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Subject:  
Groundwater Monitoring Report and Request for Ecology Opinion on Applicability  
of Model Remedy #4 for Sites with Petroleum Impacts to Groundwater  
Former Phoenix Inn Site  
415 Capitol Way North  
Olympia, Washington  
VCP SW1582

Environment

Date:  
March 21, 2018

Contact:  
Paul McCullough

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[Paul.McCullough@arcadis.com](mailto:Paul.McCullough@arcadis.com)

Dear Mr. Mullin:

Arcadis U.S., Inc. (Arcadis) is pleased to submit this Groundwater Monitoring Report for groundwater gauging and sampling activities conducted at the DoubleTree hotel located at 415 Capitol Way North in Olympia, Washington (the Property) in 2017. A location map is presented as **Figure 1**.

Our ref:  
SEA41774.0002

Groundwater monitoring activities were performed as an independent action under the Washington State Department of Ecology (Ecology) Voluntary Cleanup Program (Site Number SW1582). The work was performed in accordance with a Work Plan for Additional Characterization dated April 10, 2017 (Arcadis 2017a), which was conditionally approved by Ecology in a letter dated July 11, 2017.

## SITE DESCRIPTION

The Property is located between the East and West Bay of Budd Inlet, north of the mouth of the Deschutes River at 415 Capitol Way North in Olympia, Washington and is bordered to the north by A Avenue, to the east by Capitol Way North, to the south by Thurston Avenue, and to the west by Columbia Street Northwest. The Site is defined as all areas where hazardous substances originating from the Property have come to be located. Currently available data suggest that petroleum hydrocarbon-affected soil and groundwater do not extend beyond the Property

boundary at levels above applicable Model Toxics Control Act (MTCA) cleanup levels (CULs). The current site plan and monitoring well network is presented as **Figure 2**.

The Property is currently occupied by a DoubleTree Hotel and associated parking. The current three-story building, constructed in 1999 and retrofitted in 2013, occupies the eastern portion of the parcel and an asphalt-paved parking lot occupies the western portion. The hotel includes a swimming pool, spa, fitness center, business center, bar/lounge, meeting rooms, a retail shop, and hotel/guest laundry facilities.

The Site currently has 21 monitoring wells, 20 of which are located on or immediately adjacent to the Property (PMW-1 through PMW-3 and PMW-5 through PMW-21) and one of which is located southeast of the Property at the southwest corner of Capitol Way North and Thurston Avenue (PMW-4). Two adjacent monitoring wells associated with other nearby sites are located north of the Property (MW-1 and MW-2 on A Avenue), and two are located south of the Property (MW-10 on Thurston Avenue and MW-6 on Columbia Street).

## SUMMARY 2017 SUPPLEMENTAL INVESTIGATION ACTIVITIES

In addition to groundwater monitoring activities discussed below, Arcadis conducted the following environmental investigations in 2017:

- In June 2017, Arcadis screened site utility vaults using a calibrated five-gas meter. Results of the utility vault assessment were previously reported to Ecology in the *Work Plan for Additional Vapor Intrusion/Indoor Air Investigation* (Arcadis 2017b). The utility vault screening assessment did not indicate volatile organic compounds (VOCs) were present at significant concentrations, with no VOC reading above 0.5 parts per million. Additionally, no potentially explosive atmospheres were identified in any of the utility vault. Lower explosive level (LEL) measurements were all below 10 percent.
- In August 2017, Arcadis installed 3 groundwater monitoring wells to total depths of 14 feet below ground surface (bgs), screened from 4 to 14 feet bgs. Well locations were selected in consultation with Ecology. Monitoring well PMW-19 was installed in the northern part of the parking area and wells PMW-20 and PMW-21 were installed in the sidewalk on the eastern edge of the Property (**Figure 2**). Boring logs of these wells are included as **Attachment A**.
- In June and September 2017, Arcadis collected 3 indoor and 2 outdoor air samples to evaluate indoor air concentrations of petroleum constituents. Naphthalene was detected at concentrations within the range of Ecology published values for potential indoor air background concentrations (0.18 to 1.7  $\mu\text{g}/\text{m}^3$ ; Ecology 2018), but above the MTCA Method B CUL of 0.0735 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) in the 3 indoor air samples collected during the June event. The analytical data from the June 2017 sampling event were suspect and unusable due to the detection of naphthalene in the laboratory method blank. Analytical results indicate remaining constituents of concern (COCs) were not detected above MTCA Method A CULs. Results from resampling in September 2017 indicate naphthalene was detected at concentrations exceeding the Method B CUL, but within the Ecology published range of potential indoor air background concentrations (Ecology 2018).

- In November 2017, Arcadis collected 8 indoor air, 1 outdoor air, and 8 sub-slab soil vapor samples. Results indicate 8 indoor air samples contained naphthalene concentrations above the MTCA Method A CUL, but within the range of Ecology published values of potential indoor air background concentrations. Results also indicate 2 of the 8 sub-slab vapor samples contained naphthalene concentrations above the MTCA Method B screening level of 2.45 µg/m<sup>3</sup>. Data from these events are included in the *Vapor Intrusion Investigation Report* (Arcadis 2017c).
- In January 2018, Arcadis surveyed all of the groundwater monitoring wells at the Site using North American Vertical Datum 1988 (NAVD 88) to evaluate groundwater elevation and inferred groundwater flow direction following the installation of 3 additional monitoring wells. Calculated groundwater elevations referenced herein are based on the results of the 2018 survey.

## GROUNDWATER MONITORING ACTIVITIES

Arcadis conducted groundwater monitoring activities at the Site in June, September, and December 2017. During each event, existing onsite groundwater monitoring wells, as well as offsite well PMW-4, were gauged using a water level indicator. The on-site wells were then sampled using low-flow purge methodology via a peristaltic pump, with the exceptions of PMW-11, which was dry during all three events, and PMW-8, which was sampled via no-purge methods after it went dry during the September event. Groundwater gauging data are presented in **Table 1** and on **Figure 3**, **Figure 5**, and **Figure 7**. Groundwater analytical results are presented in **Table 1** and on **Figure 4**, **Figure 6**, and **Figure 8**. A rose diagram of historical groundwater flow direction is presented as **Figure 9**. Groundwater monitoring field data sheets are included as **Attachment B**. Laboratory analytical reports and chain-of-custody documentation are included as **Attachment C**. Hydrographs of historical analytical and groundwater elevation data are included as **Attachment D**.

Groundwater samples collected during 2017 monitoring events were analyzed for the following constituents:

- Total petroleum hydrocarbons (TPH) – gasoline range organics (GRO) by Washington State Department of Ecology (Ecology) Method NWTPH-Gx;
- TPH – diesel range organics (DRO) and heavy oil (HO) by Ecology Method NWTPH-Dx; and
- Benzene, Toluene, Ethylbenzene, and total Xylenes (BTEX) by Environmental Protection Agency (EPA) Method 8260C.

Additionally, select groundwater samples were analyzed for the following COCs:

- TPH –DRO and HO by Ecology Method NWTPH-Dx with silica gel cleanup (SGC);
- Total and Dissolved Lead by EPA Methods 6010A or 6020A;
- Ethylene Dibromide (EDB) by EPA Method 8011;
- Methyl-Tertiary Butyl Ether (MTBE) and 1,2-Dichloroethane (EDC) by EPA Method 8260C; and
- Total Naphthalenes and total Carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs) by EPA Method 8270C SIM.

Arcadis collected samples in laboratory-provided bottles and placed them in a cooler with ice. Samples were submitted to TestAmerica Laboratories, Inc. of Tacoma, Washington, under standard chain-of-custody protocol. Wastewater generated during the monitoring events was stored in Department of Transportation-approved steel drums on-site, pending characterization and disposal.

### June Monitoring Event

During the June 2017 groundwater monitoring event, monitoring wells PMW-1 through PMW-18 were gauged and PMW-1 through PMW-3, PMW-5 through PMW-10, and PMW-12 through PMW-18 were sampled. During the initial site gauging on June 28, the Budd Inlet of Puget Sound was being influenced by a falling tide (NOAA 2018). The depth to groundwater during this sampling event ranged from 4.09 feet blow top of casing (btoc) in PMW-16 to 6.63 feet btoc in PMW-10. Groundwater elevations during this event ranged from 8.49 feet (NAVD 88) in PMW-1 to 9.25 feet (NAVD 88) in PMW-15. The inferred direction of groundwater flow was to the northeast. Analytical results for groundwater samples collected in June 2017 indicated that the following COCs were present at concentrations that exceeded MTCA Method A CULs:

- TPH-DRO without SGC exceeded the MTCA Method A CUL of 500 µg/L at concentrations of 690 µg/L, 2,000 µg/L, 2,800 µg/L, 850 µg/L, 1,900 µg/L, 1,500 µg/L, 1,900 µg/L, 2,100 µg/L and 3,100 µg/L in the samples from monitoring wells PMW-5, PMW-6, PMW-8, PMW-9, PMW-10, PMW-12, PMW-13, PMW-14, and PMW-18, respectively;
- TPH-DRO with SGC exceeded the MTCA Method A CUL with a concentration of 750 µg/L in the sample from monitoring well PMW-14;
- TPH-HO exceeded the MTCA Method A CUL of 500 µg/L at concentrations of 700 µg/L, 930 µg/L, 600 µg/L, 1,400 µg/L, 1,200 µg/L, 700 µg/L, 670 µg/L, and 1,400 µg/L in the samples from monitoring wells PMW-6, PMW-8, PMW-9, PMW-10, PMW-12, PMW-13, PMW-14, and PMW-18, respectively; and
- Benzene exceeded the MTCA Method A CUL of 5 µg/L at a concentration of 24 µg/L in the sample from monitoring well PMW-8.

Groundwater analytical results from all other samples were below their respective CULs. Select groundwater analytical and gauging data are presented in **Table 1**. A groundwater contour map from the June 2017 event is presented as **Figure 3** and the analytical results are presented as **Figure 4**.

### September Monitoring Event

During the September 2017 groundwater monitoring event, monitoring wells PMW-1 through PMW-21 were gauged and PMW-1 through PMW-3, PMW-5 through PMW-10, and PMW-12 through PMW-21 were sampled. During the initial site gauging on September 27, the Budd Inlet of Puget Sound was being influenced by a rising tide (NOAA 2018). The depth to groundwater during this sampling event ranged from 4.36 feet btoc in PMW-16 to 6.91 feet btoc in PMW-19. Groundwater elevations during this event ranged from 8.20 feet (NAVD 88) in PMW-1 to 8.95 feet (NAVD 88) in PMW-15. The inferred direction of groundwater flow was to the northeast. Analytical results for groundwater samples collected in September

2017 indicated that the following COCs were present at concentrations that exceeded MTCA Method A CULs:

- TPH-DRO exceeded the MTCA Method A CUL of 500 µg/L at concentrations of 560 µg/L, 1,700 µg/L, 2,500 µg/L, 930 µg/L, 2,100 µg/L, 2,000 µg/L, 1,400 µg/L, 1,200 µg/L and 2,300 µg/L in the samples from monitoring wells PMW-5, PMW-6, PMW-8, PMW-9, PMW-10, PMW-12, PMW-13, PMW-14, and PMW-18, respectively;
- TPH-HO exceeded the MTCA Method A CUL of 500 µg/L at concentrations of 590 µg/L, 890 µg/L, 510 µg/L, 1,200 µg/L, 1,300 µg/L, 590 µg/L, and 610 µg/L in the samples from monitoring wells PMW-6, PMW-8, PMW-9, PMW-10, PMW-12, PMW-13, and PMW-18, respectively; and
- Benzene exceeded the MTCA Method A CUL of 5 µg/L at a concentration of 33 µg/L in the sample from monitoring well PMW-8.

Groundwater analytical results from all other samples were below their respective CULs. Select groundwater analytical and gauging data are presented in **Table 1**. A groundwater contour map from the September 2017 event is presented as **Figure 5** and the analytical results are presented as **Figure 6**.

### December Monitoring Event

During the December 2017 groundwater monitoring event, monitoring wells PMW-1 through PMW-21 were gauged and PMW-1 through PMW-3, PMW-5 through PMW-10, and PMW-12 through PMW-21 were sampled. During the initial site gauging on December 21, the Budd Inlet of Puget Sound was being influenced by a high tide (NOAA 2018). The depth to groundwater during this sampling event ranged from 3.75 feet btoc in PMW-16 to 6.15 feet btoc in PMW-10. Groundwater elevations during this event ranged from 8.89 feet (NAVD 88) in PMW-1 to 9.91 feet (NAVD 88) in PMW-15. The inferred direction of groundwater flow was to the east-northeast. Analytical results for groundwater samples collected in December indicated that the following COCs were present at concentrations that exceed MTCA Method A CULs:

- TPH-DRO exceeded the MTCA Method A CUL of 500 µg/L at concentrations of 1,100 µg/L, 2,300 µg/L, 1,900 µg/L, 2,000 µg/L, 1,600 µg/L, 770 µg/L, 2,700 µg/L, and 2,100 µg/L in the samples from monitoring wells PMW-6, PMW-8, PMW-10, the duplicate sample from monitoring well MW-10, PMW-12, PMW-13, PMW-14, and PMW-18, respectively;
- TPH-HO exceeded the MTCA Method A CUL of 500 µg/L at concentrations of 510 µg/L, 1,600 µg/L, 1,100 µg/L, 1,600 µg/L, 1,400 µg/L, and 920 µg/L in monitoring wells PMW-6, PMW-8, PMW-10, the duplicate sample from monitoring well MW-10, PMW-12, and PMW-18, respectively; and
- Benzene exceeded the MTCA Method A CUL of 5 µg/L at a concentration of 33 µg/L in the sample from monitoring well PMW-8.

Groundwater analytical results from all other samples were below their respective CULs. Select groundwater analytical and gauging data are presented in **Table 1**. A groundwater contour map from the December 2017 event is presented as **Figure 6** and the analytical results are presented as **Figure 7**.

## DRO ANALYTICAL RESULTS EVALUATION

Naturally occurring, non-petroleum organic material such as lipids, tannins, lignins, fatty acids, and resin acids can be extracted from samples and appear in DRO and HO ranges, interfering with the detection of petroleum hydrocarbons and potentially resulting in false positives (British Columbia Ministry of the Environment 2004). A 1908 Sanborn Fire Insurance Map depicts only the southeast corner of the site was above Budd Inlet (Hovis 2014). By 1911, 29 blocks of downtown Olympia were created from dredged sediment (Thurston County Historic Commission 1992). A study of Budd Inlet surface sediment indicated total organic carbon content in surface sediment ranged from 0.56 to 9.26 percent (SAIC 2008). Enviro reported that at 6 feet bgs in the boring for former well MW-7 a “wood debris layer with plant roots” was encountered (Enviros 1994). Based on the landscape position, sediment properties, and reported observations from drilling, the presence of non-petroleum organic material is likely. Silica gel cleanup (SGC) can be used to remove potential DRO interferences. Some HO range petroleum products may experience concentration losses of between 10 and 20 percent because of the SGC method, which can be mitigated using a calibration standard which has also undergone the SGC preparation technique (Ecology 1997).

Eight groundwater samples collected from 8 monitoring wells (PMW-2, PMW-5, PMW-10, PMW-14, PMW-17, PMW-19, PMW-20, and PMW-21) were analyzed for DRO and HO both with and without SGC in June and September 2017. Arcadis calculated the concentration from the analysis performed with SGC as a percentage of the concentration of the analysis performed without SGC. The following analytical results from groundwater samples were excluded from calculation for the following reasons:

- PMW-19 results indicate the non-SGC DRO concentration was lower than the reporting limit for the sample analyzed with SGC;
- PMW-2, PMW-5, and PMW-20 results indicate the non-SGC HO concentrations were lower than the reporting limit for the sample analyzed with SGC; and
- PMW-17, PMW-20, and PMW-21 results indicate the HO concentrations were below the reporting limit using either method.

Concentrations below the reporting limit were otherwise calculated using the reporting limit as the SGC value. Results from the remaining 7 samples analyzed for DRO indicate the following:

- Percentages ranged from 5.3 to 71 percent of the non-SGC DRO result, with a mean concentration 39 percent of the non-SGC sample; and
- Percentages ranged from 22 to 42 percent of the non-SGC HO result, with a mean concentration of 29 percent of the non-SGC sample.

While not definitive, these results from select groundwater samples suggest a significant percentage of samples collected in 2017 with DRO concentrations above MTCA Method A CULs may exceed due to the presence of non-petroleum hydrocarbon interferences. Arcadis recommends utilizing silica gel cleanup for future DRO/HO analyses to limit potential interference from non-petroleum organic material.

## CONCLUSIONS AND RECOMMENDATIONS

Results of the 2017 groundwater monitoring and supplemental investigation activities were as follows:

- Soils beneath the site were confirmed to consist of marine fill materials consisting of primarily fine-grained sand, with lesser amounts of silts, and gravels and seashell fragments. Wood waste and other organic materials such as plant roots have been historically detected in fill materials at the site. Elevated organic content has also been reported in similar fill materials near the Budd Inlet.
- Groundwater elevations and flow directions were generally consistent with previous monitoring events. Depth to groundwater ranged from approximately 8.5 to 9.4 feet NAVD88 (approximately 4 to 6 feet bgs). Groundwater flow direction is primarily to the northeast at a gradient of approximately 0.003 feet per foot. Based on an average gradient of 0.003 feet per foot, an assumed hydraulic conductivity of  $1 \times 10^{-4}$  centimeters per second (e.g., typical of fine-grained sand) and assumed porosity of 35-percent, the calculated groundwater flow velocity is approximately 1 foot per year.
- Based on the most recent groundwater sampling event in December 2017, a total of eight on-Property wells have detections of DRO in groundwater above the MTCA Method A CUL of 500  $\mu\text{g/L}$  (PMW-6, PMW-8, PMW-10, PMW-12, PMW-13, PMW-14, PMW-15, and PMW-18). In December 2017, a total of five on-Property wells had detections of HO in groundwater above the MTCA Method A CUL of 500  $\mu\text{g/L}$  (PMW-6, PMW-8, PMW-10, PMW-12, and PMW-18). None of the groundwater samples exceed the GRO CUL of 800  $\mu\text{g/L}$  and only one well exceeded the MTCA Method A CUL for benzene of 5  $\mu\text{g/L}$  (PMW-8). Concentrations of other constituents, including methyl tertiary butyl ether (MTBE), ethylene dibromide (EDB), ethylene dichloride (EDC), total naphthalenes, total CPAH's, and total lead are below their respective groundwater CULs.
- The data indicate that the dissolved phase plume (DRO and HO) has not migrated off-Property at concentrations above MTCA Method A CULs. The groundwater plume is generally stable or receding over time, although there is some temporal variation in groundwater concentrations within on-Property wells. Given that the releases had presumably occurred at least several decades ago, the potential for further off-Property dissolved phase plume migration is considered to be very low at this time.

Risks to human health and the environment associated with residual soil and groundwater impacts at the Property are not considered to be unacceptable based on the existing commercial land use exposure scenario at the Site. Residual petroleum hydrocarbon impacts are limited to the southern portion of the Property under a paved surface and/or beneath an existing building. Shallow groundwater in the general Site vicinity is highly unlikely to serve as a viable drinking water source due to its proximity to the Budd Inlet (salt water).

Indoor air quality at the hotel facility at the Property has been evaluated and no unacceptable risks have been identified for a commercial exposure scenario. Naphthalene was the only constituent detected in indoor air at concentrations above MTCA Method B CULs. While naphthalene was detected in indoor air samples from previous sampling events at levels above MTCA Method B CULS, the concentrations of

naphthalene detected in indoor air are consistent with the range of Ecology published values for potential background indoor air levels and are below levels that would create an unacceptable risk to human health for a commercial exposure scenario, as documented in a site-specific human health risk assessment (Arcadis 2017c).

Based on the above considerations, Arcadis concludes that the site should qualify for Model Remedy Number 4 for Sites with Petroleum Impacts to Groundwater (Ecology 2017). Considerations for the applicability of this model remedy include:

- **Affected media.** Neither surface water or the sediment pathway have been impacted by petroleum originating from the Property.
- **Contaminant Types.** Previous site investigations demonstrate that petroleum hydrocarbons and their constituents are the only contaminants present in soil, groundwater, soil vapor, or indoor air.
- **Terrestrial Ecological Evaluation –** The Site meets the criteria in WAC 173-340-7491 and therefore can be excluded from a terrestrial ecological evaluation because there is less than 1.5 acres of contiguous undeveloped land on the site or within 500 feet on any area of the site (See **Attachment E**).
- **Remedy Selection –** interim actions have consisted of excavation and off-site disposal of petroleum affected soil as part of previous UST removal actions and enhanced bioremediation by injections of bioremediation agents. Due to existing land use constraints, it is not practicable to further excavate impacted materials.
- **Impacts to Water Supply Wells.** The Site has not caused impacts above the practical quantitation limit (PQL) to any water supply well used for drinking water purposes.
- **Proximity to Private Wells.** No private wells are located within at least 250 feet from the lateral extent of Site contamination.
- **Vapor Intrusion Considerations –** The vapor intrusion pathway was evaluated and no unacceptable risks to human health have been identified based on indoor air sample results. One additional round of sub-slab and indoor air sampling will be conducted to confirm the prior results.
- A conditional point of compliance will be established at the downgradient property line (e.g., wells PMW-20 and PMW-21).
- An environmental covenant will be filed to impose groundwater use restrictions and to document that contaminated soil remains on the Property. The environmental covenant would need to require that the existing structures remain in-place and be adequately maintained so that they continue to serve as a barrier to water migration through the contaminated soil, unless written approval from Ecology is granted to implement modifications.

Based on these considerations and site information provided herein and previously reported to Ecology, Arcadis respectfully requests that Ecology provide an opinion on the applicability of Model Remedy #4 for Sites with Petroleum Impacts to Groundwater for this site. If Ecology concurs with this model remedy

Mr. Tim Mullin  
March 21, 2018

approach, we would like to pursue a No Further Action opinion from Ecology subject to implementation of an appropriate environmental covenant.

If you have any questions concerning this report, please do not hesitate to contact Paul McCullough at (206) 214-7161.

Sincerely

Paul McCullough, P.E.  
Principal Environmental Engineer

cc: Mike Stone, PIH Olympia  
Robyn Neely, Akerman LLP

## REFERENCES

- Arcadis. 2017a. Work Plan for Additional Site Characterization, 415 Capitol Way North, Olympia, Washington. April 10.
- Arcadis. 2017b. Work Plan for Additional Vapor Intrusion/Indoor Air Investigation, Former Phoenix Inn Site, 415 Capitol Way North, Olympia, Washington. October 20.
- Arcadis. 2017c. Vapor Intrusion Investigation Report, Former Phoenix Inn Site. December 18.
- British Columbia Ministry of the Environment. 2004. Silica Gel Cleanup of Extractable Petroleum Hydrocarbons, Version 1.0. May. Available at:  
<http://a100.gov.bc.ca/pub/eirs/finishDownloadDocument.do?subdocumentId=1576>.
- Ecology. 1997. Analytical Methods for Petroleum Hydrocarbons. Publication No. ECY 97-602. June. Available at: <https://fortress.wa.gov/ecy/publications/documents/97602.pdf>.
- Ecology. 2017. Model Remedies for Sites with Petroleum Impacts to Groundwater. December. Available at: <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/MTCA-model-remedies>.
- Ecology. 2018. Petroleum Vapor Intrusion (PVI): Updated Screening Levels, Cleanup Levels, and Assessing PVI Threats to Future Buildings. Available at:  
<https://fortress.wa.gov/ecy/publications/documents/1709043.pdf>.
- Enviros, Inc. 1994. Environmental Site Assessment, Final Report of the Yard Birds Property, Olympia, Washington. June 1.
- Hovis, J. Brian. 2014. Olympia Historical Society. 2018. 1908 Sanborn Index Sheet Map. Available at: <https://olympiahistory.org/the-sanborn-overlays-olympia-in-1908-overview/>.
- NOAA. 2018. Olympia, Budd Inlet, Tide and Currents. N.P. Website. Available at:  
<https://tidesandcurrents.noaa.gov/noaatidepredictions/NOAATidesFacade.jsp?Stationid=9446969> Accessed in January 2018.
- SAIC. 2008. Sediment Characterization Study Budd Inlet, Olympia, WA. March 12. Available at:  
<https://fortress.wa.gov/ecy/gsp/DocViewer.ashx?did=1237>.
- Thurston County Historic Commission. 1992. A Short History of Budd Inlet. August. Available at:  
<http://www.co.thurston.wa.us/permitting/historic/docs/A-Short-History-of-Budd-Inlet.1992.pdf>.

Enclosures:

## **Tables**

Table 1 – Groundwater Gauging Data and Select Analytical Results

## **Figures**

Figure 1 – Site Location Map

Figure 2 – Current Site Plan and Monitoring Well Network

Figure 3 – Groundwater Elevation Map 2<sup>nd</sup> Quarter 2017

Figure 4 – Sample Location and Analytical Results Map 2<sup>nd</sup> Quarter 2017

Figure 5 – Groundwater Elevation Map 3<sup>rd</sup> Quarter 2017

Figure 6 – Sample Location and Analytical Results Map 3<sup>rd</sup> Quarter 2017

Figure 7 – Groundwater Elevation Map 4<sup>th</sup> Quarter 2017

Figure 8 – Sample Location and Analytical Results Map 4<sup>th</sup> Quarter 2017

Figure 9 – Historical Groundwater Gradient Direction Rose Diagram

## **Attachments**

Attachment A – Boring Logs - PMW-19, PMW-20, and PMW-21

Attachment B – Groundwater Monitoring Field Data Sheets

Attachment C – Laboratory Analytical Reports and Chain-of-Custody Documentation

Attachment D – Hydrographs of GRO, DRO, Benzene, and Groundwater Elevations

Attachment E – Terrestrial Ecological Evaluation Exclusion Form

# TABLES



**Table 1**  
**Groundwater Gauging Data and Select Analytical Results from Existing Monitoring Well Network**  
**Former Phoenix Inn**  
**415 Capitol Way North, Olympia, WA**

All concentrations are presented in micrograms per liter (µg/L)

Well	Sample Date	Notes	TOC (ft NAVD 88)	DTW (ft btoc)	GWE (ft NAVD 88)	NAPL Thickness (ft)	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Naphthalenes	Total cPAHs	Total Lead	Dissolved Lead	Total Dissolved Solids	Temperature (°C)	pH (s.u.)	Conductivity (µS/cm)	ORP (mV)	Dissolved Oxygen (mg/L)	
<b>Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs)</b>							<b>800/1,000</b>	<b>500</b>	<b>500</b>	<b>5</b>	<b>1,000</b>	<b>700</b>	<b>1,000</b>	<b>20</b>	<b>0.01</b>	<b>5</b>	<b>160</b>	<b>0.1</b>	<b>15</b>	<b>15</b>	--	--	--	--	--	--	--
PMW-1	1/27/2006	(P)	11.37	6.29	5.08	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-1	7/16/2006	(LFP)	11.37	6.29	5.08	--	ND	ND	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-1	12/28/2006	(LFP)	11.37	5.70	5.67	--	ND	ND	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-1	10/22/2007	(LFP)	11.37	6.38	4.99	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-1	4/8/2008	(LFP)	11.37	6.14	5.23	--	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-1	1/9/2009	(LFP)	11.37	5.72	5.65	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-1	5/22/2009	(LFP)	11.37	6.22	5.15	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-1	2/14/2010	(LFP)	11.37	5.77	5.60	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-1	10/27/2012	(P)	11.37	5.72	5.65	--	ND< 100	ND< 250	--	ND< 1.0	ND< 1.0	ND< 1.0	ND< 3.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-1	7/22/2016	(LFP)	11.37	6.18	5.19	--	ND< 50	ND< 110	ND< 260	ND< 0.20	ND< 0.20	ND< 0.20	ND< 0.50	ND< 0.20	ND< 0.010	ND< 0.20	0.264	ND< 0.0159	ND< 2.0	ND< 2.0	--	17.3	7.43	171.3	-10	0.4	
PMW-1	6/28/2017	(LFP)	14.39	5.90	8.49	--	ND< 500 H	26 J	ND< 260	ND< 2.0	ND< 2.0	ND< 3.0	ND< 5.0	--	--	--	--	--	--	--	--	16.2	6.85	169	24.5	0.63	
PMW-1	6/28/2017	(LFP) (DUP)	14.39	5.90	8.49	--	ND< 500 H	--	--	ND< 2.0	ND< 2.0	ND< 3.0	ND< 5.0	--	--	--	--	--	--	--	--	16.2	6.85	169	24.5	0.63	
PMW-1	9/29/2017	(LFP)	14.39	6.19	8.20	--	ND< 250	51 J	ND< 260	ND< 2.0	ND< 2.0	ND< 3.0	ND< 5.0	--	--	--	0.260 J	--	--	--	--	17.7	7.53	184.3	-37.5	0.51	
PMW-1	12/21/2017	(LFP)	14.39	5.50	8.89	--	ND< 250	32 J	ND< 250	ND< 2.0	0.33 J	0.37 J B	ND< 3.43 J	--	--	--	--	--	--	--	--	13.6	7.33	167.9	-84.0	0.47	
PMW-2	1/27/2006	(P)	11.41	5.84	5.57	--	<b>3,800</b>	<b>3,000</b>	ND	<b>15</b>	<b>43</b>	<b>24</b>	<b>7.7</b>	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-2	12/28/2006	(LFP)	11.41	6.33	5.08	--	ND	ND	--	ND	ND	ND	ND	--	--	--	--	ND< 0.045	--	--	--	--	--	--	--	--	
PMW-2	10/22/2007	(LFP)	11.41	5.91	5.50	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-2	1/9/2009	(LFP)	11.41	5.18	6.23	--	<b>2300</b>	ND	ND	ND	390	1.6	3.9	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-2	5/22/2009	(LFP)	11.41	6.08	5.33	--	<b>820</b>	<b>960</b>	ND	ND	94	5.7	8.4	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-2	2/14/2010	(LFP)	11.41	5.27	6.14	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	0.021 J	--	--	--	--	--	--	--	--	
PMW-2	10/27/2012	(P)	11.41	6.34	5.07	--	460	ND< 250	--	ND< 1.0	ND< 1.0	ND< 1.0	ND< 3.0	--	--	--	--	0.038 J	--	--	--	--	--	--	--	--	
PMW-2	7/22/2016	(LFP)	11.41	5.85	5.56	--	310	310	ND< 260	ND< 0.20	ND< 0.20	ND< 0.20	ND< 0.50	ND< 0.20	ND< 0.010	ND< 0.20	0.6765	<b>0.15</b>	ND< 2.0	ND< 2.0	--	18.3	7.41	856	-113.4	0.41	
PMW-2	6/28/2017	(LFP)	14.56	5.54	9.02	--	140 J	230	97 J	ND< 2.0	ND< 2.0	ND< 3.0	ND< 5.0	--	--	--	--	--	--	--	--	16.2	6.87	940	-98.8	0.43	
PMW-2	6/28/2017	(LFP)	14.56	5.54	9.02	--	--	80 J *	ND< 270 *	--	--	--	--	--	--	--	--	--	--	--	--	16.2	6.87	940	-98.8	0.43	
PMW-2	9/27/2017	(LFP)	14.56	5.80	8.76	--	140 J B	230 B	100 J	ND< 2.0	ND< 2.0	ND< 3.0	ND< 5.0	--	--	--	ND< 0.165	ND< 0.03271	--	--	--	20.25	6.63	803	-149.9	0.32	
PMW-2	9/27/2017	(LFP) (DUP)	14.56	5.80	8.76	--	280	310 B	170 J	ND< 2.0	ND< 2.0	ND< 3.3	ND< 5.5	--	--	--	ND< 0.407	--	--	--	--	20.25	6.63	803	-149.9	0.32	
PMW-2	12/21/2017	(LFP)	14.56	5.02	9.54	--	200 J	240	110 J	ND< 2.0	0.36 J	0.43 J B	ND< 3.43 J	--	--	--	--	--	--	--	--	13.2	7.08	811	-133.9	0.39	
PMW-3	1/27/2006	(P)	11.23	5.33	5.90	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-3	12/28/2006	(LFP)	11.23	6.55	4.68	--	ND	ND	--	ND	ND	ND	ND	--	--	--	--	0.14	--	--	--	--	--	--	--	--	
PMW-3	10/22/2007	(LFP)	11.23	5.50	5.73	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-3	4/8/2008	(LFP)	11.23	5.49	5.74	--	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-3	1/10/2009	(LFP)	11.23	4.81	6.42	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-3	5/23/2009	(LFP)	11.23	5.72	5.51	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-3	2/16/2010	(LFP)	11.23	5.90	5.33	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	ND< 0.046	--	--	--	--	--	--	--	--	
PMW-3	10/27/2012	(P)	11.23	6.56	4.67	--	ND< 100	ND< 250	--	ND< 1.0	ND< 1.0	ND< 1.0	ND< 3.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-3	6/29/2017	(LFP)	14.33	5.09	9.24	--	ND< 500	22 J	ND< 280	ND< 2.0	ND< 2.0	ND< 3.0	ND< 3.0	ND< 2.0	ND< 0.010	ND< 2.0	0.0414	0.017739	ND< 30	3.6 J	--	15.2	7.08	575.4	276.6	1.13	
PMW-3	9/27/2017	(LFP)	14.33	5.44	8.89	--	ND< 250	47 J B	ND< 260	ND< 2.0	ND< 2.0	ND< 3.0	ND< 5.0	--	--	--	ND< 0.099	--	1.3 J	ND< 4.0	--	18.6	7.18	565.4	366.0	0.42	
PMW-3	12/21/2017	(LFP)	14.33	4.44	9.89	--	ND< 250	27 J	ND< 250	ND< 2.0	ND< 2.0	0.36 J B	ND< 5.0	--	--	--	--	--	--	--	--	10.8	7.27	539.9	102.2	7.09	
PMW-4	3/16/2006	(P)	10.56	5.25	5.31	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-4	7/16/2006	(LFP)	10.56	5.84	4.72	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-4	12/28/2006	(LFP)	10.56	5.53	5.03	--	ND	ND	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-4	10/22/2007	(LFP)	10.56	5.23	5.33	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-4	4/8/2008	(LFP)	10.56	5.03	5.53	--	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-4	1/9/2009	(LFP)	10.56	5.11	5.45	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-4	5/22/2009	(LFP)	10.56	5.16	5.40	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-4	2/14/2010	(LFP)	10.56	5.13	5.43	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-4	10/27/2012	(P)	10.56	5.52	5.04	--	ND< 100	ND< 250	--	ND< 1.0	ND< 1.0	ND< 1.0	ND< 3.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-4	6/28/2017	(NS)	13.81	4.90	8.91	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-4	9/27/2017	(NS)	13.81	5.11	8.70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-4	12/21/2017	(NS)	13.81	4.43	9.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-5	12/28/2006	(LFP)	11.34	6.20	5.14	--	330	<b>710</b>	--	ND	2.7	1.5	12	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-5	10/22/2007	(LFP)	11.34	5.85	5.49	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-5	1/9/2009	(LFP)	11.34	5.31	6.03	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-5	5/22/2009	(LFP)	11.34	6.03	5.31	--	ND	<b>570</b>	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-5	2/14/2010	(LFP)	11.34	5.32	6.02	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-5	10/27/2012	(P)	11.34	6.19	5.15	--	450	ND< 250	--	2	ND< 1.0	3	ND< 3.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-5	7/22/2016	(LFP)	11.34	5.72	5.62	--	370	<b>630</b>	ND< 250	0.52	0.4	0.23	ND< 0.50	ND< 0.20	ND< 0.010	ND< 0.20	2.56	ND< 0.0151	ND< 2.0	ND< 2.0	--	20	7.44	934	-126.8	0.3	
PMW-5	6/28/2017	(LFP)	14.40	5.39	9.01	--	260 J	<b>690</b>	130 J	ND< 2.0	0.44 J	ND< 3.0	ND< 5.0	--	--	--	--	--	--	--	--	17.7	6.87	927	-96.8	0.32	
PMW-5	6/28/2017	(LFP)	14.40	5.39	9.01	--	--	220 *	ND< 270 *	--	--	--															

**Table 1**  
**Groundwater Gauging Data and Select Analytical Results from Existing Monitoring Well Network**  
**Former Phoenix Inn**  
**415 Capitol Way North, Olympia, WA**

All concentrations are presented in micrograms per liter (µg/L)

Well	Sample Date	Notes	TOC (ft NAVD 88)	DTW (ft btoc)	GWE (ft NAVD 88)	NAPL Thickness (ft)	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Naphthalenes	Total cPAHs	Total Lead	Dissolved Lead	Total Dissolved Solids	Temperature (°C)	pH (s.u.)	Conductivity (µS/cm)	ORP (mV)	Dissolved Oxygen (mg/L)	
<b>Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs)</b>							<b>800/1,000</b>	<b>500</b>	<b>500</b>	<b>5</b>	<b>1,000</b>	<b>700</b>	<b>1,000</b>	<b>20</b>	<b>0.01</b>	<b>5</b>	<b>160</b>	<b>0.1</b>	<b>15</b>	<b>15</b>	--	--	--	--	--	--	--
PMW-5	9/29/2017	(LFP)	14.40	5.68	8.72	--	250 B	560	150 J	0.44 J	0.27 J	ND<3.0	ND<3.15 J	--	--	--	ND< 0.791	--	--	--	--	20.6	7.03	747	-87.0	0.43	
PMW-5	12/21/2017	(LFP)	14.40	4.72	9.68	--	360	290	86 J	0.67 J	0.57 J	0.53 J B	1.25 J	--	--	--	--	--	--	--	--	17.8	7.08	660	-100.6	0.33	
PMW-6	12/28/2006	(LFP)	11.46	6.41	5.05	--	ND	350	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-6	10/22/2007	(LFP)	11.46	--	--	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-6	1/9/2009	(LFP)	11.46	5.22	6.24	--	ND	ND	ND	ND	2.4	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-6	5/22/2009	(LFP)	11.46	5.88	5.58	--	200	ND	ND	ND	740	1.4	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-6	2/14/2010	(LFP)	11.46	5.31	6.15	--	290	ND	78,000	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-6	10/27/2012	(P)	11.46	6.41	5.05	--	ND< 100	ND< 250	--	ND< 1.0	ND< 1.0	ND< 1.0	ND< 3.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-6	6/29/2017	(LFP)	14.57	5.59	8.98	--	86 J	2,000	700	ND< 2.0	ND< 2.0	ND< 3.0	ND< 3.0	ND< 2.0	ND< 0.010	ND< 2.0	0.056 J	0.017915	3.5 J	3.3 J	--	16.1	6.82	1199	-68.1	1.64	
PMW-6	9/27/2017	(LFP)	14.57	5.86	8.71	--	120 J	1,700 B	590	ND< 2.0	ND< 2.0	ND< 3.0	ND< 5.0	--	--	--	ND< 0.097	--	--	--	--	19.6	6.92	1137	-110.8	0.51	
PMW-6	12/21/2017	(LFP)	14.57	5.07	9.50	--	70 J	1,100	510	ND< 2.0	ND< 2.0	0.36 J B	ND< 3.40 J	--	--	--	--	--	--	--	790,000	11.3	6.91	1080	-117.9	1.00	
PMW-7	12/28/2006	(LFP)	10.93	5.80	5.13	--	ND	ND	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-7	10/22/2007	(LFP)	10.93	--	--	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-7	1/9/2009	(LFP)	10.93	5.19	5.74	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-7	5/23/2009	(LFP)	10.93	5.47	5.46	--	100	ND	ND	ND	27	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-7	2/14/2010	(LFP)	10.93	5.26	5.67	--	ND	ND	550	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-7	10/27/2012	(P)	10.93	5.81	5.12	--	ND< 100	ND< 250	--	ND< 1.0	ND< 1.0	ND< 1.0	ND< 3.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-7	6/29/2017	(LFP)	14.02	5.00	9.02	--	ND< 500	160	ND< 270	ND< 2.0	ND< 2.0	ND< 3.0	ND< 3.0	ND< 2.0	ND< 0.0099	ND< 2.0	0.082 J	0.02368	ND< 30	2.7 J	--	18.1	7.13	635	-48.0	0.44	
PMW-7	9/27/2017	(LFP)	14.02	5.28	8.74	--	ND< 250	140 B	63 J	ND< 2.0	ND< 2.0	ND< 3.0	ND< 5.0	--	--	--	ND< 0.061 J	--	ND< 4.0	ND< 4.0	--	21.67	6.59	572	-165.7	0.22	
PMW-7	12/21/2017	(LFP)	14.02	4.34	9.68	--	ND< 250	110	91 J	ND< 2.0	0.30 J	0.37 J B	ND< 3.40 J	--	--	--	--	--	--	--	--	12.0	7.27	557	-95.3	0.38	
PMW-8	12/28/2006	(LFP)	11.60	6.49	5.11	--	1,200	ND	--	170	6.5	4.4	87	ND	ND	ND	2	ND	--	<1	--	--	--	--	--	--	
PMW-8	10/22/2007	(LFP)	11.60	--	--	--	ND	ND	ND	3.1	4.7	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-8	1/9/2009	(LFP)	11.60	5.27	6.33	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-8	5/22/2009	(LFP)	11.60	6.11	5.49	--	970	400	ND	52	600	13	11	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-8	2/14/2010	(LFP)	11.60	5.33	6.27	--	100	ND	ND	6.4	ND	1.8	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-8	10/27/2012	(P)	11.60	6.48	5.12	--	ND< 100	ND< 250	--	ND< 1.0	ND< 1.0	ND< 1.0	ND< 3.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-8	6/29/2017	(LFP)	14.71	5.69	9.02	--	290 J	2,800	930	24	1.0 J	ND< 3.0	1.2 J	ND< 2.0	ND< 0.010	ND< 2.0	0.602	0.01877	ND< 30	3.0 J	--	17.5	6.99	980	44.4	0.23	
PMW-8	9/27/2017	(NP)	14.71	5.95	8.76	--	270	2,500	890	33	1.6 J	0.30 J	2.4 J	--	--	--	ND< 0.56 J	--	1.3 J	ND< 4.0	--	25.75	6.56	1,030	-37.5	0.98	
PMW-8	12/21/2017	(LFP)	14.71	5.20	9.51	--	120 J	2,300	1,600	26	1.3 J	0.63 J B	ND< 3.6 J	--	--	--	--	--	--	--	--	10.7	7.30	1,546	-8.4	9.94	
PMW-9	12/28/2006	(LFP)	11.56	6.45	5.11	--	ND	ND	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-9	10/22/2007	(LFP)	11.56	6.15	5.41	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-9	4/8/2008	(LFP)	11.56	5.22	6.34	--	ND	NA	NA	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-9	1/10/2009	(LFP)	11.56	5.12	6.44	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-9	5/22/2009	(LFP)	11.56	6.14	5.42	--	730	2,000	ND	4.4	220	11	7.8	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-9	2/14/2010	(LFP)	11.56	5.19	6.37	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-9	10/27/2012	(P)	11.56	6.45	5.11	--	ND< 100	ND< 250	--	4	1	ND< 1.0	ND< 3.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-9	7/22/2016	(LFP)	11.56	5.94	5.62	--	210	530	ND< 260	0.99	1.1	ND< 0.20	1.3	ND< 0.20	ND< 0.010	ND< 0.20	0.541	ND< 0.0151	26	ND< 2.0	--	19.6	7.71	274.4	191.8	2.52	
PMW-9	6/29/2017	(LFP)	14.64	5.61	9.03	--	65 J	850	600	ND< 2.0	ND< 2.0	ND< 3.0	ND< 5.0	--	--	--	--	--	4.0 J	ND< 30	--	17.9	7.04	890	41.1	0.38	
PMW-9	9/27/2017	(LFP)	14.64	5.86	8.78	--	83 J	930 B	510	0.81 J	0.51 J	ND< 3.0	ND< 5.0	--	--	--	0.161 J	--	ND <4.0	ND <4.0	--	21.68	6.78	537	-144.3	0.43	
PMW-9	12/22/2017	(LFP)	14.64	5.09	9.55	--	100 J	430 B	290	0.68 J	0.67 J	ND< 3.0	1.22 J	--	--	--	--	--	--	--	--	12.6	7.32	338	-91.3	1.07	
PMW-9	12/22/2017	(LFP) (DUP)	14.64	5.09	9.55	--	96 J	430 B	290	0.67 J	0.64 J	ND< 3.0	ND< 5.0	--	--	--	--	--	--	--	--	12.6	7.32	338	-91.3	1.07	
PMW-10	12/28/2006	(LFP)	12.32	7.29	5.03	--	ND	ND	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-10	10/22/2007	(LFP)	12.32	--	--	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-10	1/9/2009	(LFP)	12.32	5.12	7.20	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-10	5/22/2009	(LFP)	12.32	7.03	5.29	--	NA	ND	ND	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-10	2/16/2010	(LFP)	12.32	5.44	6.88	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-10	10/27/2012	(P)	12.32	7.31	5.01	--	ND< 100	ND< 250	--	ND< 1.0	ND< 1.0	ND< 1.0	ND< 3.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
PMW-10	7/22/2016	(LFP)	12.32	6.95	5.37	--	950	4,200	3,600	5.7	1.4	3.8	1.8	ND< 0.20	ND< 0.010	ND< 0.20	9.95	ND< 0.0151	9.7	ND< 2.0	--	16.5	7.34	883	-80.5	1.96	
PMW-10	6/28/2017	(LFP)	15.61	6.63	8.98	--	610	1,900	1,400	3.0	0.70 J	0.24 J	1.98A	--	--	--	--	--	--	--	--	15.1	7.09	740	-6.8	0.41	
PMW-10	6/28/2017	(LFP)	15.61	6.63	8.98	--	--	380 *	310 *	--	--	--	--	--	--	--	--	--	--	--	--	15.1	7.09	740	-6.8	0	





**Table 1  
Groundwater Gauging Data and Select Analytical Results from Existing Monitoring Well Network  
Former Phoenix Inn  
415 Capitol Way North, Olympia, WA**

All concentrations are presented in micrograms per liter (µg/L)

Well	Sample Date	Notes	TOC (ft NAVD 88)	DTW (ft btoc)	GWE (ft NAVD 88)	NAPL Thickness (ft)	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Naphthalenes	Total cPAHs	Total Lead	Dissolved Lead	Total Dissolved Solids	Temperature (°C)	pH (s.u.)	Conductivity (µS/cm)	ORP (mV)	Dissolved Oxygen (mg/L)	
<b>Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs)</b>							<b>800/1,000</b>	<b>500</b>	<b>500</b>	<b>5</b>	<b>1,000</b>	<b>700</b>	<b>1,000</b>	<b>20</b>	<b>0.01</b>	<b>5</b>	<b>160</b>	<b>0.1</b>	<b>15</b>	<b>15</b>	--	--	--	--	--	--	--
MW3	10/6/1994	(P)	7.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW4	11/4/1993	(UNK)	6.99	--	--	--	170	2,100	--	1.5	3.3	ND< 0.5	25	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW4	1/31/1994	(NS)	6.99	8.06	-1.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW4	2/4/1994	(NS)	6.99	5.99	1.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW4	2/7/1994	(P)	6.99	--	--	--	6,200	ND< 500	--	140	530	210	1,440	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW4	3/21/1994	(NS)	6.99	5.79	1.20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW4	3/22/1994	(NS)	6.99	5.72	1.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW4	3/23/1994	(NS)	6.99	5.74	1.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW4	7/6/1994	(UNK)	6.99	6.30	0.69	--	2,200	1,400	--	57	130	2.4	285	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW4	10/6/1994	(P)	6.99	6.41	0.58	--	ND< 300	ND< 500	--	26	5.6	ND< 1.0	12	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW4	1/6/1995	(UNK)	6.99	5.31	1.68	--	560	ND< 500	--	2.9	ND< 1.0	6.8	86.7	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW4	4/20/1995	(UNK)	6.99	5.61	1.38	--	220	ND< 500	--	26	ND< 1.0	8.0	14.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW4	8/15/1995	(UNK)	6.99	--	--	--	1,700	ND< 500	--	40	ND< 1.0	220	69.1	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW4	10/31/1996	(UNK)	6.99	5.76	1.23	--	ND< 200	ND< 200	--	1.5	12	ND< 1.0	ND< 1.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW5	2/4/1994	(NS)	7.35	6.76	0.59	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW5	2/7/1994	(P)	--	--	--	--	ND< 300	890	--	11	1.6	1.3	3.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW5	3/21/1994	(NS)	7.35	6.49	0.86	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW5	3/22/1994	(NS)	7.35	6.45	0.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW5	3/23/1994	(NS)	7.35	6.49	0.86	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW5	7/6/1994	(UNK)	7.35	6.95	0.40	--	ND< 300	1,300	--	2.1	2.4	ND< 1.0	2.5	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW5	10/6/1994	(P)	7.35	6.99	0.36	--	ND< 300	77	--	12	ND< 1.0	ND< 1.0	2.2	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW5	1/6/1995	(UNK)	7.35	6.34	1.01	--	ND< 300	ND< 500	--	15	ND< 1.0	1.1	1.3	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW5	4/20/1995	(UNK)	7.35	6.51	0.84	--	200	ND< 500	--	9	ND< 1.0	1.4	2.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW5	8/15/1995	(UNK)	7.35	--	--	--	290	ND< 500	--	ND< 1.0	ND< 1.0	ND< 1.0	ND< 1.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW5	10/31/1996	(UNK)	7.35	6.54	0.81	--	ND< 200	ND< 200	--	3.6	3.2	ND< 1.0	3.2	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW6	2/4/1994	(NS)	7.44	6.70	0.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW6	2/7/1994	(P)	--	--	--	--	720	860	--	51	3.1	3.2	9.3	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW6	3/21/1994	(NS)	7.44	6.42	1.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW6	3/22/1994	(NS)	7.44	6.40	1.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW6	3/23/1994	(NS)	7.44	6.40	1.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW6	7/6/1994	(UNK)	7.44	6.89	0.55	--	800	1,100	--	41	3.3	8.5	5.8	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW6	10/6/1994	(P)	7.44	6.95	0.49	--	490	59	--	15	ND< 1.0	ND< 1.0	4.8	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW6	1/6/1995	(UNK)	7.44	6.28	1.16	--	900	ND< 500	--	53	2.1	2.7	4.5	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW6	4/20/1995	(UNK)	7.44	6.46	0.98	--	1,100	660	--	9.4	ND< 1.0	1.4	2	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW6	8/15/1996	(UNK)	7.44	--	--	--	ND< 100	700	--	61	2.9	4.9	7.4	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW6	10/31/1996	(UNK)	7.44	6.43	1.01	--	862	ND< 200	--	50	7.1	ND< 1.0	8	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW7	2/4/1994	(NS)	7.48	7.00	0.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW7	2/7/1994	(P)	--	--	--	--	ND< 300	ND< 500	--	ND< 1.0	2.3	1.5	14.8	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW7	3/21/1994	(NS)	7.48	6.78	0.70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW7	3/22/1994	(NS)	7.48	6.74	0.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW7	3/23/1994	(NS)	7.48	6.74	0.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW7	7/6/1994	(NS)	7.48	7.24	0.24	--	ND< 300	ND< 500	--	ND< 1.0	ND< 1.0	ND< 1.0	ND< 2.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW7	10/6/1994	(NS)	7.48	7.34	0.14	--	ND< 300	ND< 500	--	ND< 1.0	ND< 1.0	ND< 1.0	ND< 2.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW7	1/6/1995	(UNK)	7.48	6.55	0.93	--	ND< 300	ND< 500	--	ND< 1.0	ND< 1.0	ND< 1.0	ND< 2.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW7	4/20/1995	(UNK)	7.48	6.78	0.70	--	ND< 300	ND< 500	--	7.4	ND< 1.0	ND< 1.0	ND< 2.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW7	8/15/1995	(UNK)	7.48	--	--	--	ND< 100	ND< 500	--	ND< 1.0	ND< 1.0	ND< 1.0	ND< 1.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW7	10/31/1996	(UNK)	7.48	6.85	0.63	--	ND< 200	ND< 200	--	ND< 1.0	ND< 1.0	ND< 1.0	ND< 1.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW8	2/4/1994	(NS)	6.72	5.65	1.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW8	2/7/1994	(P)	6.72	--	--	--	ND< 300	ND< 500	--	ND< 1.0	ND< 1.0	1.0	3.5	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW8	3/21/1994	(NS)	6.72	5.21	1.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW8	3/22/1994	(NS)	6.72	5.18	1.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW8	3/23/1994	(NS)	6.72	5.16	1.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW8	7/6/1994	(NS)	6.72	5.66	1.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW8	10/6/1994	(NS)	6.72	5.69	1.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW8	10/31/1996	(UNK)	6.72	5.08	1.64	--	ND< 200	ND< 200	--	ND< 1.0	ND< 1.0	ND< 1.0	ND< 1.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	7/16/2006	(LFP)	10.52	4.01	6.51	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	12/28/2006	(LFP)	10.52	5.12	5.40	--	ND	ND	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	10/22/2007	(LFP)	10.52	4.53	5.99	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	1/10/2009	(LFP)	10.52	5.48	5.04	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	5/23/2009	(LFP)	10.52	5.54	4.98	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	

**Table 1**  
**Groundwater Gauging Data and Select Analytical Results from Existing Monitoring Well Network**  
**Former Phoenix Inn**  
**415 Capitol Way North, Olympia, WA**

All concentrations are presented in micrograms per liter (µg/L)

Well	Sample Date	Notes	TOC (ft NAVD 88)	DTW (ft btoc)	GWE (ft NAVD 88)	NAPL Thickness (ft)	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Naphthalenes	Total cPAHs	Total Lead	Dissolved Lead	Total Dissolved Solids	Temperature (°C)	pH (s.u.)	Conductivity (µS/cm)	ORP (mV)	Dissolved Oxygen (mg/L)	
<b>Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs)</b>							<b>800/1,000</b>	<b>500</b>	<b>500</b>	<b>5</b>	<b>1,000</b>	<b>700</b>	<b>1,000</b>	<b>20</b>	<b>0.01</b>	<b>5</b>	<b>160</b>	<b>0.1</b>	<b>15</b>	<b>15</b>	--	--	--	--	--	--	--
MW-1	2/14/2010	(LFP)	10.52	5.57	4.95	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	10/27/2012	(LFP)	10.52	5.12	5.40	--	ND< 100	ND< 250	--	ND< 1.0	ND< 1.0	ND< 1.0	ND< 3.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	1/21/2018	--	13.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	1/27/2006	(P)	10.69	4.59	6.10	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	1/30/2006	(P)	10.69	4.01	6.68	--	ND	ND	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	7/16/2006	(LFP)	10.69	4.59	6.10	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	12/28/2006	(LFP)	10.69	4.22	6.47	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	10/22/2007	(LFP)	10.69	5.66	5.03	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	4/8/2008	(LFP)	10.69	5.21	5.48	--	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	1/10/2009	(LFP)	10.69	6.61	4.08	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	5/22/2009	(LFP)	10.69	4.38	6.31	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	2/14/2010	(LFP)	10.69	6.52	4.17	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	10/27/2012	(P)	10.69	4.22	6.47	--	ND< 100	ND< 250	--	ND< 1.0	ND< 1.0	ND< 1.0	ND< 3.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	1/21/2018	--	13.71	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	1/27/2006	(P)	10.76	5.00	5.76	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	7/16/2006	(LFP)	10.76	4.98	5.78	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	12/28/2006	(LFP)	10.76	5.64	5.12	--	ND	ND	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	10/22/2007	(LFP)	10.76	5.33	5.43	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	4/8/2008	(LFP)	10.76	5.02	5.74	--	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	1/9/2009	(LFP)	10.76	5.21	5.55	--	ND	ND	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	5/23/2009	(LFP)	10.76	5.09	5.67	--	ND	ND	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	2/14/2010	(LFP)	10.76	5.26	5.50	--	ND	ND	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	10/27/2012	(P)	10.76	5.64	5.12	--	ND< 100	ND< 250	--	ND< 1.0	ND< 1.0	ND< 1.0	ND< 3.0	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	1/21/2018	--	13.91	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-10	1/27/2006	(P)	10.73	4.99	5.74	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-10	7/16/2006	(LFP)	10.73	5.00	5.73	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-10	12/28/2006	(LFP)	10.73	5.65	5.08	--	ND	ND	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-10	10/22/2007	(LFP)	10.73	5.28	5.45	--	ND	ND	ND	0.83	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-10	1/10/2009	(LFP)	10.73	5.11	5.62	--	ND	ND	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-10	5/22/2009	(LFP)	10.73	5.37	5.36	--	ND	ND	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-10	2/14/2010	(LFP)	10.73	5.17	5.56	--	ND	ND	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-10	1/21/2018	--	13.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

**Notes:**

- TOC = Top of casing in feet North American Vertical Datum of 1988 (NAVD 88) for 2017 elevations. Prior results reference mean sea level datum.
- DTW = Depth to water in feet below TOC
- ft btoc = Feet below top of casing
- GWE = Groundwater elevation in feet NAVD 88 for 2017 elevations. Prior results reference mean sea level datum.
- NAPL = Non-aqueous Phase Liquid
- GRO = Total petroleum hydrocarbons - gasoline range organics. GRO MTCA Method A CUL with benzene present is 800 µg/L and without is 1,000 µg/L
- DRO = Total petroleum hydrocarbons - diesel range organics
- HO = Total petroleum hydrocarbons - heavy oil range organics
- MTBE = Methyl tertiary butyl ether
- EDB = Ethylene dibromide
- EDC = 1,2-Dichloroethane
- cPAHs = carcinogenic polyaromatic hydrocarbons
- Total Naphthalenes and Total cPAHs are calculated according to Table 708-2, 173-340-900 Washington Administrative Code
- = Not analyzed/not applicable
- ND or ND< = Not detected; analytical result is less than reporting limit shown
- B = Compound found in the blank and sample
- °C = degrees Celsius
- H = Sample was prepped or analyzed beyond the specified holding time
- J = Result is less than the laboratory reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.
- \* = Northwest Method NWTPH-Dx with silica gel cleanup results
- s.u. = standard units
- ORP = oxidation-reduction potential
- µS/cm = microSiemens per centimeter
- mV = millivolts
- mg/L = milligrams per liter
- (NS) = Not sampled
- (P) = Purge sample

**Table 1**  
**Groundwater Gauging Data and Select Analytical Results from Existing Monitoring Well Network**  
**Former Phoenix Inn**  
**415 Capitol Way North, Olympia, WA**

All concentrations are presented in micrograms per liter (µg/L)

Well	Sample Date	Notes	TOC (ft NAVD 88)	DTW (ft btoc)	GWE (ft NAVD 88)	NAPL Thickness (ft)	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Naphthalenes	Total cPAHs	Total Lead	Dissolved Lead	Total Dissolved Solids	Temperature (°C)	pH (s.u.)	Conductivity (µS/cm)	ORP (mV)	Dissolved Oxygen (mg/L)	
<b>Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs)</b>							800/1,000	500	500	5	1,000	700	1,000	20	0.01	5	160	0.1	15	15	--	--	--	--	--	--	--

(NP) = No Purge sample

(LFP) = Low flow purge sample

(DUP) = Duplicate sample

(UNK) = Sampling technique unknown

Data collected prior to 2016 have been provided by previous consultants and are included as historical reference only. Wells MW1 through MW8 reference abandoned site monitoring wells. Wells MW-1, MW-2, MW-6, and MW-10 reference offsite wells unassociated with the site.

GRO, DRO, HO analyzed by Ecology Northwest Methods; Lead by Environmental Protection Agency (EPA) Method 6010A/6020A; EDB by EPA Method 8011; Benzene, toluene, ethylbenzene, and total xylenes (BTEX), MTBE, and EDC by EPA Method 8260C; Naphthalenes and cPAHs by EPA Method 8270D SIM

**BOLDED** and gray highlighted results detected above MTCA Method A Cleanup Levels.

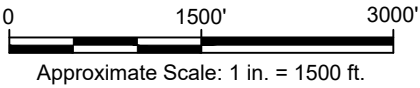
All gauging data for most recent sampling events collected on June 28, September 27, and December 21, 2017.

# FIGURES





SOURCE: GOOGLE EARTH PRO



415 CAPITOL WAY NORTH  
 OLYMPIA, WASHINGTON 98501  
**2017 GROUNDWATER MONITORING REPORT**

**SITE LOCATION MAP**

 Design & Consultancy for natural and built assets	FIGURE
	<b>1</b>



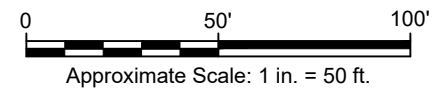
**LEGEND:**

PMW-1 MONITORING WELL LOCATION

MW-2 MONITORING WELL ASSOCIATED WITH ADJACENT SITE



SOURCES: EMPI 2000; ENVIROS, INC. 1994.  
 SURVEY BY A-LINE LAND SURVEYING 2018.



415 CAPITOL WAY NORTH  
 OLYMPIA, WASHINGTON 98501  
**2017 GROUNDWATER MONITORING REPORT**

**CURRENT SITE PLAN AND  
 MONITORING WELL NETWORK**

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FIGURE  
**2**



**LEGEND:**

- PMW-1 MONITORING WELL LOCATION
- MW-2 MONITORING WELL ASSOCIATED WITH ADJACENT SITE
- (8.49) GROUNDWATER ELEVATION (FEET, NAVD 88)
- 8.6 GROUNDWATER ELEVATION CONTOUR LINE
- INFERRED GROUNDWATER FLOW DIRECTION



SOURCES: EMPI 2000; ENVIROS, INC. 1994.  
 SURVEY BY A-LINE LAND SURVEYING 2018.



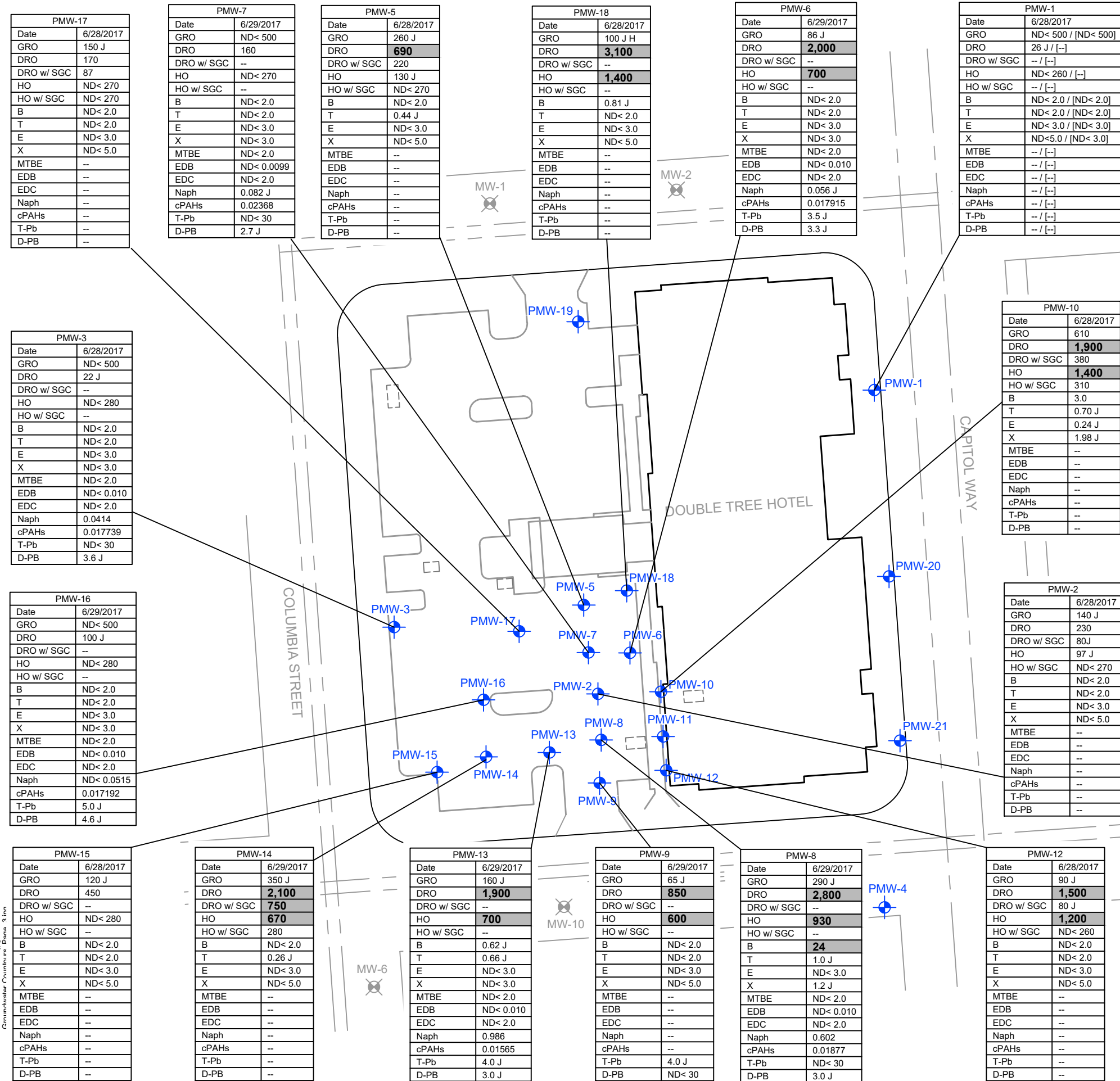
415 CAPITOL WAY NORTH  
 OLYMPIA, WASHINGTON 98501

**2017 GROUNDWATER MONITORING REPORT**

**GROUNDWATER ELEVATION MAP  
 2ND QUARTER 2017**

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FIGURE  
**3**



**LEGEND:**

PMW-1 MONITORING WELL LOCATION

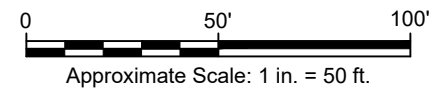
MW-2 MONITORING WELL ASSOCIATED WITH ADJACENT SITE

**DATABOX EXAMPLE**

LOCATION ID	
DATE	DATE COLLECTED
GRO	TPH-GASOLINE RANGE ORGANICS
DRO	TPH-DIESEL RANGE ORGANICS
DRO w/ SGC	TPH-DIESEL RANGE ORGANICS WITH SILICA GEL CLEANUP
HO	TPH-HEAVY RANGE ORGANICS
HO w/ SGC	TPH-HEAVY RANGE ORGANICS WITH SILICA GEL CLEANUP
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES
MTBE	METHYL TERTIARY BUTYL ETHER
EDB	ETHYLENE DIBROMIDE
EDC	1, 2-DICHLOROETHANE
Naph	TOTAL NAPHTHALENES
cPAHs	CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBONS
T-Pb	TOTAL LEAD
D-Pb	DISSOLVED LEAD

- TPH TOTAL PETROLEUM HYDROCARBONS
- NOTES:
- RESULTS ARE PRESENTED IN MICROGRAMS PER LITER (µg/L).
  - BOLD/SHADED** CONCENTRATIONS ABOVE MODEL TOXICS CONTROL ACT METHOD A CLEANUP LEVELS.
  - cPAH CONCENTRATIONS ARE EXPRESSED AS THEIR EQUIVALENT TOXICITY AS BENZO(A)PYRENE IN ACCORDANCE WITH TABLE 708-2, 173-340-900 WASHINGTON ADMINISTRATIVE CODE.

SOURCES: EMPI 2000; ENVIROS, INC. 1994.  
 SURVEY BY A-LINE LAND SURVEYING 2018.



415 CAPITOL WAY NORTH  
 OLYMPIA, WASHINGTON 98501

**2017 GROUNDWATER MONITORING REPORT**

**SAMPLE LOCATION AND ANALYTICAL RESULTS MAP**  
 2ND QUARTER 2017

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FIGURE **4**

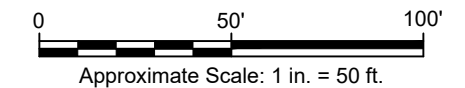


**LEGEND:**

- PMW-1 MONITORING WELL LOCATION
- MW-2 MONITORING WELL ASSOCIATED WITH ADJACENT SITE
- (8.20) GROUNDWATER ELEVATION (FEET, NAVD 88)
- 8.3 GROUNDWATER ELEVATION CONTOUR LINE
- INFERRED GROUNDWATER FLOW DIRECTION
- (NG) NOT GAUGED DURING THIS SAMPLING EVENT
- \* WELL NOT USED IN GROUNDWATER ELEVATION CONTOUR



SOURCES: EMPI 2000; ENVIROS, INC. 1994.  
 SURVEY BY A-LINE LAND SURVEYING 2018.



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 OLYMPIA, WASHINGTON 98501  
**2017 GROUNDWATER MONITORING REPORT**

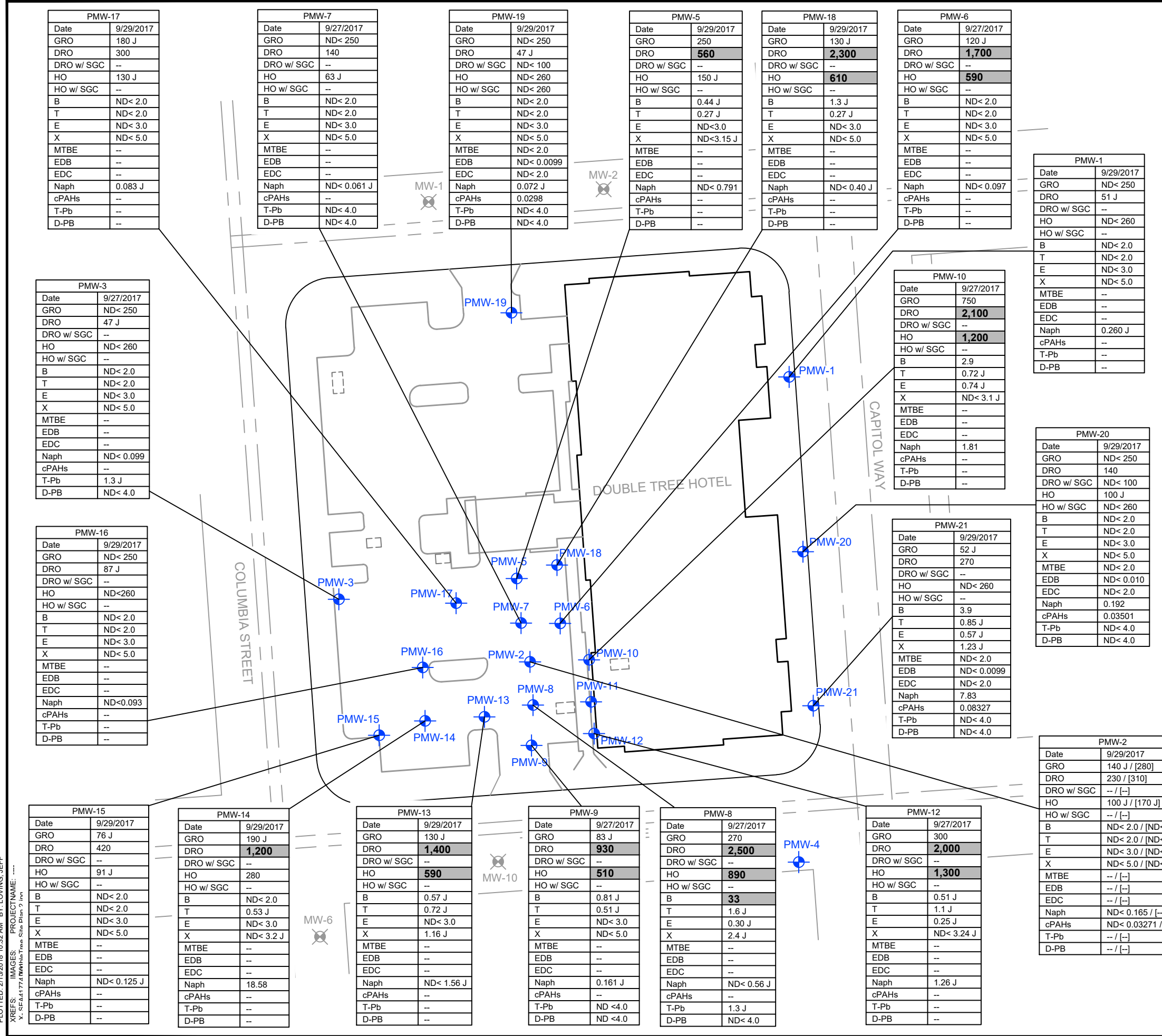
---

**GROUNDWATER ELEVATION MAP  
 3RD QUARTER 2017**

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FIGURE  
**5**



**LEGEND:**

PMW-1 MONITORING WELL LOCATION

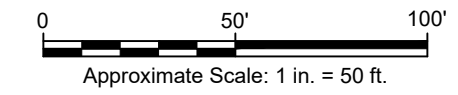
MW-2 MONITORING WELL ASSOCIATED WITH ADJACENT SITE

**DATABOX EXAMPLE**

LOCATION ID	
DATE	DATE COLLECTED
GRO	TPH-GASOLINE RANGE ORGANICS
DRO	TPH-DIESEL RANGE ORGANICS
DRO w/ SGC	TPH-DIESEL RANGE ORGANICS WITH SILICA GEL CLEANUP
HO	TPH-HEAVY RANGE ORGANICS
HO w/ SGC	TPH-HEAVY RANGE ORGANICS WITH SILICA GEL CLEANUP
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES
MTBE	METHYL TERTIARY BUTYL ETHER
EDB	ETHYLENE DIBROMIDE
EDC	1, 2-DICHLOROETHANE
Naph	TOTAL NAPHTHALENES
cPAHs	CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBONS
T-Pb	TOTAL LEAD
D-Pb	DISSOLVED LEAD

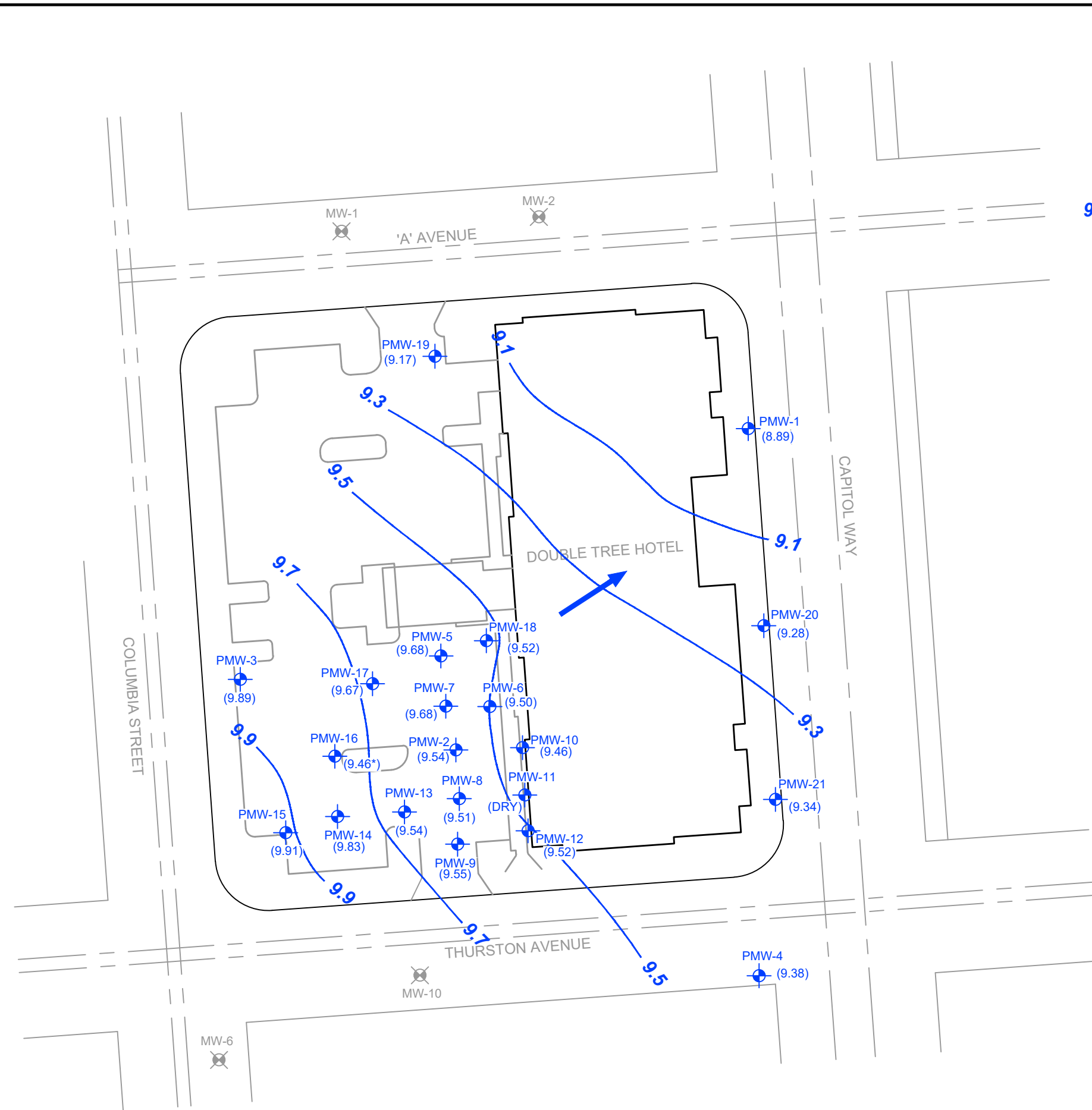
- TPH TOTAL PETROLEUM HYDROCARBONS
- NOTES:
- RESULTS ARE PRESENTED IN MICROGRAMS PER LITER (µg/L).
  - BOLD/SHADED** CONCENTRATIONS ABOVE MODEL TOXICS CONTROL ACT METHOD A CLEANUP LEVELS.
  - cPAH CONCENTRATIONS ARE EXPRESSED AS THEIR EQUIVALENT TOXICITY AS BENZO(A)PYRENE IN ACCORDANCE WITH TABLE 708-2, 173-340-900 WASHINGTON ADMINISTRATIVE CODE.

SOURCES: EMPI 2000; ENVIROS, INC. 1994.  
 SURVEY BY A-LINE LAND SURVEYING 2018.



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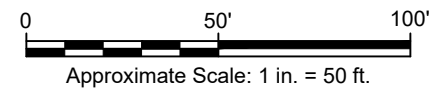
**SAMPLE LOCATION AND ANALYTICAL RESULTS MAP**  
**3RD QUARTER 2017**



**LEGEND:**

- PMW-1 MONITORING WELL LOCATION
- MW-2 MONITORING WELL ASSOCIATED WITH ADJACENT SITE
- (8.89) GROUNDWATER ELEVATION (FEET, NAVD 88)
- 9.1 GROUNDWATER ELEVATION CONTOUR LINE
- INFERRED GROUNDWATER FLOW DIRECTION
- \* WELL NOT USED IN GROUNDWATER ELEVATION CONTOUR

SOURCES: EMPI 2000; ENVIROS, INC. 1994.  
 SURVEY BY A-LINE LAND SURVEYING 2018.

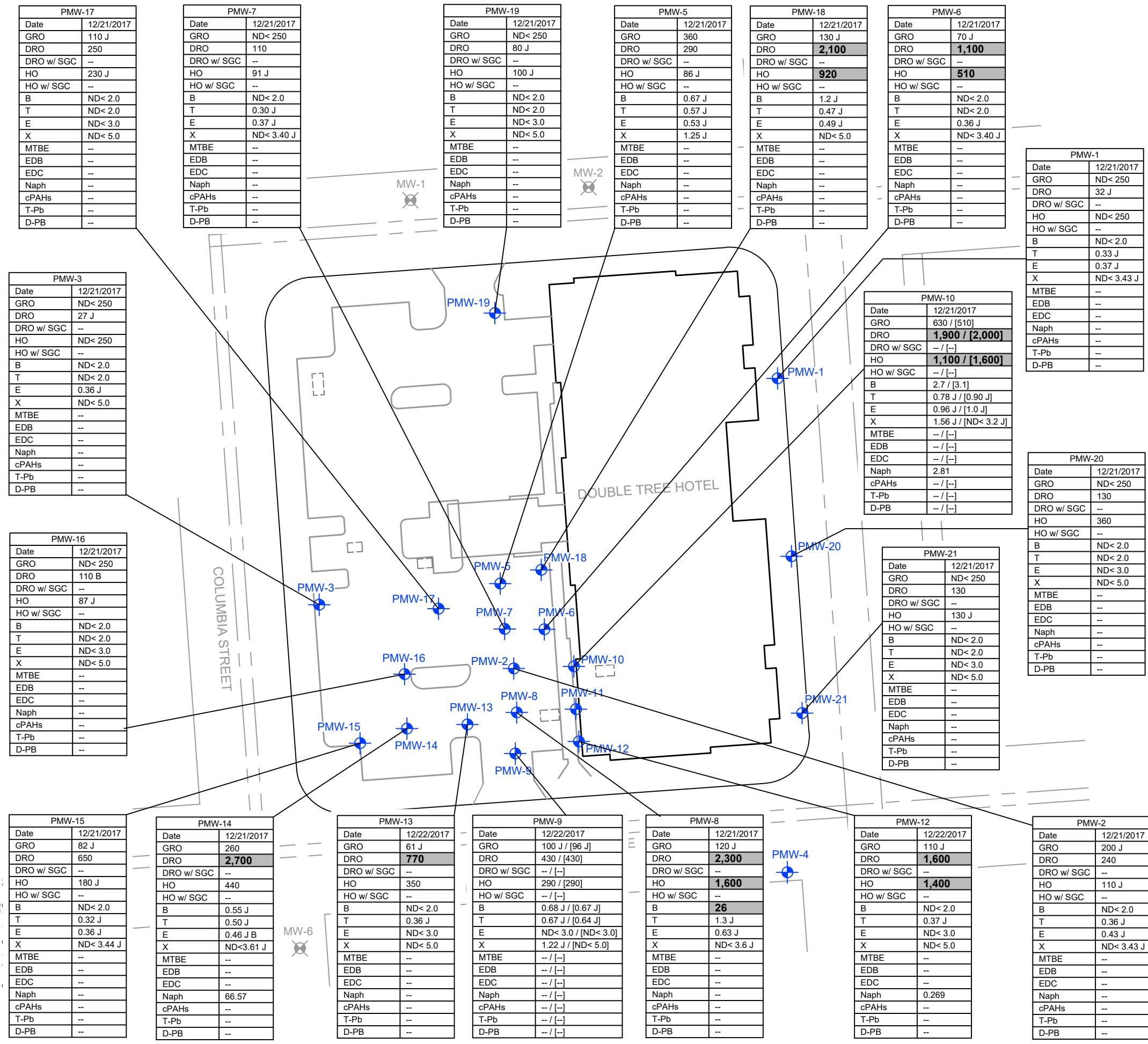


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**2017 GROUNDWATER MONITORING REPORT**

**GROUNDWATER ELEVATION MAP  
 4TH QUARTER 2017**

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FIGURE  
**7**



**LEGEND:**

PMW-1 MONITORING WELL LOCATION

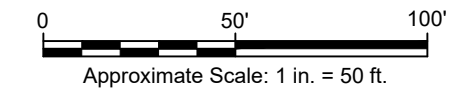
MW-2 MONITORING WELL ASSOCIATED WITH ADJACENT SITE

**DATABOX EXAMPLE**

LOCATION ID	
DATE	DATE COLLECTED
GRO	TPH-GASOLINE RANGE ORGANICS
DRO	TPH-DIESEL RANGE ORGANICS
DRO w/ SGC	TPH-DIESEL RANGE ORGANICS WITH SILICA GEL CLEANUP
HO	TPH-HEAVY RANGE ORGANICS
HO w/ SGC	TPH-HEAVY RANGE ORGANICS WITH SILICA GEL CLEANUP
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES
MTBE	METHYL TERTIARY BUTYL ETHER
EDB	ETHYLENE DIBROMIDE
EDC	1, 2-DICHLOROETHANE
Naph	TOTAL NAPHTHALENES
cPAHs	CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBONS
T-Pb	TOTAL LEAD
D-Pb	DISSOLVED LEAD

- TPH TOTAL PETROLEUM HYDROCARBONS
- NOTES:
- RESULTS ARE PRESENTED IN MICROGRAMS PER LITER (µg/L).
  - BOLD/SHADED** CONCENTRATIONS ABOVE MODEL TOXICS CONTROL ACT METHOD A CLEANUP LEVELS.
  - cPAH CONCENTRATIONS ARE EXPRESSED AS THEIR EQUIVALENT TOXICITY AS BENZO(A)PYRENE IN ACCORDANCE WITH TABLE 708-2, 173-340-900 WASHINGTON ADMINISTRATIVE CODE.

SOURCES: EMPI 2000; ENVIROS, INC. 1994.  
 SURVEY BY A-LINE LAND SURVEYING 2018.



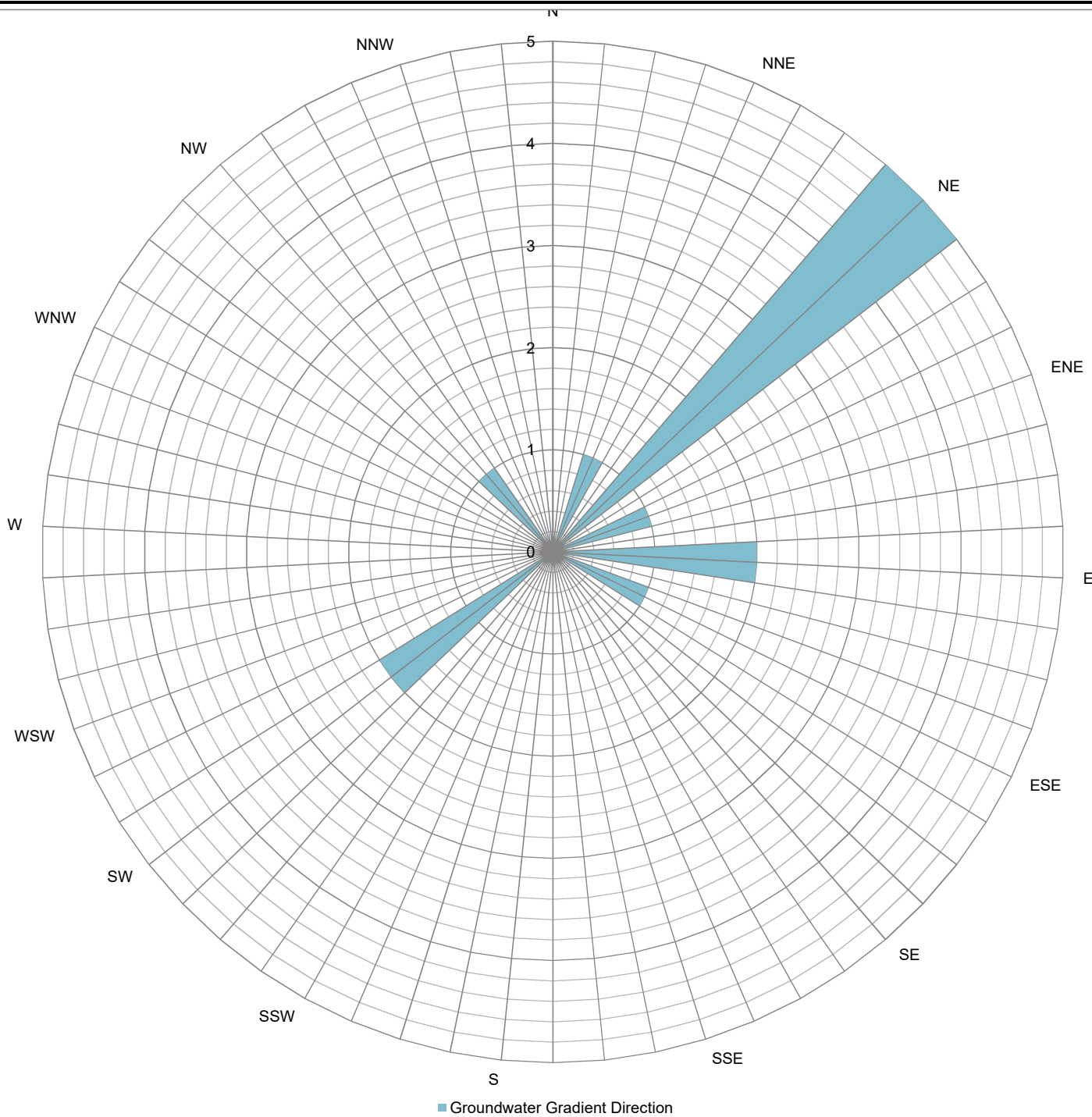
415 CAPITOL WAY NORTH  
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**2017 GROUNDWATER MONITORING REPORT**

**SAMPLE LOCATION AND ANALYTICAL RESULTS MAP**  
 4TH QUARTER 2017

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FIGURE **8**



Legend  
 N=North  
 NNE= North Northeast  
 NE= Northeast  
 ENE= East Northeast  
 E= East  
 ESE= East Southeast  
 SE=Southeast  
 SSE= South Southeast  
 S= South  
 SW= Southwest  
 SSW= South Southwest  
 WSW= West South West  
 W= West  
 WNW= West Northwest

Note  
 Rose diagram based on gradient direction calculated from historical groundwater monitoring events conducted by previous consultants and Arcadis since 1994.

Number of Events Evaluated = 15

415 CAPITOL WAY NORTH  
 OLYMPIA, WASHINGTON 98501  
**2017 GROUNDWATER MONITORING REPORT**

**HISTORICAL GROUNDWATER GRADIENT DIRECTION ROSE DIAGRAM**



# ATTACHMENT A

Boring Logs - PMW-19, PMW-20, and PMW-21



# SOIL BORING LOG

Boring No.: PMW-19  
 Sheet: 1 of 2

Project Name: Olympia Doubletree Date Started: 8/14/17 Logger: AP  
 Project Number: SEA 41774, 0002 Date Completed: 8/14/17 Editor: \_\_\_\_\_  
 Project Location: \_\_\_\_\_ Weather: sunny

Depth (feet)	Blow Counts	Sample ID & Time	Recovery (in.)	PID (ppm)	USCS Class.	Description
0						
1	HA		6" / 6"	0.3 / 0.6	GM / SW	gravel well-graded, sub-angular with well graded sand & silt, brown, dry
2	HA		6" / 6"	0.5 / 0.0	SW	U.S.-1; poorly-graded sand with small sub-rounded gravel, dark brown, dry
3	HA		6" / 6"	0.0 / 0.0	SW	SAA
4	HA		6" / 6"	0.0 / 0.5	SW	SAA
5	HA		6" / 6"	0.5 / 0.3	SW	SAA
6		PMW-19		0.3	SW	water table at 6 ft
7		5.5'-6.5'		0.5	SM	well-graded sand with some fines, medium plasticity, dense, wet, brown
8	Geo Probe		3A		SP	poorly-graded sand, medium plasticity, grey, saturated
9					SP	SAA
10				0.6	SP	SAA

Drilling Co.: Holt  
 Driller: \_\_\_\_\_  
 Drilling Method: HA geoprobe  
 Drilling Fluid: N/A  
 Remarks: \_\_\_\_\_

Sampling Method: HA, geoprobe sleeve  
 Sampling Interval: continuous to water level  
 Water Level: 6 ft bgs  
 Converted to Well:  Yes  No

**SOIL BORING LOG**

continued

Boring No.: *PMW-19*

Sheet: 2 of 2

Project Name: \_\_\_\_\_ Date Started: \_\_\_\_\_ Logger: \_\_\_\_\_  
 Project Number: \_\_\_\_\_ Date Completed: \_\_\_\_\_ Editor: \_\_\_\_\_  
 Project Location: \_\_\_\_\_ Weather: \_\_\_\_\_

Depth (feet)	Blow Counts	Sample ID & Time	Recovery (in.)	PID (ppm)	USCS Class.	Description
11					T	T SAA
12						
13	<i>400 Probe</i>		<i>5ft</i>		<i>SP</i>	
14						
15						
16						
17						
18						
19						
20						

Drilling Co.: \_\_\_\_\_ Sampling Method: \_\_\_\_\_  
 Driller: \_\_\_\_\_ Sampling Interval: \_\_\_\_\_  
 Drilling Method: \_\_\_\_\_ Water Level: \_\_\_\_\_  
 Drilling Fluid: \_\_\_\_\_ Converted to Well:  Yes  No  
 Remarks: \_\_\_\_\_

**SOIL BORING LOG**

Boring No.: PMW-20  
Sheet: 1 of 2

Project Name: Olympia Doubletree Date Started: 8/14/17 Logger: AP  
 Project Number: SEA 41774.0002 Date Completed: 8/14/17 Editor: \_\_\_\_\_  
 Project Location: \_\_\_\_\_ Weather: Sunny

Depth (feet)	Blow Counts	Sample ID & Time	Recovery (in.)	PID (ppm)	USCS Class.	Description
1	HA		6"	0.0	SP	sand - brown, poorly graded, some larger sub-rounded cobbles
2	HA		6"	0.0	SW	sand - tan-to-black, <del>poorly</del> well graded some small-to-med angular cobbles, dry
3	HA		6"	0.0	SW	SAA
4	HA		6"	0.1	SW	SAA
5	HA		6"	0.2	SW	SAA
6	<u>geoprobe</u>	<u>PMW-20</u>	<u>5</u>	<u>0.2</u>	<u>SW</u>	<u>SAA</u>
7		<u>5.5-6.5'</u>	<u>5</u>	<u>0.3</u>		water table at ~6 ft SAA - wet
8			<u>5</u>			SAA - wet
9				<u>0.3</u>		SAA - wet, black in color
10						SAA - brown

Drilling Co.: Holt Sampling Method: continuous FIA, geoprobe sleeve  
 Driller: \_\_\_\_\_ Sampling Interval: continuous to water level  
 Drilling Method: FIA, geoprobe Water Level: 6 ft  
 Drilling Fluid: N/A Converted to Well:  Yes  No  
 Remarks: \_\_\_\_\_

# SOIL BORING LOG

continued      Boring No.: *PMW-20*  
Sheet: 2 of 2

Project Name: _____	Date Started: _____	Logger: _____
Project Number: _____	Date Completed: _____	Editor: _____
Project Location: _____	Weather: _____	

Depth (feet)	Blow Counts	Sample ID & Time	Recovery (in.)	PID (ppm)	USCS Class.	Description
11						<i>SAA</i>
12						
13	<i>480 R/dm</i>		<i>5 ft.</i>			
14						
15						
16						
17						
18						
19						
20						

Drilling Co.: _____	Sampling Method: _____
Driller: _____	Sampling Interval: _____
Drilling Method: _____	Water Level: _____
Drilling Fluid: _____	Converted to Well: <input type="checkbox"/> Yes <input type="checkbox"/> No
Remarks: _____	

**SOIL BORING LOG**

Boring No.: PMW-21  
 Sheet: 1 of 2

Project Name: Olympia Doubletree Date Started: 8/14/17 Logger: AP  
 Project Number: SEA 41774-0002 Date Completed: 8/14/17 Editor: \_\_\_\_\_  
 Project Location: \_\_\_\_\_ Weather: Sunny

Depth (feet)	Blow Counts	Sample ID & Time	Recovery (in.)	PID (ppm)	USCS Class.	Description
1	HA	6"		0.1	SW	sand - well-graded with some small sub-rounded gravel, light brown, dry SAA
	HA	6"		0.2	SW	
2	HA	6"		0.2	SW	SAA
	HA	6"	→	0.2	SW	
3	HA	6"		0.3	SW	SAA
	HA	6"		0.4	SW	
4	HA	6"		0.2	SW	SAA
	HA	6"		0.5	SW	
5	HA	6"		0.4	SW	SAA
	HA	6"		0.3	SM	silty sand w/gravel - SAA turning to black sand with some fines, medium plasticity
6		PMW-21		0.4	SM	SAA
		5.9' - 6.5'		<del>0.4</del> 0.9	GP	poorly-graded gravel - black gravel with solid layers - asphalt?
7	geoprobe			3.6	SM	poorly graded sand with silt - dark grey, medium plasticity, wet
8			5ft	0.6	SM	SAA
9				0.5	SM	SAA
10				0.8	SW	well-graded sand, coarse-to-fine with small-to-med. sub-rounded gravel, brown, saturated

water table

Drilling Co.: Holt Sampling Method: HA, geoprobe sleeve  
 Driller: \_\_\_\_\_ Sampling Interval: continuous to water table  
 Drilling Method: HA, geoprobe Water Level: 6ft.  
 Drilling Fluid: N/A Converted to Well:  Yes  No  
 Remarks: \_\_\_\_\_

**SOIL BORING LOG**

continued

Boring No.: *PMW-21*

Sheet : 2 of 2

Project Name: \_\_\_\_\_ Date Started: \_\_\_\_\_ Logger: \_\_\_\_\_  
 Project Number: \_\_\_\_\_ Date Completed: \_\_\_\_\_ Editor: \_\_\_\_\_  
 Project Location: \_\_\_\_\_ Weather: \_\_\_\_\_

Depth (feet)	Blow Counts	Sample ID & Time	Recovery (in.)	PID (ppm)	USCS Class.	Description
11						SAA
12						
13			5 ft		SW	
14						
15						
16						
17						
18						
19						
20						

Drilling Co.: \_\_\_\_\_ Sampling Method: \_\_\_\_\_  
 Driller: \_\_\_\_\_ Sampling Interval: \_\_\_\_\_  
 Drilling Method: \_\_\_\_\_ Water Level: \_\_\_\_\_  
 Drilling Fluid: \_\_\_\_\_ Converted to Well:  Yes  No  
 Remarks: \_\_\_\_\_

# ATTACHMENT B

## Groundwater Monitoring Field Data Sheets



### Groundwater Gauging Form

Project No.: Blackstone Olympia Double Tree Page 1 of       
 Site Location: 415 N Capitol Way, Olympia  
 Prepared By: Joe Latham & Alex Pink Date: 6-28-17  
 Gauging Equipment: Water Probe / Oil-Water Interface Probe Other:     

Well ID	Time	Sheen or Odor	LNAPL Depth	LNAPL Thickness	DTW	TD	PID	Notes
PMW-15	0925	No	-	-	5.16	10.22	0.0	1/2 bolts, Water in box, Well Cap Good
PMW-14	0932	Slight HCL0	-	-	4.80	9.49	53.7	1/2 bolts, Water in box, Well Cap Good
PMW-13	0935	No	-	-	5.21	6.47	1.5	1/2 bolts, Water in box, Well Cap Good
PMW-9	0939	No	-	-	5.61	8.30	0.0	1/2 bolts, Water in box, Well Cap Good
PMW-12	0943	No	-	-	6.55	9.20	0.0	1/2 bolts, <del>water in box</del> , No Water in box, Well Cap Good
PMW-11	0946	No	-	-	Dry	5.74	0.0	1/2 bolts, No Water in box, Well Cap Good
PMW-8	0949	No	-	-	5.69	7.56	14.8	1/2 bolts, Water in box, Well Cap Good
PMW-2	0953	No	-	-	5.54	8.99	0.0	1/2 bolts, Water in box, Well Cap Good
PMW-10	0956	No	-	-	6.63	8.20	0.0	1/2 bolts, <del>water</del> No Water in box, Well Cap Good
PMW-6	1000	No	-	-	5.59	7.89	41.5	1/2 bolts, Water in box, Well Cap Good
PMW-7	1004	No	-	-	5.00	8.48	8.5	1/2 bolts, Water in box, Well Cap Good
PMW-5	1008	No	-	-	5.39	8.66	9.6	1/2 bolts, Water in box, Well Cap Good
PMW-18	1012	No	-	-	5.93	9.41	0.1	1/2 bolts, Water in box, Well Cap Good
PMW-17	1018	HCL0	-	-	4.33	9.13	307	1/2 bolts, Water in box, Well Cap Good
PMW-3	1024	No	-	-	5.09	11.75	0.1	1/2 bolts, Water in box, Well Cap Good



### PMW-1

Date	<u>06/28/2017</u>	Weather Conditions	<u>Cloudy</u>	Depth to Water (ft bmp)	<u>5.90</u>
Project Number	<u>SEA41774.0000</u>	Water Quality Meter	<u>YSI</u>	Measured Well Depth (ft bmp)	<u>12.29</u>
Location	<u>PIH Olympia</u>	Sampler	<u>Joe</u>	Water Column in Well	<u>0.0</u>
Gauge or Sample	<u>Gauge and Sample</u>	Casing Material	<u>PVC</u>	Gallons in Well	<u>0.0</u>
Purge Method	<u>Low Flow - Peristaltic Pump</u>	Casing Diameter (in)	<u>2</u>	Total Volume to Remove	<u>0.0</u>
Purge Volume Units	<u>ml</u>	Pump Intake Depth (ft bmp)	<u>12</u>		
Sampling Type	<u>Low Flow - Peristaltic Pump</u>	Casing Volume to Remove			
Comments	<u></u>				

### Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
12:30	200	600	16.2	6.93	170	22.2	0.71		6.13
12:33	200	1200	16.2	6.89	171	23.3	0.70		6.13
12:36	200	1800	16.2	6.85	169	24.5	0.63		6.14

### Sampling Summary

Did Well Dewater?	<u>No</u>	Alkalinity	<u></u>
Sample Time	<u>12:40</u>	Ferrous Iron	<u></u>
Sample ID	<u>Olympia Doubletree-PMW-1(2Q17)</u>	MS/MSD Sample Time	<u></u>
Duplicate Sample ID	<u>DUP-1</u>	MS/MSD Sample ID	<u></u>
Dup Sample Time	<u>12:40</u>	EB Time	<u></u>
Color	<u>No</u>	EB Sample ID	<u></u>
Odor	<u>No</u>	Remarks	<u>LFP</u>
Appearance	<u></u>		

### Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well Secured on initial inspection		X		
Well ID is Clearly Marked	X			
Is water present in well box	X			
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
J-plug present and in good condition	X			
Lock present		X		
Other action performed (explain)		X		
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		



### GROUNDWATER SAMPLING LOG

 Page      of     

Project No. \_\_\_\_\_ Well ID PMW-3 Date 6/29/17  
 Project Name/Location Olympia Doubletree Weather sunny  
 Measuring Pt. TOL Screen \_\_\_\_\_ Casing \_\_\_\_\_ Well Material  PVC  
 Description \_\_\_\_\_ Setting (ft-bmp) \_\_\_\_\_ Diameter (in.) 2 \_\_\_\_\_ SS  
 Static Water Level (ft-bmp) 5.09 Total Depth (ft-bmp) 11.75 Water Column/ Gallons in Well \_\_\_\_\_  
 MP Elevation \_\_\_\_\_ Pump Intake (ft-bmp) 10.0 Purge Method: Low Flow Sample Method Low Flow  
 Pump On/Off 1010 Volumes Purged \_\_\_\_\_ Centrifugal   
 Submersible \_\_\_\_\_ Other \_\_\_\_\_  
 Sample Time: Label 1025 Replicate/ Code No. \_\_\_\_\_  
 Start \_\_\_\_\_ End \_\_\_\_\_ Sampled by AP



Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
<u>1014</u>	<u>4</u>	<u>200</u>	<u>5.18</u>		<u>7.07</u>	<u>589.4</u>	<u>—</u>	<u>1.65</u>	<u>15.0</u>	<u>275.2</u>	<u>clear</u>	<u>no</u>
<u>1016</u>	<u>6</u>	<u>200</u>	<u>5.18</u>		<u>7.08</u>	<u>585.5</u>	<u>—</u>	<u>1.33</u>	<u>15.1</u>	<u>275.8</u>	<u>ll</u>	<u>ll</u>
<u>1018</u>	<u>8</u>	<u>200</u>	<u>5.18</u>		<u>7.08</u>	<u>580.5</u>	<u>—</u>	<u>1.23</u>	<u>15.1</u>	<u>276.0</u>	<u>ll</u>	<u>ll</u>
<u>1020</u>	<u>10</u>	<u>200</u>	<u>5.19</u>		<u>7.08</u>	<u>575.4</u>	<u>—</u>	<u>1.13</u>	<u>15.2</u>	<u>276.6</u>	<u>ll</u>	<u>ll</u>

Constituents Sampled	Container	Number	Preservative

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: _____	Well Locked at Arrival: <u>Yes</u> / <u>No</u>
Condition of Well: _____	Well Locked at Departure: <u>Yes</u> / <u>No</u>
Well Completion: <u>Flush Mount</u> / <u>Stick Up</u>	Key Number To Well: _____

### PMW-4

Date	06/29/2017	Weather Conditions	Sunny	Depth to Water (ft bmp)	4.90
Project Number	SEA41774.0000	Water Quality Meter		Measured Well Depth (ft bmp)	12.02
Location	PIH Olympia	Sampler		Water Column in Well	7.12
Gauge or Sample	Gauge	Casing Material		Gallons in Well	0.0
Purge Method		Casing Diameter (in)		Total Volume to Remove	0.0
Purge Volume Units		Pump Intake Depth (ft bmp)		Comments	
Sampling Type		Casing Volume to Remove			

### Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)

### Sampling Summary

Did Well Dewater?		Alkalinity	
Sample Time		Ferrous Iron	
Sample ID		MS/MSD Sample Time	
Duplicate Sample ID		MS/MSD Sample ID	
Dup Sample Time		EB Time	
Color		EB Sample ID	
Odor		Remarks	
Appearance			

### Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well Secured on initial inspection		X		
Well ID is Clearly Marked	X			
Is water present in well box	X			
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
J-plug present and in good condition	X			
Lock present		X		
Other action performed (explain)		X		
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		

### GROUNDWATER SAMPLING LOG

 Page      of     

Project No. \_\_\_\_\_ Well ID PMW-5 Date 6/22/17  
 Project Name/Location Olympia Double tree Weather cloudy  
 Measuring Pt. TOC Screen \_\_\_\_\_ Casing \_\_\_\_\_  
 Description \_\_\_\_\_ Setting (ft-bmp) \_\_\_\_\_ Diameter (in.) 2 Well Material  PVC  
 \_\_\_\_\_ SS  
 Static Water Level (ft-bmp) 5.39 Total Depth (ft-bmp) 8.66 Water Column/ Gallons in Well \_\_\_\_\_  
 MP Elevation \_\_\_\_\_ Pump Intake (ft-bmp) 8.00 Purge Method: Low Flow Sample Method Low Flow  
 Pump On/Off 1420 Volumes Purged \_\_\_\_\_  Centrifugal  
 \_\_\_\_\_  Submersible  
 \_\_\_\_\_  Other \_\_\_\_\_  
 Sample Time: Label 1435 Replicate/ Code No. \_\_\_\_\_  
 Start \_\_\_\_\_  
 End \_\_\_\_\_  
 Sampled by AP

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1424	4	200	5.94		6.78	961	—	0.46	17.7	-72.4	clear	no
1426	6	200	5.98		6.83	940	—	0.38	17.7	-84.5	"	"
1428	8	200	6.02		6.86	931	—	0.35	17.7	-93.3	"	"
1429	9	200	6.03		6.87	927	—	0.32	17.7	-96.8	"	"

Constituents Sampled	Container	Number	Preservative

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: _____	Well Locked at Arrival: <u>Yes</u> / <u>No</u>
Condition of Well: _____	Well Locked at Departure: <u>Yes</u> / <u>No</u>
Well Completion: <u>Flush Mount</u> / <u>Stick Up</u>	Key Number To Well: _____

**GROUNDWATER SAMPLING LOG**

Page      of     

Project No. \_\_\_\_\_ Well ID PMW-6 Date 6/29/17  
 Project Name/Location Olympia Doubletree Weather sunny  
 Measuring Pt. TOC Screen \_\_\_\_\_ Casing \_\_\_\_\_ Well Material X PVC  
 Description \_\_\_\_\_ Setting (ft-bmp) \_\_\_\_\_ Diameter (in.) 2 \_\_\_\_\_ SS  
 Static Water Level (ft-bmp) 5.59 Total Depth (ft-bmp) 7.89 Water Column/ Gallons in Well \_\_\_\_\_  
 MP Elevation \_\_\_\_\_ Pump Intake (ft-bmp) 7.50 Purge Method: Low Flow Sample Method Low Flow  
 Pump On/Off 1236 Volumes Purged \_\_\_\_\_ Centrifugal X  
 \_\_\_\_\_ Submersible \_\_\_\_\_  
 \_\_\_\_\_ Other \_\_\_\_\_  
 Sample Time: Label 1320 Replicate/ Code No. \_\_\_\_\_  
 Start \_\_\_\_\_  
 End \_\_\_\_\_  
 Sampled by AP

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1242	6	200	6.86		7.03	844	—	0.67	16.3	-31.9	clear	no
1243	7	200	6.99		6.96	950	—	0.70	16.3	-43.7	"	"
1244	8	200	7.11		6.91	1003	—	0.83	16.2	-52.2	"	lc
1245	9	200	7.19		6.88	1051	—	0.96	16.2	-57.0	"	lc
1246	10	200	7.28		6.86	1097	—	1.08	16.2	-61.2	"	lc
1247	11	200	7.33		6.81	1139	—	1.27	16.1	-63.9	"	"
1248	12	200	7.89		6.82	1149	—	1.64	16.1	-68.1	"	lc
well purged dry, will wait for recharge & sample												

Constituents Sampled	Container	Number	Preservative

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: _____	Well Locked at Arrival: Yes / No
Condition of Well: _____	Well Locked at Departure: Yes / No
Well Completion: Flush Mount / Stick Up	Key Number To Well: _____

### PMW-7

Date	<u>06/29/2017</u>	Weather Conditions	<u>Sunny</u>	Depth to Water (ft bmp)	<u>5.00</u>
Project Number	<u>SEA41774.0000</u>	Water Quality Meter	<u>YSI</u>	Measured Well Depth (ft bmp)	<u>8.48</u>
Location	<u>PIH Olympia</u>	Sampler	<u>Joe</u>	Water Column in Well	<u>3.48</u>
Gauge or Sample	<u>Gauge and Sample</u>	Casing Material	<u>PVC</u>	Gallons in Well	<u>0.57</u>
Purge Method	<u>Low Flow - Peristaltic Pump</u>	Casing Diameter (in)	<u>2</u>	Total Volume to Remove	<u>0.0</u>
Purge Volume Units	<u>ml</u>	Pump Intake Depth (ft bmp)	<u>8.4</u>		
Sampling Type	<u>Low Flow - Peristaltic Pump</u>	Casing Volume to Remove			
Comments	<u>LFP</u>				

### Field Parameters

Time	Flow Rate (ml/min)	Cumulative Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
14:00	200	800	18.2	7.12	639	-16.8	0.64		5.26
14:01	200	1000	18.1	7.12	636	-32.6	0.52		5.27
14:02	200	1200	18.1	7.12	635	-41.3	0.47		5.29
14:03	200	1400	18.1	7.13	635	-48.0	0.44		5.29

### Sampling Summary

Did Well Dewater?	<u>No</u>	Alkalinity	<u></u>
Sample Time	<u>14:10</u>	Ferrous Iron	<u></u>
Sample ID	<u>Olympia Doubletree-PMW-7(2Q17)</u>	MS/MSD Sample Time	<u></u>
Duplicate Sample ID	<u></u>	MS/MSD Sample ID	<u></u>
Dup Sample Time	<u></u>	EB Time	<u></u>
Color	<u>No</u>	EB Sample ID	<u></u>
Odor	<u>No</u>	Remarks	<u>LFP</u>
Appearance	<u></u>		

### Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well Secured on initial inspection		X		
Well ID is Clearly Marked	X			
Is water present in well box	X			
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
J-plug present and in good condition	X			
Lock present		X		
Other action performed (explain)		X		
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		

## PMW-8

Date	<u>06/29/2017</u>	Weather Conditions	<u>Sunny</u>	Depth to Water (ft bmp)	<u>5.69</u>
Project Number	<u>SEA41774.0000</u>	Water Quality Meter	<u>YSI</u>	Measured Well Depth (ft bmp)	<u>7.56</u>
Location	<u>PIH Olympia</u>	Sampler	<u>Joe</u>	Water Column in Well	<u>1.87</u>
Gauge or Sample	<u>Gauge and Sample</u>	Casing Material	<u>PVC</u>	Gallons in Well	<u>0.31</u>
Purge Method	<u>Low Flow - Peristaltic Pump</u>	Casing Diameter (in)	<u>2</u>	Total Volume to Remove	<u>0.0</u>
Purge Volume Units	<u>ml</u>	Pump Intake Depth (ft bmp)	<u>7.5</u>		
Sampling Type	<u>Low Flow - Peristaltic Pump</u>	Casing Volume to Remove			
Comments	<u>LFP</u>				

## Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
12:17	150	300	17.9	7.13	980	41.9	0.30		5.95
12:19	150	600	17.3	7.06	980	42.1	0.26		6.84
12:21	150	900	17.5	6.99	980	44.4	0.23		7.21

## Sampling Summary

Did Well Dewater?	<u>No</u>	Alkalinity	
Sample Time	<u>12:25</u>	Ferrous Iron	
Sample ID	<u>Olympia Doubletree-PMW-8(2Q17)</u>	MS/MSD Sample Time	
Duplicate Sample ID		MS/MSD Sample ID	
Dup Sample Time		EB Time	
Color	<u>No</u>	EB Sample ID	
Odor	<u>No</u>	Remarks	<u>LFP, WELL PURGED DRY DURING SAMPLING, WAIT FOR RECHARGE</u>
Appearance			

## Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well Secured on initial inspection		X		
Well ID is Clearly Marked	X			
Is water present in well box	X			
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
J-plug present and in good condition	X			
Lock present		X		
Other action performed (explain)		X		
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		

### PMW-9

Date	<u>06/29/2017</u>	Weather Conditions	<u>Sunny</u>	Depth to Water (ft bmp)	<u>5.61</u>
Project Number	<u>SEA41774.0000</u>	Water Quality Meter	<u>YSI</u>	Measured Well Depth (ft bmp)	<u>8.30</u>
Location	<u>PIH Olympia</u>	Sampler	<u>Joe</u>	Water Column in Well	<u>2.69</u>
Gauge or Sample	<u>Gauge and Sample</u>	Casing Material	<u>PVC</u>	Gallons in Well	<u>0.44</u>
Purge Method	<u>Low Flow - Peristaltic Pump</u>	Casing Diameter (in)	<u>2</u>	Total Volume to Remove	<u>0.0</u>
Purge Volume Units	<u>ml</u>	Pump Intake Depth (ft bmp)	<u>8</u>		
Sampling Type	<u>Low Flow - Peristaltic Pump</u>	Casing Volume to Remove			
Comments	<u>LFP</u>				

### Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
11:34	150	300	17.8	7.22	890	36.0	0.35		6.09
11:36	150	600	17.9	7.12	890	39.5	0.34		6.72
11:38	150	900	17.9	7.04	890	41.1	0.38		7.02

### Sampling Summary

Did Well Dewater?	<u>No</u>	Alkalinity	<u></u>
Sample Time	<u>11:40</u>	Ferrous Iron	<u></u>
Sample ID	<u>Olympia Doubletree-PMW-9(2Q17)</u>	MS/MSD Sample Time	<u></u>
Duplicate Sample ID	<u></u>	MS/MSD Sample ID	<u></u>
Dup Sample Time	<u></u>	EB Time	<u></u>
Color	<u>No</u>	EB Sample ID	<u></u>
Odor	<u>No</u>	Remarks	<u>LFP</u>
Appearance	<u></u>		

### Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well Secured on initial inspection		X		
Well ID is Clearly Marked	X			
Is water present in well box	X			
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
J-plug present and in good condition	X			
Lock present		X		
Other action performed (explain)		X		
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		

### PMW-10

Date	<u>06/28/2017</u>	Weather Conditions	<u>Cloudy</u>	Depth to Water (ft bmp)	<u>6.63</u>
Project Number	<u>SEA41774.0000</u>	Water Quality Meter	<u>YSI</u>	Measured Well Depth (ft bmp)	<u>8.20</u>
Location	<u>PIH Olympia</u>	Sampler	<u>Joe</u>	Water Column in Well	<u>1.57</u>
Gauge or Sample	<u>Gauge and Sample</u>	Casing Material	<u>PVC</u>	Gallons in Well	<u>0.26</u>
Purge Method	<u>Low Flow - Peristaltic Pump</u>	Casing Diameter (in)	<u>2</u>	Total Volume to Remove	<u>0.0</u>
Purge Volume Units	<u>ml</u>	Pump Intake Depth (ft bmp)	<u>8</u>		
Sampling Type	<u>Low Flow - Peristaltic Pump</u>	Casing Volume to Remove			
Comments	<u></u>				

### Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
14:01	200	600	15.3	7.19	770	-3.2	0.45		6.92
14:04	200	1200	15.1	7.13	750	-5.2	0.45		7.39
14:07	200	1800	15.1	7.09	740	-6.8	0.41		7.46

### Sampling Summary

Did Well Dewater?	<u>No</u>	Alkalinity	<u></u>
Sample Time	<u>14:10</u>	Ferrous Iron	<u></u>
Sample ID	<u>Olympia Doubletree-PMW-10(2Q17)</u>	MS/MSD Sample Time	<u></u>
Duplicate Sample ID	<u></u>	MS/MSD Sample ID	<u></u>
Dup Sample Time	<u></u>	EB Time	<u></u>
Color	<u>No</u>	EB Sample ID	<u></u>
Odor	<u>No</u>	Remarks	<u>LFP</u>
Appearance	<u></u>		

### Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well Secured on initial inspection		X		
Well ID is Clearly Marked	X			
Is water present in well box		X		
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
J-plug present and in good condition	X			
Lock present		X		
Other action performed (explain)		X		
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		

### PMW-11

Date	06/29/2017	Weather Conditions	Cloudy	Depth to Water (ft bmp)	5.74
Project Number	SEA41774.0000	Water Quality Meter		Measured Well Depth (ft bmp)	5.74
Location	PIH Olympia	Sampler		Water Column in Well	0.0
Gauge or Sample	Gauge	Casing Material		Gallons in Well	0.0
Purge Method		Casing Diameter (in)		Total Volume to Remove	0.0
Purge Volume Units		Pump Intake Depth (ft bmp)		Comments	
Sampling Type		Casing Volume to Remove			

### Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)

### Sampling Summary

Did Well Dewater?	NA	Alkalinity	
Sample Time		Ferrous Iron	
Sample ID		MS/MSD Sample Time	
Duplicate Sample ID		MS/MSD Sample ID	
Dup Sample Time		EB Time	
Color		EB Sample ID	
Odor		Remarks	Well is Dry
Appearance			

### Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well Secured on initial inspection		X		
Well ID is Clearly Marked	X			
Is water present in well box	X			
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
J-plug present and in good condition	X			
Lock present		X		
Other action performed (explain)		X		
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		

### PMW-12

Date	<u>06/28/2017</u>	Weather Conditions	<u>Cloudy</u>	Depth to Water (ft bmp)	<u>6.55</u>
Project Number	<u>SEA41774.0000</u>	Water Quality Meter	<u>YSI</u>	Measured Well Depth (ft bmp)	<u>9.20</u>
Location	<u>PIH Olympia</u>	Sampler	<u>Joe</u>	Water Column in Well	<u>2.65</u>
Gauge or Sample	<u>Gauge and Sample</u>	Casing Material	<u>PVC</u>	Gallons in Well	<u>0.43</u>
Purge Method	<u>Low Flow - Peristaltic Pump</u>	Casing Diameter (in)	<u>2</u>	Total Volume to Remove	<u>0.0</u>
Purge Volume Units	<u>ml</u>	Pump Intake Depth (ft bmp)	<u>9</u>		
Sampling Type	<u>Low Flow - Peristaltic Pump</u>	Casing Volume to Remove			
Comments	<u>LFP</u>				

### Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
14:42	200	600	15.2	7.09	780	-9.3	0.34		6.96
14:45	200	1200	15.1	7.07	760	-15.1	0.29		7.10
14:48	200	1800	15.1	7.05	750	-21.2	0.24		7.18

### Sampling Summary

Did Well Dewater?	<u>No</u>	Alkalinity	<u></u>
Sample Time	<u>14:50</u>	Ferrous Iron	<u></u>
Sample ID	<u>Olympia Doubletree-PMW-12(2Q17)</u>	MS/MSD Sample Time	<u></u>
Duplicate Sample ID	<u></u>	MS/MSD Sample ID	<u></u>
Dup Sample Time	<u></u>	EB Time	<u></u>
Color	<u>No</u>	EB Sample ID	<u></u>
Odor	<u>No</u>	Remarks	<u>LFP</u>
Appearance	<u></u>		

### Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well Secured on initial inspection		X		
Well ID is Clearly Marked	X			
Is water present in well box		X		
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
J-plug present and in good condition	X			
Lock present		X		
Other action performed (explain)		X		
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		
Remarks				

### PMW-13

Date	<u>06/29/2017</u>	Weather Conditions	<u>Sunny</u>	Depth to Water (ft bmp)	<u>5.21</u>
Project Number	<u>SEA41774.0000</u>	Water Quality Meter	<u>YSI</u>	Measured Well Depth (ft bmp)	<u>6.47</u>
Location	<u>PIH Olympia</u>	Sampler	<u>Joe</u>	Water Column in Well	<u>1.26</u>
Gauge or Sample	<u>Gauge and Sample</u>	Casing Material	<u>PVC</u>	Gallons in Well	<u>0.21</u>
Purge Method	<u>Low Flow - Peristaltic Pump</u>	Casing Diameter (in)	<u>2</u>	Total Volume to Remove	<u>0.0</u>
Purge Volume Units	<u>ml</u>	Pump Intake Depth (ft bmp)	<u>6.3</u>		
Sampling Type	<u>Low Flow - Peristaltic Pump</u>	Casing Volume to Remove			
Comments	<u>LFP</u>				

### Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
10:21	200	400	18.1	6.74	670	22.8	2.68		6.20
10:22	150	550	17.7	6.75	670	26.4	1.42		6.45
10:23	150	700	17.8	6.74	660	25.9	1.82		6.40
10:24	100	800	17.7	6.76	660	27.1	1.88		6.45
10:25	100	900	17.7	6.77	660	27.1	1.78		6.45

### Sampling Summary

Did Well Dewater?	<u>Yes</u>	Alkalinity	
Sample Time	<u>10:30</u>	Ferrous Iron	
Sample ID	<u>Olympia Doubletree-PMW-13(2Q17)</u>	MS/MSD Sample Time	
Duplicate Sample ID		MS/MSD Sample ID	
Dup Sample Time		EB Time	
Color	<u>No</u>	EB Sample ID	
Odor	<u>No</u>	Remarks	<u>LFP</u>
Appearance			

### Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well Secured on initial inspection		X		
Well ID is Clearly Marked	X			
Is water present in well box	X			
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
J-plug present and in good condition	X			
Lock present		X		
Other action performed (explain)		X		
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		

### PMW-14

Date	<u>06/29/2017</u>	Weather Conditions	<u>Sunny</u>	Depth to Water (ft bmp)	<u>4.80</u>
Project Number	<u>SEA41774.0000</u>	Water Quality Meter	<u>YSI</u>	Measured Well Depth (ft bmp)	<u>9.49</u>
Location	<u>PIH Olympia</u>	Sampler	<u>JOE</u>	Water Column in Well	<u>4.69</u>
Gauge or Sample	<u>Gauge and Sample</u>	Casing Material	<u>PVC</u>	Gallons in Well	<u>0.76</u>
Purge Method	<u>Low Flow - Peristaltic Pump</u>	Casing Diameter (in)	<u>2</u>	Total Volume to Remove	<u>0.0</u>
Purge Volume Units	<u>ml</u>	Pump Intake Depth (ft bmp)	<u>9</u>		
Sampling Type	<u>Low Flow - Peristaltic Pump</u>	Casing Volume to Remove			
Comments	<u>LFP</u>				

### Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
09:26	200	600	17.1	6.97	620	-38.6	2.42		5.36
09:29	200	1200	17.2	6.96	610	-40.9	1.93		5.56
09:32	200	1800	17.3	6.96	600	-41.1	1.28		5.62
09:33	200	3000	17.3	6.98	585	-39.3	1.35		5.75
09:35	200	2400	17.3	6.97	590	-40.6	1.37		5.69

### Sampling Summary

Did Well Dewater?	<u>No</u>	Alkalinity	
Sample Time	<u>09:40</u>	Ferrous Iron	
Sample ID	<u>Olympia Doubletree-PMW-14(2Q17)</u>	MS/MSD Sample Time	
Duplicate Sample ID		MS/MSD Sample ID	
Dup Sample Time		EB Time	
Color	<u>No</u>	EB Sample ID	
Odor	<u>HCLO</u>	Remarks	<u>LFP</u>
Appearance			

### Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well Secured on initial inspection		X		
Well ID is Clearly Marked	X			
Is water present in well box	X			
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
J-plug present and in good condition	X			
Lock present		X		
Other action performed (explain)		X		
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		

**GROUNDWATER SAMPLING LOG**

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Project No. \_\_\_\_\_ Well ID PMW-15 Date 8/28/17

Project Name/Location Olympia Double tree Weather cloudx

Measuring Pt. TOC Screen \_\_\_\_\_ Casing Diameter (in.) 2 Well Material  PVC  SS

Description \_\_\_\_\_ Setting (ft-bmp) \_\_\_\_\_

Static Water Level (ft-bmp) 5.16 Total Depth (ft-bmp) 10.22 Water Column/ Gallons in Well \_\_\_\_\_

MP Elevation \_\_\_\_\_ Pump Intake (ft-bmp) 10.00 Purge Method: Low Flow Sample Method Low Flow

Pump On/Off 1228 Volumes Purged \_\_\_\_\_ Centrifugal  Submersible \_\_\_\_\_ Other \_\_\_\_\_

Sample Time: Label 1250 Replicate/ Code No. \_\_\_\_\_ Sampled by AP

Start \_\_\_\_\_ End \_\_\_\_\_

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1232	4	150	5.71		6.64	679	-	0.68	15.6	288.0	clear	no
1234	6	150	5.75		6.70	682	-	0.53	15.6	200.9	"	"
1236	8	150	5.77		6.75	679	-	0.47	15.6	128.1	"	"
1237	9	150	5.78		6.77	676	-	0.42	15.6	90.0	"	"
1238	10	150	5.79		6.79	673	-	0.40	15.5	62.5	"	"
1239	11	150	5.80		6.81	668	-	0.39	15.5	37.6	"	"
1240	12	150	5.80		6.83	662	-	0.37	15.5	18.8	"	"
1241	13	150	5.80		6.86	656	-	0.32	15.5	1.4	"	"
1242	14	150	5.80		6.86	652	-	0.30	15.5	-9.0	"	"
1243	15	150	5.80		6.88	652	-	0.29	15.5	-17.8	"	"
1244	16	150	5.80		6.88	651	-	0.30	15.6	-24.3	"	"

Constituents Sampled	Container	Number	Preservative

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: _____	Well Locked at Arrival: Yes / No
Condition of Well: _____	Well Locked at Departure: Yes / No
Well Completion: Flush Mount / Stick Up	Key Number To Well: _____



**GROUNDWATER SAMPLING LOG**

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Project No. \_\_\_\_\_ Well ID PMW-17 Date 6/28/17

Project Name/Location Olympia Double tree Weather cloudy

Measuring Pt. TOC Screen \_\_\_\_\_ Casing \_\_\_\_\_ Well Material  PVC  
Description \_\_\_\_\_ Setting (ft-bmp) \_\_\_\_\_ Diameter (in.) 2  SS

Static Water Level (ft-bmp) 4.33 Total Depth (ft-bmp) 9.13 Water Column/ Gallons in Well \_\_\_\_\_

MP Elevation \_\_\_\_\_ Pump Intake (ft-bmp) 8.50 Purge Method: Low Flow Sample Method Low Flow  
Centrifugal   
Submersible \_\_\_\_\_  
Other \_\_\_\_\_

Pump On/Off 1330 Volumes Purged \_\_\_\_\_

Sample Time: Label 1345 Replicate/ Code No. \_\_\_\_\_ Sampled by AP  
Start \_\_\_\_\_  
End \_\_\_\_\_

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1334	4	150	4.89		7.40	579.0	-	0.44	17.1	-127.6	clean	sulfur
1336	6	150	4.71		7.42	580.1	-	0.38	17.1	-146.7	"	"
1338	8	150	4.72		7.42	580.9	-	0.33	17.1	-161.5	"	"
1339	9	150	4.73		7.43	580.1	-	0.30	17.1	-168.5	"	"
1340	10	150	4.73		7.43	580.5	-	0.28	17.0	-174.0	"	"

Constituents Sampled	Container	Number	Preservative

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.25" = 0.06	1.5" = 0.09	2.5" = 0.26	3" = 0.37	3.5" = 0.50	4" = 0.65	6" = 1.47
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**Well Information**

Well Location: _____	Well Locked at Arrival: Yes / No
Condition of Well: _____	Well Locked at Departure: Yes / No
Well Completion: Flush Mount / Stick Up	Key Number To Well: _____

### PMW-18

Date	<u>06/28/2017</u>	Weather Conditions	<u>Cloudy</u>	Depth to Water (ft bmp)	<u>5.93</u>
Project Number	<u>SEA41774.0000</u>	Water Quality Meter	<u>YSI</u>	Measured Well Depth (ft bmp)	<u>9.41</u>
Location	<u>PIH Olympia</u>	Sampler	<u>Joe</u>	Water Column in Well	<u>3.48</u>
Gauge or Sample	<u>Gauge and Sample</u>	Casing Material	<u>PVC</u>	Gallons in Well	<u>0.57</u>
Purge Method	<u>Low Flow - Peristaltic Pump</u>	Casing Diameter (in)	<u>2</u>	Total Volume to Remove	<u>0.0</u>
Purge Volume Units	<u>ml</u>	Pump Intake Depth (ft bmp)	<u>9</u>		
Sampling Type	<u>Low Flow - Peristaltic Pump</u>	Casing Volume to Remove			
Comments	<u></u>				

### Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
13:25	200	600	15.9	6.74	1110	-16.2	0.34		6.55
13:28	200	1200	15.9	6.72	1080	-18.2	0.33		7.00
13:31	200	1800	15.9	6.71	1050	-24.4	0.28		7.15

### Sampling Summary

Did Well Dewater?	<u>No</u>	Alkalinity	<u></u>
Sample Time	<u>13:35</u>	Ferrous Iron	<u></u>
Sample ID	<u>Olympia Doubletree-PMW-18(2Q17)</u>	MS/MSD Sample Time	<u></u>
Duplicate Sample ID	<u></u>	MS/MSD Sample ID	<u></u>
Dup Sample Time	<u></u>	EB Time	<u></u>
Color	<u>No</u>	EB Sample ID	<u></u>
Odor	<u>No</u>	Remarks	<u>LFP</u>
Appearance	<u></u>		

### Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well Secured on initial inspection		X		
Well ID is Clearly Marked	X			
Is water present in well box	X			
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
J-plug present and in good condition	X			
Lock present		X		
Other action performed (explain)		X		
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		

# Blackstone Olympia

## Groundwater Gauging Form

Project No.: SEA41774.000Z Page 1 of 2  
 Site Location: 415 Capitol Way N, Olympia  
 Prepared By: Joe Latham & Patrick Collins Date: 9-27-17  
 Gauging Equipment: Water Probe / Oil-Water Interface Probe Other \_\_\_\_\_

Well ID	Time	Sheen or Odor	LNAPL Depth	LNAPL Thickness	DTW	TD	PID	Notes
<del>AM</del> PMW-1	1153				6.19	12.33	1.0	
PMW-2	1029	-	-	-	5.80	8.99	0.3	
PMW-3	1002	-	-	-	5.44	11.75	9.4	PID malfunction
PMW-4	1145				5.11	12.02	0.0	
PMW-5	1015	-	-	-	5.68	8.20	10.50 →	PID Malfunction
PMW-6	1105				5.86	7.90	0.9	
PMW-7	1025	-	-	-	5.25	8.45	2.2	
PMW-8	1032				5.95	7.55	0.6	
PMW-9	1036				5.86	8.29	0.0	
PMW-10	1109				6.89	8.22	0.1	
PMW-11	1116				-	5.72	0.0	DRY
PMW-12	1142				6.79	9.19	0.1	
PMW-13	1040				5.45	6.44	0.7	
PMW-14	1048				5.00	9.56	0.1	
PMW-15	1059				5.46	10.26	0.0	



### PMW-1

Date	09/29/2017	Weather Conditions	Sunny	Depth to Water (ft bmp)	6.19
Project Number	SEA41774.0002	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	12.33
Location	DoubleTree Olympia	Sampler	JOE	Water Column in Well	6.14
Gauge or Sample	Gauge and Sample	Casing Material	PVC	Gallons in Well	1.0
Purge Method	Low Flow - Peristaltic Pump	Casing Diameter (in)	2	Total Volume to Remove	0.0
Purge Volume Units	ml	Pump Intake Depth (ft bmp)	12		
Sampling Type	Low Flow - Peristaltic Pump	Casing Volume to Remove			
Comments	LFP				

### Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cumulative Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
13:50	200	600	17.7	7.57	183.8	-22.1	0.54		6.36
13:53	200	1200	17.7	7.54	184.0	-30.2	0.52		6.39
13:56	200	1800	17.7	7.53	184.3	-37.5	0.51		6.43

### Sampling Summary

Did Well Dewater?	No	Alkalinity	
Sample Time	14:00	Ferrous Iron	
Sample ID	Olympia Doubletree-PMW-1(3Q17)	MS/MSD Sample Time	
Duplicate Sample ID		MS/MSD Sample ID	
Dup Sample Time		EB Time	
Color	No	EB Sample ID	
Odor	No	Remarks	LFP
Appearance			

### Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well Secured on initial inspection	X			
Well ID is Clearly Marked		X		
Is water present in well box	X			
Well Pad in Good Condition		X		
Wellbox Components Cleaned		X		
J-plug present and in good condition	X			
Lock present		X		
Other action performed (explain)		X		
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		

**GROUNDWATER SAMPLING LOG**

Project No. SEA 41774.0002 Well ID PMW-2 Page      of       
 Date 9.27.17  
 Project Name/Location Blackstone Double Tree Weather Sunny Hot  
 Measuring Pt. Screen Casing 2 Well Material PVC  
 Description Setting (ft-bmp) Diameter (in.)      SS  
 Static Water Level (ft-bmp) 649 5.80 Total Depth (ft-bmp) 8.99 Water Column/  
 Gallons in Well       
 MP Elevation      Pump Intake (ft-bmp)      Purge Method: LFP Sample Method LFP  
 Pump On/Off 14H Volumes Purged      Centrifugal       
 Other Peri Submersible       
 Sample Time: Label 1413 1414 Replicate/  
 Start 1424 1418 Code No. DUP-1 Sampled by PMMC  
 End 142 1424

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) - (°F)	Redox (mV)	Appearance	
											Color	Odor
1413	2	200	6.60	200	6.58	0.820	-	0.45	20.23	-136.7		
1414	3	200	6.69	600	6.58	0.814		0.39	20.22	-139.9		
1416	5	200	6.85	1000	6.63	0.803		0.32	20.25	-149.9		

Constituents Sampled	Container	Number	Preservative

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: _____	Well Locked at Arrival: Yes / No
Condition of Well: _____	Well Locked at Departure: Yes / No
Well Completion: Flush Mount / Stick Up	Key Number To Well: _____

### PMW-3

Date	09/27/2017	Weather Conditions	Sunny	Depth to Water (ft bmp)	5.44
Project Number	SEA41774.0002	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	11.75
Location	DoubleTree Olympia	Sampler	JOE	Water Column in Well	6.31
Gauge or Sample	Gauge and Sample	Casing Material	PVC	Gallons in Well	1.03
Purge Method	Low Flow - Peristaltic Pump	Casing Diameter (in)	2	Total Volume to Remove	0.0
Purge Volume Units	ml	Pump Intake Depth (ft bmp)	10.00		
Sampling Type	Low Flow - Peristaltic Pump	Casing Volume to Remove			
Comments	LFP				

### Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cumulative Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
12:00	200	600	18.5	7.14	589	372.6	0.65		5.55
12:03	200	1200	18.6	7.17	574	368.7	0.52		5.58
12:06	200	1800	18.6	7.19	568.6	367.2	0.46		5.60
12:09	200	2400	18.6	7.18	565.4	366.0	0.42		5.62

### Sampling Summary

Did Well Dewater?	No	Alkalinity	_____
Sample Time	12:15	Ferrous Iron	_____
Sample ID	Olympia Doubletree-PMW-3(3Q17)	MS/MSD Sample Time	_____
Duplicate Sample ID	_____	MS/MSD Sample ID	_____
Dup Sample Time	_____	EB Time	_____
Color	No	EB Sample ID	_____
Odor	No	Remarks	LFP
Appearance	_____		

### Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well Secured on initial inspection	X			
Well ID is Clearly Marked		X		
Is water present in well box	X			
Well Pad in Good Condition		X		
Wellbox Components Cleaned		X		
J-plug present and in good condition	X			
Lock present		X		
Other action performed (explain)		X		
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		

### PMW-5

Date	<u>09/29/2017</u>	Weather Conditions	<u>Cloudy</u>	Depth to Water (ft bmp)	<u>5.68</u>
Project Number	<u>SEA41774.0002</u>	Water Quality Meter	<u>YSI</u>	Measured Well Depth (ft bmp)	<u>8.70</u>
Location	<u>DoubleTree Olympia</u>	Sampler	<u>JOE</u>	Water Column in Well	<u>3.02</u>
Gauge or Sample	<u>Gauge and Sample</u>	Casing Material	<u>PVC</u>	Gallons in Well	<u>0.49</u>
Purge Method	<u>Low Flow - Peristaltic Pump</u>	Casing Diameter (in)	<u>2</u>	Total Volume to Remove	<u>0.0</u>
Purge Volume Units	<u>ml</u>	Pump Intake Depth (ft bmp)	<u>8.50</u>		
Sampling Type	<u>Low Flow - Peristaltic Pump</u>	Casing Volume to Remove			
Comments	<u>LFP</u>				

### Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cumulative Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
10:19	200	600	20.6	7.02	750	-73.1	0.40		5.98
10:22	200	1200	20.6	7.03	747	-80.1	0.42		6.08
10:25	200	1800	20.6	7.03	747	-87.0	0.43		6.22

### Sampling Summary

Did Well Dewater?	<u>No</u>	Alkalinity	<u></u>
Sample Time	<u>10:30</u>	Ferrous Iron	<u></u>
Sample ID	<u>Olympia Doubletree-PMW-5(3Q17)</u>	MS/MSD Sample Time	<u></u>
Duplicate Sample ID	<u></u>	MS/MSD Sample ID	<u></u>
Dup Sample Time	<u></u>	EB Time	<u></u>
Color	<u>No</u>	EB Sample ID	<u></u>
Odor	<u>HC</u>	Remarks	<u>LFP</u>
Appearance	<u></u>		

### Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well Secured on initial inspection	X			
Well ID is Clearly Marked		X		
Is water present in well box	X			
Well Pad in Good Condition		X		
Wellbox Components Cleaned		X		
J-plug present and in good condition	X			
Lock present		X		
Other action performed (explain)		X		
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		

### PMW-6

Date	<u>09/27/2017</u>	Weather Conditions	<u>Sunny</u>	Depth to Water (ft bmp)	<u>5.86</u>
Project Number	<u>SEA41774.0002</u>	Water Quality Meter	<u>YSI</u>	Measured Well Depth (ft bmp)	<u>7.90</u>
Location	<u>DoubleTree Olympia</u>	Sampler	<u>JOE</u>	Water Column in Well	<u>2.04</u>
Gauge or Sample	<u>Gauge and Sample</u>	Casing Material	<u>PVC</u>	Gallons in Well	<u>0.33</u>
Purge Method	<u>Low Flow - Peristaltic Pump</u>	Casing Diameter (in)	<u>2</u>	Total Volume to Remove	<u>0.0</u>
Purge Volume Units	<u>ml</u>	Pump Intake Depth (ft bmp)	<u>7.50</u>		
Sampling Type	<u>Low Flow - Peristaltic Pump</u>	Casing Volume to Remove			
Comments	<u>LFP</u>				

### Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cumulative Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
15:00	200	600	19.7	6.92	1130	-97.2	0.49		6.45
15:03	200	1200	19.7	6.92	1132	-103.2	0.48		6.87
15:06	200	1800	19.6	6.92	1137	-110.8	0.51		7.20

### Sampling Summary

Did Well Dewater?	<u>No</u>	Alkalinity	
Sample Time	<u>15:10</u>	Ferrous Iron	
Sample ID	<u>Olympia Doubletree-PMW-6(3Q17)</u>	MS/MSD Sample Time	
Duplicate Sample ID		MS/MSD Sample ID	
Dup Sample Time		EB Time	
Color	<u>No</u>	EB Sample ID	
Odor	<u>HC</u>	Remarks	<u>LFP</u>
Appearance			

### Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well Secured on initial inspection	X			
Well ID is Clearly Marked		X		
Is water present in well box	X			
Well Pad in Good Condition		X		
Wellbox Components Cleaned		X		
J-plug present and in good condition	X			
Lock present		X		
Other action performed (explain)		X		
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		

**GROUNDWATER SAMPLING LOG**

Project No. SEA41774.0002 Well ID PMW-7

Date 9.27.17

Project Name/Location Blackstone Double Tree

Weather Sunny, Hot

Measuring Pt. TOC Screen Setting (ft-bmp) \_\_\_\_\_ Casing Diameter (in.) 2

Well Material  PVC  SS

Static Water Level (ft-bmp) 5.28 Total Depth (ft-bmp) 8.48 Water Column/ Gallons in Well \_\_\_\_\_

MP Elevation \_\_\_\_\_ Pump Intake (ft-bmp) \_\_\_\_\_ Purge Method: LFP

Sample Method LFP

Pump On/Off 1524 Volumes Purged \_\_\_\_\_ Centrifugal \_\_\_\_\_ Submersible \_\_\_\_\_ Other Perc

Sample Time: Label 1535 Replicate/ Code No. \_\_\_\_\_ Start \_\_\_\_\_ End \_\_\_\_\_

Sampled by PRMC

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1527	3	150	5.45	450	6.48	0.565		0.92	22.06	-137.0		
1529	5	150	5.47	750	6.51	0.570		0.28	21.83	-150.3		
1530	6	150	5.50	900	6.57	0.571		0.23	21.78	-159.9		
1531	7	150	5.51	1050	6.59	0.572		0.22	21.67	-165.7		

Constituents Sampled	Container	Number	Preservative

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: _____	Well Locked at Arrival: Yes / No
Condition of Well: _____	Well Locked at Departure: Yes / No
Well Completion: Flush Mount / Stick Up	Key Number To Well: _____

**GROUNDWATER SAMPLING LOG**

Project No. SEA 41774.0002 Well ID PMW-8 Page      of       
 Date 9.27.17  
 Project Name/Location Blackstone Double Tree Weather Sunny, Hot  
 Measuring Pt. TOC Screen      Casing      Well Material  PVC  
 Description      Setting (ft-bmp)      Diameter (in.) 2      SS  
 Static Water Level (ft-bmp) 5.95 Total Depth (ft-bmp) 7.55 Water Column/ Gallons in Well 7  
 MP Elevation      Pump Intake (ft-bmp)      Purge Method: LFP Sample Method LFP  
 Pump On/Off 1340 Volumes Purged      Centrifugal       
 Submersible       
 Other Peri  
 Sample Time: Label 1500 Replicate/ Code No.      Sampled by PRMC  
 Start       
 End     

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1344	4	150	6.78	600	6.55	1.026		1.71	22.74	-10.0	Clear	none
1345	5	150	7.03	750	6.56	1.033		1.26	22.17	-26.8		
1346	6	150	7.15	900	6.56	1.030		0.98	22.18	-37.5		
1347	7	150	7.30	1050	6.56		D R Y					
			5.96		6.86	0.997		2.15	25.72	-122.3		
NO PURGE SAMPLE TAKEN 9/29/17 1500												

9.29.17

Constituents Sampled	Container	Number	Preservative

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: _____	Well Locked at Arrival: Yes / No
Condition of Well: _____	Well Locked at Departure: Yes / No
Well Completion: Flush Mount / Stick Up	Key Number To Well: _____

**GROUNDWATER SAMPLING LOG**

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Project No. SEA41774.0002 Well ID PMW-9

Date 9.27.17

Project Name/Location Blacksfene Doubletree

Weather Sunny, warm

Measuring Pt. TOC Screen Setting (ft-bmp)      Casing Diameter (in.) 2

Well Material  PVC  SS

Static Water Level (ft-bmp) 5.86 Total Depth (ft-bmp) 8.29 Water Column/ Gallons in Well     

MP Elevation      Pump Intake (ft-bmp)      Purge Method: LFP

Sample Method LFP

Pump On/Off 1242/1258 Volumes Purged      Centrifugal      Submersible      Other Peri

Sample Time: Label 1254 Replicate/ Code No.       
Start 1251  
End 1258

Sampled by PRMC

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1246	4	200	6.74	800	6.70	536	-	0.49	21.63	-1366	Clear	none
1247	5	200	6.92	1000	6.78	534	-	0.44	21.71	-1400	1	1
1248	6	200	7.02	1200	6.78	537	-	0.43	21.68	-144.3		

Constituents Sampled	Container	Number	Preservative

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: <u>    </u>	Well Locked at Arrival: <u>Yes / No</u>
Condition of Well: <u>    </u>	Well Locked at Departure: <u>Yes / No</u>
Well Completion: <u>Flush Mount / Stick Up</u>	Key Number To Well: <u>    </u>

### PMW-10

Date	<u>09/27/2017</u>	Weather Conditions	<u>Sunny</u>	Depth to Water (ft bmp)	<u>6.89</u>
Project Number	<u>SEA41774.0002</u>	Water Quality Meter	<u>YSI</u>	Measured Well Depth (ft bmp)	<u>8.22</u>
Location	<u>DoubleTree Olympia</u>	Sampler	<u>JOE</u>	Water Column in Well	<u>1.33</u>
Gauge or Sample	<u>Gauge and Sample</u>	Casing Material	<u>PVC</u>	Gallons in Well	<u>0.22</u>
Purge Method	<u>Low Flow - Peristaltic Pump</u>	Casing Diameter (in)	<u>2</u>	Total Volume to Remove	<u>0.0</u>
Purge Volume Units	<u>ml</u>	Pump Intake Depth (ft bmp)	<u>8.00</u>		
Sampling Type	<u>Low Flow - Peristaltic Pump</u>	Casing Volume to Remove			
Comments	<u>LFP</u>				

### Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cuml Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
13:12	200	600	17.6	7.07	867	230.4	1.11		7.50
13:14	200	1200	17.6	7.01	855	222.6	1.07		7.75
13:16	200	1800	17.6	6.93	846	212.7	1.01		7.85

### Sampling Summary

Did Well Dewater?	<u>Yes</u>	Alkalinity	<u></u>
Sample Time	<u>13:20</u>	Ferrous Iron	<u></u>
Sample ID	<u>Olympia Doubletree-PMW-10(3Q17)</u>	MS/MSD Sample Time	<u></u>
Duplicate Sample ID	<u></u>	MS/MSD Sample ID	<u></u>
Dup Sample Time	<u></u>	EB Time	<u></u>
Color	<u>No</u>	EB Sample ID	<u></u>
Odor	<u>No</u>	Remarks	<u>LFP</u>
Appearance	<u></u>		

### Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well Secured on initial inspection	X			
Well ID is Clearly Marked		X		
Is water present in well box		X		
Well Pad in Good Condition		X		
Wellbox Components Cleaned		X		
J-plug present and in good condition	X			
Lock present		X		
Other action performed (explain)		X		
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		

### PMW-12

Date	<u>09/27/2017</u>	Weather Conditions	<u>Sunny</u>	Depth to Water (ft bmp)	<u>6.79</u>
Project Number	<u>SEA41774.0002</u>	Water Quality Meter	<u>YSI</u>	Measured Well Depth (ft bmp)	<u>9.19</u>
Location	<u>DoubleTree Olympia</u>	Sampler	<u>JOE</u>	Water Column in Well	<u>2.4</u>
Gauge or Sample	<u>Gauge and Sample</u>	Casing Material	<u>PVC</u>	Gallons in Well	<u>0.39</u>
Purge Method	<u>Low Flow - Peristaltic Pump</u>	Casing Diameter (in)	<u>2</u>	Total Volume to Remove	<u>0.0</u>
Purge Volume Units	<u>ml</u>	Pump Intake Depth (ft bmp)	<u>9.00</u>		
Sampling Type	<u>Low Flow - Peristaltic Pump</u>	Casing Volume to Remove			
Comments	<u>LFP</u>				

### Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cuml Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
13:59	200	600	18.2	6.82	645	-52.5	1.61		7.02
14:02	200	1200	18.2	6.83	641	-57.5	1.52		7.40
14:05	200	1800	18.1	6.82	640	-65.4	1.44		7.52

### Sampling Summary

Did Well Dewater?	<u>No</u>	Alkalinity	<u></u>
Sample Time	<u>14:15</u>	Ferrous Iron	<u></u>
Sample ID	<u>Olympia Doubletree-PMW-12(3Q17)</u>	MS/MSD Sample Time	<u></u>
Duplicate Sample ID	<u></u>	MS/MSD Sample ID	<u></u>
Dup Sample Time	<u></u>	EB Time	<u></u>
Color	<u>No</u>	EB Sample ID	<u></u>
Odor	<u>No</u>	Remarks	<u>LFP</u>
Appearance	<u></u>		

### Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well Secured on initial inspection	X			
Well ID is Clearly Marked		X		
Is water present in well box		X		
Well Pad in Good Condition		X		
Wellbox Components Cleaned		X		
J-plug present and in good condition	X			
Lock present		X		
Other action performed (explain)		X		
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		

**GROUNDWATER SAMPLING LOG**

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Project No. SEA41774.0002 Well ID PMW-13

Date 9.29.17

Project Name/Location Blackstone Double Tree

Weather Cloudy, rain

Measuring Pt. TOC Screen Setting (ft-bmp)      Casing Diameter (in.) 2

Well Material  PVC  SS

Static Water Level (ft-bmp)      Total Depth (ft-bmp)      Water Column/ Gallons in Well     

MP Elevation      Pump Intake (ft-bmp)      Purge Method: LFD

Sample Method LFD

Pump On/Off 1115 Volumes Purged      Centrifugal      Submersible      Other Per

Sample Time: Label 1138 Replicate/ Code No.       
Start       
End     

Sampled by PRMC

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1118	3	150	6.13	450	6.54	0.742		0.42	20.07	-99.4		
1120	5	150	6.32	750	6.63	0.707		0.38	20.08	-137.5		
1122	7	150	6.42	1050	6.68	0.667		0.36	20.09	-141.4		
1124	9	150		1350	6.70	0.650		0.34	20.25	-142.0		
ML												
DRY												
LET RECHARGE AND THEN NO PURGE SAMPLE												

Constituents Sampled	Container	Number	Preservative

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: <u>    </u>	Well Locked at Arrival: <u>Yes / No</u>
Condition of Well: <u>Silt build up</u>	Well Locked at Departure: <u>Yes / No</u>
Well Completion: <u>Flush Mount / Stick Up</u>	Key Number To Well: <u>    </u>

**GROUNDWATER SAMPLING LOG**

Project No. SEA41774.0002 Well ID PMW-14 Page      of       
 Date 9.29.17  
 Project Name/Location Blackstone Double Tree Weather Cloudy, cool  
 Measuring Pt. TOC Screen      Casing      Well Material X PVC      SS  
 Description      Setting (ft-bmp)      Diameter (in.) 2  
 Static Water Level (ft-bmp) 5.36 Total Depth (ft-bmp)      Water Column/ Gallons in Well       
 MP Elevation      Pump Intake (ft-bmp)      Purge Method: LFP Sample Method LFP  
 Pump On/Off 10367004 Volumes Purged      Centrifugal      Submersible      Other Peri  
 Sample Time: Label 939 Replicate/ Code No.      Sampled by PRMC  
 Start      End     

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
942	3	200	5.66	600	6.58	0.546		0.50	20.73	-150.3		
944	5	200	5.72	1000	6.61	0.543		0.42	20.69	-155.4		
945	6	200	5.75	1200	6.64	0.544		0.38	20.69	-160.5		

Constituents Sampled	Container	Number	Preservative

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: <u>SW corner</u>	Well Locked at Arrival: <u>Yes</u> / No
Condition of Well: <u>Good</u>	Well Locked at Departure: <u>Yes</u> / No
Well Completion: <u>Flush Mount</u> / Stick Up	Key Number To Well: <u>    </u>

### GROUNDWATER SAMPLING LOG

Project No. SEA41774.0002 Well ID PMW-15 Page      of       
 Project Name/Location Blackstone Double Tree Date 9.29.17  
 Measuring Pt. TOC Screen Setting (ft-bmp)      Casing Diameter (in.) 2 Weather Cool Cloudy  
 Static Water Level (ft-bmp)      Total Depth (ft-bmp)      Water Column/ Gallons in Well      Well Material  PVC  SS  
 MP Elevation      Pump Intake (ft-bmp)      Purge Method: LFP Sample Method LFP  
 Pump On/Off 1232 Volumes Purged      Centrifugal      Submersible      Other peri  
 Sample Time: Label 1248 Replicate/ Code No.      Sampled by PRMC  
 Start      End     

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
<del>1236</del>	4	150	5.85	600	6.59	0.591		0.35	18.44	-30.8		
1238	6	150	5.92	900	6.62	0.583		0.28	18.62	-109.2		
1240	8	150	5.95	1200	6.66	0.570		0.23	18.76	-121.2		
1241	9	150	5.95	<del>1350</del> 1500	6.67	0.564		0.21	18.79	-124.3		
1243	11	150	5.92	1650	6.69	0.558		0.21	18.83	-128.3		

Constituents Sampled	Container	Number	Preservative

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: _____	Well Locked at Arrival: Yes / No
Condition of Well: _____	Well Locked at Departure: Yes / No
Well Completion: Flush Mount / Stick Up	Key Number To Well: _____

### GROUNDWATER SAMPLING LOG

Page \_\_\_ of \_\_\_

 Project No. SEA4774.0007 Well ID PMW-16

 Date 9.29.17

 Project Name/Location Blackstone Double Tree

 Weather Cloudy, cool

 Measuring Pt. TOC Screen Setting (ft-bmp) \_\_\_\_\_ Casing Diameter (in.) 2

 Well Material  PVC  SS

 Static Water Level (ft-bmp) 4.53 Total Depth (ft-bmp) \_\_\_\_\_ Water Column/ Gallons in Well \_\_\_\_\_

 MP Elevation \_\_\_\_\_ Pump Intake (ft-bmp) \_\_\_\_\_ Purge Method: LFP

 Sample Method LFP

 Pump On/Off 1021 Volumes Purged \_\_\_\_\_ Centrifugal \_\_\_\_\_ Submersible \_\_\_\_\_ Other Peri

 Sample Time: Label 1035 Replicate/ Code No. \_\_\_\_\_  
 Start \_\_\_\_\_  
 End \_\_\_\_\_

 Sampled by PRMC

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
<u>925 1025</u>	<u>4</u>	<u>200</u>	<u>4.55</u>	<u>800</u>	<u>7.03</u>	<u>0.466</u>		<u>0.52</u>	<u>20.65</u>	<u>-90.2</u>		
<u>927 1027</u>	<u>6</u>	<u>200</u>	<u>4.55</u>	<u>1200</u>	<u>7.11</u>	<u>0.456</u>		<u>0.36</u>	<u>20.75</u>	<u>-133.4</u>		
<u>1028</u>	<u>8</u>	<u>200</u>	<u>4.55</u>	<u>1600</u>	<u>7.13</u>	<u>0.453</u>		<u>0.32</u>	<u>20.77</u>	<u>-140.5</u>		
<u>1030</u>	<u>9</u>	<u>200</u>	<u>4.55</u>	<u>1800</u>	<u>7.12</u>	<u>0.453</u>		<u>0.29</u>	<u>20.84</u>	<u>-142.8</u>		

Constituents Sampled	Container	Number	Preservative

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: _____	Well Locked at Arrival: <input type="checkbox"/> Yes / <input type="checkbox"/> No
Condition of Well: _____	Well Locked at Departure: <input type="checkbox"/> Yes / <input type="checkbox"/> No
Well Completion: <input type="checkbox"/> Flush Mount / <input type="checkbox"/> Stick Up	Key Number To Well: _____

### PMW-17

Date	<u>09/29/2017</u>	Weather Conditions	<u>Cloudy</u>	Depth to Water (ft bmp)	<u>4.57</u>
Project Number	<u>SEA41774.0002</u>	Water Quality Meter	<u>YSI</u>	Measured Well Depth (ft bmp)	<u>9.20</u>
Location	<u>DoubleTree Olympia</u>	Sampler	<u>JOE</u>	Water Column in Well	<u>4.63</u>
Gauge or Sample	<u>Gauge and Sample</u>	Casing Material	<u>PVC</u>	Gallons in Well	<u>0.76</u>
Purge Method	<u>Low Flow - Peristaltic Pump</u>	Casing Diameter (in)	<u>2</u>	Total Volume to Remove	<u>0.0</u>
Purge Volume Units	<u>ml</u>	Pump Intake Depth (ft bmp)	<u>9.00</u>		
Sampling Type	<u>Low Flow - Peristaltic Pump</u>	Casing Volume to Remove			
Comments	<u>LFP</u>				

### Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cuml Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
09:27	200	600	20.2	7.32	675	-136.6	0.51		4.94
09:30	200	1800	20.2	7.33	678	-145.2	0.42		5.03
09:33	200	2400	20.2	7.35	680	-154.7	0.35		5.03

### Sampling Summary

Did Well Dewater?	<u>No</u>	Alkalinity	<u></u>
Sample Time	<u>09:40</u>	Ferrous Iron	<u></u>
Sample ID	<u>Olympia Doubletree-PMW-17(3Q17)</u>	MS/MSD Sample Time	<u></u>
Duplicate Sample ID	<u></u>	MS/MSD Sample ID	<u></u>
Dup Sample Time	<u></u>	EB Time	<u></u>
Color	<u>No</u>	EB Sample ID	<u></u>
Odor	<u>HC</u>	Remarks	<u>LFP</u>
Appearance	<u></u>		

### Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well Secured on initial inspection	X			
Well ID is Clearly Marked		X		
Is water present in well box	X			
Well Pad in Good Condition		X		
Wellbox Components Cleaned		X		
J-plug present and in good condition	X			
Lock present		X		
Other action performed (explain)		X		
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		

### PMW-18

Date	<u>09/29/2017</u>	Weather Conditions	<u>Cloudy</u>	Depth to Water (ft bmp)	<u>6.21</u>
Project Number	<u>SEA41774.0002</u>	Water Quality Meter	<u>YSI</u>	Measured Well Depth (ft bmp)	<u>9.43</u>
Location	<u>DoubleTree Olympia</u>	Sampler	<u>JOE</u>	Water Column in Well	<u>3.22</u>
Gauge or Sample	<u>Gauge and Sample</u>	Casing Material	<u>PVC</u>	Gallons in Well	<u>0.53</u>
Purge Method	<u>Low Flow - Peristaltic Pump</u>	Casing Diameter (in)	<u>2</u>	Total Volume to Remove	<u>0.0</u>
Purge Volume Units	<u>ml</u>	Pump Intake Depth (ft bmp)	<u>9.20</u>		
Sampling Type	<u>Low Flow - Peristaltic Pump</u>	Casing Volume to Remove			
Comments	<u>LFP</u>				

### Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cuml Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
11:05	200	600	18.6	6.87	1015	-108.8	0.27		7.27
11:08	200	1200	18.6	6.87	1011	-110.8	0.27		7.35
11:11	200	1800	18.6	6.86	1006	-112.7	0.27		7.50

### Sampling Summary

Did Well Dewater?	<u>No</u>	Alkalinity	<u></u>
Sample Time	<u>11:20</u>	Ferrous Iron	<u></u>
Sample ID	<u>Olympia Doubletree-PMW-18(3Q17)</u>	MS/MSD Sample Time	<u></u>
Duplicate Sample ID	<u></u>	MS/MSD Sample ID	<u></u>
Dup Sample Time	<u></u>	EB Time	<u></u>
Color	<u>No</u>	EB Sample ID	<u></u>
Odor	<u>HC</u>	Remarks	<u>LFP</u>
Appearance	<u></u>		

### Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well Secured on initial inspection	X			
Well ID is Clearly Marked		X		
Is water present in well box	X			
Well Pad in Good Condition		X		
Wellbox Components Cleaned		X		
J-plug present and in good condition	X			
Lock present		X		
Other action performed (explain)		X		
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		

**GROUNDWATER SAMPLING LOG**

Project No. \_\_\_\_\_ Well ID PMW-19 Date 9-29-17

Project Name/Location Olympia Double Tree Weather \_\_\_\_\_

Measuring Pt. \_\_\_\_\_ Screen \_\_\_\_\_ Casing \_\_\_\_\_ Well Material      PVC  
 Description \_\_\_\_\_ Setting (ft-bmp) \_\_\_\_\_ Diameter (in.) \_\_\_\_\_      SS

Static Water Level (ft-bmp) 6.91 Total Depth (ft-bmp) 13.71 Water Column/ Gallons in Well \_\_\_\_\_

MP Elevation \_\_\_\_\_ Pump Intake (ft-bmp) \_\_\_\_\_ Purge Method: \_\_\_\_\_ Sample Method LF  
 Pump On/Off 1242 Volumes Purged \_\_\_\_\_ Centrifugal \_\_\_\_\_  
 Submersible \_\_\_\_\_  
 Other \_\_\_\_\_

★ Sample Time: Label 1255 Replicate/ Code No. \_\_\_\_\_  
 Start \_\_\_\_\_  
 End \_\_\_\_\_

Sampled by JOE

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1245	3	200	7.08	600	7.77	520.0		0.38	17.8	-56.1	No	
1248	3	200	7.22	600	7.76	527.1		0.36	17.8	-62.2		
1251	3	200	7.39	600	7.74	530.4		0.35	17.8	-68.3		
				Total	1800							

Constituents Sampled	Container	Number	Preservative

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: \_\_\_\_\_ Well Locked at Arrival:      Yes /      No

Condition of Well: \_\_\_\_\_ Well Locked at Departure:      Yes /      No

Well Completion:      Flush Mount /      Stick Up      Key Number To Well: \_\_\_\_\_

### GROUNDWATER SAMPLING LOG

Page \_\_\_ of \_\_\_

Project No. SEA41774.0002 Well ID PMW-20 Date 9.29.17  
 Project Name/Location Blackstone DoubleTree Weather Sunny, cool  
 Measuring Pt. TOC Screen Setting (ft-bmp) \_\_\_\_\_ Casing Diameter (in.) 2 Well Material X PVC \_\_\_\_\_ SS  
 Static Water Level (ft-bmp) \_\_\_\_\_ Total Depth (ft-bmp) \_\_\_\_\_ Water Column/ Gallons in Well \_\_\_\_\_  
 MP Elevation \_\_\_\_\_ Pump Intake (ft-bmp) \_\_\_\_\_ Purge Method: LFD Sample Method CFD  
 Pump On/Off 1413 Volumes Purged \_\_\_\_\_ Centrifugal \_\_\_\_\_ Submersible \_\_\_\_\_ Other Peri  
 Sample Time: Label 1425 Replicate/ Code No. \_\_\_\_\_ Start \_\_\_\_\_ End \_\_\_\_\_  
 Sampled by PEMC

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1416	3	200	6.13	600	6.77	2.050		0.70	21.77	-110.9		
1418	5	200	6.14	1000	6.74	2.060		0.51	21.62	-114.6		
1419	6	200	6.14	1200	6.72	2.066		0.47	21.57	-115.7		
1420	7	200	6.14	1400	6.73	2.070		0.44	21.54	-117.0		

Constituents Sampled	Container	Number	Preservative

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: _____	Well Locked at Arrival: Yes / No
Condition of Well: _____	Well Locked at Departure: Yes / No
Well Completion: Flush Mount / Stick Up	Key Number To Well: _____



### Groundwater Gauging Form

Project No.: Olympia Doubletree (Blackstone) (SEA41774.0002) Page 1 of 2

Site Location: 415 Capitol Way North, Olympia, WA

Prepared By: Ryan Brauchla Date: 12/21/2017

Gauging Equipment: Water Probe / Oil-Water Interface Probe Other \_\_\_\_\_

Well ID	Time	Sheen or Odor	LNAPL Depth	LNAPL Thickness	DTW	TD	PID	Notes
PMW-1	0823	-	-	-	5.50'	(12.33')	0.0	WIV (Water In Vault)
PMW-2	0803	-	-	-	5.02'	(8.99')	0.0	WIV
PMW-3	0609	-	-	-	4.44'	(11.75')	0.0	WIV
PMW-4	0831	-	-	-	4.43'	(12.02')	0.0	WIV
PMW-5	0816	-	-	-	4.72'	(8.70')	0.3	WIV
PMW-6	0800	-	-	-	5.07'	(7.90')	0.0	
PMW-7	0806	-	-	-	4.34'	(8.48')	2.5	WIV
PMW-8	0753	-	-	-	5.20'	(7.55')	0.0	WIV
PMW-9	0750	-	-	-	5.09'	(8.29')	0.0	
PMW-10	0759	-	-	-	6.15'	(8.22')	0.0	
PMW-11	0757	-	-	-	5.71'	(5.72')	0.0	DRY
PMW-12	0755	-	-	-	6.02'	(9.19')	0.0	
PMW-13	0747	-	-	-	4.79'	(6.44')	0.0	WIV
PMW-14	0745	HCL0	-	-	4.11'	(9.56')	27.4	WIV
PMW-15	0740	-	-	-	4.50'	(10.26')	0.0	



**GROUNDWATER SAMPLING LOG**

Project No. SEA41774.0002 Well ID PMW-1 Date 12/21/2017

Project Name/Location Olympia Doubletree (Blackstone) / 415 Capitol Way North, Olympia, WA Weather 28°F SUNNY

Measuring Pt. top of casing Screen Setting (ft-bmp) - Casing Diameter (in.) 2 Well Material  PVC  SS

Static Water Level (ft-bmp) 5.50 Total Depth (ft-bmp) 12.33' Water Column/ Gallons in Well 6.83' / 1.1 gallons

MP Elevation -- Pump Intake (ft-bmp) 11.33' Purge Method: LFP Sample Method grab

Pump On/Off 0915/0945 Volumes Purged 0.5 Centrifugal  Submersible  Other peristaltic pump

Sample Time: Label 0935 Replicate/ Code No. -- Sampled by RB/EN  
 Start 0935  
 End 0945

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
0915	0	0.05	5.50	START PURGE							BROWN	NONE
0918	3			0	6.99	0.170.0	-	3.23	13.6	63.7	CLEAR	
0923	8		5.59	-	7.25	0.168.3	-	0.79	13.5	-88.0		
0925	10		5.59	-	7.31	0.168.5	-	0.62	13.6	-84.4		
0930	15		5.59	-	7.31	0.168.6	-	0.51	13.5	-87.9		
0935	20	↓	5.59	0.5	7.33	0.167.9	-	0.47	13.6	-84.0	↓	↓

Constituents Sampled	Container	Number	Preservative
GRO by NWTPH-Gx	VOA	3	HCl
BTEX by 8260B	VOA	3	HCl
DRO/HO by NWTPH-Dx	AMBER	2	HCl

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: <u>PMW-1</u>	Well Locked at Arrival: Yes / <input checked="" type="radio"/> No
Condition of Well: <u>GOOD, NO BELTS</u>	Well Locked at Departure: Yes / <input checked="" type="radio"/> No
Well Completion: <input checked="" type="radio"/> Flush Mount / <input type="radio"/> Stick Up	Key Number To Well:

**GROUNDWATER SAMPLING LOG**

Project No. SEA41774.0002 Well ID PMW-2 Date 12/21/2017

Project Name/Location Olympia Doubletree (Blackstone) / 415 Capitol Way North, Olympia, WA Weather 38°F, cloudy

Measuring Pt. top of casing Screen - Casing Diameter (in.) 2" Well Material  PVC  SS

Static Water Level (ft-bmp) 5.02' Total Depth (ft-bmp) 8.99' Water Column/ Gallons in Well 3.97' / 10.6 gallons

MP Elevation -- Pump Intake (ft-bmp) 7' Purge Method: LFP Sample Method grab

Pump On/Off 1436/1459 Volumes Purged 1.2 Centrifugal  Submersible  Other peristaltic pump

Sample Time: Label 1450 Replicate/ Code No. -- Sampled by RB/EN

Start 1454 End 1459

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1446	10	0.05	6.55	0.5	7.08	817	-	0.41	13.2	-126.5	clear	no
1448	12	0.05	6.53	0.6	7.08	812	-	0.39	13.3	-129.5	clear	no
1450	14	0.05	6.52	0.7	7.08	811	-	0.39	13.2	-133.9	clear	no

Constituents Sampled	Container	Number	Preservative
GRO by NWTPH-Gx	VOA	3	HCl
BTEX by 8260B	VOA	3	HCl
DRO/HO by NWTPH-Dx	AMBER	2	HCl

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: parking lot - SE Well Locked at Arrival: Yes /  No

Condition of Well: WIV Well Locked at Departure: Yes /  No

Well Completion:  Flush Mount /  Stick Up Key Number To Well: \_\_\_\_\_

**GROUNDWATER SAMPLING LOG**

Project No. SEA41774.0002 Well ID PMW-3 Date 12/21/2017

Project Name/Location Olympia Doubletree (Blackstone) / 415 Capitol Way North, Olympia, WA Weather 32°F, clear

Measuring Pt. Description top of casing Screen Setting (ft-bmp) ~ Casing Diameter (in.) 2" Well Material  PVC  SS

Static Water Level (ft-bmp) 4.44' Total Depth (ft-bmp) 11.75' Water Column/ Gallons in Well 7.31' / 1.1 gallons

MP Elevation -- Pump Intake (ft-bmp) 9' Purge Method: LFP Sample Method grab

Pump On/Off 1002/1021 Volumes Purged ~0.6 Centrifugal  Submersible  Other peristaltic pump

Sample Time: Label 1020 Replicate/ Code No. -- Sampled by RB/EN

Start 1017 End 1021

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1012	10	0.05	4.55	0.5	7.28	538.7	-	6.99	10.7	94.2	clear	no
1014	12	0.05	4.55	0.6	7.27	540.0	-	7.00	10.7	98.3	clear	no
1016	14	0.05	4.56	0.7	7.27	539.9	-	7.09	10.8	102.2	clear	no

Constituents Sampled	Container	Number	Preservative
GRO by NWTPH-Gx	VOA	3	HCl
BTEX by 8260B	VOA	3	HCl
DRO/HO by NWTPH-Dx	AMBER	2	HCl

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: west edge of parking lot Well Locked at Arrival: Yes /  No

Condition of Well: water in vault Well Locked at Departure: Yes /  No

Well Completion:  Flush Mount /  Stick Up Key Number To Well: \_\_\_\_\_

**GROUNDWATER SAMPLING LOG**

Project No. SEA41774.0002

Well ID PMW-5

Date 12/21/2017

Project Name/Location Olympia Doubletree (Blackstone) / 415 Capitol Way North, Olympia, WA

Weather 39°F, CLOUDY

Measuring Pt. Description top of casing Screen Setting (ft-bmp) - Casing Diameter (in.) 2

Well Material  PVC  SS

Static Water Level (ft-bmp) 4.83 Total Depth (ft-bmp) 8.70' Water Column/ Gallons in Well 3.87' / 10.6 gallons

MP Elevation -- Pump Intake (ft-bmp) 7.5' Purge Method: LFP

Sample Method grab

Pump On/Off 1430/1505 Volumes Purged 1.0 Centrifugal  Submersible  Other peristaltic pump

Sample Time: Label 1455 Replicate/ Code No. --  
Start 1455  
End 1505

Sampled by RB/EN

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (µS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1430	0	0.05	4.83	0	START PURGE							
1431	1		5.30	-	7.03	0.69	-	5.03	13.2	-36.9	Yellowish	Strong
1435	5		5.30	-	6.97	0.68	-	2.56	12.5	-54.6	Clear	
1440	10		5.21	-	6.98	0.68	-	0.57	12.5	-92.1		
1445	15		5.25	-	7.00	0.67	-	0.39	12.8	-97.0		
1450	20		5.25	-	7.05	0.66	-	0.34	12.5	-100.6		
1455	25		5.25	1	7.08	0.66	-	0.33	12.8	-100.6		

Constituents Sampled	Container	Number	Preservative
GRO by NWTPH-Gx	VOA	3	HCl
BTEX by 8260B	VOA	3	HCl
DRO/HO by NWTPH-Dx	AMBER	2	HCl

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: <u>PMW-5</u>	Well Locked at Arrival: Yes / <input checked="" type="radio"/> No
Condition of Well: <u>Good, Two Bats</u>	Well Locked at Departure: Yes / <input checked="" type="radio"/> No
Well Completion: <u>Flush Mount</u> / Stick Up	Key Number To Well: _____

**GROUNDWATER SAMPLING LOG**

Project No. SEA41774.0002 Well ID PMW-6 Date 12/21/2017  
 Project Name/Location Olympia Doubletree (Blackstone) / 415 Capitol Way North, Olympia, WA Weather 35°F, SUNNY  
 Measuring Pt. top of casing Screen - Casing Diameter (in.) 2 Well Material X PVC SS  
 Description top of casing Setting (ft-bmp) - Water Column/ Gallons in Well 2.83 / 10.45 gallons  
 Static Water Level (ft-bmp) 5.07 Total Depth (ft-bmp) 7.90'  
 MP Elevation -- Pump Intake (ft-bmp) 7' Purge Method: LFP Sample Method grab  
 Pump On/Off 1250/1335 Volumes Purged 1.0 Centrifugal Submersible Other peristaltic pump  
 Sample Time: Label 1325 Replicate/ Code No. -- Sampled by RB/EN  
 Start 1325  
 End 1335

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1250	0	0.05	5.07	0	START PURGE						CLEAR	NONE
1251	1		5.80	-	7.20	0.516	-	6.80	10.5	-15.1		
1255	5		5.82	-	7.13	0.540	-	6.61	10.5	-19.0		
1300	10		6.15	-	7.06	0.72	-	4.16	11.1	-31.9		SLIGHT ODF
1305	15		6.15	-	7.02	0.85	-	2.42	10.9	-103.9		
1310	20		6.16	-	6.97	0.94	-	1.60	11.0	-115.2		
1315	25		6.16	-	6.94	0.99	-	1.00	11.1	-118.3		
1320	30		6.20	-	6.92	1.04	-	1.09	11.2	-119.8		
1325	35		6.20	1	6.91	1.08	-	1.00	11.7	-117.9		

Constituents Sampled	Container	Number	Preservative
GRO by NWTPH-Gx	VOA	3	HCl
BTEX by 8260B	VOA	3	HCl
DRO/HO by NWTPH-Dx	AMBER	2	HCl
Total Dissolved Solids by 160.1	POLY	1	none

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: PMW-6 Well Locked at Arrival: Yes /  No

Condition of Well: GOOD Well Locked at Departure: Yes /  No

Well Completion:  Flush Mount /  Stick Up Key Number To Well: \_\_\_\_\_

**GROUNDWATER SAMPLING LOG**

Project No. SEA41774.0002

Well ID PMW-7

Date 12/21/2017

Project Name/Location Olympia Doubletree (Blackstone) / 415 Capitol Way North, Olympia, WA

Weather 35°F, SUNNY / PARTLY CLOUDY

Measuring Pt. Description top of casing Screen Setting (ft-bmp) - Casing Diameter (in.) 2

Well Material X PVC SS

Static Water Level (ft-bmp) 4.34' Total Depth (ft-bmp) 8.48' Water Column/ Gallons in Well 4.14' / 0.66 gallons

MP Elevation -- Pump Intake (ft-bmp) 7.5' Purge Method: LFP

Sample Method grab

Pump On/Off 1345/1415 Volumes Purged 1.0 Centrifugal Submersible Other peristaltic pump

Sample Time: Label 1405 Replicate/ Code No. --  
Start 1405  
End 1415

Sampled by RB/EN

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1345	0	0.05	4.34	0	START PURGE							
1347	2		4.69	-	7.33	0.567	-	1.23	11.9	-66.7	CLEAR	NONE
1350	5		4.70	-	7.31	0.571	-	0.98	11.8	-69.4		
1355	10		4.70	-	7.28	0.560	-	0.47	12.1	-82.5		
1400	15		4.70	-	7.28	0.560	-	0.39	11.8	-92.2		
1405	20		4.70	1	7.27	0.557	-	0.38	12.0	-95.3		

Constituents Sampled	Container	Number	Preservative
GRO by NWTPH-Gx	VOA	3	HCl
BTEX by 8260B	VOA	3	HCl
DRO/HO by NWTPH-Dx	AMBER	2	HCl

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: <u>PMW-7</u>	Well Locked at Arrival: Yes / <input checked="" type="radio"/> No
Condition of Well: <u>GOOD, NO BOLTS</u>	Well Locked at Departure: Yes / <input checked="" type="radio"/> No
Well Completion: <input checked="" type="radio"/> Flush Mount / <input type="radio"/> Stick Up	Key Number To Well: _____

**GROUNDWATER SAMPLING LOG**

Project No. SEA41774.0002 Well ID PMW-8 Date 12/21/2017  
 Project Name/Location Olympia Doubletree (Blackstone) / 415 Capitol Way North, Olympia, WA Weather 38°F, cloudy  
 Measuring Pt. Description top of casing Screen Setting (ft-bmp) - Casing Diameter (in.) 2" Well Material X PVC  
 Static Water Level (ft-bmp) 5.20' Total Depth (ft-bmp) 7.55' Water Column/ Gallons in Well 2.35' / 10.4 gallons SS  
 MP Elevation -- Pump Intake (ft-bmp) 7' Purge Method: LFP Sample Method grab  
 Pump On/Off 1515/1558 Volumes Purged ~4.3 ~5 Centrifugal \_\_\_\_\_ Submersible \_\_\_\_\_ Other peristaltic pump  
 Sample Time: Label 1540 1545 Replicate/ Code No. -- Other peristaltic pump Sampled by RB/EN  
 Start 1545 End 1558

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1525	10	0.05	7.55	1.0	8.25	1549	-	8.77	11.4	-17.4	clear	no
1528	13	0.05	7.55	1.3	9.66	1556	-	9.58	10.7	-10.8	clear	no
1530	15	0.05	7.55	1.5	9.72	1558	-	9.99	10.7	-8.8	clear	no
1532	17	0.05	7.55	1.7	7.36	1557	-	10.02	10.7	-7.9	clear	no
1534	19	0.05	7.55	1.9	7.30	1548	-	10.01	10.7	-8.1	clear	no
1536	21	0.05	7.55	2.1	7.30	1546	-	9.94	10.7	-8.4	clear	no

Constituents Sampled	Container	Number	Preservative
GRO by NWTPH-Gx	VOA	3	HCl
BTEX by 8260B	VOA	3	HCl
DRO/HO by NWTPH-Dx	AMBER	2	HCl

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: SE parking area Well Locked at Arrival: Yes /  No  
 Condition of Well: WIV Well Locked at Departure: Yes /  No  
 Well Completion:  Flush Mount /  Stick Up Key Number To Well: \_\_\_\_\_

**GROUNDWATER SAMPLING LOG**

Project No. SEA41774.0002 Well ID PMW-9 Date 12/22/2017  
 Project Name/Location Olympia Doubletree (Blackstone) / 415 Capitol Way North, Olympia, WA Weather 36°F, RAIN  
 Measuring Pt. Description top of casing Screen Setting (ft-bmp) - Casing Diameter (in.) 2 Well Material X PVC - SS  
 Static Water Level (ft-bmp) 5.15 Total Depth (ft-bmp) 8.29' Water Column/ Gallons in Well 3.14' / 0.5 gallons  
 MP Elevation -- Pump Intake (ft-bmp) 7' Purge Method: LFP Sample Method grab  
 Pump On/Off 0908/0955 Volumes Purged 1.5 Centrifugal - Submersible - Other peristaltic pump  
 Sample Time: Label 0940 Replicate/ Code No. DUP-2 Sampled by RB/EN  
 Start 0940 End 0955

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
0908	0	0.05	5.15	0	START PURGE							
0909	1		6.05		7.83	0.205	-	6.48	12.0	29.7	CLEAR	None
0913	5		6.24		7.70	0.207	-	6.06	12.0	21.8		
0915	7		6.45		7.60	0.223	-	5.52	12.0	5.7		
0920	12		6.60		7.53	0.242	-	5.50	12.0	-17.5		
0923	15		6.88		7.47	0.250	-	3.82	12.4	-50.4		
0925	17		7.10		7.40	0.279	-	3.17	12.6	-55.6		
0927	19		7.29		7.36	0.298	-	2.46	12.6	-73.7		
0930	22		7.35		7.33	0.317	-	1.65	12.7	-84.2		
0933	25		7.36		7.32	0.330	-	1.29	12.5	-89.9		
0936	28		7.37		7.31	0.339	-	1.09	12.6	-91.1		
0940	32		7.38	1.3	7.32	0.338	-	1.07	12.6	-91.3	↓	↓

Constituents Sampled	Container	Number	Preservative
GRO by NWTPH-Gx	VOA	3	HCl
BTEX by 8260B	VOA	3	HCl
DRO/HO by NWTPH-Dx	AMBER	2	HCl

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: <u>NEAR SOUTH DRIVEWAY</u>	Well Locked at Arrival: Yes / <u>(No)</u>
Condition of Well: <u>WATER IN VAULT</u>	Well Locked at Departure: Yes / <u>(No)</u>
Well Completion: <u>(Flush Mount)</u> / Stick Up	Key Number To Well: _____

**GROUNDWATER SAMPLING LOG**

Project No. SEA41774.0002 Well ID PMW-10 Date 12/21/2017

Project Name/Location Olympia Doubletree (Blackstone) / 415 Capitol Way North, Olympia, WA Weather 39°F, cloudy

Measuring Pt. top of casing Screen Setting (ft-bmp) - Casing Diameter (in.) 2 Well Material  PVC  SS

Static Water Level (ft-bmp) 6.15 Total Depth (ft-bmp) 8.22' Water Column/ Gallons in Well 2.07' / 0.33 gallons

MP Elevation -- Pump Intake (ft-bmp) 7' Purge Method: LFP Sample Method grab

Pump On/Off 1515/1610 Volumes Purged 1.0 Centrifugal  Submersible  Other peristaltic pump

Sample Time: Label 1540 Replicate/ Code No. DUP-1 Sampled by RB/EN

Start 1540 End 1610

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1515	0	0.05	6.15	0	START PURGE							
1516	1		6.48	-	7.29	0.80	-	4.16	10.8	-24.4	CLEAR	SLIGHT ODO2
1520	5		6.49	-	7.26	0.83	-	1.44	10.9	-31.7		
1525	10		6.49	-	7.23	0.82	-	1.12	10.9	-69.2		
1530	15		6.51	-	7.21	0.81	-	1.80	10.9	-71.6		
1535	20		6.51	-	7.21	0.81	-	1.90	10.7	-71.6		
1540	25		6.51	1	7.20	0.81	-	1.99	10.8	-70.9		

Constituents Sampled	Container	Number	Preservative
GRO by NWTPH-Gx	VOA	3	HCl
BTEX by 8260B	VOA	3	HCl
DRO/HO by NWTPH-Dx	AMBER	2	HCl
Total Naphthalenes by 8270 SIM	AMBER	2	none
Total Dissolved Solids by 160.1	POLY	1	none

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: PMW-10 Well Locked at Arrival: Yes /  No

Condition of Well: GOOD Well Locked at Departure: Yes /  No

Well Completion:  Flush Mount /  Stick Up Key Number To Well: \_\_\_\_\_

**GROUNDWATER SAMPLING LOG**

Project No. SEA41774.0002 Well ID PMW-12 Date 12/22/2017

Project Name/Location Olympia Doubletree (Blackstone) / 415 Capitol Way North, Olympia, WA Weather 36°F, cloudy

Measuring Pt. Description top of casing Screen Setting (ft-bmp) - Casing Diameter (in.) 2 Well Material  PVC  SS

Static Water Level (ft-bmp) 6.10 Total Depth (ft-bmp) 9.19' Water Column/ Gallons in Well 3.09' / 10.5 gallons

MP Elevation -- Pump Intake (ft-bmp) 8' Purge Method: LFP Sample Method grab

Pump On/Off 0820 / 0850 Volumes Purged 1.0 Centrifugal  Submersible  Other peristaltic pump

Sample Time: Label 0840 Replicate/ Code No. -- Sampled by RB/EN

Start 0840 End 0850

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (µMhos) (µS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
0820	0	0.05	6.10	0	START PURGE							
0821	1		6.30	-	7.16	0.73	-	2.32	11.5	91.4	CLEAR	NONE
0825	5		6.31	-	7.15	0.75	-	1.83	11.2	17.7		
0830	10		6.31	-	7.12	0.74	-	1.19	11.7	-61.3		
0835	15		6.31	-	7.11	0.74	-	0.94	11.1	-82.4		
0837	17		6.31	-	7.12	0.74	-	0.90	11.2	-83.4		
0840	20		6.31	0.7	7.10	0.73	-	0.87	11.2	-90.9		

Constituents Sampled	Container	Number	Preservative
GRO by NWTPH-Gx	VOA	3	HCl
BTEX by 8260B	VOA	3	HCl
DRO/HO by NWTPH-Dx	AMBER	2	HCl
Total Naphthalenes by 8270 SIM	AMBER	2	none

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: PMW-12; SOUTH NEAR WEST SIDE OF HOTEL Well Locked at Arrival: Yes /  No

Condition of Well: Good Well Locked at Departure: Yes /  No

Well Completion: Flush Mount / Stick Up Key Number To Well: \_\_\_\_\_

**GROUNDWATER SAMPLING LOG**

Project No. SEA41774.0002 Well ID PMW-13 Date 12/22/2017  
 Project Name/Location Olympia Doubletree (Blackstone) / 415 Capitol Way North, Olympia, WA Weather 39°F, RAIN  
 Measuring Pt. Description top of casing Screen Setting (ft-bmp) - Casing Diameter (in.) 2 Well Material x PVC - SS  
 Static Water Level (ft-bmp) 4.70 Total Depth (ft-bmp) 6.44' Water Column/ Gallons in Well 1.74' / 0.28 gallons  
 MP Elevation -- Pump Intake (ft-bmp) 5.5' Purge Method: LFP Sample Method grab  
 Pump On/Off 1015/1045 Volumes Purged 1x0 Centrifugal - Submersible - Other peristaltic pump  
 Sample Time: Label 1075 Replicate/ Code No. -- Sampled by RB/EN  
 Start 1035  
 End 1045

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1015	0	6.05	4.70	0	START PURGE							
1016	1	1	5.20	-	6.97	0.75	-	6.13	10.3	19.8	CLEAR	NONE
1020	5	1	5.50	-	6.93	0.77	-	2.43	10.7	24.0		
1025	10	1	5.75	-	6.95	0.77	-	2.82	10.9	-27.5		
1030	15	1	5.89	-	6.96	0.78	-	2.89	11.0	-48.8		
1033	18	1	5.99	-	6.94	0.79	-	2.88	11.0	-49.1		
1035	20	1	6.00	1	6.94	0.79	-	2.87	11.0	-48.0		

Constituents Sampled	Container	Number	Preservative
GRO by NWTPH-Gx	VOA	3	HCl
BTEX by 8260B	VOA	3	HCl
DRO/HO by NWTPH-Dx	AMBER	2	HCl

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: NEAR SOUTH DRIVEWAY Well Locked at Arrival: Yes /  No

Condition of Well: WATER IN VAULT Well Locked at Departure: Yes /  No

Well Completion:  Flush Mount /  Stick Up Key Number To Well: \_\_\_\_\_

**GROUNDWATER SAMPLING LOG**

Project No. SEA41774.0002 Well ID PMW-14 Date 12/21/2017

Project Name/Location Olympia Doubletree (Blackstone) / 415 Capitol Way North, Olympia, WA Weather 38°F clear

Measuring Pt. Description top of casing Screen Setting (ft-bmp) - Casing Diameter (in.) 2" Well Material  PVC  SS

Static Water Level (ft-bmp) 4.11' Total Depth (ft-bmp) 9.56' Water Column/ Gallons in Well 5.45' / 10.8 gallons

MP Elevation -- Pump Intake (ft-bmp) 7' Purge Method: LFP Sample Method grab

Pump On/Off 1319 / 1348 Volumes Purged ~1 Centrifugal  Submersible  Other peristaltic pump

Sample Time: Label 1340 Replicate/ Code No. -- Sampled by RB/EN

Start 1340 End 1346

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1329	10	0.05	5.11	0.5	6.97	683	-	0.19	13.5	-145.2	clear	HCLD
1331	12	0.05	5.08	0.6	6.98	679	-	0.17	13.5	-152.7	clear	HCLD
1333	14	0.05	5.05	0.7	6.99	670	-	0.16	13.4	-157.2	clear	HCLD
1335	16	0.05	5.00	0.8	6.99	666	-	0.16	13.5	-159.0	clear	HCLD

Constituents Sampled	Container	Number	Preservative
GRO by NWTPH-Gx	VOA	3	HCl
BTEX by 8260B	VOA	3	HCl
DRO/HO by NWTPH-Dx	AMBER	2	HCl
Total Naphthalenes by 8270 SIM	AMBER	2	none

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: parking lot - south Well Locked at Arrival: Yes /  No

Condition of Well: WIV Well Locked at Departure: Yes /  No

Well Completion:  Flush Mount /  Stick Up Key Number To Well: \_\_\_\_\_

**GROUNDWATER SAMPLING LOG**

Project No. SEA41774.0002 Well ID PMW-15 Date 12/21/2017

Project Name/Location Olympia Doubletree (Blackstone) / 415 Capitol Way North, Olympia, WA Weather 32°F, clear

Measuring Pt. top of casing Screen - Casing Diameter (in.) 2" Well Material X PVC  
 Description top of casing Setting (ft-bmp) - Diameter (in.) 2" SS

Static Water Level (ft-bmp) 4.50' Total Depth (ft-bmp) 10.26' Water Column/ Gallons in Well 5.76' / 10.9 gallons

MP Elevation -- Pump Intake (ft-bmp) 7 Purge Method: LFP Sample Method grab  
 Pump On/Off 1033/1053 Volumes Purged ~ 0.8 Centrifugal -  
 Other peristaltic pump Submersible -

Sample Time: Label 1050 Replicate/ Code No. -- Sampled by RB/EN  
 Start 1048  
 End 1053

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1043	10	0.05	5.12	0.5	7.11	591.6	-	0.22	12.9	-98.9	clear	no
1045	12	0.05	5.08	0.6	7.12	587.5	-	0.22	12.9	-105.5	clear	no
1047	14	0.05	4.98	0.7	7.13	581.7	-	0.22	12.5	-108.1	clear	no

Constituents Sampled	Container	Number	Preservative
GRO by NWTPH-Gx	VOA	3	HCl
BTEX by 8260B	VOA	3	HCl
DRO/HO by NWTPH-Dx	AMBER	2	HCl
Total Naphthalenes by 8270 SIM	AMBER	2	none

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: west edge of parking lot Well Locked at Arrival: Yes /  No

Condition of Well: good Well Locked at Departure: Yes /  No

Well Completion:  Flush Mount /  Stick Up Key Number To Well: \_\_\_\_\_

## GROUNDWATER SAMPLING LOG

Project No. SEA41774.0002 Well ID PMW-16 Date 12/21/2017  
 Project Name/Location Olympia Doubletree (Blackstone) / 415 Capitol Way North, Olympia, WA Weather 35°F, clear  
 Measuring Pt. Description top of casing Screen Setting (ft-bmp) - Casing Diameter (in.) 2" Well Material  PVC  SS  
 Static Water Level (ft-bmp) 3.75' Total Depth (ft-bmp) 8.18' Water Column/ Gallons in Well 4.43' / 0.7 gallons  
 MP Elevation -- Pump Intake (ft-bmp) 7' Purge Method: LFP Sample Method grab  
 Pump On/Off 1240 / 1303 Volumes Purged ~2 Centrifugal  Submersible  Other peristaltic pump  
 Sample Time: Label 1255 Replicate/ Code No. -- Sampled by RB/EN  
 Start 1257 End 1302

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1250	10	0.05	3.58'	1.0	7.26	519.9	-	0.37	12.1	-133.9	clear	no
1252	12	0.05	3.57'	1.2	7.26	518.0	-	0.37	12.1	-133.0	clear	no
1254	14	0.05	3.56'	1.4	7.27	515.4	-	0.36	12.1	-132.3	clear	no

Constituents Sampled	Container	Number	Preservative
GRO by NWTPH-Gx	VOA	3	HCl
BTEX by 8260B	VOA	3	HCl
DRO/HO by NWTPH-Dx	AMBER	2	HCl

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: <u>central parking area</u>	Well Locked at Arrival: Yes / <input checked="" type="radio"/> No
Condition of Well: <u>WIV</u>	Well Locked at Departure: Yes / <input checked="" type="radio"/> No
Well Completion: <input checked="" type="radio"/> Flush Mount / <input type="radio"/> Stick Up	Key Number To Well: _____

**GROUNDWATER SAMPLING LOG**

Project No. SEA41774.0002 Well ID PMW-17 Date 12/21/2017

Project Name/Location Olympia Doubletree (Blackstone) / 415 Capitol Way North, Olympia, WA Weather 35°F, Clear

Measuring Pt. Description top of casing Screen Setting (ft-bmp) - Casing Diameter (in.) 2" Well Material  PVC  SS

Static Water Level (ft-bmp) 3.75' Total Depth (ft-bmp) 9.20' Water Column/ Gallons in Well 5.45' / 0.8 gallons

MP Elevation -- Pump Intake (ft-bmp) 7' Purge Method: LFP Sample Method grab

Pump On/Off 1149 / 1208 Volumes Purged ~ Centrifugal  Submersible  Other peristaltic pump

Sample Time: Label 1205 Replicate/ Code No. -- Sampled by RB/EN

Start 1204 End 1208

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1159	10	0.05	4.07	0.5	7.37	880	-	0.16	12.0	-226.2	clear	no
1201	12	0.05	4.03	0.6	7.37	876	-	0.17	11.9	-233.4	clear	no
1203	14	0.05	4.01	0.7	7.38	874	-	0.16	11.9	-237.6	clear	no

Constituents Sampled	Container	Number	Preservative
GRO by NWTPH-Gx	VOA	3	HCl
BTEX by 8260B	VOA	3	HCl
DRO/HO by NWTPH-Dx	AMBER	2	HCl

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: central parking area Well Locked at Arrival: Yes /  No

Condition of Well: WIV Well Locked at Departure: Yes /  No

Well Completion:  Flush Mount /  Stick Up Key Number To Well: \_\_\_\_\_

**GROUNDWATER SAMPLING LOG**

Project No. SEA41774.0002 Well ID PMW-18 Date 12/21/2017  
 Project Name/Location Olympia Doubletree (Blackstone) / 415 Capitol Way North, Olympia, WA Weather 32°F, SUNNY  
 Measuring Pt. Description top of casing Screen Setting (ft-bmp) - Casing Diameter (in.) 2 Well Material  PVC  SS  
 Static Water Level (ft-bmp) 5.37 Total Depth (ft-bmp) 9.43' Water Column/ Gallons in Well 4.06' / 0.65 gallons  
 MP Elevation -- Pump Intake (ft-bmp) 8.5' Purge Method: LFP Sample Method grab  
 Pump On/Off 1155 Volumes Purged 1.5 Centrifugal  Submersible  Other peristaltic pump  
 Sample Time: Label 1225 Replicate/ Code No. -- Sampled by RB/EN  
 Start 1225 End -

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1155	0	0.05	5.37	0	START PURGE						CLEAR	NONE
1156	1		6.20	-	6.97	1.50	-	1.00	12.4	117.2		
1200	5		6.42	-	6.97	1.51	-	0.87	12.4	42.0		
1205	10		6.55	-	6.97	1.47	-	0.70	12.3	27.8		SLIGHT ODOUR
1210	15		6.56	-	6.98	1.43	-	0.55	12.4	71.3		
1215	20		6.59	-	6.98	1.19	-	0.47	12.6	88.5		
1220	25		6.59	-	6.99	1.11	-	0.41	12.5	97.0		
1225	30		6.59	1.5	6.99	1.09	-	0.39	12.6	99.0		

Constituents Sampled	Container	Number	Preservative
GRO by NWTPH-Gx	VOA	3	HCl
BTEX by 8260B	VOA	3	HCl
DRO/HO by NWTPH-Dx	AMBER	2	HCl

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: <u>PMW-18</u>	Well Locked at Arrival: Yes / <input checked="" type="radio"/> No
Condition of Well: <u>Good</u>	Well Locked at Departure: Yes / <input checked="" type="radio"/> No
Well Completion: <u>Flush Mount</u> / Stick Up	Key Number To Well: _____

**GROUNDWATER SAMPLING LOG**

Project No. SEA41774.0002 Well ID PMW-19 Date 12/21/2017

Project Name/Location Olympia Doubletree (Blackstone) / 415 Capitol Way North, Olympia, WA Weather 32°F, clear

Measuring Pt. Description top of casing Screen Setting (ft-bmp) - Casing Diameter (in.) 2" Well Material  PVC  SS

Static Water Level (ft-bmp) 6.14' Total Depth (ft-bmp) 13.71' Water Column/ Gallons in Well 7.56' / 11.2 gallons

MP Elevation -- Pump Intake (ft-bmp) 10' Purge Method: LFP Sample Method grab

Pump On/Off 0910/0938 Volumes Purged ~0.7 Centrifugal  Submersible  Other peristaltic pump

Sample Time: Label 0930 Replicate/ Code No. -- Sampled by RB/EN

Start 0931 End 0938

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
0920	10	0.05	6.25	0.5	6.94	859	-	0.82	13.4	119.9	clear	no
0922	12	0.05	6.25	0.6	6.94	859	-	0.62	13.6	111.4	clear	no
0924	14	0.05	6.25	0.7	6.94	859	-	0.69	13.6	103.1	clear	no
0926	16	0.05	6.25	0.8	6.94	859	-	0.68	13.7	94.1	clear	no
0928	18	0.05	6.25	0.9	6.94	859	-	0.67	13.8	90.2	clear	no
0930	20	0.05	6.25	1.0	6.94	859	-	0.68	13.8	86.4	clear	no

Constituents Sampled	Container	Number	Preservative
GRO by NWTPH-Gx	VOA	3	HCl
BTEX by 8260B	VOA	3	HCl
DRO/HO by NWTPH-Dx	AMBER	2	HCl
Total Dissolved Solids by 160.1	POLY	1	none

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: north parking lot - by the dumpster Well Locked at Arrival: Yes /  No

Condition of Well: good Well Locked at Departure: Yes /  No

Well Completion:  Flush Mount /  Stick Up Key Number To Well: \_\_\_\_\_

**GROUNDWATER SAMPLING LOG**

Project No. SEA41774.0002 Well ID PMW-20 Date 12/21/2017  
 Project Name/Location Olympia Doubletree (Blackstone) / 415 Capitol Way North, Olympia, WA Weather 29°F, SUNNY  
 Measuring Pt. Description top of casing Screen Setting (ft-bmp) - Casing Diameter (in.) 2 Well Material  PVC  SS  
 Static Water Level (ft-bmp) 5.45' Total Depth (ft-bmp) 13.42' Water Column/ Gallons in Well 7.97' / 1.3 gallons  
 MP Elevation -- Pump Intake (ft-bmp) 12.5' Purge Method: LFP Sample Method grab  
 Pump On/Off 1000/1040 Volumes Purged 1.5 Centrifugal  Submersible  Other peristaltic pump  
 Sample Time: Label 1030 Replicate/ Code No. -- Sampled by RB/EN  
 Start 1030 End 1040

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1000	0	0.65	5.45	0	START PURGE						CLEAR	NONE
1001	1		5.40	-	7.38	0.638	-	9.45	12.9	43.9		
1005	5		5.40	-	7.35	1.20	-	8.30	13.4	78.1		
1010	10		5.40	-	6.77	2.54	-	4.70	13.9	81.3		
1015	15		5.40	-	6.79	2.60	-	2.06	14.2	75.4		
1020	20		5.40	-	6.80	2.59	-	1.78	14.3	68.1		
1025	25		5.40	-	6.79	2.61	-	1.67	14.3	68.4		
1030	30		5.40	1.5	6.78	2.62	-	1.63	14.5	68.0		

Constituents Sampled	Container	Number	Preservative
GRO by NWTPH-Gx	VOA	3	HCl
BTEX by 8260B	VOA	3	HCl
DRO/HO by NWTPH-Dx	AMBER	2	HCl

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: <u>PMW-20</u>	Well Locked at Arrival: Yes / <input checked="" type="radio"/> No
Condition of Well: <u>GOOD NEW</u>	Well Locked at Departure: Yes / <input checked="" type="radio"/> No
Well Completion: <u>Flush Mount</u> / Stick Up	Key Number To Well: _____

**GROUNDWATER SAMPLING LOG**

Project No. SEA41774.0002 Well ID PMW-21 Date 12/21/2017

Project Name/Location Olympia Doubletree (Blackstone) / 415 Capitol Way North, Olympia, WA Weather 30°F, SUNNY

Measuring Pt. top of casing Screen Setting (ft-bmp) - Casing Diameter (in.) 2 Well Material  PVC  SS

Static Water Level (ft-bmp) 4.92 Total Depth (ft-bmp) 13.68' Water Column/ Gallons in Well 8.76' / 1.4 gallons

MP Elevation -- Pump Intake (ft-bmp) 12.5' Purge Method: LFP Sample Method grab

Pump On/Off 1045/1125 Volumes Purged 2 Centrifugal  Submersible  Other peristaltic pump

Sample Time: Label 1115 Replicate/ Code No. -- Sampled by RB/EN

Start 1115 End 1125

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1045	0	0.05	4.92	0	START PURGE							
1046	1		4.95	-	6.90	0.77	-	8.46	12.6	74.0	CLEAR	NONE
1050	5		4.95	-	6.78	0.74	-	6.02	11.3	102.9		
1055	10		4.95	-	6.76	0.74	-	5.42	11.4	112.9		
1100	15		4.96	-	6.77	0.73	-	4.96	11.6	119.7		
1105	20		4.95	-	6.77	0.73	-	4.10	11.8	121.1		
1110	25		4.95	-	6.76	0.73	-	4.35	11.7	124.1		
1115	30		4.95	2	6.77	0.72	-	4.11	12.0	126.6		

Constituents Sampled	Container	Number	Preservative
GRO by NWTPH-Gx	VOA	3	HCl
BTEX by 8260B	VOA	3	HCl
DRO/HO by NWTPH-Dx	AMBER	2	HCl

**Well Casing Volumes**

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

**Well Information**

Well Location: PMW-21 Well Locked at Arrival: Yes /  No

Condition of Well: Good, NEW Well Locked at Departure: Yes /  No

Well Completion: Flush Mount / Stick Up Key Number To Well: \_\_\_\_\_

# ATTACHMENT C

Laboratory Analytical Reports and Chain-of-Custody Documentation



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.  
TestAmerica Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

TestAmerica Job ID: 580-69636-1  
Client Project/Site: PIH Olympia  
Revision: 1

For:  
ARCADIS U.S. Inc  
1100 Olive Way  
Suite 800  
Seattle, Washington 98101

Attn: Ross LaGrandeur



Authorized for release by:  
7/20/2017 3:47:04 PM

Kristine Allen, Manager of Project Management  
(253)248-4970  
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### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Case Narrative

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Job ID: 580-69636-1**

**Laboratory: TestAmerica Seattle**

## Narrative

Report was revised 7-20-17 to correct a dilution error for NWTPH-Gx, sample PMW-2 (580-69636-2).

## Job Narrative 580-69636-1

## Comments

No additional comments.

## Receipt

The samples were received on 6/30/2017 12:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 5.9° C and 6.0° C.

## Receipt Exceptions

The following samples were received at the laboratory without a sample collection time documented on the chain of custody: PMW-3 (580-69636-11), PMW-6 (580-69636-12), PMW-7 (580-69636-13), PMW-8 (580-69636-14), PMW-9 (580-69636-15), PMW-13 (580-69636-16), PMW-14 (580-69636-17) and PMW-16 (580-69636-18). Logged in collection time per sample container.

#	Sample ID:	Collection time used from sample container
11	PMW-3	1025
12	PMW-6	1320
13	PMW-7	1410
14	PMW-8	1225
15	PMW-9	1040
16	PMW-13	1030
17	PMW-14	0940
18	PMW-16	1145

## GC/MS VOA

Method(s) NWTPH-Gx: The %D of surrogate (4-Bromofluorobenzene) for CCV associated with batch 580-250806 was outside the upper control limits. All associated sample surrogate fell within acceptance criteria; therefore, the data have been reported.

Method(s) NWTPH-Gx: The following samples was analyzed outside of analytical holding time due to instrument stoppages when attempting to run the sample within hold.: PMW-1 (580-69636-1), PMW-17 (580-69636-7), PMW-18 (580-69636-8) and DUP-1 (580-69636-10), PMW-14 (580-69636-17), PMW-16 (580-69636-18) and TRIP BLANK (580-69636-19).

Method(s) NWTPH-Gx: The closing CCV failed by approximately 2 percent. No other sample vial was available for rerun. (CCV 580-251201/12)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

## GC/MS Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

## GC Semi VOA

Method(s) 8011: The CCVs associated with 580-250590 fell high outside the control limits for surrogate 1,2-Dibromopropane on the confirmation column only. The primary column was within limits. All associated samples had recoveries within the limits and was reported from the primary column. The following samples are impacted; PMW-3 (580-69636-11), PMW-6 (580-69636-12), PMW-7 (580-69636-13), PMW-8 (580-69636-14), PMW-13 (580-69636-16), PMW-16 (580-69636-18), (CCV 580-250529/1-A), (LCS 580-250529/3-A), (LCSD 580-250529/4-A), (LLCS 580-250529/5-A) and (MB 580-250529/2-A).

Method(s) 8011: The continuing calibration verification (CCV) associated with batch 580-250590 recovered above the upper control limit for Ethylene Dibromide at 20.1%D on the primary column only. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: PMW-16 (580-69636-18) and (CCV 580-250529/1-A).

# Case Narrative

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

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## Job ID: 580-69636-1 (Continued)

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### Laboratory: TestAmerica Seattle (Continued)

Method(s) NWTPH-Dx: The following sample contained a hydrocarbon pattern in the diesel range; however, the elution pattern was earlier than the typical diesel fuel pattern used by the laboratory for quantitative purposes: PMW-17 (580-69636-7).

Method(s) NWTPH-Dx: The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: PMW-2 (580-69636-2), PMW-10 (580-69636-4), PMW-12 (580-69636-5), PMW-18 (580-69636-8), PMW-6 (580-69636-12), PMW-7 (580-69636-13), PMW-8 (580-69636-14), PMW-9 (580-69636-15) and PMW-14 (580-69636-17).

Method(s) NWTPH-Dx: The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern was earlier than the typical diesel fuel pattern used by the laboratory for quantitative purposes: PMW-2 (580-69636-2), PMW-5 (580-69636-3), PMW-10 (580-69636-4), PMW-12 (580-69636-5), PMW-17 (580-69636-7) and PMW-14 (580-69636-17).

Method(s) NWTPH-Dx: The peak profile present in this sample PMW-16 (580-69636-18) is atypical of a hydrocarbon pattern and consists of discrete peaks.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

# Definitions/Glossary

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### GC VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-1**

**Date Collected: 06/28/17 12:40**

**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-1**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			07/06/17 03:23	1
Toluene	ND		2.0	0.24	ug/L			07/06/17 03:23	1
Ethylbenzene	ND		3.0	0.21	ug/L			07/06/17 03:23	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			07/06/17 03:23	1
o-Xylene	ND		2.0	0.15	ug/L			07/06/17 03:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 122		07/06/17 03:23	1
Trifluorotoluene (Surr)	98		80 - 120		07/06/17 03:23	1
4-Bromofluorobenzene (Surr)	96		75 - 125		07/06/17 03:23	1
Dibromofluoromethane (Surr)	101		77 - 120		07/06/17 03:23	1
1,2-Dichloroethane-d4 (Surr)	109		80 - 126		07/06/17 03:23	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND	H	0.50	0.050	mg/L			07/15/17 19:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		58 - 133		07/15/17 19:47	1
Trifluorotoluene (Surr)	110		77 - 128		07/15/17 19:47	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.026	J	0.11	0.020	mg/L		07/12/17 14:20	07/13/17 20:07	1
Motor Oil (>C24-C36)	ND		0.26	0.081	mg/L		07/12/17 14:20	07/13/17 20:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	62		43 - 119	07/12/17 14:20	07/13/17 20:07	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-2**

**Date Collected: 06/28/17 15:30**

**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-2**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			07/06/17 03:50	1
Toluene	ND		2.0	0.24	ug/L			07/06/17 03:50	1
Ethylbenzene	ND		3.0	0.21	ug/L			07/06/17 03:50	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			07/06/17 03:50	1
o-Xylene	ND		2.0	0.15	ug/L			07/06/17 03:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 122		07/06/17 03:50	1
Trifluorotoluene (Surr)	98		80 - 120		07/06/17 03:50	1
4-Bromofluorobenzene (Surr)	96		75 - 125		07/06/17 03:50	1
Dibromofluoromethane (Surr)	98		77 - 120		07/06/17 03:50	1
1,2-Dichloroethane-d4 (Surr)	107		80 - 126		07/06/17 03:50	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.14	J	0.50	0.050	mg/L			07/12/17 21:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		58 - 133		07/12/17 21:46	1
Trifluorotoluene (Surr)	105		77 - 128		07/12/17 21:46	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.23		0.11	0.020	mg/L		07/12/17 14:20	07/14/17 00:36	1
Motor Oil (>C24-C36)	0.097	J	0.27	0.083	mg/L		07/12/17 14:20	07/14/17 00:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	63		43 - 119	07/12/17 14:20	07/14/17 00:36	1

## Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.080	J	0.11	0.020	mg/L		07/12/17 14:20	07/13/17 20:02	1
Motor Oil (>C24-C36)	ND		0.27	0.083	mg/L		07/12/17 14:20	07/13/17 20:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	81		43 - 119	07/12/17 14:20	07/13/17 20:02	1

TestAmerica Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-5**

**Date Collected: 06/28/17 14:35**

**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-3**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			07/06/17 04:17	1
<b>Toluene</b>	<b>0.44</b>	<b>J</b>	2.0	0.24	ug/L			07/06/17 04:17	1
Ethylbenzene	ND		3.0	0.21	ug/L			07/06/17 04:17	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			07/06/17 04:17	1
o-Xylene	ND		2.0	0.15	ug/L			07/06/17 04:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 122		07/06/17 04:17	1
Trifluorotoluene (Surr)	98		80 - 120		07/06/17 04:17	1
4-Bromofluorobenzene (Surr)	96		75 - 125		07/06/17 04:17	1
Dibromofluoromethane (Surr)	98		77 - 120		07/06/17 04:17	1
1,2-Dichloroethane-d4 (Surr)	107		80 - 126		07/06/17 04:17	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>0.26</b>	<b>J</b>	0.50	0.050	mg/L			07/12/17 22:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	113		58 - 133		07/12/17 22:17	1
Trifluorotoluene (Surr)	104		77 - 128		07/12/17 22:17	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.69</b>		0.11	0.020	mg/L		07/12/17 14:20	07/14/17 01:05	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>0.13</b>	<b>J</b>	0.27	0.082	mg/L		07/12/17 14:20	07/14/17 01:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	68		43 - 119	07/12/17 14:20	07/14/17 01:05	1

## Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.22</b>		0.11	0.020	mg/L		07/12/17 14:20	07/13/17 20:25	1
Motor Oil (>C24-C36)	ND		0.27	0.082	mg/L		07/12/17 14:20	07/13/17 20:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	88		43 - 119	07/12/17 14:20	07/13/17 20:25	1

TestAmerica Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-10**

**Date Collected: 06/28/17 14:10**

**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-4**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	3.0		2.0	0.42	ug/L			07/06/17 04:43	1
Toluene	0.70	J	2.0	0.24	ug/L			07/06/17 04:43	1
Ethylbenzene	0.24	J	3.0	0.21	ug/L			07/06/17 04:43	1
m-Xylene & p-Xylene	0.98	J	3.0	0.72	ug/L			07/06/17 04:43	1
o-Xylene	ND		2.0	0.15	ug/L			07/06/17 04:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 122		07/06/17 04:43	1
Trifluorotoluene (Surr)	98		80 - 120		07/06/17 04:43	1
4-Bromofluorobenzene (Surr)	94		75 - 125		07/06/17 04:43	1
Dibromofluoromethane (Surr)	97		77 - 120		07/06/17 04:43	1
1,2-Dichloroethane-d4 (Surr)	105		80 - 126		07/06/17 04:43	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.61		0.50	0.050	mg/L			07/12/17 22:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	133		58 - 133		07/12/17 22:48	1
Trifluorotoluene (Surr)	109		77 - 128		07/12/17 22:48	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1.9		0.10	0.019	mg/L		07/12/17 14:20	07/14/17 01:34	1
Motor Oil (>C24-C36)	1.4		0.25	0.078	mg/L		07/12/17 14:20	07/14/17 01:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	68		43 - 119	07/12/17 14:20	07/14/17 01:34	1

## Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.38		0.10	0.019	mg/L		07/12/17 14:20	07/13/17 20:48	1
Motor Oil (>C24-C36)	0.31		0.25	0.078	mg/L		07/12/17 14:20	07/13/17 20:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	93		43 - 119	07/12/17 14:20	07/13/17 20:48	1

TestAmerica Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-12**

**Date Collected: 06/28/17 14:50**

**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-5**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			07/06/17 05:09	1
Toluene	ND		2.0	0.24	ug/L			07/06/17 05:09	1
Ethylbenzene	ND		3.0	0.21	ug/L			07/06/17 05:09	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			07/06/17 05:09	1
o-Xylene	ND		2.0	0.15	ug/L			07/06/17 05:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 122		07/06/17 05:09	1
Trifluorotoluene (Surr)	99		80 - 120		07/06/17 05:09	1
4-Bromofluorobenzene (Surr)	93		75 - 125		07/06/17 05:09	1
Dibromofluoromethane (Surr)	99		77 - 120		07/06/17 05:09	1
1,2-Dichloroethane-d4 (Surr)	107		80 - 126		07/06/17 05:09	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.090	J	0.50	0.050	mg/L			07/12/17 23:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		58 - 133		07/12/17 23:19	1
Trifluorotoluene (Surr)	105		77 - 128		07/12/17 23:19	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1.5		0.10	0.020	mg/L		07/12/17 14:20	07/14/17 02:31	1
Motor Oil (>C24-C36)	1.2		0.26	0.080	mg/L		07/12/17 14:20	07/14/17 02:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	67		43 - 119	07/12/17 14:20	07/14/17 02:31	1

## Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.080	J	0.10	0.020	mg/L		07/12/17 14:20	07/13/17 21:11	1
Motor Oil (>C24-C36)	ND		0.26	0.080	mg/L		07/12/17 14:20	07/13/17 21:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	92		43 - 119	07/12/17 14:20	07/13/17 21:11	1

TestAmerica Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-15**

**Date Collected: 06/28/17 12:50**

**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-6**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			07/06/17 05:36	1
Toluene	ND		2.0	0.24	ug/L			07/06/17 05:36	1
Ethylbenzene	ND		3.0	0.21	ug/L			07/06/17 05:36	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			07/06/17 05:36	1
o-Xylene	ND		2.0	0.15	ug/L			07/06/17 05:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 122		07/06/17 05:36	1
Trifluorotoluene (Surr)	98		80 - 120		07/06/17 05:36	1
4-Bromofluorobenzene (Surr)	96		75 - 125		07/06/17 05:36	1
Dibromofluoromethane (Surr)	98		77 - 120		07/06/17 05:36	1
1,2-Dichloroethane-d4 (Surr)	108		80 - 126		07/06/17 05:36	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.12	J	0.50	0.050	mg/L			07/12/17 23:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		58 - 133		07/12/17 23:50	1
Trifluorotoluene (Surr)	101		77 - 128		07/12/17 23:50	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.45		0.11	0.021	mg/L		07/12/17 14:20	07/13/17 21:07	1
Motor Oil (>C24-C36)	ND		0.28	0.087	mg/L		07/12/17 14:20	07/13/17 21:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	69		43 - 119	07/12/17 14:20	07/13/17 21:07	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-17**

**Date Collected: 06/28/17 13:45**

**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-7**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			07/06/17 06:02	1
Toluene	ND		2.0	0.24	ug/L			07/06/17 06:02	1
Ethylbenzene	ND		3.0	0.21	ug/L			07/06/17 06:02	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			07/06/17 06:02	1
o-Xylene	ND		2.0	0.15	ug/L			07/06/17 06:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 122		07/06/17 06:02	1
Trifluorotoluene (Surr)	98		80 - 120		07/06/17 06:02	1
4-Bromofluorobenzene (Surr)	95		75 - 125		07/06/17 06:02	1
Dibromofluoromethane (Surr)	97		77 - 120		07/06/17 06:02	1
1,2-Dichloroethane-d4 (Surr)	108		80 - 126		07/06/17 06:02	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>0.15</b>	<b>J H</b>	0.50	0.050	mg/L			07/13/17 06:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		58 - 133		07/13/17 06:47	1
Trifluorotoluene (Surr)	99		77 - 128		07/13/17 06:47	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.17</b>		0.11	0.021	mg/L		07/12/17 14:20	07/14/17 02:59	1
Motor Oil (>C24-C36)	ND		0.27	0.084	mg/L		07/12/17 14:20	07/14/17 02:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	65		43 - 119	07/12/17 14:20	07/14/17 02:59	1

## Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.087</b>	<b>J</b>	0.11	0.021	mg/L		07/12/17 14:20	07/13/17 21:34	1
Motor Oil (>C24-C36)	ND		0.27	0.084	mg/L		07/12/17 14:20	07/13/17 21:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	89		43 - 119	07/12/17 14:20	07/13/17 21:34	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-18**

**Lab Sample ID: 580-69636-8**

**Date Collected: 06/28/17 13:35**

**Matrix: Water**

**Date Received: 06/30/17 12:15**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzene</b>	<b>0.81</b>	<b>J</b>	2.0	0.42	ug/L			07/06/17 06:29	1
Toluene	ND		2.0	0.24	ug/L			07/06/17 06:29	1
Ethylbenzene	ND		3.0	0.21	ug/L			07/06/17 06:29	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			07/06/17 06:29	1
o-Xylene	ND		2.0	0.15	ug/L			07/06/17 06:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 122		07/06/17 06:29	1
Trifluorotoluene (Surr)	97		80 - 120		07/06/17 06:29	1
4-Bromofluorobenzene (Surr)	92		75 - 125		07/06/17 06:29	1
Dibromofluoromethane (Surr)	99		77 - 120		07/06/17 06:29	1
1,2-Dichloroethane-d4 (Surr)	106		80 - 126		07/06/17 06:29	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>0.10</b>	<b>J H</b>	0.50	0.050	mg/L			07/13/17 07:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		58 - 133		07/13/17 07:49	1
Trifluorotoluene (Surr)	102		77 - 128		07/13/17 07:49	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>3.1</b>		0.10	0.020	mg/L		07/12/17 14:20	07/13/17 21:37	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>1.4</b>		0.26	0.080	mg/L		07/12/17 14:20	07/13/17 21:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	62		43 - 119	07/12/17 14:20	07/13/17 21:37	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 580-69636-9**

**Date Collected: 06/28/17 00:01**

**Matrix: Water**

**Date Received: 06/30/17 12:15**

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			07/06/17 02:05	1
Toluene	ND		2.0	0.24	ug/L			07/06/17 02:05	1
Ethylbenzene	ND		3.0	0.21	ug/L			07/06/17 02:05	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			07/06/17 02:05	1
o-Xylene	ND		2.0	0.15	ug/L			07/06/17 02:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 122		07/06/17 02:05	1
Trifluorotoluene (Surr)	99		80 - 120		07/06/17 02:05	1
4-Bromofluorobenzene (Surr)	93		75 - 125		07/06/17 02:05	1
Dibromofluoromethane (Surr)	99		77 - 120		07/06/17 02:05	1
1,2-Dichloroethane-d4 (Surr)	108		80 - 126		07/06/17 02:05	1

**Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.50	0.050	mg/L			07/12/17 08:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	114		58 - 133		07/12/17 08:04	1
Trifluorotoluene (Surr)	116		77 - 128		07/12/17 08:04	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: DUP-1**

**Date Collected: 06/28/17 00:01**

**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-10**

**Matrix: Water**

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			07/06/17 06:55	1
Toluene	ND		2.0	0.24	ug/L			07/06/17 06:55	1
Ethylbenzene	ND		3.0	0.21	ug/L			07/06/17 06:55	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			07/06/17 06:55	1
o-Xylene	ND		2.0	0.15	ug/L			07/06/17 06:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 122		07/06/17 06:55	1
Trifluorotoluene (Surr)	100		80 - 120		07/06/17 06:55	1
4-Bromofluorobenzene (Surr)	93		75 - 125		07/06/17 06:55	1
Dibromofluoromethane (Surr)	99		77 - 120		07/06/17 06:55	1
1,2-Dichloroethane-d4 (Surr)	107		80 - 126		07/06/17 06:55	1

**Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND	H	0.50	0.050	mg/L			07/13/17 08:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		58 - 133		07/13/17 08:20	1
Trifluorotoluene (Surr)	94		77 - 128		07/13/17 08:20	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-3**

**Date Collected: 06/29/17 10:25**

**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-11**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			07/06/17 07:22	1
1,2-Dichloroethane	ND		2.0	0.45	ug/L			07/06/17 07:22	1
Ethylbenzene	ND		3.0	0.21	ug/L			07/06/17 07:22	1
Methyl tert-butyl ether	ND		2.0	0.44	ug/L			07/06/17 07:22	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			07/06/17 07:22	1
o-Xylene	ND		2.0	0.15	ug/L			07/06/17 07:22	1
Toluene	ND		2.0	0.24	ug/L			07/06/17 07:22	1
Xylenes, Total	ND		3.0	0.30	ug/L			07/06/17 07:22	1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>1-Methylnaphthalene</b>	<b>0.0069</b>	<b>J</b>	0.023	0.0068	ug/L		07/06/17 13:37	07/07/17 15:26	1
<b>2-Methylnaphthalene</b>	<b>0.012</b>	<b>J</b>	0.034	0.010	ug/L		07/06/17 13:37	07/07/17 15:26	1
<b>Benzo[a]anthracene</b>	<b>0.010</b>	<b>J</b>	0.023	0.0023	ug/L		07/06/17 13:37	07/07/17 15:26	1
Benzo[a]pyrene	ND		0.023	0.0034	ug/L		07/06/17 13:37	07/07/17 15:26	1
Benzo[b]fluoranthene	ND		0.023	0.0091	ug/L		07/06/17 13:37	07/07/17 15:26	1
Benzo[k]fluoranthene	ND		0.034	0.010	ug/L		07/06/17 13:37	07/07/17 15:26	1
<b>Chrysene</b>	<b>0.0089</b>	<b>J</b>	0.023	0.0068	ug/L		07/06/17 13:37	07/07/17 15:26	1
Dibenz(a,h)anthracene	ND		0.023	0.0023	ug/L		07/06/17 13:37	07/07/17 15:26	1
Indeno[1,2,3-cd]pyrene	ND		0.023	0.0079	ug/L		07/06/17 13:37	07/07/17 15:26	1
Naphthalene	ND		0.045	0.015	ug/L		07/06/17 13:37	07/07/17 15:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	95		53 - 112	07/06/17 13:37	07/07/17 15:26	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.50	0.050	mg/L			07/13/17 08:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		58 - 133		07/13/17 08:59	1
Trifluorotoluene (Surr)	99		77 - 128		07/13/17 08:59	1

## Method: 8011 - EDB and DBCP in Water by Microextraction

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	ND		0.010	0.0020	ug/L		07/07/17 11:44	07/07/17 23:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dibromopropane	97		60 - 140	07/07/17 11:44	07/07/17 23:48	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.022</b>	<b>J</b>	0.11	0.021	mg/L		07/12/17 14:20	07/13/17 22:08	1
Motor Oil (>C24-C36)	ND		0.28	0.086	mg/L		07/12/17 14:20	07/13/17 22:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	72		43 - 119	07/12/17 14:20	07/13/17 22:08	1

## Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.030	0.0026	mg/L		07/05/17 17:57	07/06/17 12:00	1

TestAmerica Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-3**  
**Date Collected: 06/29/17 10:25**  
**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-11**  
**Matrix: Water**

**Method: 6010C - Metals (ICP) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0036	J	0.030	0.0026	mg/L		07/05/17 17:58	07/06/17 12:06	1

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# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-6**

**Date Collected: 06/29/17 13:20**

**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-12**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			07/06/17 07:49	1
1,2-Dichloroethane	ND		2.0	0.45	ug/L			07/06/17 07:49	1
Ethylbenzene	ND		3.0	0.21	ug/L			07/06/17 07:49	1
Methyl tert-butyl ether	ND		2.0	0.44	ug/L			07/06/17 07:49	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			07/06/17 07:49	1
o-Xylene	ND		2.0	0.15	ug/L			07/06/17 07:49	1
Toluene	ND		2.0	0.24	ug/L			07/06/17 07:49	1
Xylenes, Total	ND		3.0	0.30	ug/L			07/06/17 07:49	1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>1-Methylnaphthalene</b>	<b>0.023</b>		0.023	0.0068	ug/L		07/06/17 13:37	07/07/17 15:51	1
<b>2-Methylnaphthalene</b>	<b>0.012</b>	<b>J</b>	0.034	0.010	ug/L		07/06/17 13:37	07/07/17 15:51	1
Benzo[a]anthracene	ND		0.023	0.0023	ug/L		07/06/17 13:37	07/07/17 15:51	1
Benzo[a]pyrene	ND		0.023	0.0034	ug/L		07/06/17 13:37	07/07/17 15:51	1
Benzo[b]fluoranthene	ND		0.023	0.0090	ug/L		07/06/17 13:37	07/07/17 15:51	1
Benzo[k]fluoranthene	ND		0.034	0.010	ug/L		07/06/17 13:37	07/07/17 15:51	1
Chrysene	ND		0.023	0.0068	ug/L		07/06/17 13:37	07/07/17 15:51	1
Dibenz(a,h)anthracene	ND		0.023	0.0023	ug/L		07/06/17 13:37	07/07/17 15:51	1
Indeno[1,2,3-cd]pyrene	ND		0.023	0.0079	ug/L		07/06/17 13:37	07/07/17 15:51	1
<b>Naphthalene</b>	<b>0.021</b>	<b>J</b>	0.045	0.015	ug/L		07/06/17 13:37	07/07/17 15:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	74		53 - 112	07/06/17 13:37	07/07/17 15:51	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>0.086</b>	<b>J</b>	0.50	0.050	mg/L			07/13/17 09:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		58 - 133		07/13/17 09:30	1
Trifluorotoluene (Surr)	102		77 - 128		07/13/17 09:30	1

## Method: 8011 - EDB and DBCP in Water by Microextraction

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	ND		0.010	0.0020	ug/L		07/07/17 11:44	07/08/17 00:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dibromopropane	104		60 - 140	07/07/17 11:44	07/08/17 00:04	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>2.0</b>		0.11	0.022	mg/L		07/12/17 14:20	07/13/17 22:39	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>0.70</b>		0.28	0.088	mg/L		07/12/17 14:20	07/13/17 22:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	71		43 - 119	07/12/17 14:20	07/13/17 22:39	1

## Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Lead</b>	<b>0.0035</b>	<b>J</b>	0.030	0.0026	mg/L		07/05/17 17:57	07/06/17 12:28	1

TestAmerica Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-6**  
**Date Collected: 06/29/17 13:20**  
**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-12**  
**Matrix: Water**

**Method: 6010C - Metals (ICP) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0033	J	0.030	0.0026	mg/L		07/05/17 17:58	07/06/17 12:31	1

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# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-7**

**Date Collected: 06/29/17 14:10**

**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-13**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			07/06/17 08:15	1
1,2-Dichloroethane	ND		2.0	0.45	ug/L			07/06/17 08:15	1
Ethylbenzene	ND		3.0	0.21	ug/L			07/06/17 08:15	1
Methyl tert-butyl ether	ND		2.0	0.44	ug/L			07/06/17 08:15	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			07/06/17 08:15	1
o-Xylene	ND		2.0	0.15	ug/L			07/06/17 08:15	1
Toluene	ND		2.0	0.24	ug/L			07/06/17 08:15	1
Xylenes, Total	ND		3.0	0.30	ug/L			07/06/17 08:15	1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.020	J	0.023	0.0069	ug/L		07/06/17 13:37	07/07/17 16:16	1
2-Methylnaphthalene	0.024	J	0.034	0.010	ug/L		07/06/17 13:37	07/07/17 16:16	1
Benzo[a]anthracene	0.049		0.023	0.0023	ug/L		07/06/17 13:37	07/07/17 16:16	1
Benzo[a]pyrene	0.012	J	0.023	0.0034	ug/L		07/06/17 13:37	07/07/17 16:16	1
Benzo[b]fluoranthene	0.026		0.023	0.0092	ug/L		07/06/17 13:37	07/07/17 16:16	1
Benzo[k]fluoranthene	ND		0.034	0.010	ug/L		07/06/17 13:37	07/07/17 16:16	1
Chrysene	0.050		0.023	0.0069	ug/L		07/06/17 13:37	07/07/17 16:16	1
Dibenz(a,h)anthracene	ND		0.023	0.0023	ug/L		07/06/17 13:37	07/07/17 16:16	1
Indeno[1,2,3-cd]pyrene	0.0083	J	0.023	0.0080	ug/L		07/06/17 13:37	07/07/17 16:16	1
Naphthalene	0.038	J	0.046	0.015	ug/L		07/06/17 13:37	07/07/17 16:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	84		53 - 112	07/06/17 13:37	07/07/17 16:16	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.50	0.050	mg/L			07/13/17 10:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	86		58 - 133		07/13/17 10:06	1
Trifluorotoluene (Surr)	97		77 - 128		07/13/17 10:06	1

## Method: 8011 - EDB and DBCP in Water by Microextraction

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	ND		0.0099	0.0020	ug/L		07/07/17 11:44	07/08/17 00:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dibromopropane	100		60 - 140	07/07/17 11:44	07/08/17 00:21	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.16		0.11	0.020	mg/L		07/12/17 14:20	07/13/17 23:09	1
Motor Oil (>C24-C36)	ND		0.27	0.083	mg/L		07/12/17 14:20	07/13/17 23:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	66		43 - 119	07/12/17 14:20	07/13/17 23:09	1

## Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.030	0.0026	mg/L		07/05/17 17:57	07/06/17 12:35	1

TestAmerica Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-7**  
**Date Collected: 06/29/17 14:10**  
**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-13**  
**Matrix: Water**

**Method: 6010C - Metals (ICP) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0027	J	0.030	0.0026	mg/L		07/05/17 17:58	07/06/17 12:38	1

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# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-8**

**Date Collected: 06/29/17 12:25**

**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-14**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzene</b>	<b>24</b>		2.0	0.42	ug/L			07/06/17 08:42	1
1,2-Dichloroethane	ND		2.0	0.45	ug/L			07/06/17 08:42	1
Ethylbenzene	ND		3.0	0.21	ug/L			07/06/17 08:42	1
Methyl tert-butyl ether	ND		2.0	0.44	ug/L			07/06/17 08:42	1
<b>m-Xylene &amp; p-Xylene</b>	<b>1.2</b>	<b>J</b>	3.0	0.72	ug/L			07/06/17 08:42	1
o-Xylene	ND		2.0	0.15	ug/L			07/06/17 08:42	1
<b>Toluene</b>	<b>1.0</b>	<b>J</b>	2.0	0.24	ug/L			07/06/17 08:42	1
<b>Xylenes, Total</b>	<b>1.2</b>	<b>J</b>	3.0	0.30	ug/L			07/06/17 08:42	1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>1-Methylnaphthalene</b>	<b>0.37</b>		0.024	0.0073	ug/L		07/06/17 13:37	07/07/17 16:41	1
<b>2-Methylnaphthalene</b>	<b>0.082</b>		0.037	0.011	ug/L		07/06/17 13:37	07/07/17 16:41	1
Benzo[a]anthracene	ND		0.024	0.0024	ug/L		07/06/17 13:37	07/07/17 16:41	1
Benzo[a]pyrene	ND		0.024	0.0037	ug/L		07/06/17 13:37	07/07/17 16:41	1
Benzo[b]fluoranthene	ND		0.024	0.0098	ug/L		07/06/17 13:37	07/07/17 16:41	1
Benzo[k]fluoranthene	ND		0.037	0.011	ug/L		07/06/17 13:37	07/07/17 16:41	1
Chrysene	ND		0.024	0.0073	ug/L		07/06/17 13:37	07/07/17 16:41	1
Dibenz(a,h)anthracene	ND		0.024	0.0024	ug/L		07/06/17 13:37	07/07/17 16:41	1
Indeno[1,2,3-cd]pyrene	ND		0.024	0.0086	ug/L		07/06/17 13:37	07/07/17 16:41	1
<b>Naphthalene</b>	<b>0.15</b>		0.049	0.016	ug/L		07/06/17 13:37	07/07/17 16:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	73		53 - 112	07/06/17 13:37	07/07/17 16:41	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>0.29</b>	<b>J</b>	0.50	0.050	mg/L			07/13/17 10:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		58 - 133		07/13/17 10:37	1
Trifluorotoluene (Surr)	99		77 - 128		07/13/17 10:37	1

## Method: 8011 - EDB and DBCP in Water by Microextraction

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	ND		0.010	0.0020	ug/L		07/07/17 11:44	07/08/17 00:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dibromopropane	102		60 - 140	07/07/17 11:44	07/08/17 00:37	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>2.8</b>		0.10	0.019	mg/L		07/12/17 14:20	07/13/17 23:38	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>0.93</b>		0.26	0.079	mg/L		07/12/17 14:20	07/13/17 23:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	70		43 - 119	07/12/17 14:20	07/13/17 23:38	1

## Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.030	0.0026	mg/L		07/05/17 17:57	07/06/17 12:41	1

TestAmerica Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-8**  
**Date Collected: 06/29/17 12:25**  
**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-14**  
**Matrix: Water**

**Method: 6010C - Metals (ICP) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0030	J	0.030	0.0026	mg/L		07/05/17 17:58	07/06/17 12:45	1

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# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-9**

**Date Collected: 06/29/17 10:40**

**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-15**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			07/06/17 09:08	1
Toluene	ND		2.0	0.24	ug/L			07/06/17 09:08	1
Ethylbenzene	ND		3.0	0.21	ug/L			07/06/17 09:08	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			07/06/17 09:08	1
o-Xylene	ND		2.0	0.15	ug/L			07/06/17 09:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 122		07/06/17 09:08	1
Trifluorotoluene (Surr)	98		80 - 120		07/06/17 09:08	1
4-Bromofluorobenzene (Surr)	92		75 - 125		07/06/17 09:08	1
Dibromofluoromethane (Surr)	99		77 - 120		07/06/17 09:08	1
1,2-Dichloroethane-d4 (Surr)	109		80 - 126		07/06/17 09:08	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.065	J	0.50	0.050	mg/L			07/13/17 11:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		58 - 133		07/13/17 11:08	1
Trifluorotoluene (Surr)	101		77 - 128		07/13/17 11:08	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.85		0.10	0.020	mg/L		07/12/17 14:20	07/14/17 00:07	1
Motor Oil (>C24-C36)	0.60		0.26	0.081	mg/L		07/12/17 14:20	07/14/17 00:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	65		43 - 119	07/12/17 14:20	07/14/17 00:07	1

## Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0040	J	0.030	0.0026	mg/L		07/05/17 17:57	07/06/17 12:48	1

## Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.030	0.0026	mg/L		07/05/17 17:58	07/06/17 12:51	1

TestAmerica Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-13**

**Lab Sample ID: 580-69636-16**

**Date Collected: 06/29/17 10:30**

**Matrix: Water**

**Date Received: 06/30/17 12:15**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzene</b>	<b>0.62</b>	<b>J</b>	2.0	0.42	ug/L			07/06/17 09:34	1
1,2-Dichloroethane	ND		2.0	0.45	ug/L			07/06/17 09:34	1
Ethylbenzene	ND		3.0	0.21	ug/L			07/06/17 09:34	1
Methyl tert-butyl ether	ND		2.0	0.44	ug/L			07/06/17 09:34	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			07/06/17 09:34	1
o-Xylene	ND		2.0	0.15	ug/L			07/06/17 09:34	1
<b>Toluene</b>	<b>0.66</b>	<b>J</b>	2.0	0.24	ug/L			07/06/17 09:34	1
Xylenes, Total	ND		3.0	0.30	ug/L			07/06/17 09:34	1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>1-Methylnaphthalene</b>	<b>0.76</b>		0.020	0.0061	ug/L		07/06/17 13:37	07/07/17 17:06	1
<b>2-Methylnaphthalene</b>	<b>0.086</b>		0.031	0.0092	ug/L		07/06/17 13:37	07/07/17 17:06	1
Benzo[a]anthracene	ND		0.020	0.0020	ug/L		07/06/17 13:37	07/07/17 17:06	1
Benzo[a]pyrene	ND		0.020	0.0031	ug/L		07/06/17 13:37	07/07/17 17:06	1
Benzo[b]fluoranthene	ND		0.020	0.0081	ug/L		07/06/17 13:37	07/07/17 17:06	1
Benzo[k]fluoranthene	ND		0.031	0.0092	ug/L		07/06/17 13:37	07/07/17 17:06	1
Chrysene	ND		0.020	0.0061	ug/L		07/06/17 13:37	07/07/17 17:06	1
Dibenz(a,h)anthracene	ND		0.020	0.0020	ug/L		07/06/17 13:37	07/07/17 17:06	1
Indeno[1,2,3-cd]pyrene	ND		0.020	0.0071	ug/L		07/06/17 13:37	07/07/17 17:06	1
<b>Naphthalene</b>	<b>0.14</b>		0.041	0.013	ug/L		07/06/17 13:37	07/07/17 17:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	69		53 - 112	07/06/17 13:37	07/07/17 17:06	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>0.16</b>	<b>J</b>	0.50	0.050	mg/L			07/13/17 11:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		58 - 133		07/13/17 11:39	1
Trifluorotoluene (Surr)	99		77 - 128		07/13/17 11:39	1

## Method: 8011 - EDB and DBCP in Water by Microextraction

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	ND		0.010	0.0020	ug/L		07/07/17 11:44	07/08/17 00:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dibromopropane	102		60 - 140	07/07/17 11:44	07/08/17 00:54	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>1.9</b>		0.10	0.019	mg/L		07/13/17 15:44	07/13/17 23:51	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>0.70</b>		0.26	0.079	mg/L		07/13/17 15:44	07/13/17 23:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	85		43 - 119	07/13/17 15:44	07/13/17 23:51	1

## Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Lead</b>	<b>0.0040</b>	<b>J</b>	0.030	0.0026	mg/L		07/06/17 09:22	07/07/17 12:47	1

TestAmerica Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-13**  
**Date Collected: 06/29/17 10:30**  
**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-16**  
**Matrix: Water**

**Method: 6010C - Metals (ICP) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0030	J	0.030	0.0026	mg/L		07/06/17 09:22	07/07/17 12:22	1

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# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-14**

**Lab Sample ID: 580-69636-17**

**Date Collected: 06/29/17 09:40**

**Matrix: Water**

**Date Received: 06/30/17 12:15**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			07/06/17 10:00	1
<b>Toluene</b>	<b>0.26</b>	<b>J</b>	2.0	0.24	ug/L			07/06/17 10:00	1
Ethylbenzene	ND		3.0	0.21	ug/L			07/06/17 10:00	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			07/06/17 10:00	1
o-Xylene	ND		2.0	0.15	ug/L			07/06/17 10:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 122		07/06/17 10:00	1
Trifluorotoluene (Surr)	96		80 - 120		07/06/17 10:00	1
4-Bromofluorobenzene (Surr)	93		75 - 125		07/06/17 10:00	1
Dibromofluoromethane (Surr)	98		77 - 120		07/06/17 10:00	1
1,2-Dichloroethane-d4 (Surr)	106		80 - 126		07/06/17 10:00	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>0.35</b>	<b>J H</b>	0.50	0.050	mg/L			07/15/17 20:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		58 - 133		07/15/17 20:51	1
Trifluorotoluene (Surr)	108		77 - 128		07/15/17 20:51	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>2.1</b>		0.11	0.020	mg/L		07/12/17 14:20	07/14/17 03:28	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>0.67</b>		0.27	0.083	mg/L		07/12/17 14:20	07/14/17 03:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	73		43 - 119	07/12/17 14:20	07/14/17 03:28	1

## Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.75</b>		0.11	0.020	mg/L		07/12/17 14:20	07/13/17 21:57	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>0.28</b>		0.27	0.083	mg/L		07/12/17 14:20	07/13/17 21:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	99		43 - 119	07/12/17 14:20	07/13/17 21:57	1

TestAmerica Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-16**

**Lab Sample ID: 580-69636-18**

**Date Collected: 06/29/17 11:45**

**Matrix: Water**

**Date Received: 06/30/17 12:15**

### Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			07/06/17 10:26	1
1,2-Dichloroethane	ND		2.0	0.45	ug/L			07/06/17 10:26	1
Ethylbenzene	ND		3.0	0.21	ug/L			07/06/17 10:26	1
Methyl tert-butyl ether	ND		2.0	0.44	ug/L			07/06/17 10:26	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			07/06/17 10:26	1
o-Xylene	ND		2.0	0.15	ug/L			07/06/17 10:26	1
Toluene	ND		2.0	0.24	ug/L			07/06/17 10:26	1
Xylenes, Total	ND		3.0	0.30	ug/L			07/06/17 10:26	1

### Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.023	0.0069	ug/L		07/06/17 13:37	07/07/17 17:31	1
2-Methylnaphthalene	ND		0.034	0.010	ug/L		07/06/17 13:37	07/07/17 17:31	1
<b>Benzo[a]anthracene</b>	<b>0.0046</b>	<b>J</b>	0.023	0.0023	ug/L		07/06/17 13:37	07/07/17 17:31	1
Benzo[a]pyrene	ND		0.023	0.0034	ug/L		07/06/17 13:37	07/07/17 17:31	1
Benzo[b]fluoranthene	ND		0.023	0.0092	ug/L		07/06/17 13:37	07/07/17 17:31	1
Benzo[k]fluoranthene	ND		0.034	0.010	ug/L		07/06/17 13:37	07/07/17 17:31	1
<b>Chrysene</b>	<b>0.0082</b>	<b>J</b>	0.023	0.0069	ug/L		07/06/17 13:37	07/07/17 17:31	1
Dibenz(a,h)anthracene	ND		0.023	0.0023	ug/L		07/06/17 13:37	07/07/17 17:31	1
Indeno[1,2,3-cd]pyrene	ND		0.023	0.0080	ug/L		07/06/17 13:37	07/07/17 17:31	1
Naphthalene	ND		0.046	0.015	ug/L		07/06/17 13:37	07/07/17 17:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	68		53 - 112	07/06/17 13:37	07/07/17 17:31	1

### Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND	H	0.50	0.050	mg/L			07/15/17 21:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		58 - 133		07/15/17 21:22	1
Trifluorotoluene (Surr)	108		77 - 128		07/15/17 21:22	1

### Method: 8011 - EDB and DBCP in Water by Microextraction

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	ND		0.010	0.0020	ug/L		07/07/17 11:44	07/08/17 01:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dibromopropane	106		60 - 140	07/07/17 11:44	07/08/17 01:27	1

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.10</b>	<b>J</b>	0.11	0.021	mg/L		07/13/17 15:44	07/14/17 00:13	1
Motor Oil (>C24-C36)	ND		0.28	0.086	mg/L		07/13/17 15:44	07/14/17 00:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	88		43 - 119	07/13/17 15:44	07/14/17 00:13	1

### Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Lead</b>	<b>0.0050</b>	<b>J</b>	0.030	0.0026	mg/L		07/06/17 09:22	07/07/17 12:54	1

TestAmerica Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-16**

**Date Collected: 06/29/17 11:45**

**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-18**

**Matrix: Water**

**Method: 6010C - Metals (ICP) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0046	J	0.030	0.0026	mg/L		07/06/17 09:22	07/07/17 12:51	1

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# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 580-69636-19**

**Date Collected: 06/29/17 00:01**

**Matrix: Water**

**Date Received: 06/30/17 12:15**

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			07/06/17 02:31	1
Toluene	ND		2.0	0.24	ug/L			07/06/17 02:31	1
Ethylbenzene	ND		3.0	0.21	ug/L			07/06/17 02:31	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			07/06/17 02:31	1
o-Xylene	ND		2.0	0.15	ug/L			07/06/17 02:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 122		07/06/17 02:31	1
Trifluorotoluene (Surr)	97		80 - 120		07/06/17 02:31	1
4-Bromofluorobenzene (Surr)	95		75 - 125		07/06/17 02:31	1
Dibromofluoromethane (Surr)	100		77 - 120		07/06/17 02:31	1
1,2-Dichloroethane-d4 (Surr)	107		80 - 126		07/06/17 02:31	1

**Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND	H	0.50	0.050	mg/L			07/15/17 19:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		58 - 133		07/15/17 19:15	1
Trifluorotoluene (Surr)	113		77 - 128		07/15/17 19:15	1

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

## Method: 8260C - Volatile Organic Compounds by GC/MS

**Lab Sample ID: MB 580-250379/5**

**Matrix: Water**

**Analysis Batch: 250379**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		2.0	0.45	ug/L			07/06/17 00:45	1
Benzene	ND		2.0	0.42	ug/L			07/06/17 00:45	1
Ethylbenzene	ND		3.0	0.21	ug/L			07/06/17 00:45	1
Methyl tert-butyl ether	ND		2.0	0.44	ug/L			07/06/17 00:45	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			07/06/17 00:45	1
o-Xylene	ND		2.0	0.15	ug/L			07/06/17 00:45	1
Toluene	ND		2.0	0.24	ug/L			07/06/17 00:45	1
Xylenes, Total	ND		3.0	0.30	ug/L			07/06/17 00:45	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 122		07/06/17 00:45	1
Trifluorotoluene (Surr)	95		80 - 120		07/06/17 00:45	1
4-Bromofluorobenzene (Surr)	94		75 - 125		07/06/17 00:45	1
Dibromofluoromethane (Surr)	98		77 - 120		07/06/17 00:45	1
1,2-Dichloroethane-d4 (Surr)	104		80 - 126		07/06/17 00:45	1

**Lab Sample ID: LCS 580-250379/6**

**Matrix: Water**

**Analysis Batch: 250379**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichloroethane	10.0	9.56		ug/L		96	76 - 131
Benzene	10.0	9.65		ug/L		96	75 - 120
Ethylbenzene	10.0	10.3		ug/L		103	75 - 120
Methyl tert-butyl ether	10.0	9.26		ug/L		93	79 - 120
m-Xylene & p-Xylene	10.0	9.52		ug/L		95	75 - 120
o-Xylene	10.0	10.2		ug/L		102	74 - 120
Toluene	10.0	9.66		ug/L		97	75 - 120
Xylenes, Total	20.0	19.7		ug/L		99	74 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 122
Trifluorotoluene (Surr)	98		80 - 120
4-Bromofluorobenzene (Surr)	93		75 - 125
Dibromofluoromethane (Surr)	98		77 - 120
1,2-Dichloroethane-d4 (Surr)	106		80 - 126

**Lab Sample ID: LCSD 580-250379/7**

**Matrix: Water**

**Analysis Batch: 250379**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dichloroethane	10.0	9.47		ug/L		95	76 - 131	1	11
Benzene	10.0	9.54		ug/L		95	75 - 120	1	14
Ethylbenzene	10.0	10.5		ug/L		105	75 - 120	1	14
Methyl tert-butyl ether	10.0	9.05		ug/L		91	79 - 120	2	18
m-Xylene & p-Xylene	10.0	9.76		ug/L		98	75 - 120	3	14

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCSD 580-250379/7**  
**Matrix: Water**  
**Analysis Batch: 250379**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
o-Xylene	10.0	10.0		ug/L		100	74 - 120	2	16
Toluene	10.0	9.87		ug/L		99	75 - 120	2	13
Xylenes, Total	20.0	19.8		ug/L		99	74 - 120	0	15

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	103		80 - 122
Trifluorotoluene (Surr)	97		80 - 120
4-Bromofluorobenzene (Surr)	95		75 - 125
Dibromofluoromethane (Surr)	97		77 - 120
1,2-Dichloroethane-d4 (Surr)	105		80 - 126

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

**Lab Sample ID: MB 580-250452/1-A**  
**Matrix: Water**  
**Analysis Batch: 250561**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 250452**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.020	0.0060	ug/L		07/06/17 13:37	07/07/17 14:12	1
2-Methylnaphthalene	ND		0.030	0.0090	ug/L		07/06/17 13:37	07/07/17 14:12	1
Benzo[a]anthracene	ND		0.020	0.0020	ug/L		07/06/17 13:37	07/07/17 14:12	1
Benzo[a]pyrene	ND		0.020	0.0030	ug/L		07/06/17 13:37	07/07/17 14:12	1
Benzo[b]fluoranthene	ND		0.020	0.0080	ug/L		07/06/17 13:37	07/07/17 14:12	1
Benzo[k]fluoranthene	ND		0.030	0.0090	ug/L		07/06/17 13:37	07/07/17 14:12	1
Chrysene	ND		0.020	0.0060	ug/L		07/06/17 13:37	07/07/17 14:12	1
Dibenz(a,h)anthracene	ND		0.020	0.0020	ug/L		07/06/17 13:37	07/07/17 14:12	1
Indeno[1,2,3-cd]pyrene	ND		0.020	0.0070	ug/L		07/06/17 13:37	07/07/17 14:12	1
Naphthalene	ND		0.040	0.013	ug/L		07/06/17 13:37	07/07/17 14:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	85		53 - 112	07/06/17 13:37	07/07/17 14:12	1

**Lab Sample ID: LCS 580-250452/2-A**  
**Matrix: Water**  
**Analysis Batch: 250561**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 250452**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1-Methylnaphthalene	4.00	2.69		ug/L		67	57 - 107
2-Methylnaphthalene	4.00	3.04		ug/L		76	61 - 118
Benzo[a]anthracene	4.00	4.01		ug/L		100	71 - 119
Benzo[a]pyrene	4.00	3.98		ug/L		100	76 - 118
Benzo[b]fluoranthene	4.00	3.86		ug/L		96	66 - 117
Benzo[k]fluoranthene	4.00	3.56		ug/L		89	68 - 114
Chrysene	4.00	3.57		ug/L		89	64 - 107
Dibenz(a,h)anthracene	4.00	3.80		ug/L		95	60 - 125
Indeno[1,2,3-cd]pyrene	4.00	3.82		ug/L		96	63 - 116
Naphthalene	4.00	2.80		ug/L		70	62 - 104

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

**Lab Sample ID: LCS 580-250452/2-A**  
**Matrix: Water**  
**Analysis Batch: 250561**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 250452**

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	76		53 - 112

**Lab Sample ID: LCSD 580-250452/3-A**  
**Matrix: Water**  
**Analysis Batch: 250561**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 250452**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1-Methylnaphthalene	4.00	2.62		ug/L		66	57 - 107	3	17
2-Methylnaphthalene	4.00	2.95		ug/L		74	61 - 118	3	16
Benzo[a]anthracene	4.00	4.08		ug/L		102	71 - 119	2	16
Benzo[a]pyrene	4.00	4.04		ug/L		101	76 - 118	1	17
Benzo[b]fluoranthene	4.00	3.89		ug/L		97	66 - 117	1	20
Benzo[k]fluoranthene	4.00	3.57		ug/L		89	68 - 114	0	20
Chrysene	4.00	3.57		ug/L		89	64 - 107	0	16
Dibenz(a,h)anthracene	4.00	3.86		ug/L		97	60 - 125	2	15
Indeno[1,2,3-cd]pyrene	4.00	3.90		ug/L		98	63 - 116	2	15
Naphthalene	4.00	2.77		ug/L		69	62 - 104	1	15

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Terphenyl-d14	78		53 - 112

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

**Lab Sample ID: MB 580-250806/5**  
**Matrix: Water**  
**Analysis Batch: 250806**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.50	0.050	mg/L			07/12/17 06:28	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	116		58 - 133		07/12/17 06:28	1
Trifluorotoluene (Surr)	87		77 - 128		07/12/17 06:28	1

**Lab Sample ID: LCS 580-250806/6**  
**Matrix: Water**  
**Analysis Batch: 250806**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1.00	0.828		mg/L		83	79 - 110

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	119		58 - 133
Trifluorotoluene (Surr)	100		77 - 128

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

**Lab Sample ID: LCSD 580-250806/7**  
**Matrix: Water**  
**Analysis Batch: 250806**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	1.00	0.819		mg/L		82	79 - 110	1	10
<b>LCSD LCSD</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
4-Bromofluorobenzene (Surr)	122		58 - 133						
Trifluorotoluene (Surr)	97		77 - 128						

**Lab Sample ID: MB 580-250960/5**  
**Matrix: Water**  
**Analysis Batch: 250960**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.50	0.050	mg/L			07/12/17 19:42	1
<b>MB MB</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	89		58 - 133					07/12/17 19:42	1
Trifluorotoluene (Surr)	105		77 - 128					07/12/17 19:42	1

**Lab Sample ID: LCS 580-250960/6**  
**Matrix: Water**  
**Analysis Batch: 250960**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline	1.00	0.848		mg/L		85	79 - 110		
<b>LCS LCS</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
4-Bromofluorobenzene (Surr)	93		58 - 133						
Trifluorotoluene (Surr)	89		77 - 128						

**Lab Sample ID: LCSD 580-250960/7**  
**Matrix: Water**  
**Analysis Batch: 250960**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	1.00	0.857		mg/L		86	79 - 110	1	10
<b>LCSD LCSD</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
4-Bromofluorobenzene (Surr)	101		58 - 133						
Trifluorotoluene (Surr)	87		77 - 128						

**Lab Sample ID: MB 580-251286/5**  
**Matrix: Water**  
**Analysis Batch: 251286**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.50	0.050	mg/L			07/15/17 15:01	1

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

**Lab Sample ID: MB 580-251286/5**  
**Matrix: Water**  
**Analysis Batch: 251286**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	92		58 - 133		07/15/17 15:01	1
Trifluorotoluene (Surr)	96		77 - 128		07/15/17 15:01	1

**Lab Sample ID: LCS 580-251286/6**  
**Matrix: Water**  
**Analysis Batch: 251286**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1.00	0.881		mg/L		88	79 - 110

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	99		58 - 133
Trifluorotoluene (Surr)	106		77 - 128

**Lab Sample ID: LCSD 580-251286/7**  
**Matrix: Water**  
**Analysis Batch: 251286**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	1.00	0.857		mg/L		86	79 - 110	3	10

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	99		58 - 133
Trifluorotoluene (Surr)	101		77 - 128

## Method: 8011 - EDB and DBCP in Water by Microextraction

**Lab Sample ID: MB 580-250529/2-A**  
**Matrix: Water**  
**Analysis Batch: 250590**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 250529**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	ND		0.010	0.0020	ug/L		07/07/17 11:42	07/07/17 22:41	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dibromopropane	115		60 - 140	07/07/17 11:42	07/07/17 22:41	1

**Lab Sample ID: LCS 580-250529/3-A**  
**Matrix: Water**  
**Analysis Batch: 250590**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 250529**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylene Dibromide	0.0571	0.0704		ug/L		123	60 - 140

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dibromopropane	119		60 - 140

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

## Method: 8011 - EDB and DBCP in Water by Microextraction (Continued)

**Lab Sample ID: LCSD 580-250529/4-A**  
**Matrix: Water**  
**Analysis Batch: 250590**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 250529**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Ethylene Dibromide	0.0571	0.0660		ug/L		116	60 - 140	6	20
<b>Surrogate</b>		<b>%Recovery</b>	<b>Qualifier</b>				<b>Limits</b>		
1,2-Dibromopropane		115					60 - 140		

**Lab Sample ID: LLCS 580-250529/5-A**  
**Matrix: Water**  
**Analysis Batch: 250590**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 250529**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Ethylene Dibromide	0.0114	0.0137		ug/L		120	60 - 140		
<b>Surrogate</b>		<b>%Recovery</b>	<b>Qualifier</b>				<b>Limits</b>		
1,2-Dibromopropane		114					60 - 140		

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

**Lab Sample ID: MB 580-250982/1-A**  
**Matrix: Water**  
**Analysis Batch: 251088**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 250982**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.10	0.019	mg/L		07/12/17 14:20	07/13/17 15:42	1
Motor Oil (>C24-C36)	ND		0.25	0.077	mg/L		07/12/17 14:20	07/13/17 15:42	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
o-Terphenyl	67		43 - 119				07/12/17 14:20	07/13/17 15:42	1

**Lab Sample ID: LCS 580-250982/2-A**  
**Matrix: Water**  
**Analysis Batch: 251088**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 250982**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
#2 Diesel (C10-C24)	2.00	1.52		mg/L		76	59 - 112		
Motor Oil (>C24-C36)	2.00	1.92		mg/L		96	64 - 120		
<b>Surrogate</b>		<b>%Recovery</b>	<b>Qualifier</b>				<b>Limits</b>		
o-Terphenyl		78					43 - 119		

**Lab Sample ID: LCSD 580-250982/3-A**  
**Matrix: Water**  
**Analysis Batch: 251088**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 250982**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
#2 Diesel (C10-C24)	2.00	1.68		mg/L		84	59 - 112	10	16
Motor Oil (>C24-C36)	2.00	2.04		mg/L		102	64 - 120	6	17

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

**Lab Sample ID: LCSD 580-250982/3-A**  
**Matrix: Water**  
**Analysis Batch: 251088**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 250982**

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
<i>o</i> -Terphenyl	82		43 - 119

**Lab Sample ID: MB 580-251126/1-A**  
**Matrix: Water**  
**Analysis Batch: 251145**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 251126**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
#2 Diesel (C10-C24)	ND		0.10	0.019	mg/L		07/13/17 15:44	07/13/17 22:43	1
Motor Oil (>C24-C36)	ND		0.25	0.077	mg/L		07/13/17 15:44	07/13/17 22:43	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
<i>o</i> -Terphenyl	96		43 - 119	07/13/17 15:44	07/13/17 22:43	1

**Lab Sample ID: LCS 580-251126/2-A**  
**Matrix: Water**  
**Analysis Batch: 251145**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 251126**

Analyte	Spike	LCS	LCS	Unit	D	%Rec	Limits
	Added	Result	Qualifier				%Rec.
#2 Diesel (C10-C24)	2.00	1.82		mg/L		91	59 - 112
Motor Oil (>C24-C36)	2.00	1.90		mg/L		95	64 - 120

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
<i>o</i> -Terphenyl	76		43 - 119

**Lab Sample ID: LCSD 580-251126/3-A**  
**Matrix: Water**  
**Analysis Batch: 251145**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 251126**

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec	Limits	RPD	RPD	Limit
	Added	Result	Qualifier				%Rec.			
#2 Diesel (C10-C24)	2.00	1.78		mg/L		89	59 - 112	2		16
Motor Oil (>C24-C36)	2.00	1.95		mg/L		98	64 - 120	3		17

Surrogate	LCSD	LCSD	Limits
	%Recovery	Qualifier	
<i>o</i> -Terphenyl	80		43 - 119

## Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

**Lab Sample ID: MB 580-250982/1-B**  
**Matrix: Water**  
**Analysis Batch: 251145**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 250982**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
#2 Diesel (C10-C24)	ND		0.10	0.019	mg/L		07/12/17 14:20	07/13/17 18:55	1
Motor Oil (>C24-C36)	ND		0.25	0.077	mg/L		07/12/17 14:20	07/13/17 18:55	1

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

## Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup (Continued)

**Lab Sample ID: MB 580-250982/1-B**  
**Matrix: Water**  
**Analysis Batch: 251145**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 250982**

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
<i>o</i> -Terphenyl	90		43 - 119	07/12/17 14:20	07/13/17 18:55	1

**Lab Sample ID: LCS 580-250982/2-B**  
**Matrix: Water**  
**Analysis Batch: 251145**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 250982**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	2.00	1.91		mg/L		95	59 - 112		
Motor Oil (>C24-C36)	2.00	2.12		mg/L		106	64 - 120		

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
<i>o</i> -Terphenyl	81		43 - 119

**Lab Sample ID: LCSD 580-250982/3-B**  
**Matrix: Water**  
**Analysis Batch: 251145**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 250982**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	2.00	1.95		mg/L		97	59 - 112	2	16
Motor Oil (>C24-C36)	2.00	2.14		mg/L		107	64 - 120	1	17

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
<i>o</i> -Terphenyl	80		43 - 119

## Method: 6010C - Metals (ICP)

**Lab Sample ID: MB 580-250376/17-A**  
**Matrix: Water**  
**Analysis Batch: 250439**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 250376**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Lead	ND		0.030	0.0026	mg/L		07/05/17 17:58	07/06/17 11:51	1

**Lab Sample ID: LCS 580-250376/18-A**  
**Matrix: Water**  
**Analysis Batch: 250439**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 250376**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Lead	1.00	0.823		mg/L		82	80 - 120		

**Lab Sample ID: LCSD 580-250376/19-A**  
**Matrix: Water**  
**Analysis Batch: 250439**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total Recoverable**  
**Prep Batch: 250376**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Lead	1.00	0.891		mg/L		89	80 - 120	8	20

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

## Method: 6010C - Metals (ICP) (Continued)

**Lab Sample ID: 580-69636-11 MS**

**Matrix: Water**

**Analysis Batch: 250439**

**Client Sample ID: PMW-3**

**Prep Type: Total Recoverable**

**Prep Batch: 250376**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Lead	ND		1.00	0.859		mg/L		86	75 - 125

**Lab Sample ID: 580-69636-11 MSD**

**Matrix: Water**

**Analysis Batch: 250439**

**Client Sample ID: PMW-3**

**Prep Type: Total Recoverable**

**Prep Batch: 250376**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Lead	ND		1.00	0.898		mg/L		90	75 - 125	4	20

**Lab Sample ID: 580-69636-11 DU**

**Matrix: Water**

**Analysis Batch: 250439**

**Client Sample ID: PMW-3**

**Prep Type: Total Recoverable**

**Prep Batch: 250376**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Lead	ND		ND		mg/L		NC	20

**Lab Sample ID: MB 580-250405/22-A**

**Matrix: Water**

**Analysis Batch: 250555**

**Client Sample ID: Method Blank**

**Prep Type: Total Recoverable**

**Prep Batch: 250405**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.030	0.0026	mg/L		07/06/17 09:22	07/07/17 12:13	1

**Lab Sample ID: LCS 580-250405/23-A**

**Matrix: Water**

**Analysis Batch: 250555**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total Recoverable**

**Prep Batch: 250405**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Lead	1.00	0.924		mg/L		92	80 - 120

**Lab Sample ID: LCSD 580-250405/24-A**

**Matrix: Water**

**Analysis Batch: 250555**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total Recoverable**

**Prep Batch: 250405**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Lead	1.00	0.935		mg/L		93	80 - 120	1	20

**Lab Sample ID: 580-69636-16 MS**

**Matrix: Water**

**Analysis Batch: 250555**

**Client Sample ID: PMW-13**

**Prep Type: Dissolved**

**Prep Batch: 250405**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Lead	0.0030	J	1.00	0.941		mg/L		94	75 - 125

**Lab Sample ID: 580-69636-16 MSD**

**Matrix: Water**

**Analysis Batch: 250555**

**Client Sample ID: PMW-13**

**Prep Type: Dissolved**

**Prep Batch: 250405**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Lead	0.0030	J	1.00	0.911		mg/L		91	75 - 125	3	20

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Lab Sample ID: 580-69636-16 DU**  
**Matrix: Water**  
**Analysis Batch: 250555**

**Client Sample ID: PMW-13**  
**Prep Type: Dissolved**  
**Prep Batch: 250405**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lead	0.0030	J	0.00400	J F5	mg/L		29	20

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

# Lab Chronicle

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

## Client Sample ID: PMW-1

Date Collected: 06/28/17 12:40

Date Received: 06/30/17 12:15

## Lab Sample ID: 580-69636-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	250379	07/06/17 03:23	T1W	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	251286	07/15/17 19:47	RSB	TAL SEA
Total/NA	Prep	3510C			250982	07/12/17 14:20	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	251088	07/13/17 20:07	CJ	TAL SEA

## Client Sample ID: PMW-2

Date Collected: 06/28/17 15:30

Date Received: 06/30/17 12:15

## Lab Sample ID: 580-69636-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	250379	07/06/17 03:50	T1W	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	250960	07/12/17 21:46	IWH	TAL SEA
Total/NA	Prep	3510C			250982	07/12/17 14:20	MRG	TAL SEA
Total/NA	Cleanup	3630C			251135	07/13/17 15:55	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	251145	07/13/17 20:02	TL1	TAL SEA
Total/NA	Prep	3510C			250982	07/12/17 14:20	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	251088	07/14/17 00:36	CJ	TAL SEA

## Client Sample ID: PMW-5

Date Collected: 06/28/17 14:35

Date Received: 06/30/17 12:15

## Lab Sample ID: 580-69636-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	250379	07/06/17 04:17	T1W	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	250960	07/12/17 22:17	IWH	TAL SEA
Total/NA	Prep	3510C			250982	07/12/17 14:20	MRG	TAL SEA
Total/NA	Cleanup	3630C			251135	07/13/17 15:55	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	251145	07/13/17 20:25	TL1	TAL SEA
Total/NA	Prep	3510C			250982	07/12/17 14:20	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	251088	07/14/17 01:05	CJ	TAL SEA

## Client Sample ID: PMW-10

Date Collected: 06/28/17 14:10

Date Received: 06/30/17 12:15

## Lab Sample ID: 580-69636-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	250379	07/06/17 04:43	T1W	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	250960	07/12/17 22:48	IWH	TAL SEA
Total/NA	Prep	3510C			250982	07/12/17 14:20	MRG	TAL SEA
Total/NA	Cleanup	3630C			251135	07/13/17 15:55	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	251145	07/13/17 20:48	TL1	TAL SEA
Total/NA	Prep	3510C			250982	07/12/17 14:20	MRG	TAL SEA

TestAmerica Seattle

# Lab Chronicle

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

## Client Sample ID: PMW-10

Date Collected: 06/28/17 14:10

Date Received: 06/30/17 12:15

## Lab Sample ID: 580-69636-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Dx		1	251088	07/14/17 01:34	CJ	TAL SEA

## Client Sample ID: PMW-12

Date Collected: 06/28/17 14:50

Date Received: 06/30/17 12:15

## Lab Sample ID: 580-69636-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	250379	07/06/17 05:09	T1W	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	250960	07/12/17 23:19	IWH	TAL SEA
Total/NA	Prep	3510C			250982	07/12/17 14:20	MRG	TAL SEA
Total/NA	Cleanup	3630C			251135	07/13/17 15:55	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	251145	07/13/17 21:11	TL1	TAL SEA
Total/NA	Prep	3510C			250982	07/12/17 14:20	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	251088	07/14/17 02:31	CJ	TAL SEA

## Client Sample ID: PMW-15

Date Collected: 06/28/17 12:50

Date Received: 06/30/17 12:15

## Lab Sample ID: 580-69636-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	250379	07/06/17 05:36	T1W	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	250960	07/12/17 23:50	IWH	TAL SEA
Total/NA	Prep	3510C			250982	07/12/17 14:20	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	251088	07/13/17 21:07	CJ	TAL SEA

## Client Sample ID: PMW-17

Date Collected: 06/28/17 13:45

Date Received: 06/30/17 12:15

## Lab Sample ID: 580-69636-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	250379	07/06/17 06:02	T1W	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	250960	07/13/17 06:47	IWH	TAL SEA
Total/NA	Prep	3510C			250982	07/12/17 14:20	MRG	TAL SEA
Total/NA	Cleanup	3630C			251135	07/13/17 15:55	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	251145	07/13/17 21:34	TL1	TAL SEA
Total/NA	Prep	3510C			250982	07/12/17 14:20	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	251088	07/14/17 02:59	CJ	TAL SEA

# Lab Chronicle

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

## Client Sample ID: PMW-18

Date Collected: 06/28/17 13:35

Date Received: 06/30/17 12:15

## Lab Sample ID: 580-69636-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	250379	07/06/17 06:29	T1W	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	250960	07/13/17 07:49	IWH	TAL SEA
Total/NA	Prep	3510C			250982	07/12/17 14:20	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	251088	07/13/17 21:37	CJ	TAL SEA

## Client Sample ID: TRIP BLANK

Date Collected: 06/28/17 00:01

Date Received: 06/30/17 12:15

## Lab Sample ID: 580-69636-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	250379	07/06/17 02:05	T1W	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	250806	07/12/17 08:04	CJ	TAL SEA

## Client Sample ID: DUP-1

Date Collected: 06/28/17 00:01

Date Received: 06/30/17 12:15

## Lab Sample ID: 580-69636-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	250379	07/06/17 06:55	T1W	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	250960	07/13/17 08:20	IWH	TAL SEA

## Client Sample ID: PMW-3

Date Collected: 06/29/17 10:25

Date Received: 06/30/17 12:15

## Lab Sample ID: 580-69636-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	250379	07/06/17 07:22	T1W	TAL SEA
Total/NA	Prep	3510C			250452	07/06/17 13:37	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		1	250561	07/07/17 15:26	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	250960	07/13/17 08:59	IWH	TAL SEA
Total/NA	Prep	8011			250529	07/07/17 11:44	DCV	TAL SEA
Total/NA	Analysis	8011		1	250590	07/07/17 23:48	DCV	TAL SEA
Total/NA	Prep	3510C			250982	07/12/17 14:20	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	251088	07/13/17 22:08	CJ	TAL SEA
Dissolved	Prep	3005A			250376	07/05/17 17:58	PAB	TAL SEA
Dissolved	Analysis	6010C		1	250439	07/06/17 12:06	HJM	TAL SEA
Total Recoverable	Prep	3005A			250376	07/05/17 17:57	PAB	TAL SEA
Total Recoverable	Analysis	6010C		1	250439	07/06/17 12:00	HJM	TAL SEA

TestAmerica Seattle

# Lab Chronicle

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-6**

**Date Collected: 06/29/17 13:20**

**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-12**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	250379	07/06/17 07:49	T1W	TAL SEA
Total/NA	Prep	3510C			250452	07/06/17 13:37	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		1	250561	07/07/17 15:51	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	250960	07/13/17 09:30	IWH	TAL SEA
Total/NA	Prep	8011			250529	07/07/17 11:44	DCV	TAL SEA
Total/NA	Analysis	8011		1	250590	07/08/17 00:04	DCV	TAL SEA
Total/NA	Prep	3510C			250982	07/12/17 14:20	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	251088	07/13/17 22:39	CJ	TAL SEA
Dissolved	Prep	3005A			250376	07/05/17 17:58	PAB	TAL SEA
Dissolved	Analysis	6010C		1	250439	07/06/17 12:31	HJM	TAL SEA
Total Recoverable	Prep	3005A			250376	07/05/17 17:57	PAB	TAL SEA
Total Recoverable	Analysis	6010C		1	250439	07/06/17 12:28	HJM	TAL SEA

**Client Sample ID: PMW-7**

**Date Collected: 06/29/17 14:10**

**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-13**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	250379	07/06/17 08:15	T1W	TAL SEA
Total/NA	Prep	3510C			250452	07/06/17 13:37	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		1	250561	07/07/17 16:16	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	250960	07/13/17 10:06	IWH	TAL SEA
Total/NA	Prep	8011			250529	07/07/17 11:44	DCV	TAL SEA
Total/NA	Analysis	8011		1	250590	07/08/17 00:21	DCV	TAL SEA
Total/NA	Prep	3510C			250982	07/12/17 14:20	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	251088	07/13/17 23:09	CJ	TAL SEA
Dissolved	Prep	3005A			250376	07/05/17 17:58	PAB	TAL SEA
Dissolved	Analysis	6010C		1	250439	07/06/17 12:38	HJM	TAL SEA
Total Recoverable	Prep	3005A			250376	07/05/17 17:57	PAB	TAL SEA
Total Recoverable	Analysis	6010C		1	250439	07/06/17 12:35	HJM	TAL SEA

**Client Sample ID: PMW-8**

**Date Collected: 06/29/17 12:25**

**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-14**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	250379	07/06/17 08:42	T1W	TAL SEA
Total/NA	Prep	3510C			250452	07/06/17 13:37	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		1	250561	07/07/17 16:41	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	250960	07/13/17 10:37	IWH	TAL SEA
Total/NA	Prep	8011			250529	07/07/17 11:44	DCV	TAL SEA
Total/NA	Analysis	8011		1	250590	07/08/17 00:37	DCV	TAL SEA
Total/NA	Prep	3510C			250982	07/12/17 14:20	MRG	TAL SEA

TestAmerica Seattle

# Lab Chronicle

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-8**

**Date Collected: 06/29/17 12:25**

**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-14**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Dx		1	251088	07/13/17 23:38	CJ	TAL SEA
Dissolved	Prep	3005A			250376	07/05/17 17:58	PAB	TAL SEA
Dissolved	Analysis	6010C		1	250439	07/06/17 12:45	HJM	TAL SEA
Total Recoverable	Prep	3005A			250376	07/05/17 17:57	PAB	TAL SEA
Total Recoverable	Analysis	6010C		1	250439	07/06/17 12:41	HJM	TAL SEA

**Client Sample ID: PMW-9**

**Date Collected: 06/29/17 10:40**

**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-15**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	250379	07/06/17 09:08	T1W	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	250960	07/13/17 11:08	IWH	TAL SEA
Total/NA	Prep	3510C			250982	07/12/17 14:20	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	251088	07/14/17 00:07	CJ	TAL SEA
Dissolved	Prep	3005A			250376	07/05/17 17:58	PAB	TAL SEA
Dissolved	Analysis	6010C		1	250439	07/06/17 12:51	HJM	TAL SEA
Total Recoverable	Prep	3005A			250376	07/05/17 17:57	PAB	TAL SEA
Total Recoverable	Analysis	6010C		1	250439	07/06/17 12:48	HJM	TAL SEA

**Client Sample ID: PMW-13**

**Date Collected: 06/29/17 10:30**

**Date Received: 06/30/17 12:15**

**Lab Sample ID: 580-69636-16**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	250379	07/06/17 09:34	T1W	TAL SEA
Total/NA	Prep	3510C			250452	07/06/17 13:37	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		1	250561	07/07/17 17:06	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	250960	07/13/17 11:39	IWH	TAL SEA
Total/NA	Prep	8011			250529	07/07/17 11:44	DCV	TAL SEA
Total/NA	Analysis	8011		1	250590	07/08/17 00:54	DCV	TAL SEA
Total/NA	Prep	3510C			251126	07/13/17 15:44	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	251145	07/13/17 23:51	TL1	TAL SEA
Dissolved	Prep	3005A			250405	07/06/17 09:22	ADB	TAL SEA
Dissolved	Analysis	6010C		1	250555	07/07/17 12:22	HJM	TAL SEA
Total Recoverable	Prep	3005A			250405	07/06/17 09:22	ADB	TAL SEA
Total Recoverable	Analysis	6010C		1	250555	07/07/17 12:47	HJM	TAL SEA

TestAmerica Seattle

# Lab Chronicle

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

**Client Sample ID: PMW-14**

**Lab Sample ID: 580-69636-17**

**Date Collected: 06/29/17 09:40**

**Matrix: Water**

**Date Received: 06/30/17 12:15**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	250379	07/06/17 10:00	T1W	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	251286	07/15/17 20:51	RSB	TAL SEA
Total/NA	Prep	3510C			250982	07/12/17 14:20	MRG	TAL SEA
Total/NA	Cleanup	3630C			251135	07/13/17 15:55	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	251145	07/13/17 21:57	TL1	TAL SEA
Total/NA	Prep	3510C			250982	07/12/17 14:20	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	251088	07/14/17 03:28	CJ	TAL SEA

**Client Sample ID: PMW-16**

**Lab Sample ID: 580-69636-18**

**Date Collected: 06/29/17 11:45**

**Matrix: Water**

**Date Received: 06/30/17 12:15**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	250379	07/06/17 10:26	T1W	TAL SEA
Total/NA	Prep	3510C			250452	07/06/17 13:37	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		1	250561	07/07/17 17:31	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	251286	07/15/17 21:22	RSB	TAL SEA
Total/NA	Prep	8011			250529	07/07/17 11:44	DCV	TAL SEA
Total/NA	Analysis	8011		1	250590	07/08/17 01:27	DCV	TAL SEA
Total/NA	Prep	3510C			251126	07/13/17 15:44	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	251145	07/14/17 00:13	TL1	TAL SEA
Dissolved	Prep	3005A			250405	07/06/17 09:22	ADB	TAL SEA
Dissolved	Analysis	6010C		1	250555	07/07/17 12:51	HJM	TAL SEA
Total Recoverable	Prep	3005A			250405	07/06/17 09:22	ADB	TAL SEA
Total Recoverable	Analysis	6010C		1	250555	07/07/17 12:54	HJM	TAL SEA

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 580-69636-19**

**Date Collected: 06/29/17 00:01**

**Matrix: Water**

**Date Received: 06/30/17 12:15**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	250379	07/06/17 02:31	T1W	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	251286	07/15/17 19:15	RSB	TAL SEA

**Laboratory References:**

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

## Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-18
California	State Program	9	2901	01-31-18
L-A-B	DoD ELAP		L2236	01-19-19
L-A-B	ISO/IEC 17025		L2236	01-19-19
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-17
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-18

# Sample Summary

Client: ARCADIS U.S. Inc  
Project/Site: PIH Olympia

TestAmerica Job ID: 580-69636-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-69636-1	PMW-1	Water	06/28/17 12:40	06/30/17 12:15
580-69636-2	PMW-2	Water	06/28/17 15:30	06/30/17 12:15
580-69636-3	PMW-5	Water	06/28/17 14:35	06/30/17 12:15
580-69636-4	PMW-10	Water	06/28/17 14:10	06/30/17 12:15
580-69636-5	PMW-12	Water	06/28/17 14:50	06/30/17 12:15
580-69636-6	PMW-15	Water	06/28/17 12:50	06/30/17 12:15
580-69636-7	PMW-17	Water	06/28/17 13:45	06/30/17 12:15
580-69636-8	PMW-18	Water	06/28/17 13:35	06/30/17 12:15
580-69636-9	TRIP BLANK	Water	06/28/17 00:01	06/30/17 12:15
580-69636-10	DUP-1	Water	06/28/17 00:01	06/30/17 12:15
580-69636-11	PMW-3	Water	06/29/17 10:25	06/30/17 12:15
580-69636-12	PMW-6	Water	06/29/17 13:20	06/30/17 12:15
580-69636-13	PMW-7	Water	06/29/17 14:10	06/30/17 12:15
580-69636-14	PMW-8	Water	06/29/17 12:25	06/30/17 12:15
580-69636-15	PMW-9	Water	06/29/17 10:40	06/30/17 12:15
580-69636-16	PMW-13	Water	06/29/17 10:30	06/30/17 12:15
580-69636-17	PMW-14	Water	06/29/17 09:40	06/30/17 12:15
580-69636-18	PMW-16	Water	06/29/17 11:45	06/30/17 12:15
580-69636-19	TRIP BLANK	Water	06/29/17 00:01	06/30/17 12:15

**TestAmerica Seattle**

5755 8th Street East  
Tacoma, WA 98424  
Phone (253) 922-2310 Fax (253) 922-5047

Loc: 580  
**69636**

**Chain of Custody Rec**

TB #2 Cooler Cor 5.9 Unc 6.7  
Cooler Disc L<sub>g</sub> B<sub>1</sub> @ Lab 1350  
Wet/Packs Packing Bubble  
w/0

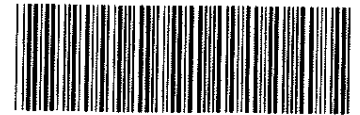
TB Cooler I<sub>1</sub> Cor 6.0 Unc 6.1  
Cooler Disc L<sub>g</sub> B<sub>1</sub> @ Lab 1350  
Wet/Packs Packing Bubble  
w/0

<b>Client Information</b>		Sample: <u>Alex Pisk + Joe Latta</u>	Lab PM: Allen, Kristine D	Carrier Tracking No(s):	COC No: 580-25050-8268.3
Client Contact: Ross LaGrandeur		Phone: <u>906-440-8394</u>	E-Mail: kristine.allen@testamericainc.com		Page: Page 3 of 3
Company: ARCADIS U.S. Inc					Job #:

Address: 1100 Olive Way Suite 800		Due Date Requested:		<b>Analysis Requested</b>				Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify)	
City: Seattle		TAT Requested (days): <u>Standard TAT</u>							
State, Zip: WA, 98101		PO #: Purchase Order Requested		Field Filtered Sample (Yes or No)		Total Number of containers		Special Instructions/Note:	
Phone: <u>906-440-8394</u>		WO #:		Perform MS/MSD (Yes or No)					
Email: ross.lagrandeur@arcadis.com		Project #: 58011340		NWTPH_Dx - Northwest - DRO/RRO → NO 56C					
Project Name: Blackstone Olympia DoubleTree		SSOW#:		NWTPH_Gx - Northwest GRO					
Site:				8270D_SIM - cPAHs + Naphthalenes					
				6010C - Total Lead					
				6010C - Dissolved Lead - field filtered					
				8011 - EDB					
				8260C - BTEX					
				8260C - BTEX, EDC, MTBE					
				<u>NWTPH-Dx - DRO/RRO - with 56C</u>					

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, Seawater, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	NWTPH_Dx - Northwest - DRO/RRO → NO 56C	NWTPH_Gx - Northwest GRO	8270D_SIM - cPAHs + Naphthalenes	6010C - Total Lead	6010C - Dissolved Lead - field filtered	8011 - EDB	8260C - BTEX	8260C - BTEX, EDC, MTBE	Total Number of containers	Special Instructions/Note:
PMW-3	6/29/17		G	W	X	X	X	X	X	X	X	X	X	X	14	
PMW-6					X	X	X	X	X	X	X	X	X	X	14	
PMW-7					X	X	X	X	X	X	X	X	X	X	14	
PMW-8					X	X	X	X	X	X	X	X	X	X	14	
PMW-9					X	X	X	X	X	X	X	X	X	X	10	
PMW-13					X	X	X	X	X	X	X	X	X	X	14	
PMW-14					X	X	X	X	X	X	X	X	X	X	10	
PMW-16					X	X	X	X	X	X	X	X	X	X	14	
Trip Blank							X						X		6	
Temp Blank													X		6	

<b>Possible Hazard Identification</b>		<b>Sample Disposal (A fee may be assessed)</b>	
<input checked="" type="checkbox"/> Non-Hazard	<input type="checkbox"/> Flammable	<input type="checkbox"/> Skin Irritant	<input type="checkbox"/> Poison B
<input type="checkbox"/> Unknown	<input type="checkbox"/> Radiological	<input type="checkbox"/> Return To Client	<input checked="" type="checkbox"/> Disposal
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:	



Empty Kit Relinquished by:		Date:	Time:	Met
Relinquished by: <u>Joe Latta</u>	Date/Time: <u>6-30-17 12:15</u>	Company:	Received by: <u>[Signature]</u>	Date/Time: <u>6/30/17 12:15</u>
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:



# Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-69636-1

**Login Number: 69636**  
**List Number: 1**  
**Creator: Gall, Brandon A**

**List Source: TestAmerica Seattle**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	No sample time on COC(Samples11-18), logged in per container labels.
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	False	No date or time on COC, logged in per container labels.
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

TestAmerica Job ID: 580-71709-1

Client Project/Site: Blackstone Double Tree Olympia (WA)

For:

ARCADIS U.S. Inc  
1100 Olive Way  
Suite 800  
Seattle, Washington 98101

Attn: Rory Henneck



Authorized for release by:  
10/13/2017 4:02:42 PM

Kayse Zalmai, Project Manager I  
(253)922-2310

[kayse.zalmai@testamericainc.com](mailto:kayse.zalmai@testamericainc.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Case Narrative

Client: ARCADIS U.S. Inc  
Project/Site: Blackstone Double Tree Olympia (WA)

TestAmerica Job ID: 580-71709-1

**Job ID: 580-71709-1**

**Laboratory: TestAmerica Seattle**

## Narrative

### Job Narrative 580-71709-1

#### Receipt

The samples were received on 9/29/2017 3:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.9° C and 3.7° C.

#### Receipt Exceptions

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. The analyses listed on the COC do not match what the client actually required. Logged in per the PM.

#### GC/MS VOA

Method(s) NWTPH-Gx: Surrogate recovery for the following samples were outside control limits: PMW-10 (580-71709-6) and PMW-2 (580-71709-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) NWTPH-Gx: The method blank for analytical batch 580-258156 contained Gasoline above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### GC/MS Semi VOA

Method(s) 8270D SIM: The method blank for preparation batch 580-258025 and analytical batch 580-258069 contained Benzo[a]anthracene above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and/or re-analysis of samples was not warranted.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### GC Semi VOA

Method(s) NWTPH-Dx: The method blank for preparation batch 580-258418 and analytical batch 580-258563 contained DRO (C10-C24) above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) NWTPH-Dx: The method blank for preparation batch 580-258457 and analytical batch 580-258557 contained DRO (C10-C24) above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) NWTPH-Dx: The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: PMW-9 (580-71709-5), PMW-10 (580-71709-6) and PMW-12 (580-71709-7).

Method(s) NWTPH-Dx: The following sample contained a hydrocarbon pattern in the diesel range; however, the elution pattern was earlier than the typical diesel fuel pattern used by the laboratory for quantitative purposes: DUP-1 (580-71709-8).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

# Definitions/Glossary

Client: ARCADIS U.S. Inc  
Project/Site: Blackstone Double Tree Olympia (WA)

TestAmerica Job ID: 580-71709-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### GC VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

### GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Client Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: Blackstone Double Tree Olympia (WA)

TestAmerica Job ID: 580-71709-1

**Client Sample ID: PMW-2**  
**Date Collected: 09/27/17 14:20**  
**Date Received: 09/29/17 15:15**

**Lab Sample ID: 580-71709-1**  
**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			10/03/17 20:25	1
Toluene	ND		2.0	0.24	ug/L			10/03/17 20:25	1
Ethylbenzene	ND		3.0	0.21	ug/L			10/03/17 20:25	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			10/03/17 20:25	1
o-Xylene	ND		2.0	0.15	ug/L			10/03/17 20:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 122		10/03/17 20:25	1
Trifluorotoluene (Surr)	105		80 - 120		10/03/17 20:25	1
4-Bromofluorobenzene (Surr)	103		75 - 125		10/03/17 20:25	1
Dibromofluoromethane (Surr)	106		77 - 120		10/03/17 20:25	1
1,2-Dichloroethane-d4 (Surr)	101		80 - 126		10/03/17 20:25	1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>1-Methylnaphthalene</b>	<b>0.066</b>		0.021	0.0062	ug/L		10/04/17 09:31	10/04/17 17:14	1
Benzo[a]anthracene	ND		0.021	0.0021	ug/L		10/04/17 09:31	10/04/17 17:14	1
Benzo[a]pyrene	ND		0.021	0.0031	ug/L		10/04/17 09:31	10/04/17 17:14	1
2-Methylnaphthalene	ND		0.031	0.0093	ug/L		10/04/17 09:31	10/04/17 17:14	1
Benzo[b]fluoranthene	ND		0.021	0.0082	ug/L		10/04/17 09:31	10/04/17 17:14	1
Benzo[k]fluoranthene	ND		0.031	0.0093	ug/L		10/04/17 09:31	10/04/17 17:14	1
<b>Naphthalene</b>	<b>0.068</b>		0.041	0.013	ug/L		10/04/17 09:31	10/04/17 17:14	1
Chrysene	ND		0.021	0.0062	ug/L		10/04/17 09:31	10/04/17 17:14	1
Dibenz(a,h)anthracene	ND		0.021	0.0021	ug/L		10/04/17 09:31	10/04/17 17:14	1
Indeno[1,2,3-cd]pyrene	ND		0.021	0.0072	ug/L		10/04/17 09:31	10/04/17 17:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	77		53 - 112	10/04/17 09:31	10/04/17 17:14	1
Terphenyl-d14	77		53 - 112	10/04/17 09:31	10/04/17 17:14	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>0.14</b>	<b>J B</b>	0.25	0.050	mg/L			10/05/17 15:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		58 - 133		10/05/17 15:08	1
Trifluorotoluene (Surr)	133	X	77 - 128		10/05/17 15:08	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.23</b>	<b>B</b>	0.10	0.020	mg/L		10/09/17 14:19	10/11/17 13:39	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>0.10</b>	<b>J</b>	0.26	0.080	mg/L		10/09/17 14:19	10/11/17 13:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	74		50 - 150	10/09/17 14:19	10/11/17 13:39	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: Blackstone Double Tree Olympia (WA)

TestAmerica Job ID: 580-71709-1

**Client Sample ID: PMW-3**

**Date Collected: 09/27/17 12:15**

**Date Received: 09/29/17 15:15**

**Lab Sample ID: 580-71709-2**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			10/03/17 20:51	1
Toluene	ND		2.0	0.24	ug/L			10/03/17 20:51	1
Ethylbenzene	ND		3.0	0.21	ug/L			10/03/17 20:51	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			10/03/17 20:51	1
o-Xylene	ND		2.0	0.15	ug/L			10/03/17 20:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 122		10/03/17 20:51	1
Trifluorotoluene (Surr)	107		80 - 120		10/03/17 20:51	1
4-Bromofluorobenzene (Surr)	102		75 - 125		10/03/17 20:51	1
Dibromofluoromethane (Surr)	106		77 - 120		10/03/17 20:51	1
1,2-Dichloroethane-d4 (Surr)	102		80 - 126		10/03/17 20:51	1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.022	0.0066	ug/L		10/04/17 09:31	10/04/17 17:36	1
2-Methylnaphthalene	ND		0.033	0.0099	ug/L		10/04/17 09:31	10/04/17 17:36	1
Naphthalene	ND		0.044	0.014	ug/L		10/04/17 09:31	10/04/17 17:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	78		53 - 112	10/04/17 09:31	10/04/17 17:36	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			10/03/17 15:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		58 - 133		10/03/17 15:31	1
Trifluorotoluene (Surr)	110		77 - 128		10/03/17 15:31	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.047	J B	0.10	0.020	mg/L		10/09/17 14:19	10/11/17 14:01	1
Motor Oil (>C24-C36)	ND		0.26	0.080	mg/L		10/09/17 14:19	10/11/17 14:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	83		50 - 150	10/09/17 14:19	10/11/17 14:01	1

## Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0013	J	0.0040	0.0010	mg/L		10/05/17 12:14	10/06/17 21:33	5

## Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040	0.0010	mg/L		10/05/17 14:39	10/06/17 22:13	5

TestAmerica Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: Blackstone Double Tree Olympia (WA)

TestAmerica Job ID: 580-71709-1

**Client Sample ID: PMW-6**

**Date Collected: 09/27/17 15:10**

**Date Received: 09/29/17 15:15**

**Lab Sample ID: 580-71709-3**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			10/03/17 21:18	1
Toluene	ND		2.0	0.24	ug/L			10/03/17 21:18	1
Ethylbenzene	ND		3.0	0.21	ug/L			10/03/17 21:18	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			10/03/17 21:18	1
o-Xylene	ND		2.0	0.15	ug/L			10/03/17 21:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 122		10/03/17 21:18	1
Trifluorotoluene (Surr)	105		80 - 120		10/03/17 21:18	1
4-Bromofluorobenzene (Surr)	102		75 - 125		10/03/17 21:18	1
Dibromofluoromethane (Surr)	108		77 - 120		10/03/17 21:18	1
1,2-Dichloroethane-d4 (Surr)	103		80 - 126		10/03/17 21:18	1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.022	0.0065	ug/L		10/04/17 09:31	10/04/17 17:58	1
2-Methylnaphthalene	ND		0.032	0.0097	ug/L		10/04/17 09:31	10/04/17 17:58	1
Naphthalene	ND		0.043	0.014	ug/L		10/04/17 09:31	10/04/17 17:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	70		53 - 112	10/04/17 09:31	10/04/17 17:58	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.12	J	0.25	0.050	mg/L			10/03/17 16:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		58 - 133		10/03/17 16:03	1
Trifluorotoluene (Surr)	108		77 - 128		10/03/17 16:03	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1.7	B	0.11	0.020	mg/L		10/09/17 14:19	10/11/17 14:23	1
Motor Oil (>C24-C36)	0.59		0.26	0.081	mg/L		10/09/17 14:19	10/11/17 14:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	71		50 - 150	10/09/17 14:19	10/11/17 14:23	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: Blackstone Double Tree Olympia (WA)

TestAmerica Job ID: 580-71709-1

**Client Sample ID: PMW-7**

**Date Collected: 09/27/17 15:35**

**Date Received: 09/29/17 15:15**

**Lab Sample ID: 580-71709-4**

**Matrix: Water**

### Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			10/03/17 21:44	1
Toluene	ND		2.0	0.24	ug/L			10/03/17 21:44	1
Ethylbenzene	ND		3.0	0.21	ug/L			10/03/17 21:44	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			10/03/17 21:44	1
o-Xylene	ND		2.0	0.15	ug/L			10/03/17 21:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 122		10/03/17 21:44	1
Trifluorotoluene (Surr)	107		80 - 120		10/03/17 21:44	1
4-Bromofluorobenzene (Surr)	102		75 - 125		10/03/17 21:44	1
Dibromofluoromethane (Surr)	105		77 - 120		10/03/17 21:44	1
1,2-Dichloroethane-d4 (Surr)	102		80 - 126		10/03/17 21:44	1

### Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.013	J	0.021	0.0063	ug/L		10/04/17 09:31	10/04/17 18:20	1
2-Methylnaphthalene	ND		0.031	0.0094	ug/L		10/04/17 09:31	10/04/17 18:20	1
Naphthalene	0.017	J	0.042	0.014	ug/L		10/04/17 09:31	10/04/17 18:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	77		53 - 112	10/04/17 09:31	10/04/17 18:20	1

### Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			10/03/17 16:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		58 - 133		10/03/17 16:35	1
Trifluorotoluene (Surr)	105		77 - 128		10/03/17 16:35	1

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.14	B	0.10	0.020	mg/L		10/09/17 14:19	10/11/17 14:46	1
Motor Oil (>C24-C36)	0.083	J	0.26	0.080	mg/L		10/09/17 14:19	10/11/17 14:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	75		50 - 150	10/09/17 14:19	10/11/17 14:46	1

### Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040	0.0010	mg/L		10/05/17 12:14	10/06/17 21:36	5

### Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040	0.0010	mg/L		10/05/17 14:39	10/06/17 21:39	5

TestAmerica Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: Blackstone Double Tree Olympia (WA)

TestAmerica Job ID: 580-71709-1

**Client Sample ID: PMW-9**

**Lab Sample ID: 580-71709-5**

**Date Collected: 09/27/17 12:54**

**Matrix: Water**

**Date Received: 09/29/17 15:15**

### Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzene</b>	<b>0.81</b>	<b>J</b>	2.0	0.42	ug/L			10/03/17 22:11	1
<b>Toluene</b>	<b>0.51</b>	<b>J</b>	2.0	0.24	ug/L			10/03/17 22:11	1
Ethylbenzene	ND		3.0	0.21	ug/L			10/03/17 22:11	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			10/03/17 22:11	1
o-Xylene	ND		2.0	0.15	ug/L			10/03/17 22:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	98		80 - 122		10/03/17 22:11	1
<i>Trifluorotoluene (Surr)</i>	105		80 - 120		10/03/17 22:11	1
<i>4-Bromofluorobenzene (Surr)</i>	106		75 - 125		10/03/17 22:11	1
<i>Dibromofluoromethane (Surr)</i>	109		77 - 120		10/03/17 22:11	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	102		80 - 126		10/03/17 22:11	1

### Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>1-Methylnaphthalene</b>	<b>0.057</b>		0.021	0.0062	ug/L		10/04/17 09:31	10/04/17 18:43	1
<b>2-Methylnaphthalene</b>	<b>0.013</b>	<b>J</b>	0.031	0.0093	ug/L		10/04/17 09:31	10/04/17 18:43	1
<b>Naphthalene</b>	<b>0.091</b>		0.041	0.013	ug/L		10/04/17 09:31	10/04/17 18:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Terphenyl-d14</i>	63		53 - 112	10/04/17 09:31	10/04/17 18:43	1

### Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>0.083</b>	<b>J</b>	0.25	0.050	mg/L			10/03/17 17:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>4-Bromofluorobenzene (Surr)</i>	97		58 - 133		10/03/17 17:07	1
<i>Trifluorotoluene (Surr)</i>	107		77 - 128		10/03/17 17:07	1

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.93</b>	<b>B</b>	0.10	0.020	mg/L		10/10/17 09:08	10/11/17 16:14	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>0.51</b>		0.26	0.079	mg/L		10/10/17 09:08	10/11/17 16:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	74		50 - 150	10/10/17 09:08	10/11/17 16:14	1

### Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040	0.0010	mg/L		10/05/17 12:14	10/06/17 21:30	5

### Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040	0.0010	mg/L		10/05/17 14:39	10/06/17 21:41	5

TestAmerica Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: Blackstone Double Tree Olympia (WA)

TestAmerica Job ID: 580-71709-1

**Client Sample ID: PMW-10**

**Lab Sample ID: 580-71709-6**

**Date Collected: 09/27/17 13:20**

**Matrix: Water**

**Date Received: 09/29/17 15:15**

### Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.9		2.0	0.42	ug/L			10/03/17 22:37	1
Toluene	0.72	J	2.0	0.24	ug/L			10/03/17 22:37	1
Ethylbenzene	0.74	J	3.0	0.21	ug/L			10/03/17 22:37	1
m-Xylene & p-Xylene	1.1	J	3.0	0.72	ug/L			10/03/17 22:37	1
o-Xylene	ND		2.0	0.15	ug/L			10/03/17 22:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 122		10/03/17 22:37	1
Trifluorotoluene (Surr)	106		80 - 120		10/03/17 22:37	1
4-Bromofluorobenzene (Surr)	102		75 - 125		10/03/17 22:37	1
Dibromofluoromethane (Surr)	106		77 - 120		10/03/17 22:37	1
1,2-Dichloroethane-d4 (Surr)	100		80 - 126		10/03/17 22:37	1

### Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	1.6		0.020	0.0061	ug/L		10/04/17 09:31	10/04/17 19:05	1
2-Methylnaphthalene	0.071		0.030	0.0091	ug/L		10/04/17 09:31	10/04/17 19:05	1
Naphthalene	0.14		0.040	0.013	ug/L		10/04/17 09:31	10/04/17 19:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	66		53 - 112	10/04/17 09:31	10/04/17 19:05	1

### Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.75		0.25	0.050	mg/L			10/03/17 17:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	146	X	58 - 133		10/03/17 17:39	1
Trifluorotoluene (Surr)	116		77 - 128		10/03/17 17:39	1

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	2.1	B	0.11	0.020	mg/L		10/10/17 09:08	10/11/17 16:36	1
Motor Oil (>C24-C36)	1.2		0.27	0.083	mg/L		10/10/17 09:08	10/11/17 16:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	64		50 - 150	10/10/17 09:08	10/11/17 16:36	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: Blackstone Double Tree Olympia (WA)

TestAmerica Job ID: 580-71709-1

**Client Sample ID: PMW-12**

**Lab Sample ID: 580-71709-7**

**Date Collected: 09/27/17 14:15**

**Matrix: Water**

**Date Received: 09/29/17 15:15**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.51	J	2.0	0.42	ug/L			10/03/17 23:03	1
Toluene	1.1	J	2.0	0.24	ug/L			10/03/17 23:03	1
Ethylbenzene	0.25	J	3.0	0.21	ug/L			10/03/17 23:03	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			10/03/17 23:03	1
o-Xylene	0.24	J	2.0	0.15	ug/L			10/03/17 23:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 122		10/03/17 23:03	1
Trifluorotoluene (Surr)	105		80 - 120		10/03/17 23:03	1
4-Bromofluorobenzene (Surr)	103		75 - 125		10/03/17 23:03	1
Dibromofluoromethane (Surr)	107		77 - 120		10/03/17 23:03	1
1,2-Dichloroethane-d4 (Surr)	102		80 - 126		10/03/17 23:03	1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.79		0.22	0.065	ug/L		10/04/17 09:31	10/04/17 19:27	10
2-Methylnaphthalene	0.15	J	0.33	0.098	ug/L		10/04/17 09:31	10/04/17 19:27	10
Naphthalene	0.32	J	0.43	0.14	ug/L		10/04/17 09:31	10/04/17 19:27	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	95		53 - 112	10/04/17 09:31	10/04/17 19:27	10

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.30		0.25	0.050	mg/L			10/03/17 18:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		58 - 133		10/03/17 18:11	1
Trifluorotoluene (Surr)	109		77 - 128		10/03/17 18:11	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	2.0	B	0.10	0.020	mg/L		10/10/17 09:08	10/11/17 16:59	1
Motor Oil (>C24-C36)	1.3		0.26	0.081	mg/L		10/10/17 09:08	10/11/17 16:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	72		50 - 150	10/10/17 09:08	10/11/17 16:59	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: Blackstone Double Tree Olympia (WA)

TestAmerica Job ID: 580-71709-1

**Client Sample ID: DUP-1**

**Date Collected: 09/27/17 00:00**

**Date Received: 09/29/17 15:15**

**Lab Sample ID: 580-71709-8**

**Matrix: Water**

### Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			10/03/17 23:30	1
Toluene	ND		2.0	0.24	ug/L			10/03/17 23:30	1
Ethylbenzene	ND		3.0	0.21	ug/L			10/03/17 23:30	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			10/03/17 23:30	1
o-Xylene	ND		2.0	0.15	ug/L			10/03/17 23:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 122		10/03/17 23:30	1
Trifluorotoluene (Surr)	106		80 - 120		10/03/17 23:30	1
4-Bromofluorobenzene (Surr)	102		75 - 125		10/03/17 23:30	1
Dibromofluoromethane (Surr)	106		77 - 120		10/03/17 23:30	1
1,2-Dichloroethane-d4 (Surr)	101		80 - 126		10/03/17 23:30	1

### Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.29		0.021	0.0062	ug/L		10/04/17 09:31	10/04/17 19:49	1
2-Methylnaphthalene	ND		0.031	0.0094	ug/L		10/04/17 09:31	10/04/17 19:49	1
Naphthalene	0.086		0.042	0.014	ug/L		10/04/17 09:31	10/04/17 19:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	70		53 - 112	10/04/17 09:31	10/04/17 19:49	1

### Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.28		0.25	0.050	mg/L			10/03/17 18:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	114		58 - 133		10/03/17 18:43	1
Trifluorotoluene (Surr)	112		77 - 128		10/03/17 18:43	1

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.31	B	0.10	0.020	mg/L		10/10/17 09:08	10/11/17 17:21	1
Motor Oil (>C24-C36)	0.17	J	0.26	0.080	mg/L		10/10/17 09:08	10/11/17 17:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	68		50 - 150	10/10/17 09:08	10/11/17 17:21	1

# QC Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: Blackstone Double Tree Olympia (WA)

TestAmerica Job ID: 580-71709-1

## Method: 8260C - Volatile Organic Compounds by GC/MS

**Lab Sample ID: MB 580-257995/5**

**Matrix: Water**

**Analysis Batch: 257995**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			10/03/17 19:06	1
Toluene	ND		2.0	0.24	ug/L			10/03/17 19:06	1
Ethylbenzene	ND		3.0	0.21	ug/L			10/03/17 19:06	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			10/03/17 19:06	1
o-Xylene	ND		2.0	0.15	ug/L			10/03/17 19:06	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 122		10/03/17 19:06	1
Trifluorotoluene (Surr)	106		80 - 120		10/03/17 19:06	1
4-Bromofluorobenzene (Surr)	108		75 - 125		10/03/17 19:06	1
Dibromofluoromethane (Surr)	113		77 - 120		10/03/17 19:06	1
1,2-Dichloroethane-d4 (Surr)	103		80 - 126		10/03/17 19:06	1

**Lab Sample ID: LCS 580-257995/6**

**Matrix: Water**

**Analysis Batch: 257995**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	10.0		ug/L		100	75 - 120
Toluene	10.0	10.2		ug/L		102	75 - 120
Ethylbenzene	10.0	9.95		ug/L		99	75 - 120
m-Xylene & p-Xylene	10.0	9.92		ug/L		99	75 - 120
o-Xylene	10.0	9.69		ug/L		97	74 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	98		80 - 122
Trifluorotoluene (Surr)	106		80 - 120
4-Bromofluorobenzene (Surr)	99		75 - 125
Dibromofluoromethane (Surr)	106		77 - 120
1,2-Dichloroethane-d4 (Surr)	102		80 - 126

**Lab Sample ID: LCSD 580-257995/7**

**Matrix: Water**

**Analysis Batch: 257995**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	10.0	10.1		ug/L		101	75 - 120	1	14
Toluene	10.0	10.4		ug/L		104	75 - 120	2	13
Ethylbenzene	10.0	10.1		ug/L		101	75 - 120	1	14
m-Xylene & p-Xylene	10.0	10.0		ug/L		100	75 - 120	1	14
o-Xylene	10.0	9.88		ug/L		99	74 - 120	2	16

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	101		80 - 122
Trifluorotoluene (Surr)	106		80 - 120
4-Bromofluorobenzene (Surr)	100		75 - 125
Dibromofluoromethane (Surr)	108		77 - 120

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: Blackstone Double Tree Olympia (WA)

TestAmerica Job ID: 580-71709-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCSD 580-257995/7**  
**Matrix: Water**  
**Analysis Batch: 257995**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	104		80 - 126

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

**Lab Sample ID: MB 580-258025/1-A**  
**Matrix: Water**  
**Analysis Batch: 258069**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 258025**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1-Methylnaphthalene	ND		0.020	0.0060	ug/L		10/04/17 09:31	10/04/17 15:44	1
Benzo[a]anthracene	0.00233	J	0.020	0.0020	ug/L		10/04/17 09:31	10/04/17 15:44	1
Benzo[a]pyrene	ND		0.020	0.0030	ug/L		10/04/17 09:31	10/04/17 15:44	1
2-Methylnaphthalene	ND		0.030	0.0090	ug/L		10/04/17 09:31	10/04/17 15:44	1
Benzo[b]fluoranthene	ND		0.020	0.0080	ug/L		10/04/17 09:31	10/04/17 15:44	1
Benzo[k]fluoranthene	ND		0.030	0.0090	ug/L		10/04/17 09:31	10/04/17 15:44	1
Naphthalene	ND		0.040	0.013	ug/L		10/04/17 09:31	10/04/17 15:44	1
Chrysene	ND		0.020	0.0060	ug/L		10/04/17 09:31	10/04/17 15:44	1
Dibenz(a,h)anthracene	ND		0.020	0.0020	ug/L		10/04/17 09:31	10/04/17 15:44	1
Indeno[1,2,3-cd]pyrene	ND		0.020	0.0070	ug/L		10/04/17 09:31	10/04/17 15:44	1

Surrogate	MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Terphenyl-d14	89		53 - 112	10/04/17 09:31	10/04/17 15:44	1

**Lab Sample ID: LCS 580-258025/2-A**  
**Matrix: Water**  
**Analysis Batch: 258069**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 258025**

Analyte	Spike Added	LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
1-Methylnaphthalene	4.00	2.77		ug/L		69	57 - 120
Benzo[a]anthracene	4.00	3.10		ug/L		78	71 - 120
Benzo[a]pyrene	4.00	3.41		ug/L		85	76 - 120
2-Methylnaphthalene	4.00	2.67		ug/L		67	61 - 120
Benzo[b]fluoranthene	4.00	3.15		ug/L		79	66 - 120
Benzo[k]fluoranthene	4.00	3.33		ug/L		83	68 - 120
Naphthalene	4.00	2.77		ug/L		69	62 - 120
Chrysene	4.00	3.24		ug/L		81	64 - 120
Dibenz(a,h)anthracene	4.00	3.30		ug/L		83	60 - 125
Indeno[1,2,3-cd]pyrene	4.00	3.20		ug/L		80	63 - 120

Surrogate	LCS		Limits
	%Recovery	Qualifier	
Terphenyl-d14	83		53 - 112

# QC Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: Blackstone Double Tree Olympia (WA)

TestAmerica Job ID: 580-71709-1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

**Lab Sample ID: LCSD 580-258025/3-A**

**Matrix: Water**

**Analysis Batch: 258069**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 258025**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1-Methylnaphthalene	4.00	2.80		ug/L		70	57 - 120	1	17
Benzo[a]anthracene	4.00	3.27		ug/L		82	71 - 120	5	16
Benzo[a]pyrene	4.00	3.48		ug/L		87	76 - 120	2	17
2-Methylnaphthalene	4.00	2.72		ug/L		68	61 - 120	2	16
Benzo[b]fluoranthene	4.00	3.19		ug/L		80	66 - 120	1	20
Benzo[k]fluoranthene	4.00	3.48		ug/L		87	68 - 120	4	20
Naphthalene	4.00	2.79		ug/L		70	62 - 120	1	15
Chrysene	4.00	3.27		ug/L		82	64 - 120	1	16
Dibenz(a,h)anthracene	4.00	3.42		ug/L		86	60 - 125	3	15
Indeno[1,2,3-cd]pyrene	4.00	3.28		ug/L		82	63 - 120	2	15

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Terphenyl-d14	81		53 - 112

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

**Lab Sample ID: MB 580-257895/6**

**Matrix: Water**

**Analysis Batch: 257895**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			10/03/17 10:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		58 - 133		10/03/17 10:12	1
Trifluorotoluene (Surr)	104		77 - 128		10/03/17 10:12	1

**Lab Sample ID: LCS 580-257895/7**

**Matrix: Water**

**Analysis Batch: 257895**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1.00	0.892		mg/L		89	79 - 110

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		58 - 133
Trifluorotoluene (Surr)	101		77 - 128

**Lab Sample ID: LCSD 580-257895/8**

**Matrix: Water**

**Analysis Batch: 257895**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	1.00	0.879		mg/L		88	79 - 110	2	10

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: Blackstone Double Tree Olympia (WA)

TestAmerica Job ID: 580-71709-1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

**Lab Sample ID: LCSD 580-257895/8**  
**Matrix: Water**  
**Analysis Batch: 257895**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

	LCS D	LCS D	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		58 - 133
Trifluorotoluene (Surr)	98		77 - 128

**Lab Sample ID: MB 580-258156/6**  
**Matrix: Water**  
**Analysis Batch: 258156**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.0535	J	0.25	0.050	mg/L	-		10/05/17 13:36	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
Surrogate	%Recovery	Qualifier	Limits			
4-Bromofluorobenzene (Surr)	101		58 - 133		10/05/17 13:36	1
Trifluorotoluene (Surr)	126		77 - 128		10/05/17 13:36	1

**Lab Sample ID: LCS 580-258156/7**  
**Matrix: Water**  
**Analysis Batch: 258156**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.	Limits
Analyte	Added	Result	Qualifier					
Gasoline	1.00	0.895		mg/L	-	89	79 - 110	

Surrogate	LCS	LCS	Limits
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		58 - 133
Trifluorotoluene (Surr)	107		77 - 128

**Lab Sample ID: LCSD 580-258156/8**  
**Matrix: Water**  
**Analysis Batch: 258156**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec	%Rec.	Limits	RPD	RPD	Limit
Analyte	Added	Result	Qualifier								
Gasoline	1.00	0.922		mg/L	-	92	79 - 110	3	10		

Surrogate	LCSD	LCSD	Limits
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		58 - 133
Trifluorotoluene (Surr)	107		77 - 128

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

**Lab Sample ID: MB 580-258418/1-A**  
**Matrix: Water**  
**Analysis Batch: 258563**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 258418**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.0222	J	0.10	0.019	mg/L	-	10/09/17 14:19	10/11/17 12:32	1
Motor Oil (>C24-C36)	ND		0.25	0.077	mg/L	-	10/09/17 14:19	10/11/17 12:32	1

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: Blackstone Double Tree Olympia (WA)

TestAmerica Job ID: 580-71709-1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

**Lab Sample ID: MB 580-258418/1-A**  
**Matrix: Water**  
**Analysis Batch: 258563**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 258418**

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	87		50 - 150	10/09/17 14:19	10/11/17 12:32	1

**Lab Sample ID: LCS 580-258418/2-A**  
**Matrix: Water**  
**Analysis Batch: 258563**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 258418**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	2.00	1.52		mg/L		76	59 - 112
Motor Oil (>C24-C36)	2.00	1.69		mg/L		84	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	81		50 - 150

**Lab Sample ID: LCSD 580-258418/3-A**  
**Matrix: Water**  
**Analysis Batch: 258563**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 258418**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	2.00	1.60		mg/L		80	59 - 112	5	16
Motor Oil (>C24-C36)	2.00	1.71		mg/L		86	64 - 120	1	17

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	81		50 - 150

**Lab Sample ID: MB 580-258457/1-A**  
**Matrix: Water**  
**Analysis Batch: 258557**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 258457**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.0520	J	0.10	0.019	mg/L		10/10/17 09:08	10/11/17 15:08	1
Motor Oil (>C24-C36)	ND		0.25	0.077	mg/L		10/10/17 09:08	10/11/17 15:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	86		50 - 150	10/10/17 09:08	10/11/17 15:08	1

**Lab Sample ID: LCS 580-258457/2-A**  
**Matrix: Water**  
**Analysis Batch: 258557**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 258457**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	2.00	1.59		mg/L		80	59 - 112
Motor Oil (>C24-C36)	2.00	1.65		mg/L		83	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	94		50 - 150

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: Blackstone Double Tree Olympia (WA)

TestAmerica Job ID: 580-71709-1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

**Lab Sample ID: LCSD 580-258457/3-A**  
**Matrix: Water**  
**Analysis Batch: 258557**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 258457**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	2.00	1.67		mg/L		84	59 - 112	5	16
Motor Oil (>C24-C36)	2.00	1.74		mg/L		87	64 - 120	5	17

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
o-Terphenyl	99		50 - 150

## Method: 6020A - Metals (ICP/MS)

**Lab Sample ID: MB 580-258162/18-A**  
**Matrix: Water**  
**Analysis Batch: 258362**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 258162**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.00080	0.00020	mg/L		10/05/17 12:14	10/06/17 20:14	1

**Lab Sample ID: LCS 580-258162/19-A**  
**Matrix: Water**  
**Analysis Batch: 258362**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 258162**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Lead	1.00	1.02		mg/L		102	80 - 120

**Lab Sample ID: LCSD 580-258162/20-A**  
**Matrix: Water**  
**Analysis Batch: 258362**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total Recoverable**  
**Prep Batch: 258162**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Lead	1.00	1.00		mg/L		100	80 - 120	1	20

**Lab Sample ID: LCS 580-258196/12-A**  
**Matrix: Water**  
**Analysis Batch: 258362**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 258196**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Lead	1.00	1.00		mg/L		100	80 - 120

**Lab Sample ID: LCSD 580-258196/13-A**  
**Matrix: Water**  
**Analysis Batch: 258362**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total Recoverable**  
**Prep Batch: 258196**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Lead	1.00	0.987		mg/L		99	80 - 120	2	20

**Lab Sample ID: MB 580-257852/4-B**  
**Matrix: Water**  
**Analysis Batch: 258362**

**Client Sample ID: Method Blank**  
**Prep Type: Dissolved**  
**Prep Batch: 258196**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040	0.0010	mg/L		10/05/17 14:39	10/06/17 22:02	5

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: Blackstone Double Tree Olympia (WA)

TestAmerica Job ID: 580-71709-1

**Lab Sample ID: 580-71709-2 MS**  
**Matrix: Water**  
**Analysis Batch: 258362**

**Client Sample ID: PMW-3**  
**Prep Type: Dissolved**  
**Prep Batch: 258196**  
**%Rec.**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Lead	ND		1.00	1.03		mg/L		103	80 - 120

**Lab Sample ID: 580-71709-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 258362**

**Client Sample ID: PMW-3**  
**Prep Type: Dissolved**  
**Prep Batch: 258196**  
**%Rec.**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Lead	ND		1.00	1.04		mg/L		104	80 - 120	1	20

**Lab Sample ID: 580-71709-2 DU**  
**Matrix: Water**  
**Analysis Batch: 258362**

**Client Sample ID: PMW-3**  
**Prep Type: Dissolved**  
**Prep Batch: 258196**  
**%Rec.**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Lead	ND		ND		mg/L		NC	20

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

# Lab Chronicle

Client: ARCADIS U.S. Inc  
 Project/Site: Blackstone Double Tree Olympia (WA)

TestAmerica Job ID: 580-71709-1

**Client Sample ID: PMW-2**

**Date Collected: 09/27/17 14:20**

**Date Received: 09/29/17 15:15**

**Lab Sample ID: 580-71709-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	257995	10/03/17 20:25	W1T	TAL SEA
Total/NA	Prep	3510C			258025	10/04/17 09:31	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		1	258069	10/04/17 17:14	TL1	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	258156	10/05/17 15:08	JCV	TAL SEA
Total/NA	Prep	3510C			258418	10/09/17 14:19	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	258563	10/11/17 13:39	CJ	TAL SEA

**Client Sample ID: PMW-3**

**Date Collected: 09/27/17 12:15**

**Date Received: 09/29/17 15:15**

**Lab Sample ID: 580-71709-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	257995	10/03/17 20:51	W1T	TAL SEA
Total/NA	Prep	3510C			258025	10/04/17 09:31	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		1	258069	10/04/17 17:36	TL1	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257895	10/03/17 15:31	RSB	TAL SEA
Total/NA	Prep	3510C			258418	10/09/17 14:19	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	258563	10/11/17 14:01	CJ	TAL SEA
Dissolved	Filtration	FILTRATION			257852	10/02/17 16:23	ASJ	TAL SEA
Dissolved	Prep	3005A			258196	10/05/17 14:39	PAB	TAL SEA
Dissolved	Analysis	6020A		5	258362	10/06/17 22:13	FCW	TAL SEA
Total Recoverable	Prep	3005A			258162	10/05/17 12:14	PAB	TAL SEA
Total Recoverable	Analysis	6020A		5	258362	10/06/17 21:33	FCW	TAL SEA

**Client Sample ID: PMW-6**

**Date Collected: 09/27/17 15:10**

**Date Received: 09/29/17 15:15**

**Lab Sample ID: 580-71709-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	257995	10/03/17 21:18	W1T	TAL SEA
Total/NA	Prep	3510C			258025	10/04/17 09:31	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		1	258069	10/04/17 17:58	TL1	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257895	10/03/17 16:03	RSB	TAL SEA
Total/NA	Prep	3510C			258418	10/09/17 14:19	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	258563	10/11/17 14:23	CJ	TAL SEA

**Client Sample ID: PMW-7**

**Date Collected: 09/27/17 15:35**

**Date Received: 09/29/17 15:15**

**Lab Sample ID: 580-71709-4**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	257995	10/03/17 21:44	W1T	TAL SEA

TestAmerica Seattle

# Lab Chronicle

Client: ARCADIS U.S. Inc  
Project/Site: Blackstone Double Tree Olympia (WA)

TestAmerica Job ID: 580-71709-1

**Client Sample ID: PMW-7**

**Date Collected: 09/27/17 15:35**

**Date Received: 09/29/17 15:15**

**Lab Sample ID: 580-71709-4**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			258025	10/04/17 09:31	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		1	258069	10/04/17 18:20	TL1	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257895	10/03/17 16:35	RSB	TAL SEA
Total/NA	Prep	3510C			258418	10/09/17 14:19	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	258563	10/11/17 14:46	CJ	TAL SEA
Dissolved	Filtration	FILTRATION			257852	10/02/17 16:23	ASJ	TAL SEA
Dissolved	Prep	3005A			258196	10/05/17 14:39	PAB	TAL SEA
Dissolved	Analysis	6020A		5	258362	10/06/17 21:39	FCW	TAL SEA
Total Recoverable	Prep	3005A			258162	10/05/17 12:14	PAB	TAL SEA
Total Recoverable	Analysis	6020A		5	258362	10/06/17 21:36	FCW	TAL SEA

**Client Sample ID: PMW-9**

**Date Collected: 09/27/17 12:54**

**Date Received: 09/29/17 15:15**

**Lab Sample ID: 580-71709-5**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	257995	10/03/17 22:11	W1T	TAL SEA
Total/NA	Prep	3510C			258025	10/04/17 09:31	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		1	258069	10/04/17 18:43	TL1	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257895	10/03/17 17:07	RSB	TAL SEA
Total/NA	Prep	3510C			258457	10/10/17 09:08	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	258557	10/11/17 16:14	ADB	TAL SEA
Dissolved	Filtration	FILTRATION			257852	10/02/17 16:23	ASJ	TAL SEA
Dissolved	Prep	3005A			258196	10/05/17 14:39	PAB	TAL SEA
Dissolved	Analysis	6020A		5	258362	10/06/17 21:41	FCW	TAL SEA
Total Recoverable	Prep	3005A			258162	10/05/17 12:14	PAB	TAL SEA
Total Recoverable	Analysis	6020A		5	258362	10/06/17 21:30	FCW	TAL SEA

**Client Sample ID: PMW-10**

**Date Collected: 09/27/17 13:20**

**Date Received: 09/29/17 15:15**

**Lab Sample ID: 580-71709-6**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	257995	10/03/17 22:37	W1T	TAL SEA
Total/NA	Prep	3510C			258025	10/04/17 09:31	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		1	258069	10/04/17 19:05	TL1	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257895	10/03/17 17:39	RSB	TAL SEA
Total/NA	Prep	3510C			258457	10/10/17 09:08	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	258557	10/11/17 16:36	ADB	TAL SEA

TestAmerica Seattle

# Lab Chronicle

Client: ARCADIS U.S. Inc  
 Project/Site: Blackstone Double Tree Olympia (WA)

TestAmerica Job ID: 580-71709-1

**Client Sample ID: PMW-12**

**Date Collected: 09/27/17 14:15**

**Date Received: 09/29/17 15:15**

**Lab Sample ID: 580-71709-7**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	257995	10/03/17 23:03	W1T	TAL SEA
Total/NA	Prep	3510C			258025	10/04/17 09:31	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		10	258069	10/04/17 19:27	TL1	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257895	10/03/17 18:11	RSB	TAL SEA
Total/NA	Prep	3510C			258457	10/10/17 09:08	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	258557	10/11/17 16:59	ADB	TAL SEA

**Client Sample ID: DUP-1**

**Date Collected: 09/27/17 00:00**

**Date Received: 09/29/17 15:15**

**Lab Sample ID: 580-71709-8**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	257995	10/03/17 23:30	W1T	TAL SEA
Total/NA	Prep	3510C			258025	10/04/17 09:31	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		1	258069	10/04/17 19:49	TL1	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257895	10/03/17 18:43	RSB	TAL SEA
Total/NA	Prep	3510C			258457	10/10/17 09:08	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	258557	10/11/17 17:21	ADB	TAL SEA

**Laboratory References:**

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: ARCADIS U.S. Inc  
Project/Site: Blackstone Double Tree Olympia (WA)

TestAmerica Job ID: 580-71709-1

## Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-18
California	State Program	9	2901	01-31-18
L-A-B	DoD ELAP		L2236	01-19-19
L-A-B	ISO/IEC 17025		L2236	01-19-19
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-17
US Fish & Wildlife	Federal		LE058448-0	10-31-18
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-18

# Sample Summary

Client: ARCADIS U.S. Inc  
Project/Site: Blackstone Double Tree Olympia (WA)

TestAmerica Job ID: 580-71709-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-71709-1	PMW-2	Water	09/27/17 14:20	09/29/17 15:15
580-71709-2	PMW-3	Water	09/27/17 12:15	09/29/17 15:15
580-71709-3	PMW-6	Water	09/27/17 15:10	09/29/17 15:15
580-71709-4	PMW-7	Water	09/27/17 15:35	09/29/17 15:15
580-71709-5	PMW-9	Water	09/27/17 12:54	09/29/17 15:15
580-71709-6	PMW-10	Water	09/27/17 13:20	09/29/17 15:15
580-71709-7	PMW-12	Water	09/27/17 14:15	09/29/17 15:15
580-71709-8	DUP-1	Water	09/27/17 00:00	09/29/17 15:15





# Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-71709-1

**Login Number: 71709**

**List Source: TestAmerica Seattle**

**List Number: 1**

**Creator: Ponce-McDermott, Monica**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	Refer to Job Narrative for details.
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

TestAmerica Job ID: 580-71745-1

Client Project/Site: Double Tree Olympia (WA)

For:

ARCADIS U.S. Inc  
1100 Olive Way  
Suite 800  
Seattle, Washington 98101

Attn: Rory Henneck



Authorized for release by:  
10/13/2017 2:12:07 PM

Kayse Zalmai, Project Manager I  
(253)922-2310

[kayse.zalmai@testamericainc.com](mailto:kayse.zalmai@testamericainc.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Case Narrative

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

**Job ID: 580-71745-1**

**Laboratory: TestAmerica Seattle**

## Narrative

### Job Narrative 580-71745-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 9/29/2017 5:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.4° C and 3.3° C.

#### GC/MS VOA

Method(s) 8260C: The method blank for analytical batch 580-257814 contained o-Xylene above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) NWTPH-Gx: The method blank for analytical batch 580-258156 contained Gasoline above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Method(s) NWTPH-Gx: Surrogate recovery for the following sample was outside control limits: PMW-13 (580-71745-6). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### GC/MS Semi VOA

Method(s) 8270D SIM: The method blank for preparation batch 580-258276 and analytical batch 580-258347 contained Benzo[a]anthracene above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Method(s) 8270D SIM: The following samples was diluted due to the nature of the sample matrix: PMW-18 (580-71745-5), PMW-13 (580-71745-6), PMW-15 (580-71745-7) and PMW-8 (580-71745-12). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### GC Semi VOA

Method(s) NWTPH-Dx: The following sample contained a hydrocarbon pattern in the diesel range; however, the elution pattern was earlier than the typical diesel fuel pattern used by the laboratory for quantitative purposes: PMW-17 (580-71745-1).

Method(s) NWTPH-Dx: The Diesel Range Organics (DRO) concentration reported for the following sample is due to the presence of discrete peaks: PMW-16 (580-71745-4).

Method(s) NWTPH-Dx: The following sample contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: PMW-13 (580-71745-6).

Method(s) NWTPH-Dx: The peak profile present in this sample PMW-19 (580-71745-8), PMW-1 (580-71745-9), PMW-20 (580-71745-10) and PMW-21 (580-71745-11) is atypical of a hydrocarbon pattern and consists of discrete peaks.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

# Definitions/Glossary

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

### GC VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

### GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

**Client Sample ID: PMW-17**

**Date Collected: 09/29/17 09:40**

**Date Received: 09/29/17 17:20**

**Lab Sample ID: 580-71745-1**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			10/03/17 23:57	1
Toluene	ND		2.0	0.24	ug/L			10/03/17 23:57	1
Ethylbenzene	ND		3.0	0.21	ug/L			10/03/17 23:57	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			10/03/17 23:57	1
o-Xylene	ND		2.0	0.15	ug/L			10/03/17 23:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 122		10/03/17 23:57	1
Trifluorotoluene (Surr)	106		80 - 120		10/03/17 23:57	1
4-Bromofluorobenzene (Surr)	104		75 - 125		10/03/17 23:57	1
Dibromofluoromethane (Surr)	107		77 - 120		10/03/17 23:57	1
1,2-Dichloroethane-d4 (Surr)	102		80 - 126		10/03/17 23:57	1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.050		0.021	0.0062	ug/L		10/04/17 09:31	10/04/17 20:11	1
2-Methylnaphthalene	0.017	J	0.031	0.0093	ug/L		10/04/17 09:31	10/04/17 20:11	1
Naphthalene	0.016	J	0.041	0.013	ug/L		10/04/17 09:31	10/04/17 20:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	77		53 - 112	10/04/17 09:31	10/04/17 20:11	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.18	J B	0.25	0.050	mg/L			10/05/17 22:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		58 - 133		10/05/17 22:46	1
Trifluorotoluene (Surr)	123		77 - 128		10/05/17 22:46	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.30		0.10	0.020	mg/L		10/11/17 09:04	10/11/17 19:29	1
Motor Oil (>C24-C36)	0.13	J	0.26	0.080	mg/L		10/11/17 09:04	10/11/17 19:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	68		50 - 150	10/11/17 09:04	10/11/17 19:29	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

**Client Sample ID: PMW-14**

**Lab Sample ID: 580-71745-2**

**Date Collected: 09/29/17 09:55**

**Matrix: Water**

**Date Received: 09/29/17 17:20**

### Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			10/04/17 00:23	1
<b>Toluene</b>	<b>0.53</b>	<b>J</b>	2.0	0.24	ug/L			10/04/17 00:23	1
Ethylbenzene	ND		3.0	0.21	ug/L			10/04/17 00:23	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			10/04/17 00:23	1
<b>o-Xylene</b>	<b>0.20</b>	<b>J</b>	2.0	0.15	ug/L			10/04/17 00:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 122		10/04/17 00:23	1
Trifluorotoluene (Surr)	106		80 - 120		10/04/17 00:23	1
4-Bromofluorobenzene (Surr)	104		75 - 125		10/04/17 00:23	1
Dibromofluoromethane (Surr)	106		77 - 120		10/04/17 00:23	1
1,2-Dichloroethane-d4 (Surr)	103		80 - 126		10/04/17 00:23	1

### Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>1-Methylnaphthalene</b>	<b>18</b>		0.021	0.0062	ug/L		10/04/17 09:31	10/04/17 20:33	1
<b>2-Methylnaphthalene</b>	<b>0.34</b>		0.031	0.0093	ug/L		10/04/17 09:31	10/04/17 20:33	1
<b>Naphthalene</b>	<b>0.24</b>		0.041	0.013	ug/L		10/04/17 09:31	10/04/17 20:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	58		53 - 112	10/04/17 09:31	10/04/17 20:33	1

### Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>0.19</b>	<b>J B</b>	0.25	0.050	mg/L			10/05/17 23:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		58 - 133		10/05/17 23:16	1
Trifluorotoluene (Surr)	121		77 - 128		10/05/17 23:16	1

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>1.2</b>		0.10	0.020	mg/L		10/11/17 09:04	10/11/17 19:57	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>0.28</b>		0.26	0.080	mg/L		10/11/17 09:04	10/11/17 19:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	73		50 - 150	10/11/17 09:04	10/11/17 19:57	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

**Client Sample ID: PMW-5**

**Date Collected: 09/29/17 10:30**

**Date Received: 09/29/17 17:20**

**Lab Sample ID: 580-71745-3**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.44	J	2.0	0.42	ug/L			10/04/17 00:49	1
Toluene	0.27	J	2.0	0.24	ug/L			10/04/17 00:49	1
Ethylbenzene	ND		3.0	0.21	ug/L			10/04/17 00:49	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			10/04/17 00:49	1
o-Xylene	0.15	J	2.0	0.15	ug/L			10/04/17 00:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 122		10/04/17 00:49	1
Trifluorotoluene (Surr)	105		80 - 120		10/04/17 00:49	1
4-Bromofluorobenzene (Surr)	103		75 - 125		10/04/17 00:49	1
Dibromofluoromethane (Surr)	106		77 - 120		10/04/17 00:49	1
1,2-Dichloroethane-d4 (Surr)	101		80 - 126		10/04/17 00:49	1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.61		0.020	0.0061	ug/L		10/04/17 09:31	10/04/17 20:55	1
2-Methylnaphthalene	ND		0.031	0.0092	ug/L		10/04/17 09:31	10/04/17 20:55	1
Naphthalene	0.15		0.041	0.013	ug/L		10/04/17 09:31	10/04/17 20:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	71		53 - 112	10/04/17 09:31	10/04/17 20:55	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.25	B	0.25	0.050	mg/L			10/05/17 23:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	130		58 - 133		10/05/17 23:47	1
Trifluorotoluene (Surr)	123		77 - 128		10/05/17 23:47	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.56		0.10	0.020	mg/L		10/11/17 09:04	10/11/17 20:26	1
Motor Oil (>C24-C36)	0.15	J	0.26	0.080	mg/L		10/11/17 09:04	10/11/17 20:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	71		50 - 150	10/11/17 09:04	10/11/17 20:26	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

**Client Sample ID: PMW-16**

**Lab Sample ID: 580-71745-4**

**Date Collected: 09/29/17 10:35**

**Matrix: Water**

**Date Received: 09/29/17 17:20**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			10/04/17 01:16	1
Toluene	ND		2.0	0.24	ug/L			10/04/17 01:16	1
Ethylbenzene	ND		3.0	0.21	ug/L			10/04/17 01:16	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			10/04/17 01:16	1
o-Xylene	ND		2.0	0.15	ug/L			10/04/17 01:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 122		10/04/17 01:16	1
Trifluorotoluene (Surr)	106		80 - 120		10/04/17 01:16	1
4-Bromofluorobenzene (Surr)	100		75 - 125		10/04/17 01:16	1
Dibromofluoromethane (Surr)	105		77 - 120		10/04/17 01:16	1
1,2-Dichloroethane-d4 (Surr)	102		80 - 126		10/04/17 01:16	1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.021	0.0062	ug/L		10/04/17 09:31	10/04/17 21:18	1
2-Methylnaphthalene	ND		0.031	0.0093	ug/L		10/04/17 09:31	10/04/17 21:18	1
Naphthalene	ND		0.041	0.013	ug/L		10/04/17 09:31	10/04/17 21:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	71		53 - 112	10/04/17 09:31	10/04/17 21:18	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			10/06/17 00:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		58 - 133		10/06/17 00:48	1
Trifluorotoluene (Surr)	117		77 - 128		10/06/17 00:48	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.087	J	0.10	0.020	mg/L		10/11/17 09:04	10/11/17 20:54	1
Motor Oil (>C24-C36)	ND		0.26	0.080	mg/L		10/11/17 09:04	10/11/17 20:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	73		50 - 150	10/11/17 09:04	10/11/17 20:54	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

**Client Sample ID: PMW-18**

**Lab Sample ID: 580-71745-5**

**Date Collected: 09/29/17 11:20**

**Matrix: Water**

**Date Received: 09/29/17 17:20**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.3	J	2.0	0.42	ug/L			10/04/17 01:42	1
Toluene	0.27	J	2.0	0.24	ug/L			10/04/17 01:42	1
Ethylbenzene	ND		3.0	0.21	ug/L			10/04/17 01:42	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			10/04/17 01:42	1
o-Xylene	ND		2.0	0.15	ug/L			10/04/17 01:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 122		10/04/17 01:42	1
Trifluorotoluene (Surr)	107		80 - 120		10/04/17 01:42	1
4-Bromofluorobenzene (Surr)	108		75 - 125		10/04/17 01:42	1
Dibromofluoromethane (Surr)	110		77 - 120		10/04/17 01:42	1
1,2-Dichloroethane-d4 (Surr)	101		80 - 126		10/04/17 01:42	1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.14		0.10	0.031	ug/L		10/06/17 12:14	10/07/17 14:37	5
2-Methylnaphthalene	ND		0.16	0.047	ug/L		10/06/17 12:14	10/07/17 14:37	5
Naphthalene	0.10	J	0.21	0.068	ug/L		10/06/17 12:14	10/07/17 14:37	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	67		53 - 112	10/06/17 12:14	10/07/17 14:37	5

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.13	J B	0.25	0.050	mg/L			10/05/17 18:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		58 - 133		10/05/17 18:11	1
Trifluorotoluene (Surr)	128		77 - 128		10/05/17 18:11	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	2.3		0.10	0.020	mg/L		10/11/17 09:04	10/11/17 21:22	1
Motor Oil (>C24-C36)	0.61		0.26	0.080	mg/L		10/11/17 09:04	10/11/17 21:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	73		50 - 150	10/11/17 09:04	10/11/17 21:22	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

**Client Sample ID: PMW-13**

**Lab Sample ID: 580-71745-6**

**Date Collected: 09/29/17 11:38**

**Matrix: Water**

**Date Received: 09/29/17 17:20**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.57	J	2.0	0.42	ug/L			10/04/17 02:09	1
Toluene	0.72	J	2.0	0.24	ug/L			10/04/17 02:09	1
Ethylbenzene	ND		3.0	0.21	ug/L			10/04/17 02:09	1
m-Xylene & p-Xylene	0.87	J	3.0	0.72	ug/L			10/04/17 02:09	1
o-Xylene	0.29	J	2.0	0.15	ug/L			10/04/17 02:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 122		10/04/17 02:09	1
Trifluorotoluene (Surr)	104		80 - 120		10/04/17 02:09	1
4-Bromofluorobenzene (Surr)	102		75 - 125		10/04/17 02:09	1
Dibromofluoromethane (Surr)	103		77 - 120		10/04/17 02:09	1
1,2-Dichloroethane-d4 (Surr)	101		80 - 126		10/04/17 02:09	1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	1.3		0.10	0.031	ug/L		10/06/17 12:14	10/07/17 15:00	5
2-Methylnaphthalene	ND		0.15	0.046	ug/L		10/06/17 12:14	10/07/17 15:00	5
Naphthalene	0.11	J	0.21	0.067	ug/L		10/06/17 12:14	10/07/17 15:00	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	82		53 - 112	10/06/17 12:14	10/07/17 15:00	5

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.13	J B	0.25	0.050	mg/L			10/05/17 19:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	116		58 - 133		10/05/17 19:12	1
Trifluorotoluene (Surr)	129	X	77 - 128		10/05/17 19:12	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1.4		0.10	0.020	mg/L		10/12/17 08:49	10/12/17 20:10	1
Motor Oil (>C24-C36)	0.59		0.26	0.079	mg/L		10/12/17 08:49	10/12/17 20:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	66		50 - 150	10/12/17 08:49	10/12/17 20:10	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

**Client Sample ID: PMW-15**

**Lab Sample ID: 580-71745-7**

**Date Collected: 09/29/17 12:48**

**Matrix: Water**

**Date Received: 09/29/17 17:20**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			10/04/17 02:36	1
Toluene	ND		2.0	0.24	ug/L			10/04/17 02:36	1
Ethylbenzene	ND		3.0	0.21	ug/L			10/04/17 02:36	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			10/04/17 02:36	1
o-Xylene	ND		2.0	0.15	ug/L			10/04/17 02:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 122		10/04/17 02:36	1
Trifluorotoluene (Surr)	106		80 - 120		10/04/17 02:36	1
4-Bromofluorobenzene (Surr)	103		75 - 125		10/04/17 02:36	1
Dibromofluoromethane (Surr)	105		77 - 120		10/04/17 02:36	1
1,2-Dichloroethane-d4 (Surr)	101		80 - 126		10/04/17 02:36	1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.027	J	0.041	0.012	ug/L		10/06/17 12:14	10/07/17 15:22	2
2-Methylnaphthalene	ND		0.062	0.018	ug/L		10/06/17 12:14	10/07/17 15:22	2
Naphthalene	0.036	J	0.082	0.027	ug/L		10/06/17 12:14	10/07/17 15:22	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	77		53 - 112	10/06/17 12:14	10/07/17 15:22	2

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.076	J B	0.25	0.050	mg/L			10/05/17 19:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		58 - 133		10/05/17 19:43	1
Trifluorotoluene (Surr)	128		77 - 128		10/05/17 19:43	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.42		0.10	0.020	mg/L		10/12/17 08:49	10/12/17 20:54	1
Motor Oil (>C24-C36)	0.091	J	0.26	0.080	mg/L		10/12/17 08:49	10/12/17 20:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	72		50 - 150	10/12/17 08:49	10/12/17 20:54	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

**Client Sample ID: PMW-19**

**Lab Sample ID: 580-71745-8**

**Date Collected: 09/29/17 12:55**

**Matrix: Water**

**Date Received: 09/29/17 17:20**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			10/03/17 19:32	1
Toluene	ND		2.0	0.24	ug/L			10/03/17 19:32	1
Ethylbenzene	ND		3.0	0.21	ug/L			10/03/17 19:32	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			10/03/17 19:32	1
o-Xylene	ND		2.0	0.15	ug/L			10/03/17 19:32	1
Methyl tert-butyl ether	ND		2.0	0.44	ug/L			10/03/17 19:32	1
1,2-Dichloroethane	ND		2.0	0.45	ug/L			10/03/17 19:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		80 - 126		10/03/17 19:32	1
4-Bromofluorobenzene (Surr)	104		75 - 125		10/03/17 19:32	1
Toluene-d8 (Surr)	90		80 - 122		10/03/17 19:32	1
Trifluorotoluene (Surr)	117		80 - 120		10/03/17 19:32	1
Dibromofluoromethane (Surr)	108		77 - 120		10/03/17 19:32	1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzo[a]anthracene</b>	<b>0.0050</b>	<b>J B</b>	0.020	0.0020	ug/L		10/06/17 12:14	10/07/17 15:44	1
Benzo[a]pyrene	ND		0.020	0.0031	ug/L		10/06/17 12:14	10/07/17 15:44	1
Benzo[b]fluoranthene	ND		0.020	0.0082	ug/L		10/06/17 12:14	10/07/17 15:44	1
Benzo[k]fluoranthene	ND		0.031	0.0092	ug/L		10/06/17 12:14	10/07/17 15:44	1
Chrysene	ND		0.020	0.0061	ug/L		10/06/17 12:14	10/07/17 15:44	1
Dibenz(a,h)anthracene	ND		0.020	0.0020	ug/L		10/06/17 12:14	10/07/17 15:44	1
Indeno[1,2,3-cd]pyrene	ND		0.020	0.0071	ug/L		10/06/17 12:14	10/07/17 15:44	1
<b>2-Methylnaphthalene</b>	<b>0.021</b>	<b>J</b>	0.031	0.0092	ug/L		10/06/17 12:14	10/07/17 15:44	1
<b>Naphthalene</b>	<b>0.040</b>	<b>J</b>	0.041	0.013	ug/L		10/06/17 12:14	10/07/17 15:44	1
<b>1-Methylnaphthalene</b>	<b>0.011</b>	<b>J</b>	0.020	0.0061	ug/L		10/06/17 12:14	10/07/17 15:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	87		53 - 112	10/06/17 12:14	10/07/17 15:44	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			10/05/17 20:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		58 - 133		10/05/17 20:13	1
Trifluorotoluene (Surr)	126		77 - 128		10/05/17 20:13	1

## Method: 8011 - EDB and DBCP in Water by Microextraction

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	ND		0.0099	0.0020	ug/L		10/03/17 13:08	10/03/17 16:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dibromopropane	109		60 - 140	10/03/17 13:08	10/03/17 16:15	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.047</b>	<b>J</b>	0.10	0.020	mg/L		10/12/17 08:49	10/12/17 21:16	1
Motor Oil (>C24-C36)	ND		0.26	0.080	mg/L		10/12/17 08:49	10/12/17 21:16	1

TestAmerica Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

**Client Sample ID: PMW-19**

**Lab Sample ID: 580-71745-8**

**Date Collected: 09/29/17 12:55**

**Matrix: Water**

**Date Received: 09/29/17 17:20**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	69		50 - 150	10/12/17 08:49	10/12/17 21:16	1

**Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.10	0.020	mg/L		10/12/17 08:49	10/12/17 17:58	1
Motor Oil (>C24-C36)	ND		0.26	0.080	mg/L		10/12/17 08:49	10/12/17 17:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	72		50 - 150	10/12/17 08:49	10/12/17 17:58	1

**Method: 6020A - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040	0.0010	mg/L		10/06/17 12:46	10/09/17 12:07	5

**Method: 6020A - Metals (ICP/MS) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040	0.0010	mg/L		10/05/17 14:39	10/06/17 21:44	5

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

**Client Sample ID: PMW-1**

**Date Collected: 09/29/17 14:00**

**Date Received: 09/29/17 17:20**

**Lab Sample ID: 580-71745-9**

**Matrix: Water**

### Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			10/03/17 19:57	1
Toluene	ND		2.0	0.24	ug/L			10/03/17 19:57	1
Ethylbenzene	ND		3.0	0.21	ug/L			10/03/17 19:57	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			10/03/17 19:57	1
o-Xylene	ND		2.0	0.15	ug/L			10/03/17 19:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	89		80 - 122		10/03/17 19:57	1
Trifluorotoluene (Surr)	117		80 - 120		10/03/17 19:57	1
4-Bromofluorobenzene (Surr)	103		75 - 125		10/03/17 19:57	1
Dibromofluoromethane (Surr)	106		77 - 120		10/03/17 19:57	1
1,2-Dichloroethane-d4 (Surr)	92		80 - 126		10/03/17 19:57	1

### Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.14		0.021	0.0063	ug/L		10/06/17 12:14	10/07/17 16:06	1
2-Methylnaphthalene	0.023	J	0.031	0.0094	ug/L		10/06/17 12:14	10/07/17 16:06	1
Naphthalene	0.097		0.042	0.014	ug/L		10/06/17 12:14	10/07/17 16:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	80		53 - 112	10/06/17 12:14	10/07/17 16:06	1

### Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			10/05/17 20:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		58 - 133		10/05/17 20:44	1
Trifluorotoluene (Surr)	121		77 - 128		10/05/17 20:44	1

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.051	J	0.10	0.020	mg/L		10/12/17 08:49	10/12/17 21:38	1
Motor Oil (>C24-C36)	ND		0.26	0.079	mg/L		10/12/17 08:49	10/12/17 21:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	74		50 - 150	10/12/17 08:49	10/12/17 21:38	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

**Client Sample ID: PMW-20**

**Lab Sample ID: 580-71745-10**

**Date Collected: 09/29/17 14:25**

**Matrix: Water**

**Date Received: 09/29/17 17:20**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			10/03/17 20:22	1
Toluene	ND		2.0	0.24	ug/L			10/03/17 20:22	1
Ethylbenzene	ND		3.0	0.21	ug/L			10/03/17 20:22	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			10/03/17 20:22	1
o-Xylene	ND		2.0	0.15	ug/L			10/03/17 20:22	1
Methyl tert-butyl ether	ND		2.0	0.44	ug/L			10/03/17 20:22	1
1,2-Dichloroethane	ND		2.0	0.45	ug/L			10/03/17 20:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		80 - 126		10/03/17 20:22	1
4-Bromofluorobenzene (Surr)	101		75 - 125		10/03/17 20:22	1
Toluene-d8 (Surr)	89		80 - 122		10/03/17 20:22	1
Trifluorotoluene (Surr)	117		80 - 120		10/03/17 20:22	1
Dibromofluoromethane (Surr)	106		77 - 120		10/03/17 20:22	1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzo[a]anthracene</b>	<b>0.0043</b>	<b>J B</b>	0.021	0.0021	ug/L		10/06/17 12:14	10/07/17 16:29	1
Benzo[a]pyrene	ND		0.021	0.0032	ug/L		10/06/17 12:14	10/07/17 16:29	1
Benzo[b]fluoranthene	ND		0.021	0.0084	ug/L		10/06/17 12:14	10/07/17 16:29	1
Benzo[k]fluoranthene	ND		0.032	0.0095	ug/L		10/06/17 12:14	10/07/17 16:29	1
Chrysene	ND		0.021	0.0063	ug/L		10/06/17 12:14	10/07/17 16:29	1
Dibenz(a,h)anthracene	ND		0.021	0.0021	ug/L		10/06/17 12:14	10/07/17 16:29	1
Indeno[1,2,3-cd]pyrene	ND		0.021	0.0074	ug/L		10/06/17 12:14	10/07/17 16:29	1
<b>2-Methylnaphthalene</b>	<b>0.049</b>		0.032	0.0095	ug/L		10/06/17 12:14	10/07/17 16:29	1
<b>Naphthalene</b>	<b>0.11</b>		0.042	0.014	ug/L		10/06/17 12:14	10/07/17 16:29	1
<b>1-Methylnaphthalene</b>	<b>0.033</b>		0.021	0.0063	ug/L		10/06/17 12:14	10/07/17 16:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	87		53 - 112	10/06/17 12:14	10/07/17 16:29	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			10/05/17 21:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		58 - 133		10/05/17 21:14	1
Trifluorotoluene (Surr)	127		77 - 128		10/05/17 21:14	1

## Method: 8011 - EDB and DBCP in Water by Microextraction

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	ND		0.010	0.0020	ug/L		10/03/17 13:08	10/03/17 16:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dibromopropane	110		60 - 140	10/03/17 13:08	10/03/17 16:31	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.14</b>		0.10	0.020	mg/L		10/12/17 08:49	10/12/17 22:00	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>0.10</b>	<b>J</b>	0.26	0.080	mg/L		10/12/17 08:49	10/12/17 22:00	1

TestAmerica Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

**Client Sample ID: PMW-20**

**Lab Sample ID: 580-71745-10**

**Date Collected: 09/29/17 14:25**

**Matrix: Water**

**Date Received: 09/29/17 17:20**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	73		50 - 150	10/12/17 08:49	10/12/17 22:00	1

**Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.10	0.020	mg/L		10/12/17 08:49	10/12/17 18:20	1
Motor Oil (>C24-C36)	ND		0.26	0.080	mg/L		10/12/17 08:49	10/12/17 18:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	74		50 - 150	10/12/17 08:49	10/12/17 18:20	1

**Method: 6020A - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040	0.0010	mg/L		10/06/17 12:46	10/09/17 12:10	5

**Method: 6020A - Metals (ICP/MS) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040	0.0010	mg/L		10/05/17 14:39	10/06/17 21:47	5

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

**Client Sample ID: PMW-21**

**Lab Sample ID: 580-71745-11**

**Date Collected: 09/29/17 14:50**

**Matrix: Water**

**Date Received: 09/29/17 17:20**

### Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	3.9		2.0	0.42	ug/L			10/03/17 20:47	1
Toluene	0.85	J	2.0	0.24	ug/L			10/03/17 20:47	1
Ethylbenzene	0.57	J	3.0	0.21	ug/L			10/03/17 20:47	1
m-Xylene & p-Xylene	0.88	J	3.0	0.72	ug/L			10/03/17 20:47	1
o-Xylene	0.35	J	2.0	0.15	ug/L			10/03/17 20:47	1
Methyl tert-butyl ether	ND		2.0	0.44	ug/L			10/03/17 20:47	1
1,2-Dichloroethane	ND		2.0	0.45	ug/L			10/03/17 20:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		80 - 126		10/03/17 20:47	1
4-Bromofluorobenzene (Surr)	103		75 - 125		10/03/17 20:47	1
Toluene-d8 (Surr)	89		80 - 122		10/03/17 20:47	1
Trifluorotoluene (Surr)	116		80 - 120		10/03/17 20:47	1
Dibromofluoromethane (Surr)	106		77 - 120		10/03/17 20:47	1

### Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.13	B	0.022	0.0022	ug/L		10/06/17 12:14	10/07/17 16:51	1
Benzo[a]pyrene	0.057		0.022	0.0032	ug/L		10/06/17 12:14	10/07/17 16:51	1
Benzo[b]fluoranthene	0.061		0.022	0.0086	ug/L		10/06/17 12:14	10/07/17 16:51	1
Benzo[k]fluoranthene	0.024	J	0.032	0.0097	ug/L		10/06/17 12:14	10/07/17 16:51	1
Chrysene	0.11		0.022	0.0065	ug/L		10/06/17 12:14	10/07/17 16:51	1
Dibenz(a,h)anthracene	0.0057	J	0.022	0.0022	ug/L		10/06/17 12:14	10/07/17 16:51	1
Indeno[1,2,3-cd]pyrene	0.031		0.022	0.0075	ug/L		10/06/17 12:14	10/07/17 16:51	1
2-Methylnaphthalene	0.73		0.032	0.0097	ug/L		10/06/17 12:14	10/07/17 16:51	1
Naphthalene	4.1		0.043	0.014	ug/L		10/06/17 12:14	10/07/17 16:51	1
1-Methylnaphthalene	3.0		0.022	0.0065	ug/L		10/06/17 12:14	10/07/17 16:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	83		53 - 112	10/06/17 12:14	10/07/17 16:51	1

### Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.052	J B	0.25	0.050	mg/L			10/05/17 21:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		58 - 133		10/05/17 21:45	1
Trifluorotoluene (Surr)	127		77 - 128		10/05/17 21:45	1

### Method: 8011 - EDB and DBCP in Water by Microextraction

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	ND		0.0099	0.0020	ug/L		10/03/17 13:08	10/03/17 16:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dibromopropane	112		60 - 140	10/03/17 13:08	10/03/17 16:48	1

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.27		0.10	0.020	mg/L		10/12/17 08:49	10/12/17 22:22	1
Motor Oil (>C24-C36)	ND		0.26	0.080	mg/L		10/12/17 08:49	10/12/17 22:22	1

TestAmerica Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

**Client Sample ID: PMW-21**

**Lab Sample ID: 580-71745-11**

**Date Collected: 09/29/17 14:50**

**Matrix: Water**

**Date Received: 09/29/17 17:20**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	80		50 - 150	10/12/17 08:49	10/12/17 22:22	1

**Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.16</b>		0.10	0.020	mg/L		10/12/17 08:49	10/12/17 18:42	1
Motor Oil (>C24-C36)	ND		0.26	0.080	mg/L		10/12/17 08:49	10/12/17 18:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	84		50 - 150	10/12/17 08:49	10/12/17 18:42	1

**Method: 6020A - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040	0.0010	mg/L		10/06/17 12:46	10/09/17 12:13	5

**Method: 6020A - Metals (ICP/MS) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040	0.0010	mg/L		10/05/17 14:39	10/06/17 21:50	5

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

**Client Sample ID: PMW-8**

**Date Collected: 09/29/17 15:00**

**Date Received: 09/29/17 17:20**

**Lab Sample ID: 580-71745-12**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	33		2.0	0.42	ug/L			10/04/17 03:28	1
Toluene	1.6	J	2.0	0.24	ug/L			10/04/17 03:28	1
Ethylbenzene	0.30	J	3.0	0.21	ug/L			10/04/17 03:28	1
m-Xylene & p-Xylene	2.4	J	3.0	0.72	ug/L			10/04/17 03:28	1
o-Xylene	ND		2.0	0.15	ug/L			10/04/17 03:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 122		10/04/17 03:28	1
Trifluorotoluene (Surr)	106		80 - 120		10/04/17 03:28	1
4-Bromofluorobenzene (Surr)	104		75 - 125		10/04/17 03:28	1
Dibromofluoromethane (Surr)	109		77 - 120		10/04/17 03:28	1
1,2-Dichloroethane-d4 (Surr)	102		80 - 126		10/04/17 03:28	1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.30		0.10	0.031	ug/L		10/06/17 12:14	10/07/17 17:13	5
2-Methylnaphthalene	ND		0.16	0.047	ug/L		10/06/17 12:14	10/07/17 17:13	5
Naphthalene	0.10	J	0.21	0.067	ug/L		10/06/17 12:14	10/07/17 17:13	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	71		53 - 112	10/06/17 12:14	10/07/17 17:13	5

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.27		0.25	0.050	mg/L			10/10/17 20:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	118		58 - 133		10/10/17 20:36	1
Trifluorotoluene (Surr)	125		77 - 128		10/10/17 20:36	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	2.5		0.10	0.020	mg/L		10/12/17 08:49	10/12/17 22:44	1
Motor Oil (>C24-C36)	0.89		0.26	0.079	mg/L		10/12/17 08:49	10/12/17 22:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	58		50 - 150	10/12/17 08:49	10/12/17 22:44	1

## Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0013	J	0.0040	0.0010	mg/L		10/06/17 12:46	10/09/17 12:16	5

## Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040	0.0010	mg/L		10/05/17 14:39	10/06/17 22:10	5

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

## Method: 8260C - Volatile Organic Compounds by GC/MS

**Lab Sample ID: MB 580-257814/5**

**Matrix: Water**

**Analysis Batch: 257814**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			10/03/17 14:56	1
Toluene	ND		2.0	0.24	ug/L			10/03/17 14:56	1
Ethylbenzene	ND		3.0	0.21	ug/L			10/03/17 14:56	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			10/03/17 14:56	1
Methyl tert-butyl ether	ND		2.0	0.44	ug/L			10/03/17 14:56	1
o-Xylene	0.156	J	2.0	0.15	ug/L			10/03/17 14:56	1
1,2-Dichloroethane	ND		2.0	0.45	ug/L			10/03/17 14:56	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		75 - 125		10/03/17 14:56	1
Toluene-d8 (Surr)	90		80 - 122		10/03/17 14:56	1
1,2-Dichloroethane-d4 (Surr)	89		80 - 126		10/03/17 14:56	1
Trifluorotoluene (Surr)	117		80 - 120		10/03/17 14:56	1
Dibromofluoromethane (Surr)	104		77 - 120		10/03/17 14:56	1

**Lab Sample ID: LCS 580-257814/7**

**Matrix: Water**

**Analysis Batch: 257814**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	9.47		ug/L		95	75 - 120
Toluene	10.0	8.77		ug/L		88	75 - 120
Ethylbenzene	10.0	8.68		ug/L		87	75 - 120
m-Xylene & p-Xylene	10.0	9.07		ug/L		91	75 - 120
Methyl tert-butyl ether	10.0	10.1		ug/L		101	79 - 120
o-Xylene	10.0	8.52		ug/L		85	74 - 120
1,2-Dichloroethane	10.0	9.28		ug/L		93	76 - 131

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		75 - 125
Toluene-d8 (Surr)	90		80 - 122
1,2-Dichloroethane-d4 (Surr)	87		80 - 126
Trifluorotoluene (Surr)	117		80 - 120
Dibromofluoromethane (Surr)	104		77 - 120

**Lab Sample ID: LCSD 580-257814/8**

**Matrix: Water**

**Analysis Batch: 257814**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	10.0	10.9		ug/L		109	75 - 120	14	14
Toluene	10.0	9.87		ug/L		99	75 - 120	12	13
Ethylbenzene	10.0	9.86		ug/L		99	75 - 120	13	14
m-Xylene & p-Xylene	10.0	10.1		ug/L		101	75 - 120	10	14
Methyl tert-butyl ether	10.0	11.3		ug/L		113	79 - 120	10	18
o-Xylene	10.0	9.80		ug/L		98	74 - 120	14	16
1,2-Dichloroethane	10.0	10.3		ug/L		103	76 - 131	10	11

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCSD 580-257814/8**  
**Matrix: Water**  
**Analysis Batch: 257814**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		75 - 125
Toluene-d8 (Surr)	90		80 - 122
1,2-Dichloroethane-d4 (Surr)	88		80 - 126
Trifluorotoluene (Surr)	117		80 - 120
Dibromofluoromethane (Surr)	104		77 - 120

**Lab Sample ID: MB 580-257995/5**  
**Matrix: Water**  
**Analysis Batch: 257995**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			10/03/17 19:06	1
Toluene	ND		2.0	0.24	ug/L			10/03/17 19:06	1
Ethylbenzene	ND		3.0	0.21	ug/L			10/03/17 19:06	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			10/03/17 19:06	1
o-Xylene	ND		2.0	0.15	ug/L			10/03/17 19:06	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		75 - 125		10/03/17 19:06	1
Toluene-d8 (Surr)	99		80 - 122		10/03/17 19:06	1
1,2-Dichloroethane-d4 (Surr)	103		80 - 126		10/03/17 19:06	1
Trifluorotoluene (Surr)	106		80 - 120		10/03/17 19:06	1
Dibromofluoromethane (Surr)	113		77 - 120		10/03/17 19:06	1

**Lab Sample ID: LCS 580-257995/6**  
**Matrix: Water**  
**Analysis Batch: 257995**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	10.0		ug/L		100	75 - 120
Toluene	10.0	10.2		ug/L		102	75 - 120
Ethylbenzene	10.0	9.95		ug/L		99	75 - 120
m-Xylene & p-Xylene	10.0	9.92		ug/L		99	75 - 120
o-Xylene	10.0	9.69		ug/L		97	74 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		75 - 125
Toluene-d8 (Surr)	98		80 - 122
1,2-Dichloroethane-d4 (Surr)	102		80 - 126
Trifluorotoluene (Surr)	106		80 - 120
Dibromofluoromethane (Surr)	106		77 - 120

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCSD 580-257995/7**

**Matrix: Water**

**Analysis Batch: 257995**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	10.0	10.1		ug/L		101	75 - 120	1	14
Toluene	10.0	10.4		ug/L		104	75 - 120	2	13
Ethylbenzene	10.0	10.1		ug/L		101	75 - 120	1	14
m-Xylene & p-Xylene	10.0	10.0		ug/L		100	75 - 120	1	14
o-Xylene	10.0	9.88		ug/L		99	74 - 120	2	16

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		75 - 125
Toluene-d8 (Surr)	101		80 - 122
1,2-Dichloroethane-d4 (Surr)	104		80 - 126
Trifluorotoluene (Surr)	106		80 - 120
Dibromofluoromethane (Surr)	108		77 - 120

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

**Lab Sample ID: MB 580-258025/1-A**

**Matrix: Water**

**Analysis Batch: 258069**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 258025**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		0.030	0.0090	ug/L		10/04/17 09:31	10/04/17 15:44	1
Naphthalene	ND		0.040	0.013	ug/L		10/04/17 09:31	10/04/17 15:44	1
1-Methylnaphthalene	ND		0.020	0.0060	ug/L		10/04/17 09:31	10/04/17 15:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	89		53 - 112	10/04/17 09:31	10/04/17 15:44	1

**Lab Sample ID: LCS 580-258025/2-A**

**Matrix: Water**

**Analysis Batch: 258069**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 258025**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylnaphthalene	4.00	2.67		ug/L		67	61 - 120
Naphthalene	4.00	2.77		ug/L		69	62 - 120
1-Methylnaphthalene	4.00	2.77		ug/L		69	57 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	83		53 - 112

**Lab Sample ID: LCSD 580-258025/3-A**

**Matrix: Water**

**Analysis Batch: 258069**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 258025**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Methylnaphthalene	4.00	2.72		ug/L		68	61 - 120	2	16
Naphthalene	4.00	2.79		ug/L		70	62 - 120	1	15
1-Methylnaphthalene	4.00	2.80		ug/L		70	57 - 120	1	17

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
Terphenyl-d14	81		53 - 112

**Lab Sample ID: MB 580-258276/1-A**  
**Matrix: Water**  
**Analysis Batch: 258347**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 258276**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzo[a]anthracene	0.00368	J	0.020	0.0020	ug/L		10/06/17 12:14	10/07/17 13:53	1
Benzo[a]pyrene	ND		0.020	0.0030	ug/L		10/06/17 12:14	10/07/17 13:53	1
Benzo[b]fluoranthene	ND		0.020	0.0080	ug/L		10/06/17 12:14	10/07/17 13:53	1
Benzo[k]fluoranthene	ND		0.030	0.0090	ug/L		10/06/17 12:14	10/07/17 13:53	1
Chrysene	ND		0.020	0.0060	ug/L		10/06/17 12:14	10/07/17 13:53	1
Dibenz(a,h)anthracene	ND		0.020	0.0020	ug/L		10/06/17 12:14	10/07/17 13:53	1
Indeno[1,2,3-cd]pyrene	ND		0.020	0.0070	ug/L		10/06/17 12:14	10/07/17 13:53	1
2-Methylnaphthalene	ND		0.030	0.0090	ug/L		10/06/17 12:14	10/07/17 13:53	1
Naphthalene	ND		0.040	0.013	ug/L		10/06/17 12:14	10/07/17 13:53	1
1-Methylnaphthalene	ND		0.020	0.0060	ug/L		10/06/17 12:14	10/07/17 13:53	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Terphenyl-d14	92		53 - 112	10/06/17 12:14	10/07/17 13:53	1

**Lab Sample ID: LCS 580-258276/2-A**  
**Matrix: Water**  
**Analysis Batch: 258347**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 258276**

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
Benzo[a]anthracene	4.00	3.81		ug/L		95	71 - 120
Benzo[a]pyrene	4.00	3.98		ug/L		99	76 - 120
Benzo[b]fluoranthene	4.00	3.73		ug/L		93	66 - 120
Benzo[k]fluoranthene	4.00	3.90		ug/L		98	68 - 120
Chrysene	4.00	3.84		ug/L		96	64 - 120
Dibenz(a,h)anthracene	4.00	4.06		ug/L		101	60 - 125
Indeno[1,2,3-cd]pyrene	4.00	3.87		ug/L		97	63 - 120
2-Methylnaphthalene	4.00	2.97		ug/L		74	61 - 120
Naphthalene	4.00	3.05		ug/L		76	62 - 120
1-Methylnaphthalene	4.00	3.06		ug/L		76	57 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Terphenyl-d14	98		53 - 112

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

**Lab Sample ID: MB 580-258156/6**  
**Matrix: Water**  
**Analysis Batch: 258156**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Gasoline	0.0535	J	0.25	0.050	mg/L			10/05/17 13:36	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	101		58 - 133		10/05/17 13:36	1
Trifluorotoluene (Surr)	126		77 - 128		10/05/17 13:36	1

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

**Lab Sample ID: LCS 580-258156/7**  
**Matrix: Water**  
**Analysis Batch: 258156**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1.00	0.895		mg/L		89	79 - 110
<b>Surrogate</b>							
	<b>%Recovery</b>	<b>LCS</b>	<b>Qualifier</b>			<b>Limits</b>	
4-Bromofluorobenzene (Surr)	106					58 - 133	
Trifluorotoluene (Surr)	107					77 - 128	

**Lab Sample ID: LCSD 580-258156/8**  
**Matrix: Water**  
**Analysis Batch: 258156**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	1.00	0.922		mg/L		92	79 - 110	3	10
<b>Surrogate</b>									
	<b>%Recovery</b>	<b>LCSD</b>	<b>Qualifier</b>			<b>Limits</b>			
4-Bromofluorobenzene (Surr)	106					58 - 133			
Trifluorotoluene (Surr)	107					77 - 128			

**Lab Sample ID: MB 580-258468/6**  
**Matrix: Water**  
**Analysis Batch: 258468**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			10/10/17 14:59	1
<b>Surrogate</b>									
	<b>%Recovery</b>	<b>MB</b>	<b>Qualifier</b>			<b>Limits</b>	<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	103					58 - 133		10/10/17 14:59	1
Trifluorotoluene (Surr)	121					77 - 128		10/10/17 14:59	1

**Lab Sample ID: LCS 580-258468/7**  
**Matrix: Water**  
**Analysis Batch: 258468**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1.00	0.968		mg/L		97	79 - 110
<b>Surrogate</b>							
	<b>%Recovery</b>	<b>LCS</b>	<b>Qualifier</b>			<b>Limits</b>	
4-Bromofluorobenzene (Surr)	107					58 - 133	
Trifluorotoluene (Surr)	113					77 - 128	

## Method: 8011 - EDB and DBCP in Water by Microextraction

**Lab Sample ID: MB 580-257921/3-A**  
**Matrix: Water**  
**Analysis Batch: 257947**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 257921**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	ND		0.010	0.0020	ug/L		10/03/17 13:08	10/03/17 14:52	1

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dibromopropane	107		60 - 140	10/03/17 13:08	10/03/17 14:52	1

**Lab Sample ID: LCS 580-257921/4-A**  
**Matrix: Water**  
**Analysis Batch: 257947**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 257921**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylene Dibromide	0.0571	0.0575		ug/L		101	60 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dibromopropane	109		60 - 140

**Lab Sample ID: LCSD 580-257921/5-A**  
**Matrix: Water**  
**Analysis Batch: 257947**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 257921**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Ethylene Dibromide	0.0571	0.0625		ug/L		109	60 - 140	8	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dibromopropane	113		60 - 140

**Lab Sample ID: LLCS 580-257921/6-A**  
**Matrix: Water**  
**Analysis Batch: 257947**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 257921**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylene Dibromide	0.0114	0.0119		ug/L		104	60 - 140

Surrogate	LLCS %Recovery	LLCS Qualifier	Limits
1,2-Dibromopropane	108		60 - 140

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

**Lab Sample ID: MB 580-258535/1-A**  
**Matrix: Water**  
**Analysis Batch: 258609**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 258535**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.10	0.019	mg/L		10/11/17 09:04	10/11/17 18:04	1
Motor Oil (>C24-C36)	ND		0.25	0.077	mg/L		10/11/17 09:04	10/11/17 18:04	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	81		50 - 150	10/11/17 09:04	10/11/17 18:04	1

**Lab Sample ID: LCS 580-258535/2-A**  
**Matrix: Water**  
**Analysis Batch: 258609**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 258535**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	2.00	1.53		mg/L		76	59 - 112
Motor Oil (>C24-C36)	2.00	1.81		mg/L		91	64 - 120

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

**Lab Sample ID: LCS 580-258535/2-A**  
**Matrix: Water**  
**Analysis Batch: 258609**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 258535**

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	90		50 - 150

**Lab Sample ID: LCSD 580-258535/3-A**  
**Matrix: Water**  
**Analysis Batch: 258609**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 258535**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	2.00	1.63		mg/L		81	59 - 112	6	16
Motor Oil (>C24-C36)	2.00	1.85		mg/L		92	64 - 120	2	17

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	93		50 - 150

**Lab Sample ID: MB 580-258648/1-A**  
**Matrix: Water**  
**Analysis Batch: 258720**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 258648**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.10	0.019	mg/L		10/12/17 08:49	10/12/17 19:04	1
Motor Oil (>C24-C36)	ND		0.25	0.077	mg/L		10/12/17 08:49	10/12/17 19:04	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	84		50 - 150	10/12/17 08:49	10/12/17 19:04	1

**Lab Sample ID: LCS 580-258648/2-A**  
**Matrix: Water**  
**Analysis Batch: 258720**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 258648**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	2.00	1.53		mg/L		77	59 - 112
Motor Oil (>C24-C36)	2.00	1.64		mg/L		82	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	80		50 - 150

**Lab Sample ID: LCSD 580-258648/3-A**  
**Matrix: Water**  
**Analysis Batch: 258720**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 258648**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	2.00	1.51		mg/L		75	59 - 112	2	16
Motor Oil (>C24-C36)	2.00	1.55		mg/L		78	64 - 120	5	17

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	81		50 - 150

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

## Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

**Lab Sample ID: MB 580-258648/1-B**  
**Matrix: Water**  
**Analysis Batch: 258720**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 258648**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.10	0.019	mg/L		10/12/17 08:49	10/12/17 16:51	1
Motor Oil (>C24-C36)	ND		0.25	0.077	mg/L		10/12/17 08:49	10/12/17 16:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	90		50 - 150	10/12/17 08:49	10/12/17 16:51	1

**Lab Sample ID: LCS 580-258648/2-B**  
**Matrix: Water**  
**Analysis Batch: 258720**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 258648**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	2.00	1.64		mg/L		82	59 - 112
Motor Oil (>C24-C36)	2.00	1.83		mg/L		92	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	86		50 - 150

**Lab Sample ID: LCSD 580-258648/3-B**  
**Matrix: Water**  
**Analysis Batch: 258720**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 258648**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	2.00	1.60		mg/L		80	59 - 112	2	16
Motor Oil (>C24-C36)	2.00	1.77		mg/L		88	64 - 120	4	17

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	79		50 - 150

## Method: 6020A - Metals (ICP/MS)

**Lab Sample ID: LCS 580-258196/12-A**  
**Matrix: Water**  
**Analysis Batch: 258362**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 258196**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Lead	1.00	1.00		mg/L		100	80 - 120

**Lab Sample ID: LCSD 580-258196/13-A**  
**Matrix: Water**  
**Analysis Batch: 258362**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total Recoverable**  
**Prep Batch: 258196**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Lead	1.00	0.987		mg/L		99	80 - 120	2	20

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

## Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 580-258281/20-A  
 Matrix: Water  
 Analysis Batch: 258407

Client Sample ID: Method Blank  
 Prep Type: Total Recoverable  
 Prep Batch: 258281

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.00080	0.00020	mg/L		10/06/17 12:46	10/09/17 11:11	1

Lab Sample ID: LCS 580-258281/21-A  
 Matrix: Water  
 Analysis Batch: 258407

Client Sample ID: Lab Control Sample  
 Prep Type: Total Recoverable  
 Prep Batch: 258281

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Lead	1.00	0.964		mg/L		96	80 - 120

Lab Sample ID: LCSD 580-258281/22-A  
 Matrix: Water  
 Analysis Batch: 258407

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Total Recoverable  
 Prep Batch: 258281

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Lead	1.00	0.961		mg/L		96	80 - 120	0	20

Lab Sample ID: MB 580-257852/4-B  
 Matrix: Water  
 Analysis Batch: 258362

Client Sample ID: Method Blank  
 Prep Type: Dissolved  
 Prep Batch: 258196

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040	0.0010	mg/L		10/05/17 14:39	10/06/17 22:02	5

# Lab Chronicle

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

## Client Sample ID: PMW-17

Date Collected: 09/29/17 09:40

Date Received: 09/29/17 17:20

## Lab Sample ID: 580-71745-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	257995	10/03/17 23:57	W1T	TAL SEA
Total/NA	Prep	3510C			258025	10/04/17 09:31	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		1	258069	10/04/17 20:11	TL1	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	258156	10/05/17 22:46	JCV	TAL SEA
Total/NA	Prep	3510C			258535	10/11/17 09:04	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	258609	10/11/17 19:29	TL1	TAL SEA

## Client Sample ID: PMW-14

Date Collected: 09/29/17 09:55

Date Received: 09/29/17 17:20

## Lab Sample ID: 580-71745-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	257995	10/04/17 00:23	W1T	TAL SEA
Total/NA	Prep	3510C			258025	10/04/17 09:31	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		1	258069	10/04/17 20:33	TL1	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	258156	10/05/17 23:16	JCV	TAL SEA
Total/NA	Prep	3510C			258535	10/11/17 09:04	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	258609	10/11/17 19:57	TL1	TAL SEA

## Client Sample ID: PMW-5

Date Collected: 09/29/17 10:30

Date Received: 09/29/17 17:20

## Lab Sample ID: 580-71745-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	257995	10/04/17 00:49	W1T	TAL SEA
Total/NA	Prep	3510C			258025	10/04/17 09:31	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		1	258069	10/04/17 20:55	TL1	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	258156	10/05/17 23:47	JCV	TAL SEA
Total/NA	Prep	3510C			258535	10/11/17 09:04	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	258609	10/11/17 20:26	TL1	TAL SEA

## Client Sample ID: PMW-16

Date Collected: 09/29/17 10:35

Date Received: 09/29/17 17:20

## Lab Sample ID: 580-71745-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	257995	10/04/17 01:16	W1T	TAL SEA
Total/NA	Prep	3510C			258025	10/04/17 09:31	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		1	258069	10/04/17 21:18	TL1	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	258156	10/06/17 00:48	JCV	TAL SEA
Total/NA	Prep	3510C			258535	10/11/17 09:04	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	258609	10/11/17 20:54	TL1	TAL SEA

TestAmerica Seattle

# Lab Chronicle

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

## Client Sample ID: PMW-18

Date Collected: 09/29/17 11:20

Date Received: 09/29/17 17:20

## Lab Sample ID: 580-71745-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	257995	10/04/17 01:42	W1T	TAL SEA
Total/NA	Prep	3510C			258276	10/06/17 12:14	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		5	258347	10/07/17 14:37	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	258156	10/05/17 18:11	JCV	TAL SEA
Total/NA	Prep	3510C			258535	10/11/17 09:04	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	258609	10/11/17 21:22	TL1	TAL SEA

## Client Sample ID: PMW-13

Date Collected: 09/29/17 11:38

Date Received: 09/29/17 17:20

## Lab Sample ID: 580-71745-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	257995	10/04/17 02:09	W1T	TAL SEA
Total/NA	Prep	3510C			258276	10/06/17 12:14	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		5	258347	10/07/17 15:00	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	258156	10/05/17 19:12	JCV	TAL SEA
Total/NA	Prep	3510C			258648	10/12/17 08:49	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	258720	10/12/17 20:10	ADB	TAL SEA

## Client Sample ID: PMW-15

Date Collected: 09/29/17 12:48

Date Received: 09/29/17 17:20

## Lab Sample ID: 580-71745-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	257995	10/04/17 02:36	W1T	TAL SEA
Total/NA	Prep	3510C			258276	10/06/17 12:14	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		2	258347	10/07/17 15:22	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	258156	10/05/17 19:43	JCV	TAL SEA
Total/NA	Prep	3510C			258648	10/12/17 08:49	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	258720	10/12/17 20:54	ADB	TAL SEA

## Client Sample ID: PMW-19

Date Collected: 09/29/17 12:55

Date Received: 09/29/17 17:20

## Lab Sample ID: 580-71745-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	257814	10/03/17 19:32	T1W	TAL SEA
Total/NA	Prep	3510C			258276	10/06/17 12:14	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		1	258347	10/07/17 15:44	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	258156	10/05/17 20:13	JCV	TAL SEA
Total/NA	Prep	8011			257921	10/03/17 13:08	Y1W	TAL SEA
Total/NA	Analysis	8011		1	257947	10/03/17 16:15	Y1W	TAL SEA

TestAmerica Seattle

# Lab Chronicle

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

**Client Sample ID: PMW-19**

**Lab Sample ID: 580-71745-8**

**Date Collected: 09/29/17 12:55**

**Matrix: Water**

**Date Received: 09/29/17 17:20**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			258648	10/12/17 08:49	NDB	TAL SEA
Total/NA	Cleanup	3630C			258698	10/12/17 12:31	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	258720	10/12/17 17:58	ADB	TAL SEA
Total/NA	Prep	3510C			258648	10/12/17 08:49	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	258720	10/12/17 21:16	ADB	TAL SEA
Dissolved	Filtration	FILTRATION			257852	10/02/17 17:20	ASJ	TAL SEA
Dissolved	Prep	3005A			258196	10/05/17 14:39	PAB	TAL SEA
Dissolved	Analysis	6020A		5	258362	10/06/17 21:44	FCW	TAL SEA
Total Recoverable	Prep	3005A			258281	10/06/17 12:46	PAB	TAL SEA
Total Recoverable	Analysis	6020A		5	258407	10/09/17 12:07	FCW	TAL SEA

**Client Sample ID: PMW-1**

**Lab Sample ID: 580-71745-9**

**Date Collected: 09/29/17 14:00**

**Matrix: Water**

**Date Received: 09/29/17 17:20**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	257814	10/03/17 19:57	T1W	TAL SEA
Total/NA	Prep	3510C			258276	10/06/17 12:14	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		1	258347	10/07/17 16:06	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	258156	10/05/17 20:44	JCV	TAL SEA
Total/NA	Prep	3510C			258648	10/12/17 08:49	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	258720	10/12/17 21:38	ADB	TAL SEA

**Client Sample ID: PMW-20**

**Lab Sample ID: 580-71745-10**

**Date Collected: 09/29/17 14:25**

**Matrix: Water**

**Date Received: 09/29/17 17:20**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	257814	10/03/17 20:22	T1W	TAL SEA
Total/NA	Prep	3510C			258276	10/06/17 12:14	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		1	258347	10/07/17 16:29	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	258156	10/05/17 21:14	JCV	TAL SEA
Total/NA	Prep	8011			257921	10/03/17 13:08	Y1W	TAL SEA
Total/NA	Analysis	8011		1	257947	10/03/17 16:31	Y1W	TAL SEA
Total/NA	Prep	3510C			258648	10/12/17 08:49	NDB	TAL SEA
Total/NA	Cleanup	3630C			258698	10/12/17 12:31	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	258720	10/12/17 18:20	ADB	TAL SEA
Total/NA	Prep	3510C			258648	10/12/17 08:49	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	258720	10/12/17 22:00	ADB	TAL SEA
Dissolved	Filtration	FILTRATION			257852	10/02/17 17:20	ASJ	TAL SEA
Dissolved	Prep	3005A			258196	10/05/17 14:39	PAB	TAL SEA
Dissolved	Analysis	6020A		5	258362	10/06/17 21:47	FCW	TAL SEA
Total Recoverable	Prep	3005A			258281	10/06/17 12:46	PAB	TAL SEA

TestAmerica Seattle

# Lab Chronicle

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

**Client Sample ID: PMW-20**

**Lab Sample ID: 580-71745-10**

**Date Collected: 09/29/17 14:25**

**Matrix: Water**

**Date Received: 09/29/17 17:20**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Analysis	6020A		5	258407	10/09/17 12:10	FCW	TAL SEA

**Client Sample ID: PMW-21**

**Lab Sample ID: 580-71745-11**

**Date Collected: 09/29/17 14:50**

**Matrix: Water**

**Date Received: 09/29/17 17:20**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	257814	10/03/17 20:47	T1W	TAL SEA
Total/NA	Prep	3510C			258276	10/06/17 12:14	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		1	258347	10/07/17 16:51	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	258156	10/05/17 21:45	JCV	TAL SEA
Total/NA	Prep	8011			257921	10/03/17 13:08	Y1W	TAL SEA
Total/NA	Analysis	8011		1	257947	10/03/17 16:48	Y1W	TAL SEA
Total/NA	Prep	3510C			258648	10/12/17 08:49	NDB	TAL SEA
Total/NA	Cleanup	3630C			258698	10/12/17 12:31	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	258720	10/12/17 18:42	ADB	TAL SEA
Total/NA	Prep	3510C			258648	10/12/17 08:49	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	258720	10/12/17 22:22	ADB	TAL SEA
Dissolved	Filtration	FILTRATION			257852	10/02/17 17:20	ASJ	TAL SEA
Dissolved	Prep	3005A			258196	10/05/17 14:39	PAB	TAL SEA
Dissolved	Analysis	6020A		5	258362	10/06/17 21:50	FCW	TAL SEA
Total Recoverable	Prep	3005A			258281	10/06/17 12:46	PAB	TAL SEA
Total Recoverable	Analysis	6020A		5	258407	10/09/17 12:13	FCW	TAL SEA

**Client Sample ID: PMW-8**

**Lab Sample ID: 580-71745-12**

**Date Collected: 09/29/17 15:00**

**Matrix: Water**

**Date Received: 09/29/17 17:20**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	257995	10/04/17 03:28	W1T	TAL SEA
Total/NA	Prep	3510C			258276	10/06/17 12:14	NDB	TAL SEA
Total/NA	Analysis	8270D SIM		5	258347	10/07/17 17:13	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	258468	10/10/17 20:36	RSB	TAL SEA
Total/NA	Prep	3510C			258648	10/12/17 08:49	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	258720	10/12/17 22:44	ADB	TAL SEA
Dissolved	Filtration	FILTRATION			257852	10/02/17 17:20	ASJ	TAL SEA
Dissolved	Prep	3005A			258196	10/05/17 14:39	PAB	TAL SEA
Dissolved	Analysis	6020A		5	258362	10/06/17 22:10	FCW	TAL SEA
Total Recoverable	Prep	3005A			258281	10/06/17 12:46	PAB	TAL SEA
Total Recoverable	Analysis	6020A		5	258407	10/09/17 12:16	FCW	TAL SEA

**Laboratory References:**

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

TestAmerica Seattle

# Accreditation/Certification Summary

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

## Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-18
California	State Program	9	2901	01-31-18
L-A-B	DoD ELAP		L2236	01-19-19
L-A-B	ISO/IEC 17025		L2236	01-19-19
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-17
US Fish & Wildlife	Federal		LE058448-0	10-31-18
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-18

# Sample Summary

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia (WA)

TestAmerica Job ID: 580-71745-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-71745-1	PMW-17	Water	09/29/17 09:40	09/29/17 17:20
580-71745-2	PMW-14	Water	09/29/17 09:55	09/29/17 17:20
580-71745-3	PMW-5	Water	09/29/17 10:30	09/29/17 17:20
580-71745-4	PMW-16	Water	09/29/17 10:35	09/29/17 17:20
580-71745-5	PMW-18	Water	09/29/17 11:20	09/29/17 17:20
580-71745-6	PMW-13	Water	09/29/17 11:38	09/29/17 17:20
580-71745-7	PMW-15	Water	09/29/17 12:48	09/29/17 17:20
580-71745-8	PMW-19	Water	09/29/17 12:55	09/29/17 17:20
580-71745-9	PMW-1	Water	09/29/17 14:00	09/29/17 17:20
580-71745-10	PMW-20	Water	09/29/17 14:25	09/29/17 17:20
580-71745-11	PMW-21	Water	09/29/17 14:50	09/29/17 17:20
580-71745-12	PMW-8	Water	09/29/17 15:00	09/29/17 17:20



Client: Aradia Client Contact: Bob M. Colburn Date: 9/29/12 Chain of Custody Number: 32732  
Address: 1100 21st Ave NW Telephone Number (Area Code)/Fax Number: 206)714 7161 Lab Number: \_\_\_\_\_ Page 1 of 1  
City: Seattle State: WA Zip Code: 98107 Sampler: Bob M. Colburn Lab Contact: \_\_\_\_\_

Project Name and Location (State): Blockbuster 2nd Floor - 4100 1st Ave NW Billing Contact: bob.colburn@testamericainc.com  
Contract/Purchase Order/Quote No.: 32732

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix					Containers & Preservatives						Analysis (Attach list if more space is needed)	Special Instructions/ Conditions of Receipt			
			Air	Aqueous	Sed.	Soil	Other	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH					
10-10-12	9/29/12	0940																
10-11-12		0940																
10-12-12		0940																
10-13-12		0940																
10-14-12		0940																
10-15-12		0940																
10-16-12		0940																
10-17-12		0940																
10-18-12		0940																
10-19-12		0940																
10-20-12		0940																
10-21-12		0940																
10-22-12		0940																
10-23-12		0940																
10-24-12		0940																
10-25-12		0940																
10-26-12		0940																
10-27-12		0940																
10-28-12		0940																
10-29-12		0940																
10-30-12		0940																
10-31-12		0940																

Cooler:  Yes  No Cooler Temp: \_\_\_\_\_ Possible Hazard Identification:  Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown Sample Disposal:  Disposal By Lab  Return To Client  Archive For \_\_\_\_\_ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required (business days):  24 Hours  48 Hours  5 Days  10 Days  15 Days  Other \_\_\_\_\_ QC Requirements (Specify): \_\_\_\_\_

1. Relinquished By Sign/Print: <u>[Signature]</u> Date: <u>9/29/12</u> Time: <u>12:00</u>	1. Received By Sign/Print: <u>[Signature]</u> Date: <u>10/9/12</u> Time: <u>12:00</u>
2. Relinquished By Sign/Print: _____ Date: _____ Time: _____	2. Received By Sign/Print: _____ Date: _____ Time: _____
3. Relinquished By Sign/Print: _____ Date: _____ Time: _____	3. Received By Sign/Print: _____ Date: _____ Time: _____

Comments: \* Updated Pg 1/2 COC



580-71745 Chain of Custody





## Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-71745-1

**Login Number: 71745**

**List Source: TestAmerica Seattle**

**List Number: 1**

**Creator: Ponce-McDermott, Monica**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

TestAmerica Job ID: 580-73901-1

Client Project/Site: Double Tree Olympia

For:

ARCADIS U.S. Inc  
1100 Olive Way  
Suite 800  
Seattle, Washington 98101

Attn: Rory Henneck



Authorized for release by:  
1/9/2018 12:03:48 PM

Kayse Zalmai, Project Manager I  
(253)922-2310

[kayse.zalmai@testamericainc.com](mailto:kayse.zalmai@testamericainc.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Case Narrative

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Job ID: 580-73901-1**

**Laboratory: TestAmerica Seattle**

## Narrative

### Job Narrative 580-73901-1

#### Receipt

The samples were received on 12/22/2017 12:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 1.0° C, 1.3° C, 3.1° C and 4.9° C.

#### GC/MS VOA

Method(s) 8260C: The method blank for analytical batch 580-264531 contained Ethylbenzene above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) NWTPH-Gx: Surrogate recovery for the following sample was outside control limits: PMW-10 (580-73901-9). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### GC/MS Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### GC Semi VOA

Method(s) NWTPH-Dx: The method blank for preparation batch 580-264553 and analytical batch 580-264622 contained DRO (C10-C24) above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Method(s) NWTPH-Dx: The continuing calibration verification (CCV) associated with batch 580-264622 recovered above the upper control limit for DRO (C10-C24). The samples associated with this CCV were non-detect at or above the RL for the affected analytes; therefore, the data have been reported. The following samples are impacted: PMW-19 (580-73901-17), PMW-20 (580-73901-18) and (CCV 580-264622/25).

Method(s) NWTPH-Dx: The Diesel Range Organics (C10-C24) concentration reported for the following sample is due to the presence of discrete peaks: PMW-2 (580-73901-2), PMW-3 (580-73901-3) and PMW-19 (580-73901-17).

Method(s) NWTPH-Dx: The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: PMW-6 (580-73901-5), PMW-7 (580-73901-6), PMW-8 (580-73901-7), PMW-10 (580-73901-9), PMW-12 (580-73901-10), PMW-13 (580-73901-11), PMW-14 (580-73901-12), PMW-16 (580-73901-14), PMW-20 (580-73901-18), PMW-18 (580-73901-16), PMW-20 (580-73901-18), PMW-21 (580-73901-19), DUP-1 (580-73901-20) and DUP-2 (580-73901-21).

Method(s) NWTPH-Dx: Surrogate recovery for the following sample was outside control limits: PMW-5 (580-73901-4). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

# Definitions/Glossary

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

### GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
X	Surrogate is outside control limits

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Client Sample ID: PMW-1**

**Date Collected: 12/21/17 09:35**

**Date Received: 12/22/17 12:20**

**Lab Sample ID: 580-73901-1**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			01/04/18 05:53	1
<b>Toluene</b>	<b>0.33</b>	<b>J</b>	2.0	0.24	ug/L			01/04/18 05:53	1
<b>Ethylbenzene</b>	<b>0.37</b>	<b>J B</b>	3.0	0.21	ug/L			01/04/18 05:53	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			01/04/18 05:53	1
<b>o-Xylene</b>	<b>0.43</b>	<b>J</b>	2.0	0.15	ug/L			01/04/18 05:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 122		01/04/18 05:53	1
Trifluorotoluene (Surr)	91		80 - 120		01/04/18 05:53	1
4-Bromofluorobenzene (Surr)	101		75 - 125		01/04/18 05:53	1
Dibromofluoromethane (Surr)	93		77 - 120		01/04/18 05:53	1
1,2-Dichloroethane-d4 (Surr)	99		80 - 126		01/04/18 05:53	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			12/28/17 19:33	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
4-Bromofluorobenzene (Surr)	91		58 - 133		12/28/17 19:33	1			
Trifluorotoluene (Surr)	108		77 - 128		12/28/17 19:33	1			

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.032</b>	<b>J</b>	0.10	0.019	mg/L		01/02/18 13:45	01/04/18 13:09	1
Motor Oil (>C24-C36)	ND		0.25	0.078	mg/L		01/02/18 13:45	01/04/18 13:09	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
o-Terphenyl	67		50 - 150		01/02/18 13:45	01/04/18 13:09	1		

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Client Sample ID: PMW-2**

**Date Collected: 12/21/17 14:50**

**Date Received: 12/22/17 12:20**

**Lab Sample ID: 580-73901-2**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			01/04/18 06:21	1
<b>Toluene</b>	<b>0.36</b>	<b>J</b>	2.0	0.24	ug/L			01/04/18 06:21	1
<b>Ethylbenzene</b>	<b>0.43</b>	<b>J B</b>	3.0	0.21	ug/L			01/04/18 06:21	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			01/04/18 06:21	1
<b>o-Xylene</b>	<b>0.43</b>	<b>J</b>	2.0	0.15	ug/L			01/04/18 06:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 122		01/04/18 06:21	1
Trifluorotoluene (Surr)	91		80 - 120		01/04/18 06:21	1
4-Bromofluorobenzene (Surr)	103		75 - 125		01/04/18 06:21	1
Dibromofluoromethane (Surr)	91		77 - 120		01/04/18 06:21	1
1,2-Dichloroethane-d4 (Surr)	98		80 - 126		01/04/18 06:21	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>0.20</b>	<b>J</b>	0.25	0.050	mg/L			12/28/17 20:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		58 - 133		12/28/17 20:04	1
Trifluorotoluene (Surr)	108		77 - 128		12/28/17 20:04	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.24</b>		0.10	0.020	mg/L		01/02/18 13:45	01/04/18 13:36	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>0.11</b>	<b>J</b>	0.26	0.080	mg/L		01/02/18 13:45	01/04/18 13:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	65		50 - 150	01/02/18 13:45	01/04/18 13:36	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Client Sample ID: PMW-3**

**Date Collected: 12/21/17 10:20**

**Date Received: 12/22/17 12:20**

**Lab Sample ID: 580-73901-3**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			01/04/18 06:50	1
Toluene	ND		2.0	0.24	ug/L			01/04/18 06:50	1
<b>Ethylbenzene</b>	<b>0.36</b>	<b>J B</b>	3.0	0.21	ug/L			01/04/18 06:50	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			01/04/18 06:50	1
o-Xylene	ND		2.0	0.15	ug/L			01/04/18 06:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 122		01/04/18 06:50	1
Trifluorotoluene (Surr)	91		80 - 120		01/04/18 06:50	1
4-Bromofluorobenzene (Surr)	101		75 - 125		01/04/18 06:50	1
Dibromofluoromethane (Surr)	93		77 - 120		01/04/18 06:50	1
1,2-Dichloroethane-d4 (Surr)	99		80 - 126		01/04/18 06:50	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			12/28/17 20:36	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
4-Bromofluorobenzene (Surr)	92		58 - 133		12/28/17 20:36	1			
Trifluorotoluene (Surr)	105		77 - 128		12/28/17 20:36	1			

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.027</b>	<b>J</b>	0.10	0.019	mg/L		01/02/18 13:45	01/04/18 14:04	1
Motor Oil (>C24-C36)	ND		0.25	0.078	mg/L		01/02/18 13:45	01/04/18 14:04	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
o-Terphenyl	64		50 - 150		01/02/18 13:45	01/04/18 14:04	1		

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Client Sample ID: PMW-5**

**Date Collected: 12/21/17 14:55**

**Date Received: 12/22/17 12:20**

**Lab Sample ID: 580-73901-4**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.67	J	2.0	0.42	ug/L			01/04/18 07:18	1
Toluene	0.57	J	2.0	0.24	ug/L			01/04/18 07:18	1
Ethylbenzene	0.53	J B	3.0	0.21	ug/L			01/04/18 07:18	1
m-Xylene & p-Xylene	0.77	J	3.0	0.72	ug/L			01/04/18 07:18	1
o-Xylene	0.45	J	2.0	0.15	ug/L			01/04/18 07:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 122		01/04/18 07:18	1
Trifluorotoluene (Surr)	93		80 - 120		01/04/18 07:18	1
4-Bromofluorobenzene (Surr)	99		75 - 125		01/04/18 07:18	1
Dibromofluoromethane (Surr)	92		77 - 120		01/04/18 07:18	1
1,2-Dichloroethane-d4 (Surr)	99		80 - 126		01/04/18 07:18	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.36		0.25	0.050	mg/L			12/28/17 21:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	121		58 - 133		12/28/17 21:08	1
Trifluorotoluene (Surr)	106		77 - 128		12/28/17 21:08	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.29		0.10	0.019	mg/L		01/02/18 13:45	01/04/18 14:32	1
Motor Oil (>C24-C36)	0.086	J	0.25	0.077	mg/L		01/02/18 13:45	01/04/18 14:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	37	X	50 - 150	01/02/18 13:45	01/04/18 14:32	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Client Sample ID: PMW-6**  
**Date Collected: 12/21/17 13:25**  
**Date Received: 12/22/17 12:20**

**Lab Sample ID: 580-73901-5**  
**Matrix: Water**

### Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			01/04/18 07:47	1
Toluene	ND		2.0	0.24	ug/L			01/04/18 07:47	1
<b>Ethylbenzene</b>	<b>0.36</b>	<b>J B</b>	3.0	0.21	ug/L			01/04/18 07:47	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			01/04/18 07:47	1
<b>o-Xylene</b>	<b>0.40</b>	<b>J</b>	2.0	0.15	ug/L			01/04/18 07:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 122		01/04/18 07:47	1
Trifluorotoluene (Surr)	90		80 - 120		01/04/18 07:47	1
4-Bromofluorobenzene (Surr)	100		75 - 125		01/04/18 07:47	1
Dibromofluoromethane (Surr)	95		77 - 120		01/04/18 07:47	1
1,2-Dichloroethane-d4 (Surr)	104		80 - 126		01/04/18 07:47	1

### Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>0.070</b>	<b>J</b>	0.25	0.050	mg/L			12/28/17 21:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		58 - 133		12/28/17 21:40	1
Trifluorotoluene (Surr)	106		77 - 128		12/28/17 21:40	1

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>1.1</b>		0.10	0.019	mg/L		01/02/18 13:45	01/04/18 15:00	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>0.51</b>		0.25	0.078	mg/L		01/02/18 13:45	01/04/18 15:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	59		50 - 150	01/02/18 13:45	01/04/18 15:00	1

### General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>790</b>		10	10	mg/L			12/27/17 11:52	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Client Sample ID: PMW-7**

**Date Collected: 12/21/17 14:05**

**Date Received: 12/22/17 12:20**

**Lab Sample ID: 580-73901-6**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			01/04/18 08:15	1
<b>Toluene</b>	<b>0.30</b>	<b>J</b>	2.0	0.24	ug/L			01/04/18 08:15	1
<b>Ethylbenzene</b>	<b>0.37</b>	<b>J B</b>	3.0	0.21	ug/L			01/04/18 08:15	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			01/04/18 08:15	1
<b>o-Xylene</b>	<b>0.40</b>	<b>J</b>	2.0	0.15	ug/L			01/04/18 08:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 122		01/04/18 08:15	1
Trifluorotoluene (Surr)	90		80 - 120		01/04/18 08:15	1
4-Bromofluorobenzene (Surr)	102		75 - 125		01/04/18 08:15	1
Dibromofluoromethane (Surr)	95		77 - 120		01/04/18 08:15	1
1,2-Dichloroethane-d4 (Surr)	102		80 - 126		01/04/18 08:15	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			12/28/17 22:43	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
4-Bromofluorobenzene (Surr)	92		58 - 133		12/28/17 22:43	1			
Trifluorotoluene (Surr)	105		77 - 128		12/28/17 22:43	1			

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.11</b>		0.10	0.019	mg/L		01/02/18 13:45	01/04/18 15:28	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>0.091</b>	<b>J</b>	0.25	0.077	mg/L		01/02/18 13:45	01/04/18 15:28	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
o-Terphenyl	61		50 - 150		01/02/18 13:45	01/04/18 15:28	1		

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Client Sample ID: PMW-8**

**Date Collected: 12/21/17 15:45**

**Date Received: 12/22/17 12:20**

**Lab Sample ID: 580-73901-7**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	26		2.0	0.42	ug/L			01/04/18 08:44	1
Toluene	1.3	J	2.0	0.24	ug/L			01/04/18 08:44	1
Ethylbenzene	0.63	J B	3.0	0.21	ug/L			01/04/18 08:44	1
m-Xylene & p-Xylene	1.6	J	3.0	0.72	ug/L			01/04/18 08:44	1
o-Xylene	ND		2.0	0.15	ug/L			01/04/18 08:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 122		01/04/18 08:44	1
Trifluorotoluene (Surr)	90		80 - 120		01/04/18 08:44	1
4-Bromofluorobenzene (Surr)	102		75 - 125		01/04/18 08:44	1
Dibromofluoromethane (Surr)	95		77 - 120		01/04/18 08:44	1
1,2-Dichloroethane-d4 (Surr)	99		80 - 126		01/04/18 08:44	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.12	J	0.25	0.050	mg/L			12/28/17 23:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		58 - 133		12/28/17 23:15	1
Trifluorotoluene (Surr)	102		77 - 128		12/28/17 23:15	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	2.3		0.10	0.020	mg/L		01/02/18 13:45	01/04/18 15:56	1
Motor Oil (>C24-C36)	1.6		0.26	0.080	mg/L		01/02/18 13:45	01/04/18 15:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	57		50 - 150	01/02/18 13:45	01/04/18 15:56	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Client Sample ID: PMW-9**

**Date Collected: 12/22/17 09:40**

**Date Received: 12/22/17 12:20**

**Lab Sample ID: 580-73901-8**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.68	J	2.0	0.42	ug/L			01/04/18 17:19	1
Toluene	0.67	J	2.0	0.24	ug/L			01/04/18 17:19	1
Ethylbenzene	ND		3.0	0.21	ug/L			01/04/18 17:19	1
m-Xylene & p-Xylene	0.72	J	3.0	0.72	ug/L			01/04/18 17:19	1
o-Xylene	0.50	J	2.0	0.15	ug/L			01/04/18 17:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 122		01/04/18 17:19	1
Trifluorotoluene (Surr)	93		80 - 120		01/04/18 17:19	1
4-Bromofluorobenzene (Surr)	99		75 - 125		01/04/18 17:19	1
Dibromofluoromethane (Surr)	94		77 - 120		01/04/18 17:19	1
1,2-Dichloroethane-d4 (Surr)	102		80 - 126		01/04/18 17:19	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.10	J	0.25	0.050	mg/L			12/28/17 23:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		58 - 133		12/28/17 23:47	1
Trifluorotoluene (Surr)	106		77 - 128		12/28/17 23:47	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.43	B	0.10	0.019	mg/L		01/04/18 08:51	01/04/18 20:49	1
Motor Oil (>C24-C36)	0.29		0.25	0.078	mg/L		01/04/18 08:51	01/04/18 20:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	79		50 - 150	01/04/18 08:51	01/04/18 20:49	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Client Sample ID: PMW-10**

**Date Collected: 12/21/17 15:40**

**Date Received: 12/22/17 12:20**

**Lab Sample ID: 580-73901-9**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.7		2.0	0.42	ug/L			01/04/18 09:13	1
Toluene	0.78	J	2.0	0.24	ug/L			01/04/18 09:13	1
Ethylbenzene	0.96	J B	3.0	0.21	ug/L			01/04/18 09:13	1
m-Xylene & p-Xylene	1.1	J	3.0	0.72	ug/L			01/04/18 09:13	1
o-Xylene	0.46	J	2.0	0.15	ug/L			01/04/18 09:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		80 - 122		01/04/18 09:13	1
Trifluorotoluene (Surr)	89		80 - 120		01/04/18 09:13	1
4-Bromofluorobenzene (Surr)	103		75 - 125		01/04/18 09:13	1
Dibromofluoromethane (Surr)	91		77 - 120		01/04/18 09:13	1
1,2-Dichloroethane-d4 (Surr)	94		80 - 126		01/04/18 09:13	1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	2.5		0.021	0.0062	ug/L		12/27/17 08:49	12/28/17 14:47	1
2-Methylnaphthalene	0.14		0.031	0.0093	ug/L		12/27/17 08:49	12/28/17 14:47	1
Naphthalene	0.17		0.041	0.013	ug/L		12/27/17 08:49	12/28/17 14:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	79		34 - 109	12/27/17 08:49	12/28/17 14:47	1
Terphenyl-d14	63		53 - 112	12/27/17 08:49	12/28/17 14:47	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.63		0.25	0.050	mg/L			12/29/17 00:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	137	X	58 - 133		12/29/17 00:19	1
Trifluorotoluene (Surr)	111		77 - 128		12/29/17 00:19	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1.9	B	0.10	0.020	mg/L		01/04/18 08:51	01/04/18 21:10	1
Motor Oil (>C24-C36)	1.1		0.26	0.080	mg/L		01/04/18 08:51	01/04/18 21:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	69		50 - 150	01/04/18 08:51	01/04/18 21:10	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	580		10	10	mg/L			12/27/17 11:52	1

TestAmerica Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Client Sample ID: PMW-12**

**Date Collected: 12/22/17 08:40**

**Date Received: 12/22/17 12:20**

**Lab Sample ID: 580-73901-10**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			01/04/18 17:47	1
<b>Toluene</b>	<b>0.37</b>	<b>J</b>	2.0	0.24	ug/L			01/04/18 17:47	1
Ethylbenzene	ND		3.0	0.21	ug/L			01/04/18 17:47	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			01/04/18 17:47	1
o-Xylene	ND		2.0	0.15	ug/L			01/04/18 17:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 122		01/04/18 17:47	1
Trifluorotoluene (Surr)	90		80 - 120		01/04/18 17:47	1
4-Bromofluorobenzene (Surr)	100		75 - 125		01/04/18 17:47	1
Dibromofluoromethane (Surr)	95		77 - 120		01/04/18 17:47	1
1,2-Dichloroethane-d4 (Surr)	94		80 - 126		01/04/18 17:47	1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>1-Methylnaphthalene</b>	<b>0.19</b>		0.021	0.0062	ug/L		12/27/17 08:49	12/28/17 15:09	1
2-Methylnaphthalene	ND		0.031	0.0093	ug/L		12/27/17 08:49	12/28/17 15:09	1
<b>Naphthalene</b>	<b>0.079</b>		0.041	0.013	ug/L		12/27/17 08:49	12/28/17 15:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	82		34 - 109	12/27/17 08:49	12/28/17 15:09	1
Terphenyl-d14	71		53 - 112	12/27/17 08:49	12/28/17 15:09	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>0.11</b>	<b>J</b>	0.25	0.050	mg/L			12/29/17 00:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		58 - 133		12/29/17 00:51	1
Trifluorotoluene (Surr)	105		77 - 128		12/29/17 00:51	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>1.6</b>	<b>B</b>	0.11	0.021	mg/L		01/04/18 08:51	01/04/18 21:32	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>1.4</b>		0.28	0.087	mg/L		01/04/18 08:51	01/04/18 21:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	74		50 - 150	01/04/18 08:51	01/04/18 21:32	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Client Sample ID: PMW-13**

**Lab Sample ID: 580-73901-11**

**Date Collected: 12/22/17 10:35**

**Matrix: Water**

**Date Received: 12/22/17 12:20**

### Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			01/04/18 18:16	1
<b>Toluene</b>	<b>0.36</b>	<b>J</b>	2.0	0.24	ug/L			01/04/18 18:16	1
Ethylbenzene	ND		3.0	0.21	ug/L			01/04/18 18:16	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			01/04/18 18:16	1
o-Xylene	ND		2.0	0.15	ug/L			01/04/18 18:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 122		01/04/18 18:16	1
Trifluorotoluene (Surr)	91		80 - 120		01/04/18 18:16	1
4-Bromofluorobenzene (Surr)	102		75 - 125		01/04/18 18:16	1
Dibromofluoromethane (Surr)	94		77 - 120		01/04/18 18:16	1
1,2-Dichloroethane-d4 (Surr)	99		80 - 126		01/04/18 18:16	1

### Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>0.061</b>	<b>J</b>	0.25	0.050	mg/L			12/29/17 01:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		58 - 133		12/29/17 01:23	1
Trifluorotoluene (Surr)	104		77 - 128		12/29/17 01:23	1

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.77</b>	<b>B</b>	0.10	0.020	mg/L		01/04/18 08:51	01/04/18 21:54	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>0.35</b>		0.26	0.080	mg/L		01/04/18 08:51	01/04/18 21:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	68		50 - 150	01/04/18 08:51	01/04/18 21:54	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Client Sample ID: PMW-14**

**Lab Sample ID: 580-73901-12**

**Date Collected: 12/21/17 13:40**

**Matrix: Water**

**Date Received: 12/22/17 12:20**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.55	J	2.0	0.42	ug/L			01/04/18 09:42	1
Toluene	0.50	J	2.0	0.24	ug/L			01/04/18 09:42	1
Ethylbenzene	0.46	J B	3.0	0.21	ug/L			01/04/18 09:42	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			01/04/18 09:42	1
o-Xylene	0.61	J	2.0	0.15	ug/L			01/04/18 09:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 122		01/04/18 09:42	1
Trifluorotoluene (Surr)	88		80 - 120		01/04/18 09:42	1
4-Bromofluorobenzene (Surr)	103		75 - 125		01/04/18 09:42	1
Dibromofluoromethane (Surr)	96		77 - 120		01/04/18 09:42	1
1,2-Dichloroethane-d4 (Surr)	97		80 - 126		01/04/18 09:42	1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	3.1		0.032	0.0095	ug/L		12/27/17 08:49	12/28/17 15:31	1
Naphthalene	0.47		0.042	0.014	ug/L		12/27/17 08:49	12/28/17 15:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	64		34 - 109	12/27/17 08:49	12/28/17 15:31	1
Terphenyl-d14	65		53 - 112	12/27/17 08:49	12/28/17 15:31	1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	63		0.21	0.064	ug/L		12/27/17 08:49	12/29/17 23:15	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	89		34 - 109	12/27/17 08:49	12/29/17 23:15	10
Terphenyl-d14	98		53 - 112	12/27/17 08:49	12/29/17 23:15	10

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.26		0.25	0.050	mg/L			12/28/17 22:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		58 - 133		12/28/17 22:44	1
Trifluorotoluene (Surr)	122		77 - 128		12/28/17 22:44	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	2.7	B	0.10	0.020	mg/L		01/04/18 08:51	01/04/18 22:16	1
Motor Oil (>C24-C36)	0.44		0.26	0.079	mg/L		01/04/18 08:51	01/04/18 22:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	77		50 - 150	01/04/18 08:51	01/04/18 22:16	1

TestAmerica Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Client Sample ID: PMW-15**

**Lab Sample ID: 580-73901-13**

**Date Collected: 12/21/17 10:50**

**Matrix: Water**

**Date Received: 12/22/17 12:20**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			01/04/18 10:10	1
<b>Toluene</b>	<b>0.32</b>	<b>J</b>	2.0	0.24	ug/L			01/04/18 10:10	1
<b>Ethylbenzene</b>	<b>0.36</b>	<b>J B</b>	3.0	0.21	ug/L			01/04/18 10:10	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			01/04/18 10:10	1
<b>o-Xylene</b>	<b>0.44</b>	<b>J</b>	2.0	0.15	ug/L			01/04/18 10:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 122		01/04/18 10:10	1
Trifluorotoluene (Surr)	88		80 - 120		01/04/18 10:10	1
4-Bromofluorobenzene (Surr)	102		75 - 125		01/04/18 10:10	1
Dibromofluoromethane (Surr)	96		77 - 120		01/04/18 10:10	1
1,2-Dichloroethane-d4 (Surr)	102		80 - 126		01/04/18 10:10	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>0.082</b>	<b>J</b>	0.25	0.050	mg/L			12/28/17 23:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		58 - 133		12/28/17 23:15	1
Trifluorotoluene (Surr)	120		77 - 128		12/28/17 23:15	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.65</b>	<b>B</b>	0.10	0.019	mg/L		01/04/18 08:51	01/04/18 22:38	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>0.18</b>	<b>J</b>	0.25	0.078	mg/L		01/04/18 08:51	01/04/18 22:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	85		50 - 150	01/04/18 08:51	01/04/18 22:38	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Client Sample ID: PMW-16**

**Lab Sample ID: 580-73901-14**

**Date Collected: 12/21/17 12:55**

**Matrix: Water**

**Date Received: 12/22/17 12:20**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			01/04/18 13:59	1
Toluene	ND		2.0	0.24	ug/L			01/04/18 13:59	1
Ethylbenzene	ND		3.0	0.21	ug/L			01/04/18 13:59	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			01/04/18 13:59	1
o-Xylene	ND		2.0	0.15	ug/L			01/04/18 13:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 122		01/04/18 13:59	1
Trifluorotoluene (Surr)	91		80 - 120		01/04/18 13:59	1
4-Bromofluorobenzene (Surr)	99		75 - 125		01/04/18 13:59	1
Dibromofluoromethane (Surr)	91		77 - 120		01/04/18 13:59	1
1,2-Dichloroethane-d4 (Surr)	98		80 - 126		01/04/18 13:59	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			12/28/17 23:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	86		58 - 133		12/28/17 23:45	1
Trifluorotoluene (Surr)	120		77 - 128		12/28/17 23:45	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.11	B	0.11	0.020	mg/L		01/04/18 08:51	01/04/18 23:00	1
Motor Oil (>C24-C36)	0.087	J	0.26	0.081	mg/L		01/04/18 08:51	01/04/18 23:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	72		50 - 150		01/04/18 08:51	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Client Sample ID: PMW-17**

**Date Collected: 12/21/17 12:05**

**Date Received: 12/22/17 12:20**

**Lab Sample ID: 580-73901-15**

**Matrix: Water**

### Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			01/04/18 14:28	1
Toluene	ND		2.0	0.24	ug/L			01/04/18 14:28	1
Ethylbenzene	ND		3.0	0.21	ug/L			01/04/18 14:28	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			01/04/18 14:28	1
o-Xylene	ND		2.0	0.15	ug/L			01/04/18 14:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 122		01/04/18 14:28	1
Trifluorotoluene (Surr)	92		80 - 120		01/04/18 14:28	1
4-Bromofluorobenzene (Surr)	98		75 - 125		01/04/18 14:28	1
Dibromofluoromethane (Surr)	89		77 - 120		01/04/18 14:28	1
1,2-Dichloroethane-d4 (Surr)	97		80 - 126		01/04/18 14:28	1

### Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.11	J	0.25	0.050	mg/L			12/29/17 00:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		58 - 133		12/29/17 00:16	1
Trifluorotoluene (Surr)	120		77 - 128		12/29/17 00:16	1

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.25	B	0.10	0.020	mg/L		01/04/18 08:51	01/08/18 19:17	1
Motor Oil (>C24-C36)	0.23	J	0.26	0.080	mg/L		01/04/18 08:51	01/08/18 19:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	72		50 - 150	01/04/18 08:51	01/08/18 19:17	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Client Sample ID: PMW-18**

**Lab Sample ID: 580-73901-16**

**Date Collected: 12/21/17 12:25**

**Matrix: Water**

**Date Received: 12/22/17 12:20**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.2	J	2.0	0.42	ug/L			01/04/18 14:56	1
Toluene	0.47	J	2.0	0.24	ug/L			01/04/18 14:56	1
Ethylbenzene	0.49	J	3.0	0.21	ug/L			01/04/18 14:56	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			01/04/18 14:56	1
o-Xylene	ND		2.0	0.15	ug/L			01/04/18 14:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 122		01/04/18 14:56	1
Trifluorotoluene (Surr)	89		80 - 120		01/04/18 14:56	1
4-Bromofluorobenzene (Surr)	100		75 - 125		01/04/18 14:56	1
Dibromofluoromethane (Surr)	91		77 - 120		01/04/18 14:56	1
1,2-Dichloroethane-d4 (Surr)	103		80 - 126		01/04/18 14:56	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.13	J	0.25	0.050	mg/L			12/29/17 00:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		58 - 133		12/29/17 00:47	1
Trifluorotoluene (Surr)	119		77 - 128		12/29/17 00:47	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	2.1	B	0.10	0.019	mg/L		01/04/18 08:51	01/08/18 19:39	1
Motor Oil (>C24-C36)	0.92		0.25	0.078	mg/L		01/04/18 08:51	01/08/18 19:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	70		50 - 150	01/04/18 08:51	01/08/18 19:39	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Client Sample ID: PMW-19**

**Date Collected: 12/21/17 09:30**

**Date Received: 12/22/17 12:20**

**Lab Sample ID: 580-73901-17**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			01/04/18 15:24	1
Toluene	ND		2.0	0.24	ug/L			01/04/18 15:24	1
Ethylbenzene	ND		3.0	0.21	ug/L			01/04/18 15:24	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			01/04/18 15:24	1
o-Xylene	ND		2.0	0.15	ug/L			01/04/18 15:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 122		01/04/18 15:24	1
Trifluorotoluene (Surr)	90		80 - 120		01/04/18 15:24	1
4-Bromofluorobenzene (Surr)	100		75 - 125		01/04/18 15:24	1
Dibromofluoromethane (Surr)	91		77 - 120		01/04/18 15:24	1
1,2-Dichloroethane-d4 (Surr)	96		80 - 126		01/04/18 15:24	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			12/29/17 01:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		58 - 133		12/29/17 01:18	1
Trifluorotoluene (Surr)	120		77 - 128		12/29/17 01:18	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.080	J B	0.10	0.020	mg/L		01/04/18 08:51	01/08/18 21:50	1
Motor Oil (>C24-C36)	0.10	J	0.26	0.080	mg/L		01/04/18 08:51	01/08/18 21:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	86		50 - 150	01/04/18 08:51	01/08/18 21:50	1

## General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	540		10	10	mg/L			12/27/17 11:52	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Client Sample ID: PMW-20**

**Date Collected: 12/21/17 10:30**

**Date Received: 12/22/17 12:20**

**Lab Sample ID: 580-73901-18**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			01/04/18 15:53	1
Toluene	ND		2.0	0.24	ug/L			01/04/18 15:53	1
Ethylbenzene	ND		3.0	0.21	ug/L			01/04/18 15:53	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			01/04/18 15:53	1
o-Xylene	ND		2.0	0.15	ug/L			01/04/18 15:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 122		01/04/18 15:53	1
Trifluorotoluene (Surr)	92		80 - 120		01/04/18 15:53	1
4-Bromofluorobenzene (Surr)	97		75 - 125		01/04/18 15:53	1
Dibromofluoromethane (Surr)	93		77 - 120		01/04/18 15:53	1
1,2-Dichloroethane-d4 (Surr)	99		80 - 126		01/04/18 15:53	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			12/29/17 01:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		58 - 133		12/29/17 01:48	1
Trifluorotoluene (Surr)	118		77 - 128		12/29/17 01:48	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.13	B	0.10	0.019	mg/L		01/04/18 08:51	01/08/18 22:12	1
Motor Oil (>C24-C36)	0.36		0.25	0.077	mg/L		01/04/18 08:51	01/08/18 22:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	77		50 - 150	01/04/18 08:51	01/08/18 22:12	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Client Sample ID: PMW-21**

**Date Collected: 12/21/17 11:15**

**Date Received: 12/22/17 12:20**

**Lab Sample ID: 580-73901-19**

**Matrix: Water**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			01/04/18 16:22	1
Toluene	ND		2.0	0.24	ug/L			01/04/18 16:22	1
Ethylbenzene	ND		3.0	0.21	ug/L			01/04/18 16:22	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			01/04/18 16:22	1
o-Xylene	ND		2.0	0.15	ug/L			01/04/18 16:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 122		01/04/18 16:22	1
Trifluorotoluene (Surr)	92		80 - 120		01/04/18 16:22	1
4-Bromofluorobenzene (Surr)	99		75 - 125		01/04/18 16:22	1
Dibromofluoromethane (Surr)	91		77 - 120		01/04/18 16:22	1
1,2-Dichloroethane-d4 (Surr)	98		80 - 126		01/04/18 16:22	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			12/29/17 02:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		58 - 133		12/29/17 02:19	1
Trifluorotoluene (Surr)	120		77 - 128		12/29/17 02:19	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.13	B	0.10	0.019	mg/L		01/04/18 08:51	01/08/18 20:01	1
Motor Oil (>C24-C36)	0.13	J	0.25	0.078	mg/L		01/04/18 08:51	01/08/18 20:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	81		50 - 150	01/04/18 08:51	01/08/18 20:01	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Client Sample ID: DUP-1**

**Lab Sample ID: 580-73901-20**

**Date Collected: 12/21/17 00:01**

**Matrix: Water**

**Date Received: 12/22/17 12:20**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	3.1		2.0	0.42	ug/L			01/04/18 16:50	1
Toluene	0.90	J	2.0	0.24	ug/L			01/04/18 16:50	1
Ethylbenzene	1.0	J	3.0	0.21	ug/L			01/04/18 16:50	1
m-Xylene & p-Xylene	1.2	J	3.0	0.72	ug/L			01/04/18 16:50	1
o-Xylene	ND		2.0	0.15	ug/L			01/04/18 16:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 122		01/04/18 16:50	1
Trifluorotoluene (Surr)	90		80 - 120		01/04/18 16:50	1
4-Bromofluorobenzene (Surr)	102		75 - 125		01/04/18 16:50	1
Dibromofluoromethane (Surr)	91		77 - 120		01/04/18 16:50	1
1,2-Dichloroethane-d4 (Surr)	100		80 - 126		01/04/18 16:50	1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	2.0		0.020	0.0061	ug/L		12/27/17 08:49	12/28/17 15:53	1
2-Methylnaphthalene	0.11		0.030	0.0091	ug/L		12/27/17 08:49	12/28/17 15:53	1
Naphthalene	0.16		0.041	0.013	ug/L		12/27/17 08:49	12/28/17 15:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	75		34 - 109	12/27/17 08:49	12/28/17 15:53	1
Terphenyl-d14	67		53 - 112	12/27/17 08:49	12/28/17 15:53	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.51		0.25	0.050	mg/L			12/29/17 02:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	125		58 - 133		12/29/17 02:50	1
Trifluorotoluene (Surr)	120		77 - 128		12/29/17 02:50	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	2.0	B	0.10	0.020	mg/L		01/04/18 08:51	01/08/18 20:23	1
Motor Oil (>C24-C36)	1.6		0.26	0.080	mg/L		01/04/18 08:51	01/08/18 20:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	70		50 - 150	01/04/18 08:51	01/08/18 20:23	1

## General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	610		10	10	mg/L			12/27/17 11:52	1

TestAmerica Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Client Sample ID: DUP-2**

**Lab Sample ID: 580-73901-21**

**Date Collected: 12/22/17 00:01**

**Matrix: Water**

**Date Received: 12/22/17 12:20**

### Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzene</b>	<b>0.67</b>	<b>J</b>	2.0	0.42	ug/L			01/04/18 18:44	1
<b>Toluene</b>	<b>0.64</b>	<b>J</b>	2.0	0.24	ug/L			01/04/18 18:44	1
Ethylbenzene	ND		3.0	0.21	ug/L			01/04/18 18:44	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			01/04/18 18:44	1
o-Xylene	ND		2.0	0.15	ug/L			01/04/18 18:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	103		80 - 122		01/04/18 18:44	1
<i>Trifluorotoluene (Surr)</i>	89		80 - 120		01/04/18 18:44	1
<i>4-Bromofluorobenzene (Surr)</i>	102		75 - 125		01/04/18 18:44	1
<i>Dibromofluoromethane (Surr)</i>	91		77 - 120		01/04/18 18:44	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	102		80 - 126		01/04/18 18:44	1

### Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>0.096</b>	<b>J</b>	0.25	0.050	mg/L			12/29/17 03:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>4-Bromofluorobenzene (Surr)</i>	86		58 - 133		12/29/17 03:20	1
<i>Trifluorotoluene (Surr)</i>	124		77 - 128		12/29/17 03:20	1

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.43</b>	<b>B</b>	0.10	0.020	mg/L		01/04/18 08:51	01/08/18 20:45	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>0.29</b>		0.26	0.080	mg/L		01/04/18 08:51	01/08/18 20:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	83		50 - 150	01/04/18 08:51	01/08/18 20:45	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 580-73901-22**

**Date Collected: 12/21/17 00:01**

**Matrix: Water**

**Date Received: 12/22/17 12:20**

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			01/04/18 13:30	1
Toluene	ND		2.0	0.24	ug/L			01/04/18 13:30	1
Ethylbenzene	ND		3.0	0.21	ug/L			01/04/18 13:30	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			01/04/18 13:30	1
o-Xylene	ND		2.0	0.15	ug/L			01/04/18 13:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 122		01/04/18 13:30	1
Trifluorotoluene (Surr)	91		80 - 120		01/04/18 13:30	1
4-Bromofluorobenzene (Surr)	100		75 - 125		01/04/18 13:30	1
Dibromofluoromethane (Surr)	91		77 - 120		01/04/18 13:30	1
1,2-Dichloroethane-d4 (Surr)	96		80 - 126		01/04/18 13:30	1

**Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			12/28/17 18:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		58 - 133		12/28/17 18:38	1
Trifluorotoluene (Surr)	109		77 - 128		12/28/17 18:38	1

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

## Method: 8260C - Volatile Organic Compounds by GC/MS

**Lab Sample ID: MB 580-264531/5**

**Matrix: Water**

**Analysis Batch: 264531**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.42	ug/L			01/03/18 23:42	1
Toluene	ND		2.0	0.24	ug/L			01/03/18 23:42	1
Ethylbenzene	0.374	J	3.0	0.21	ug/L			01/03/18 23:42	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			01/03/18 23:42	1
o-Xylene	ND		2.0	0.15	ug/L			01/03/18 23:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 122		01/03/18 23:42	1
Trifluorotoluene (Surr)	92		80 - 120		01/03/18 23:42	1
4-Bromofluorobenzene (Surr)	102		75 - 125		01/03/18 23:42	1
Dibromofluoromethane (Surr)	92		77 - 120		01/03/18 23:42	1
1,2-Dichloroethane-d4 (Surr)	98		80 - 126		01/03/18 23:42	1

**Lab Sample ID: LCS 580-264531/8**

**Matrix: Water**

**Analysis Batch: 264531**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	8.29		ug/L		83	75 - 120
Toluene	10.0	8.47		ug/L		85	75 - 120
Ethylbenzene	10.0	9.22		ug/L		92	75 - 120
m-Xylene & p-Xylene	10.0	9.27		ug/L		93	75 - 120
o-Xylene	10.0	9.09		ug/L		91	74 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	103		80 - 122
Trifluorotoluene (Surr)	92		80 - 120
4-Bromofluorobenzene (Surr)	107		75 - 125
Dibromofluoromethane (Surr)	95		77 - 120
1,2-Dichloroethane-d4 (Surr)	97		80 - 126

**Lab Sample ID: LCSD 580-264531/9**

**Matrix: Water**

**Analysis Batch: 264531**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	10.0	8.54		ug/L		85	75 - 120	3	14
Toluene	10.0	8.57		ug/L		86	75 - 120	1	13
Ethylbenzene	10.0	9.16		ug/L		92	75 - 120	1	14
m-Xylene & p-Xylene	10.0	9.43		ug/L		94	75 - 120	2	14
o-Xylene	10.0	9.42		ug/L		94	74 - 120	4	16

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	104		80 - 122
Trifluorotoluene (Surr)	94		80 - 120
4-Bromofluorobenzene (Surr)	109		75 - 125
Dibromofluoromethane (Surr)	95		77 - 120

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCSD 580-264531/9**  
**Matrix: Water**  
**Analysis Batch: 264531**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	97		80 - 126

**Lab Sample ID: MB 580-264590/5**  
**Matrix: Water**  
**Analysis Batch: 264590**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	ND		2.0	0.42	ug/L			01/04/18 12:05	1
Toluene	ND		2.0	0.24	ug/L			01/04/18 12:05	1
Ethylbenzene	ND		3.0	0.21	ug/L			01/04/18 12:05	1
m-Xylene & p-Xylene	ND		3.0	0.72	ug/L			01/04/18 12:05	1
o-Xylene	ND		2.0	0.15	ug/L			01/04/18 12:05	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	105		80 - 122		01/04/18 12:05	1
Trifluorotoluene (Surr)	92		80 - 120		01/04/18 12:05	1
4-Bromofluorobenzene (Surr)	99		75 - 125		01/04/18 12:05	1
Dibromofluoromethane (Surr)	90		77 - 120		01/04/18 12:05	1
1,2-Dichloroethane-d4 (Surr)	98		80 - 126		01/04/18 12:05	1

**Lab Sample ID: LCS 580-264590/6**  
**Matrix: Water**  
**Analysis Batch: 264590**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
	Added	Result	Qualifier				Limits
Benzene	10.0	7.88		ug/L		79	75 - 120
Toluene	10.0	8.12		ug/L		81	75 - 120
Ethylbenzene	10.0	8.28		ug/L		83	75 - 120
m-Xylene & p-Xylene	10.0	8.18		ug/L		82	75 - 120
o-Xylene	10.0	7.94		ug/L		79	74 - 120

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	105		80 - 122
Trifluorotoluene (Surr)	93		80 - 120
4-Bromofluorobenzene (Surr)	100		75 - 125
Dibromofluoromethane (Surr)	92		77 - 120
1,2-Dichloroethane-d4 (Surr)	102		80 - 126

**Lab Sample ID: LCSD 580-264590/7**  
**Matrix: Water**  
**Analysis Batch: 264590**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec	%Rec.	RPD	RPD
	Added	Result	Qualifier				Limits	RPD	Limit
Benzene	10.0	8.26		ug/L		83	75 - 120	5	14
Toluene	10.0	8.46		ug/L		85	75 - 120	4	13
Ethylbenzene	10.0	8.62		ug/L		86	75 - 120	4	14
m-Xylene & p-Xylene	10.0	8.51		ug/L		85	75 - 120	4	14

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCSD 580-264590/7**  
**Matrix: Water**  
**Analysis Batch: 264590**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
o-Xylene	10.0	8.51		ug/L		85	74 - 120	7	16
<b>Surrogate</b>									
	<b>%Recovery</b>	<b>LCSD</b>	<b>Qualifier</b>			<b>Limits</b>			
Toluene-d8 (Surr)	106					80 - 122			
Trifluorotoluene (Surr)	94					80 - 120			
4-Bromofluorobenzene (Surr)	102					75 - 125			
Dibromofluoromethane (Surr)	95					77 - 120			
1,2-Dichloroethane-d4 (Surr)	99					80 - 126			

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

**Lab Sample ID: MB 580-264145/1-A**  
**Matrix: Water**  
**Analysis Batch: 264270**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 264145**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
1-Methylnaphthalene	ND		0.020	0.0060	ug/L		12/27/17 08:49	12/28/17 13:41	1	
2-Methylnaphthalene	ND		0.030	0.0090	ug/L		12/27/17 08:49	12/28/17 13:41	1	
Naphthalene	ND		0.040	0.013	ug/L		12/27/17 08:49	12/28/17 13:41	1	
<b>Surrogate</b>										
	<b>%Recovery</b>	<b>MB</b>	<b>MB</b>			<b>Limits</b>		<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
2,4,6-Tribromophenol	74					34 - 109		12/27/17 08:49	12/28/17 13:41	1
Terphenyl-d14	78					53 - 112		12/27/17 08:49	12/28/17 13:41	1

**Lab Sample ID: LCS 580-264145/2-A**  
**Matrix: Water**  
**Analysis Batch: 264270**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 264145**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1-Methylnaphthalene	4.00	2.67		ug/L		67	57 - 120
2-Methylnaphthalene	4.00	2.50		ug/L		63	61 - 120
Naphthalene	4.00	2.65		ug/L		66	62 - 120
<b>Surrogate</b>							
	<b>%Recovery</b>	<b>LCS</b>	<b>LCS</b>			<b>Limits</b>	
2,4,6-Tribromophenol	79					34 - 109	
Terphenyl-d14	86					53 - 112	

**Lab Sample ID: LCSD 580-264145/3-A**  
**Matrix: Water**  
**Analysis Batch: 264270**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 264145**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1-Methylnaphthalene	4.00	2.97		ug/L		74	57 - 120	11	17
2-Methylnaphthalene	4.00	2.84		ug/L		71	61 - 120	13	16
Naphthalene	4.00	2.92		ug/L		73	62 - 120	10	15

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

**Lab Sample ID: LCSD 580-264145/3-A**  
**Matrix: Water**  
**Analysis Batch: 264270**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 264145**

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol	77		34 - 109
Terphenyl-d14	81		53 - 112

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

**Lab Sample ID: MB 580-264238/5**  
**Matrix: Water**  
**Analysis Batch: 264238**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			12/28/17 12:03	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		58 - 133		12/28/17 12:03	1
Trifluorotoluene (Surr)	100		77 - 128		12/28/17 12:03	1

**Lab Sample ID: LCS 580-264238/6**  
**Matrix: Water**  
**Analysis Batch: 264238**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1.00	0.806		mg/L		81	79 - 110

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		58 - 133
Trifluorotoluene (Surr)	98		77 - 128

**Lab Sample ID: LCSD 580-264238/7**  
**Matrix: Water**  
**Analysis Batch: 264238**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	1.00	0.811		mg/L		81	79 - 110	1	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		58 - 133
Trifluorotoluene (Surr)	95		77 - 128

**Lab Sample ID: MB 580-264284/6**  
**Matrix: Water**  
**Analysis Batch: 264284**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			12/28/17 17:07	1

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

**Lab Sample ID: MB 580-264284/6**  
**Matrix: Water**  
**Analysis Batch: 264284**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	87		58 - 133		12/28/17 17:07	1
Trifluorotoluene (Surr)	110		77 - 128		12/28/17 17:07	1

**Lab Sample ID: LCS 580-264284/7**  
**Matrix: Water**  
**Analysis Batch: 264284**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1.00	0.951		mg/L		95	79 - 110
Surrogate	LCS LCS		Limits				
%Recovery	Qualifier						
4-Bromofluorobenzene (Surr)	88		58 - 133				
Trifluorotoluene (Surr)	103		77 - 128				

**Lab Sample ID: LCSD 580-264284/8**  
**Matrix: Water**  
**Analysis Batch: 264284**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	1.00	0.987		mg/L		99	79 - 110	4	10
Surrogate	LCSD LCSD		Limits						
%Recovery	Qualifier								
4-Bromofluorobenzene (Surr)	87		58 - 133						
Trifluorotoluene (Surr)	108		77 - 128						

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

**Lab Sample ID: MB 580-264432/1-A**  
**Matrix: Water**  
**Analysis Batch: 264502**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 264432**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
#2 Diesel (C10-C24)	ND		0.10	0.019	mg/L		01/02/18 13:45	01/04/18 11:46	1
Motor Oil (>C24-C36)	ND		0.25	0.077	mg/L		01/02/18 13:45	01/04/18 11:46	1
Surrogate	MB MB		Limits						
%Recovery	Qualifier								
o-Terphenyl	74		50 - 150						

**Lab Sample ID: LCS 580-264432/2-A**  
**Matrix: Water**  
**Analysis Batch: 264502**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 264432**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	2.00	1.55		mg/L		78	59 - 112
Motor Oil (>C24-C36)	2.00	1.94		mg/L		97	64 - 120

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

**Lab Sample ID: LCS 580-264432/2-A**  
**Matrix: Water**  
**Analysis Batch: 264502**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 264432**

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	86		50 - 150

**Lab Sample ID: LCSD 580-264432/3-A**  
**Matrix: Water**  
**Analysis Batch: 264502**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 264432**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	2.00	1.64		mg/L		82	59 - 112	6	16
Motor Oil (>C24-C36)	2.00	1.97		mg/L		98	64 - 120	1	17

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	89		50 - 150

**Lab Sample ID: MB 580-264553/1-A**  
**Matrix: Water**  
**Analysis Batch: 264622**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 264553**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.0402	J	0.10	0.019	mg/L		01/04/18 08:51	01/04/18 19:43	1
Motor Oil (>C24-C36)	ND		0.25	0.077	mg/L		01/04/18 08:51	01/04/18 19:43	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	98		50 - 150	01/04/18 08:51	01/04/18 19:43	1

**Lab Sample ID: LCS 580-264553/2-A**  
**Matrix: Water**  
**Analysis Batch: 264622**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 264553**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	2.00	1.83		mg/L		91	59 - 112
Motor Oil (>C24-C36)	2.00	1.90		mg/L		95	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	97		50 - 150

**Lab Sample ID: LCSD 580-264553/3-A**  
**Matrix: Water**  
**Analysis Batch: 264622**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 264553**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	2.00	1.85		mg/L		93	59 - 112	1	16
Motor Oil (>C24-C36)	2.00	1.82		mg/L		91	64 - 120	4	17

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	87		50 - 150

TestAmerica Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID: MB 580-264172/1**  
**Matrix: Water**  
**Analysis Batch: 264172**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L	-		12/27/17 11:52	1

**Lab Sample ID: LCS 580-264172/2**  
**Matrix: Water**  
**Analysis Batch: 264172**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	1040		mg/L	-	104	80 - 120

**Lab Sample ID: 580-73901-5 DU**  
**Matrix: Water**  
**Analysis Batch: 264172**

**Client Sample ID: PMW-6**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	790		782		mg/L	-	1	20

**Lab Sample ID: 580-73901-17 DU**  
**Matrix: Water**  
**Analysis Batch: 264172**

**Client Sample ID: PMW-19**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	540		555		mg/L	-	3	20

# Lab Chronicle

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

## Client Sample ID: PMW-1

Date Collected: 12/21/17 09:35

Date Received: 12/22/17 12:20

## Lab Sample ID: 580-73901-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	264531	01/04/18 05:53	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	264238	12/28/17 19:33	JCV	TAL SEA
Total/NA	Prep	3510C			264432	01/02/18 13:45	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	264502	01/04/18 13:09	ADB	TAL SEA

## Client Sample ID: PMW-2

Date Collected: 12/21/17 14:50

Date Received: 12/22/17 12:20

## Lab Sample ID: 580-73901-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	264531	01/04/18 06:21	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	264238	12/28/17 20:04	JCV	TAL SEA
Total/NA	Prep	3510C			264432	01/02/18 13:45	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	264502	01/04/18 13:36	ADB	TAL SEA

## Client Sample ID: PMW-3

Date Collected: 12/21/17 10:20

Date Received: 12/22/17 12:20

## Lab Sample ID: 580-73901-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	264531	01/04/18 06:50	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	264238	12/28/17 20:36	JCV	TAL SEA
Total/NA	Prep	3510C			264432	01/02/18 13:45	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	264502	01/04/18 14:04	ADB	TAL SEA

## Client Sample ID: PMW-5

Date Collected: 12/21/17 14:55

Date Received: 12/22/17 12:20

## Lab Sample ID: 580-73901-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	264531	01/04/18 07:18	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	264238	12/28/17 21:08	JCV	TAL SEA
Total/NA	Prep	3510C			264432	01/02/18 13:45	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	264502	01/04/18 14:32	ADB	TAL SEA

## Client Sample ID: PMW-6

Date Collected: 12/21/17 13:25

Date Received: 12/22/17 12:20

## Lab Sample ID: 580-73901-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	264531	01/04/18 07:47	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	264238	12/28/17 21:40	JCV	TAL SEA

TestAmerica Seattle

# Lab Chronicle

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			264432	01/02/18 13:45	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	264502	01/04/18 15:00	ADB	TAL SEA
Total/NA	Analysis	SM 2540C		1	264172	12/27/17 11:52	MP	TAL SEA

## Client Sample ID: PMW-7

Date Collected: 12/21/17 14:05

Date Received: 12/22/17 12:20

## Lab Sample ID: 580-73901-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	264531	01/04/18 08:15	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	264238	12/28/17 22:43	JCV	TAL SEA
Total/NA	Prep	3510C			264432	01/02/18 13:45	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	264502	01/04/18 15:28	ADB	TAL SEA

## Client Sample ID: PMW-8

Date Collected: 12/21/17 15:45

Date Received: 12/22/17 12:20

## Lab Sample ID: 580-73901-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	264531	01/04/18 08:44	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	264238	12/28/17 23:15	JCV	TAL SEA
Total/NA	Prep	3510C			264432	01/02/18 13:45	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	264502	01/04/18 15:56	ADB	TAL SEA

## Client Sample ID: PMW-9

Date Collected: 12/22/17 09:40

Date Received: 12/22/17 12:20

## Lab Sample ID: 580-73901-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	264590	01/04/18 17:19	P1P	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	264238	12/28/17 23:47	JCV	TAL SEA
Total/NA	Prep	3510C			264553	01/04/18 08:51	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	264622	01/04/18 20:49	ADB	TAL SEA

## Client Sample ID: PMW-10

Date Collected: 12/21/17 15:40

Date Received: 12/22/17 12:20

## Lab Sample ID: 580-73901-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	264531	01/04/18 09:13	JSM	TAL SEA
Total/NA	Prep	3510C			264145	12/27/17 08:49	MRG	TAL SEA
Total/NA	Analysis	8270D SIM		1	264270	12/28/17 14:47	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	264238	12/29/17 00:19	JCV	TAL SEA
Total/NA	Prep	3510C			264553	01/04/18 08:51	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	264622	01/04/18 21:10	ADB	TAL SEA
Total/NA	Analysis	SM 2540C		1	264172	12/27/17 11:52	MP	TAL SEA

TestAmerica Seattle

# Lab Chronicle

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

## Client Sample ID: PMW-12

Date Collected: 12/22/17 08:40

Date Received: 12/22/17 12:20

## Lab Sample ID: 580-73901-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	264590	01/04/18 17:47	P1P	TAL SEA
Total/NA	Prep	3510C			264145	12/27/17 08:49	MRG	TAL SEA
Total/NA	Analysis	8270D SIM		1	264270	12/28/17 15:09	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	264238	12/29/17 00:51	JCV	TAL SEA
Total/NA	Prep	3510C			264553	01/04/18 08:51	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	264622	01/04/18 21:32	ADB	TAL SEA

## Client Sample ID: PMW-13

Date Collected: 12/22/17 10:35

Date Received: 12/22/17 12:20

## Lab Sample ID: 580-73901-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	264590	01/04/18 18:16	P1P	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	264238	12/29/17 01:23	JCV	TAL SEA
Total/NA	Prep	3510C			264553	01/04/18 08:51	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	264622	01/04/18 21:54	ADB	TAL SEA

## Client Sample ID: PMW-14

Date Collected: 12/21/17 13:40

Date Received: 12/22/17 12:20

## Lab Sample ID: 580-73901-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	264531	01/04/18 09:42	JSM	TAL SEA
Total/NA	Prep	3510C			264145	12/27/17 08:49	MRG	TAL SEA
Total/NA	Analysis	8270D SIM		1	264270	12/28/17 15:31	W1T	TAL SEA
Total/NA	Prep	3510C	DL		264145	12/27/17 08:49	MRG	TAL SEA
Total/NA	Analysis	8270D SIM	DL	10	264333	12/29/17 23:15	ERB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	264284	12/28/17 22:44	JCV	TAL SEA
Total/NA	Prep	3510C			264553	01/04/18 08:51	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	264622	01/04/18 22:16	ADB	TAL SEA

## Client Sample ID: PMW-15

Date Collected: 12/21/17 10:50

Date Received: 12/22/17 12:20

## Lab Sample ID: 580-73901-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	264531	01/04/18 10:10	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	264284	12/28/17 23:15	JCV	TAL SEA
Total/NA	Prep	3510C			264553	01/04/18 08:51	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	264622	01/04/18 22:38	ADB	TAL SEA

TestAmerica Seattle

# Lab Chronicle

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

## Client Sample ID: PMW-16

Date Collected: 12/21/17 12:55

Date Received: 12/22/17 12:20

## Lab Sample ID: 580-73901-14

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	264590	01/04/18 13:59	P1P	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	264284	12/28/17 23:45	JCV	TAL SEA
Total/NA	Prep	3510C			264553	01/04/18 08:51	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	264622	01/04/18 23:00	ADB	TAL SEA

## Client Sample ID: PMW-17

Date Collected: 12/21/17 12:05

Date Received: 12/22/17 12:20

## Lab Sample ID: 580-73901-15

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	264590	01/04/18 14:28	P1P	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	264284	12/29/17 00:16	JCV	TAL SEA
Total/NA	Prep	3510C			264553	01/04/18 08:51	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	264761	01/08/18 19:17	ADB	TAL SEA

## Client Sample ID: PMW-18

Date Collected: 12/21/17 12:25

Date Received: 12/22/17 12:20

## Lab Sample ID: 580-73901-16

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	264590	01/04/18 14:56	P1P	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	264284	12/29/17 00:47	JCV	TAL SEA
Total/NA	Prep	3510C			264553	01/04/18 08:51	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	264761	01/08/18 19:39	ADB	TAL SEA

## Client Sample ID: PMW-19

Date Collected: 12/21/17 09:30

Date Received: 12/22/17 12:20

## Lab Sample ID: 580-73901-17

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	264590	01/04/18 15:24	P1P	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	264284	12/29/17 01:18	JCV	TAL SEA
Total/NA	Prep	3510C			264553	01/04/18 08:51	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	264761	01/08/18 21:50	ADB	TAL SEA
Total/NA	Analysis	SM 2540C		1	264172	12/27/17 11:52	MP	TAL SEA

## Client Sample ID: PMW-20

Date Collected: 12/21/17 10:30

Date Received: 12/22/17 12:20

## Lab Sample ID: 580-73901-18

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	264590	01/04/18 15:53	P1P	TAL SEA

TestAmerica Seattle

# Lab Chronicle

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Client Sample ID: PMW-20**

**Date Collected: 12/21/17 10:30**

**Date Received: 12/22/17 12:20**

**Lab Sample ID: 580-73901-18**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	264284	12/29/17 01:48	JCV	TAL SEA
Total/NA	Prep	3510C			264553	01/04/18 08:51	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	264761	01/08/18 22:12	ADB	TAL SEA

**Client Sample ID: PMW-21**

**Date Collected: 12/21/17 11:15**

**Date Received: 12/22/17 12:20**

**Lab Sample ID: 580-73901-19**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	264590	01/04/18 16:22	P1P	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	264284	12/29/17 02:19	JCV	TAL SEA
Total/NA	Prep	3510C			264553	01/04/18 08:51	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	264761	01/08/18 20:01	ADB	TAL SEA

**Client Sample ID: DUP-1**

**Date Collected: 12/21/17 00:01**

**Date Received: 12/22/17 12:20**

**Lab Sample ID: 580-73901-20**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	264590	01/04/18 16:50	P1P	TAL SEA
Total/NA	Prep	3510C			264145	12/27/17 08:49	MRG	TAL SEA
Total/NA	Analysis	8270D SIM		1	264270	12/28/17 15:53	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	264284	12/29/17 02:50	JCV	TAL SEA
Total/NA	Prep	3510C			264553	01/04/18 08:51	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	264761	01/08/18 20:23	ADB	TAL SEA
Total/NA	Analysis	SM 2540C		1	264172	12/27/17 11:52	MP	TAL SEA

**Client Sample ID: DUP-2**

**Date Collected: 12/22/17 00:01**

**Date Received: 12/22/17 12:20**

**Lab Sample ID: 580-73901-21**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	264590	01/04/18 18:44	P1P	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	264284	12/29/17 03:20	JCV	TAL SEA
Total/NA	Prep	3510C			264553	01/04/18 08:51	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	264761	01/08/18 20:45	ADB	TAL SEA

# Lab Chronicle

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 580-73901-22**

**Date Collected: 12/21/17 00:01**

**Matrix: Water**

**Date Received: 12/22/17 12:20**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	264590	01/04/18 13:30	P1P	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	264284	12/28/17 18:38	JCV	TAL SEA

**Laboratory References:**

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310



# Accreditation/Certification Summary

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

## Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-18
ANAB	DoD ELAP		L2236	01-19-19
ANAB	ISO/IEC 17025		L2236	01-19-19
California	State Program	9	2901	01-31-18
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-18
US Fish & Wildlife	Federal		LE058448-0	10-31-18
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-18

# Sample Summary

Client: ARCADIS U.S. Inc  
Project/Site: Double Tree Olympia

TestAmerica Job ID: 580-73901-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-73901-1	PMW-1	Water	12/21/17 09:35	12/22/17 12:20
580-73901-2	PMW-2	Water	12/21/17 14:50	12/22/17 12:20
580-73901-3	PMW-3	Water	12/21/17 10:20	12/22/17 12:20
580-73901-4	PMW-5	Water	12/21/17 14:55	12/22/17 12:20
580-73901-5	PMW-6	Water	12/21/17 13:25	12/22/17 12:20
580-73901-6	PMW-7	Water	12/21/17 14:05	12/22/17 12:20
580-73901-7	PMW-8	Water	12/21/17 15:45	12/22/17 12:20
580-73901-8	PMW-9	Water	12/22/17 09:40	12/22/17 12:20
580-73901-9	PMW-10	Water	12/21/17 15:40	12/22/17 12:20
580-73901-10	PMW-12	Water	12/22/17 08:40	12/22/17 12:20
580-73901-11	PMW-13	Water	12/22/17 10:35	12/22/17 12:20
580-73901-12	PMW-14	Water	12/21/17 13:40	12/22/17 12:20
580-73901-13	PMW-15	Water	12/21/17 10:50	12/22/17 12:20
580-73901-14	PMW-16	Water	12/21/17 12:55	12/22/17 12:20
580-73901-15	PMW-17	Water	12/21/17 12:05	12/22/17 12:20
580-73901-16	PMW-18	Water	12/21/17 12:25	12/22/17 12:20
580-73901-17	PMW-19	Water	12/21/17 09:30	12/22/17 12:20
580-73901-18	PMW-20	Water	12/21/17 10:30	12/22/17 12:20
580-73901-19	PMW-21	Water	12/21/17 11:15	12/22/17 12:20
580-73901-20	DUP-1	Water	12/21/17 00:01	12/22/17 12:20
580-73901-21	DUP-2	Water	12/22/17 00:01	12/22/17 12:20
580-73901-22	Trip Blank	Water	12/21/17 00:01	12/22/17 12:20

Client: **ARCADIS** Client Contact: **PAUL McCULLOUGH** Date: **12-22-17** Chain of Custody Number: **36510**  
 Address: **1100 OLIVE WAY STE 800** Telephone Number (Area Code)/Fax Number: **206-214-7161** Lab Number: **73901** Page **1** of **2**  
 City: **SEATTLE** State: **WA** Zip Code: **98101** Sampler: **RBIEN** Lab Contact: \_\_\_\_\_

Project Name and Location (State): **BLACKSTONE DOUBLETREE OLY** Billing Contact: **ACCOUNTSPAYABLE.AMINISTR@ARCADIS-US.COM**  
 Contract/Purchase Order/Quote No.: **SEA41774.0002**

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix				Containers & Preservatives						GRD NNTHG	DPL/HO NO SGZ NNTHT-DX	BTEX BGL08	TOTAL NAPHTHALENES	TOTAL DISALVED	Analysis (Attach list if more space is needed)	Special Instructions/ Conditions of Receipt	
			Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc2								MeOH
-1 PMW-1	12/21/17	0935		X																
PMW-2	12/21/17	1450																		
-3 PMW-3		1020																		
PMW-5		1455																		
-5 PMW-6		1325						1												
PMW-7		1405																		
-7 PMW-8		1545																		
PMW-9	12/22/17	0940																		
-9 PMW-10	12/21/17	1540						3												
PMW-12	12/22/17	0840						2												
-11 PMW-13	12/22/17	1035																		
PMW-14	12/21/17	1340						2												



Cooler:  Yes  No Cooler Temp: \_\_\_\_\_ Possible Hazard Identification:  Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown Sample Disposal:  Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required (business days):  24 Hours  48 Hours  5 Days  10 Days  15 Days  Other \_\_\_\_\_ QC Requirements (Specify): \_\_\_\_\_

1. Relinquished By: <b>ERIC NICOLAI</b> Date: <b>12/22/17</b> Time: <b>1220</b>	1. Received By: <b>Blankinship</b> Date: <b>12/22/17</b> Time: <b>1220</b>
2. Relinquished By: _____ Date: _____ Time: _____	2. Received By: _____ Date: _____ Time: _____
3. Relinquished By: _____ Date: _____ Time: _____	3. Received By: _____ Date: _____ Time: _____

Comments: \_\_\_\_\_



# Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-73901-1

**Login Number: 73901**

**List Source: TestAmerica Seattle**

**List Number: 1**

**Creator: Blankinship, Tom X**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

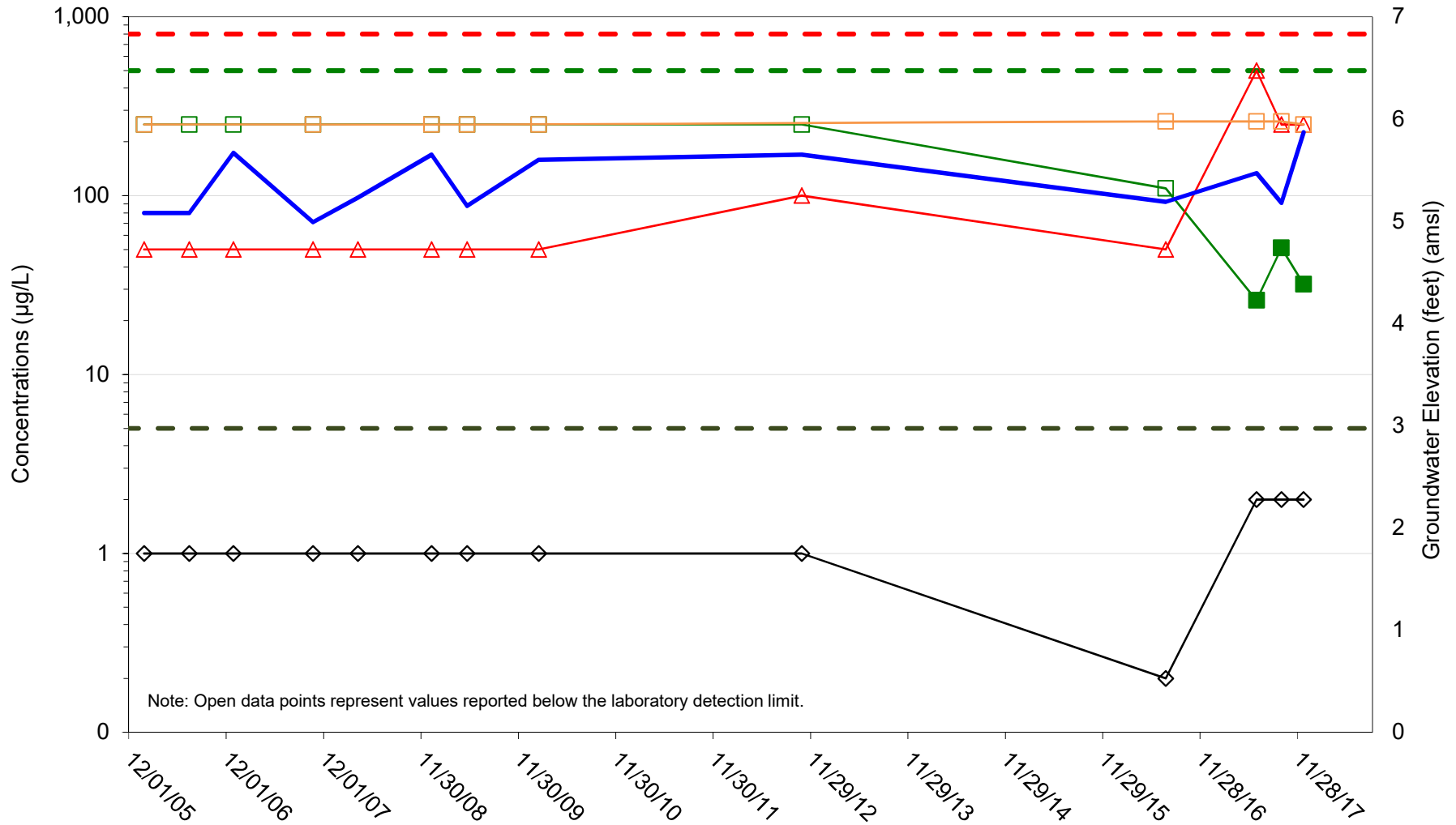


# ATTACHMENT D

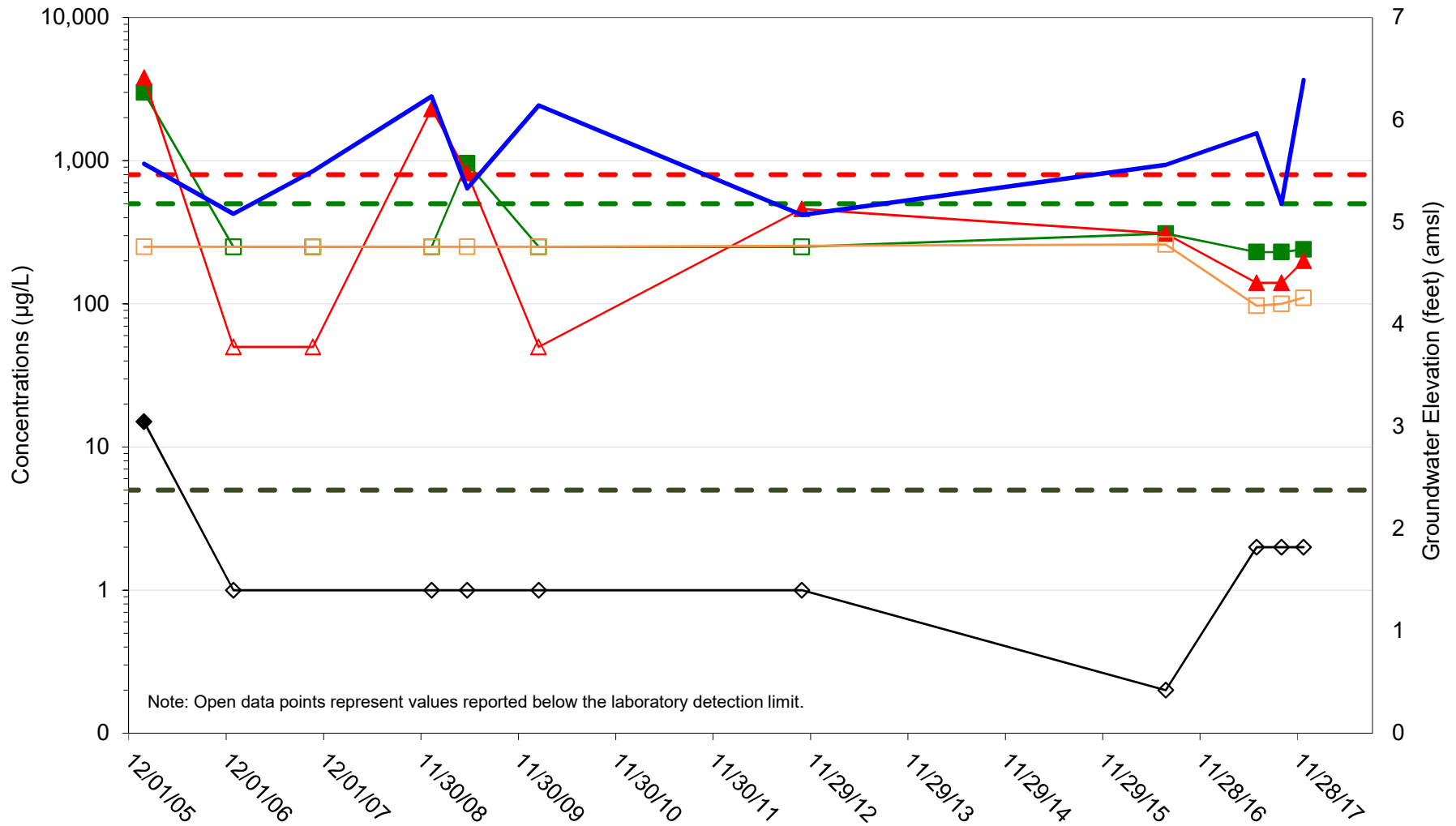
Hydrographs of GRO, DRO, Benzene and Groundwater Elevations



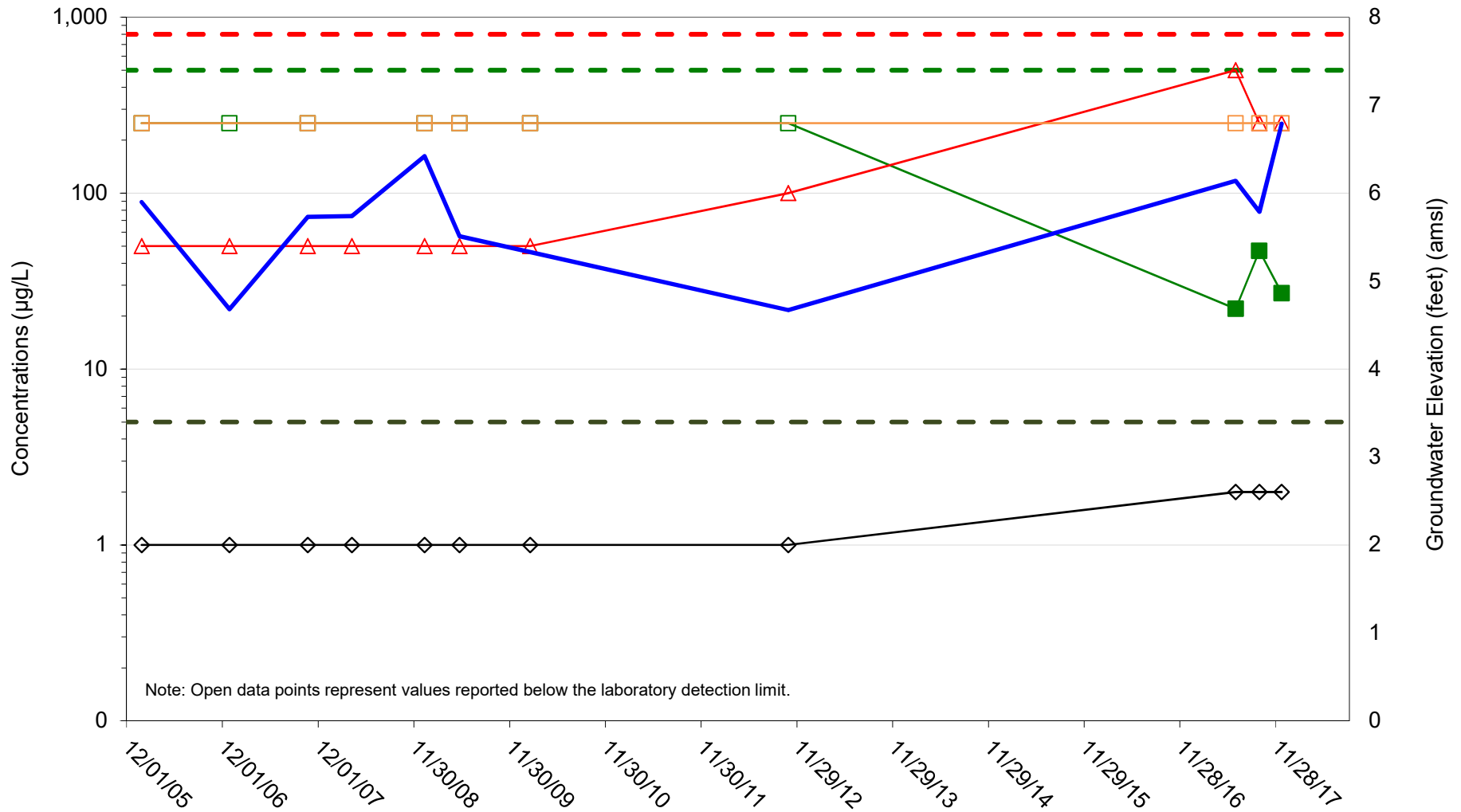
WELL PMW-1  
 GRO, DRO & BENZENE CONCENTRATIONS and GROUNDWATER ELEVATIONS VERSUS TIME  
 415 Capitol Way North  
 Olympia, Washington



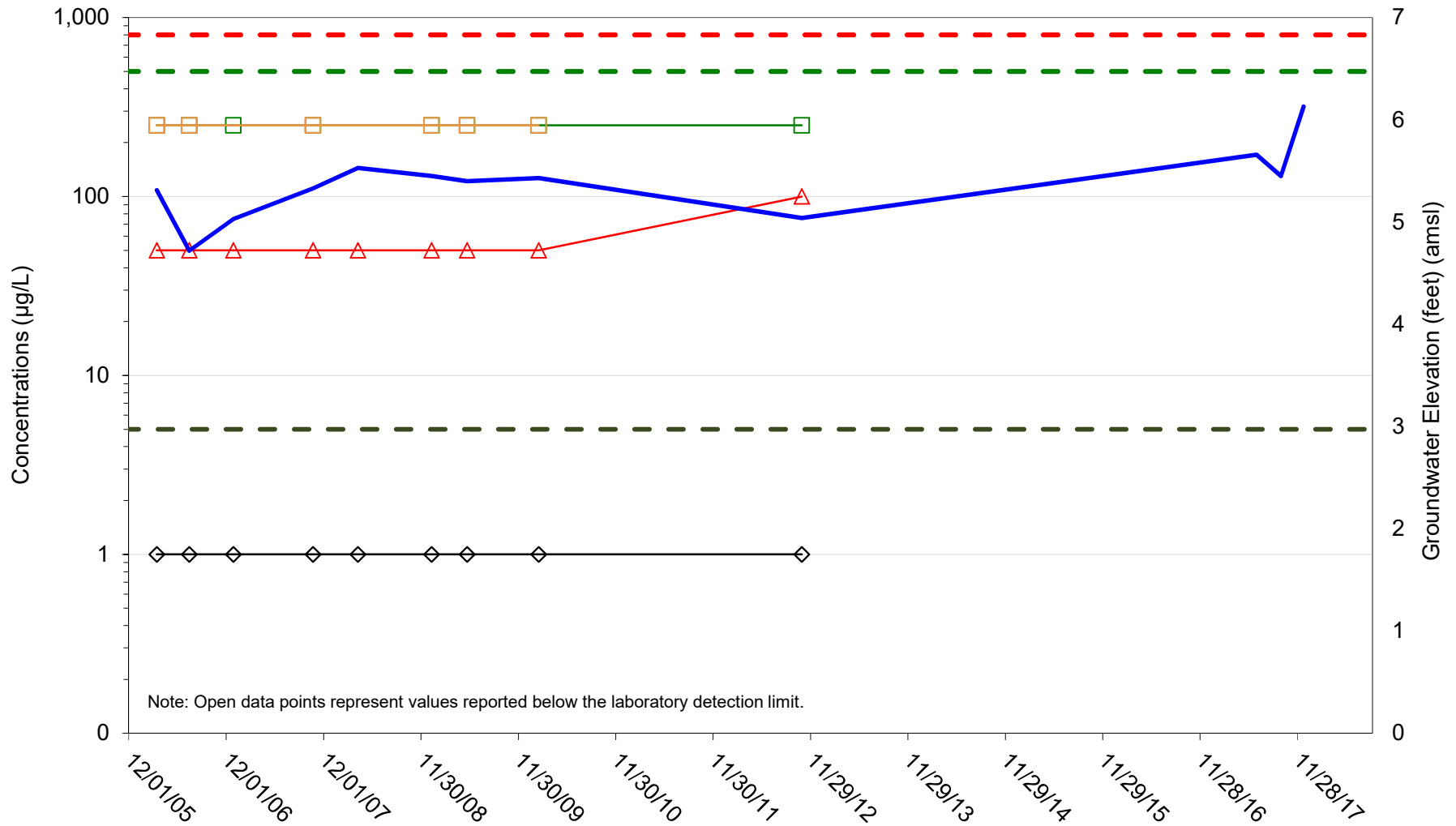
WELL PMW-2  
 GRO, DRO & BENZENE CONCENTRATIONS and GROUNDWATER ELEVATIONS VERSUS TIME  
 415 Capitol Way North  
 Olympia, Washington



WELL PMW-3  
 GRO, DRO & BENZENE CONCENTRATIONS and GROUNDWATER ELEVATIONS VERSUS TIME  
 415 Capitol Way North  
 Olympia, Washington



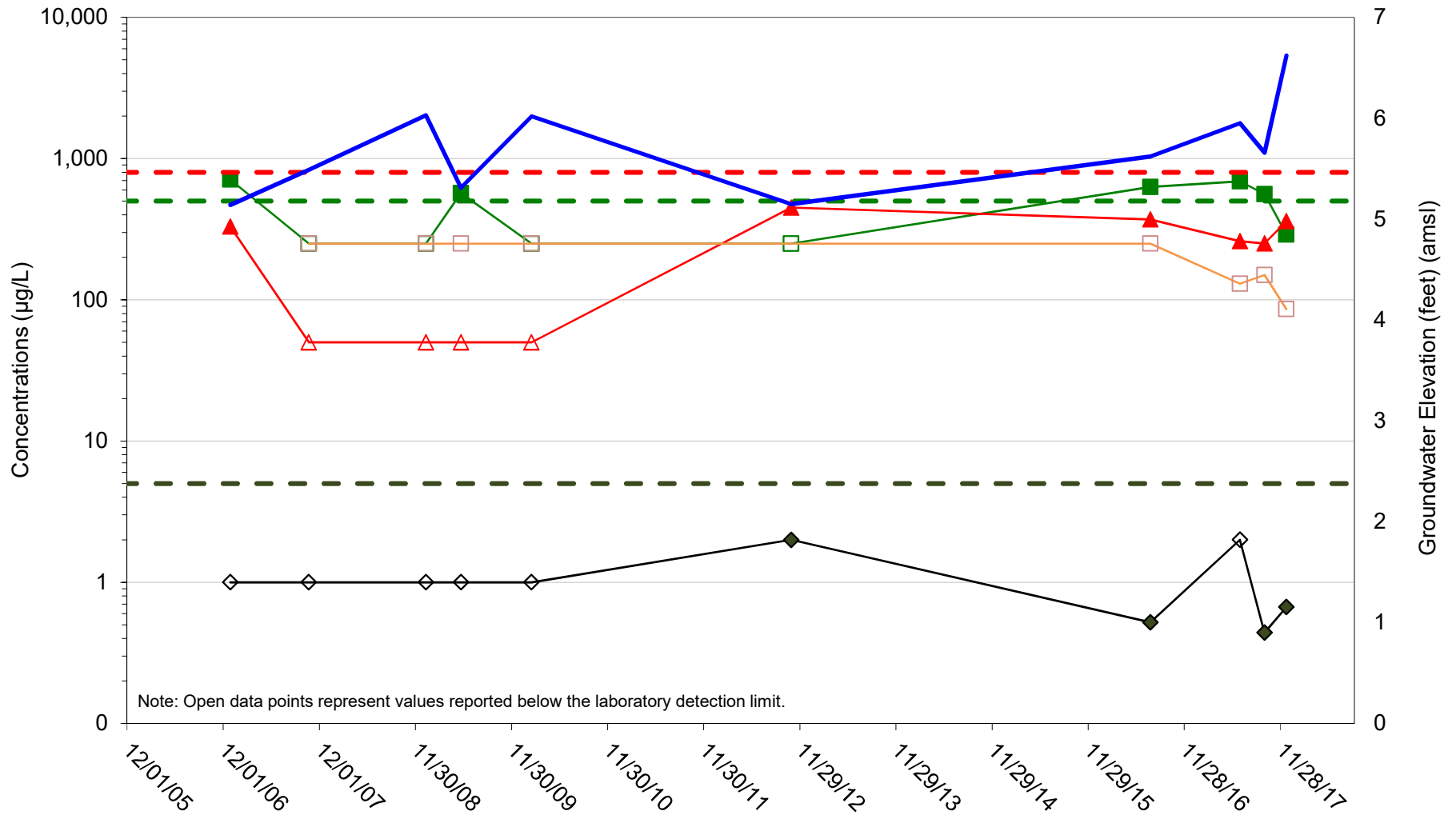
WELL PMW-4  
 GRO, DRO & BENZENE CONCENTRATIONS and GROUNDWATER ELEVATIONS VERSUS TIME  
 415 Capitol Way North  
 Olympia, Washington



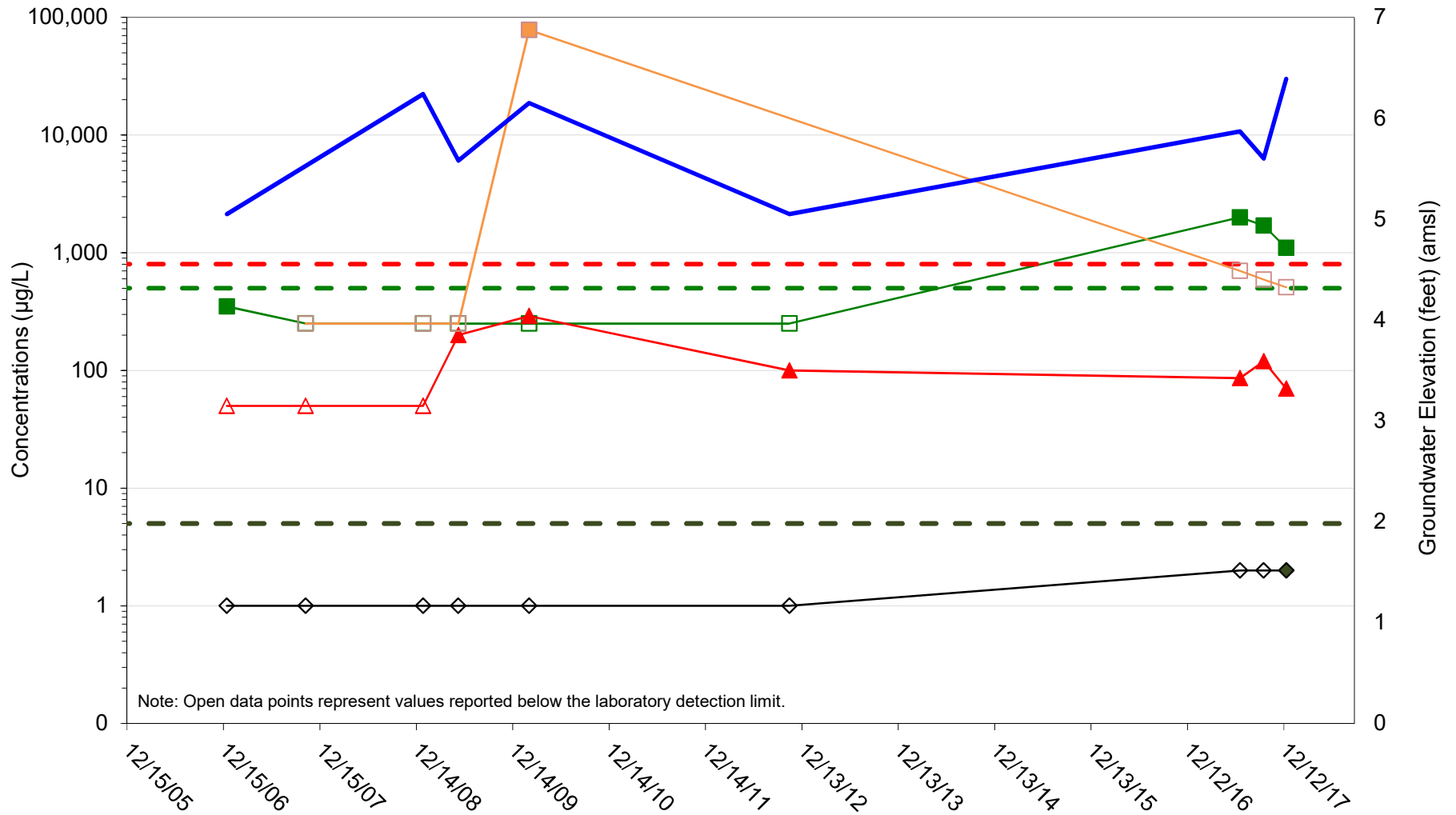
Note: Open data points represent values reported below the laboratory detection limit.



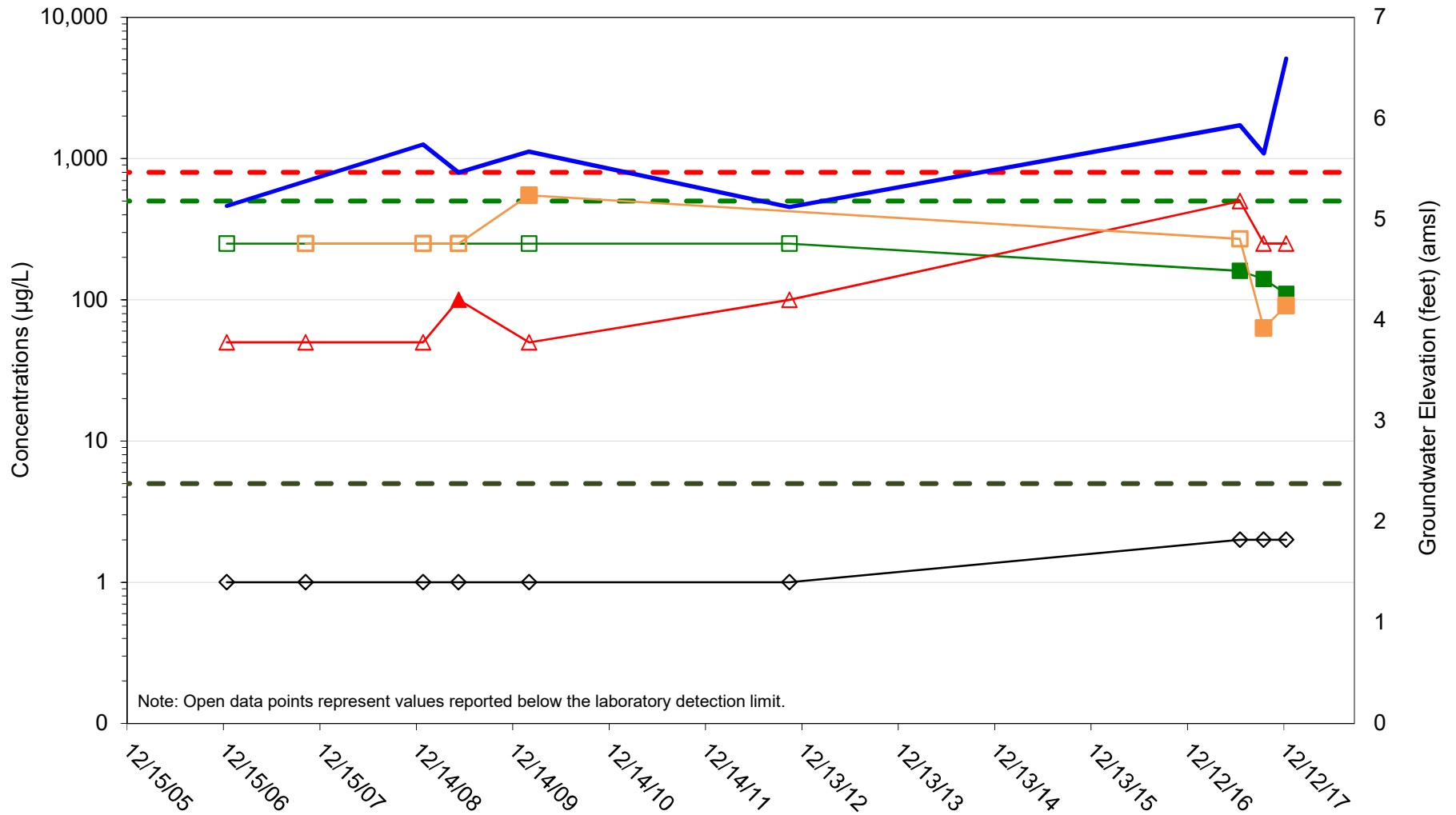
WELL PMW-5  
 GRO, DRO & BENZENE CONCENTRATIONS and GROUNDWATER ELEVATIONS VERSUS TIME  
 415 Capitol Way North  
 Olympia, Washington



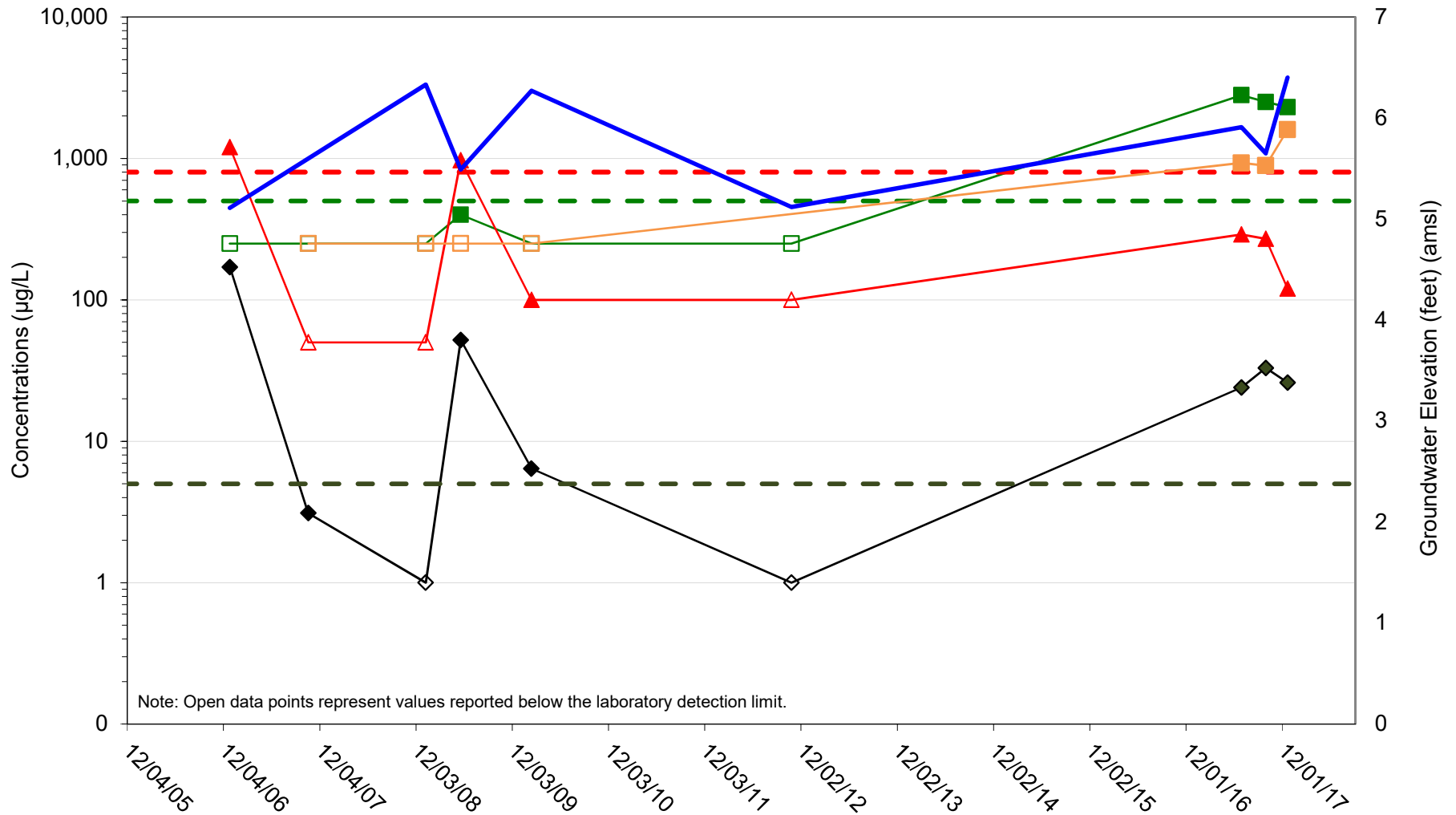
WELL PMW-6  
 GRO, DRO & BENZENE CONCENTRATIONS and GROUNDWATER ELEVATIONS VERSUS TIME  
 415 Capitol Way North  
 Olympia, Washington



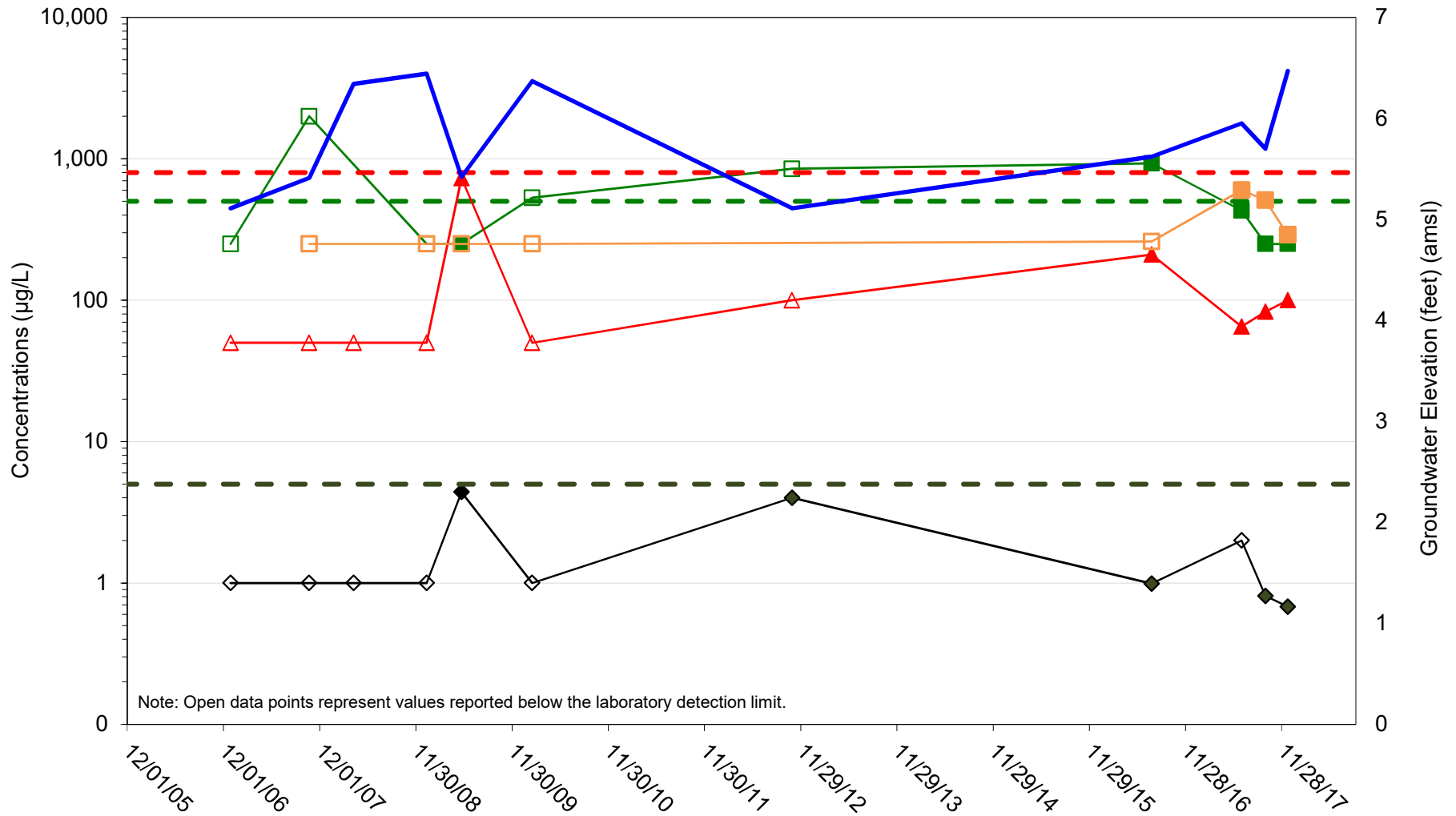
WELL PMW-7  
 GRO, DRO & BENZENE CONCENTRATIONS and GROUNDWATER ELEVATIONS VERSUS TIME  
 415 Capitol Way North  
 Olympia, Washington



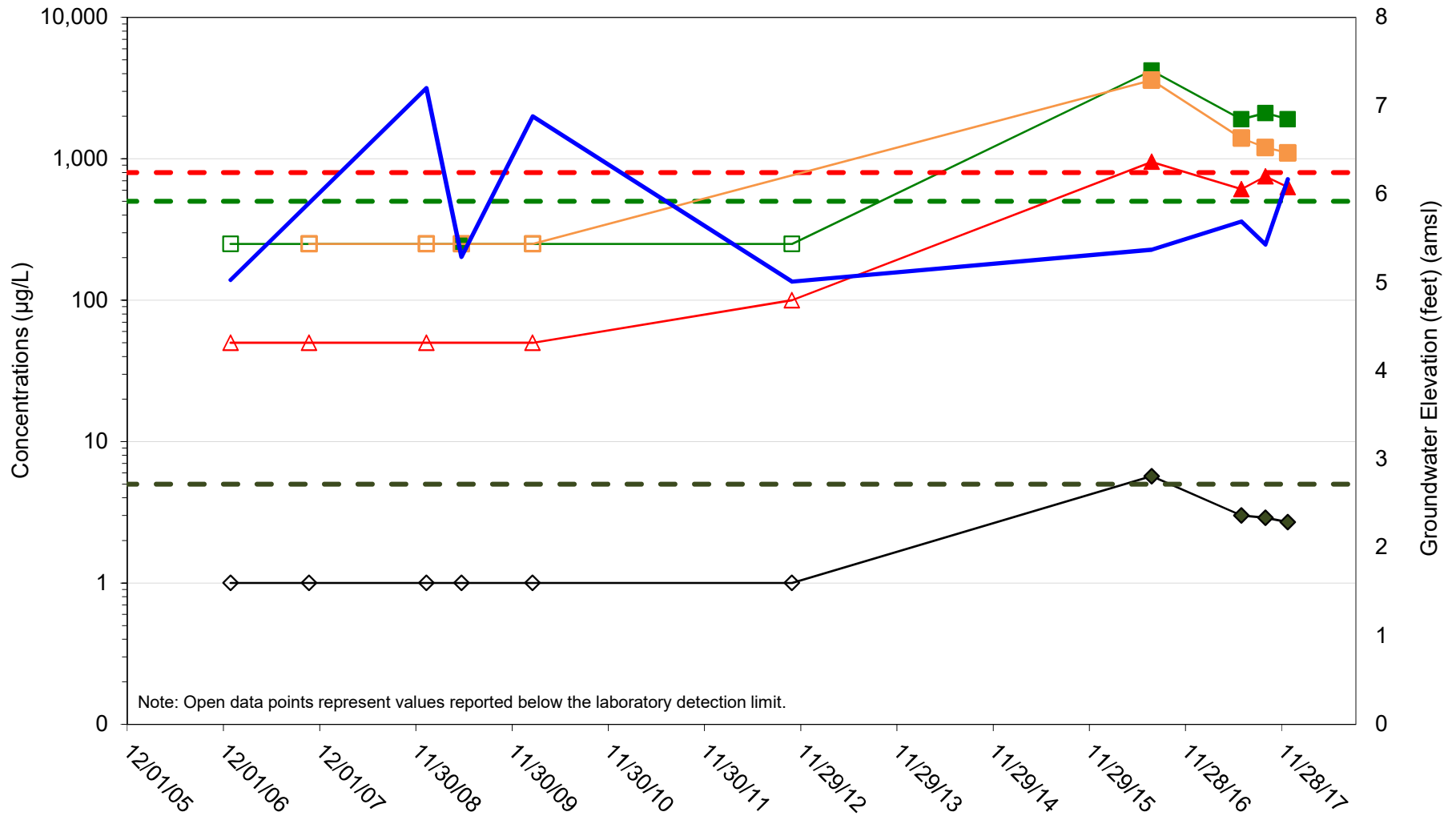
WELL PMW-8  
 GRO, DRO & BENZENE CONCENTRATIONS and GROUNDWATER ELEVATIONS VERSUS TIME  
 415 Capitol Way North  
 Olympia, Washington



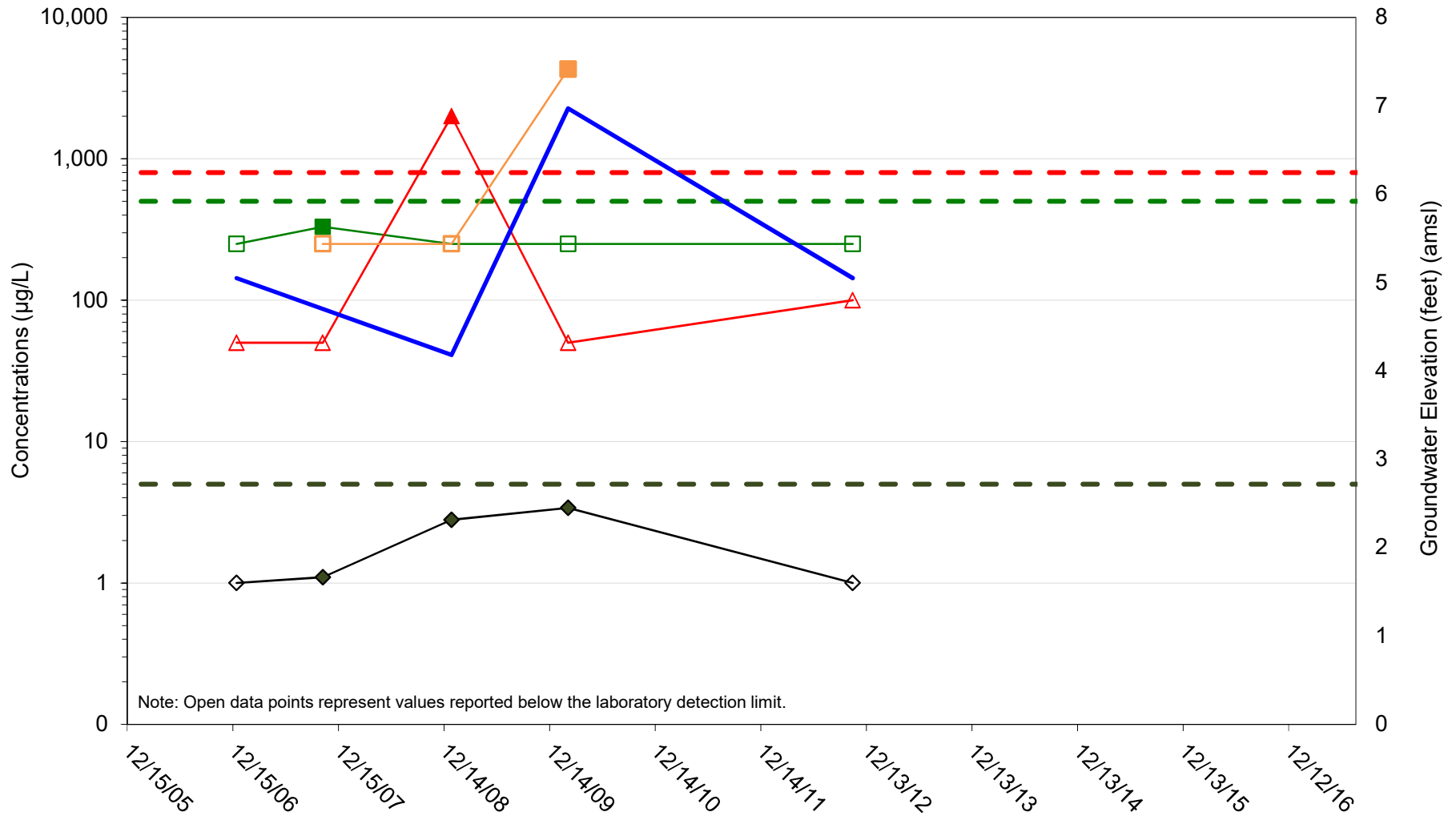
WELL PMW-9  
 GRO, DRO & BENZENE CONCENTRATIONS and GROUNDWATER ELEVATIONS VERSUS TIME  
 415 Capitol Way North  
 Olympia, Washington



WELL PMW-10  
 GRO, DRO & BENZENE CONCENTRATIONS and GROUNDWATER ELEVATIONS VERSUS TIME  
 415 Capitol Way North  
 Olympia, Washington



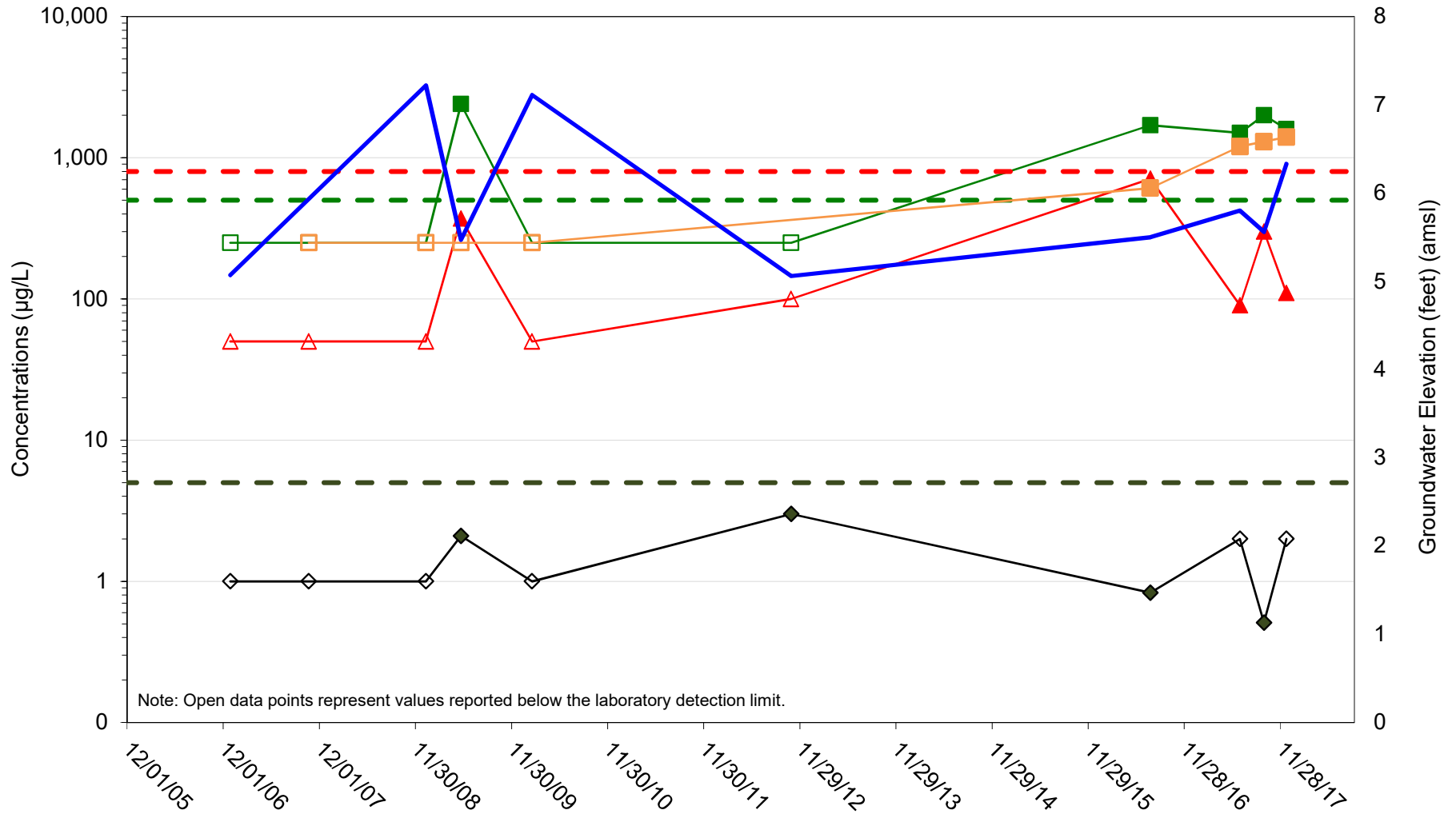
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 GRO, DRO & BENZENE CONCENTRATIONS and GROUNDWATER ELEVATIONS VERSUS TIME  
 415 Capitol Way North  
 Olympia, Washington



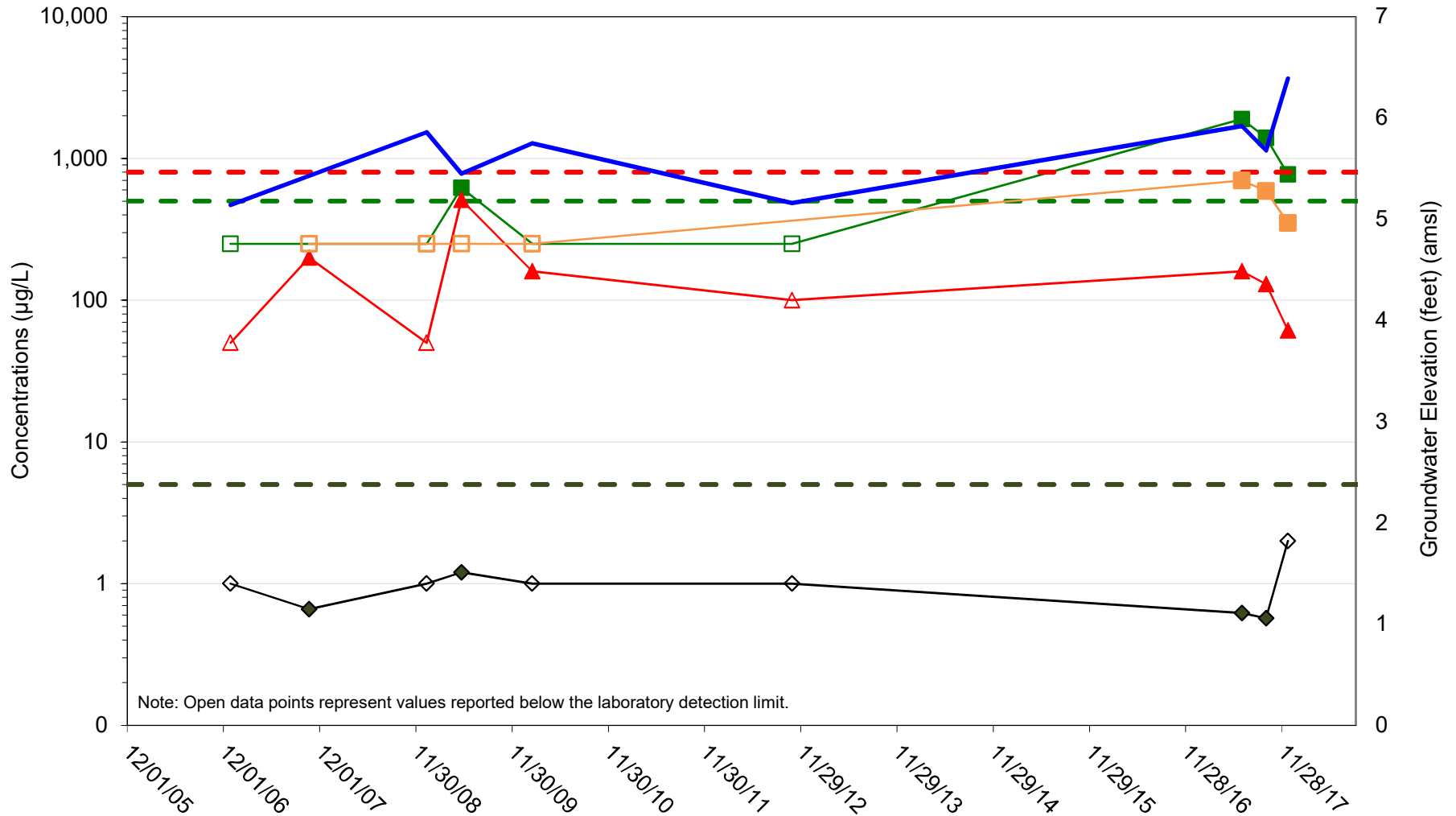
Note: Open data points represent values reported below the laboratory detection limit.



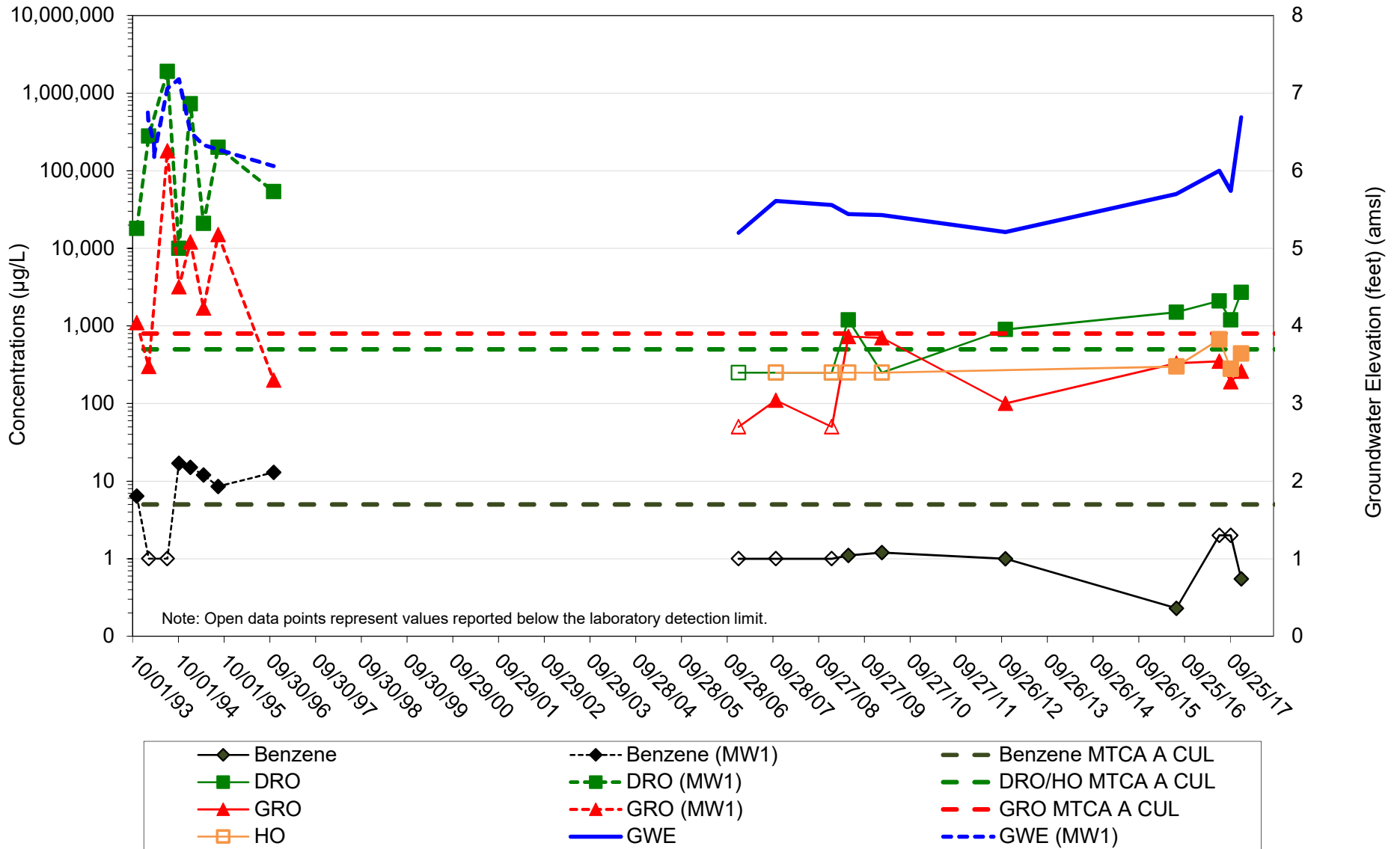
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 GRO, DRO & BENZENE CONCENTRATIONS and GROUNDWATER ELEVATIONS VERSUS TIME  
 415 Capitol Way North  
 Olympia, Washington



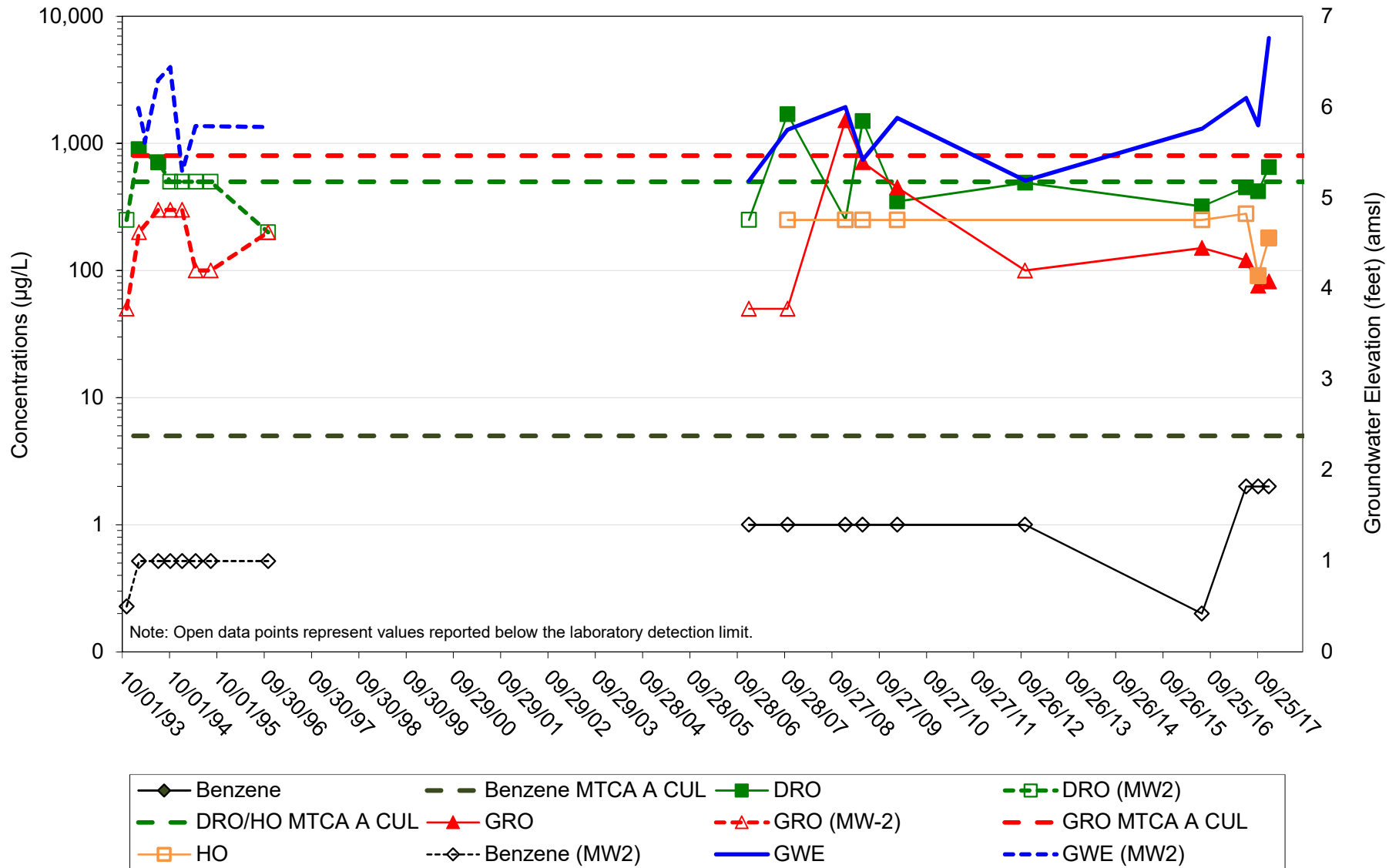
WELL PMW-13  
 GRO, DRO & BENZENE CONCENTRATIONS and GROUNDWATER ELEVATIONS VERSUS TIME  
 415 Capitol Way North  
 Olympia, Washington



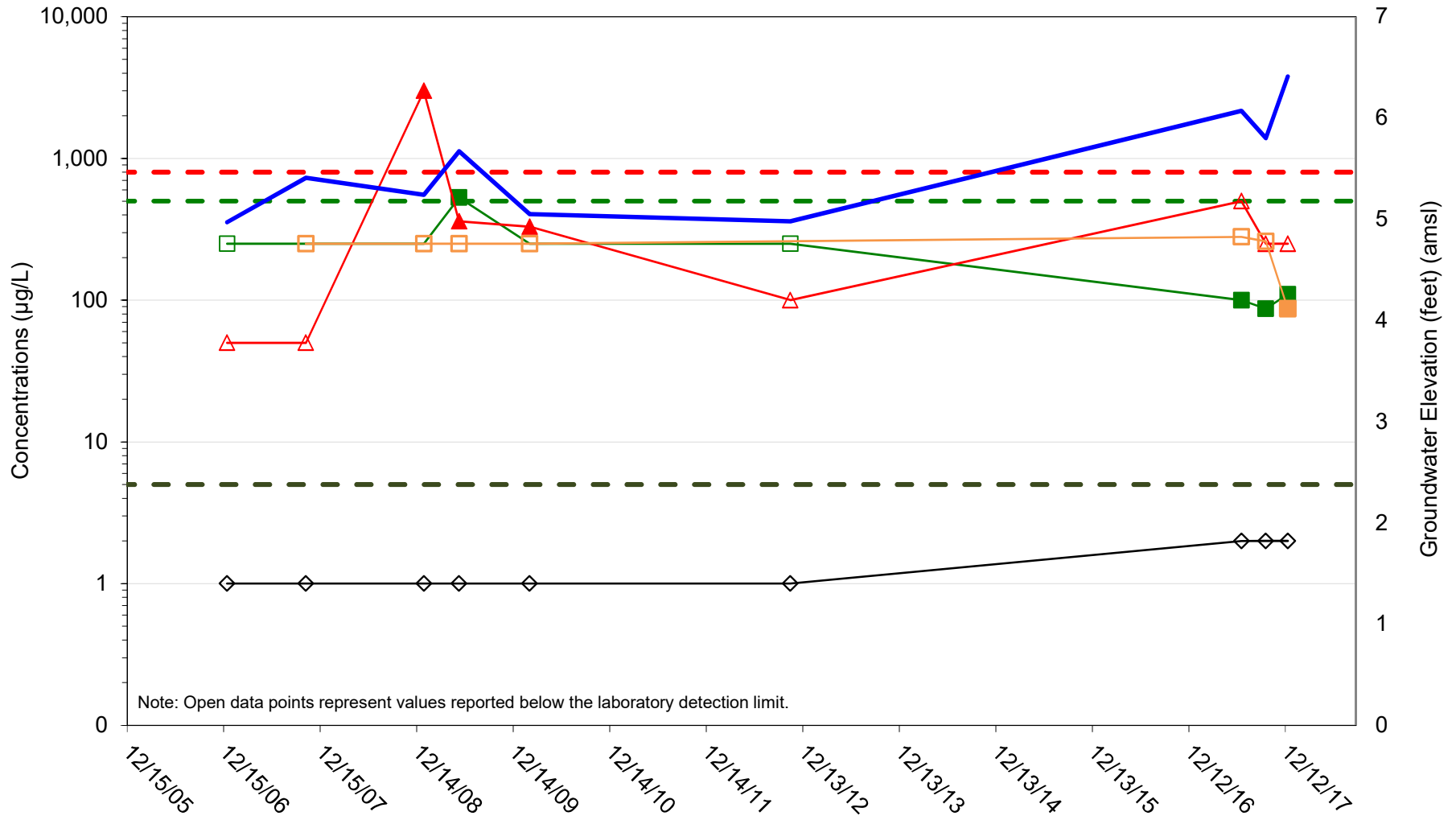
WELLS MW1 AND PMW-14  
 GRO, DRO & BENZENE CONCENTRATIONS and GROUNDWATER ELEVATIONS VERSUS TIME  
 415 Capitol Way North  
 Olympia, Washington



WELLS MW2 AND PMW-15  
 GRO, DRO & BENZENE CONCENTRATIONS and GROUNDWATER ELEVATIONS VERSUS TIME  
 415 Capitol Way North  
 Olympia, Washington



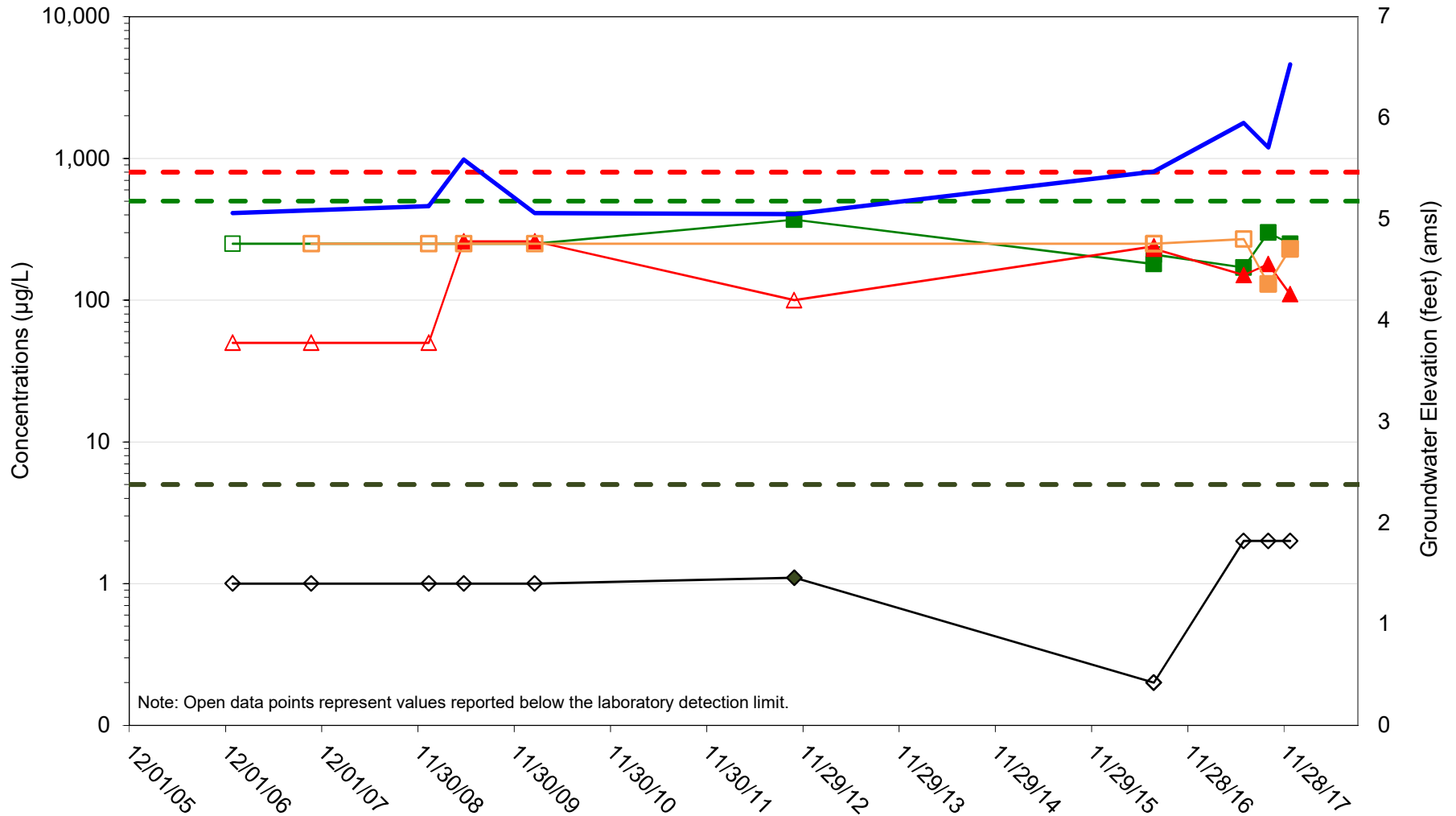
WELL PMW-16  
 GRO, DRO & BENZENE CONCENTRATIONS and GROUNDWATER ELEVATIONS VERSUS TIME  
 415 Capitol Way North  
 Olympia, Washington



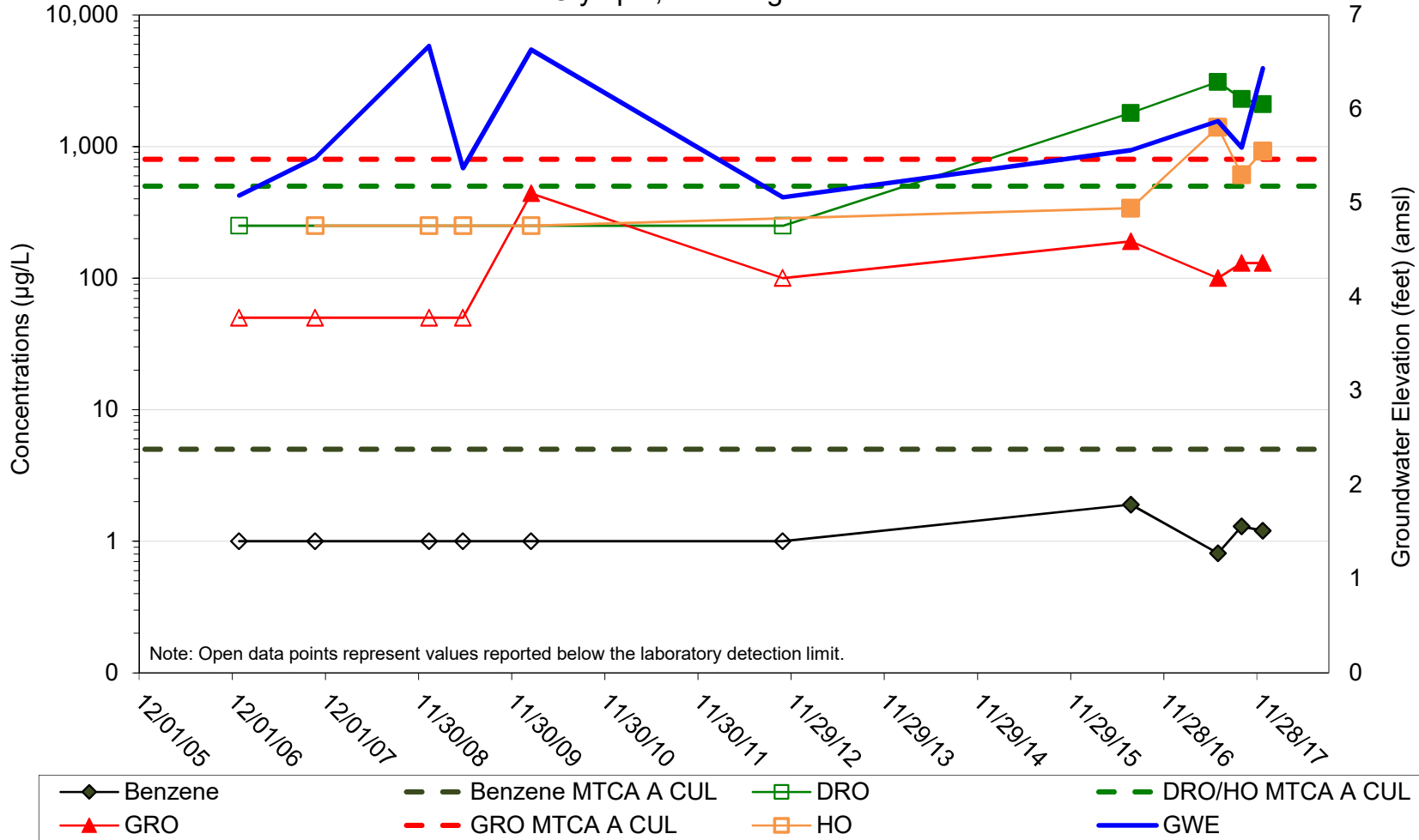
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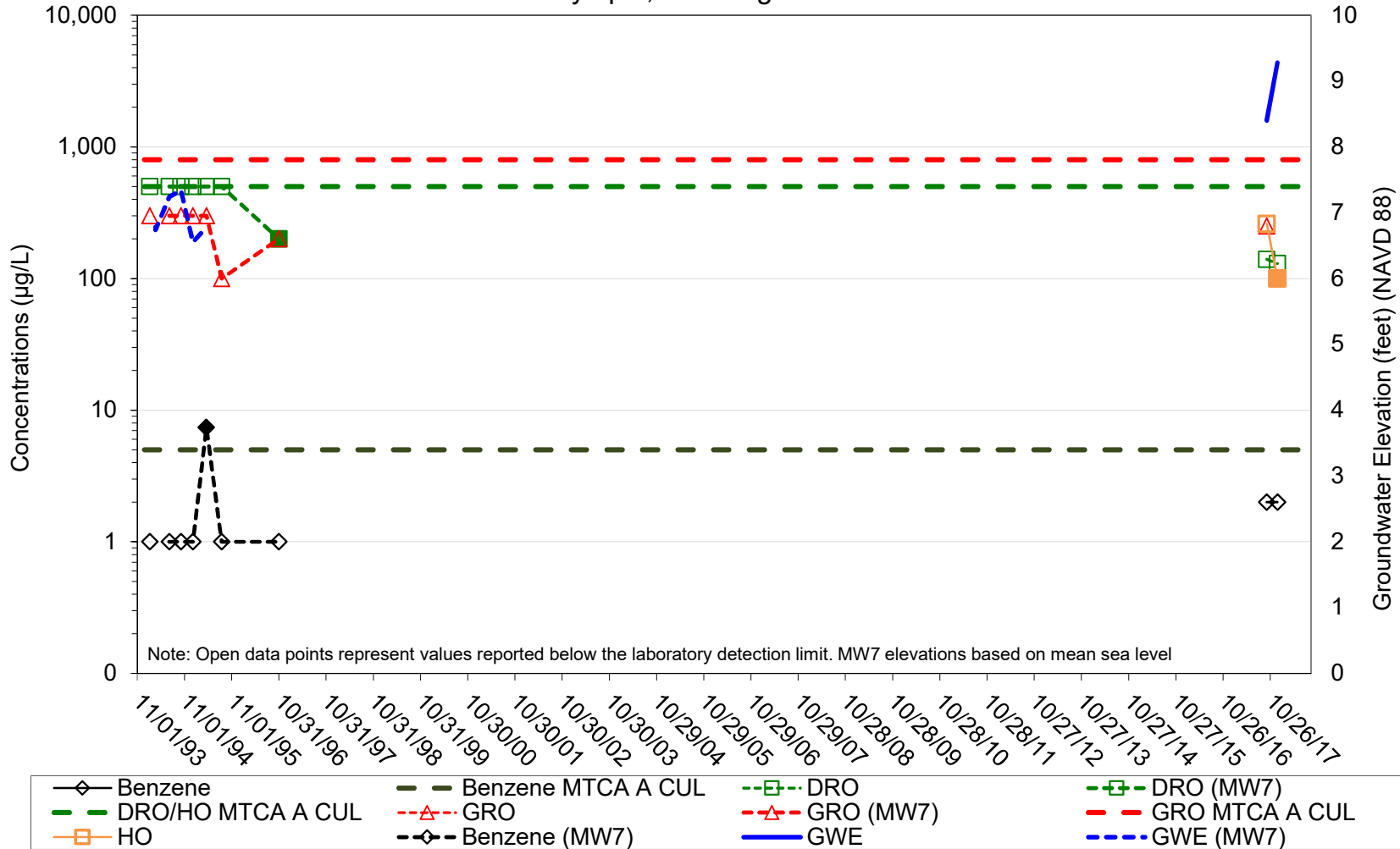
WELL PMW-17  
 GRO, DRO & BENZENE CONCENTRATIONS and GROUNDWATER ELEVATIONS VERSUS TIME  
 415 Capitol Way North  
 Olympia, Washington



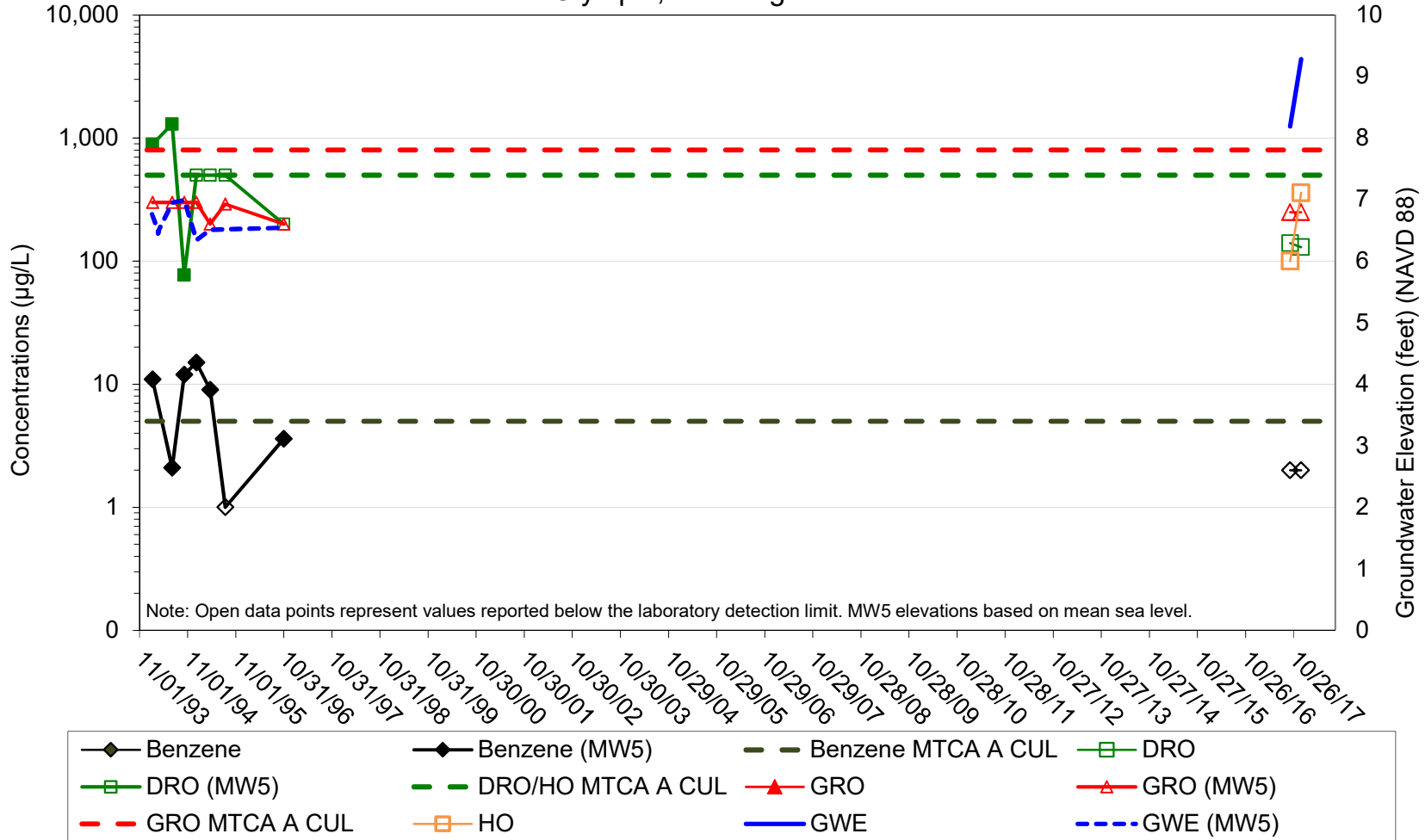
**WELL PMW-18**  
**GRO, DRO & BENZENE CONCENTRATIONS and GROUNDWATER ELEVATIONS**  
**VERSUS TIME**  
 415 Capitol Way North  
 Olympia, Washington



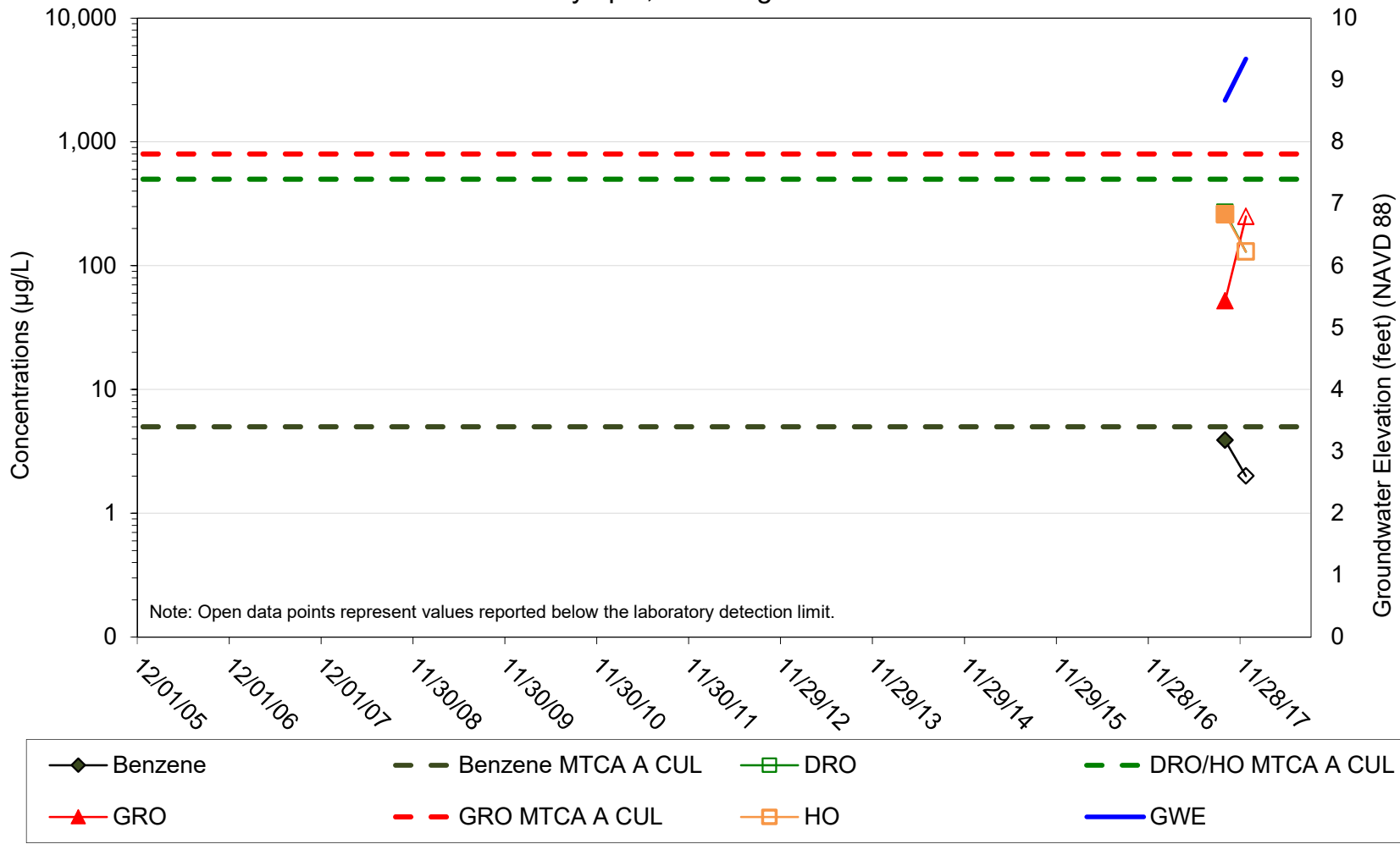
**WELLS MW7 AND PMW-19**  
**GRO, DRO & BENZENE CONCENTRATIONS and GROUNDWATER ELEVATIONS**  
**VERSUS TIME**  
 415 Capitol Way North  
 Olympia, Washington



**WELLS MW5 AND PMW-20**  
**GRO, DRO & BENZENE CONCENTRATIONS and GROUNDWATER ELEVATIONS**  
**VERSUS TIME**  
 415 Capitol Way North  
 Olympia, Washington



**WELL PMW-21**  
**GRO, DRO & BENZENE CONCENTRATIONS and GROUNDWATER ELEVATIONS**  
**VERSUS TIME**  
 415 Capitol Way North  
 Olympia, Washington



# ATTACHMENT E

## Terrestrial Ecological Evaluation Exclusion Form





# Voluntary Cleanup Program

## Washington State Department of Ecology Toxics Cleanup Program

### TERRESTRIAL ECOLOGICAL EVALUATION FORM

Under the Model Toxics Control Act (MTCA), a terrestrial ecological evaluation is necessary if hazardous substances are released into the soils at a Site. In the event of such a release, you must take one of the following three actions as part of your investigation and cleanup of the Site:

1. Document an exclusion from further evaluation using the criteria in WAC 173-340-7491.
2. Conduct a simplified evaluation as set forth in WAC 173-340-7492.
3. Conduct a site-specific evaluation as set forth in WAC 173-340-7493.

When requesting a written opinion under the Voluntary Cleanup Program (VCP), you must complete this form and submit it to the Department of Ecology (Ecology). The form documents the type and results of your evaluation.

**Completion of this form is not sufficient to document your evaluation. You still need to document your analysis and the basis for your conclusion in your cleanup plan or report.**

If you have questions about how to conduct a terrestrial ecological evaluation, please contact the Ecology site manager assigned to your Site. For additional guidance, please refer to [www.ecy.wa.gov/programs/tcp/policies/terrestrial/TEEHome.htm](http://www.ecy.wa.gov/programs/tcp/policies/terrestrial/TEEHome.htm).

#### Step 1: IDENTIFY HAZARDOUS WASTE SITE

Please identify below the hazardous waste site for which you are documenting an evaluation.

Facility/Site Name: Phoenix Inn (DoubleTree Hotel)

Facility/Site Address: 415 Capitol Way North, Olympia, Washington 98501

Facility/Site No: 1571525

VCP Project No.: SW1582

#### Step 2: IDENTIFY EVALUATOR

Please identify below the person who conducted the evaluation and their contact information.

Name: Paul McCullough

Title: Principal Engineer

Organization: Arcadis U.S., Inc.

Mailing address: 1100 Olive Way, Suite 800

City: Seattle

State: WA

Zip code: 98101

Phone: 206-214-7161

Fax:

E-mail: paul.mccullough@arcadis.com

## Step 3: DOCUMENT EVALUATION TYPE AND RESULTS

### A. Exclusion from further evaluation.

#### 1. Does the Site qualify for an exclusion from further evaluation?

- Yes *If you answered "YES," then answer **Question 2**.*
- No or Unknown *If you answered "NO" or "UNKNOWN," then skip to **Step 3B** of this form.*

#### 2. What is the basis for the exclusion? Check all that apply. Then skip to **Step 4** of this form.

Point of Compliance: WAC 173-340-7491(1)(a)

- All soil contamination is, or will be,\* at least 15 feet below the surface.
- All soil contamination is, or will be,\* at least 6 feet below the surface (or alternative depth if approved by Ecology), and institutional controls are used to manage remaining contamination.

Barriers to Exposure: WAC 173-340-7491(1)(b)

- All contaminated soil, is or will be,\* covered by physical barriers (such as buildings or paved roads) that prevent exposure to plants and wildlife, and institutional controls are used to manage remaining contamination.

Undeveloped Land: WAC 173-340-7491(1)(c)

- There is less than 0.25 acres of contiguous# undeveloped± land on or within 500 feet of any area of the Site and any of the following chemicals is present: chlorinated dioxins or furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, or pentachlorobenzene.
- For sites not containing any of the chemicals mentioned above, there is less than 1.5 acres of contiguous# undeveloped± land on or within 500 feet of any area of the Site.

Background Concentrations: WAC 173-340-7491(1)(d)

- Concentrations of hazardous substances in soil do not exceed natural background levels as described in WAC 173-340-200 and 173-340-709.

\* An exclusion based on future land use must have a completion date for future development that is acceptable to Ecology.

± "Undeveloped land" is land that is not covered by building, roads, paved areas, or other barriers that would prevent wildlife from feeding on plants, earthworms, insects, or other food in or on the soil.

# "Contiguous" undeveloped land is an area of undeveloped land that is not divided into smaller areas of highways, extensive paving, or similar structures that are likely to reduce the potential use of the overall area by wildlife.

## B. Simplified evaluation.

### 1. Does the Site qualify for a simplified evaluation?

- Yes *If you answered "YES," then answer **Question 2** below.*
- No or Unknown *If you answered "NO" or "UNKNOWN," then skip to **Step 3C** of this form.*

### 2. Did you conduct a simplified evaluation?

- Yes *If you answered "YES," then answer **Question 3** below.*
- No *If you answered "NO," then skip to **Step 3C** of this form.*

### 3. Was further evaluation necessary?

- Yes *If you answered "YES," then answer **Question 4** below.*
- No *If you answered "NO," then answer **Question 5** below.*

### 4. If further evaluation was necessary, what did you do?

- Used the concentrations listed in Table 749-2 as cleanup levels. *If so, then skip to **Step 4** of this form.*
- Conducted a site-specific evaluation. *If so, then skip to **Step 3C** of this form.*

### 5. If no further evaluation was necessary, what was the reason? Check all that apply. Then skip to **Step 4** of this form.

#### Exposure Analysis: WAC 173-340-7492(2)(a)

- Area of soil contamination at the Site is not more than 350 square feet.
- Current or planned land use makes wildlife exposure unlikely. Used Table 749-1.

#### Pathway Analysis: WAC 173-340-7492(2)(b)

- No potential exposure pathways from soil contamination to ecological receptors.

#### Contaminant Analysis: WAC 173-340-7492(2)(c)

- No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations that exceed the values listed in Table 749-2.
- No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations that exceed the values listed in Table 749-2, and institutional controls are used to manage remaining contamination.
- No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays.
- No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays, and institutional controls are used to manage remaining contamination.

**C. Site-specific evaluation.** A site-specific evaluation process consists of two parts: (1) formulating the problem, and (2) selecting the methods for addressing the identified problem. Both steps require consultation with and approval by Ecology. See WAC 173-340-7493(1)(c).

**1. Was there a problem?** See WAC 173-340-7493(2).

- Yes    *If you answered “YES,” then answer **Question 2** below.*
- No    *If you answered “NO,” then identify the reason here and then skip to **Question 5** below:*
- No issues were identified during the problem formulation step.
  - While issues were identified, those issues were addressed by the cleanup actions for protecting human health.

**2. What did you do to resolve the problem?** See WAC 173-340-7493(3).

- Used the concentrations listed in Table 749-3 as cleanup levels. *If so, then skip to **Question 5** below.*
- Used one or more of the methods listed in WAC 173-340-7493(3) to evaluate and address the identified problem. *If so, then answer **Questions 3 and 4** below.*

**3. If you conducted further site-specific evaluations, what methods did you use?**  
*Check all that apply. See WAC 173-340-7493(3).*

- Literature surveys.
- Soil bioassays.
- Wildlife exposure model.
- Biomarkers.
- Site-specific field studies.
- Weight of evidence.
- Other methods approved by Ecology. If so, please specify:

**4. What was the result of those evaluations?**

- Confirmed there was no problem.
- Confirmed there was a problem and established site-specific cleanup levels.

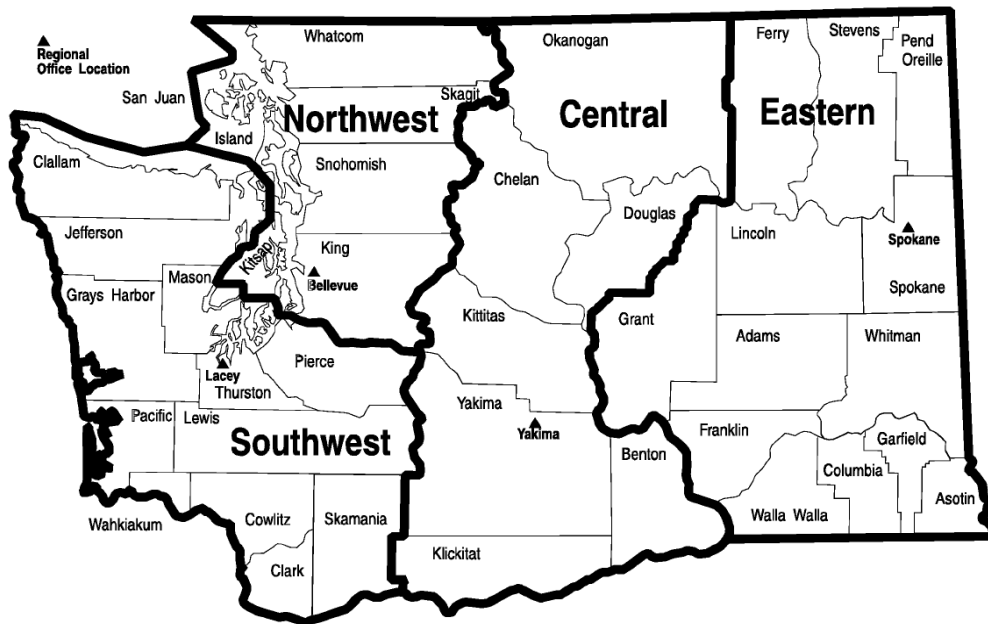
**5. Have you already obtained Ecology’s approval of both your problem formulation and problem resolution steps?**

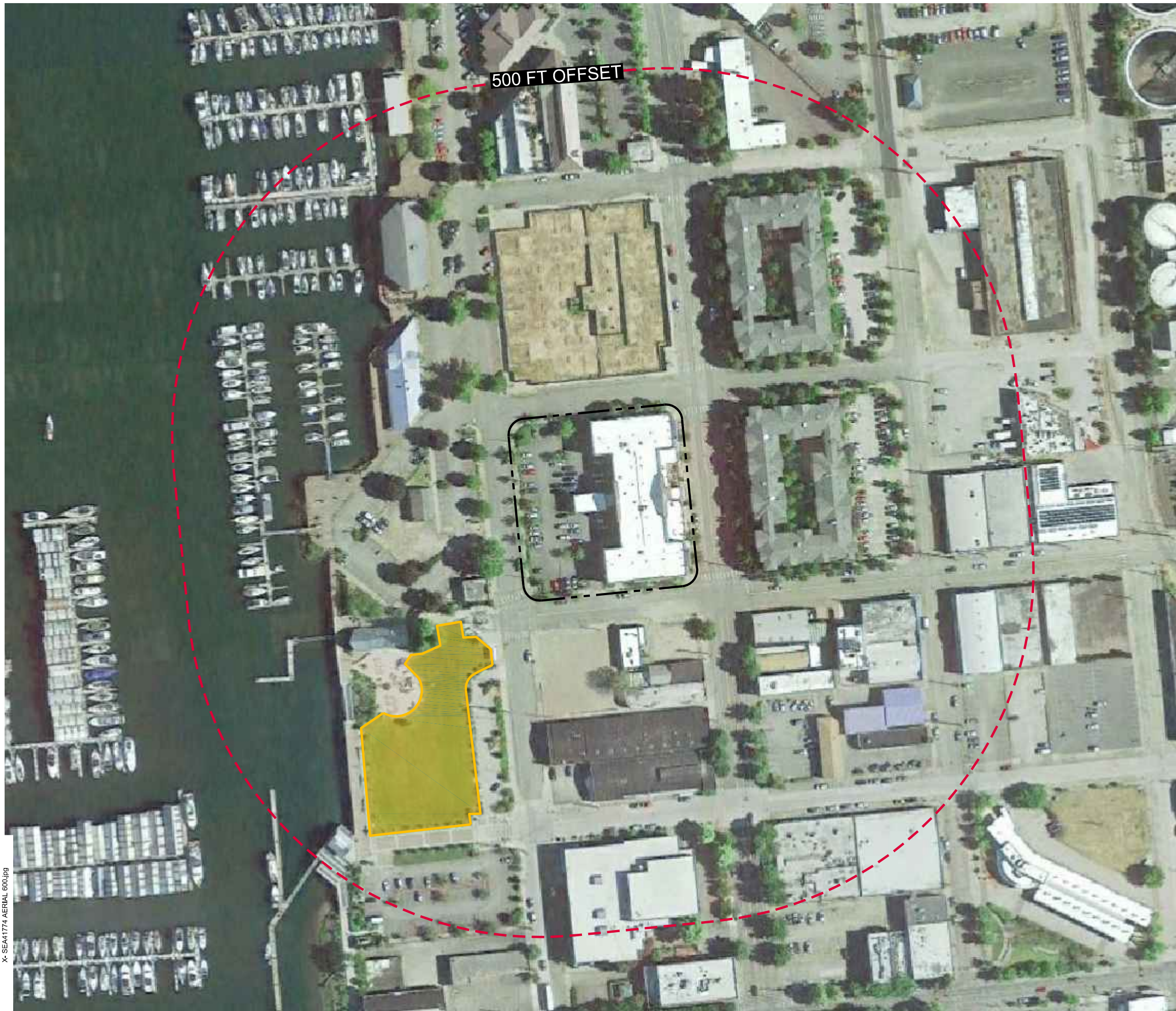
- Yes    If so, please identify the Ecology staff who approved those steps:
- No

## Step 4: SUBMITTAL




Please mail your completed form to the Ecology site manager assigned to your Site. If a site manager has not yet been assigned, please mail your completed form to the Ecology regional office for the County in which your Site is located.

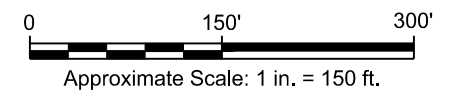
<p><b>Northwest Region:</b>          Attn: VCP Coordinator          3190 160<sup>th</sup> Ave. SE          Bellevue, WA 98008-5452</p>	<p><b>Central Region:</b>          Attn: VCP Coordinator          1250 West Alder St.          Union Gap, WA 98903-0009</p>
<p><b>Southwest Region:</b>          Attn: VCP Coordinator          P.O. Box 47775          Olympia, WA 98504-7775</p>	<p><b>Eastern Region:</b>          Attn: VCP Coordinator          N. 4601 Monroe          Spokane WA 99205-1295</p>





LEGEND:

-  SITE BOUNDARY
-  500 FOOT OFFSET
-  CONTIGUOUS UNDEVELOPED LAND AREA (APPROXIMATELY 38,022 SQ. FT.)



SOURCE: GOOGLE EARTH PRO

415 CAPITOL WAY NORTH  
OLYMPIA, WASHINGTON 98501  
**TERRESTRIAL ECOLOGICAL EVALUATION**

**AERIAL SHOWING CONTIGUOUS UNDEVELOPED LAND WITHIN 500 FT**