0.0010	<0.0010	0.037	0.013	--	--	--	--	--	--	--	--	--	--	
A-21	02/14/02	<0.25	<0.25	--	<0.5	--	<0.0005	0.0010	<0.0005	<0.0005	<0.005*	--	--	--	--	--	--	--	--	--	
A-21	05/22/02	<0.25	<0.5	--	<0.5	--	0.00061	0.0017	<0.0005	0.00057	<0.005*	--	--	--	--	--	--	--	--	--	
A-21	08/29/02	<0.25	0.76	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*	--	2.10	0.31	--	--	33.00	<0.25	41.00	0.3	
A-21	11/06/02	<0.25	0.37	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*	--	1.60	0.64	--	--	32.00	<0.25	32.00	<0.1	
A-21	02/19/03	<0.25	<0.5	--	<0.5	--	0.0013	0.0018	<0.0005	0.00061	<0.005*	--	1.90	1.60	--	--	28.00	<0.25	2.90	0.1	
A-21	06/10/03	0.25	<0.25	--	<0.25	--	0.0082	0.00058	<0.0005	<0.0005	0.062*	--	1.30	2.80	--	--	31.00	<0.25	0.30	0.2	
A-21	09/16/03	<0.25	<0.25	--	<0.50	--	0.0034	<0.0005	<0.0005	<0.0005	0.0085*	--	1.60	4.10	--	--	33.00	<0.25 b	5.30	0.7	
A-21	11/19/03	0.47	<0.25	--	<0.50	--	0.061	0.0019	<0.0005	0.0029	0.0067*	--	1.70	5.60	--	--	26.00	<0.25 b	16.00	0.2	
A-21	02/25/04	0.63	<0.50	--	<0.50	--	0.013	0.00066	0.045	0.0016	<0.0050*	--	2.10	2.60	--	--	31.00	<0.25 b	1.20	0.4	
A-21	05/12/04	0.50	<0.25	--	<0.50	--	0.0019	<0.0005	0.0042	0.00072	<0.0050*	--	0.80	1.80	--	--	33.00	<0.25	0.79	<0.10	
A-21	08/25/04	0.26	<0.25	--	<0.50	--	0.0015	<0.0005	<0.0005	0.0015	<0.0050*	--	1.44	5.80	--	--	16.00	<0.25	2.40	0.11	
A-21	12/14/04	0.99	<0.25	--	<0.50	--	0.061	0.0025	0.022	0.0083	<0.0050*	--	2.72	11.00	--	--	4.60	<0.25	0.74	0.12	
A-21	03/10/05	1.5	0.26	--	<0.50	--	0.024	0.0021	0.0025	0.011	0.020*	--	1.50	8.50	--	--	19.00	<0.25	0.79	<0.10	
A-21	06/07/05	1.2	0.35	--	<0.50	--	0.0076	0.00084	0.00077	0.0043	<0.0050*	--	1.50	3.80	--	--	3.30	<0.25	<0.50	0.7	
A-21	09/20/05	1.3	<0.25	--	<0.50	--	0.011	0.0012	0.00066	0.0048	<0.0050*	--	2.60	6.10	--	--	27.00	<0.25	<0.50	<0.10	
A-21	12/13/05	1.6	<0.25	--	<0.50	--	0.017	0.0016	0.0015	0.0052	<0.0050*	--	2.50	7.50	--	--	30.00	<0.25	<0.50	<0.10	
A-21	03/15/06	0.97	<0.25	--	<0.50	--	0.0098	0.00097	0.0023	0.0033	<0.0050*	--	2.50	3.20	--	--	32.00	<0.25	<0.50	<0.10	
A-21	06/08/06	0.82	<0.25	--	<0.50	--	0.0023	0.00059	<0.0005	0.0019	<0.0050*	--	2.80	2.20	--	--	33.00	<0.25	<0.50	<0.10	
A-21	09/12/06	0.85	<0.25	--	<0.50	--	0.0019	<0.0005	<0.0005	0.0016	<0.0050*	--	2.60	2.90	--	--	31.00	<0.25	<0.50	<0.10	
A-21	12/12/06	0.85	<0.25	--	<0.50	--	0.0071	<0.0005	0.0021	0.0014	<0.0050*	--	3.10	3.20	--	--	46.00	<0.25	130.00	0.11	
A-21	03/27/07	0.28	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	3.80	--	--	--	--	--	--	--	
A-21	06/19/07	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	2.10	0.19	--	--	24	<0.25	120	0.13	
A-21	09/25/07	<0.25	--	--	--	--	0.0040	<0.0005	<0.0005	<0.0005	--	--	3.00	--	--	--	--	--	--	--	
A-21	12/11/07	0.51	--	--	--	--	0.0062	<0.0005	0.026	0.0020	--	--	1.70	--	--	--	--	--	--	--	
A-21	03/04/08	<0.25	--	--	--	--	<0.0005	<0.0005	0.0051	<0.0005	--	--	0.30	--	--	--	--	--	--	--	
A-21	06/04/08	<0.25	--	--	--	--	<0.0005	<0.0005	0.00075	<0.0005	<0.0050	--	1.60	0.11	--	--	20.00	0.27	150.00	0.14	
A-21	09/08/08	0.41	--	--	--	--	<0.0005	0.00074	0.0018	0.00053	--	--	1.71	--	--	--	--	--	--	--	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
A-21	12/04/08	0.96	--	--	--	--	<0.0010	<0.0010	0.15	<0.0010	--	--	0.72	--	--	--	--	--	--	--	
A-21	03/04/09	0.48	--	--	--	--	0.0075	<0.0005	0.0068	0.021	--	--	0.37	--	--	--	--	--	--	--	
A-21	06/02/09	0.46	--	--	--	--	0.0027	<0.00050	0.0023	0.0059	0.0087	--	0.20	0.028	--	--	8.00	<0.25	320.00	<0.10	
A-21	09/22/09	0.27	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.56	--	--	--	--	--	--	--	
A-21	11/17/09	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.39	--	--	--	--	--	--	--	
A-21	03/08/10	<0.25	--	--	--	--	0.0026	<0.0005	0.0019	0.0046	--	--	0.85	--	--	--	--	--	--	--	
A-21	06/08/10	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	0.33	0.015	--	--	0.72	0.28	85.00	<0.10	
A-21	09/10/10	<0.25	--	--	--	--	<0.0010	<0.0010	<0.0010	<0.0010	--	--	3.49	--	--	--	--	--	--	--	
A-21	11/16/10	0.82	--	--	--	--	<0.0010	<0.0010	0.056	0.011	--	--	0.33	--	--	--	--	--	--	--	
A-21	03/02/11	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	1.50	--	--	--	--	--	--	--	
A-21	05/24/11	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	1.54	0.038	--	--	0.19	0.50	25.00	0.10	
A-21	08/30/11	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.38	--	--	--	--	--	--	--	
A-21	12/02/11	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0010	--	--	0.70	--	--	--	--	--	--	--	
A-21	03/02/12	1.7	--	--	--	--	<0.0010	<0.0010	0.16	0.026	--	--	0.29	--	--	--	--	--	--	--	
A-21	05/30/12	1.5	--	--	--	--	<0.0010	<0.0010	0.027	<0.0010	<0.0050	--	0.00	<0.010	--	--	9.60	<0.25	940.00	0.15	
A-21	08/25/12	1.6	--	--	--	--	<0.0010	<0.0010	0.024	<0.0010	--	--	--	--	--	--	--	--	--	--	
A-21	11/08/12	0.53	--	--	--	--	<0.0005	<0.0005	0.0011	0.0015	--	--	--	--	--	--	--	--	--	--	
A-21	02/28/13	0.44	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-21	04/10/13	0.58	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	<0.010	--	--	--	<0.25	920	<0.10	
A-21	07/29/13	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-21	10/03/13	<0.25	--	--	--	--	<0.001	<0.001	<0.001	<0.001	--	--	0.00	--	--	--	--	--	--	--	
A-21	01/21/14	<0.25	--	--	--	--	<0.001	<0.001	<0.001	<0.001	--	--	3.53	--	--	--	--	--	--	--	
A-21	04/23/14	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	0.013	--	--	0.62	<0.25	250	<0.10	
A-21	07/15/14	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.39	--	--	--	--	--	--	--	
A-21	03/18/15	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.03	0.050	--	--	4.2	<2.5	1,500	<0.10	
A-21	10/01/15	<0.100	--	--	--	--	<0.001	<0.005	<0.001	<0.003	0.00526	0.00402	0.30	0.0590	--	--	73.9	<0.1	41.0	0.0780	
A-21	03/31/16	<0.100	--	--	--	--	<0.001	<0.005	<0.001	<0.003	--	--	0.96	0.0189	--	--	0.378 J5	0.295	42.8	<0.05	
A-21	10/13/16	<0.100	--	--	--	--	<0.001	<0.005	<0.001	<0.003	<0.002	<0.002	0.82	--	--	--	--	--	--	--	
A-21	03/29/17	0.135	--	--	--	--	<0.001	<0.001	<0.001	<0.003	--	--	4.82	--	--	--	--	--	--	--	
A-21	10/13/17	0.142	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00100	0.62	--	--	--	--	--	--	--	
A-21	03/29/18	0.12 B	--	--	--	--	0.00153	<0.001	<0.001	<0.003	--	--	2.01	--	--	--	--	--	--	--	
A-21	10/04/18	0.113 B	--	--	--	--	<0.001	<0.001	<0.001	<0.003	<0.002	<0.002	0.06	--	--	--	--	--	--	--	
A-21	04/03/19	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	3.01	--	--	--	--	--	--	--	
A-21	10/04/19	0.206 B	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	0.00212	<0.00200	0.16	--	--	--	--	--	--	--	
A-21	03/26/20	<0.500	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.25	--	--	--	--	--	--	--	
A-21	10/23/20	0.201 B	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	<0.00500	<0.00500	0.27	--	--	--	--	--	--	--	
A-21	04/13/21	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	1.19	--	--	--	--	--	--	--	
A-21	10/12/21	0.154	--	--	--	--	<0.00100	<0.00100	0.00109	<0.00300	0.00326	0.00235	0.39	--	--	--	--	--	--	--	
A-21	04/19/22	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	1.80	--	--	--	--	--	--	--	
A-21	09/21/22	0.111	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.34	--	--	--	--	--	--	--	
A-22R	05/25/11	27	--	--	--	--	3.4	0.086	3.0	1.7	--	--	--	--	--	--	--	--	--	--	
A-23R	02/14/02	0.26	2.1	--	<0.5	--	0.060	0.0010	0.0099	0.0072	0.72*a	--	--	--	--	--	--	--	--	--	
A-23R	05/20/02	0.74	6.9	--	<0.5	--	0.15	<0.001	0.088	0.0067	0.095*a	--	--	--	--	--	--	--	--	--	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
A-23R	08/28/02	0.62	2.1	--	<0.5	--	0.20	0.0035	0.021	0.0075	0.23*	--	2.40	4.10	--	--	13.00	<0.25	270.00	0.20	
A-23R	11/05/02	0.74	1.7	--	<0.5	--	0.22	<0.0015	0.0059	0.014	0.18*	--	2.40	3.60	--	--	11.00	<0.25	200.00	1.60	
A-23R	02/19/03	0.71	2.3	--	<0.5	--	0.26	0.0033	0.0054	0.0059	0.049*	--	3.00	6.10	--	--	12.00	<0.25	120.00	<0.1	
A-23R	06/10/03	<0.25	1.8	--	<0.25	--	0.0073	<0.001	0.0028	<0.001	<0.005*	--	1.80	1.80	--	--	30.00	<0.25	300.00	0.20	
A-23R	09/16/03	0.70	1.3	--	<0.50	--	0.043	0.0029	0.057	0.0018	0.38*	--	1.40	7.60	--	--	12.00	<0.25 b	100.00	0.90	
A-23R	11/19/03	1.0	0.78	--	<0.50	--	0.08	0.0037	0.069	0.0035	0.13*	--	1.50	8.70	--	--	7.80	<0.25 b	26.00	0.80	
A-23R	02/25/04	1.6	0.78	--	<0.50	--	0.26	0.0072	0.061	0.015	0.081*	--	1.70	13.00	--	--	14.00	<0.25 b	17.00	0.70	
A-23R	05/12/04	0.28	0.45	--	<0.50	--	0.020	0.00075	0.0022	0.00082	<0.0050*	--	4.70	5.30	--	--	23.00	<0.25	80.00	<1.0	
A-23R	08/25/04	2.3	0.35	--	<0.50	--	0.46	0.012	0.074	0.020	0.012*	--	1.80	10.00	--	--	11.00	<0.25	31.00	0.34	
A-23R	12/14/04	2	0.65	--	<0.50	--	0.37	0.0084	0.041	0.013	0.018*	--	2.20	12.00	--	--	9.80	<0.25	6.40	0.25	
A-23R	03/10/05	0.60	0.31	--	<0.50	--	0.035	0.0011	0.0045	0.0014	0.035*	--	1.10	7.30	--	--	30.00	<0.25	220.00	0.20	
A-23R	06/07/05	0.33	<0.25	--	<0.50	--	0.0080	<0.0005	0.0012	<0.0005	0.013*	--	1.50	5.60	--	--	28.00	<0.25	200.00	1.90	
A-23R	09/20/05	<0.25	<0.25	--	<0.50	--	0.00060	<0.0005	<0.0005	<0.0005	0.0096*a	--	1.50	2.60	--	--	34.00	<0.25	270.00	<0.10	
A-23R	12/14/05	0.37	<0.25	--	<0.50	--	0.019	0.00056	0.00065	0.00058	0.032*	--	0.80	5.30	--	--	25.00	<0.25	50.00	0.17	
A-23R	03/15/06	1.1	<0.25	--	<0.50	--	0.34	0.0033	<0.0025	0.0051	<0.0050*	--	0.80	13.00	--	--	27.00	<0.25	21.00	0.28	
A-23R	06/08/06	0.34	<0.25	--	<0.50	--	0.033	<0.0005	<0.0005	0.031	0.0081*	--	0.70	4.00	--	--	38.00	<0.25	150.00	0.19	
A-23R	09/12/06	0.42	<0.25	--	<0.50	--	0.010	<0.0005	0.032	0.0013	0.035*	--	1.40	3.60	--	--	33.00	<0.25	100.00	<0.10	
A-23R	12/12/06	2.1	<0.25	--	<0.50	--	0.52	0.0066	0.053	0.021	<0.0050*	--	2.80	16.00	--	--	24.00	<0.25	4.20	0.31	
A-23R	03/27/07	0.86	--	--	--	--	0.17	0.0019	0.0019	0.0045	--	--	1.10	--	--	--	--	--	--	--	
A-23R	06/19/07	0.44	--	--	--	--	0.021	0.00058	0.010	0.0013	0.0076*	--	1.40	3.00	--	--	32.00	<0.25	180.00	0.11	
A-23R	09/24/07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
A-23R	12/11/07	0.79	--	--	--	--	0.095	0.0025	0.0050	0.0026	--	--	2.73	--	--	--	--	--	--	--	
A-23R	03/04/08	<0.25	--	--	--	--	0.00097	<0.0005	<0.0005	<0.0005	--	--	3.20	--	--	--	--	--	--	--	
A-23R	06/05/08	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	2.40	2.60	--	--	44.00	<0.25	440.00	<0.10	
A-23R	12/05/08	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.33	--	--	--	--	--	--	--	
A-23R	03/04/09	<0.25	--	--	--	--	0.00073	<0.0005	0.0022	0.013	--	--	0.35	--	--	--	--	--	--	--	
A-23R	06/02/09	<0.25	--	--	--	--	0.0013	<0.00050	0.0021	0.0059	<0.0050*	--	0.60	2.10	--	--	22.00	<0.25	290.00	<0.10	
A-23R	09/21/09	<0.25	--	--	--	--	<0.00050	<0.00050	<0.00050	<0.00050	--	--	0.77	--	--	--	--	--	--	--	
A-23R	11/16/09	<0.25	--	--	--	--	<0.0005	<0.0005	0.001	<0.0005	--	--	1.29	--	--	--	--	--	--	--	
A-23R	03/08/10	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.86	--	--	--	--	--	--	--	
A-23R	06/08/10	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	0.89	1.10	--	--	39.00	<0.25	450.00	<0.10	
A-23R	09/09/10	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.54	--	--	--	--	--	--	--	
A-23R	11/16/10	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.96	--	--	--	--	--	--	--	
A-23R	03/01/11	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.00	--	--	--	--	--	--	--	
A-23R	05/24/11	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050***	--	0.59	1.00	--	--	44.00	<0.25	450.00	0.10	
A-23R	08/29/11	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.55	--	--	--	--	--	--	--	
A-23R	12/01/11	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0010	--	--	1.15	--	--	--	--	--	--	--	
A-23R	03/01/12	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	1.47	--	--	--	--	--	--	--	
A-23R	05/30/12	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050***	--	0.00	<0.010	--	--	86.00	<0.25	470.00	<0.10	
A-23R	11/07/12	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	<0.010	--	--	11	<0.25 *c	1,000	<0.10	
A-23R	02/27/13	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.00	--	--	--	--	--	--	--	
A-23R	04/08/13	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	<0.0050	--	--	--	--	--	--	--	--	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
A-23R	07/29/13	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
A-23R	10/02/13	<0.25	--	--	--	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	
A-23R	01/21/14	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	4.28	--	--	--	--	--	--	--	
A-23R	04/22/14	<0.25	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.0050	<0.0050	--	0.018	--	--	18	<0.25	1,900	<0.10	
A-23R	07/15/14	<0.25	--	--	--	--	0.00092	<0.0005	<0.0005	<0.0005	--	--	0.88	--	--	--	--	--	--	--	
A-23R	09/28/15	<0.100	--	--	--	--	0.00109	<0.005	<0.001	<0.003	--	--	0.12	3.55	--	--	4.87 T8	<0.1 T8	23.7	<0.05	
A-23R	10/11/16	<0.100	--	--	--	--	0.00109	<0.005	<0.001	<0.003	--	--	0.26	--	--	--	--	--	--	--	
A-23R	10/10/17	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.51	--	--	--	--	--	--	--	
A-23R	10/02/18	0.119 B	--	--	--	--	0.00299	<0.001	<0.001	<0.003	--	--	0.12	--	--	--	--	--	--	--	
A-23R	10/03/19	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.11	--	--	--	--	--	--	--	
A-23R	10/19/20	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.22	--	--	--	--	--	--	--	
A-23R	10/11/21	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.00	--	--	--	--	--	--	--	
A-23R	09/19/22	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.12	--	--	--	--	--	--	--	
A-25	06/16/11	4.1	--	--	--	--	0.27	0.038	0.28	0.19	--	--	--	--	--	--	--	--	--	--	
A-26R	05/25/11	22	--	--	--	--	4	0.095	1.6	0.75	--	--	--	--	--	--	--	--	--	--	
A-27	02/14/02	2.9	11	--	<0.5	--	0.13	0.014	0.096	0.25	--	--	--	--	--	--	--	--	--	--	
A-27	05/22/02	3.3	8.2	--	<0.5	--	0.20	0.016	0.14	0.38	--	--	--	--	--	--	--	--	--	--	
A-27	08/29/02	3.8	8.1	--	<0.5	--	0.24	0.016	0.14	0.29	--	--	2.30	7.50	--	--	24.00	<0.25	0.29	0.20	
A-27	11/06/02	3.2	8.000	--	<0.5	--	0.16	0.016	0.065	0.14	--	--	0.70	5.20	--	--	26.00	<0.25	<0.25	0.20	
A-27	02/19/03	3.1	6.8	--	<0.5	--	0.17	0.017	0.052	0.13	--	--	3.20	6.60	--	--	19.00	<0.25	<0.25	<0.1	
A-27	06/10/03	3.7	4.5	--	<0.25	--	0.14	0.013	0.11	0.23	--	--	1.20	10.00	--	--	19.00	<0.25	0.77	0.10	
A-27	09/16/03	4.5	5.6	--	<0.50	--	0.27	0.02	0.18	0.38	--	--	1.00	8.60	--	--	51.00	<0.25 b	0.59	0.70	
A-27	11/19/03	5.9	5.3	--	<0.50	--	0.25	0.023	0.13	0.33	--	--	1.10	8.90	--	--	19.00	<0.25 b	0.33	<0.1	
A-27	02/25/04	4.4	16	--	<0.50	--	0.15	0.016	0.18	0.30	--	--	1.90	12.00	--	--	27.00	<0.25 b	<0.25	0.30	
A-27	05/11/04	4.6	5.2	--	<0.50	--	0.16	0.017	0.23	0.38	--	--	0.70	8.40	--	--	25.00	<0.25	<0.50	<0.10	
A-27	08/25/04	4.7	2.5	--	<0.50	--	0.25	0.018	0.17	0.24	--	--	1.68	12.00	--	--	22.00	<0.25	<0.50	0.13	
A-27	12/14/04	4.5	4.4	--	<0.50	--	0.11	0.012	0.099	0.14	--	--	1.32	12.00	--	--	10.00	<0.25	<0.50	0.12	
A-27	03/10/05	5.8	4.7	--	<0.50	--	0.14	0.015	0.16	0.22	--	--	1.62	12.00	--	--	18.00	<0.25	0.78	<0.10	
A-27	06/07/05	4.5	7.8	--	<0.50	--	0.17	0.014	0.24	0.34	--	--	1.00	7.00	--	--	19.00	<0.25	<0.50	0.30	
A-27	09/20/05	6.3	2.3	--	<0.50	--	0.25	0.019	0.18	0.22	--	--	3.10	10.00	--	--	29.00	<0.25	0.84	0.16	
A-27	12/13/05	3.7	0.83	--	<0.50	--	0.13	0.012	0.083	0.095	--	--	2.30	16.00	--	--	24.00	<0.25	<0.50	<0.10	
A-27	03/15/06	4.4	1.3	--	<0.50	--	0.13	0.017	0.19	0.24	--	--	2.30	15.00	--	--	14.00	<0.25	<0.50	0.16	
A-27	06/08/06	4.5	1.1	--	<0.50	--	0.19	0.016	0.23	0.28	--	--	1.20	13.00	--	--	25.00	<0.25	0.51	0.15	
A-27	09/12/06	3.4	0.82	--	<0.50	--	0.17	0.011	0.12	0.12	--	--	1.90	12.00	--	--	19.00	<0.25	<0.50	0.23	
A-27	12/12/06	3.7	0.90	--	<0.50	--	0.11	0.0096	0.10	0.12	--	--	1.00	13.00	--	--	24.00	<0.25	<0.50	<0.10	
A-27	03/27/07	3.2	--	--	--	--	0.063	0.0078	0.047	0.050	--	--	1.40	--	--	--	--	--	--	--	
A-27	06/19/07	2.6	--	--	--	--	0.073	0.0064	0.047	0.053	--	--	2.40	11.00	--	--	7.50	<0.25	<1.0	0.10	
A-27	09/24/07	2.7	--	--	--	--	0.10	0.0072	0.035	0.040	--	--	1.50	--	--	--	--	--	--	--	
A-27	12/11/07	4.7	--	--	--	--	0.16	0.011	0.17	0.13	--	--	1.50	--	--	--	--	--	--	--	
A-27	03/04/08	4.0	--	--	--	--	0.10	0.011	0.14	0.11	--	--	1.80	--	--	--	--	--	--	--	
A-27	06/04/08	2.5	--	--	--	--	0.093	0.0063	0.022	0.041	--	--	2.00	9.90	--	--	10.00	<0.25	<0.50	0.13	
A-27	09/08/08	3.5	--	--	--	--	0.16	0.0091	0.067	0.047	--	--	1.85	--	--	--	--	--	--	--	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
A-27	12/04/08	3.1	--	--	--	--	0.13	0.0075	0.091	0.046	--	--	0.39	--	--	--	--	--	--	--	
A-27	03/04/09	2.5	--	--	--	--	0.098	0.0080	0.07	0.043	--	--	0.39	--	--	--	--	--	--	--	
A-27	06/02/09	3.1	--	--	--	--	0.048	0.0065	0.11	0.05	--	--	0.63	6.5	--	--	13	<0.25	1.2	<0.10	
A-27	09/22/09	2.9	--	--	--	--	0.054	0.0064	0.099	0.037	--	--	0.45	--	--	--	--	--	--	--	
A-27	11/16/09	3.0	--	--	--	--	0.035	0.0051	0.0921	0.035	--	--	0.46	--	--	--	--	--	--	--	
A-27	03/09/10	2.4	--	--	--	--	0.024	0.0043	0.089	0.036	--	--	1.32	--	--	--	--	--	--	--	
A-27	06/08/10	2.5	--	--	--	--	0.021	0.0041	0.088	0.031	--	--	0.00	3.90	--	--	12.00	<0.25	2.10	<0.10	
A-27	09/09/10	3.4	--	--	--	--	0.035	0.0054	0.12	0.034	--	--	0.47	--	--	--	--	--	<0.50	--	
A-27	11/16/10	2.1	--	--	--	--	0.014	0.0034	0.070	0.022	--	--	0.34	--	--	--	--	--	--	--	
A-27	03/02/11	2.3	--	--	--	--	0.014	0.0024	0.051	0.016	--	--	0.00	--	--	--	--	--	--	--	
A-27	05/24/11	1.7	--	--	--	--	0.0092	0.0017	0.023	0.0096	--	--	0.27	3.30	--	--	8.80	<0.25	2.20	0.10	
A-27	08/30/11	2.1	--	--	--	--	0.026	0.0021	0.022	0.011	--	--	0.36	--	--	--	--	--	--	--	
A-27	12/02/11	2.2	--	--	--	--	0.016	0.0026	0.030	0.0094	--	--	0.77	--	--	--	--	--	--	--	
A-27	03/01/12	1.4	--	--	--	--	0.012	0.0018	0.035	0.0077	--	--	0.32	--	--	--	--	--	--	--	
A-27	05/30/12	1.6	--	--	--	--	0.015	0.0016	0.038	0.0066	--	--	0.00	2.60	--	--	21.00	<0.25	1.10	<0.10	
A-27	08/25/12	1.5	--	--	--	--	0.029	0.0018	0.0027	0.0048	--	--	--	--	--	--	--	--	--	--	
A-27	11/08/12	1.2	--	--	--	--	0.025	0.0022	0.0093	0.0068	--	--	--	--	--	--	--	--	--	--	
A-27	02/28/13	1.6	--	--	--	--	0.038	0.0019	0.057	0.0078	--	--	--	--	--	--	--	--	--	--	
A-27	04/10/13	1.3	--	--	--	--	0.035	0.0018	0.041	0.0053	--	--	--	3.9	--	--	21	<0.25 *c	3.3	<0.10	
A-27	06/21/13	1.0	0.40 K	--	--	--	0.053	0.0024	0.043	0.0083	--	--	--	--	--	--	--	<0.25 *c	2.7	<0.10	Baseline monitoring event
A-27	07/30/13	1.8	--	--	--	--	0.073	0.0039	0.051	0.017	--	--	--	6.2	16	3.6	--	16	<0.50	<0.10	
A-27 (DUP)	07/30/13	1.5	--	--	--	--	0.058	0.0033	0.040	0.015	--	--	--	--	--	--	--	--	--	--	Duplicate of A-27
A-27	08/26/13	1.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Two-month monitoring event
A-27	08/26/13	2.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Duplicate of A-27
A-27	10/02/13	1.9	--	--	--	--	0.066	0.0041	0.038	0.021	--	--	0.00	7.4	14	3.6	--	<0.50 *c	<0.50	<0.10	
A-27	01/22/14	2.6	--	--	--	--	0.078	0.0042	0.061	0.062	--	--	7.32	--	--	--	--	--	<0.50	<0.10	
A-27	04/22/14	2.9	--	--	--	--	0.062	0.0023	0.074	0.078	--	--	--	2.9	--	--	2.4	<0.25	4.2	<0.10	
A-27	07/15/14	1.8	--	--	--	--	0.051	0.0021	0.012	0.016	--	--	0.36	5.7	18	16	--	--	0.34 J	<0.10	
A-27	03/18/15	2.3	--	--	--	--	0.072	0.0019	0.072	0.010	--	--	0.33	6.7	--	--	17	<0.25	3.1	<0.10	Surrogate recovery above lab limits
A-27	09/29/15	1.68	--	--	--	--	0.0609	<0.005	0.00988	0.00742	--	--	0.29	3.86	--	--	22.8 T8	<0.10	9.30	<0.05	
A-27	03/31/16	2.55	--	--	--	--	0.131	<0.005	0.142	0.0142	--	--	0.36	4.98	--	--	25.7	<0.10	7.57	<0.05 J3 J6	
A-27	10/14/16	1.42	--	--	--	--	0.0670	<0.005	0.0101	0.00490	--	--	0.29	2.02	--	--	24.3	<0.10	105	<0.05	
A-27	03/29/17	2.81	--	--	--	--	0.144	0.00320	0.159	0.0204	--	--	0.23	--	--	--	--	--	--	--	
A-27	10/12/17	1.08	--	--	--	--	0.0598	<0.00100	0.0114	<0.00300	--	--	0.73	1.47	--	--	19.3 T8	<0.100	74.0	<0.0500	
A-27	03/29/18	1.29	--	--	--	--	0.0259	<0.001	0.00882	<0.003	--	--	0.11	--	--	--	--	--	--	--	
A-27	10/04/18	0.949	--	--	--	--	0.0259	<0.001	<0.001	<0.003	--	--	0.12	1.64	--	--	10.7 T8	<0.1	236	<0.05	
A-27	04/03/19	0.869	--	--	--	--	0.00859	<0.00100	0.0116	<0.00300	--	--	0.08	--	--	--	--	--	292	--	
A-27	10/04/19	1.32	--	--	--	--	0.0217	0.00104	0.00201	0.00407	--	--	0.18	2.65	--	--	<1.25 T8	<0.100	6.65	<0.0500	
A-27	03/27/20	0.950 B	--	--	--	--	0.0135	<0.00100	0.0277	0.00357	--	--	0.21	--	--	--	--	--	<5.00	--	
A-27	10/22/20	1.73 B	--	--	--	--	0.0185	0.00123	<0.00100	0.00315	--	--	0.34	5.14	--	--	14.2 T8	<0.100	46.2	<0.0500	
A-27	04/13/21	0.741	--	--	--	--	0.0181	<0.00100	0.0122	<0.00300	--	--	0.16	--	--	--	--	--	--	--	
A-27	10/13/21	0.929	--	--	--	--	0.0138	0.00116	<0.00100	0.00429	--	--	0.27	3.02	--	--	7.64 T8	<0.100	<5.00	<0.0500	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
A-27	04/19/22	1.190	--	--	--	--	0.0228	<0.00100	0.0317	<0.00300	--	--	0.10	--	--	--	--	--	--	--	
A-27	09/21/22	0.835	--	--	--	--	0.0343	<0.00100	0.0108	<0.00300	--	--	0.18	2.56	--	--	9.04 T8	<0.100	19.8	1.08	
A-28R	02/14/02	5.3	2.7	--	<0.5	--	0.66	0.027	0.42	0.20	0.035*	--	--	--	--	--	--	--	--	--	
A-28R	05/22/02	3.1	6.7	--	<0.5	--	0.14	0.010	0.20	0.092	0.05*	--	--	--	--	--	--	--	--	--	
A-28R	08/29/02	4.0	6.0	--	<0.5	--	0.15	0.019	0.23	0.078	0.032*	--	3.60	6.20	--	--	45.00	<0.25	0.73	0.30	
A-28R	11/06/02	3.4	1.8	--	<0.5	--	0.47	0.015	0.053	0.050	0.028*	--	2.20	5.90	--	--	46.00	<0.25	0.57	<0.1	
A-28R	02/19/03	3.5	4.6	--	<0.5	--	0.46	0.015	0.051	0.050	0.013*	--	3.00	6.30	--	--	48.00	<0.25	0.56	<0.1	
A-28R	06/10/03	3.7	2.9	--	<0.25	--	0.31	0.0081	0.085	0.051	0.064*	--	1.20	6.10	--	--	42.00	<0.25	<0.25	<0.1	
A-28R	09/16/03	3.8	2.0	--	<0.50	--	1.0	0.013	0.075	0.048	0.17*	--	0.90	10b	--	--	58.00	<0.25 b	0.41	0.50	
A-28R	11/19/03	4.9	<0.25	--	<0.50	--	0.58	0.012	0.059	0.064	0.11*	--	1.20	9.90	--	--	47.00	<0.25 b	0.25	<0.1	
A-28R	02/25/04	5.1	1.7	--	<0.50	--	0.63	0.0093	0.19	0.076	0.0080*	--	1.80	9.60	--	--	46.00	<0.25 b	<0.25	1.40	
A-28R	05/12/04	6.5	2.6	--	<0.50	--	0.96	0.012	0.20	0.058	<0.0050*	--	1.90	11.00	--	--	47.00	<0.25	<0.50	<0.10	
A-28R	08/25/04	5.9	0.88	--	<0.50	--	2.1	0.018	0.050	0.053	0.043*	--	0.50	12.00	--	--	38.00	<0.25	--*b	--*b	
A-28R	12/14/04	7.6	3.0	--	<0.50	--	1.4	0.015	0.073	0.062	0.025*	--	1.72	12.00	--	--	22.00	<0.25	<0.50	0.12	
A-28R	03/10/05	10	0.76	--	<0.50	--	1.9	0.019	0.077	0.064	0.0078*	--	3.32	14.00	--	--	42.00	<0.25	<0.50	<0.10	
A-28R	06/07/05	6.4	1.2	--	<0.50	--	2.1	0.015	0.069	0.048	0.0068*	--	1.00	13.00	--	--	35.00	<0.25	<0.50	0.70	
A-28R	09/20/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
A-28R	12/13/05	5.4	<0.25	--	<0.50	--	0.93	0.011	0.033	0.036	0.012*	--	0.89	15.00	--	--	28.00	<0.25	<0.50	0.13	
A-28R	03/15/06	4.6	<0.25	--	<0.50	--	0.80	0.012	0.11	0.035	<0.0050*	--	0.89	15.00	--	--	45.00	<0.25	1.30	<0.10	
A-28R	06/08/06	4.2	0.49	--	0.73	--	0.87	0.013	0.070	0.035	0.019*	--	0.80	13.00	--	--	34.00	<0.25	<0.50	--	
A-28R	09/12/06	5.2	<0.25	--	<0.50	--	1.0	0.015	0.048	0.036	0.016*	--	1.10	16.00	--	--	35.00	<0.25	<0.50	<0.10	
A-28R	12/12/06	4.0	0.57	--	<0.50	--	0.3	0.0095	0.027	0.028	<0.0050*	--	1.70	13.00	--	--	25.00	<0.25	<0.50	<0.10	
A-28R	03/27/07	5.5	--	--	--	--	0.71	0.014	0.062	0.022	--	--	3.20	--	--	--	--	--	--	--	
A-28R	06/19/07	5.3	--	--	--	--	0.59	0.018	0.058	0.041	<0.0050	--	3.20	12.00	--	--	32.00	<0.25	2.50	<0.10	
A-28R	09/24/07	3.9	--	--	--	--	0.53	0.015	0.041	0.035	--	--	2.90	--	--	--	--	--	--	--	
A-28R	12/11/07	2.1	--	--	--	--	0.088	0.0044	0.013	0.015	--	--	2.60	--	--	--	--	--	--	--	
A-28R	03/04/08	3.6	--	--	--	--	0.27	0.0087	0.044	0.022	--	--	0.80	--	--	--	--	--	--	--	
A-28R	06/04/08	2.2	--	--	--	--	0.095	0.0049	0.0060	0.012	<0.0050	--	2.30	7.00	--	--	18.00	<0.25	<0.50	<0.10	
A-28R	12/04/08	1.4	--	--	--	--	0.026	0.0022	0.011	0.0075	--	--	0.36	--	--	--	--	--	--	--	
A-28R	03/04/09	1.4	--	--	--	--	0.12	0.0060	0.057	0.029	--	--	0.44	--	--	--	--	--	--	--	
A-28R	06/02/09	2.1	--	--	--	--	0.055	0.0020	0.016	0.0069	<0.0050	--	0.46	2.30	--	--	15.00	<0.25	2.80	0.18	
A-28R	09/22/09	2.3	--	--	--	--	0.1	0.0026	0.038	0.016	--	--	0.55	--	--	--	--	--	--	--	
A-28R	11/16/09	1.7	--	--	--	--	0.080	0.002	0.039	0.017	--	--	0.52	--	--	--	--	--	--	--	
A-28R	03/09/10	7.3	--	--	--	--	0.65	0.0079	0.32	0.092	--	--	0.50	--	--	--	--	--	--	--	
A-28R	06/08/10	2.2	--	--	--	--	0.14	0.0018	0.045	0.013	<0.0050	--	0.00	2.40	--	--	31.00	<0.25	18.00	0.29	
A-28R	09/10/10	2.4	--	--	--	--	0.12	0.0020	0.041	0.011	--	--	3.81	--	--	--	--	--	--	--	
A-28R	11/16/10	1.8	--	--	--	--	0.077	0.0017	0.047	0.013	--	--	0.79	--	--	--	--	--	--	--	
A-28R	03/02/11	2.8	--	--	--	--	0.15	0.0029	0.083	0.016	--	--	0.00	--	--	--	--	--	--	--	
A-28R	05/24/11	3.5	--	--	--	--	0.21	0.0029	0.091	0.015	<0.0050	--	0.00	3.60	--	--	39.00	<0.25	1.60	0.13	
A-28R	08/30/11	3.7	--	--	--	--	0.14	0.0026	0.061	0.011	--	--	0.31	--	--	--	--	--	--	--	
A-28R	12/02/11	3.6	--	--	--	--	0.074	0.0022	0.056	0.0092	--	--	0.30	--	--	--	--	--	--	--	
A-28R	03/02/12	2.6	--	--	--	--	0.086	0.0022	0.075	0.012	--	--	2.47	--	--	--	--	--	--	--	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
A-28R	05/30/12	2.7	--	--	--	--	0.065	0.0017	0.050	0.0085	<0.0050	--	0.00	2.00	--	--	42.00	<0.25	<0.50	0.11	
A-28R	08/25/12	1.8	--	--	--	--	0.030	0.00089	0.010	0.0031	--	--	--	--	--	--	--	--	--	--	
A-28R	11/08/12	0.81	--	--	--	--	0.015	<0.0005	0.0066	0.0013	--	--	--	--	--	--	--	--	--	--	
A-28R	02/28/13	2.6	--	--	--	--	0.062	<0.0025	0.044	0.0059	--	--	--	--	--	--	--	--	--	--	
A-28R	04/10/13	3.2	--	--	--	--	0.035	0.0013	0.030	0.0042	<0.0050	--	--	2.5	--	--	37	<0.25 °c	7.9	<0.10	
A-28R	07/29/13	2.5	--	--	--	--	0.043	0.0018	0.019	0.0034	--	--	--	--	--	--	--	--	--	--	
A-28R	10/02/13	1.4	--	--	--	--	0.015	<0.001	0.0043	0.0026	--	--	0.00	--	--	--	--	--	--	--	
A-28R	01/22/14	1.4	--	--	--	--	0.17	0.0027	0.0060	0.0033	--	--	5.55	--	--	--	--	--	--	--	
A-28R	04/22/14	2.2	--	--	--	--	0.062	0.0022	0.016	0.0025	<0.0050	--	--	4.3	--	--	47	0.45	2.2	<0.10	
A-28R	07/15/14	1.7	--	--	--	--	0.043	0.0016	0.0062	0.0020	--	--	0.20	--	--	--	--	--	--	--	
A-28R	03/18/15	3.0	--	--	--	--	0.042	0.0035	0.016	0.0055	--	--	0.22	7.5	--	--	44	<0.25	4.4	<0.10	Surrogate recovery above lab limits
A-28R	09/29/15	1.85	--	--	--	--	0.0205	<0.005	0.00431	<0.003	--	--	0.30	4.15	--	--	71.3 T8	<0.10	<5.0	<0.05	
A-28R	03/31/16	3.37	--	--	--	--	0.160	<0.005	0.0202	0.00467	--	--	0.41	5.11	--	--	45.5	<0.10	<5.0	<0.05	
A-28R	10/14/16	3.65	--	--	--	--	0.208	0.00979	0.0106	0.00704	<0.002	<0.002	0.38	9.23	--	--	32.9	<0.10	<5.0	<0.05	
A-28R	03/29/17	3.87	--	--	--	--	0.113	0.00481	0.0217	0.00608	--	--	0.19	--	--	--	--	--	--	--	
A-28R	10/13/17	4.67	--	--	--	--	0.850	0.0177	0.0277	0.0161	<0.00200	<0.00100	0.63	13.6	--	--	37.7 T8	<0.100	<5.00	<0.0500	
A-28R	03/29/18	6.93	--	--	--	--	0.466	0.0103	0.0282	0.00879	--	--	4.61	--	--	--	--	--	--	--	
A-28R	10/04/18	7.86	--	--	--	--	0.534	0.0173	0.0284	0.0146	<0.002	<0.002	0.14	14.7	--	--	31.1 T8	<0.1	<5.0	<0.05	
A-28R	04/03/19	6.24	--	--	--	--	0.127	0.0069	0.294	0.023	--	--	0.09	--	--	--	--	--	--	--	
A-28R	10/04/19	8.86	--	--	--	--	0.544	0.0128	0.240	0.0265	<0.00200	<0.00200	0.28	15.5	--	--	32.5 T8	<0.100	<5.00	<0.0500	
A-28R	03/26/20	1.96	--	--	--	--	0.00593	<0.00100	0.0740	0.00677	--	--	0.18	--	--	--	--	--	--	--	
A-28R	10/22/20	3.72	--	--	--	--	0.0398	0.00334	0.0538	0.00876	<0.00500	<0.00500	0.07	4.46	--	--	34.8 T8	<0.100	<5.00	<0.0500	
A-28R	04/13/21	3.92	--	--	--	--	0.02180	0.00239	0.0190	0.00355	--	--	0.12	--	--	--	--	--	--	--	
A-28R	10/13/21	2.50	--	--	--	--	0.0222	0.00235	0.00476	<0.00300	<0.00200	<0.00200	0.00	4.15	--	--	37 T8	<0.100	<5.00	<0.0500	
A-28R	04/19/22	2.280	--	--	--	--	0.0166	0.00144	0.00562	<0.00300	--	--	0.13	--	--	--	--	--	--	--	
A-28R	09/21/22	1.040	--	--	--	--	0.00631	0.00160	0.00263	<0.00300	<0.00200	<0.00200	0.10	3.2	--	--	31.9 T8	<0.100	31.9	0.178	
A-29R	05/25/11	5.6	--	--	--	--	2.3	0.018	<0.015	0.024	--	--	--	--	--	--	--	--	--	--	
11	06/24/13	<0.25	0.30	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	<0.25	2.5	<0.10	Baseline monitoring event
11	07/30/13	<0.25	--	--	--	--	--	--	--	--	--	--	--	0.42	1.0	<0.30	--	<0.25	0.88	<0.10	
11	08/26/15	<0.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.71	--	
11	10/03/13	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.69	0.046	5.2	0.78	--	1.2 °c	560	<0.10	
11	01/22/14	0.75	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	9.20	--	--	--	--	--	120	<0.10	
11	04/21/14	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	1.1	580	<0.10	
11	07/14/14	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	1.07	0.47	1.6	0.55	--	--	200	<0.10	
11	03/18/15	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	10.87	<0.010	--	--	<0.050	0.43	450	<0.10	
11	09/29/15	<0.100	--	--	--	--	<0.001	<0.005	<0.001	<0.003	--	--	3.59	0.0747	--	--	0.518	0.438	310	<0.05	
11	03/30/16	<0.100	--	--	--	--	<0.001	<0.005	<0.001	<0.003	--	--	7.15	<0.010	--	--	<0.050	0.332	1,120	<0.05	
11	10/14/16	<0.100	--	--	--	--	<0.001	<0.005	<0.001	<0.003	--	--	7.40	--	--	--	--	--	548	--	
11	03/29/17	<0.100	--	--	--	--	<0.001	<0.001	<0.001	<0.003	--	--	6.58	--	--	--	--	--	1,010	--	
11	10/13/17	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	4.84	--	--	--	--	--	428	--	
11	03/29/18	<0.1	--	--	--	--	<0.001	<0.001	<0.001	<0.003	--	--	7.24	--	--	--	--	--	222	--	
11	10/03/18	<0.1	--	--	--	--	<0.001	<0.001	<0.001	<0.003	--	--	2.37	--	--	--	--	--	423	--	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
11	04/03/19	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	7.62	--	--	--	--	--	90	--	
11	10/03/19	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	3.30	--	--	--	--	--	175	--	
11	03/26/20	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	7.31	--	--	--	--	--	408	--	
11	10/20/20	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	4.01	--	--	--	--	--	247	--	
11	04/14/21	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	6.99	--	--	--	--	--	79.9	--	
11	10/12/21	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	4.30	--	--	--	--	--	45.1	--	
11	04/19/22	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	4.94	--	--	--	--	--	113	--	
11	09/22/22	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	1.41	--	--	--	--	--	103	--	
12	06/24/13	4.1	5.3 K	--	--	--	0.037	0.045	0.13	0.53	--	--	--	--	--	--	--	<0.25	<0.50	<0.10	Baseline monitoring event
12	08/26/13	9.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Two-month monitoring event
12	10/03/13	2.7	--	--	--	--	0.0020	0.0057	0.043	0.18	--	--	0.00	2.2	39	35	--	1.1 *c	5,500	<0.10	
12	01/22/14	4.2	--	--	--	--	0.0067	0.015	0.027	0.34	--	--	3.42	--	--	--	--	--	3,000	<0.10	
12	04/21/14	2.6	--	--	--	--	0.015	0.014	0.088	0.15	--	--	--	--	--	--	--	<0.25	1,700	0.22	
12	07/14/14	4.7	--	--	--	--	0.019	0.026	0.17	0.22	--	--	0.20	11	31	38	--	--	1,100	<0.10	
12	03/18/15	1.8	--	--	--	--	0.0059	0.0012	0.003	0.024	--	--	0.23	2.2	--	--	5.5	<0.25	940	<0.10	
12	09/29/15	3.32	--	9.85	--	0.732	0.0435	0.0217	0.191	0.0609	0.0508	0.00280	0.14	3.01	--	--	1.34 T8	<0.10	550	0.499	
12	03/30/16	0.725	--	--	--	--	0.00441	<0.005	0.0140	0.00511	--	--	0.29	0.473	--	--	2.32	<0.10	1,550	<0.05	
12	10/14/16	1.62	--	0.713	--	<0.500	0.00363	0.00950	0.0721	0.0306	0.0187	0.00336	0.87	--	--	--	--	--	791	--	
12	04/20/17	1.83	--	--	--	--	0.0244	<0.010	0.138	<0.030	--	--	0.31	--	--	--	--	--	2,740	--	
12	10/13/17	2.19 B	--	4.59	--	<0.250	0.0110	<0.0100	0.101	0.0317	0.146	0.00182	0.46	--	--	--	--	--	901	--	
12	03/29/18	1.05	--	--	--	--	0.00197	<0.001	0.00228	0.00365	--	--	0.10	--	--	--	--	--	627	--	
12	10/04/18	2.68	--	0.772	--	<0.25	0.033	0.012	0.181	<0.03	0.024	0.00272	0.26	--	--	--	--	--	152	--	
12	04/03/19	1.23	--	--	--	--	0.00225	0.00150	0.0185	0.0175	--	--	0.02	--	--	--	--	--	254	--	
12	10/03/19	1.36	--	1.41	--	<0.250	0.00435	0.00295	0.0226	0.0109	0.00951	0.00334	0.12	--	--	--	--	--	125	--	
12	03/26/20	0.520	--	--	--	--	0.00213	0.00132	0.00808	0.0141	--	--	0.66	--	--	--	--	--	1,050	--	
12	10/21/20	2.73	--	1.57	--	<0.250	0.116	0.00918	0.0913	0.0490	0.0239	<0.00500	0.45	--	--	--	--	--	1,270	--	
12	04/12/21	1.290	--	--	--	--	0.00327	<0.00100	0.00471	0.00605	--	--	1.30	--	--	--	--	--	691	--	
12	10/12/21	4.10	--	1.46	--	<0.250	0.0392	0.00746	0.1570	0.0458	0.0131	0.00325	0.06	--	--	--	--	--	998	--	
12	04/19/22	2.070	--	--	--	--	0.0139	0.00463	0.0940	0.0238	--	--	0.04	--	--	--	--	--	1,340	--	
12	09/22/22	2.430	--	0.729	--	<0.250	0.169	0.01080	0.0912	0.0604	0.0130	0.00584	3.32	--	--	--	--	--	1,040	--	
MW-1	02/13/02	<0.25	2.0	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*	--	--	--	--	--	--	--	--	--	
MW-1	05/21/02	<0.25	1.9	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*	--	--	--	--	--	--	--	--	--	
MW-1	08/28/02	<0.25	1.0	--	<0.5	--	0.0013	0.0067	0.00052	0.0016	<0.005*	--	3.20	4.00	--	--	12.00	<0.25	1.20	0.20	
MW-1	11/05/02	<0.25	0.87	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	0.021*	--	1.90	3.60	--	--	85.00	<0.25	0.99	1.30	
MW-1	02/19/03	<0.25	1.9	--	<0.5	--	<0.0005	0.00058	<0.0005	<0.0005	<0.005*	--	3.60	4.90	--	--	16.00	<0.25	11.00	0.10	
MW-1	06/10/03	<0.25	1.1	--	<0.25	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*	--	1.30	7.60	--	--	28.00	<0.25	6.40	<0.1	
MW-1	09/16/03	<0.25	<0.50	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.40	5.60	--	--	25.00	<0.25 b	5.20	<0.1	
MW-1	11/19/03	<0.25	<0.50	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.90	3.80	--	--	15.00	<0.25 b	0.50	<0.1	
MW-1	02/25/04	<0.25	1.3	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.20	2.60	--	--	21.00	<0.25 b	17.00	0.20	
MW-1	05/11/04	<0.25	0.87	--	<0.50	--	<0.0005	0.00068	<0.0005	<0.0005	<0.0050*	--	1.80	1.60	--	--	27.00	<0.25	11.00	<0.10	
MW-1	08/25/04	0.83	0.40	--	<0.50	--	<0.0005	<0.0005	0.00065	<0.0005	<0.0050*	--	2.38	1.60	--	--	18.00	<0.25	2.80	<0.10	
MW-1	12/15/04	<0.25	0.38	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	3.20	1.40	--	--	4.30	0.72	26.00	<0.10	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
MW-1	03/09/05	<0.25	0.63	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	3.40	1.50	--	--	19.00	<0.25	9.80	<0.10	
MW-1	06/08/05	<0.25	0.80	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	3.00	0.82	--	--	11.00	<0.25	15.00	<0.2	
MW-1	09/21/05	<0.25	0.40	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	3.50	0.68	--	--	51.00	<0.25	52.00	<0.10	
MW-1	12/14/05	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.20	1.10	--	--	18.00	<0.25	21.00	<0.10	
MW-1	03/14/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.10	0.16	--	--	20.00	<0.25	21.00	<0.10	
MW-1	06/07/06	<0.25	0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.80	0.14	--	--	23.00	<0.25	86.00	<0.10	
MW-1	09/13/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.0052*	--	2.20	2.50	--	--	24.00	<0.25	15.00	<0.10	
MW-1	12/13/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.60	0.22	--	--	6.60	1.00	49.00	<0.10	
MW-1	06/20/07	<0.25	0.75	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	3.40	--	--	--	--	--	--	--	
MW-1	03/04/08	--	--	--	--	--	--	--	--	--	--	--	1.20	--	--	--	--	--	26.00	--	
MW-1	06/05/08	<0.25	0.32	--	<0.50	--	<0.0005	<0.0005	<0.0005	0.0013	<0.0050	--	2.70	--	--	--	--	<0.25	41.00	--	
MW-1	06/01/09	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	0.68	--	--	--	--	--	--	--	
MW-1	06/08/10	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	0.00	--	--	--	--	--	--	--	
MW-1	05/23/11	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	0.12	--	--	--	--	--	--	--	
MW-1	06/01/12	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	0.00	--	--	--	--	--	--	--	
MW-1	04/09/13	<0.25	--	<0.25	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	--	--	--	--	--	--	--	
MW-1	04/23/14	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	--	--	--	--	--	--	--	
MW-1	10/01/15	<0.100	--	1.38	--	0.708	<0.001	<0.005	<0.001	<0.003	<0.002	<0.002	0.19	--	--	--	--	--	--	--	
MW-1	10/12/16	<0.100	--	<0.250	--	<0.500	<0.001	<0.005	<0.001	<0.003	<0.002	<0.002	0.34	--	--	--	--	--	--	--	
MW-1	10/12/17	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00100	0.77	--	--	--	--	--	--	--	
MW-1	10/03/18	<0.1	--	<0.2	--	<0.25	<0.001	<0.001	<0.001	<0.003	<0.002	<0.002	0.14	--	--	--	--	--	--	--	
MW-1	10/02/19	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.16	--	--	--	--	--	--	--	
MW-1	10/22/20	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00500	<0.00500	0.10	--	--	--	--	--	--	--	
MW-1	10/14/21	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.22	--	--	--	--	--	--	--	
MW-1	09/19/22	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.10	--	--	--	--	--	--	--	
MW-2	02/13/02	<0.25	0.71	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*	--	--	--	--	--	--	--	--	--	
MW-2	05/21/02	<0.25	0.66	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*	--	--	--	--	--	--	--	--	--	
MW-2	08/29/02	<0.25	0.91	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*	--	2.10	0.69	--	--	1.60	<0.25	9.80	<0.1	
MW-2	11/05/02	<0.25	0.73	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*	--	1.90	1.20	--	--	5.10	<0.25	9.60	<0.1	
MW-2	02/19/03	<0.25	0.74	--	<0.5	--	<0.0005	0.00062	<0.0005	<0.0005	0.028*	--	2.10	0.031	--	--	1.60	<0.25	55.00	<0.1	
MW-2	06/10/03	<0.25	0.61	--	<0.25	--	<0.0005	0.00071	<0.0005	<0.0005	0.026*a	--	1.40	0.059	--	--	1.60	<0.25	25.00	0.30	
MW-2	09/16/03	<0.25	<0.50	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.062*	--	1.40	1.10	--	--	12.00	<0.25 b	21.00	0.60	
MW-2	11/19/03	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.021*	--	6.40	0.13	--	--	0.40	<0.25 b	8.30	<0.1	
MW-2	02/25/04	<0.25	<0.50	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.030*	--	4.30	0.079	--	--	0.75	0.67 b	17.00	0.20	
MW-2	05/11/04	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.70	0.24	--	--	0.18	0.64	25.00	<0.10	
MW-2	08/25/04	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.02	0.11	--	--	0.063	<0.25	21.00	<0.10	
MW-2	12/14/04	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.72	0.093	--	--	<0.050	<0.25	11.00	<0.10	
MW-2	03/10/05	<0.25	0.29	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.00	0.23	--	--	0.32	0.34	31.00	<0.10	
MW-2	06/07/05	<0.25	0.91	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.036*	--	1.00	0.44	--	--	0.059	0.26	21.00	<0.2	
MW-2	09/20/05	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.70	0.033	--	--	<0.050	<0.25	25.00	<0.10	
MW-2	12/13/05	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.024*	--	3.00	0.71	--	--	1.60	<0.25	4.50	<0.10	
MW-2	03/15/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.80	<0.010	--	--	<0.050	0.54	17.00	<0.10	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
MW-2	06/08/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.0063*	--	1.20	0.013	--	--	<0.050	0.35	10.00	<0.10	
MW-2	09/12/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.50	0.49	--	--	<0.050	<0.25	13.00	<0.10	
MW-2	12/12/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.20	0.018	--	--	0.068	0.91	14.00	<0.10	
MW-2	06/19/07	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	1.80	--	--	--	--	--	--	--	
MW-2	03/04/08	--	--	--	--	--	--	--	--	--	--	--	3.20	--	--	--	--	--	19.00	--	
MW-2	06/04/08	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	1.90	--	--	--	--	0.97	12.00	--	
MW-2	06/03/09	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	4.27	--	--	--	--	--	--	--	
MW-2	06/08/10	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.063	--	1.71	--	--	--	--	--	--	--	
MW-2	05/23/11	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	3.30	--	--	--	--	--	--	0.0050	
MW-2	05/31/12	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	1.83	--	--	--	--	--	--	0.0050	
MW-2	04/09/13	<0.25	--	<0.25	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	--	--	--	--	--	--	<0.10	
MW-2	04/22/14	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	--	--	--	--	--	--	<0.10	
MW-2	09/30/15	<0.100	--	<0.100	--	<0.25	<0.001	<0.005	<0.001	<0.003	<0.002	<0.002	1.02	0.276	--	--	0.115 T8	<0.10	6.98	<0.05	
MW-2	10/12/16	<0.100	--	<0.250	--	<0.500	<0.001	<0.005	<0.001	<0.003	<0.002	<0.002	1.42	--	--	--	--	--	--	--	
MW-2	10/11/17	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00100	2.66	--	--	--	--	--	--	--	
MW-2	10/03/18	<0.1	--	<0.2	--	<0.25	<0.001	<0.001	<0.001	<0.003	<0.002	<0.002	3.14	--	--	--	--	--	--	--	
MW-2	10/03/19	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	1.37	--	--	--	--	--	--	--	
MW-2	10/21/20	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00500	<0.00500	1.11	--	--	--	--	--	--	--	
MW-2	10/14/21	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	2.17	--	--	--	--	--	--	--	
MW-2	9/22/2022*	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	1.35	--	--	--	--	--	--	--	
MW-3	02/13/02	<0.25	1.8	--	<0.5	--	0.011	0.0015	0.0045	0.011	<0.005*	--	--	--	--	--	--	--	--	--	
MW-3	05/20/02	0.38	1.9	--	<0.5	--	0.052	0.0028	0.025	0.020	0.01*	--	--	--	--	--	--	--	--	--	
MW-3	08/28/02	0.62	2.5	--	<0.5	--	0.11	0.0071	0.021	0.030	<0.005*	--	2.60	4.60	--	--	11.00	<0.25	19.00	0.20	
MW-3	11/06/02	0.63	1.1	--	<0.5	--	0.14	0.0053	0.021	0.015	0.006*	--	2.90	0.88	--	--	0.80	<0.25	9.20	0.20	
MW-3	02/19/03	<0.25	1.8	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	0.014*	--	8.60	0.017	--	--	0.20	6.10	84.00	0.20	
MW-3	06/11/03	<0.25	1.3	--	<0.25	--	<0.0005	<0.0005	<0.0005	<0.0005	0.019*	--	6.54	0.022	--	--	0.40	8.50	130.00	0.20	
MW-3	09/17/03	<0.25	1.4	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.042*	--	6.50	0.028	--	--	0.80	8.20	160.00	<0.1	
MW-3	11/20/03	<0.25	2.4	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.0063*	--	7.80	<0.01	--	--	<0.2	17.00	66.00	0.20	
MW-3	02/25/04	<0.25	1.2	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.025*	--	2.80	<0.01	--	--	<0.050	6.70	35.00	0.20	
MW-3	05/11/04	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	8.40	<0.010	--	--	<0.050	7.70	59.00	<0.10	
MW-3	08/25/04	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.0051*	--	1.80	<0.010	--	--	<0.050	7.00	66.00	<0.10	
MW-3	12/15/04	<0.25	0.33	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.018*	--	7.60	0.059	--	--	<0.050	6.50	50.00	<0.10	
MW-3	03/09/05	<0.25	<0.25	--	<0.50	--	0.0010	<0.0005	<0.0005	<0.0005	<0.0050*	--	4.43	1.80	--	--	<0.050	3.50	51.00	<0.10	
MW-3	06/08/05	<0.25	<0.25	--	<0.50	--	0.0011	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.98	3.30	--	--	<0.050	4.20	37.00	<0.2	
MW-3	09/21/05	<0.25	<0.25	--	<0.50	--	0.00094	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.90	4.30	--	--	0.064	3.40	47.00	<0.10	
MW-3	12/14/05	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.80	0.80	--	--	<0.050	1.60	72.00	<0.10	
MW-3	03/14/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	3.10	0.23	--	--	<0.050	7.50	22.00	<0.10	
MW-3	06/07/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.80	0.30	--	--	<0.050	4.60	21.00	<0.10	
MW-3	09/13/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.60	2.40	--	--	<0.050	0.40	30.00	<0.10	
MW-3	12/13/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	0.80	0.25	--	--	0.064	2.80	28.00	<0.10	
MW-3	06/20/07	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	2.20	--	--	--	--	--	--	--	
MW-3	06/05/08	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	2.00	--	--	--	--	3.40	15.00	--	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
MW-3	06/01/09	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	4.84	--	--	--	--	--	--	--	
MW-3	06/09/10	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	0.0011	0.0053	<0.0050	--	3.24	--	--	--	--	--	--	--	
MW-3	05/23/11	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	5.29	--	--	--	--	--	--	--	
MW-3	05/31/12	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	0.34	--	--	--	--	--	--	--	
MW-3	04/09/13	<0.25	--	<0.25	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	--	--	--	--	--	--	--	
MW-3	04/22/14	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	--	--	--	--	--	--	--	
MW-3	10/01/15	<0.100	--	0.143	--	<0.25	<0.001	<0.005	<0.001	<0.003	<0.002	<0.002	2.76	--	--	--	--	--	--	--	
MW-3	10/12/16	<0.100	--	<0.250	--	<0.500	<0.001	<0.005	<0.001	<0.003	<0.002	<0.002	3.86	--	--	--	--	--	--	--	
MW-3	10/11/17	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00100	4.49	--	--	--	--	--	--	--	
MW-3	10/03/18	<0.1	--	<0.2	--	<0.25	<0.001	<0.001	<0.001	<0.003	<0.002	<0.002	2.95	--	--	--	--	--	--	--	
MW-3	10/02/19	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	0.00743	<0.00200	4.44	--	--	--	--	--	--	--	
MW-3	10/22/20	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00500	<0.00500	4.84	--	--	--	--	--	--	--	
MW-3	10/13/21	0.131 B	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	3.49	--	--	--	--	--	--	--	
MW-3	09/20/22	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.85	--	--	--	--	--	--	--	
MW-4	02/14/02	0.78	280	--	<50	--	0.30	0.0072	0.0023	0.0082	--	--	--	--	--	--	--	--	--	--	
MW-4	05/21/02	1.5	8.6	--	<0.5	--	0.43	0.023	0.034	0.13	--	--	--	--	--	--	--	--	--	--	
MW-4	08/28/02	3.3	30	--	2.6	--	1.1	0.016	0.016	0.024	--	--	1.00	5.10	--	--	86.00	<0.25	2.90	--^	
MW-4	11/05/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-4	02/19/03	3.1	31	--	<0.5	--	0.056	0.0017	0.014	0.020	--	--	2.00	1.80	--	--	120.00	<0.25	270.00	--^	
MW-4	06/10/03	0.39	12	--	<0.25	--	0.031	0.0012	0.0091	0.0096	--	--	0.90	4.90	--	--	36.00	<0.25	8.40	0.60	
MW-4	09/16/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-4	11/19/03	0.25	19	--	<0.50	--	0.033	<0.001	0.0042	0.0069	--	--	1.40	1.90	--	--	31.00	<0.25 b	49.00	0.60	
MW-4	02/25/04	0.36	15	--	<0.50	--	0.035	0.0014	0.0056	0.0094	--	--	2.20	1.20	--	--	32.00	<0.25 b	1.00	0.30	
MW-4	05/12/04	0.33	7.4	--	<0.50	--	0.012	<0.001	0.0048	0.0058	--	--	0.89	4.90	--	--	37.00	<0.25	5.30	<0.10	
MW-4	08/26/04	<0.50	5.1	--	<0.50	--	0.014	<0.0025	0.0039	0.0069	--	--	2.32	1.40	--	--	26.00	<0.25	6.40	0.42	
MW-4	12/15/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-4	03/09/05	<2.0	11	--	<0.50	--	<0.01	<0.01	<0.01	0.013	--	--	1.37	1.00	--	--	31.00	<0.25	110.00	0.33	
MW-4	06/08/05	<1.0	16	--	1.1	--	<0.005	<0.005	<0.005	<0.005	<0.0050	--	1.50	1.60	--	--	46.00	<0.25	11.00	0.50	
MW-4	09/21/05	<2.0	19	--	2.1	--	<0.010	<0.010	<0.010	<0.010	--	--	1.30	7.00	--	--	54.00	<0.25	0.52	23.00	
MW-4	12/14/05	<0.50	6.2	--	0.81	--	0.012	<0.0025	0.0032	0.0084	--	--	2.40	6.60	--	--	19.00	<0.25	33.00	0.38	
MW-4	03/14/06	<0.40	3.9	--	0.69	--	0.0063	<0.0020	0.0020	0.0062	--	--	2.40	4.20	--	--	11.00	<0.25	1.90	0.53	
MW-4	06/07/06	<0.50	4.5	--	<0.50	--	0.0037	<0.0025	<0.0025	<0.0025	--	--	3.20	7.10	--	--	8.30	<0.25	<0.50	0.54	
MW-4	09/13/06	<0.50	2.7	--	<0.50	--	0.0034	<0.0025	<0.0025	0.0029	--	--	2.80	7.60	--	--	15.00	<0.25	<0.50	0.85	
MW-4	12/13/06	<0.25	3.7	--	0.62	--	0.0012	<0.0005	<0.0005	0.0023	--	--	2.90	2.30	--	--	8.70	<0.25	31.00	<0.10	
MW-4	06/20/07	<0.25	--	--	--	--	<0.0010	<0.0010	<0.0010	<0.0010	--	--	1.80	--	--	--	--	--	--	--	
MW-4	06/05/08	<0.25	1.2	--	<0.50	--	<0.0010	<0.0010	<0.0010	<0.0010	--	--	2.60	--	--	--	--	--	--	--	
MW-4	06/01/09	<0.25	2.1	--	0.61	--	<0.0005	<0.0005	<0.0005	0.00080	--	--	0.26	--	--	--	--	--	--	--	
MW-4	06/08/10	<0.25	0.86	--	<0.50	--	<0.0005	0.00057	<0.0005	0.0018	--	--	0.00	--	--	--	--	--	--	--	
MW-4	05/23/11	<0.25	1.6	--	<0.50	--	<0.0010	<0.0010	<0.0010	<0.0010	--	--	0.25	--	--	--	--	--	--	--	
MW-4	06/01/12	<0.50	2.0	--	<0.50	--	<0.0025	<0.0025	<0.0025	<0.0025	--	--	0.00	--	--	--	--	--	--	--	
MW-4	04/09/13	<0.50 O	--	0.92	<0.50	--	<0.0025	<0.0025	<0.0025	<0.0025	--	--	--	--	--	--	--	--	--	--	
MW-4	04/23/14	<0.25	5.3	1.7	0.90	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
MW-4	09/30/15	<0.100	--	5.02	--	0.916	<0.001	<0.005	<0.001	<0.003	--	--	0.41	--	--	--	--	--	--	--	
MW-4	10/12/16	0.285	--	1.27	--	<0.500	<0.001	<0.005	<0.001	<0.003	--	--	0.62	--	--	--	--	--	--	--	
MW-4	10/11/17	0.225 B	--	4.55	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.59	--	--	--	--	--	--	--	
MW-4	10/04/18	0.198	--	0.973	--	<0.25	<0.001	<0.001	<0.001	<0.003	--	--	0.08	--	--	--	--	--	--	--	
MW-4	10/03/19	<0.100	--	1.44	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.21	--	--	--	--	--	--	--	
MW-4	10/20/20	0.217 B	--	0.929	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.04	--	--	--	--	--	--	--	
MW-4	10/14/21	0.221	--	1.290	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.07	--	--	--	--	--	--	--	
MW-4	09/22/22	0.179	--	0.793	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.20	--	--	--	--	--	--	--	
MW-5	02/13/02	<0.25	<0.25	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*	--	--	--	--	--	--	--	--	--	
MW-5	05/21/02	<0.25	<0.5	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	0.01*	--	--	--	--	--	--	--	--	--	
MW-5	08/29/02	<0.25	1.2	--	<0.5	--	<0.0005	0.0018	<0.0005	0.00063	<0.005*	--	1.40	0.17	--	--	0.30	<0.25	11.00	0.20	
MW-5	11/05/02	<0.25	1.6	--	<0.5	--	0.0055	0.0016	<0.0005	0.00056	<0.005*	--	4.10	6.40	--	--	13.00	1.10	250.00	0.30	
MW-5	02/20/03	<0.25	<0.25	--	<0.5	--	<0.0005	0.00066	<0.0005	<0.0005	<0.005*	--	2.00	0.073	--	--	<0.2	<0.25	6.20	<0.1	
MW-5	06/11/03	<0.25	0.36	--	<0.25	--	<0.0005	0.00079	<0.0005	<0.0005	<0.005*	--	1.60	2.50	--	--	0.60	<0.25	8.20	0.10	
MW-5	09/16/03	<0.25	<0.50	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.011*	--	1.20	4.70	--	--	3.10	<0.25 b	5.60	0.10	
MW-5	11/20/03	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.0086*	--	4.90	<0.01	--	--	0.30	<0.25 b	4.70	0.20	
MW-5	02/24/04	<0.25	<0.50	--	<0.50	--	<0.0005	0.0014	<0.0005	<0.0005	<0.0050*	--	3.10	0.33	--	--	0.062	<0.25 b	5.80	0.10	
MW-5	05/11/04	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.90	0.61	--	--	1.50	0.27	3.00	<0.10	
MW-5	08/26/04	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.22	<0.010	--	--	<0.050	1.80	7.60	<0.10	
MW-5	12/15/04	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	12.19	<0.010	--	--	<0.050	0.27	4.30	<0.10	
MW-5	03/09/05	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.11*	--	6.22	0.020	--	--	<0.050	<0.25	15.00	<0.10	
MW-5	06/08/05	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.50	<0.010	--	--	<0.050	<0.25	11.00	<0.2	
MW-5	09/21/05	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.90	0.080	--	--	0.077	<0.25	8.90	<0.10	
MW-5	12/14/05	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.20	<0.010	--	--	<0.050	<0.25	9.80	--*d	
MW-5	03/14/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.012*	--	2.20	<0.010	--	--	<0.050	0.55	3.20	<0.10	
MW-5	06/07/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.0099*	--	2.00	<0.010	--	--	<0.050	1.10	4.50	<0.10	
MW-5	09/13/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.013*	--	2.10	0.34	--	--	<0.050	<0.25	6.60	<0.10	
MW-5	12/13/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.0088*	--	2.30	<0.010	--	--	<0.050	0.30	3.80	<0.10	
MW-5	06/20/07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-5	06/04/08	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.0094	--	2.40	--	--	--	--	--	--	--	
MW-5	06/02/09	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	0.00078	<0.0050	--	4.34	--	--	--	--	--	--	--	
MW-5	06/08/10	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	1.84	--	--	--	--	--	--	--	
MW-5	05/24/11	<0.25	<0.25	--	<0.50	--	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	--	5.26	--	--	--	--	--	--	--	
MW-5	05/31/12	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	2.33	--	--	--	--	--	--	--	
MW-5	04/09/13	<0.25	--	<0.25	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.0073	--	--	--	--	--	--	--	--	--	
MW-5	04/21/14	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	--	--	--	--	--	--	--	
MW-5	10/01/15	<0.100	--	0.371	--	<0.25	<0.001	<0.005	<0.001	<0.003	<0.002	<0.002	0.45	--	--	--	--	--	--	--	
MW-5	10/12/16	<0.100	--	<0.250	--	<0.500	<0.001	<0.005	<0.001	<0.003	<0.002	<0.002	0.40	--	--	--	--	--	--	--	
MW-5	10/13/17	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00100	0.59	--	--	--	--	--	--	--	
MW-5	10/03/18	<0.1	--	<0.2	--	<0.25	<0.001	<0.001	<0.001	<0.003	<0.002	<0.002	0.13	--	--	--	--	--	--	--	
MW-5	10/01/19	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	1.46	--	--	--	--	--	--	--	
MW-5	10/19/20	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00500	<0.00500	1.37	--	--	--	--	--	--	--	

Appendix E
 Historical Groundwater Analytical Results
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments	
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058											
MW-5	10/11/21	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.22	--	--	--	--	--	--	--	--	
MW-5	09/20/22	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	0.00253	<0.00200	0.10	--	--	--	--	--	--	--	--	
MW-6	02/13/02	0.97	1.1	--	<0.5	--	0.014	0.0007	<0.0005	0.00065	<0.005*	--	--	--	--	--	--	--	--	--	--	
MW-6	05/22/02	1.1	2.5	--	<0.5	--	0.035	0.0012	0.0024	0.00072	<0.005*	--	--	--	--	--	--	--	--	--	--	
MW-6	08/29/02	0.58	6.4	--	<0.5	--	0.0014	<0.001	<0.001	<0.001	<0.005*	--	1.20	0.72	--	--	4.10	<0.25	11.00	0.10		
MW-6	11/05/02	0.59	7.3	--	<0.5	--	0.064	<0.001	<0.001	0.0016	0.02*	--	1.70	1.70	--	--	10.00	<0.25	5.60	0.70		
MW-6	02/19/03	0.54	1.7	--	<0.5	--	0.0062	<0.0005	<0.0005	<0.0005	<0.005*	--	3.30	1.20	--	--	7.30	<0.25	62.00	0.10		
MW-6	06/10/03	0.70	1.9	--	<0.25	--	0.025	0.0011	0.00052	0.00051	<0.005*	--	2.00	0.87	--	--	5.90	<0.25	17.00	0.20		
MW-6	09/16/03	0.68	<0.50	--	<0.50	--	<0.0005	<0.0005	0.00053	<0.0005	0.019*	--	2.30	1.60	--	--	41.00	<0.25 b	2.90	1.00		
MW-6	11/19/03	0.44	1.6	--	<0.50	--	0.0095	0.00067	<0.0005	0.00051	<0.0050*	--	5.10	1.70	--	--	5.40	<0.25 b	19.00	<0.1		
MW-6	02/25/04	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.40	<0.01	--	--	0.49	2.8b	24.00	<0.1		
MW-6	05/11/04	1.0	0.67	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.20	0.39	--	--	5.10	<0.25	12.00	<0.10		
MW-6	08/25/04	<0.25	0.50	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.26	0.59	--	--	4.90	<0.25	8.70	0.18		
MW-6	12/14/04	0.82	0.81	--	<0.50	--	0.0080	<0.0005	<0.0005	<0.0005	0.011*	--	1.45	2.80	--	--	2.50	<0.25	9.90	<0.10		
MW-6	03/10/05	1.0	0.42	--	<0.50	--	0.0011	<0.0005	<0.0005	<0.0005	<0.0050*	--	0.70	0.85	--	--	1.90	<0.25	20.00	0.15		
MW-6	06/07/05	0.92	<0.25	--	<0.50	--	0.0014	<0.0005	<0.0005	<0.0005	<0.0050*	--	3.80	0.38	--	--	0.86	0.56	19.00	0.20		
MW-6	09/20/05	0.91	<0.25	--	<0.50	--	<0.0005	<0.0005	0.00062	<0.0005	<0.0050*	--	0.90	1.50	--	--	2.50	<0.25	6.00	0.18		
MW-6	12/13/05	1.2	0.38	--	<0.50	--	0.0032	<0.0005	0.00050	<0.0005	<0.0050*	--	1.00	1.90	--	--	2.60	<0.25	10.00	0.26		
MW-6	03/15/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.00	0.057	--	--	0.30	<0.25	17.00	<0.10		
MW-6	06/08/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.90	0.22	--	--	5.90	<0.25	7.30	0.39		
MW-6	09/12/06	0.71	<0.25	--	<0.50	--	<0.0005	0.00055	<0.0005	<0.0005	<0.0050*	--	1.60	0.98	--	--	2.50	<0.25	3.10	0.33		
MW-6	12/12/06	<0.25	<0.25	--	<0.50	--	<0.0005	0.00055	<0.0005	<0.0005	<0.0050*	--	2.00	0.032	--	--	1.60	0.91	49.00	<0.10		
MW-6	03/27/07	0.81	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	2.30	--	--	--	--	--	--	--	--	
MW-6	06/19/07	0.73	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	1.40	0.40	--	--	4.40	<0.25	15.00	0.21		
MW-6	09/24/07	0.55	--	--	--	--	<0.0010	<0.0010	<0.0010	<0.0010	--	--	3.40	--	--	--	--	--	--	--	--	
MW-6	12/11/07	0.54	--	--	--	--	0.0014	<0.0005	<0.0005	<0.0005	--	--	3.16	--	--	--	--	--	--	--	--	
MW-6	03/04/08	0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	1.50	--	--	--	--	--	--	--	--	
MW-6	06/04/08	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	2.90	0.38	--	--	0.70	<0.25	11.00	0.13		
MW-6	09/08/08	0.51	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.89	--	--	--	--	--	--	--	--	
MW-6	12/04/08	0.43	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.33	--	--	--	--	--	--	--	--	
MW-6	03/04/09	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.57	--	--	--	--	--	--	--	--	
MW-6	06/02/09	0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	0.0025	<0.0050	--	1.37	0.096	--	--	0.30	3.30	24.00	<0.10		
MW-6	09/21/09	0.33	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.28	--	--	--	--	--	--	--	--	
MW-6	11/17/09	0.31	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.46	--	--	--	--	--	--	--	--	
MW-6	03/09/10	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	0.00095	--	--	1.33	--	--	--	--	--	--	--	--	
MW-6	06/08/10	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	0.080	0.036	--	--	0.22	0.41	11.00	<0.10		
MW-6	09/09/10	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.40	--	--	--	--	--	4.80	--	--	
MW-6	11/15/10	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.42	--	--	--	--	--	--	--	--	
MW-6	03/02/11	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	1.20	--	--	--	--	--	--	--	--	
MW-6	05/24/11	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	1.86	0.010	--	--	<0.050	0.68	10.00	0.10		
MW-6	08/30/11	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.32	--	--	--	--	--	--	--	--	
MW-6	12/01/11	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0010	--	--	0.90	--	--	--	--	--	--	--	--	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
MW-6	03/01/12	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	1.69	--	--	--	--	--	--	--	
MW-6	05/31/12	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	0.00	<0.010	--	--	<0.050	2.10	18.00	<0.10	
MW-6	08/25/12	0.27	--	--	--	--	<0.00050	<0.00050	<0.00050	<0.00050	--	--	--	--	--	--	--	--	--	--	
MW-6	11/08/12	0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-6	02/28/13	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-6	04/09/13	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	<0.010	--	--	<0.050	0.92 *c	15	<0.10	
MW-6	07/29/13	0.30	--	--	--	--	<0.0005	<0.0005	<0.0005	0.00059	--	--	--	--	--	--	--	--	--	--	
MW-6	10/02/13	0.69	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	10.68	--	--	--	--	--	--	--	
MW-6	01/22/14	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	8.95	--	--	--	--	--	--	--	
MW-6	04/22/14	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	<0.010	--	--	<0.050	1.6	23	<0.10	
MW-6	07/15/14	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.51	--	--	--	--	--	--	--	
MW-6	09/29/15	0.259	--	--	--	--	<0.001	<0.005	<0.001	<0.003	<0.002	<0.002	0.36	0.123	--	--	0.203 T8	<0.1	9.64	<0.05	
MW-6	10/12/16	0.294	--	--	--	--	<0.001	<0.005	<0.001	<0.003	<0.002	<0.002	0.78	--	--	--	--	--	--	--	
MW-6	10/12/17	0.311	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00100	1.14	--	--	--	--	--	--	--	
MW-6	10/03/18	0.389 B	--	--	--	--	<0.001	<0.001	<0.001	<0.003	<0.002	<0.002	0.36	--	--	--	--	--	--	--	
MW-6	10/03/19	0.249	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.15	--	--	--	--	--	--	--	
MW-6	10/22/20	0.250 B	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	<0.00500	<0.00500	0.50	--	--	--	--	--	--	--	
MW-6	10/14/21	0.211 B	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.30	--	--	--	--	--	--	--	
MW-6	09/21/22	0.232	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.20	--	--	--	--	--	--	--	
MW-7	02/14/02	13	7.5	--	<0.5	--	0.20	0.24	0.57	1.8	0.035*	--	--	--	--	--	--	--	--	--	
MW-7	05/21/02	6.6	11	--	<0.5	--	0.16	0.089	0.43	0.66	0.04*	--	--	--	--	--	--	--	--	--	
MW-7	08/29/02	2.9	5.7	--	<0.5	--	0.12	0.042	0.24	0.11	0.047*	--	1.40	14.00	--	--	9.80	<0.25	20.00	0.40	
MW-7	11/05/02	0.90	5.9	--	<0.5	--	0.021	0.0022	0.004	0.0066	0.041*	--	3.00	14.00	--	--	8.90	<0.25	7.00	0.50	
MW-7	02/20/03	9.7	11	--	<0.5	--	0.12	0.13	0.33	1.4	0.11*a	--	2.50	13.00	--	--	13.00	<0.25	21.00	1.10	
MW-7	06/11/03	5.7	8.7	--	<0.25	--	0.13	0.092	0.26	0.52	0.081*a	--	2.00	17.00	--	--	12.00	<0.25	1.10	0.50	
MW-7	09/17/03	1.4	12	--	<0.50	--	0.078	0.031	0.15	0.089	0.11*a	--	1.10	14.00	--	--	2.70	<0.25 c	3.00	1.10	
MW-7	11/20/03	0.26	0.79	--	<0.50	--	<0.0005	<0.0005	<0.0005	0.035	0.019*a	--	2.40	0.98	--	--	0.90	1.3 c	19.00	<0.1	
MW-7	02/26/04	15	21	--	<0.50	--	0.11	0.34	0.63	3.8	0.034*a	--	6.20	18.00	--	--	27.00	<0.25 b	59.00	0.90	
MW-7	05/11/04	6.3	11	--	<0.50	--	0.059	0.15	0.31	1.3	0.0083*a	--	1.00	14.00	--	--	16.00	<0.25	12.00	0.15	
MW-7	08/26/04	7.1	20	--	<0.50	--	0.054	0.22	0.34	1.7	0.067*a	--	3.80	15.00	--	--	13.00	<0.25	9.20	0.47	
MW-7	12/15/04	18	4.4	--	<0.50	--	0.14	0.37	0.53	3.0	0.19*a	--	1.30	10.00	--	--	20.00	3.20	68.00	0.19	
MW-7	03/09/05	3.5	2.1	--	<0.50	--	0.045	0.034	0.090	0.27	0.079*a	--	1.45	18.00	--	--	9.30	<0.25	4.50	0.45	
MW-7	06/08/05	2.9	2.3	--	<0.50	--	0.054	0.050	0.11	0.44	0.069*a	--	10.50	17.00	--	--	8.70	<0.25	1.40	0.40	
MW-7	09/20/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-7	09/21/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-7	12/14/05	8.8	0.59	--	<0.50	--	0.16	0.19	0.31	1.5	0.042*a	--	1.70	22.00	--	--	19.00	<0.25	75.00	0.16	
MW-7	03/14/06	15	0.50	--	<0.50	--	0.12	0.26	0.50	3.6	0.026*	--	1.70	18.00	--	--	9.70	<0.25	19.00	0.36	
MW-7	06/07/06	17	0.85	--	<0.50	--	0.12	0.35	0.69	4.5	0.023*	--	1.60	19.00	--	--	2.70	<0.25	17.00	0.43	
MW-7	09/13/06	2.4	0.32	--	<0.50	--	0.050	0.055	0.19	0.39	0.021*a	--	2.00	17.00	--	--	1.80	<0.25	2.10	0.17	
MW-7	12/13/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-7	03/27/07	13	--	--	--	--	0.091	0.22	0.60	2.5	--	--	1.90	--	--	--	--	--	--	--	
MW-7	06/20/07	6.6	--	--	--	--	0.027	0.06	0.19	1.1	0.030*	--	1.00	23.00	--	--	2.90	<0.25	8.30	0.45	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
MW-7	09/24/07	6.6	--	--	--	--	0.023	0.094	0.27	2.0	--	--	2.60	--	--	--	--	--	--	--	
MW-7	12/11/07	27	--	--	--	--	0.031	0.33	0.87	6.6	--	--	3.22	--	--	--	--	--	--	--	
MW-7	03/04/08	19	--	--	--	--	0.032	0.19	0.66	3.8	--	--	1.30	--	--	--	--	--	13.00	--	
MW-7	06/04/08	6.4	--	--	--	--	<0.01	0.088	0.30	0.77	0.019***	--	1.30	19.00	--	--	0.15	<0.25	2.30	0.63	
MW-7	09/08/08	15	--	--	--	--	0.015	0.064	0.35	2.6	--	--	0.73	--	--	--	--	--	--	--	
MW-7	12/05/08	8.7	--	--	--	--	0.019	0.046	0.33	1.5	--	--	0.40	--	--	--	--	--	--	--	
MW-7	03/04/09	5.7	--	--	--	--	0.014	0.073	0.25	1.4	--	--	0.70	--	--	--	--	--	--	--	
MW-7	06/02/09	5.5	--	--	--	--	0.014	0.029	0.15	0.89	0.0072*	--	0.37	25.00	--	--	2.80	<0.25	21.00	0.42	
MW-7	09/21/09	6.1	--	--	--	--	0.0072	0.03	0.18	1.1	--	--	0.54	--	--	--	--	--	--	--	
MW-7	11/17/09	18	--	--	--	--	<0.020	0.16	0.54	4.3	--	--	0.64	--	--	--	--	--	--	--	
MW-7	03/09/10	5.8	--	--	--	--	0.013	0.047	0.20	0.9	--	--	0.18	--	--	--	--	--	--	--	
MW-7	06/09/10	4.9	--	--	--	--	0.0075	0.058	0.25	1.2	0.0064*	--	0.00	27.00	--	--	1.10	1.60	1.60	0.44	
MW-7	09/09/10	1.9	<0.25	--	<0.50	--	0.0036	0.0082	0.041	0.23	--	--	0.25	--	--	--	--	<0.25	3.60	--	
MW-7	11/15/10	8.8	--	--	--	--	0.012	0.10	0.34	2.1	--	--	0.47	--	--	--	--	--	--	--	
MW-7	03/01/11	4.9	--	--	--	--	0.0051	0.055	0.11	0.77	--	--	0.00	--	--	--	--	--	--	--	
MW-7	05/24/11	5.0	--	--	--	--	0.0062	0.050	0.14	0.66	0.0082***	--	0.00	3.50	--	--	1.80	0.46	5.10	0.55	
MW-7	08/29/11	2.3	--	--	--	--	0.0022	0.0055	0.026	0.16	--	--	0.44	--	--	--	--	--	--	--	
MW-7	12/01/11	5.2	--	--	--	--	<0.0005	0.026	0.036	0.83	--	--	0.42	--	--	--	--	--	--	--	
MW-7	03/01/12	6.0	<0.25	--	<0.50	--	0.011	0.0987	0.24	0.90	--	--	0.25	--	--	--	--	--	--	--	
MW-7	05/31/12	8.8	--	--	--	--	0.02	0.14	0.36	1.9	0.0063***	--	0.00	14.00	--	--	1.50	<0.25	2.40	0.70	
MW-7	08/25/12	1.8	--	--	--	--	0.0024	0.0062	0.030	0.16	--	--	--	--	--	--	--	--	--	--	
MW-7	11/08/12	2.4	--	--	--	--	0.0028	0.028	0.072	0.55	--	--	--	--	--	--	--	--	--	--	
MW-7	02/28/13	1.3	--	--	--	--	<0.0015	0.0070	0.0070	0.19	--	--	--	--	--	--	--	--	--	--	
MW-7	04/09/13	8.1	--	--	--	--	<0.005	0.070	0.25	1.4	0.0097	0.0097	--	3.7	--	--	3.3	<0.25 *c	4.7	0.054 J	
MW-7	04/09/13	5.7	--	--	--	--	0.0071	0.072	0.24	1.2	--	--	--	--	--	--	--	--	--	--	
MW-7	06/21/13	4.0	0.27 K	--	--	--	0.0059	0.064	0.28	1.1	--	--	--	--	--	--	--	<0.25 *c	3.2	<0.10	Baseline monitoring event
MW-7	07/30/13	7.2	--	--	--	--	0.016	0.11	0.29	1.6	--	--	--	20	4.6	<0.30	--	<0.25	4.1	<0.10	
MW-7	08/26/13	7.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Two-month monitoring event
MW-7	10/03/13	2.8	--	--	--	--	0.016	0.033	0.15	0.54	--	--	0.00	20	170	140	--	0.81 *c	3,100	<0.10	
MW-7	01/22/14	2.1	--	--	--	--	0.014	0.010	0.13	0.17	--	--	5.11	--	--	--	--	--	2,100	0.23	
MW-7	04/21/14	1.9	--	--	--	--	0.013	0.0093	0.11	0.2	<0.0050	<0.0050	--	7.9	--	--	15	0.29	1,200	0.18	
MW-7 (DUP)	04/21/14	2.4	--	--	--	--	0.015	0.012	0.13	0.25	--	--	--	--	--	--	--	--	--	--	Duplicate of MW-7
MW-7	07/14/14	1.5	--	--	--	--	0.012	0.0012	0.073	0.021	--	--	1.80	24	3.7	5.8	--	--	1,000	<0.10	
MW-7	03/17/15	1.6	--	--	--	--	0.0043	0.0061	0.050	0.13	--	--	0.10	3.3	--	--	3.6	<0.25	750	0.16	
MW-7 (DUP)	03/17/15	2.1	--	--	--	--	0.0059	0.0078	0.068	0.17	--	--	--	--	--	--	--	--	--	--	Duplicate of MW-7
MW-7	09/30/15	1.02	--	--	--	--	0.00844	<0.005	0.0328	0.0335	0.00580	0.00381	0.21	12.1	--	--	19.7 T8	<0.10	932	<0.05	
MW-7	03/30/16	0.519	--	--	--	--	0.00212	<0.005	0.0203	0.0144	--	--	0.45	2.08	--	--	9.61	<0.10	1,250	<0.05	
MW-7 (DUP)	03/30/16	0.799	--	--	--	--	0.00211	<0.005	0.0272	0.0267	--	--	--	--	--	--	--	--	--	--	Duplicate of MW-7
MW-7	10/13/16	1.87	--	--	--	--	0.00538	<0.005	0.0690	0.0819	0.00555	0.00434	0.26	--	--	--	--	--	963	--	
MW-7 (DUP)	10/13/16	1.88	--	--	--	--	0.00557	<0.005	0.0705	0.0825	0.00539	0.00706	0.26	--	--	--	--	--	976	--	Duplicate of MW-7
MW-7	04/20/17	1.25	--	--	--	--	0.00118	0.00455	0.0644	0.0999	--	--	0.23	--	--	--	--	--	1,830	--	
MW-7	10/12/17	1.03	--	--	--	--	0.00362	0.00205	0.0331	0.0268	0.00488	0.00313	0.45	--	--	--	--	--	96.7	--	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
MW-7 (DUP)	10/12/17	1.03	--	--	--	--	0.00307	0.00202	0.0359	0.0287	0.00448	0.00287	0.45	--	--	--	--	--	953	--	Duplicate of MW-7
MW-7	03/29/18	1.15	--	--	--	--	0.00117	0.00187	0.0216	0.0324	--	--	0.11	--	--	--	--	--	803	--	
MW-7 (DUP)	03/29/18	1.24	--	--	--	--	0.00111	0.00191	0.0257	0.0399	--	--	--	--	--	--	--	--	--	--	Duplicate of MW-7
MW-7	10/04/18	1.49	--	--	--	--	0.0049	0.00211	0.0202	0.0142	0.00818	0.00449	0.10	--	--	--	--	--	1,670	--	
MW-7 (DUP)	10/04/18	1.45	--	--	--	--	0.00354	0.00207	0.0189	0.0160	0.00741	0.00581	--	--	--	--	--	--	--	--	Duplicate of MW-7
MW-7	04/03/19	0.451	--	--	--	--	<0.00100	<0.00100	0.00142	<0.00300	--	--	0.01	--	--	--	--	--	763	--	
MW-7 (DUP)	04/03/19	0.251	--	--	--	--	<0.00100	<0.00100	0.00116	<0.00300	--	--	0.01	--	--	--	--	--	--	--	Duplicate of MW-7
MW-7	10/03/19	1.83	--	--	--	--	0.00213	0.00397	0.0413	0.0193	0.00326	0.00226	0.05	--	--	--	--	--	400	--	
MW-7 (DUP)	10/03/19	1.74	--	--	--	--	0.00215	0.00399	0.0385	0.0194	0.00333	0.00237	0.05	--	--	--	--	--	379	--	Duplicate of MW-7
MW-7	03/26/20	0.394	--	--	--	--	<0.00100	<0.00100	0.00853	0.00701	--	--	0.18	--	--	--	--	--	2,270	--	
MW-7	10/20/20	0.173 B	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	<0.00500	<0.00500	0.25	--	--	--	--	--	681	--	
MW-7 (DUP)	10/20/20	0.119 B	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	<0.00500	<0.00500	0.25	--	--	--	--	--	755	--	Duplicate of MW-7
MW-7	04/13/21	1.930	--	--	--	--	<0.00100	<0.00100	0.0239	0.0236	--	--	0.20	--	--	--	--	--	<500	--	
MW-7 (DUP)	04/13/21	1.970	--	--	--	--	<0.00100	<0.00100	0.0234	0.0226	--	--	0.20	--	--	--	--	--	473	--	Duplicate of MW-7
MW-7	10/12/21	0.472	--	--	--	--	<0.00100	0.00235	0.0103	0.00956	0.00365	<0.00200	0.89	--	--	--	--	--	2,550	--	
MW-7 (DUP)	10/12/21	0.419	--	--	--	--	<0.00100	0.00215	0.00992	0.00884	0.00392	<0.00200	0.89	--	--	--	--	--	2,690	--	Duplicate of MW-7
MW-7	04/18/22	0.109 B	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.12	--	--	--	--	--	876	--	
MW-7 (DUP)	04/18/22	0.120 B	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.12	--	--	--	--	--	870	--	
MW-7	09/20/22	0.119	--	--	--	--	<0.00100	<0.00100	0.00233	<0.00300	0.00406	0.00244 B	0.07	--	--	--	--	--	604	--	
MW-7 (DUP)	09/20/22	0.146	--	--	--	--	<0.00100	<0.00100	0.00244	<0.00300	0.00399	<0.00200	0.07	--	--	--	--	--	591	--	
MW-8	02/14/02	<0.25	8.1	--	<5.0	--	<0.0005	0.00086	<0.0005	<0.0005	0.03*	--	--	--	--	--	--	--	--	--	
MW-8	08/29/02	<0.25	7.5	--	<0.5	--	<0.0005	0.00082	<0.0005	<0.0005	0.017*	--	6.20	0.90	--	--	2.30	<0.25	3.70	0.20	
MW-8	11/05/02	<0.25	1.7	--	1.2	--	<0.0005	<0.0005	<0.0005	<0.0005	0.012*	--	2.10	5.50	--	--	3.40	<0.25	7.50	0.10	
MW-8	02/20/03	<0.25	6.6	--	<0.5	--	<0.0005	0.00055	<0.0005	0.0024	0.029*	--	2.90	0.56	--	--	0.50	0.69	7.60	0.30	
MW-8	06/11/03	<0.25	3.8	--	<0.25	--	0.0013	<0.001	<0.001	<0.001	0.012*	--	1.56	18.00	--	--	0.30	<0.25	<0.25	0.40	
MW-8	09/17/03	<0.25	3.3	--	0.77	--	<0.0005	<0.0005	<0.0005	<0.0005	0.030*	--	2.50	11.00	--	--	6.10	<0.25 c	6.70	0.40	
MW-8	11/20/03	<0.25	2.5	--	<0.50	--	<0.001	<0.001	<0.001	<0.001	<0.0050*	--	1.70	<0.010	--	--	<0.2	2.4 c	11.00	0.10	
MW-8	02/26/04	<0.25	2.7	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.016*	--	2.30	<0.01	--	--	0.57	1.2 b	4.40	0.20	
MW-8	05/11/04	<0.25	1.5	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	3.10	0.19	--	--	0.12	<0.25	5.30	<0.10	
MW-8	08/26/04	<0.25	1.0	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	3.32	0.36	--	--	<0.050	2.20	11.00	<0.10	
MW-8	12/15/04	<0.25	1.5	--	<0.50	--	<0.001	<0.001	<0.001	<0.001	0.0071*	--	2.30	<0.010	--	--	<0.050	5.80	15.00	<0.10	
MW-8	03/09/05	<0.25	1.6	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.0094*	--	2.22	<0.010	--	--	<0.050	1.20	7.30	<0.10	
MW-8	06/08/05	<0.25	1.8	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.014*	--	6.50	0.018	--	--	<0.050	2.30	7.40	<0.2	
MW-8	09/21/05	<0.25	0.97	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.011*	--	2.10	4.40	--	--	0.51	<0.25	11.00	<0.10	
MW-8	12/14/05	<0.25	1.1	--	0.58	--	<0.001	<0.001	<0.001	0.0013	0.0060*	--	2.50	4.00	--	--	<0.050	2.20	11.00	<0.10	
MW-8	03/14/06	<0.25	0.54	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.011*	--	2.50	<0.010	--	--	<0.050	1.60	6.40	<0.10	
MW-8	06/07/06	<0.25	0.88	--	0.61	--	<0.0005	<0.0005	<0.0005	<0.0005	0.0093*	--	1.30	0.53	--	--	<0.050	1.10	6.00	<0.10	
MW-8	09/13/06	<0.25	0.35	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.012*	--	1.60	7.10	--	--	0.068	<0.25	5.00	<0.10	
MW-8	12/13/06	<0.25	0.82	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.0060*	--	3.10	<0.010	--	--	<0.050	7.30	41.00	<0.10	
MW-8	06/20/07	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.029	--	2.20	--	--	--	--	--	--	--	
MW-8	06/04/08	<0.25	0.37	--	<0.50	--	<0.0010	<0.0010	<0.0010	<0.0010	0.064	--	2.50	--	--	--	--	--	--	--	
MW-8	06/02/09	<0.25	0.52	--	<0.50	--	<0.00050	<0.00050	<0.00050	<0.00050	0.020	--	1.52	--	--	--	--	--	--	--	

Appendix E
 Historical Groundwater Analytical Results
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
MW-8	06/09/10	<0.25	0.82	--	0.65	--	<0.0005	<0.0005	<0.0005	<0.0005	0.013	--	1.55	--	--	--	--	--	--	--	
MW-8	05/24/11	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.020	--	0.85	--	--	--	--	--	--	--	
MW-8	05/31/12	<0.25	<0.25	--	<0.50	--	<0.0010	<0.0010	<0.0010	<0.0010	0.032	--	0.79	--	--	--	--	--	--	--	
MW-8	04/10/13	<0.25	--	<0.25	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.046	--	--	--	--	--	--	--	--	--	
MW-8	04/24/14	<0.25	0.49	<0.25	<0.50	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	0.027	--	--	--	--	--	--	--	--	--	
MW-8	09/29/15	<0.100	--	1.75	--	2.07	<0.001	<0.005	<0.001	<0.003	0.00676	<0.002	2.06	--	--	--	--	--	--	--	
MW-8	10/13/16	<0.100	--	0.385	--	<0.500	<0.001	<0.005	<0.001	<0.003	0.0183	<0.002	0.25	--	--	--	--	--	--	--	
MW-8	10/12/17	<0.100	--	0.390	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	0.0180	<0.00100	0.54	--	--	--	--	--	--	--	
MW-8	10/03/18	<0.1	--	<0.2	--	<0.25	<0.001	<0.001	<0.001	<0.003	0.00275	<0.002	0.12	--	--	--	--	--	--	--	
MW-8	10/02/19	<0.100	--	0.328	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	0.00579	<0.00200	0.31	--	--	--	--	--	--	--	
MW-8	10/21/20	<0.100	--	0.290	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	0.0130	<0.00500	1.14	--	--	--	--	--	--	--	
MW-8	10/13/21	<0.100	--	0.365	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	0.00645	<0.00200	3.78	--	--	--	--	--	--	--	
MW-8	09/22/22	<0.100	--	0.523	--	0.51	<0.00100	<0.00100	<0.00100	<0.00300	0.0110	0.00325	1.08	--	--	--	--	--	--	--	
MW-9	06/11/03	6.0	13	--	<0.50	--	0.0031	0.036	0.076	0.60	0.022*	--	2.10	6.60	--	--	15.00	<0.25	2.00	0.70	
MW-9	09/17/03	5.3	39	--	0.72	--	0.026	0.027	0.09	0.45	0.0095*	--	2.10	9.80	--	--	19.00	<0.25 c	1.50	0.70	
MW-9	11/20/03	8.5	19	--	<0.50	--	<0.005	0.018	0.14	1.1	0.0096*	--	1.60	2.20	--	--	14.00	<0.25 c	66.00	0.30	
MW-9	02/26/04	4.1	28	--	<0.50	--	0.022	0.0072	0.025	0.47	0.0083*	--	1.10	15.00	--	--	12.00	<0.25 b	8.10	0.80	
MW-9	05/11/04	4.1	5.8	--	<0.50	--	0.0023	0.0093	0.081	0.44	<0.0050*	--	0.90	4.10	--	--	0.25	<0.25	0.62	0.12	
MW-9	08/26/04	4.2	6.2	--	<0.50	--	0.0066	0.025	0.13	0.43	0.0099*	--	1.80	8.20	--	--	15.00	<0.25	1.00	0.41	
MW-9	12/15/04	5.4	7.6	--	<0.50	--	<0.0025	0.011	0.12	0.39	0.0094*	--	1.76	5.30	--	--	29.00	10.00	180.00	<0.10	
MW-9	03/09/05	4.5	3.5	--	<0.50	--	0.0037	0.0047	0.042	0.18	0.021*	--	4.70	4.30	--	--	7.20	<0.25	4.40	0.30	
MW-9	06/08/05	3.2	3.9	--	<0.50	--	0.0035	0.0087	0.069	0.17	0.0076*	--	4.50	6.50	--	--	8.40	<0.25	6.10	0.30	
MW-9	09/21/05	2.3	2.6	--	<0.50	--	0.007	0.0077	0.033	0.12	0.0076*	--	1.70	11.00	--	--	14.00	<0.25	1.90	0.21	
MW-9	12/14/05	4.7	1.2	--	<0.50	--	0.0078	0.010	0.12	0.38	0.0095*	--	3.30	10.00	--	--	9.10	<0.25	17.00	0.11	
MW-9	03/14/06	2.4	1.4	--	<0.50	--	0.0024	0.0034	0.018	0.12	0.013*	--	3.30	12.00	--	--	3.40	<0.25	1.40	0.51	
MW-9	06/07/06	<0.25	1.0	--	<0.50	--	0.0011	0.023	0.049	0.21	0.021*	--	0.90	4.60	--	--	5.60	<0.25	0.94	0.13	
MW-9	09/13/06	1.8	0.46	--	<0.50	--	0.0044	0.016	0.063	0.064	0.010*	--	1.90	7.40	--	--	7.50	<0.25	<0.50	<0.10	
MW-9	12/13/06	2.6	3.8	--	<0.50	--	<0.0025	<0.0025	0.024	0.19	0.025*	--	2.40	0.72	--	--	3.60	0.27	12.00	0.19	
MW-9	03/27/07	1.5	--	--	--	--	0.16	0.0013	0.0051	0.026	--	--	2.90	--	--	--	--	--	--	--	
MW-9	06/20/07	2.0	--	--	--	--	0.066	0.015	0.051	0.12	0.017	--	2.90	3.50	--	--	6.00	<0.25	<0.50	0.42	
MW-9	09/24/07	1.7	--	--	--	--	0.0036	0.0072	0.029	0.093	--	--	2.50	--	--	--	--	--	--	--	
MW-9	12/11/07	2.9	--	--	--	--	<0.0025	<0.0025	0.057	0.55	--	--	1.76	--	--	--	--	--	--	--	
MW-9	03/04/08	3.0	--	--	--	--	0.0096	<0.0015	0.016	0.15	--	--	1.50	--	--	--	--	--	--	--	
MW-9	06/04/08	2.0	--	--	--	--	0.0019	0.0073	0.039	0.089	0.0088	--	1.80	3.50	--	--	7.90	<0.25	0.80	0.40	
MW-9	09/08/08	2.4	--	--	--	--	0.0022	0.020	0.077	0.16	--	--	1.25	--	--	--	--	--	--	--	
MW-9	12/05/08	0.93	--	--	--	--	<0.0015	<0.0015	<0.0015	0.052	--	--	0.47	--	--	--	--	--	--	--	
MW-9	03/04/09	0.42	--	--	--	--	<0.0010	<0.0010	0.0040	0.031	--	--	0.32	--	--	--	--	--	--	--	
MW-9	06/02/09	1.2	--	--	--	--	<0.00050	<0.00050	0.0041	0.032	0.0099	--	0.51	0.57	--	--	1.50	<0.25	10.00	<0.10	
MW-9	09/22/09	1.2	--	--	--	--	0.0060	0.0018	0.0068	0.033	--	--	1.16	--	--	--	--	--	--	--	
MW-9	11/17/09	<0.25	--	--	--	--	<0.0005	0.00050	<0.0005	0.0043	--	--	0.48	--	--	--	--	--	--	--	
MW-9	03/09/10	<0.25	--	--	--	--	0.00092	0.00050	0.00055	0.00071	--	--	0.48	--	--	--	--	--	--	--	
MW-9	06/09/10	0.3	--	--	--	--	0.0014	<0.0005	0.00081	0.0058	<0.0050	--	0.00	7.50	--	--	2.90	<0.25	4.80	0.49	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
MW-9	09/09/10	0.48	--	--	--	--	0.0058	0.0014	0.0061	0.025	--	--	0.37	--	--	--	--	--	2.00	--	
MW-9	11/15/10	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	0.00085	--	--	0.39	--	--	--	--	--	--	--	
MW-9	03/01/11	<0.25	--	--	--	--	0.014	<0.0005	<0.0005	0.00085	--	--	0.00	--	--	--	--	--	--	--	
MW-9	05/24/11	<0.25	--	--	--	--	0.0043	<0.0005	<0.0005	0.00085	0.0093	--	0.00	18.00	--	--	<0.050	<0.25	3.60	0.10	
MW-9	08/29/11	0.28	--	--	--	--	0.0067	<0.0005	0.00078	0.0038	--	--	0.27	--	--	--	--	--	--	--	
MW-9	12/01/11	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	0.0024	--	--	0.66	--	--	--	--	--	--	--	
MW-9	03/01/12	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	1.35	--	--	--	--	--	--	--	
MW-9	05/31/12	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	0.012	--	0.00	0.13	--	--	<0.050	0.38	5.30	<0.10	
MW-9	08/25/12	0.67	--	--	--	--	<0.00050	<0.00050	0.00062	0.0057	--	--	--	--	--	--	--	--	--	--	
MW-9	11/08/12	<0.25	--	--	--	--	<0.001	<0.001	<0.001	0.0029	--	--	--	--	--	--	--	--	--	--	
MW-9	02/28/13	<0.25	--	--	--	--	0.0012	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-9	04/10/13	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	6.1	--	--	<0.050	0.88 °c	3.2	<0.10	
MW-9	06/24/13	0.33	0.37	--	--	--	0.014	<0.0005	<0.0005	0.0035	--	--	--	--	--	--	--	<0.25	5.3	0.11	Baseline monitoring event
MW-9	07/30/13	0.27	--	--	--	--	0.0017	<0.0005	0.00071	0.006	--	--	--	14	2.0	<0.30	--	<0.25	72	0.077 J	
MW-9	08/26/13	0.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Two-month monitoring event
MW-9	10/03/13	0.3	--	--	--	--	0.0056	<0.0005	<0.0005	0.0092	--	--	0.00	18	3.8	1.5	--	<0.50 °c	8.6	<0.10	
MW-9	01/22/14	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	0.0013	--	--	9.46	--	--	--	--	--	26	<0.10	
MW-9	04/21/14	<0.25	--	--	--	--	0.017	<0.0005	<0.0005	<0.0005	<0.0050	--	--	24	--	--	0.45	<0.25	300	<0.10	
MW-9	07/14/14	<0.25	--	--	--	--	0.010	<0.0005	<0.0005	0.00072	--	--	0.24	21	1.5	1.2	--	--	99	<0.10	
MW-9	03/18/15	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	1.99	2.9	--	--	<0.050	0.57	190	<0.10	
MW-9	09/30/15	<0.100	--	--	--	--	<0.001	<0.005	<0.001	<0.003	0.00323	<0.002	0.09	5.40	--	--	0.207 T8	<0.1	27.8	<0.05	
MW-9	03/30/16	<0.100	--	--	--	--	<0.001	<0.005	<0.001	<0.003	--	--	3.76	<0.010	--	--	<0.050	0.585	86.3	<0.05	
MW-9	10/13/16	0.784	--	--	--	--	<0.001	<0.005	0.00182	0.0116	0.00276	<0.002	0.24	--	--	--	--	--	39.2	--	
MW-9	03/29/17	0.113	--	--	--	--	<0.001	<0.001	<0.001	<0.003	--	--	5.09	--	--	--	--	--	89.7	--	
MW-9 (DUP)	03/29/17	0.147	--	--	--	--	<0.001	<0.001	<0.001	<0.003	--	--	--	--	--	--	--	--	--	--	
MW-9	10/12/17	0.667	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	0.0123	<0.00100	0.53	--	--	--	--	--	18 P1	--	
MW-9	03/28/18	<0.1	--	--	--	--	<0.001	<0.001	<0.001	<0.003	--	--	4.67	--	--	--	--	--	47.5	--	
MW-9	10/04/18	0.769	--	--	--	--	<0.001	<0.001	<0.001	<0.003	0.00808	<0.002	0.11	--	--	--	--	--	7.13	--	
MW-9	04/03/19	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	3.96	--	--	--	--	--	5.2	--	
MW-9	10/02/19	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	0.00435	<0.00200	0.15	--	--	--	--	--	6.77	--	
MW-9	03/26/20	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	5.24	--	--	--	--	--	47.1	--	
MW-9	10/21/20	0.130 B	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	<0.00500	<0.00500	1.73	--	--	--	--	--	16.1	--	
MW-9	04/13/21	0.272	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	4.99	--	--	--	--	--	16.8	--	
MW-9	10/13/21	0.202	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	0.00233	<0.00200	0.60	--	--	--	--	--	7.01	--	
MW-9	04/19/22	0.110 B	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	4.99	--	--	--	--	--	35.80	--	
MW-9	09/22/22	0.105	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.26	--	--	--	--	--	7.29 P1	--	
MW-12	06/19/01	<0.05	1.6	--	<0.5	--	<0.001	<0.001	<0.001	<0.003	<0.004	--	--	--	--	--	--	--	--	--	
MW-12	06/20/01	<0.06	1.7	--	<0.5	--	<0.001	<0.001	<0.001	<0.003	<0.004	--	--	--	--	--	--	--	--	--	
MW-12																					Destroyed during construction activities
MW-12R	02/14/02	<0.25	1.4	--	<0.5	--	0.014	<0.0005	<0.0005	<0.0005	<0.005*	--	--	--	--	--	--	--	--	--	
MW-12R	05/21/02	<0.25	2.5	--	<0.5	--	0.08	0.0013	<0.0005	0.00066	<0.005*	--	--	--	--	--	--	--	--	--	

Appendix E
 Historical Groundwater Analytical Results
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
MW-12R	08/28/02	<0.25	2.1	--	<0.5	--	0.028	0.0059	<0.0005	0.0015	<0.005*	--	--	--	--	--	--	--	--	--	
MW-12R	11/05/02	<0.25	1.3	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*	--	--	--	--	--	--	--	--	--	
MW-12R	02/19/03	0.26	2.5	--	<0.5	--	0.19	0.0012	<0.001	<0.001	<0.005*	--	--	--	--	--	--	--	--	--	
MW-12R	06/10/03	0.41	1.3	--	<0.25	--	0.11	0.00055	<0.0005	<0.0005	<0.005*	--	--	--	--	--	--	--	--	--	
MW-12R	09/16/03	<0.25	0.67	--	<0.50	--	0.0021	<0.0005	<0.0005	<0.0005	0.013*	--	--	--	--	--	--	--	--	--	
MW-12R	11/19/03	0.42	<0.25	--	<0.50	--	0.26	<0.001	<0.001	<0.001	0.0078	--	--	--	--	--	--	--	--	--	
MW-12R	02/25/04	0.26	1.8	--	<0.50	--	0.099	0.00050	<0.0005	0.00076	0.010*	--	--	--	--	--	--	--	--	--	
MW-12R	05/12/04	0.56	0.74	--	<0.50	--	0.20	<0.001	<0.001	<0.001	<0.0050*	--	--	--	--	--	--	--	--	--	
MW-12R	08/26/04	0.35	0.50	--	<0.50	--	0.089	<0.001	<0.001	<0.001	<0.0050*	--	--	--	--	--	--	--	--	--	
MW-12R	12/15/04	<0.25	0.50	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	--	--	--	--	--	--	--	--	
MW-12R	03/09/05	<0.25	0.39	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	--	--	--	--	--	--	--	--	
MW-12R	06/08/05	<0.25	0.39	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-12R	09/21/05	0.26	0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	--	--	--	--	--	--	--	--	
MW-12R	03/14/06	<0.25	<0.25	--	<0.50	--	<0.001	<0.001	<0.001	<0.001	<0.0050*	--	--	--	--	--	--	--	--	--	
MW-12R	06/07/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	--	--	--	--	--	--	--	--	
MW-12R	09/13/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	--	--	--	--	--	--	--	--	
MW-12R	12/13/06	<0.25	0.27	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	--	--	--	--	--	--	--	--	
MW-12R	12/14/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	--	--	--	--	--	--	--	--	
MW-12R	06/20/07	<0.25	--	--	--	--	<0.0005	0.0010	<0.0005	<0.0005	<0.0050	--	--	--	--	--	--	--	--	--	
MW-12R	06/05/08	<0.25	0.78	--	<0.50	--	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	--	--	--	--	--	--	--	--	--	
MW-12R	06/01/09	<0.25	0.32	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	0.36	--	--	--	--	--	--	--	
MW-12R	06/08/10	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	0.19	--	--	--	--	--	--	--	
MW-12R	05/23/11	<0.25	0.41	--	<0.50	--	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	--	0.55	--	--	--	--	--	--	0.0050	
MW-12R	06/01/12	<0.25	<0.25	--	<0.50	--	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	--	0.00	--	--	--	--	--	--	0.0050	
MW-12R	04/09/13	<0.25	--	<0.25	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	--	--	--	--	--	--	<0.10	
MW-12R	04/23/14	<0.25	0.49	<0.25	<0.50	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	--	--	--	--	--	--	<0.10	
MW-12R	09/30/15	<0.100	--	2.41	--	1.07	<0.001	<0.005	<0.001	<0.003	<0.002	<0.002	0.41	4.05	--	--	2.1 T8	<0.1	5.55	<0.05	
MW-12R	10/12/16	<0.100	--	<0.250	--	<0.500	<0.001	<0.005	<0.001	<0.003	<0.002	<0.002	0.61	--	--	--	--	--	--	--	
MW-12R	10/11/17	<0.100	--	0.216	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00100	0.65	--	--	--	--	--	--	--	
MW-12R	10/04/18	<0.1	--	<0.2	--	<0.25	<0.001	<0.001	<0.001	<0.003	<0.002	<0.002	0.08	--	--	--	--	--	--	--	
MW-12R	10/03/19	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.13	--	--	--	--	--	--	--	
MW-12R	10/20/20	0.103 B	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00500	<0.00500	0.03	--	--	--	--	--	--	--	
MW-12R	10/14/21	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.01	--	--	--	--	--	--	--	
MW-12R	09/22/22	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.25	--	--	--	--	--	--	--	
MW-13	06/19/01	<0.05	1.3	--	<0.5	--	<0.001	<0.001	<0.001	<0.003	<0.004	--	--	--	--	--	--	--	--	--	
MW-13																					Destroyed during construction activities
MW-13R	02/14/02	<0.25	3.2	--	<0.5	--	0.056	<0.0005	<0.0005	0.00075	<0.005*	--	--	--	--	--	--	--	--	--	
MW-13R	05/21/02	<0.25	3.5	--	<0.5	--	0.0025	<0.0005	<0.0005	<0.0005	<0.005*	--	--	--	--	--	--	--	--	--	
MW-13R	08/28/02	<0.25	2.4	--	<0.5	--	<0.0005	0.0019	<0.0005	0.00070	<0.005*	--	--	--	--	--	--	--	--	--	
MW-13R	11/05/02	<0.25	2.0	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*	--	--	--	--	--	--	--	--	--	
MW-13R	02/19/03	<0.25	1.7	--	<0.5	--	0.00078	0.0032	<0.0005	0.00083	<0.005*	--	--	--	--	--	--	--	--	--	
MW-13R	06/10/03	<0.25	0.76	--	<0.25	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*	--	--	--	--	--	--	--	--	--	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
MW-13R	09/16/03	<0.25	1.4	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.0078*	--	--	--	--	--	--	--	--	--	
MW-13R	11/19/03	<0.25	<0.50	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.0066	--	--	--	--	--	--	--	--	--	
MW-13R	02/25/04	<0.25	<0.50	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.012*	--	--	--	--	--	--	--	--	--	
MW-13R	05/12/04	<0.25	0.61	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	--	--	--	--	--	--	--	--	
MW-13R	08/26/04	<0.25	0.49	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	--	--	--	--	--	--	--	--	
MW-13R	12/15/04	<0.25	0.91	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	--	--	--	--	--	--	--	--	
MW-13R	03/09/05	<0.25	0.35	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	--	--	--	--	--	--	--	--	
MW-13R	06/08/05	<0.25	0.49	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-13R	09/21/05	<0.25	0.39	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	--	--	--	--	--	--	--	--	
MW-13R	03/14/06	<0.25	<0.25	--	<0.50	--	<0.001	<0.001	<0.001	<0.001	<0.0050*	--	--	--	--	--	--	--	--	--	
MW-13R	06/07/06	<0.25	<0.25	--	<0.50	--	<0.005	<0.005	<0.005	<0.005	<0.0050*	--	--	--	--	--	--	--	--	--	
MW-13R	09/13/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	--	--	--	--	--	--	--	--	
MW-13R	12/13/06	<0.25	0.33	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0077*	--	--	--	--	--	--	--	--	--	
MW-13R	12/14/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	--	--	--	--	--	--	--	--	
MW-13R	06/20/07	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	--	--	--	--	--	--	--	
MW-13R	06/05/08	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	--	--	--	--	--	--	--	
MW-13R	06/01/09	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	0.49	--	--	--	--	--	--	--	
MW-13R	06/08/10	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	0.00	--	--	--	--	--	--	--	
MW-13R	05/23/11	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	0.18	--	--	--	--	--	--	0.0050	
MW-13R		Abandoned on 5/25/2012																			
MW-14	02/13/02	2.5	37	--	<5.0	--	0.010	0.0085	0.18	0.22	--	--	--	--	--	--	--	--	--	--	
MW-14	05/21/02	2.9	23	--	1.0	--	0.0093	0.0057	0.18	0.15	--	--	--	--	--	--	--	--	--	--	
MW-14	08/29/02	2.9	28	--	<0.5	--	0.017	0.0073	0.21	0.14	--	--	2.20	5.90	--	--	20.00	<0.25	52.00	0.70	
MW-14	11/05/02	2.0	28	--	0.91	--	0.060	0.0059	0.12	0.076	--	--	2.40	11.00	--	--	23.00	<0.25	39.00	0.80	
MW-14	02/20/03	3.4	18	--	<0.5	--	0.056	0.0062	0.14	0.11	--	--	1.90	3.50	--	--	20.00	<0.25	35.00	0.80	
MW-14	06/11/03	3.1	28	--	<0.5	--	0.059	0.0098	0.23	0.13	--	--	1.50	2.90	--	--	19.00	<0.25	4.30	0.40	
MW-14	09/16/03	<1.0	15	--	<0.50	--	0.13	<0.005	0.019	0.022	--	--	1.30	0.86	--	--	15.00	<0.25 b	0.89	0.50	
MW-14	11/20/03	<2.0	29	--	0.7	--	0.12	<0.01	0.020	0.031	--	--	3.70	0.57	--	--	4.90	0.57 c	31.00	<0.1	
MW-14	02/24/04	2.4	21	--	<0.50	--	0.061	0.014	0.25	0.20	--	--	4.30	2.40	--	--	19.00	<0.25 b	0.60	0.60	
MW-14	05/11/04	2.7	27	--	<0.50	--	0.053	0.0092	0.21	0.16	--	--	0.10	2.30	--	--	19.00	<0.25	<0.50	<0.10	
MW-14	08/26/04	2.3	11	--	0.53	--	0.024	<0.0025	0.16	0.19	--	--	1.01	2.90	--	--	13.00	<0.25	47.00	0.38	
MW-14	12/15/04	1.2	9.6	--	<0.50	--	0.0084	<0.005	0.010	0.0055	--	--	2.88	4.50	--	--	0.13	4.80	110.00	<0.10	
MW-14	03/09/05	4.2	7.7	--	<0.50	--	0.0053	0.0094	0.18	0.099	--	--	2.99	6.80	--	--	12.00	0.62	41.00	0.30	
MW-14	06/08/05	3.1	8.8	--	<0.50	--	0.0043	0.0069	0.17	0.11	--	--	2.00	4.30	--	--	15.00	<0.25	18.00	0.40	
MW-14	09/21/05	1.6	10	--	1.1	--	0.012	0.0048	0.077	0.068	--	--	2.00	7.60	--	--	19.00	<0.25	8.20	0.36	
MW-14	12/14/05	3.1	2.0	--	<0.50	--	0.0059	0.0075	0.12	0.068	--	--	2.10	8.90	--	--	9.50	<0.25	21.00	<0.10	
MW-14	03/14/06	0.79	2.1	--	<0.50	--	<0.0025	<0.0025	0.023	0.030	--	--	2.10	1.50	--	--	7.90	<0.25	33.00	0.12	
MW-14	06/07/06	0.84	3.0	--	<0.50	--	<0.0025	<0.0025	0.061	0.033	--	--	1.50	1.50	--	--	11.00	<0.25	16.00	1.10	
MW-14	09/13/06	2.4	1.8	--	<0.50	--	<0.0025	0.0060	0.1	0.056	--	--	1.80	6.80	--	--	14.00	<0.25	1.70	0.22	
MW-14	12/13/06	1.1	1.4	--	<0.50	--	<0.0025	<0.0025	0.044	0.029	--	--	2.20	2.20	--	--	5.80	0.36	25.00	<0.10	
MW-14	03/27/07	1.3	--	--	--	--	0.0057	<0.0025	0.049	0.024	--	--	2.70	--	--	--	--	--	--	--	
MW-14	06/20/07	1.5	--	--	--	--	<0.0025	0.0039	0.087	0.046	--	--	3.40	2.90	--	--	7.50	<0.25	4.90	0.79	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
MW-14	09/24/07	2.5	--	--	--	--	0.0024	0.0077	0.15	0.13	--	--	3.10	--	--	--	--	--	--	--	
MW-14	12/11/07	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	1.76	--	--	--	--	--	--	--	
MW-14	03/04/08	0.43	--	--	--	--	<0.0015	<0.0015	0.019	0.0073	--	--	1.10	--	--	--	--	--	--	--	
MW-14	06/04/08	<0.30	--	--	--	--	<0.0015	<0.0015	<0.015	<0.015	--	--	2.70	2.00	--	--	3.40	<0.25	8.90	0.58	
MW-14	09/08/08	2.5	--	--	--	--	0.0024	0.0070	0.17	0.075	--	--	0.69	--	--	--	--	--	--	--	
MW-14	12/05/08	<0.50	--	--	--	--	<0.0025	<0.0025	0.0047	0.0036	--	--	0.45	--	--	--	--	--	--	--	
MW-14	03/04/09	<0.25	--	--	--	--	0.0011	<0.0010	0.0011	0.0038	--	--	0.81	--	--	--	--	--	--	--	
MW-14	06/02/09	<0.25	--	--	--	--	<0.0010	<0.0010	<0.0010	0.0018	--	--	0.89	0.15	--	--	0.12	2.50	34.00	<0.10	
MW-14	09/21/09	0.56	--	--	--	--	<0.0025	<0.0025	0.044	0.013	--	--	0.92	--	--	--	--	--	--	--	
MW-14	11/17/09	<0.50	--	--	--	--	<0.0025	<0.0025	<0.0025	<0.0025	--	--	1.01	--	--	--	--	--	--	--	
MW-14	03/08/10	<0.25	--	--	--	--	0.0010	<0.0010	0.0010	0.0021	--	--	0.32	--	--	--	--	--	--	--	
MW-14	06/08/10	<0.25	--	--	--	--	<0.0005	<0.0005	0.0011	0.0014	--	--	0.25	0.72	--	--	0.18	<0.25	8.50	<0.10	
MW-14	09/09/10	0.5	--	--	--	--	0.0013	0.0018	0.031	0.036	--	--	0.32	--	--	--	--	--	--	--	
MW-14	11/15/10	<0.25	--	--	--	--	<0.0010	<0.0010	<0.0010	<0.0010	--	--	0.35	--	--	--	--	--	--	--	
MW-14	03/01/11	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.020	--	--	--	--	--	--	--	
MW-14	05/24/11	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.00	0.18	--	--	0.10	0.25	14.00	0.10	
MW-14	08/29/11	0.41	--	--	--	--	<0.0010	0.0011	0.019	0.026	--	--	0.19	--	--	--	--	--	--	--	
MW-14	12/01/11	<0.25	--	--	--	--	<0.0010	<0.0010	<0.0010	0.0032	--	--	0.31	--	--	--	--	--	--	--	
MW-14	03/01/12	<0.25	--	--	--	--	<0.0010	<0.0010	<0.0010	<0.0010	--	--	1.10	--	--	--	--	--	--	--	
MW-14	05/31/12	<0.25	--	--	--	--	<0.0010	<0.0010	<0.0010	<0.0010	--	--	0.00	0.086	--	--	<0.050	<0.25	10.00	<0.10	
MW-14	08/25/12	<0.25	--	--	--	--	<0.00050	<0.00050	0.0028	0.0017	--	--	--	--	--	--	--	--	--	--	
MW-14	11/08/12	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	0.0041	--	--	--	--	--	--	--	--	--	--	
MW-14	02/28/13	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-14	04/09/13	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	0.25	--	--	<0.050	0.46 *c	9.2	<0.10	
MW-14	07/30/13	<0.25	--	--	--	--	<0.0005	0.00058	0.011	0.0092	--	--	--	--	--	--	--	--	--	--	
MW-14	10/03/13	<0.25	--	--	--	--	<0.001	<0.001	0.0034	0.022	--	--	0.00	--	--	--	--	--	--	--	
MW-14	01/22/14	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	5.98	--	--	--	--	--	--	--	
MW-14	04/21/14	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	0.23	--	--	<0.050	<0.25	8.8	<0.10	
MW-14	07/15/14	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.37	--	--	--	--	--	--	--	
MW-14	10/01/15	0.299	--	--	--	--	<0.001	<0.005	0.00106	0.0192	--	--	0.81	3.47	--	--	8.61 T8	<0.1	<5	<0.05	
MW-14	10/11/16	1.11	--	--	--	--	<0.001	<0.005	0.0257	0.0309	--	--	0.73	--	--	--	--	--	--	--	
MW-14	10/11/17	0.416	--	--	--	--	<0.00100	<0.00100	0.00251	0.00387	--	--	0.70	--	--	--	--	--	--	--	
MW-14	10/03/18	0.65	--	--	--	--	<0.001	0.00116	<0.001	0.00549	--	--	0.13	--	--	--	--	--	--	--	
MW-14	10/01/19	0.526	--	--	--	--	<0.00100	0.00109	<0.00100	0.00649	--	--	0.08	--	--	--	--	--	--	--	
MW-14	10/19/20	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	2.42	--	--	--	--	--	--	--	
MW-14	10/12/21	0.331	--	--	--	--	<0.00100	<0.00100	<0.00100	0.00316	--	--	0.07	--	--	--	--	--	--	--	
MW-14	09/20/22	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.10	--	--	--	--	--	--	--	
MW-16	02/13/02	<0.25	<0.25	--	<0.5	--	0.0013	0.0037	<0.0005	0.0011	--	--	--	--	--	--	--	--	--	--	
MW-16	05/21/02	<0.25	<0.5	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-16	08/29/02	<0.25	<0.5	--	<0.5	--	<0.0005	0.0022	<0.0005	0.00069	--	--	--	--	--	--	--	--	--	--	
MW-16	11/05/02	<0.25	0.29	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-16	02/19/03	<0.25	<0.25	--	<0.5	--	<0.0005	0.0018	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
MW-16	06/10/03	<0.25	<0.25	--	<0.25	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-16	09/16/03	<0.25	<0.50	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-16	11/19/03	<0.25	<0.25	--	<0.50	--	<0.0005	0.0013	<0.0005	0.00062	--	--	--	--	--	--	--	--	--	--	
MW-16	02/25/04	<0.25	<0.50	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-16	05/11/04	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-16	08/26/04	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-16	12/15/04	<0.25	<0.25	--	<0.50	--	0.029	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-16	03/10/05	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-16	06/07/05	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-16	09/20/05	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-16	12/13/05	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-16	03/15/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-16	06/08/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-16	09/12/06	<0.25	<0.25	--	<0.50	--	<0.0005	0.00062	0.0012	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-16	12/12/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-16	06/19/07	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-16	06/04/08	0.39	0.43	--	<0.50	--	<0.0010	<0.0010	<0.0010	<0.0010	--	--	--	--	--	--	--	--	--	--	
MW-16	06/03/09	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	1.48	--	--	--	--	--	--	--	
MW-16	06/09/10	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	0.0012	--	--	1.11	--	--	--	--	--	--	--	
MW-16	05/23/11	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	1.34	--	--	--	--	--	--	--	
MW-16	05/31/12	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.020	--	--	--	--	--	--	--	
MW-16	04/09/13	<0.25	--	<0.25	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-16	04/22/14	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-16	09/30/15	<0.100	--	<0.100	--	<0.25	<0.001	<0.005	<0.001	<0.003	--	--	0.48	--	--	--	--	--	--	--	
MW-16	10/12/16	<0.100	--	<0.250	--	<0.500	<0.001	<0.005	<0.001	<0.003	--	--	0.88	--	--	--	--	--	--	--	
MW-16	10/13/17	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.79	--	--	--	--	--	--	--	
MW-16	10/03/18	<0.1	--	<0.2	--	<0.25	<0.001	<0.001	<0.001	<0.003	--	--	0.27	--	--	--	--	--	--	--	
MW-16	10/04/19	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.24	--	--	--	--	--	--	--	
MW-16	10/22/20	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.40	--	--	--	--	--	--	--	
MW-16	09/21/22	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	2.04	--	--	--	--	--	--	--	
MW-17	05/23/11	0.3	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-18	02/13/02	7.6	0.77	--	<0.5	--	1.8	0.067	0.29	0.34	--	--	--	--	--	--	--	--	--	--	
MW-18	05/21/02	1.2	0.30	--	<0.5	--	0.25	0.016	0.068	0.068	--	--	--	--	--	--	--	--	--	--	
MW-18	08/29/02	1.6	<0.5	--	<0.5	--	0.45	0.014	0.032	0.044	--	--	--	--	--	--	--	--	--	--	
MW-18	11/05/02	1.1	<0.25	--	<0.5	--	<0.3	0.010	0.011	0.031	--	--	--	--	--	--	--	--	--	--	
MW-18	02/19/03	<0.25	<0.25	--	<0.5	--	0.0035	0.0047	<0.0005	0.0016	--	--	--	--	--	--	--	--	--	--	
MW-18	06/10/03	<0.25	<0.25	--	<0.25	--	0.022	0.0016	<0.0005	0.0040	--	--	--	--	--	--	--	--	--	--	
MW-18	09/16/03	<0.25	<0.50	--	<0.50	--	0.036	0.0019	<0.0005	0.0075	--	--	--	--	--	--	--	--	--	--	
MW-18	11/19/03	<0.25	<0.25	--	<0.50	--	0.0042	<0.0005	<0.0005	0.0015	--	--	--	--	--	--	--	--	--	--	
MW-18	02/25/04	0.58	<0.25	--	<0.50	--	0.11	0.0048	0.00087	0.026	--	--	--	--	--	--	--	--	--	--	
MW-18	05/11/04	1.1	<0.25	--	<0.50	--	0.25	0.0073	0.0016	0.037	--	--	--	--	--	--	--	--	--	--	
MW-18	08/26/04	<0.25	<0.25	--	<0.50	--	0.003	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
MW-18	12/15/04	0.84	<0.25	--	<0.50	--	0.14	0.0060	0.0019	0.029	--	--	--	--	--	--	--	--	--	--	
MW-18	03/10/05	0.84	<0.25	--	<0.50	--	0.25	0.0049	0.0020	0.021	--	--	--	--	--	--	--	--	--	--	
MW-18	06/07/05	0.68	<0.25	--	<0.50	--	0.17	0.0039	0.0019	0.0098	--	--	--	--	--	--	--	--	--	--	
MW-18	09/20/05	4.0	<0.25	--	<0.50	--	0.74	0.021	0.0091	0.090	--	--	--	--	--	--	--	--	--	--	
MW-18	12/13/05	2.3	<0.25	--	<0.50	--	0.45	0.015	0.0067	0.033	--	--	--	--	--	--	--	--	--	--	
MW-18	03/15/06	4.9	<0.25	--	<0.50	--	1.2	0.035	0.025	0.12	--	--	--	--	--	--	--	--	--	--	
MW-18	06/08/06	1.2	<0.25	--	<0.50	--	0.15	0.011	0.011	0.034	--	--	--	--	--	--	--	--	--	--	
MW-18	09/12/06	0.35	<0.25	--	<0.50	--	0.023	0.0021	0.0022	0.0047	--	--	--	--	--	--	--	--	--	--	
MW-18	12/12/06	0.28	<0.25	--	<0.50	--	0.023	0.0018	0.0019	0.0060	--	--	--	--	--	--	--	--	--	--	
MW-18	03/27/07	0.78	--	--	--	--	0.022	0.0029	0.0051	0.012	--	--	3.20	--	--	--	--	--	--	--	
MW-18	06/19/07	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-18	09/24/07	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	3.20	--	--	--	--	--	--	--	
MW-18	12/11/07	<0.25	--	--	--	--	0.011	0.00075	<0.0005	0.0032	--	--	3.40	--	--	--	--	--	--	--	
MW-18	03/04/08	0.29	--	--	--	--	0.0090	0.0016	0.00050	0.00088	--	--	1.50	--	--	--	--	--	--	--	
MW-18	06/04/08	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	3.10	--	--	--	--	--	--	--	
MW-18	09/08/08	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	1.26	--	--	--	--	--	--	--	
MW-18	12/04/08	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.21	--	--	--	--	--	--	--	
MW-18	03/04/09	<0.25	--	--	--	--	0.00080	<0.0005	<0.0005	<0.0005	--	--	0.94	--	--	--	--	--	--	--	
MW-18	06/03/09	<0.25	--	--	--	--	0.00061	<0.0005	<0.0005	<0.0005	--	--	0.47	--	--	--	--	--	--	--	
MW-18	09/22/09	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.63	--	--	--	--	--	--	--	
MW-18	11/17/09	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	8.07	--	--	--	--	--	--	--	
MW-18	03/09/10	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	0.0011	--	--	0.90	--	--	--	--	--	--	--	
MW-18	06/08/10	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.00	--	--	--	--	--	--	--	
MW-18	09/10/10	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	3.84	--	--	--	--	--	--	--	
MW-18	11/16/10	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.59	--	--	--	--	--	--	--	
MW-18	03/02/11	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.030	--	--	--	--	--	--	--	
MW-18	05/23/11	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.00	--	--	--	--	--	--	--	
MW-18	08/30/11	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.28	--	--	--	--	--	--	--	
MW-18	12/02/11	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0010	--	--	0.57	--	--	--	--	--	--	--	
MW-18	03/02/12	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.57	--	--	--	--	--	--	--	
MW-18	05/31/12	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.00	--	--	--	--	--	--	--	
MW-18	11/08/12	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-18	02/28/13	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-18	04/09/13	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-18	07/29/13	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-18	10/02/13	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.00	--	--	--	--	--	--	--	
MW-18	01/22/14	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	5.50	--	--	--	--	--	--	--	
MW-18	04/22/14	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-18	07/15/14	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.15	--	--	--	--	--	--	--	
MW-18	03/18/15	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.23	--	--	--	--	--	--	--	
MW-18	09/30/15	<0.100	--	--	--	--	<0.001	<0.005	<0.001	<0.003	--	--	0.47	--	--	--	--	--	--	--	
MW-18	03/29/16	<0.100	--	--	--	--	<0.001	<0.005	<0.001	<0.003	--	--	0.65	--	--	--	--	--	--	--	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
MW-18	10/12/16	<0.100	--	--	--	--	<0.001	<0.005	<0.001	<0.003	--	--	0.67	--	--	--	--	--	--	--	
MW-18	03/29/17	<0.100	--	--	--	--	<0.001	<0.001	<0.001	<0.003	--	--	0.17	--	--	--	--	--	--	--	
MW-18	10/12/17	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.73	--	--	--	--	--	--	--	
MW-18	03/29/18	0.13 B	--	--	--	--	<0.001	<0.001	<0.001	<0.003	--	--	1.89	--	--	--	--	--	--	--	
MW-18	10/03/18	<0.1	--	--	--	--	<0.001	<0.001	<0.001	<0.003	--	--	0.15	--	--	--	--	--	--	--	
MW-18	04/03/19	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.1	--	--	--	--	--	--	--	
MW-18	10/03/19	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.13	--	--	--	--	--	--	--	
MW-18	03/27/20	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.25	--	--	--	--	--	--	--	
MW-18	10/21/20	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.09	--	--	--	--	--	--	--	
MW-18	04/13/21	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	1.21	--	--	--	--	--	--	--	
MW-18	10/14/21	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.16	--	--	--	--	--	--	--	
MW-18	09/21/22	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.13	--	--	--	--	--	--	--	
MW-19	02/13/02	29	6.8	--	<2.5	--	0.057	0.73	0.58	6.5	--	--	--	--	--	--	--	--	--	--	
MW-19	05/21/02	30	7.7	--	<0.5	--	0.049	0.65	0.53	6.5	--	--	--	--	--	--	--	--	--	--	
MW-19	08/29/02	13	11	--	<0.5	--	0.14	0.29	0.20	2.1	--	--	0.90	13.00	--	--	19.00	<0.25	<0.25	0.60	
MW-19	11/05/02	8.2	3.0	--	<0.5	--	0.21	0.37	0.16	1.7	--	--	2.70	10.00	--	--	19.00	<0.25	<0.25	0.40	
MW-19	02/20/03	38	19	--	<0.5	--	0.091	1.2	0.80	8.0	--	--	3.20	13.00	--	--	43.00	<0.25	23.00	0.50	
MW-19	06/11/03	32	15	--	<1.0	--	0.042	0.38	0.80	6.7	--	--	0.50	16.00	--	--	37.00	<0.25	11.00	0.40	
MW-19	09/16/03	4.2	12	--	<0.50	--	0.19	0.043	0.19	1.1	--	--	1.40	18.00	--	--	30.00	<0.25 b	5.20	0.70	
MW-19	11/20/03	22	10	--	<0.50	--	0.11	0.67	0.75	6.1	--	--	4.80	18.00	--	--	49.00	<0.25 c	10.00	0.50	
MW-19	02/24/04	19	14	--	<0.50	--	<0.015	0.49	0.63	4.7	--	--	2.10	20.00	--	--	39.00	<0.25 b	1.80	0.60	
MW-19	05/11/04	27	13	--	<0.50	--	<0.025	0.22	0.87	7.2	--	--	0.60	17.00	--	--	30.00	<0.25	0.98	0.24	
MW-19	08/26/04	22	0.72	--	<0.50	--	0.042	0.26	0.64	4.6	--	--	2.83	15.00	--	--	15.00	<0.25	<0.50	0.20	
MW-19	12/15/04	15	7.6	--	<0.50	--	0.039	0.12	0.37	2.7	--	--	3.89	21.00	--	--	44.00	<0.25	31.00	0.22	
MW-19	03/09/05	27	9.1	--	<0.50	--	0.073	0.18	0.56	3.4	--	--	3.42	22.00	--	--	25.00	<0.25	5.30	0.26	
MW-19	06/08/05	17	6.3	--	<0.50	--	0.071	0.17	0.61	2.8	--	--	0.89	15.00	--	--	18.00	<0.25	12.00	0.60	
MW-19	09/20/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-19	12/14/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-19	03/14/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-19	06/07/06	14	1.4	--	<0.50	--	<0.010	0.043	0.29	1.4	--	--	1.70	18.00	--	--	7.90	<0.25	<0.50	0.55	
MW-19	09/13/06	11	0.50	--	<0.50	--	0.032	0.047	0.41	1.1	--	--	2.10	19.00	--	--	10.00	<0.25	<0.50	1.30	
MW-19	12/13/06	8.0	1.4	--	<0.50	--	0.016	0.052	0.3	1.4	--	--	3.90	19.00	--	--	30.00	<0.25	16.00	0.43	
MW-19	03/27/07	13	--	--	--	--	<0.010	0.047	0.35	1.8	--	--	2.50	--	--	--	--	--	--	--	
MW-19	06/20/07	12	--	--	--	--	0.05	0.092	0.29	1.2	--	--	1.90	23.00	--	--	9.30	<0.25	<0.50	0.19	
MW-19	09/24/07	10	--	--	--	--	0.13	0.11	0.42	1.3	--	--	3.70	--	--	--	--	--	--	--	
MW-19	12/11/07	12	--	--	--	--	0.11	0.14	0.40	1.9	--	--	2.13	--	--	--	--	--	--	--	
MW-19	03/04/08	17	--	--	--	--	0.15	0.28	0.52	2.4	--	--	1.90	--	--	--	--	--	--	--	
MW-19	06/04/08	11	--	--	--	--	0.070	0.023	0.45	1.0	--	--	3.40	21.00	--	--	7.00	<0.25	0.86	0.46	
MW-19	09/08/08	5.3	--	--	--	--	0.078	0.0063	0.12	0.29	--	--	1.02	--	--	--	--	--	--	--	
MW-19	12/05/08	7.8	--	--	--	--	0.071	0.047	0.38	0.73	--	--	0.27	--	--	--	--	--	--	--	
MW-19	03/04/09	9.4	--	--	--	--	0.076	0.13	0.43	1.4	--	--	0.52	--	--	--	--	--	--	--	
MW-19	06/02/09	13	--	--	--	--	0.071	0.13	0.43	1.6	--	--	0.37	28.00	--	--	6.30	<0.25	<0.50	0.18	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
MW-19	09/21/09	8.4	--	--	--	--	0.052	0.0097	0.32	0.29	--	--	0.35	--	--	--	--	--	--	--	
MW-19	11/17/09	7.4	--	--	--	--	0.023	0.049	0.34	1.2	--	--	0.86	--	--	--	--	--	--	--	
MW-19	03/08/10	10	--	--	--	--	0.017	0.11	0.46	1.8	--	--	0.69	--	--	--	--	--	--	--	
MW-19	06/08/10	12	--	--	--	--	0.042	0.17	0.55	1.6	--	--	0.00	27.00	--	--	10.00	<0.25	<0.50	<0.10	
MW-19	09/09/10	7.3	0.71	--	<0.50	--	0.039	0.020	0.42	0.18	--	--	0.41	--	--	--	--	<0.25	39.00	--	
MW-19	11/15/10	4.5	--	--	--	--	0.039	0.18	0.44	0.13	--	--	0.35	--	--	--	--	--	--	--	
MW-19	03/01/11	9.6	--	--	--	--	0.039	0.13	0.34	0.88	--	--	0.00	--	--	--	--	--	--	--	
MW-19	05/24/11	7.4	--	--	--	--	0.0028	0.011	0.17	0.38	--	--	0.69	28.00	--	--	1.70	<0.25	3.80	0.11	
MW-19	08/29/11	7.0	--	--	--	--	0.012	0.015	0.15	0.066	--	--	0.21	--	--	--	--	--	--	--	
MW-19	12/01/11	7.5	--	--	--	--	0.059	0.034	0.22	0.30	--	--	0.41	--	--	--	--	--	--	--	
MW-19	03/01/12	6.4	--	--	--	--	0.15	0.064	0.34	0.44	--	--	0.26	--	--	--	--	--	--	--	
MW-19	05/31/12	8.3	--	--	--	--	0.079	0.073	0.48	0.81	--	--	0.00	13.00	--	--	10.00	<0.25	<0.50	0.21	
MW-19	08/25/12	5.2	--	--	--	--	0.054	0.0076	0.27	0.089	--	--	--	--	--	--	--	--	--	--	
MW-19	11/08/12	4.7	--	--	--	--	0.042	0.0096	0.28	0.18	--	--	--	--	--	--	--	--	--	--	
MW-19	02/28/13	8.1	--	--	--	--	0.045	0.13	0.44	0.77	--	--	--	--	--	--	--	--	--	--	
MW-19	04/09/13	6.9	--	--	--	--	0.029	0.15	0.32	0.57	--	--	--	27	--	--	7.5	<0.25 *c	<0.50	<0.10	
MW-19	06/21/13	2.8	1.1 K	--	--	--	0.019	0.017	0.31	0.081	--	--	--	--	--	--	--	<0.25 *c	<0.50	0.13	Baseline monitoring event
MW-19	07/30/13	4.4	--	--	--	--	0.0086	0.0051	0.16	0.013	--	--	--	--	--	--	--	--	--	--	
MW-19	08/26/13	2.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Two-month monitoring event
MW-19	10/03/13	3.2	--	--	--	--	0.0076	0.0023	0.046	0.0020	--	--	0.00	--	--	--	--	--	--	--	
MW-19	01/22/14	2.2	--	--	--	--	0.021	0.00065	0.029	<0.0005	--	--	7.20	--	--	--	--	--	620	<0.10	
MW-19	04/21/14	2.1	--	--	--	--	0.0066	0.0039	0.16	0.0064	--	--	--	28	--	--	30	<0.25	190	0.23	
MW-19	07/15/14	4.2	--	--	--	--	0.0059	0.010	0.21	0.15	--	--	0.46	30	8.3	7.6	--	--	<0.50	<0.10	
MW-19 (DUP)	07/15/14	4.4	--	--	--	--	0.0052	0.0097	0.20	0.15	--	--	--	--	--	--	--	--	--	--	Duplicate of MW-19
MW-19	03/17/15	4.3	--	--	--	--	0.0049	0.014	0.14	0.18	--	--	0.05	30	--	--	8.7	<0.25	1.9	<0.10	
MW-19	09/30/15	2.02	--	--	--	--	0.00341	<0.005	0.0157	<0.003	--	--	0.20	7.96	--	--	11.0 T8	<0.10	<5	<0.05	
MW-19	03/30/16	1.69	--	--	--	--	<0.001	<0.005	0.0365	0.0591	--	--	0.28	16.60	--	--	45.1	<0.10	170	<0.05	
MW-19	10/11/16	1.98	--	--	--	--	0.00527	<0.005	0.0119	0.00806	--	--	0.76	--	--	--	--	--	<5.0	--	
MW-19	03/28/17	3.12	--	--	--	--	<0.005	<0.005	0.0483	0.239	--	--	0.15	--	--	--	--	--	200	--	
MW-19	10/13/17	1.91	--	--	--	--	<0.00100	0.00157	0.00731	0.00979	--	--	0.63	--	--	--	--	--	<5.0	--	
MW-19	03/29/18	2.31	--	--	--	--	<0.001	0.00299	0.0678	0.136	--	--	0.13	--	--	--	--	--	<5.0	--	
MW-19	10/03/18	<0.1	--	--	--	--	0.00101	0.00158	0.00583	<0.003	--	--	0.14	--	--	--	--	--	28.3	--	
MW-19	04/02/19	0.810	--	--	--	--	0.00180	<0.00100	<0.00100	<0.00300	--	--	0.06	--	--	--	--	--	1,310	--	
MW-19	10/02/19	1.23	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.24	--	--	--	--	--	130	--	
MW-19	03/25/20	0.276	--	--	--	--	0.00107	<0.00100	0.00863	<0.00300	--	--	0.29	--	--	--	--	--	1,690	--	
MW-19	10/20/20	0.856	--	--	--	--	0.00409	<0.00100	<0.00100	<0.00300	--	--	0.04	--	--	--	--	--	557	--	
MW-19	04/12/21	2.14	--	--	--	--	0.00124	0.0170	0.157	0.0170	--	--	0.15	--	--	--	--	--	8.61	--	
MW-19	10/11/21	1.90	--	--	--	--	0.0183	0.0542	0.0254	0.0169	--	--	0.08	--	--	--	--	--	468	--	
MW-19	04/19/22	1.320	--	--	--	--	<0.00100	0.00193	0.0183	<0.00300	--	--	0.21	--	--	--	--	--	30	--	
MW-19	09/20/22	1.780	--	--	--	--	<0.00100	0.0025	0.0223	0.182	--	--	0.12	--	--	--	--	--	<5.00	--	
MW-20	02/13/02	<0.25	0.64	--	<0.5	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	
MW-20	05/20/02	<0.25	1.3	--	<0.5	--	0.018	0.0012	0.0048	0.014	--	--	--	--	--	--	--	--	--	--	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
MW-20	08/29/02	0.6	1.1	--	<0.5	--	0.057	0.0065	0.021	0.084	--	--	2.60	12	--	--	5.4	<0.25	7.90	0.3	
MW-20	11/06/02	<0.25	0.81	--	<0.5	--	0.0023	0.00053	<0.0005	<0.0005	--	--	5.70	0.10	--	--	4.2	<0.25	610.00	0.3	
MW-20	02/19/03	<0.25	<0.25	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-20	06/11/03	<0.25	0.68	--	<0.25	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	15.00	<0.01	--	--	7.30	<0.25	2200.00	0.2	
MW-20	09/17/03	<0.25	<0.50	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	14.00	<0.010	--	--	2.00	<0.25 c	1800.00	0.5	
MW-20	11/20/03	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	0.00072	--	--	13.00	0.15	--	--	1.70	<0.25 c	1900.00	<0.1	
MW-20	02/25/04	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	14.00	0.026	--	--	0.34	<0.25 b	2100.00	--	
MW-20	05/11/04	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	7.50	0.048	--	--	0.29	<0.25	2100.00	<0.10	
MW-20	08/26/04	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	2.00	16.00	--	--	140.00	<0.25	970.00	<0.10	
MW-20	12/15/04	<0.25	0.30	--	<0.50	--	0.0013	<0.0005	<0.0005	<0.0005	--	--	3.34	0.71	--	--	27.00	<0.25	550.00	0.28	
MW-20	03/09/05	<0.25	<0.25	--	<0.50	--	0.00074	<0.0005	<0.0005	<0.0005	--	--	2.82	0.25	--	--	18.00	<0.25	470.00	<0.10	
MW-20	06/08/05	<0.25	0.55	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	2.50	10.00	--	--	18.00	<0.25	480.00	0.20	
MW-20	09/21/05	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-20	12/14/05	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	3.20	0.28	--	--	15.00	<0.25	250.00	0.21	
MW-20	03/14/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	3.20	0.98	--	--	5.50	<0.25	56.00	<0.10	
MW-20	06/07/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	1.00	15.00	--	--	7.40	<0.25	68.00	<0.10	
MW-20	09/13/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	2.50	23.00	--	--	17.00	<0.25	110.00	<0.10	
MW-20	12/13/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	2.30	3.3	--	--	2.30	<0.25	69.00	<0.10	
MW-20	06/20/07	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	4.10	--	--	--	--	--	--	--	
MW-20	06/05/08	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	2.30	--	--	--	--	--	--	--	
MW-20	06/01/09	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.40	--	--	--	--	--	--	--	
MW-20	06/09/10	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	0.00054	0.0028	--	--	0.00	--	--	--	--	--	--	--	
MW-20	05/23/11	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.00	--	--	--	--	--	--	--	
MW-20	05/31/12	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.00	--	--	--	--	--	--	--	
MW-20	04/09/13	<0.25	--	<0.25	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-20	04/22/14	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-20	10/01/15	<0.100	--	0.378	--	<0.25	<0.001	<0.005	<0.001	<0.003	--	--	0.22	--	--	--	--	--	--	--	
MW-20	10/12/16	<0.100	--	<0.250	--	<0.500	<0.001	<0.005	<0.001	<0.003	--	--	0.23	--	--	--	--	--	--	--	
MW-20	10/12/17	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.70	--	--	--	--	--	--	--	
MW-20	10/03/18	<0.1	--	<0.2	--	<0.25	<0.001	<0.001	<0.001	<0.003	--	--	0.11	--	--	--	--	--	--	--	
MW-20	10/02/19	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.20	--	--	--	--	--	--	--	
MW-20	10/21/20	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.18	--	--	--	--	--	--	--	
MW-20	10/13/21	0.151 B	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.15	--	--	--	--	--	--	--	
MW-20	09/20/22	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.12	--	--	--	--	--	--	--	
MW-21	02/19/03	--	--	--	--	--	--	--	--	--	--	--	6.90	0.061	--	--	1.9	<0.25	1400	<0.1	
MW-21	06/10/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-21	06/11/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-21	09/17/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-21	11/20/03	0.97	19	--	<0.50	--	<0.0025	<0.0025	<0.0025	<0.0025	--	--	0.90	0.013	--	--	2.80	<0.25 c	17.00	0.5	
MW-21	02/26/04	2.3	35	--	<0.50	--	<0.0025	<0.0025	<0.0025	<0.0025	--	--	1.00	12.00	--	--	17.00	<0.25 b	12.00	0.9	
MW-21	05/11/04	1.2	29	--	<0.50	--	<0.0025	<0.0025	<0.0025	<0.0025	--	--	1.80	4.70	--	--	12.00	<0.25	0.92	<0.10	
MW-21	08/26/04	4.3	33	--	<0.50	--	<0.001	<0.001	0.0013	0.0014	--	--	2.80	2.00	--	--	1.80	<0.25	<0.50	0.13	

Appendix E
 Historical Groundwater Analytical Results
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
MW-21	12/15/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-21	03/09/05	2.4	140	--	<5.0	--	<0.0015	<0.0015	0.0016	<0.0015	--	--	0.99	4.30	--	--	9.80	<0.25	<0.50	<0.10	
MW-21	06/08/05	1.8	31	--	0.50	--	<0.002	<0.002	0.0026	<0.002	--	--	3.50	1.80	--	--	11.00	<0.25	1.20	0.5	
MW-21	09/21/05	1.7	46	--	3.3	--	<0.0010	<0.0010	0.0013	<0.0010	--	--	2.40	15.00	--	--	7.20	<0.25	<0.50	0.14	
MW-21	12/14/05	1.0	6.1	--	0.54	--	<0.002	<0.002	0.0027	<0.002	--	--	1.20	18.00	--	--	0.19	<0.25	5.30	0.18	
MW-21	03/14/06	<0.25	33	--	3.1	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	1.20	<0.010	--	--	0.10	<0.25	3.20	<0.10	
MW-21	06/07/06	0.77	18	--	1.2	--	<0.0025	<0.0025	<0.0025	<0.0025	--	--	1.20	1.70	--	--	9.90	<0.25	2.30	0.37	
MW-21	09/13/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-21	12/13/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-21	03/27/07	<0.50	9.6	--	0.75	--	<0.0025	<0.0025	<0.0025	<0.0025	--	--	0.90	--	--	--	--	--	--	--	
MW-21	06/20/07	<0.50	8.5	--	0.66	--	<0.0025	<0.0025	<0.0025	<0.0025	--	--	2.10	9.10	--	--	4.20	<0.25	<0.50	<0.10	
MW-21	09/24/07	0.36	4.3	--	0.52	--	<0.0015	<0.0015	0.0018	<0.0015	--	--	2.50	--	--	--	--	--	--	--	
MW-21	12/11/07	<0.25	34	--	2.5	--	<0.0010	<0.0010	<0.0010	<0.0010	--	--	2.60	--	--	--	--	--	--	--	
MW-21	03/04/08	<0.50	12	--	0.92	--	<0.0025	<0.0025	<0.0025	<0.0025	--	--	2.50	--	--	--	--	--	--	--	
MW-21	06/04/08	<0.30	4.7	--	<0.50	--	<0.0015	<0.0015	<0.015	<0.0015	--	--	2.80	14.00	--	--	7.40	<0.25	<0.50	0.13	
MW-21	09/08/08	0.98	3.8	--	<0.50	--	<0.0015	0.0015	0.0049	0.0028	--	--	0.77	--	--	--	--	--	--	--	
MW-21	12/05/08	<1.0	4.8	--	<0.50	--	<0.0050	<0.0050	<0.0050	<0.0050	--	--	1.24	--	--	--	--	--	--	--	
MW-21	03/04/09	<0.50	6.4	--	0.89	--	<0.0025	<0.0025	<0.0025	0.0034	--	--	0.84	--	--	--	--	--	--	--	
MW-21	06/02/09	0.7	2.9	--	0.68	--	<0.0010	<0.0010	0.0016	<0.0010	--	--	1.29	7.10	--	--	4.00	<0.25	3.90	0.23	
MW-21	09/22/09	1.7	4.7	--	<0.50	--	<0.0025	<0.0025	0.0029	<0.0025	--	--	0.79	--	--	--	--	--	--	--	
MW-21	11/17/09	<0.25	0.87	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	2.17	--	--	--	--	--	--	--	
MW-21	03/09/10	<0.25	1.1	--	<0.50	--	0.0014	<0.0010	<0.0010	<0.0005	--	--	1.03	--	--	--	--	--	--	--	
MW-21	09/10/10	0.6	3.7	--	<0.50	--	<0.0010	<0.0010	<0.0010	<0.0010	--	--	--	--	--	--	--	--	--	--	
MW-21	11/15/10	<0.25	0.49	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.72	--	--	--	--	--	--	--	
MW-21	03/01/11	<0.25	1.2	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.11	--	--	--	--	--	--	--	
MW-21	05/23/11	<0.25	1.2	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.41	0.85	--	--	0.11	ND	4.30	0.10	
MW-21	08/29/11	0.35	3.7	--	0.98	--	<0.0010	<0.0010	<0.0010	<0.0010	--	--	0.55	--	--	--	--	--	--	--	
MW-21	12/01/11	<0.25	1.7	--	--	--	<0.0010	<0.0010	<0.0010	<0.0020	--	--	1.16	--	--	--	--	--	--	--	
MW-21	03/01/12	<0.25	0.51	--	<0.50	--	<0.0010	<0.0010	<0.0010	<0.0010	--	--	0.79	--	--	--	--	--	--	--	
MW-21	05/31/12	<0.25	6.1	--	<0.50	--	<0.0010	<0.0010	<0.0010	<0.0010	--	--	0.00	0.24	--	--	0.092	<0.25	5.70	0.22	
MW-21	08/25/12	0.56	1.8	--	0.59	--	<0.0025 o	<0.0025 o	<0.0025 o	<0.0025 o	--	--	--	--	--	--	--	--	--	--	
MW-21	11/08/12	<0.25	--	0.29	<0.50	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	
MW-21	02/28/13	<0.25	--	0.90	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-21	04/10/13	<0.25	--	0.25	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	0.62	--	--	<0.050	0.70 *c	4.2	<0.10	
MW-21	07/30/13	0.32	2.9	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-21	10/03/13	<0.25	--	0.62	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.00	--	--	--	--	--	--	--	
MW-21	01/22/14	<0.25	2.3	--	0.77	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	8.32	--	--	--	--	--	--	--	
MW-21	04/24/14	<0.25	0.74	0.28	<0.50	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	0.20	--	--	<0.050	<0.25	7.8	<0.10	
MW-21	07/14/14	<0.25	1.4	0.58	<0.50	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.29	--	--	--	--	--	--	--	
MW-21	03/18/15	<0.25	--	<0.25	--	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	--	--	4.6	0.55	--	--	<0.050	0.28	2.0	<0.10	
MW-21	09/30/15	<0.100	--	3.12	--	1.59	<0.001	<0.005	<0.001	<0.003	--	--	0.28	2.51	--	--	4.36 T8	0.107	<5.0	0.081	
MW-21	03/30/16	<0.100	--	1.00	--	0.537	<0.001	<0.005	<0.001	<0.003	--	--	1.85	0.0797	--	--	<0.05	0.605	<5.0	<0.05	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments	
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058											
MW-21	10/13/16	0.244	--	1.64	--	<0.500	<0.001	<0.005	<0.001	<0.003	--	--	0.34	--	--	--	--	--	--	--	--	
MW-21	03/29/17	<0.100	--	0.354	--	<0.500	<0.001	<0.001	<0.001	<0.003	--	--	3.25	--	--	--	--	--	--	--	--	
MW-21	10/12/17	0.168 B	--	1.68	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.63	--	--	--	--	--	--	--	--	
MW-21	03/28/18	<0.1	0.624	--	0.31	--	<0.001	<0.001	<0.001	<0.003	--	--	0.77	--	--	--	--	--	--	--	--	
MW-21	10/03/18	0.444	--	7.03	--	0.757	<0.001	<0.001	<0.001	<0.003	--	--	0.08	--	--	--	--	--	--	--	--	
MW-21	04/03/19	0.165 B	--	0.967	--	0.271 B	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.5	--	--	--	--	--	--	--	--	
MW-21	10/02/19	<0.100	--	1.15	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.14	--	--	--	--	--	--	--	--	
MW-21 (DUP)	10/02/19	<0.100	--	1.21	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.14	--	--	--	--	--	--	--	--	Duplicate of MW-21
MW-21	03/26/20	<0.500	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.96	--	--	--	--	--	--	--	--	
MW-21 (DUP)	03/26/20	<0.100	--	<0.200	--	<0.200	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.96	--	--	--	--	--	--	--	--	Duplicate of MW-21
MW-21	10/21/20	0.188	--	1.67	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.41	--	--	--	--	--	--	--	--	
MW-21 (DUP)	10/21/20	0.281 B	--	2.21	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.41	--	--	--	--	--	--	--	--	Duplicate of MW-21
MW-21	04/14/21	<0.100	--	0.780	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.90	--	--	--	--	--	--	--	--	
MW-21 (DUP)	04/14/21	<0.100	--	0.662	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.90	--	--	--	--	--	--	--	--	Duplicate of MW-21
MW-21	10/13/21	0.236	--	0.765	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.10	--	--	--	--	--	--	--	--	
MW-21 (DUP)	10/13/21	0.212 B	--	0.711	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.10	--	--	--	--	--	--	--	--	Duplicate of MW-21
MW-21	04/19/22	<0.100	--	0.594	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	1.28	--	--	--	--	--	--	--	--	
MW-21 (DUP)	04/19/22	<0.100	--	0.633	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	1.28	--	--	--	--	--	--	--	--	
MW-21	09/22/22	<0.100	--	1.960	--	<0.500	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.24	--	--	--	--	--	--	--	--	
MW-21 (DUP)	09/22/22	<0.100	--	1.580	--	<0.500	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.24	--	--	--	--	--	--	--	--	
MW-22	02/13/02	0.96	9.2	--	<0.5	--	0.012	0.0053	0.017	0.0097	--	--	--	--	--	--	--	--	--	--	--	
MW-22	05/21/02	1.1	7.7	--	<0.5	--	0.16	0.049	0.023	0.030	--	--	--	--	--	--	--	--	--	--	--	
MW-22	08/29/02	1.4	2.4	--	<0.5	--	0.50	0.0093	0.044	0.0066	--	--	0.70	2.4	--	--	9.1	<0.25	2.20	0.2		
MW-22	11/05/02	0.49	1.7	--	<0.5	--	0.14	0.0031	0.025	<0.001	--	--	1.60	1.1	--	--	5.6	<0.25	99.00	0.2		
MW-22	02/19/03	<0.25	9.1	--	<0.5	--	<0.001	<0.001	<0.001	<0.001	--	--	2.10	<0.01	--	--	4.7	<0.25	120	0.1		
MW-22	06/10/03	<0.25	7.4	--	0.87a	--	<0.001	<0.001	<0.001	<0.001	--	--	1.30	0.087	--	--	5.00	0.64	110.00	0.5		
MW-22	09/16/03	<0.25	2.7	--	<0.50	--	0.0018	<0.0005	<0.0005	<0.0005	--	--	2.40	2.0	--	--	55.00	<0.25 b	230.00	1.6		
MW-22	11/19/03	<0.50	8.4	--	<0.50	--	<0.0025	<0.0025	<0.0025	<0.0025	--	--	6.60	0.056	--	--	2.30	<0.25 b	100.00	0.4		
MW-22	02/25/04	<0.25	6.4	--	<0.50	--	<0.001	<0.001	<0.001	<0.001	--	--	8.20	<0.01	--	--	2.40	0.38 b	43.00	0.4		
MW-22	05/11/04	<0.25	2.0	--	<0.50	--	<0.001	<0.001	<0.001	<0.001	--	--	5.10	<0.010	--	--	0.48	0.87	36.00	<0.10		
MW-22	08/25/04	<0.25	0.61	--	<0.50	--	<0.001	<0.001	<0.001	<0.001	--	--	2.72	1.4	--	--	2.70	0.33	59.00	--*b		
MW-22	12/14/04	<0.25	1.1	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	1.35	3.2	--	--	5.50	1.20	65.00	<0.10		
MW-22	03/10/05	<0.25	2.2	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	1.40	0.38	--	--	9.20	0.49	23.00	0.61		
MW-22	06/07/05	<0.25	3.0	--	<0.50	--	0.0049	<0.001	<0.001	<0.001	--	--	4.20	0.53	--	--	6.30	<0.25	25.00	0.7		
MW-22	09/20/05	0.40	2.9	--	<0.50	--	<0.001	<0.001	<0.001	<0.001	--	--	3.70	0.86	--	--	27.00	<0.25	24.00	0.16		
MW-22	12/13/05	<0.25	0.71	--	<0.50	--	<0.001	<0.001	<0.001	<0.001	--	--	2.10	3.8	--	--	12.00	<0.25	25.00	3.0		
MW-22	03/15/06	<0.25	2.4	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	2.10	0.033	--	--	4.40	<0.25	14.00	<0.10		
MW-22	06/08/06	<0.25	0.89	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	2.60	0.62	--	--	4.50	<0.25	17.00	0.19		
MW-22	09/12/06	<0.25	0.45	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	2.60	2.2	--	--	4.50	<0.25	19.00	0.11		
MW-22	12/12/06	<0.25	1.4	--	<0.50	--	<0.001	<0.001	<0.001	<0.001	--	--	0.90	0.010	--	--	2.20	<0.25	7.3	<0.10		
MW-22	06/19/07	<0.25	1.1	--	<0.50	--	0.0094	<0.0005	<0.0005	<0.0005	--	--	1.80	--	--	--	--	--	--	--	--	
MW-22	06/04/08	<0.25	0.77	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	2.60	--	--	--	--	--	--	--	--	
MW-22	06/03/09	<0.25	1.8	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.50	--	--	--	--	--	--	--	--	
MW-22	06/09/10	<0.25	1.2	--	<0.50	--	<0.0005	<0.0005	<0.0005	0.0011	--	--	0.00	--	--	--	--	--	--	--	--	
MW-22	09/09/10	--	--	--	--	--	--	--	--	--	--	--	0.36	--	--	--	--	--	<0.50	--	--	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
MW-22	05/23/11	<0.25	2.7	--	<0.50	--	<0.0010	<0.0010	<0.0010	<0.0010	--	--	0.00	--	--	--	--	--	--	--	
MW-22	05/31/12	<1.0	2.1	--	0.73	--	<0.0050	<0.0050	<0.0050	<0.0050	--	--	0.00	--	--	--	--	--	--	--	
MW-22	04/09/13	<0.25	--	0.97	<0.50	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	
MW-22	04/22/14	<0.25	2.9	0.38	<0.50	<0.50	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	
MW-22	09/30/15	<0.100	--	0.911	--	<0.25	<0.001	<0.005	<0.001	<0.003	--	--	0.36	--	--	--	--	--	--	--	
MW-22	10/12/16	<0.100	--	<0.250	--	<0.500	<0.001	<0.005	<0.001	<0.003	--	--	0.84	--	--	--	--	--	--	--	
MW-22	10/11/17	<0.100	--	0.256	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.71	--	--	--	--	--	--	--	
MW-22	10/03/18	<0.1	--	<0.2	--	<0.25	<0.001	<0.001	<0.001	<0.003	--	--	0.11	--	--	--	--	--	--	--	
MW-22	10/03/19	0.826	--	0.258	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.10	--	--	--	--	--	--	--	
MW-22	10/21/20	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.10	--	--	--	--	--	--	--	
MW-22	10/14/21	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.17	--	--	--	--	--	--	--	
MW-22	09/21/22	<0.100	--	0.485	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.27	--	--	--	--	--	--	--	
MW-23	11/19/03	5.3	1.4	--	<0.50	--	0.87	0.016	0.098	0.23	--	--	--	--	--	--	--	--	--	--	
MW-23	02/25/04	3.3	0.85	--	<0.50	--	0.91	0.011	0.046	0.030	0.0052*	--	1.60	12	--	--	15	<0.25 b	13.00	0.4	
MW-23	05/12/04	4.2	1.3	--	<0.50	--	1.1	0.013	0.046	0.048	<0.0050*	--	1.80	13	--	--	19	<0.25	3.60	0.16	
MW-23	08/26/04	5.3	0.72	--	<0.50	--	1.1	0.023	0.20	0.17	0.014*	--	1.41	10	--	--	14	<0.25	21.00	0.11	
MW-23	12/14/04	--	--	--	--	--	--	--	--	--	--	--	2.30	16	--	--	1.2	<0.25	<0.50	0.25	
MW-23	03/08/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-23	06/07/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-23	09/20/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-23	12/13/05	6.3	<0.25	--	<0.50	--	1.3	0.014	0.048	0.044	<0.0050*	--	--	--	--	--	--	--	--	--	
MW-23	03/15/06	7.0	0.28	--	<0.50	--	1.4	0.015	0.19	0.21	<0.0050*	--	2.30	17	--	--	20	<0.25	<0.50	0.23	
MW-23	06/08/06	5.2	1.3	--	<0.50	--	1.4	0.014	0.11	0.11	<0.0050*	--	1.10	18	--	--	18	<0.25	<0.50	0.20	
MW-23	09/12/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-23	12/12/06	8.1	<0.25	--	<0.50	--	1.8	0.02	0.11	0.16	<0.0050*	--	1.90	27	--	--	27	<0.25	<0.50	0.24	
MW-23	03/27/07	8.4	--	--	--	--	1.8	0.019	0.16	0.16	--	--	2.40	--	--	--	--	--	--	--	
MW-23	06/19/07	8.7	--	--	--	--	1.8	0.021	0.23	0.23	<0.0050	--	1.20	13	--	--	18	<0.25	<1.0	0.19	
MW-23	09/25/07	6.9	--	--	--	--	1.5	0.021	0.085	0.11	--	--	2.90	--	--	--	--	--	--	--	
MW-23	12/11/07	9.1	--	--	--	--	1.3	0.022	0.053	0.097	--	--	2.77	--	--	--	--	--	--	--	
MW-23	03/04/08	7.8	--	--	--	--	1.5	0.018	0.089	0.10	--	--	2.40	--	--	--	--	--	--	--	
MW-23	06/04/08	19	--	--	--	--	2.4	0.061	0.59	3.2	<0.0050	--	1.70	12	--	--	63	<0.25	1.0	0.48	
MW-23	09/08/08	6.4	--	--	--	--	0.79	0.014	0.07	0.038	--	--	--	--	--	--	--	--	--	--	
MW-23	12/04/08	5.4	--	--	--	--	0.52	0.0088	0.091	0.063	--	--	0.53	--	--	--	--	--	--	--	
MW-23	03/04/09	4.8	--	--	--	--	0.81	0.012	0.27	0.11	--	--	0.80	--	--	--	--	--	--	--	
MW-23	06/02/09	5.7	--	--	--	--	0.21	0.0061	0.17	0.054	<0.0050	--	0.42	9.5	--	--	17	<0.25	57	0.92	
MW-23	09/21/09	5.9	--	--	--	--	0.64	0.013	0.26	0.025	--	--	0.60	--	--	--	--	--	--	--	
MW-23	11/16/09	6.2	--	--	--	--	0.80	0.017	0.45	0.036	--	--	0.43	--	--	--	--	--	--	--	
MW-23	03/08/10	4.8	--	--	--	--	0.25	0.0077	0.19	0.031	--	--	0.26	--	--	--	--	--	--	--	
MW-23	06/08/10	5.5	--	--	--	--	0.39	0.0082	0.17	0.025	<0.0050	--	0.15	11.00	--	--	22.00	<0.25	4.20	0.52	
MW-23	09/10/10	4.9	--	--	--	--	0.21	0.0044	0.11	0.019	--	--	3.49	--	--	--	--	--	--	--	
MW-23	11/16/10	4.5	--	--	--	--	0.37	0.010	0.23	0.02	--	--	0.46	--	--	--	--	--	--	--	
MW-23	03/02/11	5.0	--	--	--	--	0.21	0.0060	0.15	0.023	--	--	0.00	--	--	--	--	--	--	--	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
MW-23	05/24/11	6.0	--	--	--	--	0.32	0.0053	0.16	0.027	<0.0050	--	0.33	14.00	--	--	31.00	<0.25	0.80	0.10	
MW-23	08/30/11	6.0	--	--	--	--	0.15	0.0030	0.093	0.015	--	--	1.10	--	--	--	--	--	--	--	
MW-23	12/02/11	5.3	--	--	--	--	0.29	0.0076	0.13	0.017	--	--	0.89	--	--	--	--	--	--	--	
MW-23	03/02/12	4.0	--	--	--	--	0.12	0.0029	0.13	0.027	--	--	0.65	--	--	--	--	--	--	--	
MW-23	05/30/12	4.5	--	--	--	--	0.087	<0.0025	0.14	0.022	<0.0050	--	0.00	5.50	--	--	41.00	<0.25	74.00	0.38	
MW-23	08/25/12	2.6	--	--	--	--	0.050	<0.0025	0.059	0.0046	--	--	--	--	--	--	--	--	--	--	
MW-23	11/08/12	2.3	--	--	--	--	0.021	<0.001	0.065	0.0038	--	--	--	--	--	--	--	--	--	--	
MW-23	02/28/13	2.6	--	--	--	--	0.034	<0.0025	0.16	0.010	--	--	--	--	--	--	--	--	--	--	
MW-23	04/10/13	0.54	--	--	--	--	0.015	<0.001	0.015	0.0013	<0.0050	--	--	1.9	--	--	92	<0.25	1,000	<0.10	
MW-23	07/29/13	1.7	--	--	--	--	0.0097	<0.001	0.025	0.0011	--	--	--	--	--	--	--	--	--	--	
MW-23	10/02/13	0.39	--	--	--	--	0.015	<0.001	0.0019	<0.001	--	--	0.00	--	--	--	--	--	--	--	
MW-23	01/21/14	0.27	--	--	--	--	0.011	<0.001	<0.001	<0.001	--	--	5.42	--	--	--	--	--	--	--	
MW-23	04/23/14	1.7	--	--	--	--	0.039	<0.001	<0.001	0.0026	<0.0050	--	--	3.1	--	--	23	<0.25	470	<0.10	
MW-23	07/15/14	2.5	--	--	--	--	0.11	0.0020	0.063	0.0071	--	--	0.30	--	--	--	--	--	--	--	
MW-23	03/18/15	2.1	--	--	--	--	0.056	0.0013	0.028	0.0039	--	--	--	--	--	--	--	--	--	--	Surrogate recovery above lab limits
MW-23 (DUP)	03/18/15	1.4	--	--	--	--	0.045	0.0011	0.024	0.0029	--	--	0.07	6.5	--	--	9.5	<0.25	260	0.15	
MW-23	10/01/15	1.68	--	--	--	--	0.0873	<0.005	0.00684	0.00331	--	--	0.19	6.03	--	--	6.48 T8	<0.10	58.3	<0.05	
MW-23	03/31/16	1.39	--	--	--	--	0.0139	<0.005	0.0180	<0.003	--	--	0.36	6.08	--	--	7.93	<0.10	26.0	<0.05	
MW-23 (DUP)	03/31/16	1.36	--	--	--	--	0.0121	<0.005	0.0157	<0.003	--	--	--	--	--	--	--	--	--	--	
MW-23	10/14/16	1.63	--	--	--	--	0.0852	<0.005	<0.001	<0.003	<0.002	<0.002	0.70	5.36	--	--	15.4	<0.10	42.3	<0.05	
MW-23	03/29/17	0.433	--	--	--	--	0.00210	<0.001	<0.001	<0.003	--	--	0.20	--	--	--	--	--	--	--	
MW-23 (DUP)	03/29/17	0.489	--	--	--	--	0.00248	0.001	<0.001	<0.003	--	--	--	--	--	--	--	--	--	--	
MW-23	10/11/17	1.73	--	--	--	--	0.0665	0.00106	0.0134	<0.00300	<0.00200	<0.00100	0.56	8.26	--	--	4.89 T8	<0.100	<5.00	<0.0500	
MW-23	03/28/18	2.06	--	--	--	--	0.06	0.00154	0.00648	<0.003	--	--	0.28	--	--	--	--	--	--	--	
MW-23	10/04/18	2.61	--	--	--	--	0.307	0.00449	0.0011	<0.003	<0.002	<0.002	0.05	13.8	--	--	5.22 T8	<0.1	<5.0	<0.05	
MW-23	04/03/19	1.74	--	--	--	--	0.240	0.00369	0.00231	0.00760	--	--	0.09	--	--	--	--	--	--	--	
MW-23 (DUP)	04/03/19	1.65	--	--	--	--	0.255	0.00397	0.00245	0.00630	--	--	0.09	--	--	--	--	--	--	--	Duplicate of MW-23
MW-23	10/04/19	3.17	--	--	--	--	0.360	0.00797	0.00370	0.00539	<0.00200	<0.00200	0.22	18.7	--	--	14.9 T8	<0.100	<5.00	<0.0500	
MW-23	03/27/20	1.66	--	--	--	--	0.258	0.00539	0.00555	<0.0150	--	--	0.16	--	--	--	--	--	--	--	
MW-23 (DUP)	03/27/20	1.60	--	--	--	--	0.305	0.00562	0.00635	0.00662	--	--	0.16	--	--	--	--	--	--	--	Duplicate of MW-23
MW-23	10/22/20	3.77	--	--	--	--	0.309	0.00859	0.00968	<0.0150	<0.00500	<0.00500	0.09	17.7	--	--	13.0 T8	0.105	<5.00	<0.0500	
MW-23	04/13/21	2.34 B	--	--	--	--	0.206	0.0118	0.0106	0.0150	--	--	0.14	--	--	--	--	--	--	--	
MW-23	10/13/21	4.39	--	--	--	--	0.228	<0.00500	0.0111	0.0169	<0.00200	<0.00200	0.13	9.89	--	--	14.8 T8	<0.100	<5.00	<0.0500	
MW-23	04/19/22	3.220	--	--	--	--	0.173	0.00609	0.0063	<0.0150	--	--	0.09	--	--	--	--	--	--	--	
MW-23	09/21/22	2.660	--	--	--	--	0.140	0.00625	0.0084	<0.0150	<0.00200	<0.00200	0.16	12.4	--	--	15.4 T8	<0.100	<5.00	0.09	
MW-24	11/19/03	34	6.4	--	0.54	--	2.8	0.54	1.4	6.0	--	--	--	--	--	--	--	--	--	--	
MW-24	02/25/04	26	3.0	--	<0.50	--	4.3	0.085	1.0	3.3	<0.0050*	--	1.70	15	--	--	22	<0.25 b	6.40	0.3	
MW-24	05/12/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-24	08/26/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-24	12/14/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-24	03/08/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-24	06/07/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
MW-24	09/20/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-24	12/13/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-24	12/14/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-24	03/15/06	26	0.34	--	<0.50	--	4.4	0.064	0.88	4.2	0.0069	--	--	25	--	--	46	<0.25	<0.50	0.23	
MW-24	06/08/06	21	<0.25	--	<0.50	--	1.5	0.039	0.86	4.9	0.0068	--	1.60	7.6	--	--	9.1	<0.25	<0.50	0.42	
MW-24	09/12/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-24	12/12/06	20	1.1	--	<0.50	--	1.5	0.037	0.69	3.2	0.0078*	--	2.30	16	--	--	3.2	<0.25	<0.50	0.31	
MW-24	03/27/07	27	--	--	--	--	3.4	0.062	1.3	4.6	--	--	2.20	--	--	--	--	--	--	--	
MW-24	06/19/07	31	--	--	--	--	3.0	0.063	1.0	5.7	0.022	--	1.40	15	--	--	68	<0.25	<0.50	1.7	
MW-24	09/25/07	16	--	--	--	--	2.0	0.036	0.79	2.3	--	--	2.30	--	--	--	--	--	--	--	
MW-24	12/11/07	40	--	--	--	--	1.5	0.066	1.8	9.2	--	--	1.19	--	--	--	--	--	--	--	
MW-24	03/04/08	41	--	--	--	--	1.8	0.052	1.4	7.7	--	--	2.20	--	--	--	--	--	--	--	
MW-24	06/04/08	5.5	--	--	--	--	1.2	0.013	0.027	0.027	<0.0050	--	2.10	15	--	--	17	<0.25	7.4	0.85	
MW-24	09/08/08	46	--	--	--	--	3.5	0.081	1.9	7.3	--	--	1.38	--	--	--	--	--	--	--	
MW-24	12/05/08	32	--	--	--	--	2.4	0.061	1.6	4.3	--	--	0.33	--	--	--	--	--	--	--	
MW-24	03/04/09	26	--	--	--	--	2.3	0.056	1.5	5.3	--	--	0.83	--	--	--	--	--	--	--	
MW-24	06/02/09	37	--	--	--	--	2.5	0.064	1.7	4.4	0.0062	--	0.46	12	--	--	37	<0.25	<0.50	<0.10	
MW-24	09/21/09	28	--	--	--	--	1.6	0.042	1.3	4.2	--	--	0.77	--	--	--	--	--	--	--	
MW-24	11/16/09	20	--	--	--	--	1.1	0.027	0.94	2.7	--	--	0.78	--	--	--	--	--	--	--	
MW-24	03/08/10	31	--	--	--	--	2.5	0.058	1.6	5.1	--	--	0.29	--	--	--	--	--	--	--	
MW-24	06/08/10	37	--	--	--	--	3.1	0.084	2.2	7.1	0.019	--	0.00	12.00	--	--	35.00	<0.25	<0.50	0.23	
MW-24	09/10/10	28	--	--	--	--	2.4	0.066	1.8	4.3	--	--	3.70	--	--	--	--	--	--	--	
MW-24	11/16/10	26	--	--	--	--	1.3	0.051	1.5	5.8	--	--	0.47	--	--	--	--	--	--	--	
MW-24	03/02/11	26	--	--	--	--	2.2	0.057	1.3	4.8	--	--	0.00	--	--	--	--	--	--	--	
MW-24	05/24/11	11	--	--	--	--	1.2	0.028	0.51	1.3	<0.0050	--	0.53	12.00	--	--	26.00	<0.25	0.78	0.11	
MW-24	08/30/11	30	--	--	--	--	2	0.057	1.4	4.2	--	--	0.39	--	--	--	--	--	--	--	
MW-24	12/02/11	18	--	--	--	--	0.37	0.016	0.42	2.56	--	--	0.48	--	--	--	--	--	--	--	
MW-24	03/02/12	8.7	--	--	--	--	0.53	0.014	0.25	1.1	--	--	1.52	--	--	--	--	--	--	--	
MW-24	05/30/12	7.3	--	--	--	--	0.39	0.013	0.3	0.88	<0.0050	--	0.00	7.50	--	--	31.00	<0.25	2.40	0.15	
MW-24	08/25/12	11	--	--	--	--	0.56	<0.020 V	0.41	1.4	--	--	--	--	--	--	--	--	--	--	
MW-24 (DUP)	08/25/12	8.0	--	--	--	--	0.41	<0.015 V	0.30	1.1	--	--	--	--	--	--	--	--	--	--	Duplicate of MW-24
MW-24	11/08/12	20	--	--	--	--	1.7	0.057	1.4	4.1	--	--	--	--	--	--	--	--	--	--	
MW-24	11/08/12	19	--	--	--	--	1.7	0.057	1.4	4.2	--	--	--	--	--	--	--	--	--	--	
MW-24	02/28/13	6.6	--	--	--	--	0.29	<0.01	0.39	0.84	--	--	--	--	--	--	--	--	--	--	
MW-24	02/28/13	9.0	--	--	--	--	0.48	0.016	0.59	1.3	--	--	--	--	--	--	--	--	--	--	
MW-24	04/10/13	20	--	--	--	--	1.1	0.048	0.22	3.8	--	--	--	19	--	--	35	<0.25	1.0	<0.10	
MW-24	04/10/13	23	--	--	--	--	1.2	0.061	1.7	4.1	0.01	--	--	--	--	--	--	--	--	--	
MW-24	07/29/13	27	--	--	--	--	1.1	0.059	2.1	4.7	--	--	--	--	--	--	--	--	--	--	
MW-24	10/02/13	33	--	--	--	--	1.1	0.072	2.6	6.3	--	--	0.00	--	--	--	--	--	--	--	
MW-24 (DUP)	10/02/13	29	--	--	--	--	1.4	0.076	2.5	5.6	--	--	--	--	--	--	--	--	--	--	Duplicate of MW-24
MW-24	01/22/14	3.1	--	--	--	--	0.088	0.0034	0.18	0.33	--	--	--	--	--	--	--	--	--	--	
MW-24 (DUP)	01/22/14	2.2	--	--	--	--	0.056	0.0026	0.12	0.2	--	--	0.00	--	--	--	--	--	--	--	Duplicate of MW-24

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
MW-24	04/23/14	23	--	--	--	--	1.0	0.051	1.7	3.6	0.0085	--	--	13	--	--	52	0.95	2.3	<0.10	
MW-24 (DUP)	04/23/14	24	--	--	--	--	1.0	0.048	1.7	3.7	--	--	--	--	--	--	--	--	--	--	Duplicate of MW-24
MW-24	07/15/14	24	--	--	--	--	1.1	0.055	1.7	3.7	--	--	0.20	--	--	--	--	--	--	--	
MW-24 (DUP)	07/15/14	22	--	--	--	--	1.1	0.05	1.7	3.6	--	--	--	--	--	--	--	--	--	--	Duplicate of MW-24
MW-24	03/18/15	28	--	--	--	--	1.4	0.066	1.8	2.6	--	--	0.18	23	--	--	40	<0.25	1.2	<0.10	
MW-24	10/01/15	13.6	--	--	--	--	0.641	<0.100	1.13	1.80	0.00282	<0.002	0.29	10.4	--	--	31.3 T8	<0.10	<5.0	<0.05	
MW-24 (DUP)	10/01/15	14.5	--	--	--	--	0.637	0.0264	0.934	1.51	0.00249	<0.002	--	--	--	--	--	--	--	--	Duplicate of MW-24
MW-24	03/31/16	3.44	--	--	--	--	0.136	0.00605	0.106	0.115	--	--	0.45	9.40	--	--	12.6	<0.10	<5.0	<0.05	
MW-24	10/14/16	5.28	--	--	--	--	0.106	<0.05	0.201	0.280	0.00390	<0.002	0.30	2.53	--	--	6.23	<0.10	<5.0	<0.05	
MW-24 (DUP)	10/14/16	5.59	--	--	--	--	0.113	<0.05	0.206	0.287	0.00404	<0.002	--	--	--	--	--	--	--	--	Duplicate of MW-24
MW-24	03/29/17	12.8	--	--	--	--	0.160	<0.100	0.446	0.452	--	--	3.51	--	--	--	--	--	--	--	
MW-24	10/11/17	7.22	--	--	--	--	0.649	0.0260	0.773	0.732	0.00281	<0.00100	0.58	14.4	--	--	22.9 T8	<0.100	<5.00	<0.0500	
MW-24 (DUP)	10/11/17	7.12	--	--	--	--	0.649	0.0252	0.735	0.641	0.00266 B	<0.00100	0.58	13.3	--	--	25.7 T8	<0.100	<5.00	<0.0500	Duplicate of MW-24
MW-24	03/28/18	10.5	--	--	--	--	0.829	0.023	1.04	0.612	--	--	0.11	--	--	--	--	--	--	--	
MW-24 (DUP)	03/28/18	9.3	--	--	--	--	0.591	0.0260	0.869	0.535	--	--	--	--	--	--	--	--	--	--	Duplicate of MW-24
MW-24	10/04/18	10.4	--	--	--	--	0.337	0.0168	0.643	0.208	<0.002	<0.002	0.11	12.9	--	--	15.7 T8	<0.1	<5.0	<0.05	
MW-24 (DUP)	10/04/18	10.8	--	0.568	--	<0.25	0.378	0.0173	0.815	0.259	<0.002	<0.002	--	--	--	--	--	--	--	--	Duplicate of MW-24
MW-24	04/03/19	13.6	--	--	--	--	0.719	0.0274	1.23	0.309	--	--	0.09	--	--	--	--	--	--	--	
MW-24	10/04/19	10.3	--	--	--	--	0.581	0.0173	0.643	0.112	<0.00200	<0.00200	0.76	19.6	--	--	53.0 T8	<0.100	<5.00	<0.0500	
MW-24	03/27/20	2.15	--	--	--	--	0.222	<0.010	0.144	0.0412	--	--	0.32	--	--	--	--	--	--	--	
MW-24	10/22/20	9.00	--	--	--	--	0.859	0.0371	0.708	0.244	<0.00500	<0.00500	0.12	18.7	--	--	55.2 T8	<0.100	<5.00	<0.0500 J6	
MW-24	04/13/21	6.71	--	--	--	--	0.508	0.0243	0.683	0.313	--	--	0.09	--	--	--	--	--	--	--	
MW-24	10/13/21	9.63	--	--	--	--	0.440	0.0304	0.737	0.216	0.00224	<0.00200	0.00	11.8	--	--	56.7 T8	<0.100	<5.00	<0.0500	
MW-24	04/19/22	11.10	--	--	--	--	0.552	0.0303	0.776	0.263	--	--	0.16	--	--	--	--	--	--	--	
MW-24	09/21/22	8.240	--	--	--	--	0.407	0.0217	0.772	0.201	0.00303	<0.00200	0.11	11.6	--	--	52.2 T8	<0.100	<5.00	0.099	
MW-25	11/20/03	<0.25	1.3	--	<0.50	--	0.0061	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	
MW-25	02/26/04	0.38	8.9	--	<0.50	--	0.0011	<0.0005	0.0027	<0.0005	0.012*	--	1.30	1.5	--	--	27	<0.25 b	120.00	0.9	
MW-25	05/12/04	<0.25	1.6	--	<0.50	--	<0.0005	<0.0005	0.0034	<0.0005	<0.0050*	--	1.90	2.0	--	--	12	<0.25	140.00	0.10	
MW-25	08/26/04	<0.25	0.27	--	<0.50	--	0.013	<0.0005	<0.0005	<0.0005	0.034*a	--	1.78	1.7	--	--	5.4	<0.25	380.00	0.13	
MW-25	12/14/04	<0.25	1.4	--	<0.50	--	0.0035	<0.001	<0.001	<0.001	<0.0050*	--	2.10	0.40	--	--	2.7	<0.25	370.00	<0.10	
MW-25	03/10/05	0.31	3.7	--	<0.50	--	0.0014	<0.0005	0.00064	<0.0005	<0.0050*	--	2.10	2.0	--	--	3.5	<0.25	180.00	0.21	
MW-25	06/07/05	0.40	3.2	--	<0.50	--	<0.001	<0.001	0.0014	<0.001	<0.0050*	--	1.75	2.2	--	--	4.7	<0.25	160.00	0.7	
MW-25	09/20/05	0.30	1.4	--	<0.50	--	0.0016	<0.0005	<0.0005	<0.0005	0.059*a	--	1.30	0.91	--	--	1.8	<0.25	270.00	0.12	
MW-25	12/13/05	<0.25	1.2	--	<0.50	--	<0.001	<0.001	<0.001	<0.001	<0.0050*	--	2.50	1.8	--	--	1.8	<0.25	140.00	0.23	
MW-25	03/15/06	<0.25	1.0	--	<0.50	--	0.0019	<0.001	<0.001	<0.001	<0.0050*	--	2.50	0.92	--	--	4.6	<0.25	210.00	0.38	
MW-25	06/08/06	<0.25	1.4	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.20	1.9	--	--	6.5	<0.25	120.00	0.13	
MW-25	09/12/06	<0.25	0.31	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.80	0.84	--	--	5.9	<0.25	250.00	<0.10	
MW-25	12/12/06	<0.25	0.86	--	<0.50	--	0.0052	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.10	1.6	--	--	15	<0.25	400.00	<0.10	
MW-25	06/19/07	<0.50	1.6	--	<0.50	--	<0.0025	<0.0025	<0.0025	<0.0025	<0.0050	--	2.10	--	--	--	--	--	--	--	
MW-25	06/04/08	<0.25	0.26	--	<0.50	--	0.0020	<0.0005	<0.0005	<0.0005	<0.0050	--	2.40	--	--	--	--	--	--	--	
MW-25	06/03/09	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	0.62	--	--	--	--	--	--	--	
MW-25	06/09/10	<0.25	0.32	--	<0.50	--	<0.001	<0.001	<0.001	<0.001	<0.0050	--	0.00	--	--	--	--	--	--	--	

Appendix E
 Historical Groundwater Analytical Results
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
MW-25	05/25/11	<0.50	1.4	--	<0.50	--	<0.0025	<0.0025	<0.0025	<0.0025	<0.0050	--	1.17	--	--	--	--	--	--	--	
MW-25	06/01/12	<0.25	<0.25	--	<0.50	--	0.0011	<0.0010	<0.0010	<0.0010	<0.0050	--	0.00	--	--	--	--	--	--	--	
MW-25	04/10/13	<0.25	--	<0.25	<0.50	--	0.0013	<0.0005	<0.0005	<0.0005	<0.0050	--	--	--	--	--	--	--	--	--	
MW-25	04/23/14	<0.25	0.65	0.25	<0.50	<0.50	0.0014	<0.0005	<0.0005	<0.0005	<0.0050	--	--	--	--	--	--	--	--	--	
MW-25	10/02/15	<0.100	--	1.19	--	1.19	<0.001	<0.005	<0.001	<0.003	<0.002	<0.002	0.19	--	--	--	--	--	--	--	
MW-25	10/13/16	<0.100	--	<0.250	--	<0.500	<0.001	<0.005	<0.001	<0.003	<0.002	<0.002	0.62	--	--	--	--	--	--	--	
MW-25	10/11/17	0.110	--	1.60	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00100	0.46	--	--	--	--	--	--	--	
MW-25	10/02/18	<0.1	--	0.669	--	<0.25	<0.001	<0.001	<0.001	<0.003	<0.002	<0.002	0.12	--	--	--	--	--	--	--	
MW-25	10/03/19	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.16	--	--	--	--	--	--	--	
MW-25	10/23/20	<0.100	--	0.633	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00500	<0.00500	0.07	--	--	--	--	--	--	--	
MW-25	10/12/21	<0.100	--	0.437	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	0.00293	<0.00200	0.09	--	--	--	--	--	--	--	
MW-25	04/19/22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-25	09/21/22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-26	10/25/11	<0.25		<0.25		<0.50	<0.00050	<0.00050	<0.00050	<0.00050	--	--	--	--	--	--	--	--	--	--	
SH-02	12/20/00	0.078	<0.25	--	<0.5	--	0.001	<0.001	<0.001	<0.003	0.015**	--	--	5.40	--	--	0.86	0.040	14.00	0.32	
SH-02		Destroyed during construction activities																			
SH-02R	02/13/02	<0.25	0.56	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*	--	--	--	--	--	--	--	--	--	
SH-02R	05/21/02	<0.25	2.4	--	<0.5	--	0.037	<0.0005	<0.0005	<0.0005	0.005*	--	--	--	--	--	--	--	--	--	
SH-02R	08/28/02	<0.25	4.3	--	<0.5	--	0.087	0.0038	0.00061	0.0023	0.006*	--	1.50	4.90	--	--	17.00	<0.25	3.80	<0.1	
SH-02R	11/05/02	<0.25	1.1	--	<0.5	--	0.016	<0.0005	<0.0005	<0.0005	0.005*	--	2.10	6.10	--	--	20.00	<0.25	13.00	<0.1	
SH-02R	02/19/03	<0.25	<0.5	--	<0.5	--	<0.0005	0.00086	<0.0005	<0.0005	<0.005*	--	2.50	0.29	--	--	2.40	0.33	10.00	0.60	
SH-02R	06/10/03	<0.25	0.97	--	<0.25	--	<0.0005	0.00051	<0.0005	<0.0005	0.0059*	--	1.30	1.40	--	--	5.10	<0.25	6.80	0.30	
SH-02R	09/16/03	<0.25	3.0	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.010*	--	1.90	5.20	--	--	19.00	<0.25 b	5.10	0.40	
SH-02R	11/19/03	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.10	1.50	--	--	4.60	0.34 b	7.10	0.20	
SH-02R	02/25/04	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	3.40	5.00	--	--	14.00	0.46 b	5.20	0.40	
SH-02R	05/12/04	<0.25	0.74	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.00	3.20	--	--	7.40	<0.25	4.40	<0.10	
SH-02R	08/26/04	<0.25	0.58	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.24	2.10	--	--	3.80	<0.25	5.80	<0.10	
SH-02R	12/15/04	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.98	0.092	--	--	0.055	0.44	100.00	<0.10	
SH-02R	03/09/05	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.59	0.38	--	--	1.50	<0.25	380.00	<0.10	
SH-02R	06/08/05	<0.25	0.31	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.00	1.20	--	--	0.11	<0.25	110.00	<0.2	
SH-02R	09/21/05	<0.25	0.58	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.50	4.40	--	--	0.72	<0.25	31.00	<0.10	
SH-02R	12/14/05	<0.25	0.30	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.0078*	--	0.70	2.20	--	--	0.28	<0.25	11.00	<0.10	
SH-02R	03/14/06	<0.25	0.30	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.0072*	--	0.70	0.42	--	--	1.40	<0.25	25.00	<0.10	
SH-02R	06/07/06	<0.25	0.59	--	<0.50	--	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050*	--	0.90	3.10	--	--	4.40	<0.25	20.00	<0.10	
SH-02R	09/13/06	<0.25	<0.25	--	<0.50	--	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050*	--	1.70	3.90	--	--	5.50	<0.25	24.00	<0.10	
SH-02R	12/13/06	<0.25	0.49	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	0.90	0.38	--	--	1.30	0.34	10.00	<0.10	
SH-02R	06/20/07	<0.25	0.77	--	<0.50	--	<0.0010	<0.0010	<0.0010	0.0016	<0.0050	--	2.00	--	--	--	--	--	--	--	
SH-02R	06/05/08	<0.25	0.28	--	<0.50	--	<0.0005	<0.0005	<0.0005	0.00073	<0.0050	--	3.10	--	--	--	--	--	--	--	
SH-02R	06/01/09	<0.25	0.37	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	0.25	--	--	--	--	--	--	--	
SH-02R	06/08/10	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	0.24	--	--	--	--	--	--	--	
SH-02R	05/23/11	<0.25	0.29	--	<0.50	--	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	--	0.41	--	--	--	--	--	--	0.0050	
SH-02R	06/01/12	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	0.00	--	--	--	--	--	--	0.0050	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments	
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058											
SH-02R	04/09/13	<0.25	--	<0.25	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	--	--	--	--	--	--	--	<0.10	
SH-02R	04/23/14	<0.25	0.28	<0.25	<0.50	<0.50	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	--	--	--	--	--	--	--	<0.10	
SH-02R	09/30/15	<0.100	--	1.00	--	0.298	<0.001	<0.005	<0.001	<0.003	<0.002	<0.002	0.38	4.26	--	--	3.88	<0.1	<5	<0.05		
SH-02R	10/12/16	<0.100	--	<0.250	--	<0.500	<0.001	<0.005	<0.001	<0.003	<0.002	<0.002	0.61	--	--	--	--	--	--	--		
SH-02R	10/11/17	0.145 B	--	0.331	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00100	0.61	--	--	--	--	--	--	--		
SH-02R	10/04/18	0.129	--	0.594	--	<0.25	<0.001	<0.001	<0.001	<0.003	<0.002	<0.002	0.08	--	--	--	--	--	--	--		
SH-02R	10/03/19	<0.100	--	0.565	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.17	--	--	--	--	--	--	--		
SH-02R	10/21/20	0.220 B	--	0.252	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00500	<0.00500	0.08	--	--	--	--	--	--	--		
SH-02R	10/14/21	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.04	--	--	--	--	--	--	--		
SH-02R	09/22/22	<0.100	--	0.271	--	<0.250	<0.00500	<0.00500	<0.00500	<0.0150	<0.00200	<0.00200	0.40	--	--	--	--	--	--	--		
SH-05	12/20/00	<0.05	1.0	--	<0.5	--	<0.001	<0.001	<0.003	<0.001	0.017**	--	--	0.010	--	--	1.80	0.14	6.00	<0.01		
SH-05R	05/21/02	0.71	11	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*	--	--	--	--	--	--	--	--	--		
SH-05R	08/28/02	0.77	10	--	<0.5	--	<0.0005	0.0015	<0.0005	<0.0005	0.006*	--	1.40	1.00	--	--	11.00	<0.25	1.40	0.50		
SH-05R	11/05/02	1.4	7.1	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	0.008*	--	1.50	1.20	--	--	17.00	<0.25	6.30	<0.1		
SH-05R	02/19/03	0.8	6.8	--	<0.5	--	<0.001	0.0016	<0.001	<0.001	<0.005*	--	2.60	2.90	--	--	32.00	<0.25	28.00	<0.1		
SH-05R	06/10/03	1.1	45	--	<0.25	--	<0.0005	<0.0005	<0.0005	<0.0005	0.04*	--	1.40	1.50	--	--	33.00	<0.25	2.80	0.60		
SH-05R	09/16/03	<0.25	23	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.074*	--	1.20	1.60	--	--	41.00	<0.25 b	0.46	0.90		
SH-05R	11/19/03	0.62	19	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.075*	--	3.10	1.60	--	--	36.00	<0.25 b	71.00	0.50		
SH-05R	02/25/04	<0.25	5.3	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.50	0.56	--	--	0.087	0.76 b	120.00	0.20		
SH-05R	05/12/04	0.43	4.3	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.12	2.10	--	--	16.00	<0.25	4.60	<0.10		
SH-05R	08/26/04	0.63	3.0	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	1.96	2.00	--	--	6.40	<0.25	0.63	<0.10		
SH-05R	12/15/04	0.30	10	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.0056*	--	2.80	3.70	--	--	26.00	<0.25	26.00	<0.10		
SH-05R	03/09/05	0.78	4.3	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.56	3.40	--	--	2.00	<0.25	7.50	<0.10		
SH-05R	06/08/05	0.32	4.0	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.50	3.80	--	--	19.00	<0.25	30.00	<0.2		
SH-05R	09/21/05	0.61	2.8	--	1.0	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	0.80	3.10	--	--	9.10	<0.25	<0.50	<0.10		
SH-05R	12/14/05	0.78	1.3	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.30	5.40	--	--	23.00	<0.25	16.00	<0.10		
SH-05R	03/14/06	<0.25	1.4	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.0074*	--	2.30	0.11	--	--	0.087	<0.25	35.00	<0.10		
SH-05R	06/07/06	<0.25	1.4	--	<0.50	--	<0.001	<0.001	<0.001	<0.001	<0.0050*	--	1.20	1.90	--	--	8.40	0.34	21.00	<0.10		
SH-05R	09/13/06	0.34	0.56	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.40	2.20	--	--	7.40	<0.25	<0.50	<0.10		
SH-05R	12/13/06	<0.50	1.9	--	<0.50	--	<0.0025	<0.0025	<0.0025	<0.0025	<0.0050*	--	2.70	0.14	--	--	0.11	2.10	100.00	<0.10		
SH-05R	06/20/07	0.59	1.8	--	<0.50	--	<0.0005	0.00058	<0.0005	<0.0005	<0.0050	--	0.90	--	--	--	--	--	--	--		
SH-05R	06/05/08	<0.25	1.7	--	<0.50	--	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	--	2.90	--	--	--	--	--	--	--		
SH-05R	06/01/09	0.36	0.99	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	1.01	--	--	--	--	--	--	--		
SH-05R	06/08/10	<0.25	0.28	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	0.00	--	--	--	--	--	--	--		
SH-05R	05/23/11	<0.25	1.4	--	<0.50	--	<0.0025	<0.0025	<0.0025	<0.0025	<0.0050	--	1.39	--	--	--	--	--	--	0.0050		
SH-05R	10/01/15	<0.100	--	1.80	--	0.320	<0.001	<0.005	<0.001	0.003	<0.002	<0.002	0.42	--	--	--	--	--	--	--		
SH-05R	10/12/16	0.257	--	0.543	--	<0.500	<0.001	<0.005	<0.001	<0.003	<0.002	<0.002	0.61	--	--	--	--	--	--	--		
SH-05R	10/11/17	0.267 B	--	0.586	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00100	0.73	--	--	--	--	--	--	--		
SH-05R	10/04/18	0.242	--	0.7	--	<0.25	<0.001	<0.001	<0.001	<0.003	<0.002	<0.002	0.07	--	--	--	--	--	--	--		
SH-05R	10/03/19	<0.100	--	0.391	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.13	--	--	--	--	--	--	--		
SH-05R	10/21/20	0.180 B	--	0.314	--	<0.2500	<0.00100	<0.00100	<0.00100	<0.00300	<0.00500	<0.00500	0.14	--	--	--	--	--	--	--		
SH-05R	10/14/21	<0.100	--	0.413	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.06	--	--	--	--	--	--	--		

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments	
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058											
SH-05R	09/22/22	<0.100	--	0.455	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.26	--	--	--	--	--	--	--	--	
MW-07R	02/13/02	<0.25	1.2	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	0.035*	--	--	--	--	--	--	--	--	--	--	
MW-07R	05/21/02	<0.25	2.1	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	0.005*	--	--	--	--	--	--	--	--	--	--	
MW-07R	08/28/02	<0.25	2.4	--	<0.5	--	<0.0005	0.0028	<0.0005	0.0012	0.006*	--	1.60	0.17	--	--	6.90	<0.25	9.00	0.10	--	
MW-07R	11/05/02	<0.25	3.7	--	<0.5	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005*	--	1.60	0.16	--	--	12.00	<0.25	2.70	<0.1	--	
MW-07R	02/19/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-07R	06/10/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not Sampled
MW-07R	09/16/03	<0.25	1.9	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.045*	--	1.40	0.26	--	--	26.00	<0.25 b	9.10	1.60	--	
MW-07R	11/19/03	<0.25	2.1	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.020*	--	2.20	0.017	--	--	4.90	0.77 b	14.00	0.30	--	
MW-07R	02/25/04	<0.25	<0.50	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.10	<0.01	--	--	1.80	0.42 b	5.70	0.30	--	
MW-07R	05/12/04	<0.25	0.48	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.49	<0.010	--	--	2.20	0.74	3.40	<0.10	--	
MW-07R	08/26/04	<0.25	0.42	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	2.05	0.011	--	--	0.12	<0.25	12.00	<0.10	--	
MW-07R	12/15/04	<0.25	0.85	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.0076*	--	2.00	0.034	--	--	1.40	0.36	10.00	<0.10	--	
MW-07R	03/09/05	<0.25	0.54	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.15	0.030	--	--	4.20	<0.25	120.00	<0.10	--	
MW-07R	06/08/05	<0.25	0.46	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.98	<0.010	--	--	0.25	0.89	5.70	<0.2	--	
MW-07R	09/21/05	<0.25	0.70	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.80	0.13	--	--	<0.050	<0.25	15.00	<0.10	--	
MW-07R	12/14/05	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.50	<0.010	--	--	<0.050	0.29	5.70	<0.10	--	
MW-07R	03/14/06	<0.25	0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.50	0.23	--	--	2.30	0.51	8.90	<0.10	--	
MW-07R	06/07/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	2.20	<0.010	--	--	0.28	2.40	3.90	<0.10	--	
MW-07R	09/13/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	0.0065	--	1.20	0.26	--	--	3.40	<0.25	8.50	<0.10	--	
MW-07R	12/13/06	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050*	--	1.90	<0.010	--	--	<0.050	1.90	23.00	<0.10	--	
MW-07R	06/20/07	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	1.70	--	--	--	--	--	--	--	--	
MW-07R	06/05/08	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	1.90	--	--	--	--	--	--	--	--	
MW-07R	06/01/09	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	1.29	--	--	--	--	--	--	--	--	
MW-07R	06/08/10	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	1.11	--	--	--	--	--	--	--	--	
MW-07R	05/23/11	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	3.20	--	--	--	--	--	--	0.0050	--	
MW-07R	06/01/12	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	1.03	--	--	--	--	--	--	0.0050	--	
MW-07R	04/09/13	<0.25	--	<0.25	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	--	--	--	--	--	--	--	<0.10	
MW-07R	04/23/14	<0.25	<0.25	--	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0050	--	--	--	--	--	--	--	--	--	<0.10	
MW-07R	10/01/15	<0.100	--	2.61	--	0.373	<0.001	<0.005	<0.001	<0.003	<0.002	<0.002	0.37	1.54	--	--	11.8 T8	<0.1	<5	<0.05	--	
MW-07R	10/12/16	<0.100	--	0.280	--	<0.500	<0.001	<0.005	<0.001	<0.003	<0.002	<0.002	0.58	--	--	--	--	--	--	--	--	
MW-07R	10/11/17	0.423	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00100	0.67	--	--	--	--	--	--	--	--	
MW-07R	10/04/18	<0.1	--	<0.2	--	<0.25	<0.001	<0.001	<0.001	<0.003	<0.002	<0.002	0.05	--	--	--	--	--	--	--	--	
MW-07R	10/03/19	<0.100	--	0.229	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.13	--	--	--	--	--	--	--	--	
MW-07R	10/20/20	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00500	<0.00500	0.17	--	--	--	--	--	--	--	--	
MW-07R	10/14/21	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.06	--	--	--	--	--	--	--	--	
MW-07R	09/22/22	<0.100	--	<0.200	--	<0.250	<0.00100	<0.00100	<0.00100	<0.00300	<0.00200	<0.00200	0.16	--	--	--	--	--	--	--	--	
TMW-B1	10/29/09	5.7	<0.25	--	<0.50	--	0.12	0.0070	0.058	0.15	--	--	--	--	--	--	--	--	--	--	--	
TMW-B1	06/09/10	--	--	--	--	--	--	--	--	--	--	--	1.06	--	--	--	--	--	3.60	--	--	
TMW-B1	09/09/10	--	--	--	--	--	--	--	--	--	--	--	0.25	--	--	--	--	--	<0.50	--	--	
TMW-B1	05/25/11	9.1	--	--	--	--	0.024	<0.0050	0.24	0.56	--	--	1.51	--	--	--	--	--	--	--	--	
TMW-B1	12/02/11	6.6	--	--	--	--	0.091	<0.0050	0.15	0.26	--	--	0.33	--	--	--	--	--	--	--	--	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
TMW-B1	03/01/12	8.0	--	--	--	--	0.079	<0.0025	0.28	0.55	--	--	0.30	--	--	--	--	--	--	--	
TMW-B1	11/08/12	3.7	--	--	--	--	0.16	0.010	0.019	0.036	--	--	--	--	--	--	--	--	--	--	
TMW-B1	02/28/13	14	--	--	--	--	0.026	<0.01	0.50	0.87	--	--	--	--	--	--	--	--	--	--	
TMW-B1	10/02/13	5.8	--	--	--	--	0.039	<0.005	0.16	0.24	--	--	0.00	--	--	--	--	--	--	--	
TMW-B1	09/29/15	7.22	--	--	--	--	0.0355	<0.01	0.213	0.106	--	--	0.33	--	--	--	--	--	--	--	
TMW-B1	10/14/16	7.03	--	--	--	--	0.0227	<0.05	0.0690	<0.03	--	--	0.23	9.42	--	--	15.2	<0.10	<5.0	<0.05	
TMW-B1	10/12/17	6.71	--	--	--	--	0.0304	0.00266	0.0738	0.0276	--	--	0.62	11.4	--	--	12.7 T8	<0.100	<5.00	<0.0500	
TMW-B1	10/04/18	6.36	--	--	--	--	0.0827	0.00427	0.0428	0.01	--	--	0.14	6.6	--	--	8.34 T8	<0.1	<5.0	<0.05	
TMW-B1	10/04/19	5.68	--	--	--	--	0.0599	0.00758	0.0259	0.00913	--	--	0.08	6.57	--	--	<1.25 T8	<0.100	<5.00	<0.0500	
TMW-B1	10/22/20	6.00	--	--	--	--	0.0796	0.00869	0.0293	0.0124	--	--	0.05	10.8	--	--	12.1 T8	<0.100	<5.00	<0.0500	
TMW-B1	10/13/21	4.72	--	--	--	--	0.0751	0.00697	0.0143	0.00883	--	--	0.01	5.83	--	--	11.7 T8	<0.100	<5.00	<0.0500	
TMW-B1	09/21/22	5.050	--	--	--	--	0.0190	0.00242	0.0156	0.00685	--	--	0.15	9.31	--	--	5.7 T8	<0.100	<5.00	0.166	
TMW-1	06/21/13	<0.25	<0.25	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	0.41 °c	11	<0.10	Baseline monitoring event
TMW-1	07/30/13	<0.25	--	--	--	--	--	--	--	--	--	--	--	0.075	10	<0.30	--	0.28	1,900	<0.10	
TMW-1	08/26/13	<0.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Two-month monitoring event
TMW-1	10/03/13	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	2.92	0.081	13	5.2	--	<0.50 °c	980	<0.10	
TMW-1	01/22/14	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	9.27	--	--	--	--	--	450	<0.10	
TMW-1	04/21/14	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	<0.25	670	<0.10	
TMW-1	07/14/14	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.87	<0.010	4.0	3.1	--	--	650	<0.10	
TMW-1	03/17/15	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	5.42	0.040	--	--	0.65	0.32	640	<0.10	
TMW-1	09/29/15	2.03	--	--	--	--	<0.001	<0.005	<0.001	<0.003	--	--	1.80	<0.010	--	--	1.40 T8	0.571	1,090	<0.05	
TMW-1	03/30/16	<0.100	--	--	--	--	<0.001	<0.005	<0.001	<0.003	--	--	6.11	<0.010	--	--	1.74	<0.10	816	<0.05	
TMW-1	10/12/16	<0.100	--	--	--	--	<0.001	<0.005	<0.001	<0.003	--	--	4.86	--	--	--	--	--	314	--	
TMW-1	03/28/17	<0.100	--	--	--	--	<0.001	<0.001	<0.001	<0.003	--	--	6.65	--	--	--	--	--	511	--	
TMW-1	10/13/17	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.73	--	--	--	--	--	851	--	
TMW-1	03/29/18	<0.1	--	--	--	--	<0.001	<0.001	<0.001	<0.003	--	--	8.20	--	--	--	--	--	667	--	
TMW-1	10/03/18	<0.1	--	--	--	--	<0.001	<0.001	<0.001	<0.003	--	--	1.92	--	--	--	--	--	810	--	
TMW-1	04/02/19	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	6.77	--	--	--	--	--	627	--	
TMW-1	10/02/19	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	3.94	--	--	--	--	--	641	--	
TMW-1	03/25/20	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	9.59	--	--	--	--	--	669	--	
TMW-1	10/20/20	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	4.46	--	--	--	--	--	331	--	
TMW-1	04/12/21	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	8.40	--	--	--	--	--	963	--	
TMW-1	10/11/21	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.01	--	--	--	--	--	294	--	
TMW-1	04/19/22	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	8.06	--	--	--	--	--	989	--	
TMW-1	09/20/22	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.29	--	--	--	--	--	708	--	
TMW-2	06/21/13	0.25	0.28	--	--	--	0.0075	0.00097	<0.0005	0.00068	--	--	--	--	--	--	--	<0.25 °c	0.83	<0.10	Baseline monitoring event
TMW-2	07/30/13	0.26	--	--	--	--	--	--	--	--	--	--	--	17	29	1.2	--	<0.25	6.4	<0.10	
TMW-2	08/26/13	0.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Two-month monitoring event
TMW-2	10/03/13	0.50	--	--	--	--	0.013	0.00074	<0.0005	0.0024	--	--	0.00	15	160	110	--	<0.50 °c	2,000	<0.10	
TMW-2	01/22/14	0.28	--	--	--	--	0.011	<0.0005	<0.0005	<0.0005	--	--	6.12	--	--	--	--	--	3,000	<0.10	
TMW-2	04/21/14	<0.25	--	--	--	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	<0.25	2,600	<0.10	
TMW-2	07/14/14	<0.25	--	--	--	--	0.0028	<0.0005	<0.0005	<0.0005	--	--	0.10	7.1	68	67	--	--	2,700	<0.10	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
TMW-2	03/17/15	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.24	2.7	--	--	16	<0.25	1,500	<0.10	
TMW-2	10/01/15	<0.100	--	--	--	--	<0.001	<0.005	<0.001	<0.003	--	--	0.34	0.0843	--	--	34.8 T8	<0.10	1,810	<0.05	
TMW-2	03/30/16	<0.100	--	--	--	--	<0.001	<0.005	<0.001	<0.003	--	--	0.32	6.71	--	--	9.26	<0.10	1,340	<0.05	
TMW-2	10/12/16	<0.100	--	--	--	--	<0.001	<0.005	<0.001	<0.003	--	--	0.23	--	--	--	--	--	1,200	--	
TMW-2	03/28/17	<0.100	--	--	--	--	<0.001	<0.001	<0.001	<0.003	--	--	0.41	--	--	--	--	--	1,480	--	
TMW-2	10/13/17	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.56	--	--	--	--	--	1,390	--	
TMW-2	03/29/18	<0.1	--	--	--	--	<0.001	<0.001	<0.001	<0.003	--	--	0.08	--	--	--	--	--	1,250	--	
TMW-2	10/03/18	<0.1	--	--	--	--	<0.001	<0.001	<0.001	<0.003	--	--	0.12	--	--	--	--	--	1,730	--	
TMW-2	04/02/19	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.09	--	--	--	--	--	1,480	--	
TMW-2	10/02/19	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.22	--	--	--	--	--	1,370	--	
TMW-2	03/25/20	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	7.42	--	--	--	--	--	1,390	--	
TMW-2	10/20/20	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.03	--	--	--	--	--	1,160	--	
TMW-2	04/12/21	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	1.03	--	--	--	--	--	1,220	--	
TMW-2	10/11/21	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.65	--	--	--	--	--	1,030	--	
TMW-2	04/19/22	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.14	--	--	--	--	--	1,330	--	
TMW-2	09/20/22	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.14	--	--	--	--	--	868	--	
TMW-3	06/24/13	0.86	0.85	--	--	--	<0.0005	0.00052	<0.0005	0.00087	--	--	--	--	--	--	--	<0.25	4.4	<0.10	Baseline monitoring event
TMW-3	07/30/13	0.98	--	--	--	--	--	--	--	--	--	--	--	2.6	10	<0.30	--	<0.25	3.1	<0.10	
TMW-3	08/26/13	1.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Two-month monitoring event
TMW-3	10/03/13	0.92	--	--	--	--	0.00057	0.0018	0.0076	0.0072	--	--	0.00	3.8	43	18	--	<0.50 °c	1,100	<0.10	
TMW-3	01/22/14	0.75	--	--	--	--	<0.001	0.0022	<0.001	<0.001	--	--	0.00	--	--	--	--	--	3,800	<0.10	
TMW-3	04/24/14	0.51	--	--	--	--	<0.0005	0.0046	0.0011	<0.0005	--	--	--	--	--	--	--	<0.25	2,500	<0.10	
TMW-3	07/14/14	<0.25	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.27	1.3	19	17	--	--	3,100	<0.10	
TMW-3	03/18/15	0.62	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	0.07	1.3	--	--	9.3	<0.25	1,300	<0.10	
TMW-3	09/30/15	0.358	--	--	--	--	<0.001	<0.005	<0.001	<0.003	--	--	0.17	0.890	--	--	13.4 T8	<0.10	984	<0.05	
TMW-3	03/30/16	0.266	--	--	--	--	<0.001	<0.005	<0.001	<0.003	--	--	0.38	0.494	--	--	5.5	<0.10	1,380	<0.05	
TMW-3	10/12/16	0.607	--	--	--	--	<0.001	<0.005	<0.001	<0.003	--	--	0.24	--	--	--	--	--	1,190	--	
TMW-3	03/29/17	0.170	--	--	--	--	<0.001	<0.001	<0.001	<0.003	--	--	0.23	--	--	--	--	--	1,800	--	
TMW-3	10/12/17	0.610	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.54	--	--	--	--	--	1,320	--	
TMW-3	03/29/18	0.309	--	--	--	--	<0.001	<0.001	<0.001	<0.003	--	--	0.12	--	--	--	--	--	1,150	--	
TMW-3	10/04/18	1.15	--	--	--	--	<0.001	<0.001	0.0012	<0.003	--	--	0.24	--	--	--	--	--	1,220	--	
TMW-3	04/03/19	0.553	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.01	--	--	--	--	--	909	--	
TMW-3	10/03/19	0.955	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.16	--	--	--	--	--	513	--	
TMW-3	03/26/20	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.21	--	--	--	--	--	1,100	--	
TMW-3	10/20/20	0.136 B	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.16	--	--	--	--	--	912	--	
TMW-3	04/13/21	0.167	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.46	--	--	--	--	--	1,120	--	
TMW-3	10/12/21	0.559	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.29	--	--	--	--	--	730	--	
TMW-3	04/18/22	0.123 B	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.09	--	--	--	--	--	1,170	--	
TMW-3	09/20/22	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.10	--	--	--	--	--	627	--	
TMW-4	06/24/13	4.9	2.5 Z	--	--	--	0.17	0.084	0.23	0.95	--	--	--	--	--	--	--	<0.25	32	0.11	Baseline monitoring event
TMW-4	07/30/13	5.1	--	--	--	--	--	--	--	--	--	--	--	13	24	5.0	--	0.48	1.4	0.11	
TMW-4	08/26/13	9.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Two-month monitoring event

Appendix E
 Historical Groundwater Analytical Results
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
TMW-4	10/03/13	4.7	--	--	--	--	0.13	0.12	0.29	1.3	--	--	0.00	16	410	17	--	0.36 J*	2,800	<0.10	
TMW-4	01/22/14	6.0	--	--	--	--	0.21	0.070	0.40	0.99	--	--	0.00	--	--	--	--	--	2,800	<0.10	
TMW-4	04/24/14	4.0	--	--	--	--	0.16	0.044	0.39	0.84	--	--	--	--	--	--	--	<0.25	1,400	<0.10	
TMW-4	07/14/14	5.6	--	--	--	--	0.19	0.016	0.38	0.35	--	--	0.12	7.9	130	130	--	--	940	<0.10	
TMW-4	03/18/15	7.5	--	--	--	--	0.21	0.019	0.53	0.38	--	--	0.08	7.5	--	--	30	<0.25	410	<0.10	
TMW-4	09/30/15	3.49	--	--	--	--	0.107	<0.125	0.455	<0.075	--	--	0.12	1.12	--	--	43.4 T8	<0.10	374	<0.05	
TMW-4	03/30/16	2.23	--	--	--	--	0.0471	<0.005	0.343	0.0141	--	--	1.01	1.96	--	--	5.01	<0.10	1,940	<0.05	
TMW-4	10/14/16	3.13	--	--	--	--	0.0250	<0.025	0.211	<0.015	--	--	0.67	--	--	--	--	--	936	--	

Appendix E
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Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
TMW-4	03/29/17	3.48	--	--	--	--	0.0139	0.00301	0.194	0.00977	--	--	0.18	--	--	--	--	--	1,880	--	
TMW-4	10/12/17	3.52	--	--	--	--	0.0345	0.0430	0.308	0.117	--	--	0.39	--	--	--	--	--	494	--	
TMW-4	03/29/18	3.85	--	--	--	--	0.00497	0.00913	0.282	0.0439	--	--	0.05	--	--	--	--	--	741	--	
TMW-4	10/04/18	6.35	--	--	--	--	0.0103	0.0451	0.435	0.341	--	--	0.13	--	--	--	--	--	1,360	--	
TMW-4	04/03/19	3.07	--	--	--	--	<0.0100	<0.0100	0.257	<0.0300	--	--	0.07	--	--	--	--	--	696	--	
TMW-4	10/03/19	6.02	--	--	--	--	0.00347	0.0532	0.263	0.337	--	--	0.10	--	--	--	--	--	446	--	
TMW-4	03/26/20	1.35	--	--	--	--	0.00132	0.00324	0.275	0.00576	--	--	3.36	--	--	--	--	--	1,520	--	
TMW-4	10/20/20	2.49 B	--	--	--	--	<0.00500	<0.00500	0.00512	<0.0150	--	--	0.15	--	--	--	--	--	1,680	--	
TMW-4	04/13/21	2.51	--	--	--	--	0.00434	0.00224	0.0461	0.00398	--	--	0.19	--	--	--	--	--	1,180	--	
TMW-4	10/12/21	4.54	--	--	--	--	0.00122	0.0318	0.335	0.179	--	--	0.15	--	--	--	--	--	805	--	
TMW-4	04/19/22	1.870	--	--	--	--	0.00135	0.00156	0.00124	<0.00300	--	--	0.12	--	--	--	--	--	638	--	
TMW-4	09/20/22	2.060	--	--	--	--	<0.00100	0.0158	0.193	0.192	--	--	0.21	--	--	--	--	--	382	--	
TMW-5	06/21/13	1.3	0.65 K	--	--	--	0.10	0.0097	0.022	0.02	--	--	--	--	--	--	--	<0.25 °c	4.3	<0.10	Baseline monitoring event
TMW-5	07/30/13	4.3	--	--	--	--	--	--	--	--	--	--	--	7.6	11	<0.30	--	<0.25	0.67	0.25	
TMW-5	08/26/13	4.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Two-month monitoring event
TMW-5	10/03/13	1.9	--	--	--	--	0.044	0.0063	0.00380	0.0088	--	--	0.00	5.6	39	16	--	<0.50 °c	2,500	0.10	
TMW-5	01/22/14	1.9	--	--	--	--	0.0039	0.0031	0.00120	0.0023	--	--	7.18	--	--	--	--	--	2,600	0.10	
TMW-5	04/24/14	1.4	--	--	--	--	<0.0015	0.0026	0.0017	0.0021	--	--	--	--	--	--	--	<0.25	4,000	<0.10	
TMW-5	07/14/14	1.4	--	--	--	--	0.01	0.0016	<0.0005	0.00062	--	--	0.09	2.4	8.0	0.82	--	--	1,300	<0.10	
TMW-5	03/18/15	3.0	--	--	--	--	0.046	0.0069	0.016	0.016	--	--	0.04	8.9	--	--	0.069	<0.25	700	0.20	
TMW-5	09/30/15	1.20	--	--	--	--	0.00943	<0.005	<0.001	<0.003	--	--	0.09	2.00	--	--	43.1 T8	<0.10	734	6.72	
TMW-5	03/30/16	0.865	--	--	--	--	0.0220	<0.005	0.00831	<0.003	--	--	0.27	4.12	--	--	2.21	<0.10	1,500	<0.05	
TMW-5	10/12/16	1.27	--	--	--	--	0.00812	<0.005	<0.001	<0.003	--	--	0.17	--	--	--	--	--	765	--	
TMW-5	03/29/17	1.53	--	--	--	--	0.01580	0.00107	0.0053	<0.003	--	--	0.28	--	--	--	--	--	1,730	--	
TMW-5	10/12/17	1.06	--	--	--	--	0.00928	0.00139	<0.00100	<0.00300	--	--	0.38	--	--	--	--	--	686	--	
TMW-5	03/29/18	1.42	--	--	--	--	<0.001	<0.001	0.00304	<0.003	--	--	0.09	--	--	--	--	--	727	--	
TMW-5	10/04/18	0.99	--	--	--	--	<0.001	<0.001	<0.001	<0.003	--	--	0.09	--	--	--	--	--	1,210	--	
TMW-5	04/03/19	1.04	--	--	--	--	<0.00100	<0.00100	0.00200	<0.00300	--	--	0.01	--	--	--	--	--	832	--	
TMW-5	10/02/19	<0.100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.29	--	--	--	--	--	581	--	
TMW-5	03/26/20	0.316	--	--	--	--	<0.00100	<0.00100	0.00506	<0.00300	--	--	0.21	--	--	--	--	--	1,940	--	
TMW-5	10/20/20	0.790	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00300	--	--	0.23	--	--	--	--	--	1,210	--	
TMW-5	04/12/21	1.100	--	--	--	--	0.00158	<0.00100	0.00355	<0.00300	--	--	0.27	--	--	--	--	--	763	--	
TMW-5	10/11/21	1.030	--	--	--	--	0.00916	0.00238	<0.00100	<0.00300	--	--	0.10	--	--	--	--	--	495	--	
TMW-5	04/18/22	0.896	--	--	--	--	0.00308	<0.00100	<0.00100	<0.00300	--	--	0.03	--	--	--	--	--	958	--	
TMW-5	09/20/22	0.439	--	--	--	--	0.00585	0.00309	<0.00100	<0.00300	--	--	0.09	--	--	--	--	--	417	--	
TMW-6	06/24/13	4.9	1.8 Z	--	--	--	0.067	0.0099	0.1500	0.55	--	--	--	--	--	--	--	<0.25	16	0.14	Baseline monitoring event
TMW-6	07/30/13	7.8	--	--	--	--	--	--	--	--	--	--	--	5.4	13	2.4	--	<0.25	5.0	0.14	
TMW-6	08/26/13	8.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Two-month monitoring event
TMW-6	10/03/13	5.4	--	--	--	--	0.028	0.010	0.18000	0.42	--	--	0.00	5.6	290	250	--	<0.50 °c	1,700	<0.10	
TMW-6	01/22/14	7.0	--	--	--	--	0.06	0.010	0.28000	0.53	--	--	3.60	--	--	--	--	--	2,300	<0.10	
TMW-6	04/24/14	5.1	--	--	--	--	0.015	0.0036	0.19000	0.37	--	--	--	--	--	--	--	<0.25	1,800	<0.10	
TMW-6	07/14/14	3.9	--	--	--	--	0.064	0.0047	0.1600	0.21	--	--	0.22	6.5	100	98	--	--	1,600	<0.10	

Appendix E
 Historical Groundwater Analytical Results
 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
TMW-6	03/18/15	5.0	--	--	--	--	0.003	0.0028	0.15	0.12	--	--	0.09	0.54	--	--	2.0	<0.25	1,000	<0.10	
TMW-6	09/30/15	5.09	--	--	--	--	0.00287	<0.005	0.133	0.189	--	--	0.19	1.15	--	--	41.7 T8	<0.10	1,400	<0.05	
TMW-6	03/30/16	2.00	--	--	--	--	<0.001	<0.005	0.05630	0.0546	--	--	0.66	0.254	--	--	14.9	<0.10	1,560	<0.05	
TMW-6	10/12/16	5.82	--	--	--	--	0.00278	0.00667	0.26700	0.392	--	--	0.27	--	--	--	--	--	1,530	--	
TMW-6	04/20/17	3.85	--	--	--	--	<0.010	<0.010	0.12400	0.144	--	--	0.36	--	--	--	--	--	1,770	--	

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 Kinder Morgan Liquids Terminals, LLC
 Harbor Island Terminal
 2720 13th Avenue Southwest, Seattle, Washington



Well ID	Date Sampled	GRO mg/L	DRO mg/L	DRO, SGC mg/L	HO mg/L	HO, SGC mg/L	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylenes mg/L	Total Lead mg/L	Dissolved Lead mg/L	Dissolved Oxygen mg/L	Methane mg/L	Total Iron mg/L	Dissolved Iron mg/L	Ferrous Iron mg/L	Nitrate mg/L	Sulfate mg/L	Sulfide mg/L	Comments
Site-Specific Cleanup Levels:		1.0	10	10	10	10	0.071	200	29.0	N/A	0.0058										
TMW-6	10/12/17	9.33	--	--	--	--	<0.0100	0.0109	0.5790	0.526	--	--	0.54	--	--	--	--	--	1,400	--	
TMW-6	03/28/18	9.31	--	--	--	--	<0.001	0.00212	0.286	0.27	--	--	0.08	--	--	--	--	--	796	--	
TMW-6	10/03/18	9.79	--	--	--	--	0.00157	0.00623	0.548	0.374	--	--	0.07	--	--	--	--	--	1,250	--	
TMW-6	04/03/19	4.77	--	--	--	--	<0.00100	<0.00100	0.289	0.413	--	--	0.05	--	--	--	--	--	344	--	
TMW-6	10/02/19	11.6	--	--	--	--	<0.00100	0.00486	0.640	1.09	--	--	0.13	--	--	--	--	--	416	--	
TMW-6	03/26/20	2.16	--	--	--	--	<0.00100	<0.00100	0.145	0.0812	--	--	0.26	--	--	--	--	--	3,720	--	
TMW-6	10/21/20	6.74	--	--	--	--	<0.00100	0.00123	0.300	0.313	--	--	0.20	--	--	--	--	--	1,010	--	
TMW-6	04/13/21	2.16	--	--	--	--	<0.00100	<0.00100	0.290	0.473	--	--	0.30	--	--	--	--	--	411	--	
TMW-6	10/13/21	10.3	--	--	--	--	<0.0100	<0.0100	0.691	0.977	--	--	0.17	--	--	--	--	--	622	--	
TMW-6	04/19/22	6.950	--	--	--	--	<0.0100	<0.0100	0.357	0.604	--	--	0.47	--	--	--	--	--	269	--	
TMW-6	09/22/22	8.370	--	--	--	--	<0.0100	0.0174	0.528	0.811	--	--	0.13	--	--	--	--	--	326	--	
TMW-6	09/28/22	<0.100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

Appendix E
Historical Groundwater Analytical Results
Kinder Morgan Liquids Terminals, LLC
Harbor Island Terminal
2720 13th Avenue Southwest, Seattle, Washington



Notes:

*: MW-2 total and dissolved lead samples were taken on 9/22/22.

Highlighted = data from most recent monitoring event

-- = Sample not analyzed for this parameter

< = Denotes compound was not detected at designated detection limit.

Bold = Concentration detected above the Site-Specific Cleanup Level

mg/L = milligrams per liter (parts per million [ppm])

N/A = not applicable

^ = Analysis could not be run due to excess particulate matter.

* = Also tested for Dissolved Lead (EPA-200.8), results are below detection limit of 0.0050 ppm.

*a = Also tested for Dissolved Lead (EPA-200.8), results are at or above detection limit of 0.0050 ppm.

*b = Lab did not receive sample container to run analysis.

*c = The laboratory analyzed nitrate samples using preserved samples. Concentrations may be biased high due to possible oxidation of nitrite to nitrate

*d = Lab received broken volatile organic analyzer (VOA), not able to run analysis.

** = Also tested for Dissolved Lead (EPA-7421), results are below detection limit of 0.004 ppm.

*** = Also tested for Dissolved Lead (EPA-SW6020), results are below detection limit of 0.0050 ppm.

a = Insulating oil range hydrocarbons were reported for MW-22 at concentration of 0.87 ppm.

b = The lab analyzed these samples for nitrate only, using sulfuric acid preserved samples (submitted for nitrate analysis). Holding time for preserved samples for nitrate analysis is 28 days. The lab analyzed these for nitrate because non-preserved samples were received outside of 48 hours.

c = The lab analyzed these samples for nitrate and sulfate together, using non-preserved samples (submitted for sulfate analysis). Holding time for non-preserved samples for nitrate analysis is 48 hours and for sulfate analysis is 28 days. These samples were received within the 48-hour holding time.

d = Dissolved oxygen was not recorded at this well due to a technical error with the data recording system.

o = Reporting Limits were increased due to sample foaming.

B = The same analyte is found in the associated blank.

V = Reporting Limits were increased due to high concentration of target analytes.

K = DRO concentration may include contributions from lighter-end hydrocarbons that elute in the DRO range.

Z = DRO concentration may include contributions from lighter-end and heavier-end hydrocarbons that elute in the DRO range

1. Total Petroleum Hydrocarbons (TPH) as gasoline range organics (GRO) - Analysis by Washington Method WTPH-G prior to 5/20/98; analysis by Northwest Method NWTPH-Gx from 5/20/98 through present.

2. Total Petroleum Hydrocarbons (TPH) as diesel range organics (DRO) and heavy oil range organics (HO) - Analysis by Washington Method WTPH-D+ extended prior to 5/20/98; analysis by Northwest Method NWTPH-Dx from 5/20/98 through present.

3. Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) Compounds - Analysis by EPA Method 8020 prior to 5/20/98; analysis by EPA Method 8260B from 5/20/98 through present.

J3 = The associated batch quality control (QC) was outside the established quality control range for precision.

J5 = The sample matrix interfered with the ability to make any accurate determination; spike value is high.

J6 = The sample matrix interfered with the ability to make any accurate determination; spike value is low.

J = Estimated value between the method reporting limit (MRL) and the detection limit

P1 = Relative percent difference value not applicable for sample concentrations less than 5 times the reporting limit.

T8 = Sample was received by the lab outside the hold time for the analyte; value should be considered a minimum.

SGC = A silica gel wash as performed on the solvent extract before analysis. Silica gel cleanup was completed for samples with TPH-DRO and TPH-HO detections above the method reporting limit. All samples analyzed since September 2015 were performed with SGC for all TPH-DRO and TPH-HO analysis.

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