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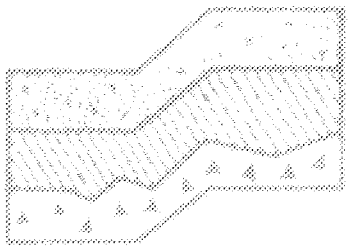
Groundwater Summary

Former C and C Paints Facility
Seattle, Washington
VCP NW 2496

Project No. T-6552



Terra Associates, Inc.

Prepared for:

HALCO Properties, LLC
Auburn, Washington

June 17, 2020

TERRA ASSOCIATES, Inc.

Consultants in Geotechnical Engineering, Geology
and
Environmental Earth Sciences

June 17, 2020
Project No. T-6552

Mr. Brett Cowman
HALCO Properties, LLC
P.O. Box 512
Auburn, Washington 98071

Subject: Groundwater Summary
Former C and C Paints Facility
Seattle, Washington
VCP NW 2496

Dear Mr. Cowman:

This report summarizes past and current groundwater conditions on and immediately adjacent to 5221 Ballard Avenue NW. This report is cumulative and updates our report, dated October 21, 2019.

The results of the groundwater monitoring that has been done to date show that the groundwater beneath the 5221 Ballard Avenue NW site meets the current cleanup levels. The data further indicates that no migration of contamination from the former UST cluster at 5232 Shilshole Avenue NW has impacted the 5221 Ballard Avenue site.

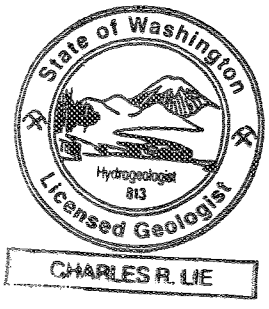
The attached report discusses our site observations, the results of analytical testing, and our conclusions in more detail.

We trust the information presented is sufficient for your current needs. If you have any questions or require additional information, please call.

Respectfully submitted,
TERRA ASSOCIATES, INC.

Charles R. Lie, L.H.G.
Project Manager

Submitted via email only



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1.0 EXECUTIVE SUMMARY

The following report presents the cumulative sampling of groundwater wells at the subject site. The site was formerly known as C&C Paints. The site covered by VCP NW 2496 consists of the extent of contamination attributed to the former UST cluster in the parking lot at 5221 Ballard Avenue NW, a portion of the adjacent parcel immediately west of 5221 with an address of 5227 Ballard Avenue NW, and a portion of the parcel immediately south of 5221 known as 5246 Shilshole Avenue NW. This report includes groundwater data for the overall 5221 site as well as for an adjacent site not covered by VCP NW 2496, 5232 Shilshole Avenue NW (5232).

As discussed in this report, the groundwater beneath the 5221 property meets current cleanup levels. Additional groundwater assessments are needed at the 5246 Shilshole Avenue NW property that will be subject to a separate remedial action under a separate VCP file.

The results of our study are discussed in more detail later in this report.

2.0 SCOPE OF WORK

Our scope of work for this supplemental report consisted of the following:

- Measuring static water level in the existing wellfield on and adjacent to 5221.
- Sampling groundwater from the existing wellfield and the new wells built for this study.
- Subcontracting analytical testing of selected soil and groundwater samples.
- Appropriate analysis of the data.
- Preparation of this report.

3.0 SITE CONDITIONS

3.1 Surface

The site is located at 5221 Ballard Avenue NW in Seattle, Washington. The site location is shown on Figures 1 and 2. The site layout is shown on Figure 3.

The monitoring well locations and former UST locations on the 5221 and 5232 parcels are shown on Figure 3.

The elevation of the parking lot where the UST cluster at 5221 is approximately Elev. 37. The elevation of the 5232 Parcel is approximately Elev. 28. The grade change is supported by basement walls in the buildings on the two sites.

3.2 Subsurface

We observed explorations at the 5221 site and 5232 properties consisting of Direct Push Technology probes and borings. We also referred to prior work done by others. Locations of the explorations are shown on Figure 3.

In general, native subsurface conditions beneath the site consist of silty sands that are dense till soils. Overlying the dense till soil are fills. These fills represent soils that were reworked incidental to the construction of the existing building and adjacent building as well as UST backfill soils. All soils encountered in the borings are granular soils.

Logs of the individual explorations conducted for this study are presented in Appendix A of this report.

3.3 Groundwater

3.3.1 Static Water Level Measurements

A total of 26 monitoring wells have been built on-site. Table 1 summarizes the wells, their construction date, and their current status. Thirteen of the wells went dry as a result of the dewatering at the hotel east of the site. Nine of the monitoring wells have been lawfully closed. Eleven wells remain for the current monitoring.

Groundwater elevations have been established through the use of a groundwater depth tape that is marked in 1/100th of a foot. The wells have all been surveyed by a licensed surveyor. Static water levels prior to 2011 were measured by others. Measurements show that groundwater gradients were towards the south-southwest prior to 2012. Table 2 attached to this report summarizes the static water levels measured from 1996 through 2020.

Figures 3 through 17 show our interpretations of groundwater depth measurements collected by others prior to 2011 and by us subsequent to 2011. Prior to 2011 all of the wells were located at and south of the parcel at 5232 Shilshole Avenue NW. The groundwater flow gradient was consistent with prior data developed by others until the construction of the new building north of 5221 Ballard Avenue NW. Construction of the new building included a deep parking garage that is dewatered on a continuous basis. As seen in the data, the groundwater levels on-site have decreased. To summarize the groundwater gradients on the project site, a rose diagram was created to show the general directions of flow within the entire wellfield.

In the creation of the static water level contours shown on Figures 10 through 17, we used the footing drain inverts for the new building at 5216 Ballard Avenue North. There is a deeper sump within the basement area; however, we have not been provided access to survey the location of the sump. The project surveyor, Axis Survey, established the building corners of the building at 5216 Ballard Avenue NW during a survey printed on September 27, 2019. The footing drain inverts are based on drawings obtained from the City of Seattle on-line permit archives. Appendix A contains selected plans and notes from the permit archives for the building at 5216 Ballard Avenue NW. One monitoring well has continued to have groundwater throughout nearly the entire monitoring period. This is Monitoring Well MW-6 located along Shilshole Avenue North. Monitoring Well MW-6 is discussed in more detail in Section 3.3.2.

The variation is more dramatic for the wells at 5221 where the initial static water elevation was at about Elev. 25 in the spring through fall of 2011. The decline in static water levels started in November of 2011 and resulted in the screened segments of Monitoring Wells MW-101 through MW-104 being left dry. Monitoring Well MW-205, a new well was established at the north end of the UST cluster at 5221 in 2014 close to the former location of Monitoring Well MW-103. The static water elevation in that well has been about Elev. 13.

At the request of Ecology, Monitoring Well MW-206 was established midway between the locations of former Monitoring Wells MW-101 and MW-102.

3.3.2 MW-6 Measurements

The change in static water levels is illustrated on Table 2 and Chart 1 on Figure 19 for Monitoring Well MW-6 at 5232 Shilshole Avenue NW. Monitoring Well MW-6 is the only original well that still has groundwater within the screen zone. As can be seen, the static water elevation trended from Elev. 21 to 23 from 1995 through 2011. Subsequent to 2011, the static water level has trended from Elev. 19.5 to 18.

The mapped gradient subsequent to the end of 2011 has been towards the north. Monitoring Well MW-6 had been an anomaly in the post 2011 groundwater contours. The static water level in Monitoring Well MW-6 had resembled a groundwater divide where groundwater to the north of Monitoring Well MW-6 flowed towards the north and groundwater south of Monitoring Well MW-6 flowed towards the south.

There is not an as built for Monitoring Well MW-6. We used a down hole TV camera to establish the screen depth. We found that the well is screened from about 5.4 to 15.4 feet below the top of casing, consistent with a 10-foot screen in 15-foot-deep borings. Based on our current interpretation, based on site observations and measurements, Monitoring Well MW-6 had become a seasonal groundwater mound due to a broken slab of concrete that allowed stormwater runoff from the downspout of the adjacent building to directly infiltration near the location of Monitoring Well MW-6. The approximate location of the main downspout from the roof of the adjacent building at 5232 Shilshole Avenue is shown on the photo.

Monitoring Well MW-6 was built within the former UST cavity for the Shilshole parcels. The UST cavity is within the till soils and allows a local groundwater mound to develop due to the infiltration of roof runoff. During the installation of a soil vapor extraction system (SVE) at 5232 Shilshole Avenue NW, the broken segments of the concrete apron in the vicinity of Monitoring Well MW-6 was repaired and restored most of the flow of stormwater from the nearby roof downspout to the existing stormwater system. The apparent groundwater mound diminished following the repair to the concrete apron. As seen in the January 2020 data, the mound returned following the heavy rains of the prior December of 2019 and January of 2020.

3.3.3 Surface Water Infiltration at 5221 Ballard Avenue Northwest

Until the summer of 2018, the paved surface of the parking area above the USTs along the western margin of 5221 Ballard Avenue NW was in poor condition. The pavement condition was due to excavations that removed position of a concrete apron to allow placement of USTs and of the disruption pipes that led to the south. This poor condition was effectively equivalent to a Low Impact Development (LID) pavement that allows infiltration of runoff to enter the site soils.

The catch basin located at the northeast corner of the parking lot was typically clogged allowing water to pond in the northern portion of the parking lot. Water flow into the adjacent basement areas occurred on a regular basis due to the lack of suitable drainage in the parking lot area. In 2016, the remodeling of the building at 5221 Ballard Avenue NW resulted in the removal of about half of the prior pavement allowing additional infiltration directly into the former UST cavities to occur. The pavement was not replaced until the spring of 2018. The replacement of the pavement with a cast concrete apron directed runoff from the site into the neighborhood stormwater system.

4.0 FIELD SAMPLING

Standard sampling procedures were used in the field. The procedures are discussed in Appendix B.

5.0 LABORATORY TESTING

5.1 General

The constituents of concern (COCs) are paint thinners, petroleum hydrocarbons including Diesel No. 2 (Heating oil), and volatile organic compounds. The COCs are based on the past use of the land, the contents of former USTs on-site, and previous sampling by others.

Groundwater samples have been analyzed for the following analytes:

- Total petroleum hydrocarbons (TPH) in the gasoline range (paint thinner) at both 5221 and 5232.
- Volatile organic compounds (BETX) and halogenated compounds at both 5221 and 5232.
- Lead at 5232 where paint mixing occurred.
- Ethylene Glycol at 5232 where paint mixing occurred.
- TPH in the diesel range due to former heating oil UST at 5232.
- PAHs in Monitoring Wells MW-205 and MW-206 at the request of the WDOE and in Monitoring Well MW-107 as part of the VPH/EPH analysis.

The test results are summarized in the following sections of this report.

The laboratory reports for testing groundwater done for this study are attached as Appendix C.

5.2 Groundwater

The following tables are cumulative and show the results reported by prior testing by others. All testing prior to 2011 was done by other firms. As documented by groundwater sampling, the contaminants of concern are TPH in the gasoline through diesel range and gasoline constituents of benzene, ethyl benzene, toluene, and xylenes (BETX). The benzene and ethyl benzene appear to have been incidental contaminates in the paint thinner used on-site. None of the former USTs were reported to be used to store gasoline.

6.0 DISCUSSION

6.1 General

There is no indication from the current nor from prior work that shows that the plume from 5221 extended onto 5232 Shilshole Avenue NW. There was a UST cluster at 5232 that was removed in the early 1990s. There are impacted soils and groundwater at the 5232 site; however, none of the prior nor the current data suggests that the impacts from 5232 have co-mingled with the impacts from 5221. A separate VCP application will be submitted for the proposed remedial action at 5232. This report includes data from both the 5232 site as well as the 5221 site to allow an understanding of the changes in the groundwater flow regime that have occurred over the past five years.

Remedial measures have been undertaken at 5221 Ballard Avenue NW that consisted of enhanced bioremediation with initial injection of a calcium peroxide. As documented in prior reports and in this report, dewatering associated with a new building located north of the 5221-property resulted in dramatic decreases in groundwater levels at 5221. Subsequent to the dewatering effort, a Soil Vapor Extraction System (SVE) was placed adjacent to the UST cluster at 5221.

Remedial measures are underway at 5232 using a soil vapor extraction system placed beneath the slab of the former paint mixing operation. This remedial measure is not discussed further in this report.

To address concerns about groundwater quality, the former monitoring wells along the north margin of Shilshole Avenue NW were abandoned and replaced with wells that have deeper screens. The decreased groundwater level had left the prior wells either dry or with so little water that representative samples could not be obtained. In addition, a new well was placed along the north margin of the UST cluster at 5221 to document the groundwater flow and quality beneath the former UST cluster at 5221.

The cleanup levels for this project are summarized below. All units are µg/liter.

Benzene	Method B	0.795
Ethyl benzene	Method B	800
Toluene	Method B	640
Xylenes	Method B	1,600
TPH Gasoline	Method B	250 (based on MTCATPH11 calculations)
cPAHs	Method A	0.1
Lead	Method A	15
Ethylene Glycol	Method B	16,000

As shown in the data, the only 2 monitoring wells that have levels of hydrocarbons that exceed the project cleanup levels are Monitoring Wells MW-201 and MW-107 both associated with 5232 Shilshole Avenue NW. None of the monitoring wells associated with 5221 exceed the project cleanup levels.

6.2 Recommendations

Based on the data summarized in this report, it is our opinion that no more groundwater sampling is needed at the wells associated with the former USTs located at 5221 Ballard Avenue Northwest. There is no evidence that the residual contamination present along the southern margin of the building located at 5232 Shilshole Avenue NW is migrating towards 5221 Ballard Avenue Northwest. The wells associated with 5221 Ballard Avenue Northwest consist of Monitoring Wells MW-205 and MW-206.

Prior testing in the initial wells, Monitoring Wells MW-101 through MW-103 showed only slight exceedances of the general Method A cleanup levels and of the site-specific cleanup levels. As discussed earlier, dewatering for the construction of the adjacent hotel lowered the groundwater levels to below the screened interval. Immediately prior to the change in groundwater levels, Terra Associates, Inc. observed the injection of 770 pounds of Calcium Peroxide into the groundwater to enhance in situ bio-degradation.

Monitoring Wells MW-101 through MW-103 were then converted to SVE wells and were under vacuum for several years. None of the contaminants of concern have been found to exceed with Method A cleanup values or the lower site-specific cleanup levels for gasoline and BETX in the replacement wells, Monitoring Wells MW-205 and MW-206.

It is our opinion that the monitoring wells at 5221 Ballard Avenue Northwest may be closed. A sperate report will be submitted that addresses soil and soil vapor conditions at 5221 Ballard Ave Northwest. There are sufficient wells at the property at 5232 Shilshole Avenue NW to provide documentation of the groundwater flows and groundwater quality for that separate cleanup effort.

7.0 LIMITATIONS

This report is the copyrighted property of Terra Associates, Inc. and was prepared in accordance with generally accepted local geo-environmental engineering practices and within the limitations of time and budget. Analytical testing of samples was based on our understanding of past land uses documented in reports by others and the tax records. In the event additional information regarding site history or current site uses is found, the information should be brought to our attention, as it may affect our conclusions.

This report is intended for specific application to the 5221 Ballard Avenue NW project, and is for the exclusive use of HALCO Properties, LLC and their authorized representatives. No other warranty, expressed or implied, is made.

The analyses and recommendations presented in this report are based on information prepared by others together with data obtained from explorations advanced on the site, and analyses of groundwater samples for this study. The conclusions reached in this report are our opinions based on the previous and current explorations and analytical test data summarized and discussed in this report. Subsurface conditions may vary and seasonal variations in groundwater may occur.

Table 1
Monitoring Well Summary

Monitoring Well	Surface Elev.	Date Built	Total depth (feet)	Screen Interval	Notes	Date Closed
MW-1	26.44	2/16/1995	8	3-8	Well went dry after 8/14/2012.	9/2014
MW-2	25.98	2/16/1995	9	4-9	Well went dry after 8/14/2012.	9/2014
MW-3	26.05	2/16/1995	9	4-9	Well went dry after 8/14/2012.	9/2014
MW-4	26.21	2/16/1995	9	4-9	Well went dry after 8/14/2012.	9/2014
MW-5	26.32	2/1996?	9	4-9	Well went dry after 8/14/2012.	9/2014
MW-6	26.8	2/1996?	15.4	5.4-15.4	B-6 drilled Feb 1996, MW-6 built at a later time, no log has been found, screen information is from a video.	Still Active
MW-7	26.89	2/1996?	8	3-8	Well went dry after 8/14/2012.	Held as SVE measuring point
MW-7A	26.74	1/2019	15	5 to 15	Still Active	Active
MW-8	27.97	2/1996?	8	3-8	Well went dry after 8/14/012.	Present-dry
MW-9	30.24	2/1996?	8	3-8	Well went dry after 8/14/2012.	Present-dry
MW-10	26.48	2/1996?	7	3-7	Well went dry after 8/14/2012.	9/2014
MW-101	36.77	5/6/2011	20	10-20	Well went dry after 11/29/2011 converted to SVE well.	1/2016
MW-102	36.35	5/6/2011	20	10-20	Well went dry after 11/29/2011 converted to SVE well.	1/2016
MW-103	36.13	5/6/2011	20	10-20	Well went dry after 11/29/2011 converted to SVE well.	1/2016
MW-104	28.23	6/13/2011	15	5-15	Well went dry after 11/29/2011	Present-dry
MW-105	36+/-	2/8/2013	21.5	10-20	SVE well	1/2016
MW-106	36+/-	2/18/2013	20	10-20	SVE well	1/2016
MW-107	25.96	3/27/2013	18.5	7-17	Still Active	Active
MW-108	30.34	1/18/2016	22.5	12.5-22.5	Still Active	Active
MW-109	26.79	1/18/2016	20	10-20	Still Active	Active
MW-201	28	9/10/2014	28	18-28	Still Active	Active
MW-202	26.85	9/10/2014	21	11-21	Still Active	Active
MW-203	26.02	9/11/2014	21.5	10-20	Still Active	Active
MW-204	26.15	9/11/2014	21.5	10-20	Still Active	Active
MW-205	38.23	11/13/2014	46.5	34-44	Still Active	Active
MW-206	36.20	5/25/2018	30	20-30	Still Active	Active

Table 2
Groundwater Measurements

Monitoring Well	Surface Elev.	MP Elev.	4-29-2011		5-6-2011		5-10-2011		6-29-2011		9-29-2011		10-17-2011		11-18-2011		11-29-2011	
			Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.
MW-1	26.44	26.11	4.6	21.51	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	4.78	21.33
MW-2	25.98	25.98	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	5.75	20.23
MW-3	26.05	26.05	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-4	26.21	25.90	4.89	21.01	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	5.26	20.64
MW-5	26.32	26.32	4.92	21.40	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-6	26.8	26.34	4.63	21.71	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	4.71	21.63
MW-7	26.89	26.60	3.38	23.22	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	3.09	23.51
MW-8	27.97	27.51	3.52	23.99	NM	NM	NM	NM	NM	NM	5.22	22.29	NM	NM	NM	NM	3.72	23.79
MW-9	30.24	29.99	4.77	25.22	NM	NM	NM	NM	NM	NM	7.39	22.60	NM	NM	NM	NM	4.99	25.00
MW-10	26.48	26.16	5.8	20.36	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	6	20.16
MW-101	36.77	36.37	NM	NM	10.3	26.07	11.63	24.74	11.50	24.87	15.68	20.69	17.19	19.18	10.45	25.92	10.78	25.59
MW-102	36.35	35.93	NM	NM	10.25	25.68	11	24.93	10.86	25.07	15.78	20.15	17.32	18.61	9.81	26.12	10.08	25.85
MW-103	36.13	35.79	NM	NM	10.25	25.54	10.86	24.93	10.54	25.25	16.83	18.96	18.54	17.25	9.38	26.41	9.74	26.05
MW-104	28.23	27.98	NM	NM	NM	NM	3.55	24.43	NM	NM	6.83	21.15	NM	NM	NM	NM	2.76	25.22

Table 2 (continued)
Groundwater Measurements

Monitoring Well	Surface Elev.	MP Elev.	5-2-2012		8-14-2012		7-11-2013		9-27-2013		2-26-2014		9-24-2014		11-7-2014		2-20-2015	
			Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.
MW-1	26.44	26.11	NM	NM	7.52	18.59	Dry		Closed		Closed		7.3	18.81				
MW-2	25.98	25.98	NM	NM	6.88	19.10	6.25	19.73	Closed		Closed				19.73	19.73		
MW-3	26.05	26.05	NM	NM	7.07	18.98	Dry		Closed		Closed		6.89	19.16				
MW-4	26.21	25.90	NM	NM	NM	NM	7.78	18.12	Closed		Closed		6.95	18.95	18.12	18.12		
MW-5	26.32	26.32	NM	NM	NM	NM	dry		Closed		Closed							
MW-6	26.8	26.34	NM	NM	5.87	20.47	7.65	18.69	NM		NM		6.91	19.43	18.69	18.69	NM	NM
MW-7	26.89	26.60	NM	NM	>8	<18.60	Dry		Dry		NM		>8	<18.60			Dry	
MW-8	27.97	27.51	>8	<18.60	NM	NM	Dry		Dry		NM		NM	NM				
MW-9	30.24	29.99	>8	<19.51	NM	NM	Dry		Dry		NM		NM	NM				
MW-10	26.48	26.16	NM	NM	NM	NM	Dry		Closed		Closed		7.7	18.46				
MW-101	36.77	36.37	>20	<16.37	NM	NM	NM		Dry		Dry		NM	NM	Dry		Closed	
MW-102	36.35	35.93	>20	<15.93	NM	NM	NM		Dry		Dry		NM	NM	Dry		Closed	
MW-103	36.13	35.79	>20	<15.79	NM	NM	NM		Dry		Dry		NM	NM	Dry		Closed	
MW-104	28.23	27.98	>15	<12.98	NM	NM	NM		Dry		Dry		>15	<12.98	Dry		Closed	
MW-105	SVE Well-dry during drilling. Under vacuum 2-28-13 to 2-24-15						NM		Dry		Dry				Dry		Closed	
MW-106	SVE Well-dry during drilling. Under vacuum 2-28-13 to 2-24-15						NM		Dry		Dry				Dry		Closed	
MW-107	25.96	25.66					7.62	18.08	NM	NM	8.03	18.17	7.53	18.17	18.08	18.08	7.56	18.64
MW-201	28	27.63							15.36	12.52	13.29	14.59	NM	NM	NM	NM	13.24	14.64
MW-202	26.85	26.52							9.57	17.1	9.37	17.3	NM	NM	NM	NM	8.63	18.04
MW-203	26.02	25.69							8.62	17.55	8.93	17.24	NM	NM	NM	NM	8.19	17.98
MW-204	26.15	25.89							8.47	17.77	8.52	17.72	NM	NM	NM	NM	7.95	18.29
MW-205	38.23	37.98	Well built on November 3, 2014														22.77	13.11

Table 2 (continued)
Groundwater Measurements

Monitoring Well	Surface Elev.	MP Elev.	5/27/2015		6/17/2015		7/14/2015		2/5/2016		8/29/2016		11/17/2016		3/23/2018	
			Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.
MW-6	26.8	26.34	7.43	18.91	7.74	18.60	8.2	18.14	5.84	20.34	8.1	18.08	5.79	20.39	6.68	19.50
MW-7	26.89	26.60	Dry		Dry	< 18.41			Dry		Dry		Dry		Dry	
MW-8	27.97	27.51	Dry		Dry	<20.56			Dry		Dry		Dry		Dry	
MW-9	30.24	29.99	Dry		Dry	<21.74			Dry		Dry		Dry		Dry	
MW-104	28.23	27.98	Dry		Dry				Dry		Dry		Dry		Dry	
MW-107	25.96	25.66	7.45	18.75			8.2	18	6.65	19.01	8.35	17.31			6.78	18.88
MW-108	30.34	30.04							11.73	18.31	13.8	16.24	11.73	18.31	11.98	18.06
MW-109	26.79	26.49									9.79	16.7	8.75	17.74	8.64	17.85
MW-201	28	27.63	12.7	15.18			12.47	15.41	11.19	16.44	12.4	15.23	11.19	16.44	11.20	16.43
MW-202	26.85	26.52	8.76	17.91			9.39	17.28	7.8	18.72	9.48	17.04	7.8	18.72	8.29	18.23
MW-203	26.02	25.69	8.6	17.57			8.72	17.45	7.97	17.72	9	16.69	8.12	17.57	6.57	19.12
MW-204	26.15	25.89	8.96	17.28			8.73	17.51	7.62	18.27	9.15	16.74	8	17.89	6.57	19.32
MW-205	38.23	37.98	22.9	12.98			23.06	12.82	NM	NM	22.88	15.1	22.61	15.37	22.67	15.31

Table 2 (continued)
Groundwater Measurements

Monitoring Well	Surface Elev.	MP Elev.	6/1/2018		3/8/2019		7/30/2019		10/30/2019		1/30/2020	
			Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.
MW-6	26.8	26.34	7.13	19.05	6.95	19.23	8.56	17.62	8.63	17.55	5.87	20.31
MW-7	26.89	26.60	Dry		Dry		Dry		Dry		Dry	
MW-7A	26.74	26.34	Built in February 2018		8.72	17.62	9.23	17.11	9.51	16.83	8.14	18.2
MW-8	27.97	27.51	Dry		Dry		Dry		Dry		Dry	
MW-9	30.24	29.99	Dry		Dry		Dry		Dry		Dry	
MW-104	28.23	27.98	Dry		Dry		Dry		Dry		Dry	
MW-107	25.96	25.66			6.63	19.03	7.76	17.9	7.58	18.08	6.18	19.48
MW-108	30.34	30.04	12.47	17.57	12.15	17.89	12.97	17.07	12.47	17.57	11.27	18.77
MW-109	26.79	26.49	8.26	18.23	8.52	17.97	8.88	17.61	8.78	17.71	8.34	18.15
MW-201	28	27.63	11.27	16.36	11.28	16.35	12.7	14.93	11.72	15.91	10.24	17.39
MW-202	26.85	26.52	10.9	15.62	8.29	18.23	8.92	17.6	8.59	17.93	8.22	18.30
MW-203	26.02	25.69	8.24	17.45	8.03	17.66	8.03	17.66	8.21	17.48	7.93	17.76
MW-204	26.15	25.89	8.46	17.43	7.63	18.26	9.23	16.66	8.34	17.55	7.75	18.14
MW-205	36.03	35.78	22.32	13.46	22.3	13.48	22.58	13.2	22.59	13.19	22.29	13.49
MW-206	36.2	35.87	22.03	13.84	22.13	13.74	22.48	13.39	22.5	13.37	22.03	13.84

Notes: MP is the north side of the top of the PVC casing within the surface monument.
Ground surface elevations are from a survey by Jim Hart and Associates.
NM indicates that the well was not measured or was inaccessible on the day of the field work.
Closed indicates wells that have been permanently abandoned in accordance with state regulations.
The wellhead for MW-205 was changed during placement of the final concrete for the driveway and was resurveyed to obtain current top of casing prior to the June 1, 2018 site visit.

Table 3
Static Water Elevation for MW-6 from all Data

MW-6	**Date**	**01/30/1996**	**09/11/1996**	**10/10/1998**	**09/25/2002**	**11/14/2003**	**04/29/2011**	**06/29/2011**	**08/14/2012**	**7/11/2013**	**9/27/2013**	**2/26/2014**	**5/27/2015**	**6/17/2015**	**7/14/2015**	**2/5/2016**	**8/29/2016**
	SWL Elev.	21.77	22.86	23.03	21.48	22.72	21.71	21.63	20.47	19.43	18.69	19.2	18.75	18.44	17.98	20.34	18.08
	Date	**11/17/2016**	**3/23/2018**	**6/1/2018**	**3/8/2019**	**7/30/2019**	**10/30/2019**	**1/30/2020**	**4/21/2020**								
	SWL Elev.	20.39	19.50	19.05	19.23	17.62	17.55	20.31	19.5								

Notes: Measurements prior to 2011 are by others. Chart 1 on Figure 5 is a graphical presentation of this data.

Table 4
Total Petroleum Hydrocarbons
Groundwater

Well Number	Date	TPH Diesel Range	TPH Oil Range	TPH Gas Range	Benzene	Ethyl Benzene	Toluene	m,p Xylene	o Xylene
Units		mg/liter	mg/liter	mg/liter	µg/liter	µg/liter	µg/liter	µg/liter	µg/liter
MW-1	11/27/1995	NT	NT	24,000	**930**	550	**41,000**	**855,000**	
	6/20/1996	NT	NT	210	**8.5**	**14,000**	300	**14,000**	
	9/11/1996	NT	NT	190	ND	**13,000**	ND	**58,000**	
	12/10/1996	NT	NT	190	**7.0**	**14,000**	270	**64,000**	
	4/3/1997	NT	NT	190	**7.6**	**13,000**	260	**51,000**	NT
	1/31/1998	NT	NT	310	ND	**15,000**	230	**70,000**	
	10/10/2000	1.1	0.95	410	1.0U	**16,000**	120	**70,100**	
	9/25/2002	0.91	0.5U	34	**10U**	**11,000**	26	**19,000**	**3,900**
	11/14/2003	11		18	5.0U	**1,700**	80	**5,500**	
	6/21/2006	0.5U	0.5U	NR	ND	240	1	280	
	12/15/2006	ND	ND	ND	ND	**2,900**	29	11,000	
	1/18/2007	ND	ND	ND	ND	150	ND	440	
	6/12/2007	ND	ND	5.8	10U	**800**	10U	**2,500**	
	10/22/2007	NR	ND	2.4	10U	**825**	10U	**2,700**	
	3/19/2008	ND	ND	2.7	10U	**700**	10U	**1,900**	
	6/20/2008	NT	NT	0.5U	1.0U	40	1.0U	130	
	12/30/2008	NT	NT	312	0.56	27	2.0U	47	
	6/2009	NT	NT	8.7	1.0U	460	1.0U	1,800	
	10/2009	NT	NT	11.3	10U	825	10U	2,700	
	2/2010	NT	NT	10.0	10U	700	10U	1,900	
	7/27/2010	0.5U	0.5U	1.2	1.0U	40	1.0U	130	
	4/29/2011	0.3U	0.41U	1.1	0.56	27	2.0U	47	
	8/14/2012	0.38U	0.41U	4.9	1.0U	460	1.0U	1,800	
	7/11/2013	1.4	0.41U	2.3	0.53	32	1.0U	210	
	MW-1 abandoned due to lower groundwater levels in September 2014, see replacement Monitoring Well MW-204.								

Table 4 (continued)
Total Petroleum Hydrocarbons
Groundwater

Well Number	Date	TPH Diesel Range	TPH Oil Range	TPH Gas Range	Benzene	Ethyl Benzene	Toluene	m,p Xylene	o Xylene
	Units	mg/liter	mg/liter	mg/liter	µg/liter	µg/liter	µg/liter	µg/liter	
MW-2	11/27/1995	NT	NT	ND	ND	6.6	ND	27	
	6/20/1996	NT	NT	1.1	NT	NT	NT	NT	NT
	9/11/1996	NT	NT	0.9	ND	79	23	379	
	12/10/1996	NT	NT	0.9	ND	1.1	ND	2.3	
	4/3/1997	NT	NT	0.1U	ND	ND	3.2	ND	
	1/31/1998	NT	NT	ND	ND	ND	ND	ND	
	10/10/2000	NT	NT	0.13	1.0U	1.0U	36	1.0U	NT
	9/25/2002	NT	NT	0.5U	5.0U	5.0U	5.0U	5.0U	
	11/14/2003	NT	NT	0.25U	5.0U	5.0U	5.0U	15U	
	6/21/2006	0.5U	X	0.25U	NT	NT	NT	NT	NT
	12/15/2006	ND	ND	ND	NT	NT	NT	NT	NT
	1/18/2007	ND	NR	ND	NT	NT	NT	NT	NT
	6/12/2007	ND	NR	ND	NT	NT	NT	NT	NT
	10/22/2007	NR	NR	ND	NT	NT	NT	NT	NT
	3/19/2008	ND	ND	ND	NT	NT	NT	NT	NT
	6/20/2008	NT	NT	0.05U	NT	NT	NT	NT	NT
	12/30/2008	NT	NT	ND	ND	ND	ND	ND	
	7/27/2010	0.47	1.2	0.2U	NT	NT	NT	NT	NT
	2/26/2014	5.1U	16	0.1U	1.0U	1.0U	1.0U	1.0U	1.0U
	MW-2 abandoned due to lower groundwater levels in September 2014-see replacement well MW-203.								

Table 4 (continued)
Total Petroleum Hydrocarbons
Groundwater

Well Number	Date	TPH Diesel Range	TPH Oil Range	TPH Gas Range	Benzene	Ethyl Benzene	Toluene	m,p Xylene	o Xylene
MW-3	Units	mg/liter	mg/liter	mg/liter	µg/liter	µg/liter	µg/liter	µg/liter	µg/liter
	11/27/1995	NT	NT	ND	ND	ND	ND	ND	ND
	1/31/1998	NT	NT	ND	ND	ND	ND	ND	ND
	10/10/2000	NT	NT	ND	1.0U	1.0U	1.0U	1.0U	1.6
	9/25/2002	NT	NT	0.05U	1.0U	1.0U	1.0U	1.0U	1.0U
	11/14/2003	NT	NT	0.05U	1.0U	1.0U	1.0U	1.0U	3.0U
	6/26/2006	0.5U	0.5U	0.25U	NT	NT	NT	NT	NT
	12/15/2006	0.65	ND	ND	NT	NT	NT	NT	NT
	1/18/2007	ND	NR	ND	NT	NT	NT	NT	NT
	6/12/2007	ND	ND	ND	NT	NT	NT	NT	NT
	10/22/2007	ND	ND	ND	NT	NT	NT	NT	NT
	3/19/2008	ND	ND	ND	NT	NT	NT	NT	NT
	6/20/2008	NT	NT	0.052	NT	NT	NT	NT	NT
	12/30/2008	NT	NT	ND	NT	NT	NT	NT	NT
	7/27/2010	0.5U	0.5U	0.2U	NT	NT	NT	NT	NT
	8/14/2012	0.26U	0.41U	0.1U	1.0U	1.0U	1.0U	3.2	1.0U
	7/11/2013			0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	MW-3 abandoned due to lower groundwater levels in September 2014.								

Table 4 (continued)
Total Petroleum Hydrocarbons
Groundwater

Well Number	Date	TPH Diesel Range	TPH Oil Range	TPH Gas Range	Benzene	Ethyl Benzene	Toluene	m,p Xylene	o Xylene
MW-4	Units	mg/liter	mg/liter	mg/liter	µg/liter	µg/liter	µg/liter	µg/liter	
	11/27/1995	NT	NT	78	4.0	4,600	40	20,800	
	1/31/1998	NT	NT	14	ND	1,300	3.0	3,075	
	10/10/2000	NT	NT	0.68	1.0U	37	1.0U	30	NT
	9/25/2002	NT	NT	0.11	1.0U	3.0	1.0U	16	
	11/14/2003	NT	NT	0.05U	1.0U	1.0U	1.0U	3.0U	
	6/21/2006	0.5U	0.5U	0.25U	NT	NT	NT	NT	NT
	12/15/2006	ND	ND	ND	NT	NT	NT	NT	NT
	1/18/2007	ND	ND	ND	NT	NT	NT	NT	NT
	6/12/2007	ND	ND	0.11	ND	1.0	ND	6	
	10/22/2007	NR	ND	ND	NT	NT	NT	NT	NT
	3/19/2008	ND	ND	ND	NT	NT	NT	NT	NT
	6/20/2008	NT	NT	1.57	NT	NT	NT	NT	NT
	12/30/2008	NT	NT	ND	NT	NT	NT	NT	NT
	7/27/2010	0.5U	0.5U	0.2U	NT	NT	NT	NT	NT
	7/11/2013	0.38	0.41U	0.19	0.5U	1.3	1.0	12	1.0U
	9/27/2013	0.32	0.41U	0.16	0.5U	1.0U	1.0U	1.1	1.0U
	MW-4 abandoned due to lower groundwater levels in September 2014.								

Table 4 (continued)
Total Petroleum Hydrocarbons
Groundwater

Well Number	Date	TPH Diesel Range	TPH Oil Range	TPH Gas Range	Benzene	Ethyl Benzene	Toluene	m,p Xylene	o Xylene
MW-5	Units	mg/liter	mg/liter	mg/liter	µg/liter	µg/liter	µg/liter	µg/liter	
	11/27/1995	NT	NT	28	4.0	1,500	11	7,400	
	1/31/1998	NT	NT	1.1	ND	38	5.1	211	
	10/10/2000	NT	NT	0.2	1.1	1	1.0U	4.9	NT
	9/25/2002	NT	NT	0.25U	5.0U	5.0U	5.0U	7.0	
	11/14/2003	NT	NT	0.05U	1.0U	1.0U	1.0U	3.0U	
	12/15/2006	ND	ND	ND	NT	NT	NT	NT	NT
	1/18/2007	ND	ND	ND	NT	NT	NT	NT	NT
	6/12/2007	ND	ND	ND	NT	NT	NT	NT	NT
	10/22/2007	NR	NR	ND	NT	NT	NT	NT	NT
	3/19/2008	ND	ND	ND	NT	NT	NT	NT	NT
	6/20/2008	NT	NT	0.05U	NT	NT	NT	NT	NT
	12/30/2008	NT	NT	ND	NT	NT	NT	NT	NT
	7/27/2010	0.5U	0.5U	0.2U	NT	NT	NT	NT	NT
	MW-5 abandoned due to lower groundwater levels in September 2014.								

Table 4 (continued)
Total Petroleum Hydrocarbons
Groundwater

Well Number	Date	TPH Diesel Range	TPH Oil Range	TPH Gas Range	Benzene	Ethyl Benzene	Toluene	m,p Xylene	o Xylene
MW-6	Units	mg/liter	mg/liter	mg/liter	µg/liter	µg/liter	µg/liter	µg/liter	
	1/29/1996	NT	NT	0.68	3.5	2.5	ND	112	
	1/31/1998	NT	NT	NT	3.7	ND	ND	1.7	
	10/10/2000	NT	NT	0.84	1.9	1.0U	1.0U	1.7	NT
	9/25/2002	NT	NT	0.25U	5.0U	5.0U	5.0U	8.0	
	11/14/2003	NT	NT	0.05U	1.0U	1.0U	1.0U	3.0U	
	6/26/2006	0.5U	0.5U	0.25U	NT	NT	NT	NT	NT
	12/15/2006	ND	ND	ND	NT	NT	NT	NT	NT
	1/18/2007	ND	ND	0.29	16	ND	69	16	
	6/12/2007	NR	ND	0.32	ND	ND	ND	ND	
	10/22/2007	NR	NR	ND	NT	NT	NT	NT	NT
	3/19/2008	ND	ND	ND	NT	NT	NT	NT	NT
	6/20/2008	NT	NT	0.147	NT	NT	NT	NT	NT
	12/30/2008	NT	NT	0.12	NT	NT	NT	NT	NT
	7/27/2010	0.5U	0.5U	0.11	1.0U	1.0U	1.0U	3.0U	
	4/28/2011	0.26U	0.41U	0.16	0.2U	0.2U	1.0U	0.4U	0.2U
	8/14/2012	0.26U	0.41U	0.1U	1.0U	1.0U	1.0U	1.0U	1.0U
	7/11/2013	0.37	0.41U	0.16	0.5U	2.3	1.0U	21	1.0U
	9/27/2013	0.29	0.41U	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	2/26/2014	0.26U	0.41U	0.1U	1.0U	1.0U	1.0U	1.0U	1.0U
	5/27/2015	0.27	0.41U	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	2/5/2016	0.29	0.41U	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	3/8/2019	NT	NT	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	7/31/2019	0.26U	0.42U	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	10/30/2019	0.2U	0.28	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	1/31/2020	0.2U	0.25	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U

Table 4 (continued)
Total Petroleum Hydrocarbons
Groundwater

Well Number	Date	TPH Diesel Range	TPH Oil Range	TPH Gas Range	Benzene	Ethyl Benzene	Toluene	m,p Xylene	o Xylene
	Units	mg/liter	mg/liter	mg/liter	µg/liter	µg/liter	µg/liter	µg/liter	
MW-7	1/29/1996	NT	NT	61	2.0	**3,500**	340	**3,200**	
	6/20/1996	NT	NT	16	NT	NT	NT	NT	NT
	9/11/1996	NT	NT	9.0	NT	NT	NT	NT	NT
	12/10/1996	NT	NT	15	NT	NT	NT	NT	NT
	4/3/1997	NT	NT	17	NT	NT	NT	NT	NT
	1/31/1998	NT	NT	31	**1,600**	1.6	486	**1,600**	
	10/10/2000	NT	NT	4.3	190	1.0U	360	190	
	9/25/2002	NT	NT	0.89	140	5.0U	130	140	
	11/14/2003	NT	NT	0.72	130	5.0U	210		130
	6/21/2006	0.5U	0.5U	0.25U	NT	NT	NT	NT	NT
	1/18/2007	ND	ND	0.077	ND	4.0	ND	69	
	6/12/2007	ND	ND	ND	ND	ND	ND	ND	
	10/22/2007	NR	ND	2.4	NT	NT	NT	NT	NT
	3/19/2008	ND	ND	0.3	ND	ND	ND	ND	
	6/20/2008	NT	NT	0.13	NT	NT	NT	NT	NT
	12/30/2008	NT	NT	ND	NT	NT	NT	NT	NT
	7/27/2010	0.5U	0.5U	0.2U	NT	NT	NT	NT	NT
	4/28/2011	0.26U	0.41U	0.1U	0.2U	0.32	1.0U	0.4U	0.2U
MW-7A	3/8/2019	NT	NT	0.14	0.5	8.0	1.0U	1.0U	1.0U
	8/6/2019	NT	NT	0.12	0.5U	4.2	1.0U	1.0U	1.0U
	10/30/2019	NT	NT	0.1U	0.5U	2.1	1.0U	1.0U	1.0U
	1/31/2020	NT	NT	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U

Table 4 (continued)
Total Petroleum Hydrocarbons
Groundwater

Well Number	Date	TPH Diesel Range	TPH Oil Range	TPH Gas Range	Benzene	Ethyl Benzene	Toluene	m,p Xylene	o Xylene
MW-8	Units	mg/liter	mg/liter	mg/liter	µg/liter	µg/liter	µg/liter	µg/liter	
	1/29/1996	NT	NT	ND	ND	ND	ND	1.0	
	6/20/1996	NT	NT	0.1U	NT	NT	NT	NT	NT
	9/11/1996	NT	NT	0.1U	ND	ND	ND	ND	
	12/10/1996	NT	NT	0.1U	NT	NT	NT	NT	NT
	4/3/1997	NT	NT	0.1U	NT	NT	NT	NT	NT
	1/31/1998	NT	NT	ND	ND	ND	ND	ND	
	10/10/2000	NT	NT	0.1U	1.0U	1.0U	1.0U	1.0U	NT
	9/25/2002	NT	NT	0.05U	1.0U	1.0U	1.0U	3.0	
	11/14/2003	NT	NT	0.05U	1.0U	1.0U	1.0U	3.0U	
	6/21/2006	0.5U	0.5U	0.25U	NT	NT	NT	NT	NT
	12/15/2006	ND	ND	ND	NT	NT	NT	NT	NT
	1/18/2007	ND	ND	ND	NT	NT	NT	NT	NT
	6/12/2007	ND	ND	ND	ND	ND	ND	ND	
	10/22/2007	ND	ND	ND	NT	NT	NT	NT	NT
	3/19/2008	ND	ND	ND	NT	NT	NT	NT	NT
	6/20/2008	NT	NT	0.05U	NT	NT	NT	NT	NT
	12/30/2008	NT	NT	ND	NT	NT	NT	NT	NT
	7/27/2010	0.5U	0.5U	0.2U	NT	NT	NT	NT	NT

Table 4 (continued)
Total Petroleum Hydrocarbons
Groundwater

Well Number	Date	TPH Diesel Range	TPH Oil Range	TPH Gas Range	Benzene	Ethyl Benzene	Toluene	m,p Xylene	o Xylene
	Units	mg/liter	mg/liter	mg/liter	µg/liter	µg/liter	µg/liter	µg/liter	
MW-9	1/29/1996	NT	NT	ND	ND	ND	ND	1.0	
	6/20/1996	NT	NT	0.1U	NT	NT	NT	NT	NT
	9/11/1996	NT	NT	0.1U	ND	ND	ND	ND	
	12/10/1996	NT	NT	0.1U	NT	NT	NT	NT	NT
	4/3/1997	NT	NT	0.1U	ND	ND	ND	ND	ND
	1/31/1998	NT	NT	ND	ND	ND	ND	ND	ND
	10/10/2000	NT	NT	0.1U	1.0U	1.0U	1.0U	1.0U	1.0U
	9/25/2002	NT	NT	0.05U	1.0U	1.0U	1.0U	2.0	
	11/14/2003	NT	NT	0.05U	1.0U	1.0U	1.0U	3.0U	
	1/18/2007	ND	ND	ND	NT	NT	NT	NT	NT
	6/12/2007	ND	ND	ND	NT	NT	NT	NT	NT
	10/22/2007	ND	ND	ND	NT	NT	NT	NT	NT
	3/19/2008	ND	ND	ND	NT	NT	NT	NT	NT
	6/20/2008	NT	NT	0.05	NT	NT	NT	NT	NT
	12/30/2008	NT	NT	ND	NT	NT	NT	NT	NT
	7/27/2010	0.5U	0.5U	0.2U	NT	NT	NT	NT	NT

Table 4 (continued)
Total Petroleum Hydrocarbons
Groundwater

Well Number	Date	TPH Diesel Range	TPH Oil Range	TPH Gas Range	Benzene	Ethyl Benzene	Toluene	m,p Xylene	o Xylene
	Units	mg/liter	mg/liter	mg/liter	µg/liter	µg/liter	µg/liter	µg/liter	
MW-10	1/29/1996	NT	NT	0.93	ND	62	ND	39.7	
	6/20/1996	NT	NT	1.1	NT	NT	NT	NT	NT
	9/11/1996	NT	NT	0.58	ND	43	ND	171	
	12/10/1996	NT	NT	0.1U	ND	ND	ND	1.2	
	4/3/1997	NT	NT	0.1U	ND	2.1	ND	5.2	
	1/31/1998	NT	NT	ND	ND	ND	ND	ND	
	10/10/2000	NT	NT	ND	1.0U	1.0U	1.0U	1.0U	NT
	9/25/2002	NT	NT	0.05U	1.0U	1.0U	1.0U	2.0	
	11/14/2003	NT	NT	0.05U	1.0U	1.0U	1.0U	3.0U	
	12/15/2006	ND	ND	ND	NT	NT	NT	NT	NT
	6/12/2007	ND	ND	ND	NT	NT	NT	NT	NT
	10/22/2007	ND	ND	ND	NT	NT	NT	NT	NT
	3/19/2008	ND	ND	ND	NT	NT	NT	NT	NT
	6/20/2008	NT	NT	0.05U	NT	NT	NT	NT	NT
	12/30/2008	NT	NT	ND	NT	NT	NT	NT	NT
	7/27/2010	0.5U	0.5U	0.2U	NT	NT	NT	NT	NT
	7/11/2013	NT	NT	0.1U	0.5U	1.8	1.0U	16	1.0U
MW-10 abandoned due to lower groundwater levels in September 2014.									

Table 4 (continued)
Total Petroleum Hydrocarbons
Groundwater

Well Number	Date	TPH Diesel Range	TPH Oil Range	TPH Gas Range	Benzene	Ethyl Benzene	Toluene	m,p Xylene	o Xylene
	Units	mg/liter	mg/liter	mg/liter	µg/liter	µg/liter	µg/liter	µg/liter	
MW-101	5/10/2011	0.26U	0.41U	0.16	1.3	0.95	1.0U	1.5	0.2U
	9/29/2011	0.26U	0.42U	0.29	2.8	1.2	1.0U	0.4U	0.2U
MW-101 went dry after sept 29, 2011 and was converted to an SVE well. MW-101 was abandoned									
MW-102	5/10/2011	0.27U	0.41U	0.5U	0.2U	0.2U	1.0U	0.4U	0.2U
	9/29/2011	0.26U	0.41U	0.59	0.2U	0.2U	1.0U	0.4U	0.2U
MW-102 went dry after sept 29, 2011 and was converted to an SVE well. MW-101 was abandoned									
MW-103	5/10/2011	0.7U	0.42U	0.94	0.2U	0.2U	1.0U	0.4U	0.2U
	9/29/2011	0.26U	0.41U	0.27	0.2U	0.2U	1.0U	0.4U	0.2U
MW-103 went dry after sept 29, 2011 and was converted to an SVE well. MW-101 was abandoned									
MW-104	6/29/2011	0.41U	0.26U	0.1U	0.27	0.2U	1.0U	0.4U	0.2U
	9/29/2011	0.26U	0.41U	0.1U	0.21	0.2U	1.0U	0.4U	0.2U
MW-104 went dry after September 29, 2011. This well has remained dry.									

Table 4 (continued)
Total Petroleum Hydrocarbons
Groundwater

Well Number	Date	TPH Diesel Range	TPH Oil Range	TPH Gas Range	Benzene	Ethyl Benzene	Toluene	m,p Xylene	o Xylene
	Units	mg/liter	mg/liter	mg/liter	µg/liter	µg/liter	µg/liter	µg/liter	µg/liter
MW-107	4/12/2013	0.59U	6.900	6.9	1.0U	1,100	4.5	4,000	1,100
	7/11/2013	0.27	0.1U	0.1U	0.5U	1.0U	1.0U	3.4	1.0U
	10/1/2013	0.69	6.8	6.8	0.5U	1500	4.3	5300	6800
	2/28/2014	0.28U	0.84	0.32	1.0U	84	1.0U	150	39
	2/20/2015	0.35	0.46U	0.1U	1.0U	1.0U	1.0U	1.0U	1.0U
	5/27/2015	0.31	0.41U	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	2/5/2016	0.31	0.41U	0.73	0.5U	1.2	1.0U	130	1.0U
	3/8/2019	0.25U	0.4U	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	7/31/2019	0.25U	0.4U	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	10/30/2019	0.31	0.43	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	11/12/2019	0.42	0.61	NT	NT	NT	NT	NT	NT
	1/31/2020	0.65 (0.2U)	0.42 (0.2U)	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
MW-108	2/5/2016	0.25U	0.41U	0.1U	0.5U	2.4	1.0U	6.4	1.0U
	3/8/2019	NT	NT	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	7/31/2019	0.26U	0.41U	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	10/30/2019	0.2U	0.2U	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	1/31/2020	0.21U (0.21U	0.21U(0.21U)	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
MW-109	2/5/2019	0.26U	0.41U	0.1U	1.0U	1.0U	1.0U	1.0U	1.0U
	3/8/2019	NT	NT	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	7/31/2019	NT	NT	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	10/30/2019	NT	NT	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	1/31/2020	NT	MT	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U

Table 4 (continued)
Total Petroleum Hydrocarbons
Groundwater

Well Number	Date	TPH Diesel Range	TPH Oil Range	TPH Gas Range	Benzene	Ethyl Benzene	Toluene	m,p Xylene	o Xylene
	Units	mg/liter	mg/liter	mg/liter	µg/liter	µg/liter	µg/liter	µg/liter	µg/liter
MW-201	9/24/2014	NT	NT	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	2/20/2015	0.26U	0.41U	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	5/27/2015	NT	NT	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	2/5/2016	NT	NT	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	3/8/2019	NT	NT	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	7/31/2019	NT	NT	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	10/30/2019	NT	NT	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	1/31/2020	NTNT		0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
MW-202	9/24/2014	NT	NT	0.38	0.05U	51	6.3	46	44
	2/20/2015	0.7	0.44U	42	4.6	3,900	31	9,200	1,900
	5/27/2015	0.39	0.41U	7.8	1.4	1,600	3.8	3,400	570
	2/5/2016	0.57	0.41	31.0	3.4	3,100	7.0	8,200	900
	3/8/2019	NT	NT	40.0	4.3	5,100	17	16,000	1,600
	8/6/2019	NT	NT	33.0	2.8	2,000	4.9	9,400	840
	10/30/2019	NT	NT	19.0	2.1	2,100	3.9	7,500	520
	1/31/2020	0.21U	0.21U	15	1.5	1,100	1.0U	4,000	110

Table 4 (continued)
Total Petroleum Hydrocarbons
Groundwater

Well Number	Date	TPH Diesel Range	TPH Oil Range	TPH Gas Range	Benzene	Ethyl Benzene	Toluene	m,p Xylene	o Xylene
	Units	mg/liter	mg/liter	mg/liter	µg/liter	µg/liter	µg/liter	µg/liter	µg/liter
MW-203	9/24/2014	0.26U	0.42U	0.1U	0.5U	3.8	1.0U	1.7	1.0
	2/20/2015	0.29U	0.47U	0.15	0.5U	18	1.0U	20	1.4
	5/27/2015	0.26U	0.41U	0.1U	0.5U	21	1.0U	1.0U	1.0U
	2/5/2016	0.26U	0.41U	0.1U	0.5U	2.3	1.0U	1.0U	1.0U
	3/8/2019	NT	NT	0.1U	0.1U	1.0U	1.0U	1.0U	1.0U
	7/31/2019	NT	NT	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	10/30/2019	NT	NT	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	1/31/2020	NT	NT	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
MW-204	9/24/2014	0.47	0.41U	0.16	0.5U	1.0U	1.0U	1.0U	1.0U
	2/20/2015	0.43	0.45U	0.17	0.5U	3.2	1.0U	8.5	1.5
	5/27/2015	0.26U	0.41U	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	2/5/2016	0.44	0.41U	0.16	0.5U	1.0U	1.0U	6.4	1.0U
	3/8/2019	NT	NT	0.1U	1.0U	1.0U	1.0U	1.0U	1.0U
	7/31/2019	NT	NT	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	10/30/2019	NT	NT	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	1/31/2020	NT	NT	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
MW-205	11/25/2014	NT	NT	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	2/20/2015	0.28U	0.44U	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	5/27/2015	NT	NT	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	3/8/2019	0.25U	0.4U	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	8/6/2019	0.25U	0.4U	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	10/30/2019	0.21U	0.21U	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	1/31/2020	NT	NT	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
MW-206	3//8/2019	0.25U	0.4U	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	7/31/2019	0.25U	0.4U	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	10/30/2019	0.27	0.2U	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
	1/31/2020	NT	NT	0.1U	0.5U	1.0U	1.0U	1.0U	1.0U
MTCA Method A		0.5	0.5	0.8 (1.0)	5.0	700	1,000	1,000	
Project Remediation Levels		0.5	0.5	0.25	0.795	800	640	1,600	

Notes: TPH values are reported in mg/liter, BETX values are reported in µg/liter.
U modifier indicates that the analyte was not present at the stated practical quantitation limit (PQL).
NT indicates that the sample was not tested for the individual analyte.

Table 5
Volatile Organic Compounds
Groundwater

Well Number	Date	Vinyl Chloride	1,1-Dichlroethane	(cis) 1,2-Dichloroehtene	Trichloroethylene	Tetrachloroethylene
MW-1	9/23/2020	10U	10U	10U	10U	10U
	4/29/2011	0.4U	0.4U	0.4U	0.4U	0.4U
MW-6	4/29/2011	0.2U	0.20	0.2U	0.2U	0.22
MW-7	4/29/2011	0.2U	0.2U	0.39	0.22	0.27
MW-101	5/10/2011	0.2U	0.49	0.39	0.2U	0.2U
MW-102	5/10/2011	0.2U	0.2U	0.2U	0.2U	0.2U
MW-103	5/10/2011	0.2U	0.2U	0.2U	0.2U	0.2U
MW-104	6/29/2011	0.2U	0.23	0.2U	0.2U	0.2U
MTCA		0.2	7.7	16	5.0	5.0

Notes: All units are µg/liter.

Table 6
PAHs-MW-205/MW-206/MW-107

Well Number	Date	Benzo[a]pyrene	Benzo[a]anthracene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Chrysene	Dibenz[a,h]anthracene	Indeno[1,2,3-cd]pyrene	Total cPAHs
MW-205	1/12/2015	0.0094U	0.0094U	0.0094U	0.094U	0.0094U	0.0094U	0.0094U	0.066U
	3/8/2019	0.0094U	0.0094U	0.0094U	0.094U	0.0094U	0.0094U	0.0094U	0.066U
	8/14/2019	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.07U
	11/1/2019	0.0094U	0.0094U	0.0094U	0.094U	0.0094U	0.0094U	0.0094U	0.066U
	1/31/2020	0.0094U	0.0094U	0.0094U	0.094U	0.0094U	0.0094U	0.0094U	0.066U
MW-206	3/8/2019	0.0096U	0.0096U	0.0096U	0.0096U	0.0096U	0.0096U	0.0096U	0.0672
	8/14/2019	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.07U
	11/1/2019	0.0094U	0.0094U	0.0094U	0.094U	0.0094U	0.0094U	0.0094U	0.066U
	1/30/2020	0.0095U	0.0095U	0.0095U	0.0095U	0.0095U	0.0095U	0.0095U	0.0665U
MW-107	11/1/2019	0.0094U	0.0094U	0.0094U	0.094U	0.0094U	0.0094U	0.0094U	0.066U
MTCA	0.1 for sum of cPAHs								

Notes: All units are µg/liter.
Note total cPAH shown does not take 708-2 TEF into account and is a conservative number.
Non-carcinogenic PAHs are not shown for brevity, all PAHs in the analysis were below the PQL.
MW-107 was analyzed for PAHs as part of a VPH/EPH analysis.

Table 7
Lead

Well ID	Date	Total lead	Dissolved Lead
MW-107	2/20/2015	13	1.0U
MW-201	2/20/2015	1.1U	1.0U
MW-202	2/20/2015	2.5	1.0U
MW-203	2/20/2015	1.1U	1.0U
MW-204	2/20/2015	1.1U	1.0U
MTCA Method A		15	15

Notes: All units are µg/liter.
Samples for dissolved lead analysis were field filtered through a 0.45-micron filter.

Table 8
Ethylene Glycol

Well ID	Date	Ethylene Glycol
MW-107	2/20/2015	10U
MW-201	2/20/2015	10U
MW-202	2/20/2015	10U
MW-203	2/20/2015	10U
MTCA Method B		16

Table 9
Groundwater Parameters

Well Number	Date	pH	Conductivity	DO	ORP	Temp.
MW-1	6/21/2006	6.19	600	NM	NM	NM
	12/15/2006	6.97	NM	NM	NM	NM
	4/29/2011	NM	NM	NM	NM	15.8
MW-2	6/21/2006	6.97	249	NM	NM	NM
	12/15/2006	6.9	NM	NM	NM	NM
MW-3	12/15/2006	6.35	NM	NM	NM	NM
MW-4	6/21/2006	6.3	484	NM	NM	NM
	12/15/2006	6.9	NM	NM	NM	NM
	9/27/2013	6.5	654	0.57	-75	20.1
MW-5	6/21/2006	6.05	430	NM	NM	NM
	12/15/2006	6.85	NM	NM	NM	NM
MW-6	6/21/2006	6.67	521	NM	NM	NM
	12/15/2006	6.9	NM	NM	NM	NM
	4/29/2011	NM	NM	NM	NM	12.6
	9/27/2013	6.16	379	0	-2	19.24
	5/27/2015	6.27	316	1.82	-19.2	14.51
	7/30/2019	6.46	406	0.71	-5.3	16.58
	10/30/2019	6.61	268	2.28	15.9	14.26
	1/30/2020	6.78	267	0.21	-1	12.91
MW-7	6/21/2006	6.7	511	NM	NM	NM
	4/29/2011	NM	NM	NM	NM	14.4
MW-7A	3/7/2019	7.19	775	0.3	-105.9	13.15
	7/30/2019	7.2	630	1.82	-84.8	17.7
	10/30/2019	7.42	618	1.25	-115.8	17.19
	1/30/2020	7.15	787	0.29	-147	14.79
MW-8	6/21/2006	6.6	579	NM	NM	NM
	12/15/2006	7.0	NM	NM	NM	NM
MW-10	12/15/2006	6.9	NM	NM	NM	NM
MW-101	5/10/2011	NM	NM	NM	NM	15.3
	7/6/2011	6.55	148	0.32	-10	16.0
MW-102	5/10/2011	NM	NM	NM	NM	15.2
MW-103	5/10/2011	NM	NM	NM	NM	16.1
	7/6/2011	6.49	113	0.3	-45	16.6

Table 9 (cont.)
Groundwater Parameters

Well Number	Date	pH	Conductivity	DO	ORP	Temp.
MW-7	6/21/2006	6.7	511	NM	NM	NM
	4/29/2011	NM	NM	NM	NM	14.4
MW-7A	3/7/2019	7.19	775	0.3	-105.9	13.15
	7/30/2019	7.2	630	1.82	-84.8	17.7
	10/30/2019	7.42	618	1.25	-115.8	17.19
	1/30/2020	7.15	787	0.29	-147	14.79
MW-8	6/21/2006	6.6	579	NM	NM	NM
	12/15/2006	7.0	NM	NM	NM	NM
MW-10	12/15/2006	6.9	NM	NM	NM	NM
MW-101	5/10/2011	NM	NM	NM	NM	15.3
	7/6/2011	6.55	148	0.32	-10	16.0
MW-102	5/10/2011	NM	NM	NM	NM	15.2
MW-103	5/10/2011	NM	NM	NM	NM	16.1
	7/6/2011	6.49	113	0.3	-45	16.6
MW-107	7/11/2013	6.53	855	0.6	-69	17.03
	9/27/2013	7.06	968	0	-94	20.09
	2/20/2015	6.91	NM	0.67	-92.2	14.32
	3/7/2019	6.65	877	0.54	50.6	11.58
	7/30/2019	6.47	791	0.69	82.2	17.88
	10/30/2019	6.45	564	1.03	36	17.51
	1/30/2020	6.59	595	0.19	80	13.07
MW-108	3/7/2019	7.41	284	0.19	-117.4	11.64
	7/30/2019	7.33	290	0.57	-90.1	17.75
	1/30/2020	7.03	328	0.39	-91	14.18
MW-109	3/7/2019	6.98	775	0.47	-80.1	13.52
	7/30/2019	6.91	872	0.71	-46.2	16.98
	1/30/2020	7.14	779	0.37	32	15.24
MW-201	2/20/2015	7.27	NM	0.89	-9	15.23
	5/27/2015	7.01	444	1.94	-50.2	15.16
	3/17/2019	7.11	448	0.55	-35.5	12.94
	7/30/2019	7.12	469	1.29	-72.2	16.26
	10/30/2019	7.11	439	1.33	-82.8	15.78
	1/30/2020	7.01	519	0.01	-76	14.8

Table 9 (cont.)
Groundwater Parameters

Well Number	Date	pH	Conductivity	DO	ORP	Temp.
MW-202	2/20/2015	6.82	NM	0.71	-82.3	14.61
	5/27/2015	6.62	638	0.68	-58.1	14.88
	3/9/2019	6.75	588	0.68	-103.3	12.86
	7/30/2019	6.69	586	1.66	-44.1	16.7
	10/30/2019	6.76	627	1.51	-66	16.86
	1/30/2020	6.65	830	0.52	-130	14.89
MW-203	2/20/2015	6.95	NM	0.56	-116.7	14.67
	5/27/2015	6.52	526	1.01	-57.1	15.83
	3/7/2019	6.64	598	0.37	-61.8	12.04
	7/30/2019	6.61	682	1.31	-73.2	17.44
	10/30/2019	6.62	603	2.16	-34.2	17.32
	1/30/2020	6.58	787	0.18	-83	14.27
MW-204	2/20/2015	6.7	NM	0.84	-98.4	14.4
	5/27/2015	6.55	489	0.7	-83.5	15.87
	3/9/2019	6.75	585	0.22	-98.5	11.57
	7/30/2019	6.64	611	0.8	-72	17.01
	10/30/2019	6.74	532	2.2	-64.9	17.8
	1/30/2020	6.59	689	0.2	-102	14.12
MW-205j	2/20/2015	7.02	NM	0.88	46.2	16.24
	5/28/2015	6.73	297	1.22	136.1	15.38
	3/7/2019	7.04	349	0.49	-10.1	14.18
	7/30/2019	7.02	341.6	2.29	78.3	16.1
	10/30/2019	7.04	357	1.74	1.8	15.72
	1/30/2020	6.89	412	0.1	37	15.26
MW-206	6/1/2018	7.26	1,477.3	1.3	-63.6	16.1
	3/9/2019					
	7/30/2019	6.63	1,104	1.73	-46.3	16.9
	10/30/2019	6.51	1,037	1.81	-34.9	16.13
	1/30/2020	6.47	140	0.51	-75	14.97

Notes: Data prior to 2011 was collected by others.
DO is measured in ppm.
ORP is measured in milli volts.
Conductivity is measured in micro Siemens.
pH is in standard units.
Temperature is in degrees Celsius.

Reference: Thomas Bros King County Road Atlas. NOT TO SCALE

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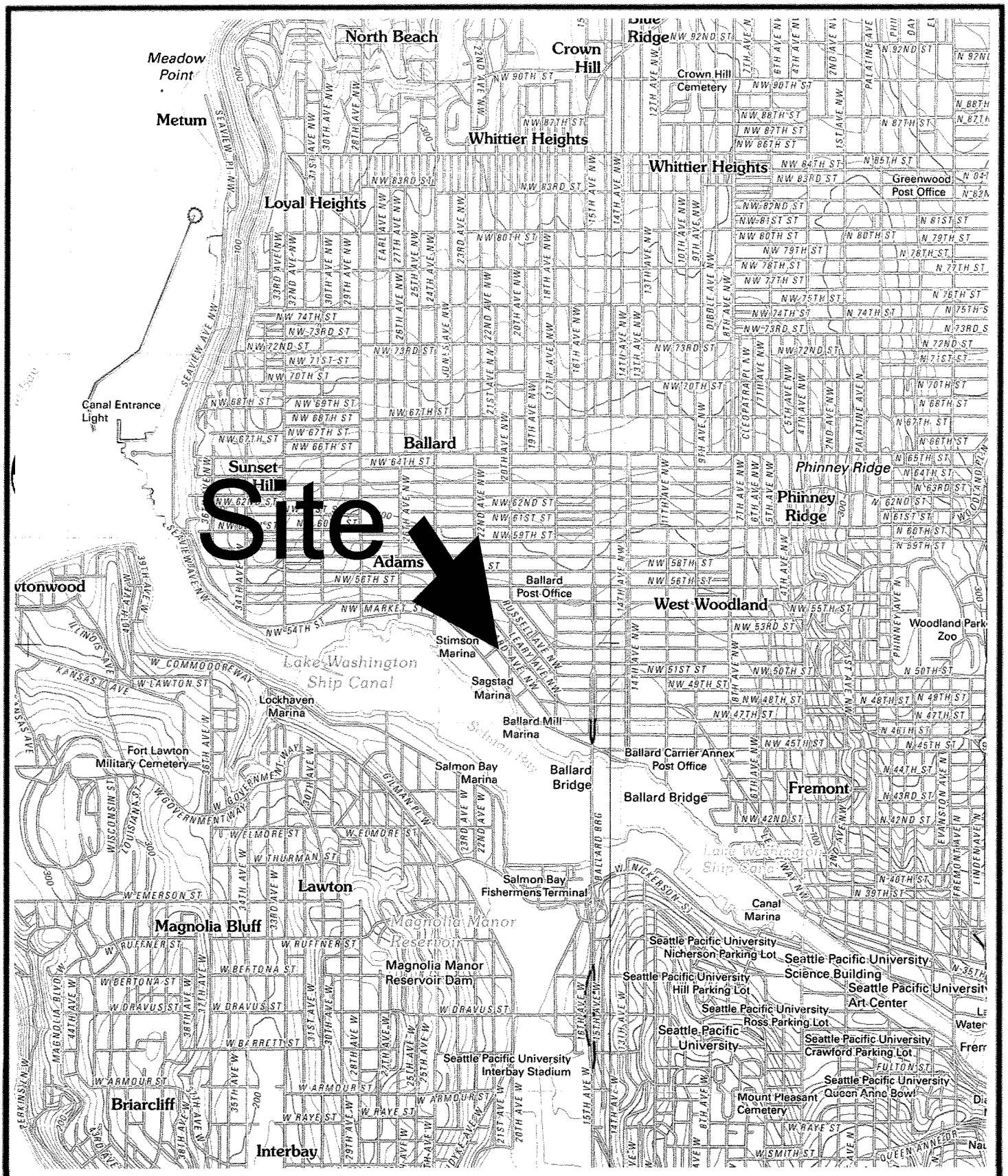
Vicinity Map
Former C and C Paint Facility
Seattle, Washington

Proj. No T-6552	Date June 2020	Figure 1



Reference: Seattle North and Shilshole Bay USGS Quadrangles

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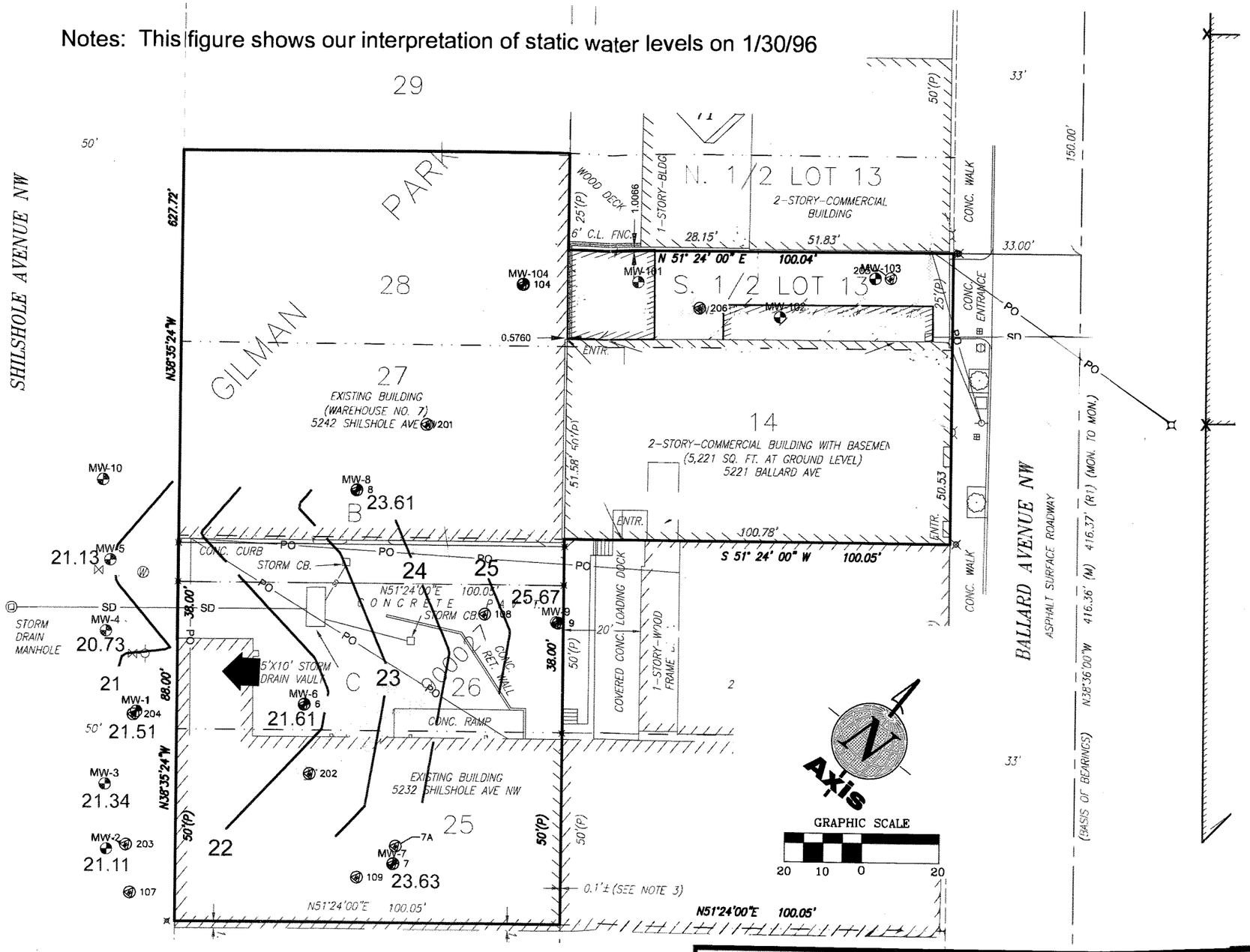
Topographic Vicinity Map
Former C and C Paint Facility
Seattle, Washington

Proj. No T-6552	Date June 2020	Figure 2

Notes: This figure shows our interpretation of static water levels on 1/30/96



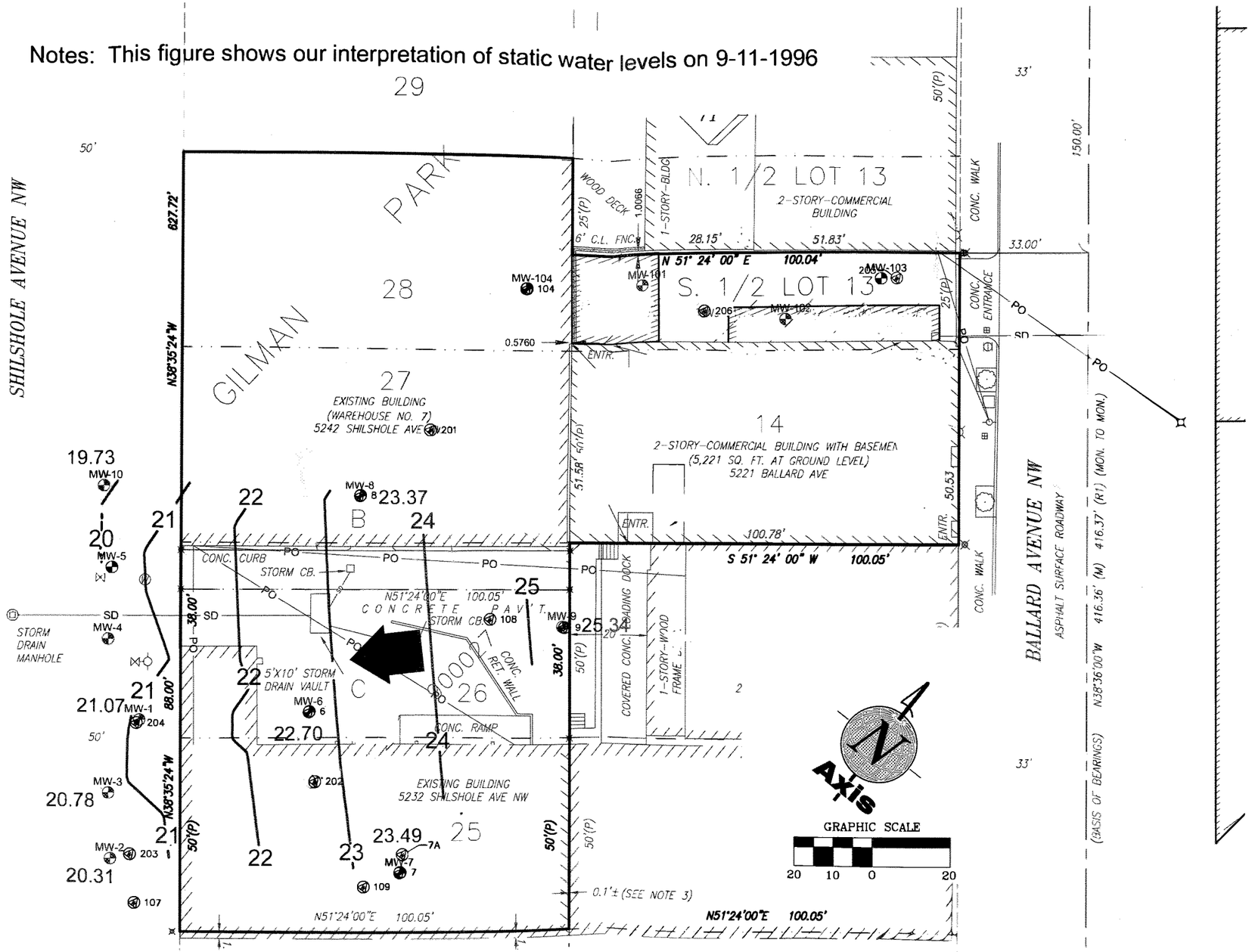
Reference: Survey by Jim Hart and Associates

TERRA ASSOCIATES
Geotechnical Consultants

January 30, 1996 Static Water Levels
Former C and C Paint Facility
Seattle, Washington

Proj. No. T-6552	Date June 2020	Figure 3

Notes: This figure shows our interpretation of static water levels on 9-11-1996



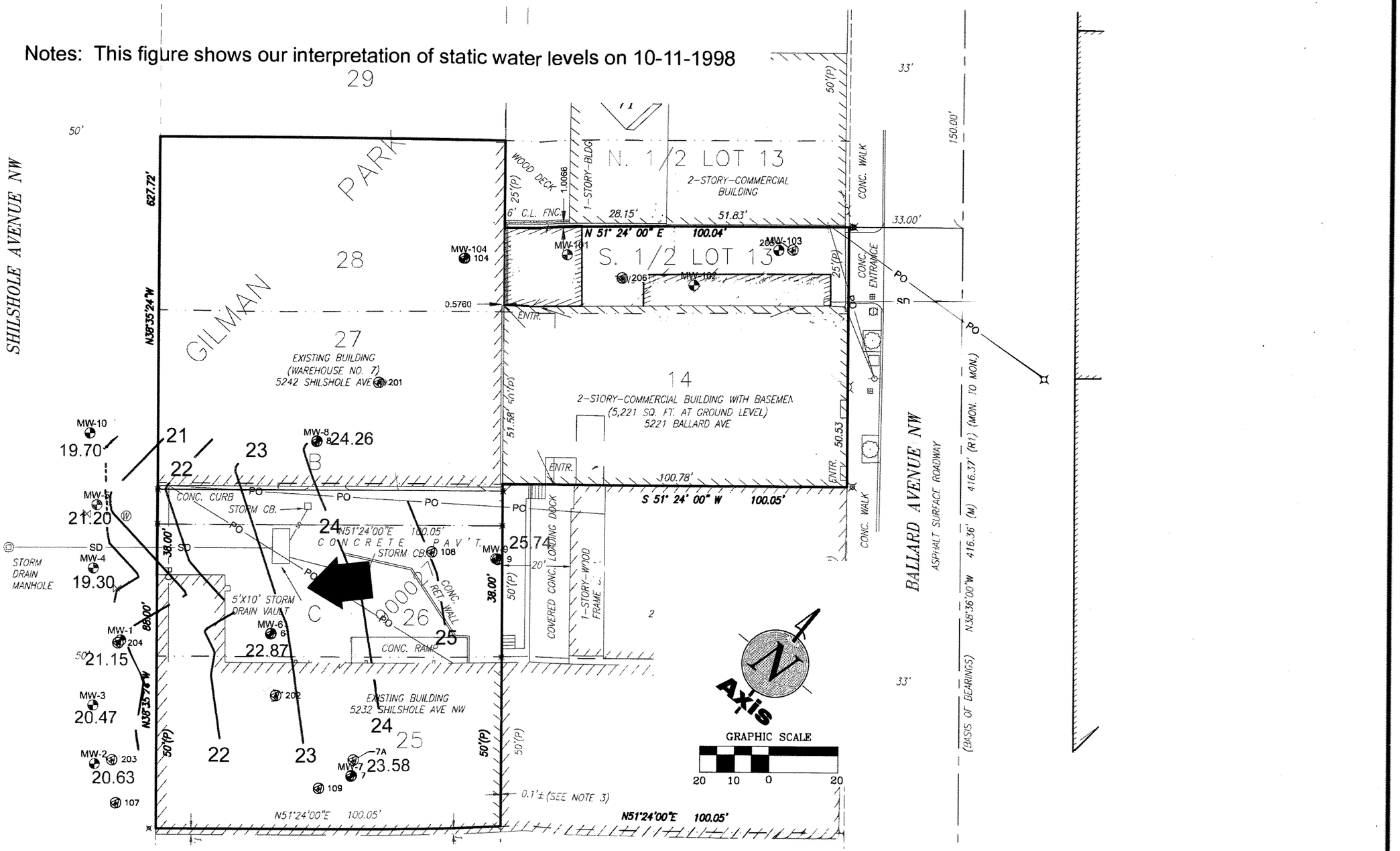
Reference: Survey by Jim Hart and Associates

TERRA ASSOCIATES
Geotechnical Consultants

September 11, 1996 Static Water Levels
Former C and C Paint Faclity
Seattle, Washington

Proj. No. T-6552	Date June 2020	Figure 4

Notes: This figure shows our interpretation of static water levels on 10-11-1998



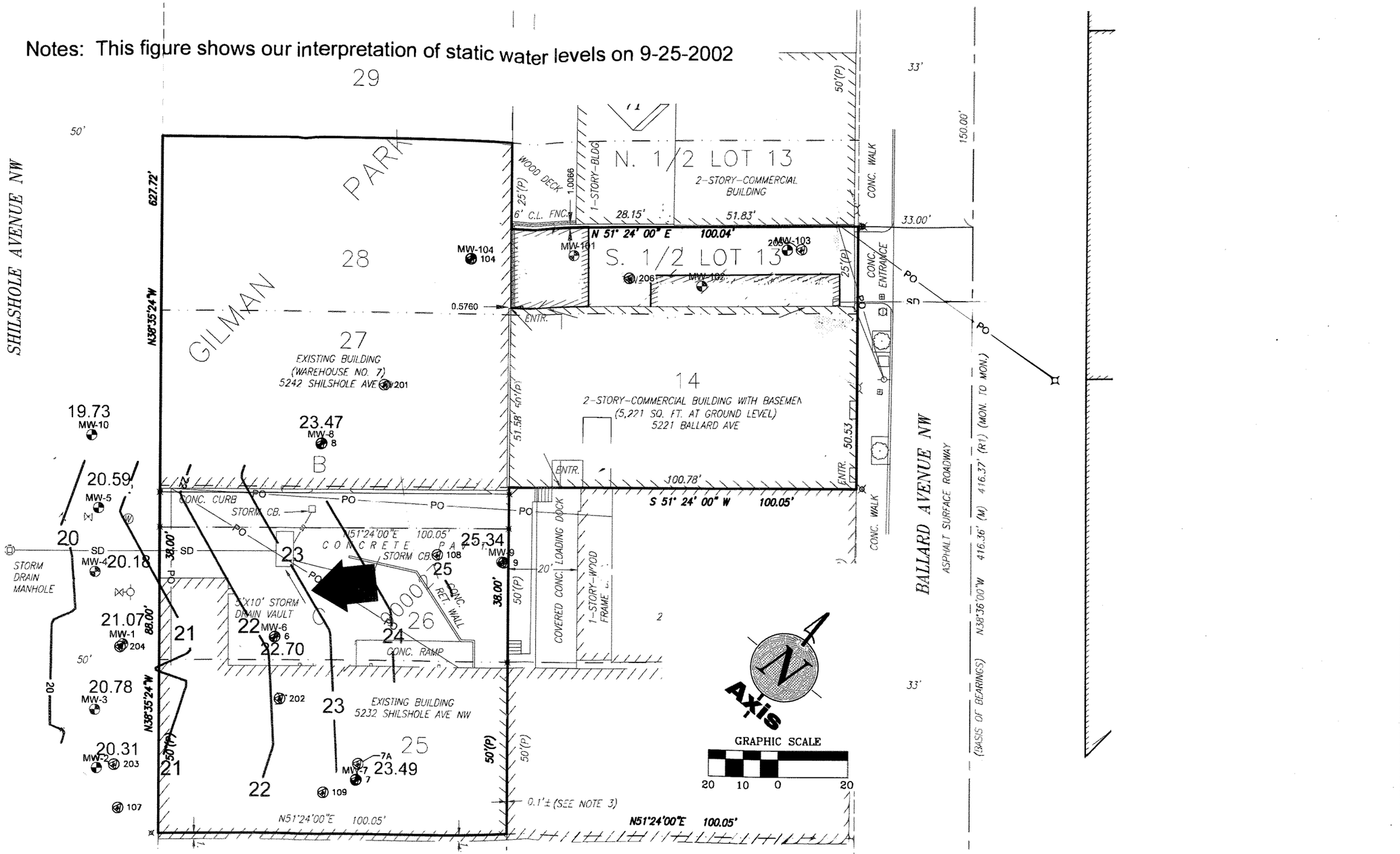
Reference: Survey by Jim Hart and Associates

TERRA ASSOCIATES
Geotechnical Consultants

October 11, 1998 Static Water Levels Former C and C Paint Facility Seattle, Washington

Proj. No. T-6552	Date June 2020	Figure 5

Notes: This figure shows our interpretation of static water levels on 9-25-2002



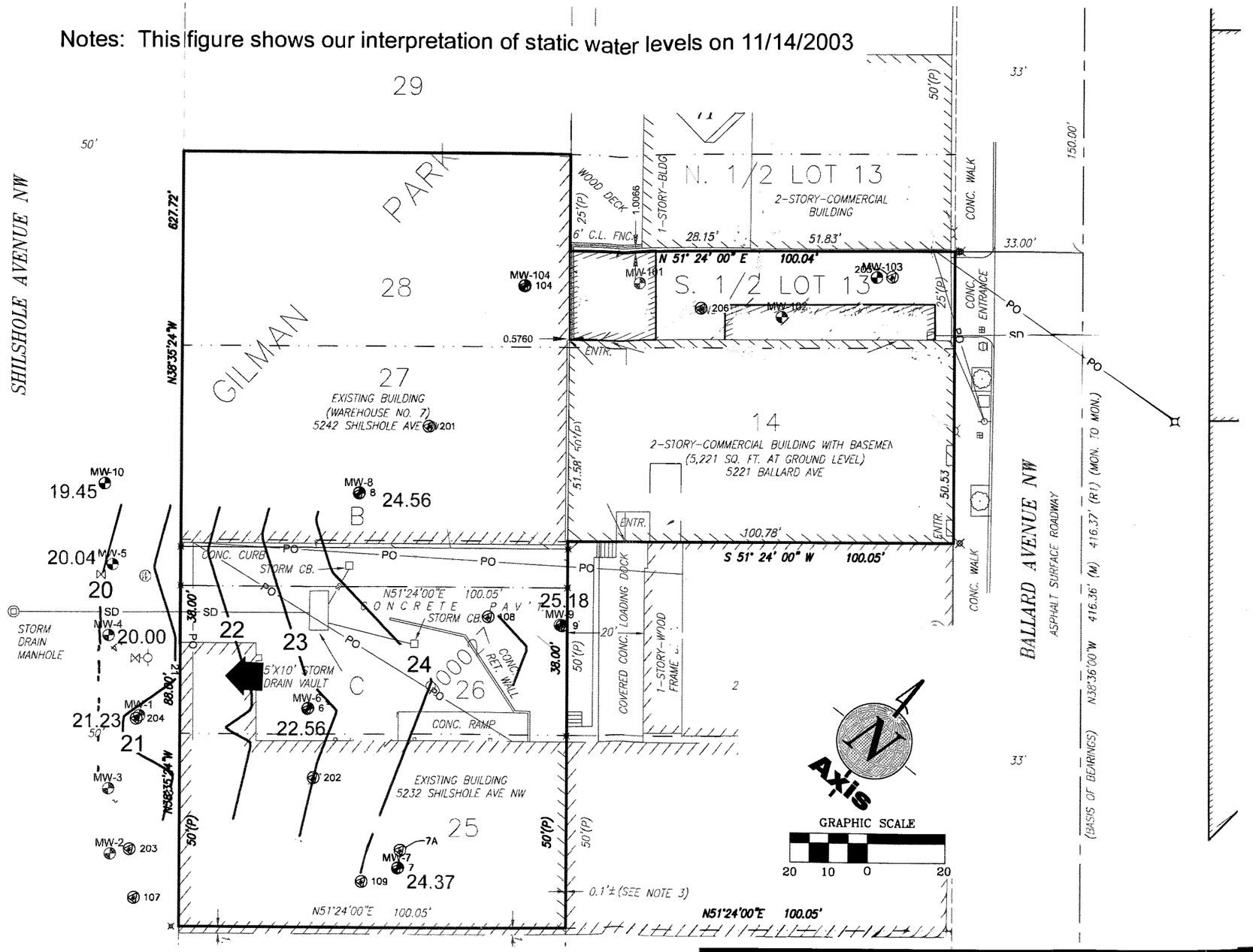
Reference: Survey by Jim Hart and Associates

TERRA ASSOCIATES
Geotechnical Consultants

September 25, 2002 Static Water Levels Former C and C Paint Faclity Seattle, Washington

Proj. No. T-6552	Date June 2020	Figure 6

Notes: This figure shows our interpretation of static water levels on 11/14/2003



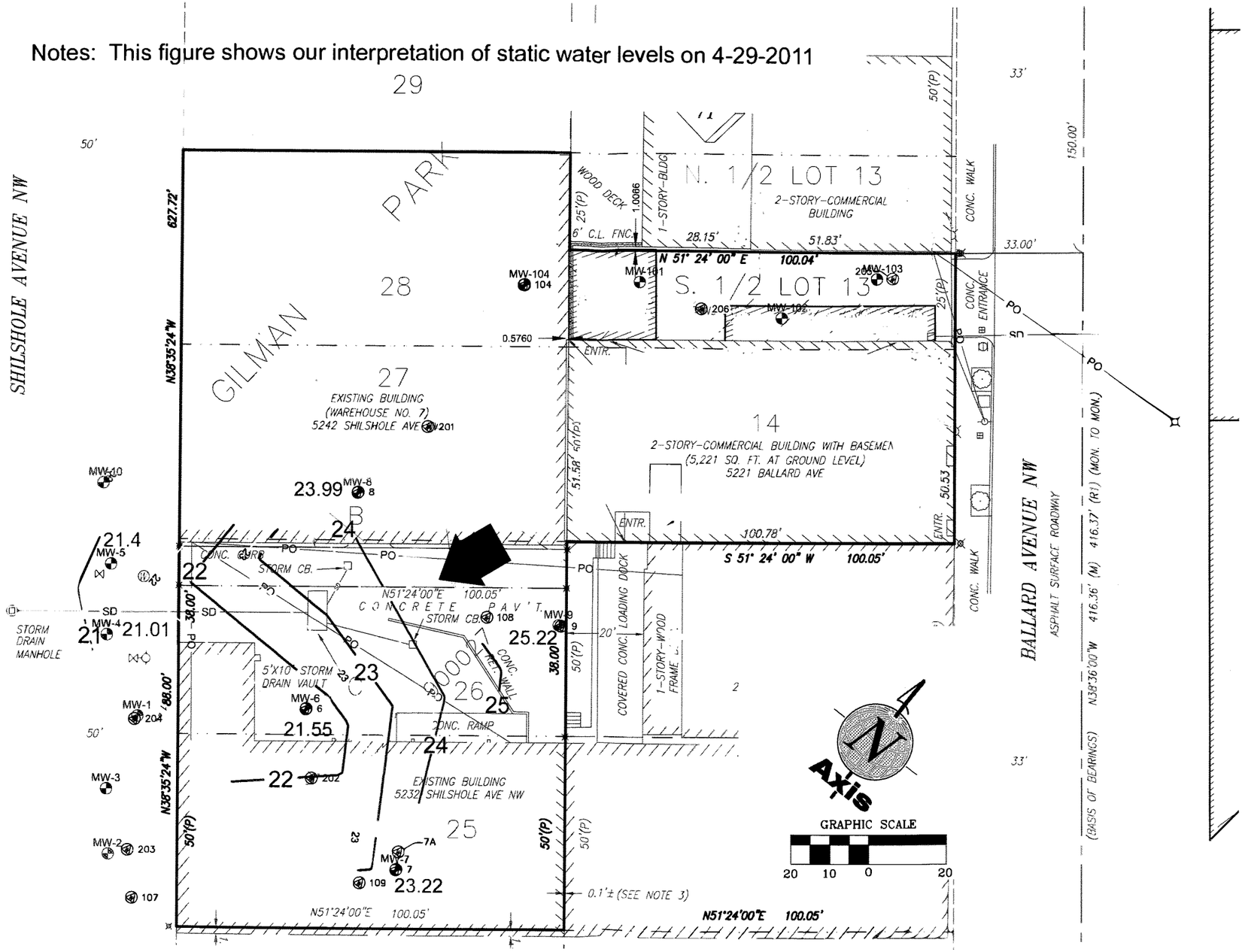
Reference: Survey by Jim Hart and Associates

TERRA ASSOCIATES
Geotechnical Consultants

November 14, 2003 Static Water Levels
Former C and C Paint Facility
Seattle, Washington

Proj. No. T-6552	Date June 2020	Figure 7

Notes: This figure shows our interpretation of static water levels on 4-29-2011



Refer to appendix A for details on footing drains for Ballard Hotel

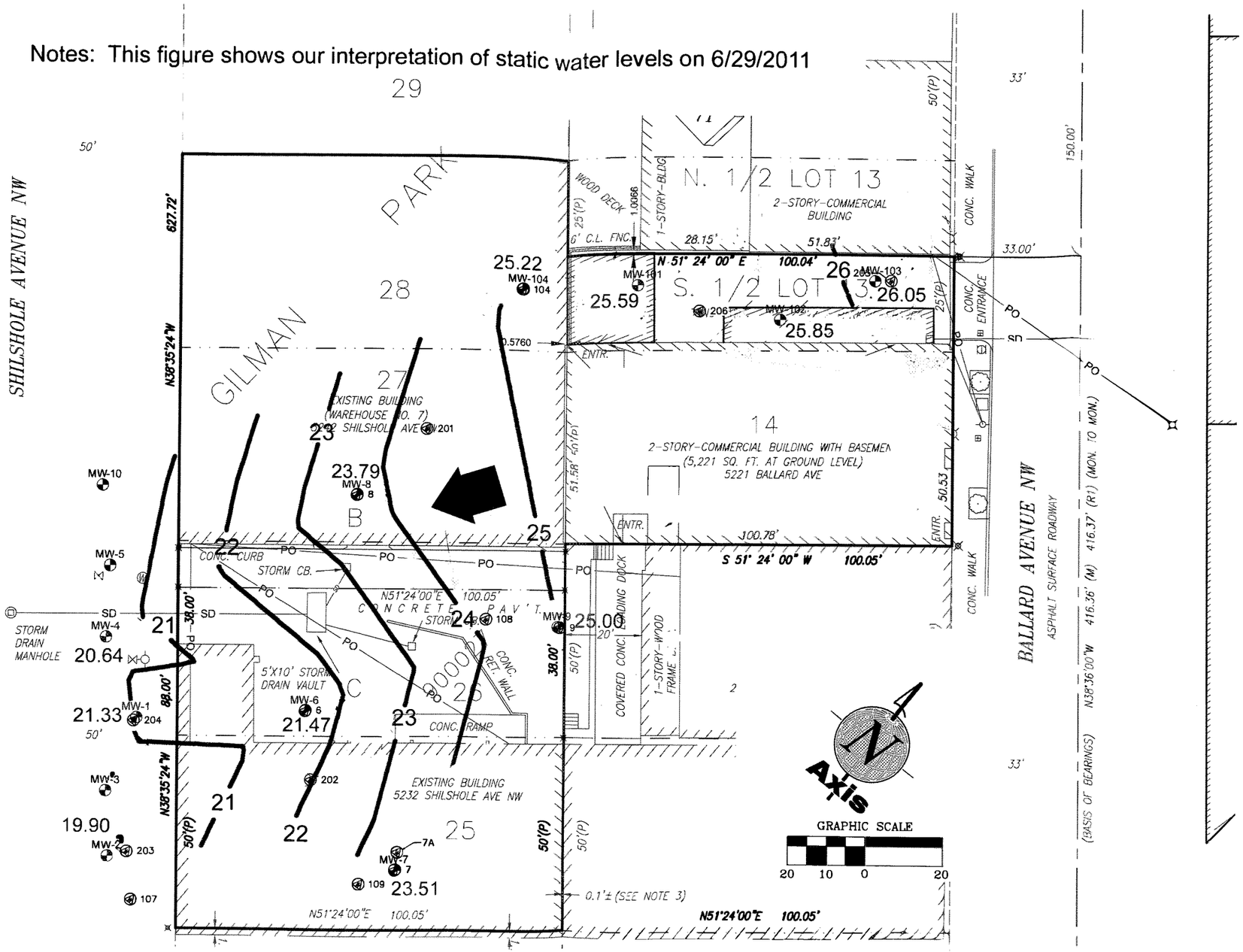
Reference: Survey by Jim Hart and Associates

TERRA ASSOCIATES
Geotechnical Consultants

April 29, 2011 Static Water Levels
Former C and C Paint Facility
Seattle, Washington

Proj. No. T-6552	Date June 2020	Figure 8

Notes: This figure shows our interpretation of static water levels on 6/29/2011



Refer to appendix A for details on footing drains for Ballard Hotel

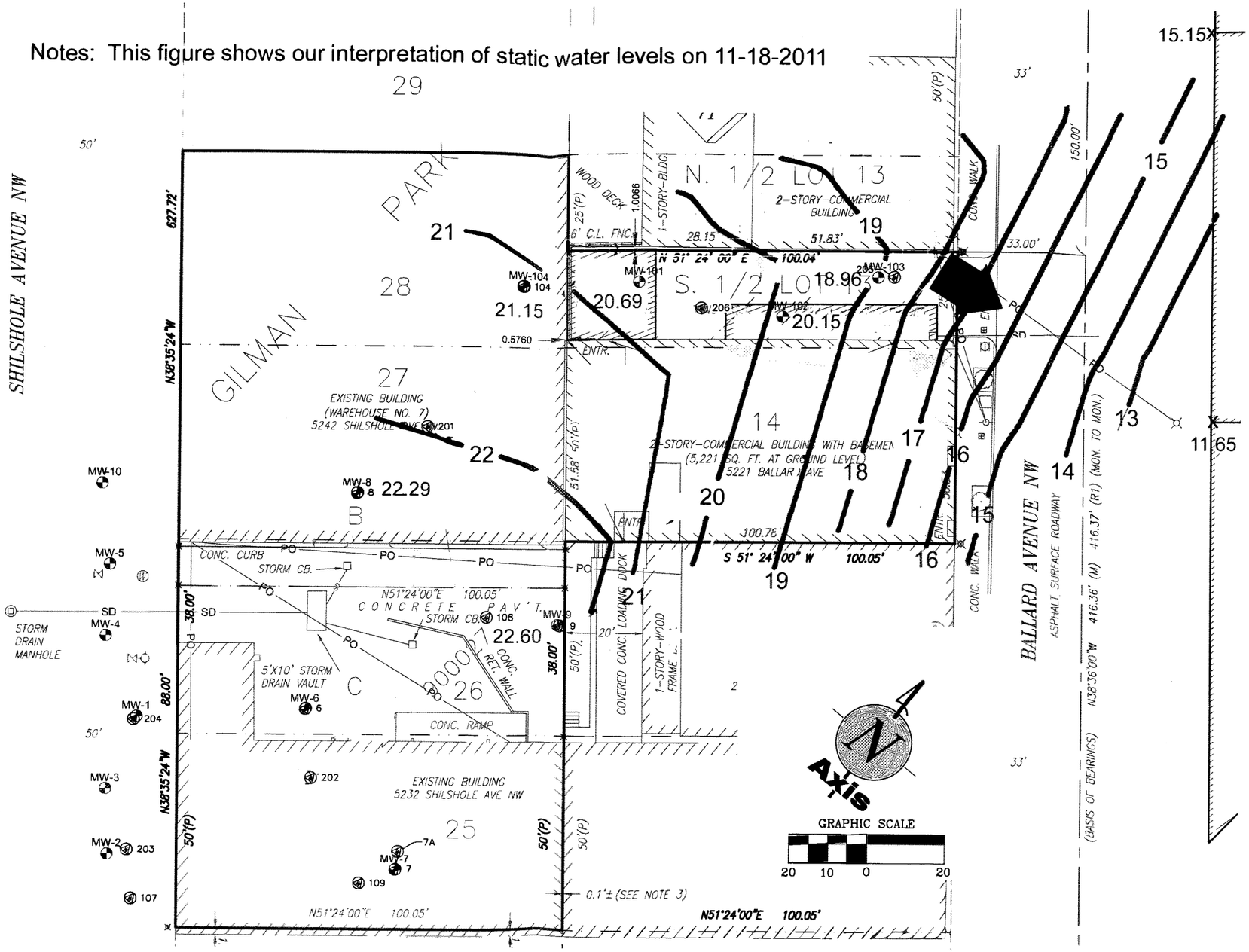
Reference: Survey by Jim Hart and Associates

TERRA ASSOCIATES
Geotechnical Consultants

June 29, 2011 Static Water Levels
Former C and C Paint Facility
Seattle, Washington

Proj. No. T-6552	Date June 2020	Figure 9

Notes: This figure shows our interpretation of static water levels on 11-18-2011



Refer to appendix A for details on footing drains for Ballard Hotel

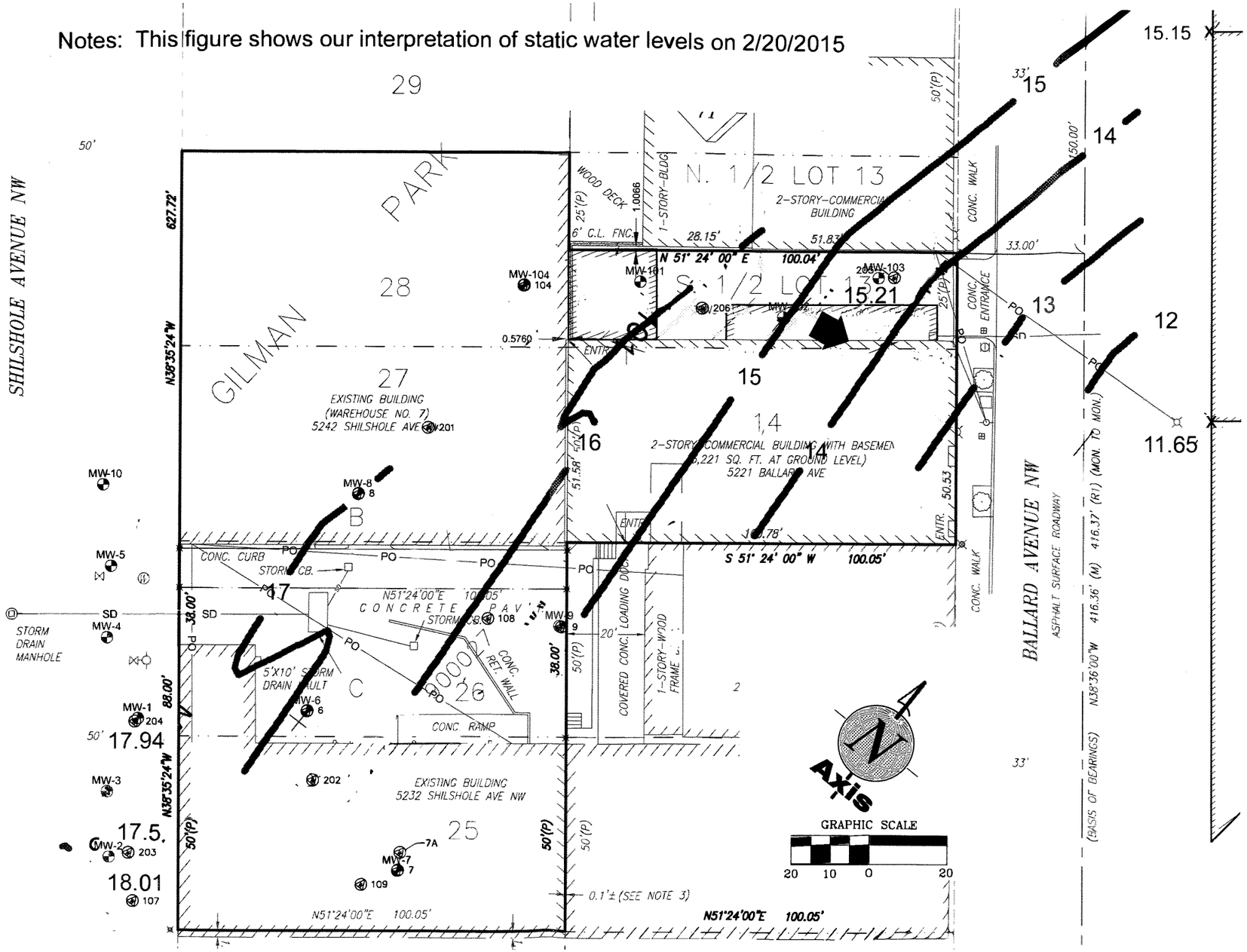
Reference: Survey by Jim Hart and Associates

TERRA ASSOCIATES
Geotechnical Consultants

November 18, 2011 Static Water Levels
Former C and C Paint Facility
Seattle, Washington

Proj. No. T-6552	Date June 2020	Figure 10

Notes: This figure shows our interpretation of static water levels on 2/20/2015



Refer to appendix A for details on footing drains for Ballard Hotel

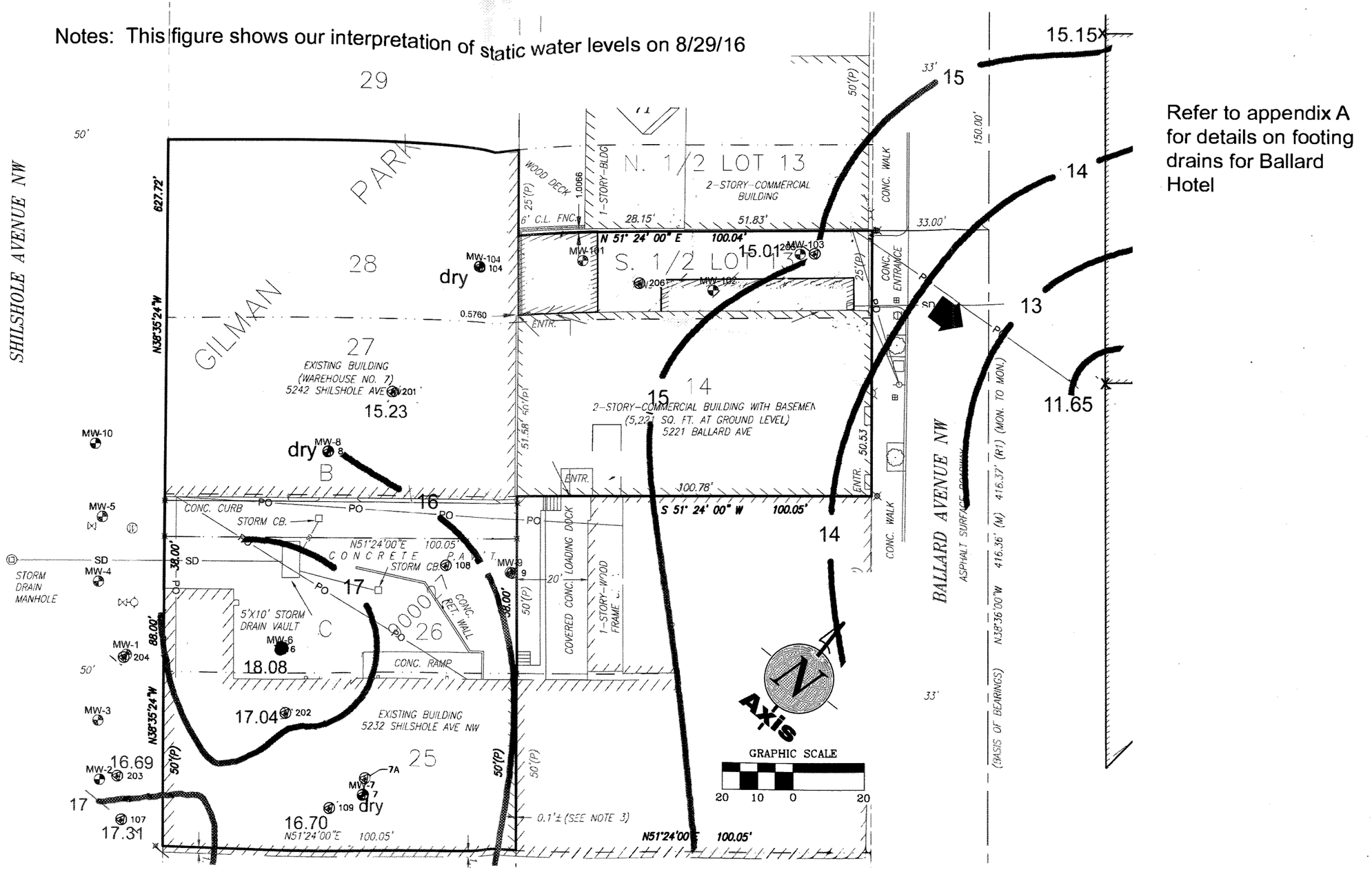
Reference: Survey by Jim Hart and Associates

TERRA ASSOCIATES
Geotechnical Consultants

February 20, 2015 Static Water Levels
Former C and C Paint Faclity
Seattle, Washington

Proj. No. T-6552	Date June 2020	Figure 11

Notes: This figure shows our interpretation of static water levels on 8/29/16



Refer to appendix A for details on footing drains for Ballard Hotel

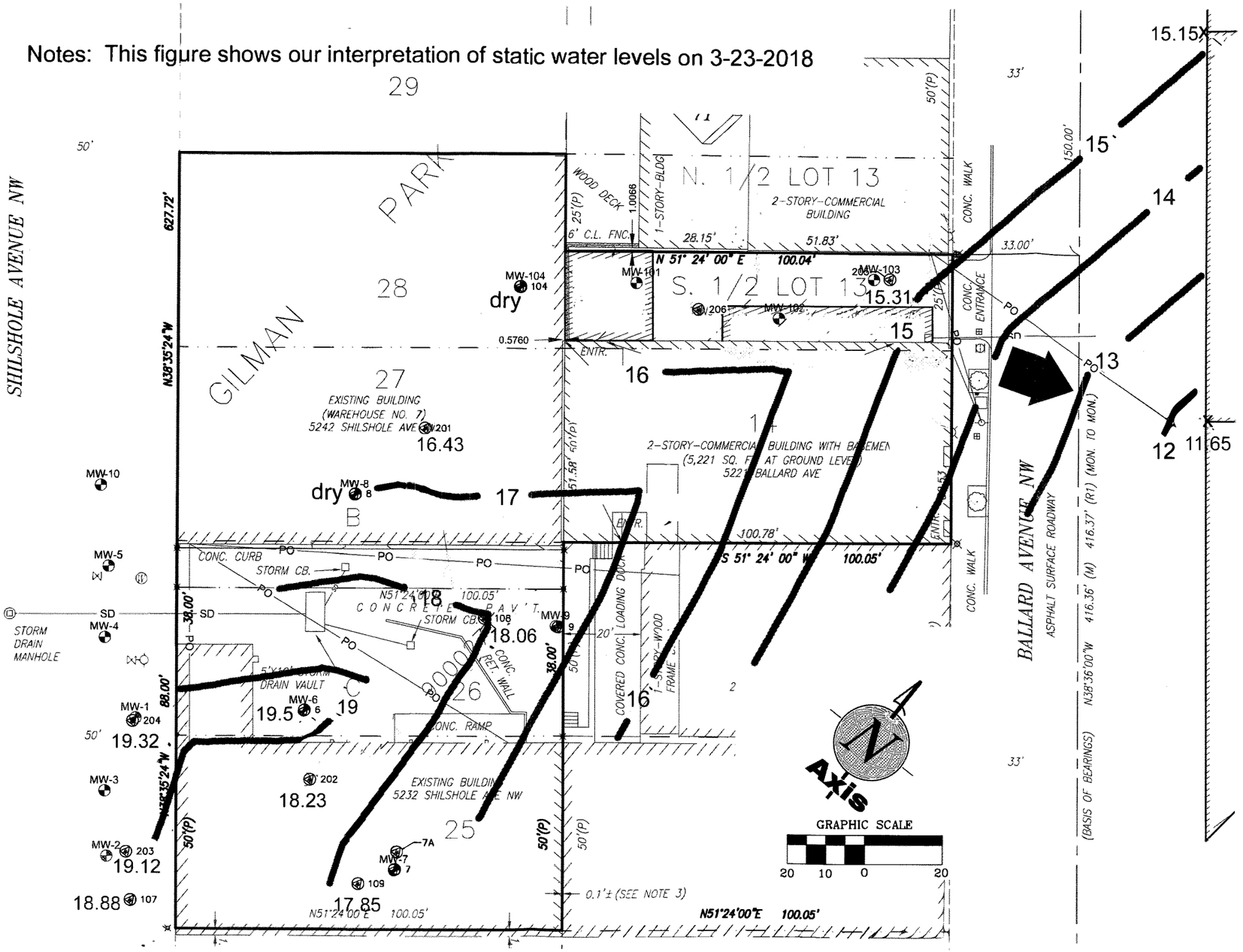
Reference: Survey by Jim Hart and Associates

TERRA ASSOCIATES
Geotechnical Consultants

August 29.2016 Static Water Levels
Former C and C Paint Faclity
Seattle, Washington

Proj. No. T-6552	Date June 2020	Figure 12

Notes: This figure shows our interpretation of static water levels on 3-23-2018



Refer to appendix A for details on footing drains for Ballard Hotel

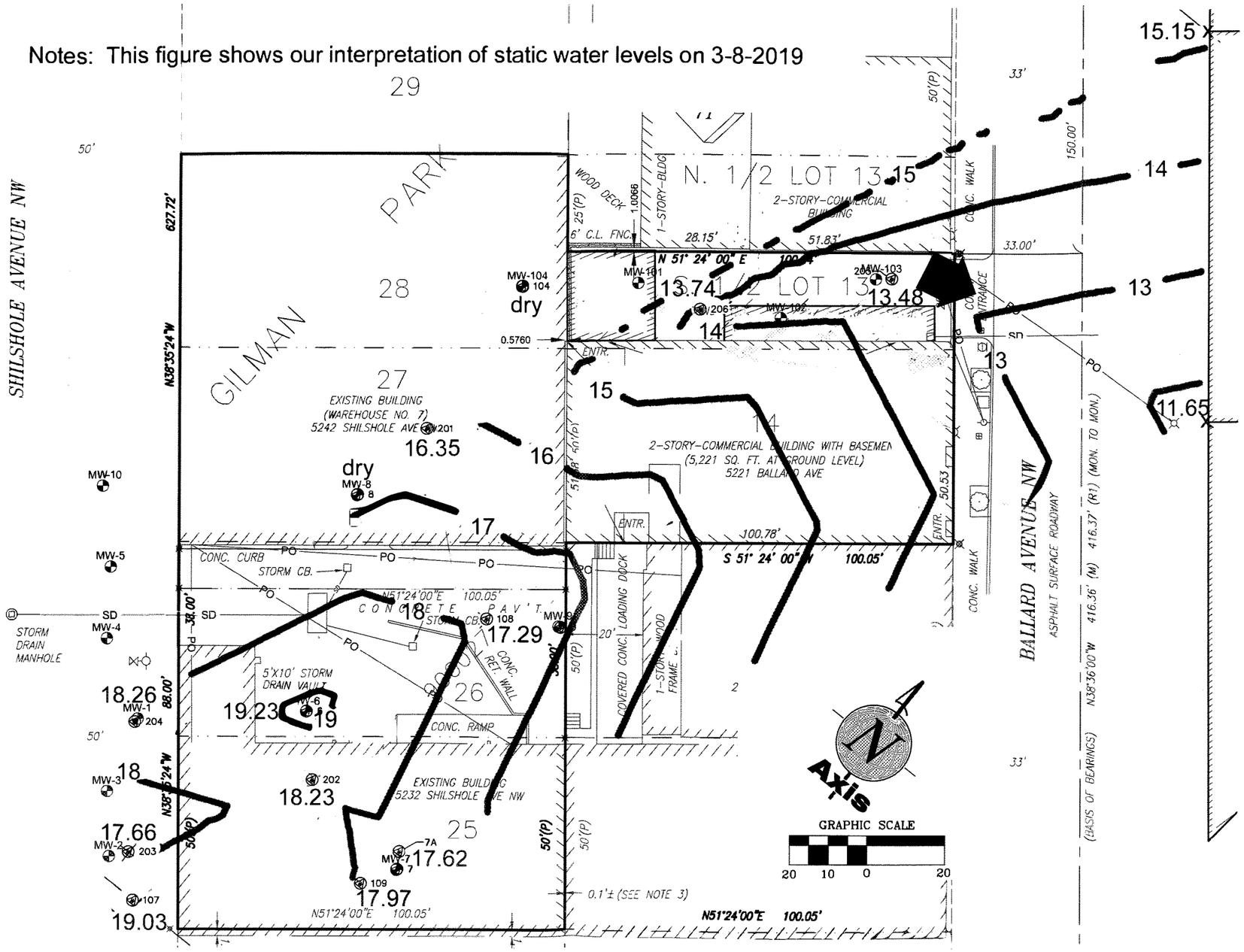
Reference: Survey by Jim Hart and Associates

TERRA ASSOCIATES
Geotechnical Consultants

March 23 2018 Static Water Levels
Former C and C Paint Facility
Seattle, Washington

Proj. No. T-6552	Date June 2020	Figure 14

Notes: This figure shows our interpretation of static water levels on 3-8-2019



Refer to appendix A for details on footing drains for Ballard Hotel

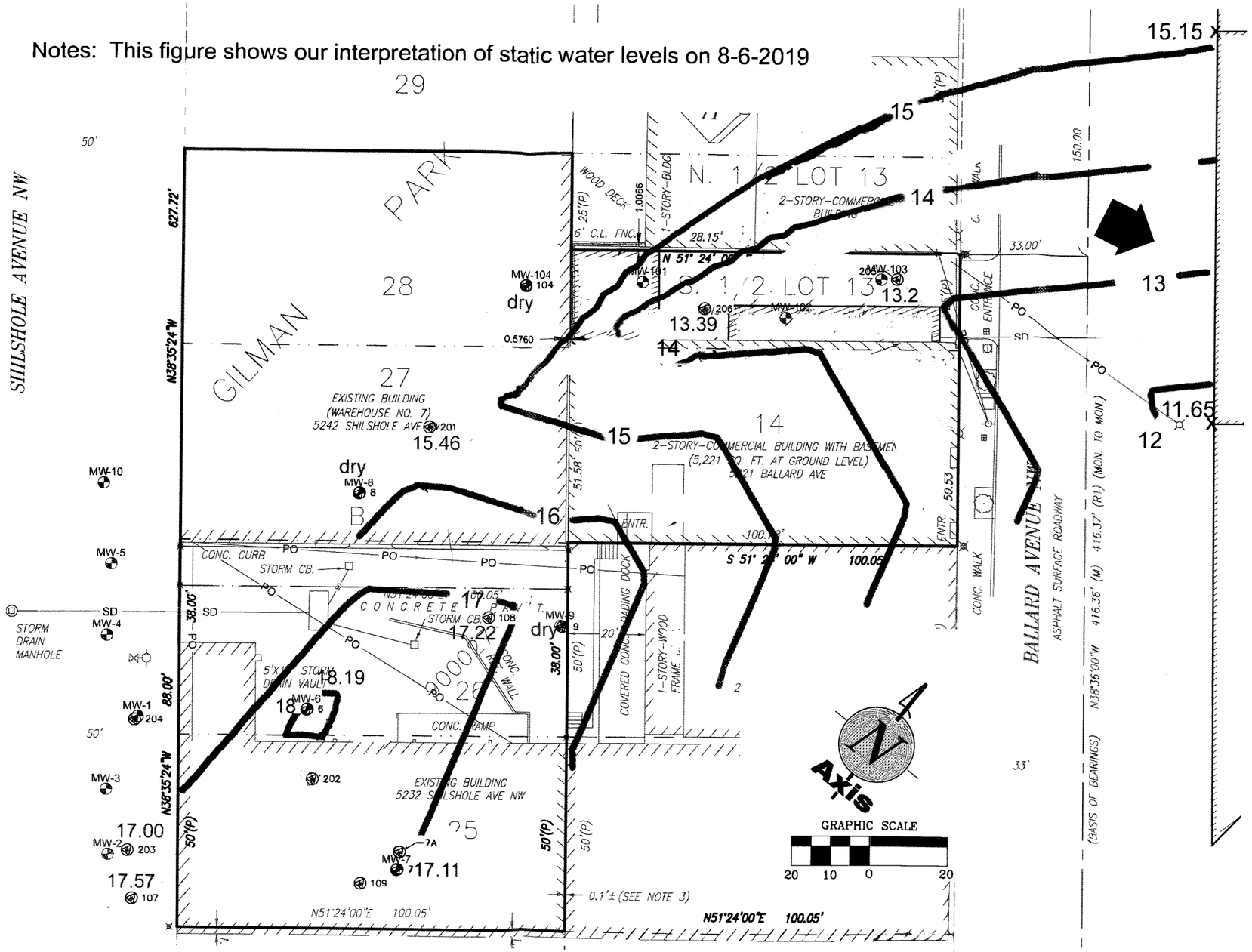
Reference: Survey by Jim Hart and Associates

TERRA ASSOCIATES
Geotechnical Consultants

March 8 2019 Static Water Levels
Former C and C Paint Facility
Seattle, Washington

Proj. No. T-6552	Date June 2020	Figure 14

Notes: This figure shows our interpretation of static water levels on 8-6-2019



Refer to appendix A for details on footing drains for Ballard Hotel

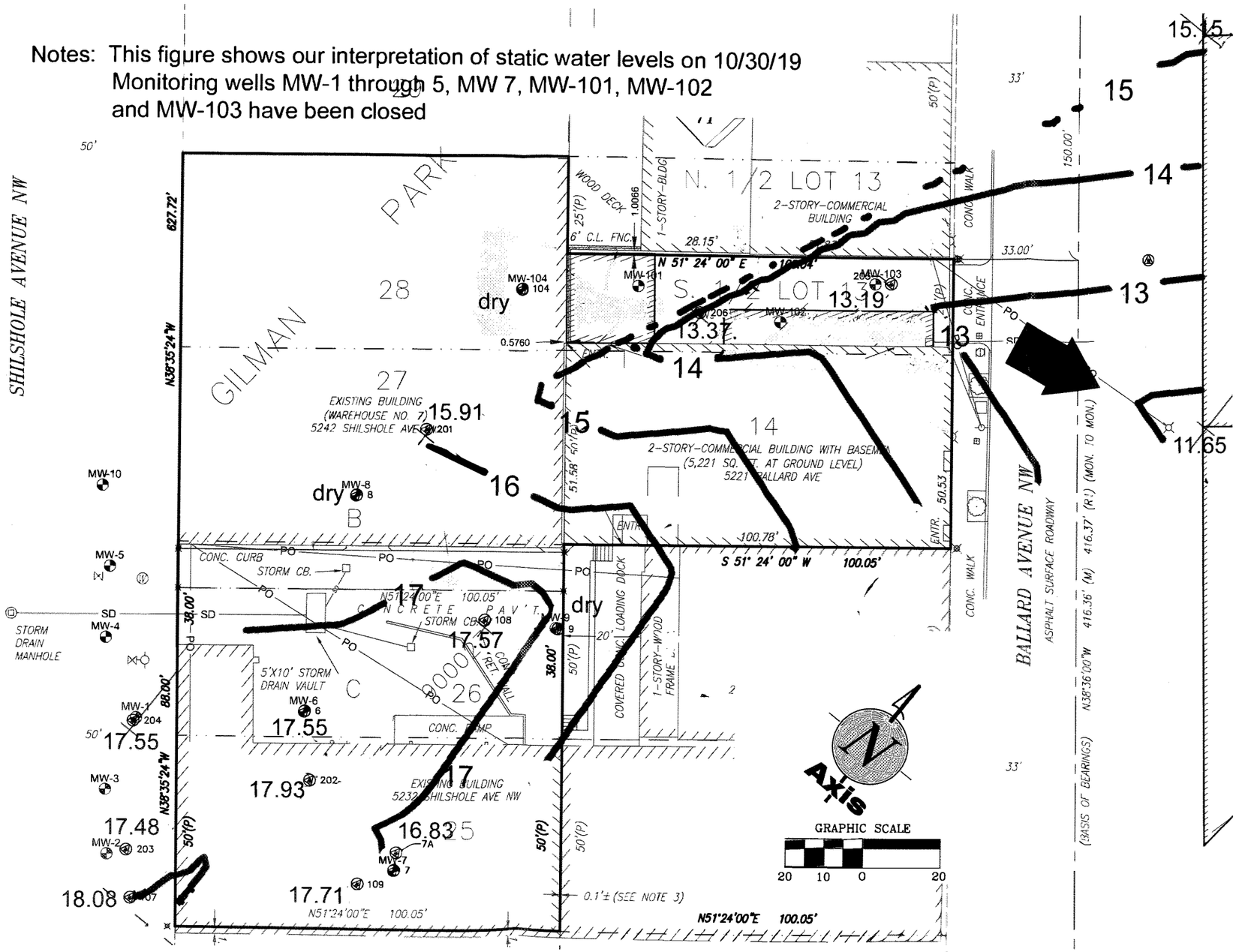
Reference: Survey by Jim Hart and Associates

TERRA ASSOCIATES
Geotechnical Consultants

August 6 2019 Static Water Levels
Former C and C Paint Facility
Seattle, Washington

Proj. No. T-6552	Date June 2020	Figure 15

Notes: This figure shows our interpretation of static water levels on 10/30/19
Monitoring wells MW-1 through 5, MW 7, MW-101, MW-102
and MW-103 have been closed



Refer to appendix A for details on footing drains for Ballard Hotel

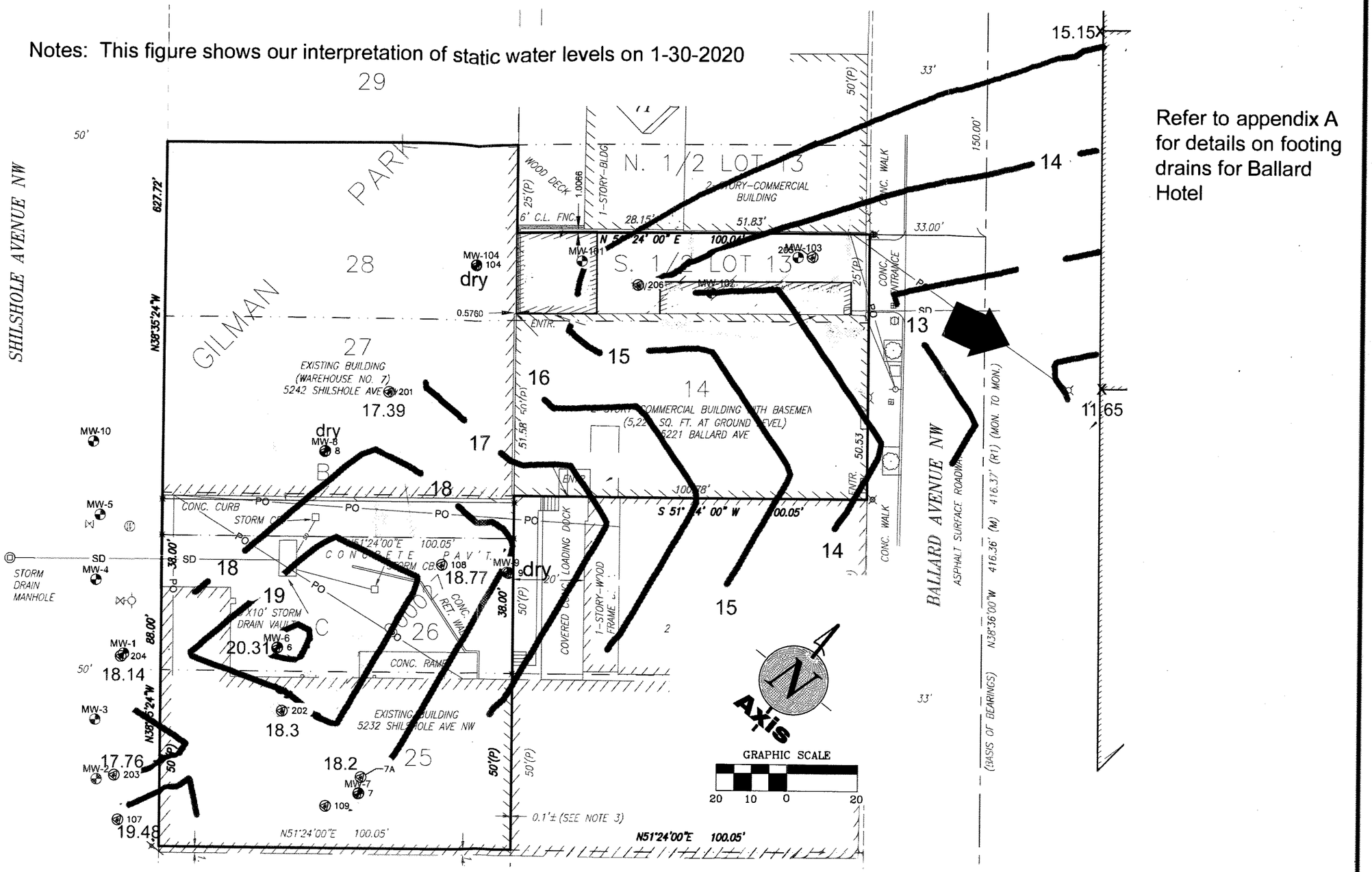
Reference: Survey by Jim Hart and Associates

TERRA ASSOCIATES
Geotechnical Consultants

October 30, 2019 Static Water Levels
Former C and C Paint Facility
Seattle, Washington

Proj. No. T-6552 | Date June 2020 | Figure 16

Notes: This figure shows our interpretation of static water levels on 1-30-2020



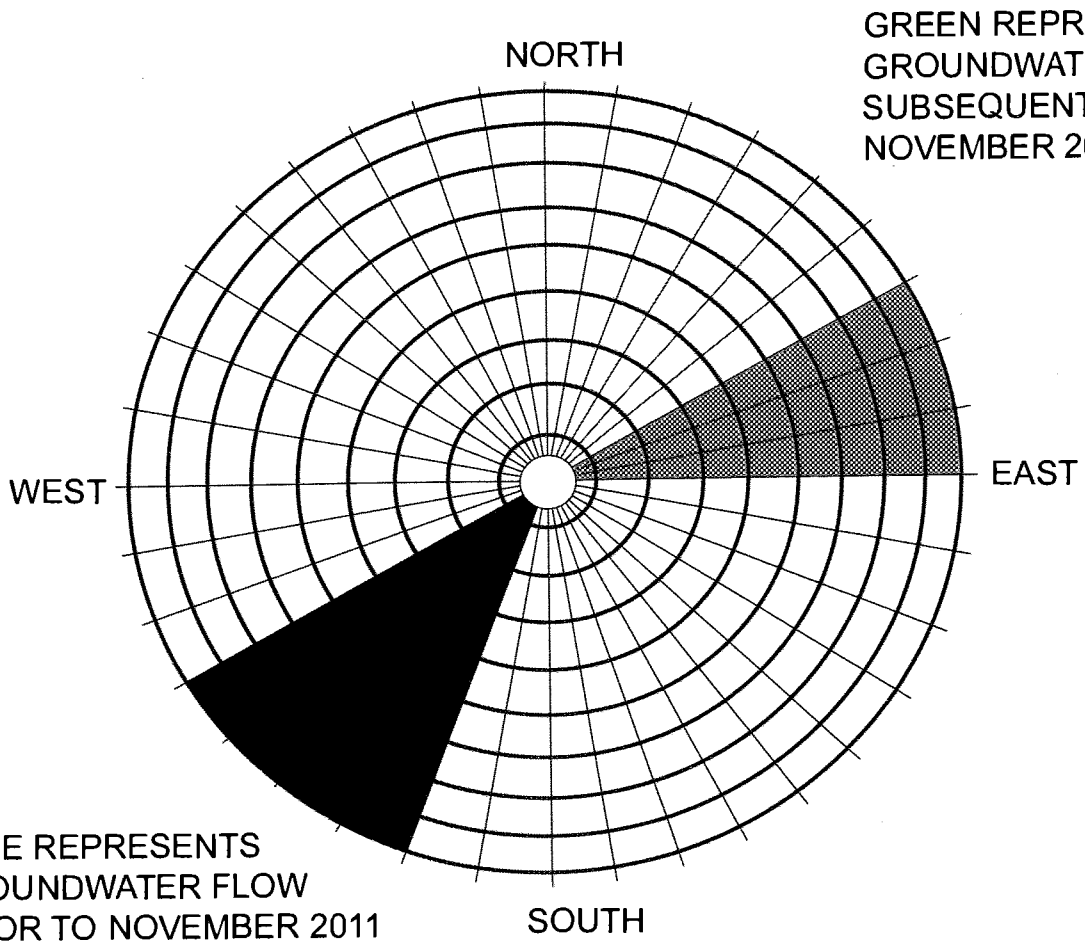
Refer to appendix A for details on footing drains for Ballard Hotel

Reference: Survey by Jim Hart and Associates

TERRA ASSOCIATES
Geotechnical Consultants

January 30, 2020 Static Water Levels
Former C and C Paint Faclity
Seattle, Washington

Proj. No. T-6552	Date June 2020	Figure 17

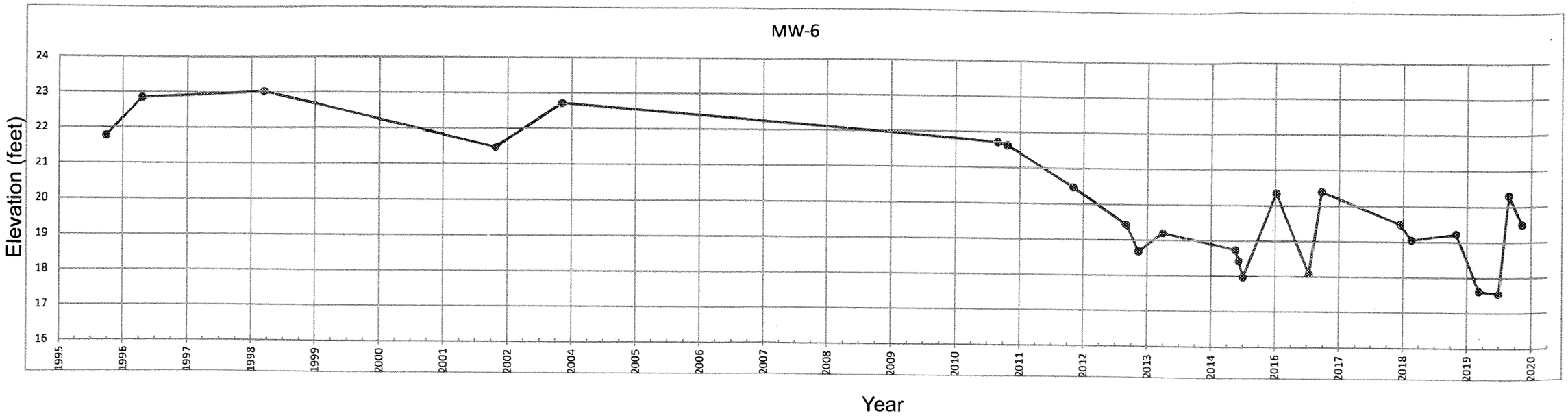


Note, this is a general representation of groundwater flow from the area of the UST cluster at 5221 Ballard Avenue NW.

TERRA ASSOCIATES
Geotechnical Consultants

Rose Diagram
Former C and C Paint Facility
Seattle, Washington

Proj. No T-6552	Date June 2020	Figure 18



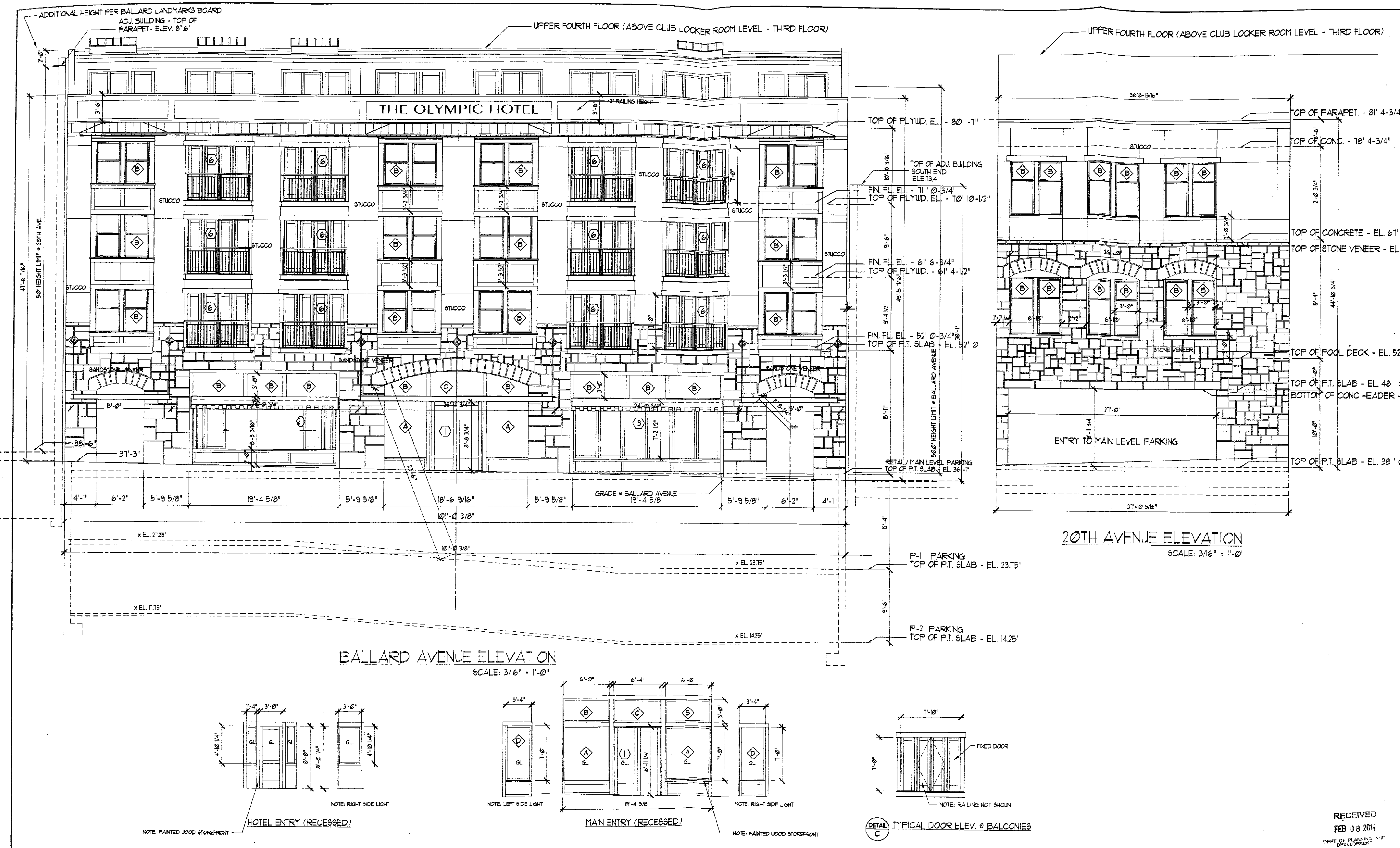
TERRA ASSOCIATES
Geotechnical Consultants

Chart 1:MW-6 SWL Measurements
Former C and C Paint Facility
Seattle, Washington

Proj. No. T-6552	Date June 2020	Figure 19

APPENDIX A

BALLARD HOTEL PLANS



RECEIVED
FEB 08 2011
DEPT OF PLANNING AND DEVELOPMENT

NOTES	CONSTRUCTION SET			
1.	REVISIONS			
2.	1. CORRECTIONS & REVISIONS RESUBMITTAL 12 OCT 2010			
3.	2.			
4.	3.			
5.	4.			

Lagerquist & Morris AIA
5135 Ballard Ave. NW Seattle WA 98107
phone: 206.789.7611 fax: 206.781.1911
email: lagerquistmorris@qwest.net

PRINCIPAL ARCHITECTS
GORDON LAGERQUIST
EUGENE MORRIS

BUILDING PERMIT DRAWINGS

Olympic Athletic Club & Hotel
5214 & 5216 Ballard Avenue N.W.
Seattle Washington

BALLARD AVE. ELEVATION
20TH AVE. ELEVATION
SCALE: 3/16" = 1'-0"

A3.1

APPENDIX B
FIELD SAMPLING

Former C & C Paints Facility
Seattle, Washington

Groundwater samples have been taken with a peristaltic pump using dedicated tubing and low flow purge methodology. For Monitoring Well MW-205, a submersible stainless-steel pump is used to purge the well. During groundwater sampling, some basic parameters were monitored. All parameter monitoring by Terra Associates, Inc. has been done with a flow through cell.

APPENDIX C
ANALYTICAL TESTING
GROUNDWATER

Former C & C Paints Facility
Seattle, Washington

All groundwater samples were placed into laboratory-prepared glassware. Each sample was given unique sample identification. All samples were kept refrigerated pending delivery to OnSite Environmental Inc. in Redmond, Washington. Chain of custody protocols were followed for all samples. OnSite Environmental Inc. has accreditation from Ecology for all of the testing performed during this project.

All testing was performed within the designated holding times. At the laboratory, standard quality control procedures were followed. The procedures consisted of sample blanks, duplicates, and matrix spikes. All testing was within normal standards.

To evaluate the diesel and oil range hydrocarbons found in the sample from Monitoring Well MW-107 was analyzed by the EPH/VPH method in addition to standard TPHDx methodology.

Based on our review of the laboratory data, it is our opinion that the results are acceptable for current use. Only analytical test reports for groundwater samples in 2019 and 2020 are included in this appendix.

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

March 18, 2019

Chuck Lie
Terra Associates, Inc.
12220 113th Avenue NE, Suite 130
Kirkland, WA 98034

Re: Analytical Data for Project 6552-1
Laboratory Reference No. 1903-083

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on March 8, 2019.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: March 18, 2019
Samples Submitted: March 8, 2019
Laboratory Reference: 1903-083
Project: 6552-1

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-202**					
Laboratory ID:	03-083-01					
Benzene	**4.3**	0.50	EPA 8021B	3-14-19	3-14-19	
Toluene	**17**	1.0	EPA 8021B	3-14-19	3-14-19	
Ethyl Benzene	**5100**	500	EPA 8021B	3-15-19	3-15-19	
m,p-Xylene	**16000**	500	EPA 8021B	3-15-19	3-15-19	
o-Xylene	**1600**	20	EPA 8021B	3-14-19	3-14-19	
Gasoline	**40000**	2000	NWTPH-Gx	3-14-19	3-14-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*86*	*66-117*				
Client ID:	**MW-109**					
Laboratory ID:	03-083-02					
Benzene	**ND**	0.50	EPA 8021B	3-15-19	3-15-19	
Toluene	**ND**	1.0	EPA 8021B	3-15-19	3-15-19	
Ethyl Benzene	**ND**	1.0	EPA 8021B	3-15-19	3-15-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	3-15-19	3-15-19	
o-Xylene	**ND**	1.0	EPA 8021B	3-15-19	3-15-19	
Gasoline	**ND**	100	NWTPH-Gx	3-15-19	3-15-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*82*	*66-117*				
Client ID:	**MW-7A**					
Laboratory ID:	03-083-03					
Benzene	**ND**	0.50	EPA 8021B	3-15-19	3-15-19	
Toluene	**ND**	1.0	EPA 8021B	3-15-19	3-15-19	
Ethyl Benzene	**8.0**	1.0	EPA 8021B	3-15-19	3-15-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	3-15-19	3-15-19	
o-Xylene	**ND**	1.0	EPA 8021B	3-15-19	3-15-19	
Gasoline	**140**	100	NWTPH-Gx	3-15-19	3-15-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*83*	*66-117*				

Date of Report: March 18, 2019
Samples Submitted: March 8, 2019
Laboratory Reference: 1903-083
Project: 6552-1

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-6**					
Laboratory ID:	03-083-04					
Benzene	**ND**	0.50	EPA 8021B	3-15-19	3-15-19	
Toluene	**ND**	1.0	EPA 8021B	3-15-19	3-15-19	
Ethyl Benzene	**ND**	1.0	EPA 8021B	3-15-19	3-15-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	3-15-19	3-15-19	
o-Xylene	**ND**	1.0	EPA 8021B	3-15-19	3-15-19	
Gasoline	**ND**	100	NWTPH-Gx	3-15-19	3-15-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*85*	*66-117*				
Client ID:	**MW-201**					
Laboratory ID:	03-083-05					
Benzene	**ND**	0.50	EPA 8021B	3-15-19	3-15-19	
Toluene	**ND**	1.0	EPA 8021B	3-15-19	3-15-19	
Ethyl Benzene	**ND**	1.0	EPA 8021B	3-15-19	3-15-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	3-15-19	3-15-19	
o-Xylene	**ND**	1.0	EPA 8021B	3-15-19	3-15-19	
Gasoline	**ND**	100	NWTPH-Gx	3-15-19	3-15-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*82*	*66-117*				
Client ID:	**MW-108**					
Laboratory ID:	03-083-06					
Benzene	**ND**	0.50	EPA 8021B	3-15-19	3-15-19	
Toluene	**ND**	1.0	EPA 8021B	3-15-19	3-15-19	
Ethyl Benzene	**ND**	1.0	EPA 8021B	3-15-19	3-15-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	3-15-19	3-15-19	
o-Xylene	**ND**	1.0	EPA 8021B	3-15-19	3-15-19	
Gasoline	**ND**	100	NWTPH-Gx	3-15-19	3-15-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*83*	*66-117*				

Date of Report: March 18, 2019
Samples Submitted: March 8, 2019
Laboratory Reference: 1903-083
Project: 6552-1

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-206**					
Laboratory ID:	03-083-07					
Benzene	**ND**	0.50	EPA 8021B	3-14-19	3-14-19	
Toluene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
Ethyl Benzene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
o-Xylene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
Gasoline	**ND**	100	NWTPH-Gx	3-14-19	3-14-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*83*	*66-117*				
Client ID:	**MW-205**					
Laboratory ID:	03-083-08					
Benzene	**ND**	0.50	EPA 8021B	3-14-19	3-14-19	
Toluene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
Ethyl Benzene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
o-Xylene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
Gasoline	**ND**	100	NWTPH-Gx	3-14-19	3-14-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*84*	*66-117*				
Client ID:	**MW-107**					
Laboratory ID:	03-083-09					
Benzene	**ND**	0.50	EPA 8021B	3-14-19	3-14-19	
Toluene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
Ethyl Benzene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
o-Xylene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
Gasoline	**ND**	100	NWTPH-Gx	3-14-19	3-14-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*83*	*66-117*				

Date of Report: March 18, 2019
Samples Submitted: March 8, 2019
Laboratory Reference: 1903-083
Project: 6552-1

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-203**					
Laboratory ID:	03-083-10					
Benzene	**ND**	0.50	EPA 8021B	3-14-19	3-14-19	
Toluene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
Ethyl Benzene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
o-Xylene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
Gasoline	**ND**	100	NWTPH-Gx	3-14-19	3-14-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*82*	*66-117*				
Client ID:	**MW-204**					
Laboratory ID:	03-083-11					
Benzene	**ND**	0.50	EPA 8021B	3-14-19	3-14-19	
Toluene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
Ethyl Benzene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
o-Xylene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
Gasoline	**ND**	100	NWTPH-Gx	3-14-19	3-14-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*84*	*66-117*				

Date of Report: March 18, 2019
Samples Submitted: March 8, 2019
Laboratory Reference: 1903-083
Project: 6552-1

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B
METHOD BLANK QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0314W2					
Benzene	**ND**	0.50	EPA 8021B	3-14-19	3-14-19	
Toluene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
Ethyl Benzene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
o-Xylene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
Gasoline	**ND**	100	NWTPH-Gx	3-14-19	3-14-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*83*	*66-117*				
Laboratory ID:	MB0314W3					
Benzene	**ND**	0.50	EPA 8021B	3-14-19	3-14-19	
Toluene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
Ethyl Benzene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
o-Xylene	**ND**	1.0	EPA 8021B	3-14-19	3-14-19	
Gasoline	**ND**	100	NWTPH-Gx	3-14-19	3-14-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*79*	*66-117*				
Laboratory ID:	MB0315W1					
Benzene	**ND**	0.50	EPA 8021B	3-15-19	3-15-19	
Toluene	**ND**	1.0	EPA 8021B	3-15-19	3-15-19	
Ethyl Benzene	**ND**	1.0	EPA 8021B	3-15-19	3-15-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	3-15-19	3-15-19	
o-Xylene	**ND**	1.0	EPA 8021B	3-15-19	3-15-19	
Gasoline	**ND**	100	NWTPH-Gx	3-15-19	3-15-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*80*	*66-117*				

Date of Report: March 18, 2019
Samples Submitted: March 8, 2019
Laboratory Reference: 1903-083
Project: 6552-1

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	03-083-02										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*82*	*73*	*66-117*			
Laboratory ID:	03-083-03										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**8.02**	**7.69**	NA	NA		NA		NA	4	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**137**	**139**	NA	NA		NA		NA	1	30	
Surrogate:											
Fluorobenzene						*83*	*79*	*66-117*			
SPIKE BLANKS											
Laboratory ID:	SB0314W3										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**49.4**	**50.0**	50.0	50.0		**99**	**100**	82-122	1	11	
Toluene	**51.2**	**52.5**	50.0	50.0		**102**	**105**	83-123	3	12	
Ethyl Benzene	**52.7**	**53.4**	50.0	50.0		**105**	**107**	83-123	1	12	
m,p-Xylene	**54.3**	**53.6**	50.0	50.0		**109**	**107**	83-123	1	12	
o-Xylene	**51.7**	**52.7**	50.0	50.0		**103**	**105**	83-123	2	11	
Surrogate:											
Fluorobenzene						*91*	*90*	*66-117*			

Date of Report: March 18, 2019
Samples Submitted: March 8, 2019
Laboratory Reference: 1903-083
Project: 6552-1

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-206**					
Laboratory ID:	03-083-07					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	3-11-19	3-11-19	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	3-11-19	3-11-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*100*	*50-150*				
Client ID:	**MW-205**					
Laboratory ID:	03-083-08					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	3-11-19	3-11-19	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	3-11-19	3-11-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*122*	*50-150*				
Client ID:	**MW-107**					
Laboratory ID:	03-083-09					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	3-11-19	3-11-19	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	3-11-19	3-11-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*115*	*50-150*				

Date of Report: March 18, 2019
Samples Submitted: March 8, 2019
Laboratory Reference: 1903-083
Project: 6552-1

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0311W1					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	3-11-19	3-11-19	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	3-11-19	3-11-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*103*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	03-083-08									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*122* *111*	*50-150*			

Date of Report: March 18, 2019
Samples Submitted: March 8, 2019
Laboratory Reference: 1903-083
Project: 6552-1

PAHs EPA 8270D/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-206**					
Laboratory ID:	03-083-07					
Naphthalene	**ND**	0.096	EPA 8270D/SIM	3-11-19	3-11-19	
2-Methylnaphthalene	**ND**	0.096	EPA 8270D/SIM	3-11-19	3-11-19	
1-Methylnaphthalene	**ND**	0.096	EPA 8270D/SIM	3-11-19	3-11-19	
Acenaphthylene	**ND**	0.096	EPA 8270D/SIM	3-11-19	3-11-19	
Acenaphthene	**ND**	0.096	EPA 8270D/SIM	3-11-19	3-11-19	
Fluorene	**ND**	0.096	EPA 8270D/SIM	3-11-19	3-11-19	
Phenanthrene	**ND**	0.096	EPA 8270D/SIM	3-11-19	3-11-19	
Anthracene	**ND**	0.096	EPA 8270D/SIM	3-11-19	3-11-19	
Fluoranthene	**ND**	0.096	EPA 8270D/SIM	3-11-19	3-11-19	
Pyrene	**ND**	0.096	EPA 8270D/SIM	3-11-19	3-11-19	
Benzo[a]anthracene	**ND**	0.0096	EPA 8270D/SIM	3-11-19	3-11-19	
Chrysene	**ND**	0.0096	EPA 8270D/SIM	3-11-19	3-11-19	
Benzo[b]fluoranthene	**ND**	0.0096	EPA 8270D/SIM	3-11-19	3-11-19	
Benzo(j,k)fluoranthene	**ND**	0.0096	EPA 8270D/SIM	3-11-19	3-11-19	
Benzo[a]pyrene	**ND**	0.0096	EPA 8270D/SIM	3-11-19	3-11-19	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0096	EPA 8270D/SIM	3-11-19	3-11-19	
Dibenz[a,h]anthracene	**ND**	0.0096	EPA 8270D/SIM	3-11-19	3-11-19	
Benzo[g,h,i]perylene	**ND**	0.0096	EPA 8270D/SIM	3-11-19	3-11-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*76*	*21 - 110*				
Pyrene-d10	*91*	*19 - 111*				
Terphenyl-d14	*98*	*32 - 137*				

Date of Report: March 18, 2019
Samples Submitted: March 8, 2019
Laboratory Reference: 1903-083
Project: 6552-1

PAHs EPA 8270D/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-205**					
Laboratory ID:	03-083-08					
Naphthalene	**ND**	0.094	EPA 8270D/SIM	3-11-19	3-11-19	
2-Methylnaphthalene	**ND**	0.094	EPA 8270D/SIM	3-11-19	3-11-19	
1-Methylnaphthalene	**ND**	0.094	EPA 8270D/SIM	3-11-19	3-11-19	
Acenaphthylene	**ND**	0.094	EPA 8270D/SIM	3-11-19	3-11-19	
Acenaphthene	**ND**	0.094	EPA 8270D/SIM	3-11-19	3-11-19	
Fluorene	**ND**	0.094	EPA 8270D/SIM	3-11-19	3-11-19	
Phenanthrene	**ND**	0.094	EPA 8270D/SIM	3-11-19	3-11-19	
Anthracene	**ND**	0.094	EPA 8270D/SIM	3-11-19	3-11-19	
Fluoranthene	**ND**	0.094	EPA 8270D/SIM	3-11-19	3-11-19	
Pyrene	**ND**	0.094	EPA 8270D/SIM	3-11-19	3-11-19	
Benzo[a]anthracene	**ND**	0.0094	EPA 8270D/SIM	3-11-19	3-11-19	
Chrysene	**ND**	0.0094	EPA 8270D/SIM	3-11-19	3-11-19	
Benzo[b]fluoranthene	**ND**	0.0094	EPA 8270D/SIM	3-11-19	3-11-19	
Benzo(j,k)fluoranthene	**ND**	0.0094	EPA 8270D/SIM	3-11-19	3-11-19	
Benzo[a]pyrene	**ND**	0.0094	EPA 8270D/SIM	3-11-19	3-11-19	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0094	EPA 8270D/SIM	3-11-19	3-11-19	
Dibenz[a,h]anthracene	**ND**	0.0094	EPA 8270D/SIM	3-11-19	3-11-19	
Benzo[g,h,i]perylene	**ND**	0.0094	EPA 8270D/SIM	3-11-19	3-11-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*67*	*21 - 110*				
Pyrene-d10	*87*	*19 - 111*				
Terphenyl-d14	*90*	*32 - 137*				

Date of Report: March 18, 2019
Samples Submitted: March 8, 2019
Laboratory Reference: 1903-083
Project: 6552-1

PAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0311W1					
Naphthalene	**ND**	0.10	EPA 8270D/SIM	3-11-19	3-11-19	
2-Methylnaphthalene	**ND**	0.10	EPA 8270D/SIM	3-11-19	3-11-19	
1-Methylnaphthalene	**ND**	0.10	EPA 8270D/SIM	3-11-19	3-11-19	
Acenaphthylene	**ND**	0.10	EPA 8270D/SIM	3-11-19	3-11-19	
Acenaphthene	**ND**	0.10	EPA 8270D/SIM	3-11-19	3-11-19	
Fluorene	**ND**	0.10	EPA 8270D/SIM	3-11-19	3-11-19	
Phenanthrene	**ND**	0.10	EPA 8270D/SIM	3-11-19	3-11-19	
Anthracene	**ND**	0.10	EPA 8270D/SIM	3-11-19	3-11-19	
Fluoranthene	**ND**	0.10	EPA 8270D/SIM	3-11-19	3-11-19	
Pyrene	**ND**	0.10	EPA 8270D/SIM	3-11-19	3-11-19	
Benzo[a]anthracene	**ND**	0.010	EPA 8270D/SIM	3-11-19	3-11-19	
Chrysene	**ND**	0.010	EPA 8270D/SIM	3-11-19	3-11-19	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270D/SIM	3-11-19	3-11-19	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270D/SIM	3-11-19	3-11-19	
Benzo[a]pyrene	**ND**	0.010	EPA 8270D/SIM	3-11-19	3-11-19	
Indeno(1,2,3-c,d)pyrene	**ND**	0.010	EPA 8270D/SIM	3-11-19	3-11-19	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270D/SIM	3-11-19	3-11-19	
Benzo[g,h,i]perylene	**ND**	0.010	EPA 8270D/SIM	3-11-19	3-11-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*50*	*21 - 110*				
Pyrene-d10	*87*	*19 - 111*				
Terphenyl-d14	*86*	*32 - 137*				

Date of Report: March 18, 2019
Samples Submitted: March 8, 2019
Laboratory Reference: 1903-083
Project: 6552-1

PAHs EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0311W1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.352**	**0.369**	0.500	0.500	70	74	28 - 109	5	38	
Acenaphthylene	**0.402**	**0.406**	0.500	0.500	80	81	37 - 111	1	26	
Acenaphthene	**0.349**	**0.362**	0.500	0.500	70	72	41 - 113	4	33	
Fluorene	**0.414**	**0.432**	0.500	0.500	83	86	47 - 114	4	23	
Phenanthrene	**0.391**	**0.415**	0.500	0.500	78	83	50 - 113	6	18	
Anthracene	**0.401**	**0.458**	0.500	0.500	80	92	50 - 117	13	18	
Fluoranthene	**0.466**	**0.485**	0.500	0.500	93	97	52 - 120	4	15	
Pyrene	**0.446**	**0.474**	0.500	0.500	89	95	51 - 128	6	31	
Benzo[a]anthracene	**0.428**	**0.464**	0.500	0.500	86	93	57 - 127	8	15	
Chrysene	**0.448**	**0.477**	0.500	0.500	90	95	51 - 120	6	15	
Benzo[b]fluoranthene	**0.481**	**0.529**	0.500	0.500	96	106	54 - 124	10	17	
Benzo(j,k)fluoranthene	**0.468**	**0.491**	0.500	0.500	94	98	50 - 127	5	18	
Benzo[a]pyrene	**0.440**	**0.475**	0.500	0.500	88	95	50 - 120	8	16	
Indeno(1,2,3-c,d)pyrene	**0.434**	**0.479**	0.500	0.500	87	96	46 - 132	10	20	
Dibenz[a,h]anthracene	**0.464**	**0.507**	0.500	0.500	93	101	49 - 129	9	18	
Benzo[g,h,i]perylene	**0.427**	**0.449**	0.500	0.500	85	90	45 - 130	5	19	
Surrogate:										
2-Fluorobiphenyl					*59*	*60*	*21 - 110*			
Pyrene-d10					*91*	*94*	*19 - 111*			
Terphenyl-d14					*89*	*95*	*32 - 137*			

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: Terra Associates Inc
Project Number: 6552-1
Project Name:
Project Manager: Chuck Lie
Sampled by: Micah R. Hoffman

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days)
☐ _____ (other)

Laboratory Number: 03-083

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A					% Moisture
1	MW-202	3/7/19	9:30	Water	3		X																				
2	MW-109		10:25		3		X																				
3	MW-7A		11:20		3		X																				
4	MW-6		12:10		3		X																				
5	MW-201		12:45		3		X																				
6	MW-108		13:35		3		X																				
7	MW-206		14:50		7		X		X					X													
8	MW-205		15:45		7		X		X					X													
9	MW-107	3/8/19	8:45		5		X		X					~~X~~ NO D3													
10	MW-203	3/8/19	9:45	↓	3		X																				

	Signature	Company	Date	Time
Relinquished		TAI	3/8/19	13:12
Received		CDSE	3/8/19	1312
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: Terra Associates Inc
Project Number: 6552-1
Project Name:
Project Manager: Chuck Lie
Sampled by: Nicolas K. Hoffman

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days)
☐ _____ (other)

Laboratory Number: 03-083

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A					% Moisture
11	MW-204	3/8/19	10:45	~~Soil~~ Groundwater	3		X																				

	Signature	Company	Date	Time
Relinquished		TAI	3/8/19	13:12
Received		CORE	3/8/19	1312
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 8, 2019

Chuck Lie
Terra Associates, Inc.
12220 113th Avenue NE, Suite 130
Kirkland, WA 98034

Re: Analytical Data for Project 6552-1
Laboratory Reference No. 1907-358

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on July 31, 2019.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: August 8, 2019
Samples Submitted: July 31, 2019
Laboratory Reference: 1907-358
Project: 6552-1

Case Narrative

Samples were collected on July 30 and 31, 2019 and received by the laboratory on July 31, 2019. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: August 8, 2019
Samples Submitted: July 31, 2019
Laboratory Reference: 1907-358
Project: 6552-1

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-201**					
Laboratory ID:	07-358-01					
Benzene	**ND**	0.50	EPA 8021B	8-1-19	8-1-19	
Toluene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
Ethyl Benzene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
o-Xylene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
Gasoline	**ND**	100	NWTPH-Gx	8-1-19	8-1-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*59-122*				
Client ID:	**MW-109**					
Laboratory ID:	07-358-02					
Benzene	**ND**	0.50	EPA 8021B	8-1-19	8-1-19	
Toluene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
Ethyl Benzene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
o-Xylene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
Gasoline	**ND**	100	NWTPH-Gx	8-1-19	8-1-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*59-122*				
Client ID:	**MW-204**					
Laboratory ID:	07-358-03					
Benzene	**ND**	0.50	EPA 8021B	8-1-19	8-1-19	
Toluene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
Ethyl Benzene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
o-Xylene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
Gasoline	**ND**	100	NWTPH-Gx	8-1-19	8-1-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*100*	*59-122*				

Date of Report: August 8, 2019
Samples Submitted: July 31, 2019
Laboratory Reference: 1907-358
Project: 6552-1

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-107**					
Laboratory ID:	07-358-04					
Benzene	**ND**	0.50	EPA 8021B	8-1-19	8-1-19	
Toluene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
Ethyl Benzene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
o-Xylene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
Gasoline	**ND**	100	NWTPH-Gx	8-1-19	8-1-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*100*	*59-122*				
Client ID:	**MW-203**					
Laboratory ID:	07-358-05					
Benzene	**ND**	0.50	EPA 8021B	8-1-19	8-1-19	
Toluene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
Ethyl Benzene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
o-Xylene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
Gasoline	**ND**	100	NWTPH-Gx	8-1-19	8-1-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*100*	*59-122*				
Client ID:	**MW-108**					
Laboratory ID:	07-358-06					
Benzene	**ND**	0.50	EPA 8021B	8-1-19	8-1-19	
Toluene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
Ethyl Benzene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
o-Xylene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
Gasoline	**ND**	100	NWTPH-Gx	8-1-19	8-1-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*100*	*59-122*				

Date of Report: August 8, 2019
Samples Submitted: July 31, 2019
Laboratory Reference: 1907-358
Project: 6552-1

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-6**					
Laboratory ID:	07-358-07					
Benzene	**ND**	0.50	EPA 8021B	8-1-19	8-1-19	
Toluene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
Ethyl Benzene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
o-Xylene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
Gasoline	**ND**	100	NWTPH-Gx	8-1-19	8-1-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*100*	*59-122*				

Date of Report: August 8, 2019
Samples Submitted: July 31, 2019
Laboratory Reference: 1907-358
Project: 6552-1

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0801W1					
Benzene	**ND**	0.50	EPA 8021B	8-1-19	8-1-19	
Toluene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
Ethyl Benzene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
o-Xylene	**ND**	1.0	EPA 8021B	8-1-19	8-1-19	
Gasoline	**ND**	100	NWTPH-Gx	8-1-19	8-1-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*96*	*59-122*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-358-01										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*90*	*99*	*59-122*			
SPIKE BLANKS											
Laboratory ID:	SB0801W1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**52.6**	**53.1**	50.0	50.0		**105**	**106**	76-120	1	11	
Toluene	**52.5**	**52.9**	50.0	50.0		**105**	**106**	80-116	1	12	
Ethyl Benzene	**53.3**	**53.6**	50.0	50.0		**107**	**107**	80-116	1	12	
m,p-Xylene	**53.0**	**53.1**	50.0	50.0		**106**	**106**	76-117	0	12	
o-Xylene	**52.5**	**52.8**	50.0	50.0		**105**	**106**	79-114	1	11	
Surrogate:											
Fluorobenzene						*108*	*105*	*59-122*			

Date of Report: August 8, 2019
Samples Submitted: July 31, 2019
Laboratory Reference: 1907-358
Project: 6552-1

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-107**					
Laboratory ID:	07-358-04					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	8-6-19	8-6-19	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	8-6-19	8-6-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*88*	*50-150*				
Client ID:	**MW-108**					
Laboratory ID:	07-358-06					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	8-6-19	8-6-19	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	8-6-19	8-6-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*94*	*50-150*				
Client ID:	**MW-6**					
Laboratory ID:	07-358-07					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	8-6-19	8-6-19	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	8-6-19	8-6-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*97*	*50-150*				

Date of Report: August 8, 2019
Samples Submitted: July 31, 2019
Laboratory Reference: 1907-358
Project: 6552-1

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0806W1					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	8-6-19	8-6-19	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	8-6-19	8-6-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	SB0806W1										
	ORIG	DUP									
Diesel Fuel #2	**0.775**	**0.768**	NA	NA		NA		NA	1	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*91*	*90*	*50-150*			

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Laboratory Number: 07-358

Company: TAI
Project Number: 0552-1
Project Name:
Project Manager: Chuck Lie
Sampled by: Evan H. Eckles

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days)
☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A					% Moisture
1	MW-201	7-30	13:30	W	3		✓																				
2	MW-109	7-30	15:25	W	3		✓																				
3	MW-204	7-31	6:50	W	3		✓																				
4	MW-107	7-31	7:45	W	3		✓																				
4/5	MW-107	7-31	7:45	W	1				✓																		
5/6	MW-203	7-31	8:55	W	3		✓																				
6/7	MW-108	7-31	10:00	W	3		✓																				
6/8	MW-108	7-31	10:00	W	1				✓																		
7/9	MW-6	7-31	10:45	W	3		✓																				
10	MW-6	7-31	10:45	W	1				✓																		

	Signature	Company	Date	Time
Relinquished		TAI	7-31-19	13:30
Received		OSE	7/31/19	1330
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

Reviewed/Date

Reviewed/Date

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 12, 2019

Chuck Lie
Terra Associates, Inc.
12220 113th Avenue NE, Suite 130
Kirkland, WA 98034

Re: Analytical Data for Project 6552-1
Laboratory Reference No. 1908-073

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on August 6, 2019.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: August 12, 2019
Samples Submitted: August 6, 2019
Laboratory Reference: 1908-073
Project: 6552-1

Case Narrative

Samples were collected on August 6, 2019 and received by the laboratory on August 6, 2019. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH-Gx/BTEX Analysis

The chromatogram for sample MW-202 is not similar to a typical gas.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: August 12, 2019
Samples Submitted: August 6, 2019
Laboratory Reference: 1908-073
Project: 6552-1

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-205**					
Laboratory ID:	08-073-01					
Benzene	**ND**	0.50	EPA 8021B	8-8-19	8-8-19	
Toluene	**ND**	1.0	EPA 8021B	8-8-19	8-8-19	
Ethyl Benzene	**ND**	1.0	EPA 8021B	8-8-19	8-8-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	8-8-19	8-8-19	
o-Xylene	**ND**	1.0	EPA 8021B	8-8-19	8-8-19	
Gasoline	**ND**	100	NWTPH-Gx	8-8-19	8-8-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*99*	*59-122*				
Client ID:	**MW-206**					
Laboratory ID:	08-073-02					
Benzene	**ND**	0.50	EPA 8021B	8-8-19	8-8-19	
Toluene	**ND**	1.0	EPA 8021B	8-8-19	8-8-19	
Ethyl Benzene	**ND**	1.0	EPA 8021B	8-8-19	8-8-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	8-8-19	8-8-19	
o-Xylene	**ND**	1.0	EPA 8021B	8-8-19	8-8-19	
Gasoline	**ND**	100	NWTPH-Gx	8-8-19	8-8-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*101*	*59-122*				
Client ID:	**MW-7A**					
Laboratory ID:	08-073-03					
Benzene	**ND**	0.50	EPA 8021B	8-8-19	8-8-19	
Toluene	**ND**	1.0	EPA 8021B	8-8-19	8-8-19	
Ethyl Benzene	**4.2**	1.0	EPA 8021B	8-8-19	8-8-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	8-8-19	8-8-19	
o-Xylene	**ND**	1.0	EPA 8021B	8-8-19	8-8-19	
Gasoline	**120**	100	NWTPH-Gx	8-8-19	8-8-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*101*	*59-122*				

Date of Report: August 12, 2019
Samples Submitted: August 6, 2019
Laboratory Reference: 1908-073
Project: 6552-1

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-202**					
Laboratory ID:	08-073-04					
Benzene	**2.5**	0.50	EPA 8021B	8-8-19	8-8-19	
Toluene	**4.9**	1.0	EPA 8021B	8-8-19	8-8-19	
Ethyl Benzene	**2000**	50	EPA 8021B	8-8-19	8-8-19	
m,p-Xylene	**9400**	100	EPA 8021B	8-8-19	8-8-19	
o-Xylene	**540**	50	EPA 8021B	8-8-19	8-8-19	
Gasoline	**33000**	5000	NWTPH-Gx	8-8-19	8-8-19	T
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*59-122*				

Date of Report: August 12, 2019
Samples Submitted: August 6, 2019
Laboratory Reference: 1908-073
Project: 6552-1

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0808W1					
Benzene	**ND**	0.50	EPA 8021B	8-8-19	8-8-19	
Toluene	**ND**	1.0	EPA 8021B	8-8-19	8-8-19	
Ethyl Benzene	**ND**	1.0	EPA 8021B	8-8-19	8-8-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	8-8-19	8-8-19	
o-Xylene	**ND**	1.0	EPA 8021B	8-8-19	8-8-19	
Gasoline	**ND**	100	NWTPH-Gx	8-8-19	8-8-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*100*	*59-122*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-073-01										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*99*	*100*	*59-122*			
SPIKE BLANKS											
Laboratory ID:	SB0808W1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**49.8**	**51.7**	50.0	50.0		**100**	**103**	76-120	4	11	
Toluene	**50.3**	**52.4**	50.0	50.0		**101**	**105**	80-116	4	12	
Ethyl Benzene	**51.3**	**53.5**	50.0	50.0		**103**	**107**	80-116	4	12	
m,p-Xylene	**51.1**	**53.3**	50.0	50.0		**102**	**107**	76-117	4	12	
o-Xylene	**50.8**	**52.9**	50.0	50.0		**102**	**106**	79-114	4	11	
Surrogate:											
Fluorobenzene						*104*	*107*	*59-122*			

Date of Report: August 12, 2019
Samples Submitted: August 6, 2019
Laboratory Reference: 1908-073
Project: 6552-1

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-205**					
Laboratory ID:	08-073-01					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	8-8-19	8-9-19	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	8-8-19	8-9-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*66*	*50-150*				
Client ID:	**MW-206**					
Laboratory ID:	08-073-02					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	8-8-19	8-9-19	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	8-8-19	8-9-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*67*	*50-150*				

Date of Report: August 12, 2019
Samples Submitted: August 6, 2019
Laboratory Reference: 1908-073
Project: 6552-1

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0808W1					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	8-8-19	8-9-19	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	8-8-19	8-9-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*64*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-078-07										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*72*	*69*	*50-150*			

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical gas.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: Terra Associates Inc
Project Number: 6552-1
Project Name:
Project Manager: Chuck Lee
Sampled by: Nicolas R. Hoffman

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days)
☐ _____ (other)

Laboratory Number: 08-073

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A					% Moisture
1	MW-205	8/6/19	9:05	Water	5		X		X																		
2	MW-206		9:05		5		X		X																		
3	MW-7A		10:15		3		X																				
4	MW-202		11:00		3		X																				

	Signature	Company	Date	Time
Relinquished		TAI	8/6/19	14:10
Received		OSE	8/6/19	1410
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 19, 2019

Chuck Lie
Terra Associates, Inc.
12220 113th Avenue NE, Suite 130
Kirkland, WA 98034

Re: Analytical Data for Project 6552-1
Laboratory Reference No. 1908-173

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on August 14, 2019.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: August 19, 2019
Samples Submitted: August 14, 2019
Laboratory Reference: 1908-173
Project:

Case Narrative

Samples were collected on August 14, 2019 and received by the laboratory on August 14, 2019. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: August 19, 2019
Samples Submitted: August 14, 2019
Laboratory Reference: 1908-173
Project:

PAHs EPA 8270D/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-206**					
Laboratory ID:	08-173-01					
Naphthalene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
2-Methylnaphthalene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
1-Methylnaphthalene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Acenaphthylene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Acenaphthene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Fluorene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Phenanthrene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Anthracene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Fluoranthene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Pyrene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Benzo[a]anthracene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Chrysene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Benzo[a]pyrene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Indeno(1,2,3-c,d)pyrene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Benzo[g,h,i]perylene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*77*	*27 - 106*				
Pyrene-d10	*86*	*35 - 98*				
Terphenyl-d14	*89*	*41 - 129*				

Date of Report: August 19, 2019
Samples Submitted: August 14, 2019
Laboratory Reference: 1908-173
Project:

PAHs EPA 8270D/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-205**					
Laboratory ID:	08-173-02					
Naphthalene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
2-Methylnaphthalene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
1-Methylnaphthalene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Acenaphthylene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Acenaphthene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Fluorene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Phenanthrene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Anthracene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Fluoranthene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Pyrene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Benzo[a]anthracene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Chrysene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Benzo[a]pyrene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Indeno(1,2,3-c,d)pyrene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Benzo[g,h,i]perylene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*78*	*27 - 106*				
Pyrene-d10	*87*	*35 - 98*				
Terphenyl-d14	*96*	*41 - 129*				

Date of Report: August 19, 2019
Samples Submitted: August 14, 2019
Laboratory Reference: 1908-173
Project:

PAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0815W2					
Naphthalene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
2-Methylnaphthalene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
1-Methylnaphthalene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Acenaphthylene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Acenaphthene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Fluorene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Phenanthrene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Anthracene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Fluoranthene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Pyrene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Benzo[a]anthracene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Chrysene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Benzo[a]pyrene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Indeno(1,2,3-c,d)pyrene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Benzo[g,h,i]perylene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*61*	*27 - 106*				
Pyrene-d10	*81*	*35 - 98*				
Terphenyl-d14	*84*	*41 - 129*				

Date of Report: August 19, 2019
Samples Submitted: August 14, 2019
Laboratory Reference: 1908-173
Project:

PAHs EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0815W2									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.439**	**0.341**	0.500	0.500	88	68	36 - 99	25	40	
Acenaphthylene	**0.396**	**0.402**	0.500	0.500	79	80	45 - 113	2	32	
Acenaphthene	**0.401**	**0.425**	0.500	0.500	80	85	43 - 119	6	33	
Fluorene	**0.417**	**0.418**	0.500	0.500	83	84	48 - 114	0	30	
Phenanthrene	**0.430**	**0.429**	0.500	0.500	86	86	49 - 113	0	24	
Anthracene	**0.424**	**0.431**	0.500	0.500	85	86	50 - 113	2	25	
Fluoranthene	**0.453**	**0.457**	0.500	0.500	91	91	57 - 118	1	22	
Pyrene	**0.477**	**0.487**	0.500	0.500	95	97	56 - 128	2	32	
Benzo[a]anthracene	**0.462**	**0.469**	0.500	0.500	92	94	59 - 127	2	24	
Chrysene	**0.453**	**0.463**	0.500	0.500	91	93	57 - 122	2	24	
Benzo[b]fluoranthene	**0.443**	**0.438**	0.500	0.500	89	88	58 - 123	1	26	
Benzo(j,k)fluoranthene	**0.441**	**0.457**	0.500	0.500	88	91	60 - 123	4	22	
Benzo[a]pyrene	**0.431**	**0.433**	0.500	0.500	86	87	54 - 121	0	24	
Indeno(1,2,3-c,d)pyrene	**0.435**	**0.431**	0.500	0.500	87	86	55 - 125	1	26	
Dibenz[a,h]anthracene	**0.439**	**0.443**	0.500	0.500	88	89	57 - 127	1	25	
Benzo[g,h,i]perylene	**0.433**	**0.439**	0.500	0.500	87	88	54 - 122	1	25	
Surrogate:										
2-Fluorobiphenyl					*69*	*70*	*27 - 106*			
Pyrene-d10					*88*	*84*	*35 - 98*			
Terphenyl-d14					*92*	*89*	*41 - 129*			

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: Tetra Associates Inc
Project Number: 6552-1
Project Name:
Project Manager: Chuck Lie
Sampled by: Nicolas R. Hoffman

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Days
- ☐ 3 Days
- ☒ Standard (7 Days)
- ☐ _____ (other)

Laboratory Number: 08-173

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A					% Moisture
1	MW-206	8/14/19	9:45	Water	2									X													
2	MW-205	8/14/19	10:15	Water	2									X													

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		Tetra Associates	8/14/19	11:35	
Received		COE	8/14/19	1135	
Relinquished					
Received					
Relinquished					
Received					Data Package: Standard ☐ Level III ☐ Level IV ☐
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

Date of Report: August 19, 2019
Samples Submitted: August 14, 2019
Laboratory Reference: 1908-173
Project:

PAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0815W2					
Naphthalene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
2-Methylnaphthalene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
1-Methylnaphthalene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Acenaphthylene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Acenaphthene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Fluorene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Phenanthrene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Anthracene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Fluoranthene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Pyrene	**ND**	0.10	EPA 8270D/SIM	8-15-19	8-16-19	
Benzo[a]anthracene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Chrysene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Benzo[a]pyrene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Indeno(1,2,3-c,d)pyrene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Benzo[g,h,i]perylene	**ND**	0.010	EPA 8270D/SIM	8-15-19	8-16-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*61*	*27 - 106*				
Pyrene-d10	*81*	*35 - 98*				
Terphenyl-d14	*84*	*41 - 129*				

Date of Report: August 19, 2019
Samples Submitted: August 14, 2019
Laboratory Reference: 1908-173
Project:

PAHs EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0815W2									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.439**	**0.341**	0.500	0.500	88	68	36 - 99	25	40	
Acenaphthylene	**0.396**	**0.402**	0.500	0.500	79	80	45 - 113	2	32	
Acenaphthene	**0.401**	**0.425**	0.500	0.500	80	85	43 - 119	6	33	
Fluorene	**0.417**	**0.418**	0.500	0.500	83	84	48 - 114	0	30	
Phenanthrene	**0.430**	**0.429**	0.500	0.500	86	86	49 - 113	0	24	
Anthracene	**0.424**	**0.431**	0.500	0.500	85	86	50 - 113	2	25	
Fluoranthene	**0.453**	**0.457**	0.500	0.500	91	91	57 - 118	1	22	
Pyrene	**0.477**	**0.487**	0.500	0.500	95	97	56 - 128	2	32	
Benzo[a]anthracene	**0.462**	**0.469**	0.500	0.500	92	94	59 - 127	2	24	
Chrysene	**0.453**	**0.463**	0.500	0.500	91	93	57 - 122	2	24	
Benzo[b]fluoranthene	**0.443**	**0.438**	0.500	0.500	89	88	58 - 123	1	26	
Benzo(j,k)fluoranthene	**0.441**	**0.457**	0.500	0.500	88	91	60 - 123	4	22	
Benzo[a]pyrene	**0.431**	**0.433**	0.500	0.500	86	87	54 - 121	0	24	
Indeno(1,2,3-c,d)pyrene	**0.435**	**0.431**	0.500	0.500	87	86	55 - 125	1	26	
Dibenz[a,h]anthracene	**0.439**	**0.443**	0.500	0.500	88	89	57 - 127	1	25	
Benzo[g,h,i]perylene	**0.433**	**0.439**	0.500	0.500	87	88	54 - 122	1	25	
Surrogate:										
2-Fluorobiphenyl					*69*	*70*	*27 - 106*			
Pyrene-d10					*88*	*84*	*35 - 98*			
Terphenyl-d14					*92*	*89*	*41 - 129*			

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: Terra Associates Inc
Project Number: 6552-1
Project Name:
Project Manager: Chuck Lee
Sampled by: Nicolas R. Hoffman

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Days
- ☐ 3 Days
- ☒ Standard (7 Days)
- ☐ _____ (other)

Laboratory Number: 08-173

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A					% Moisture
1	MW-20b	8/14/19	9:45	water	2									X													
2	MW-20S	8/14/19	10:15	Water	2									X													

	Signature	Company	Date	Time
Relinquished	[signature]	Terra Associates	8/14/19	11:35
Received	[signature]	OSE	8/14/19	1135
Relinquished				
Received				
Relinquished				
Received				

Reviewed/Date

Reviewed/Date

Comments/Special Instructions

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

November 14, 2019

Chuck Lie
Terra Associates, Inc.
12220 113th Avenue NE, Suite 130
Kirkland, WA 98034

Re: Analytical Data for Project 6552-1
Laboratory Reference No. 1911-127

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on November 12, 2019.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: November 14, 2019
Samples Submitted: November 12, 2019
Laboratory Reference: 1911-127
Project: 6552-1

Case Narrative

Samples were collected on November 12, 2019 and received by the laboratory on November 12, 2019. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: November 14, 2019
Samples Submitted: November 12, 2019
Laboratory Reference: 1911-127
Project: 6552-1

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-107**					
Laboratory ID:	11-127-01					
Diesel Range Organics	**0.42**	0.21	NWTPH-Dx	11-13-19	11-13-19	
Lube Oil Range Organics	**0.61**	0.21	NWTPH-Dx	11-13-19	11-13-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*125*	*50-150*				

Date of Report: November 14, 2019
Samples Submitted: November 12, 2019
Laboratory Reference: 1911-127
Project: 6552-1

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1113W1					
Diesel Range Organics	**ND**	0.20	NWTPH-Dx	11-13-19	11-13-19	
Lube Oil Range Organics	**ND**	0.20	NWTPH-Dx	11-13-19	11-13-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*105*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-127-01										
	ORIG	DUP									
Diesel Range Organics	**0.417**	**0.374**	NA	NA		NA		NA	11	NA	
Lube Oil Range Organics	**0.612**	**0.439**	NA	NA		NA		NA	33	NA	
Surrogate:											
o-Terphenyl						*125*	*103*	*50-150*			

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: TAI
Project Number: 0552-1
Project Name:
Project Manager: Chuck Lie
Sampled by: Evan H. Eckles

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☒ 2 Days ~~☒ 3 Days~~ 13
☐ Standard (7 Days)
☐ _____ (other)

Laboratory Number: 11-127

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A					% Moisture
1	MW-107	11-12	11:00	W	11				X																		

	Signature	Company	Date	Time
Relinquished		TAI	11-12	14:25
Received	Robert Liscell	OSE	11/12/19	1425
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

November 27, 2019

Chuck Lie
Terra Associates, Inc.
12220 113th Avenue NE, Suite 130
Kirkland, WA 98034

Re: Analytical Data for Project 6552-1
Laboratory Reference No. 1911-127B

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on November 12, 2019.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: November 27, 2019
Samples Submitted: November 12, 2019
Laboratory Reference: 1911-127B
Project: 6552-1

PAHs EPA 8270E/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-107**					
Laboratory ID:	11-127-01					
Naphthalene	**ND**	0.094	EPA 8270E/SIM	11-15-19	11-15-19	
2-Methylnaphthalene	**ND**	0.094	EPA 8270E/SIM	11-15-19	11-15-19	
1-Methylnaphthalene	**ND**	0.094	EPA 8270E/SIM	11-15-19	11-15-19	
Acenaphthylene	**ND**	0.094	EPA 8270E/SIM	11-15-19	11-15-19	
Acenaphthene	**ND**	0.094	EPA 8270E/SIM	11-15-19	11-15-19	
Fluorene	**ND**	0.094	EPA 8270E/SIM	11-15-19	11-15-19	
Phenanthrene	**ND**	0.094	EPA 8270E/SIM	11-15-19	11-15-19	
Anthracene	**ND**	0.094	EPA 8270E/SIM	11-15-19	11-15-19	
Fluoranthene	**ND**	0.094	EPA 8270E/SIM	11-15-19	11-15-19	
Pyrene	**ND**	0.094	EPA 8270E/SIM	11-15-19	11-15-19	
Benzo[a]anthracene	**ND**	0.0094	EPA 8270E/SIM	11-15-19	11-15-19	
Chrysene	**ND**	0.0094	EPA 8270E/SIM	11-15-19	11-15-19	
Benzo[b]fluoranthene	**ND**	0.0094	EPA 8270E/SIM	11-15-19	11-15-19	
Benzo(j,k)fluoranthene	**ND**	0.0094	EPA 8270E/SIM	11-15-19	11-15-19	
Benzo[a]pyrene	**ND**	0.0094	EPA 8270E/SIM	11-15-19	11-15-19	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0094	EPA 8270E/SIM	11-15-19	11-15-19	
Dibenz[a,h]anthracene	**ND**	0.0094	EPA 8270E/SIM	11-15-19	11-15-19	
Benzo[g,h,i]perylene	**ND**	0.0094	EPA 8270E/SIM	11-15-19	11-15-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*82*	*27 - 106*				
Pyrene-d10	*94*	*35 - 98*				
Terphenyl-d14	*100*	*41 - 129*				

Date of Report: November 27, 2019
Samples Submitted: November 12, 2019
Laboratory Reference: 1911-127B
Project: 6552-1

PAHs EPA 8270E/SIM
QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1115W1					
Naphthalene	**ND**	0.10	EPA 8270E/SIM	11-15-19	11-15-19	
2-Methylnaphthalene	**ND**	0.10	EPA 8270E/SIM	11-15-19	11-15-19	
1-Methylnaphthalene	**ND**	0.10	EPA 8270E/SIM	11-15-19	11-15-19	
Acenaphthylene	**ND**	0.10	EPA 8270E/SIM	11-15-19	11-15-19	
Acenaphthene	**ND**	0.10	EPA 8270E/SIM	11-15-19	11-15-19	
Fluorene	**ND**	0.10	EPA 8270E/SIM	11-15-19	11-15-19	
Phenanthrene	**ND**	0.10	EPA 8270E/SIM	11-15-19	11-15-19	
Anthracene	**ND**	0.10	EPA 8270E/SIM	11-15-19	11-15-19	
Fluoranthene	**ND**	0.10	EPA 8270E/SIM	11-15-19	11-15-19	
Pyrene	**ND**	0.10	EPA 8270E/SIM	11-15-19	11-15-19	
Benzo[a]anthracene	**ND**	0.010	EPA 8270E/SIM	11-15-19	11-15-19	
Chrysene	**ND**	0.010	EPA 8270E/SIM	11-15-19	11-15-19	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-15-19	11-15-19	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-15-19	11-15-19	
Benzo[a]pyrene	**ND**	0.010	EPA 8270E/SIM	11-15-19	11-15-19	
Indeno(1,2,3-c,d)pyrene	**ND**	0.010	EPA 8270E/SIM	11-15-19	11-15-19	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270E/SIM	11-15-19	11-15-19	
Benzo[g,h,i]perylene	**ND**	0.010	EPA 8270E/SIM	11-15-19	11-15-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*56*	*27 - 106*				
Pyrene-d10	*95*	*35 - 98*				
Terphenyl-d14	*100*	*41 - 129*				

Date of Report: November 27, 2019
Samples Submitted: November 12, 2019
Laboratory Reference: 1911-127B
Project: 6552-1

PAHs EPA 8270E/SIM
QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1115W1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.373**	**0.337**	0.500	0.500	75	67	36 - 99	10	40	
Acenaphthylene	**0.433**	**0.384**	0.500	0.500	87	77	45 - 113	12	32	
Acenaphthene	**0.451**	**0.398**	0.500	0.500	90	80	43 - 119	12	33	
Fluorene	**0.445**	**0.410**	0.500	0.500	89	82	48 - 114	8	30	
Phenanthrene	**0.453**	**0.423**	0.500	0.500	91	85	49 - 113	7	24	
Anthracene	**0.453**	**0.428**	0.500	0.500	91	86	50 - 113	6	25	
Fluoranthene	**0.444**	**0.436**	0.500	0.500	89	87	57 - 118	2	22	
Pyrene	**0.496**	**0.438**	0.500	0.500	99	88	56 - 128	12	32	
Benzo[a]anthracene	**0.512**	**0.483**	0.500	0.500	102	97	59 - 127	6	24	
Chrysene	**0.470**	**0.456**	0.500	0.500	94	91	57 - 122	3	24	
Benzo[b]fluoranthene	**0.494**	**0.474**	0.500	0.500	99	95	58 - 123	4	26	
Benzo(j,k)fluoranthene	**0.481**	**0.454**	0.500	0.500	96	91	60 - 123	6	22	
Benzo[a]pyrene	**0.477**	**0.449**	0.500	0.500	95	90	54 - 121	6	24	
Indeno(1,2,3-c,d)pyrene	**0.499**	**0.459**	0.500	0.500	100	92	55 - 125	8	26	
Dibenz[a,h]anthracene	**0.488**	**0.471**	0.500	0.500	98	94	57 - 127	4	25	
Benzo[g,h,i]perylene	**0.479**	**0.464**	0.500	0.500	96	93	54 - 122	3	25	
Surrogate:										
2-Fluorobiphenyl					*76*	*67*	*27 - 106*			
Pyrene-d10					*91*	*83*	*35 - 98*			
Terphenyl-d14					*99*	*90*	*41 - 129*			

Date of Report: November 27, 2019
Samples Submitted: November 12, 2019
Laboratory Reference: 1911-127B
Project: 6552-1

VOLATILE PETROLEUM HYDROCARBONS

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-107**					
Laboratory ID:	11-127-01					
Aliphatic C5-C6	**ND**	50	NWTPH-VPH	11-19-19	11-19-19	
Aliphatic C6-C8	**ND**	50	NWTPH-VPH	11-19-19	11-19-19	
Aliphatic C8-C10	**ND**	50	NWTPH-VPH	11-19-19	11-19-19	
Aliphatic C10-C12	**ND**	50	NWTPH-VPH	11-19-19	11-19-19	
Total Aliphatic:	**NA**		NWTPH-VPH	11-19-19	11-19-19	
Aromatic C8-C10	**ND**	50	NWTPH-VPH	11-19-19	11-19-19	
Aromatic C10-C12	**ND**	50	NWTPH-VPH	11-19-19	11-19-19	
Aromatic C12-C13	**ND**	50	NWTPH-VPH	11-19-19	11-19-19	
Total Aromatic:	**NA**		NWTPH-VPH	11-19-19	11-19-19	
Methyl t-butyl ether	**ND**	10	EPA 8021B	11-19-19	11-19-19	
Benzene	**ND**	1.0	EPA 8021B	11-19-19	11-19-19	
Toluene	**ND**	1.0	EPA 8021B	11-19-19	11-19-19	
Ethylbenzene	**ND**	1.0	EPA 8021B	11-19-19	11-19-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	11-19-19	11-19-19	
o-Xylene	**ND**	1.0	EPA 8021B	11-19-19	11-19-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*81*	*60-122*				

Date of Report: November 27, 2019
Samples Submitted: November 12, 2019
Laboratory Reference: 1911-127B
Project: 6552-1

VOLATILE PETROLEUM HYDROCARBONS
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1119W1					
Aliphatic C5-C6	**ND**	50	NWTPH-VPH	11-19-19	11-19-19	
Aliphatic C6-C8	**ND**	50	NWTPH-VPH	11-19-19	11-19-19	
Aliphatic C8-C10	**ND**	50	NWTPH-VPH	11-19-19	11-19-19	
Aliphatic C10-C12	**ND**	50	NWTPH-VPH	11-19-19	11-19-19	
Total Aliphatic:	**NA**		NWTPH-VPH	11-19-19	11-19-19	
Aromatic C8-C10	**ND**	50	NWTPH-VPH	11-19-19	11-19-19	
Aromatic C10-C12	**ND**	50	NWTPH-VPH	11-19-19	11-19-19	
Aromatic C12-C13	**ND**	50	NWTPH-VPH	11-19-19	11-19-19	
Total Aromatic:	**NA**		NWTPH-VPH	11-19-19	11-19-19	
Methyl t-butyl ether	**ND**	10	EPA 8021B	11-19-19	11-19-19	
Benzene	**ND**	1.0	EPA 8021B	11-19-19	11-19-19	
Toluene	**ND**	1.0	EPA 8021B	11-19-19	11-19-19	
Ethylbenzene	**ND**	1.0	EPA 8021B	11-19-19	11-19-19	
m,p-Xylene	**ND**	1.0	EPA 8021B	11-19-19	11-19-19	
o-Xylene	**ND**	1.0	EPA 8021B	11-19-19	11-19-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*81*	*60-122*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB1119W1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**47.7**	**48.5**	50.0	50.0		**95**	**97**	76-120	2	11	
Toluene	**48.3**	**46.2**	50.0	50.0		**97**	**92**	80-116	4	12	
Ethyl Benzene	**48.2**	**45.7**	50.0	50.0		**96**	**91**	80-116	5	12	
m,p-Xylene	**48.8**	**46.0**	50.0	50.0		**98**	**92**	76-117	6	12	
o-Xylene	**48.1**	**46.2**	50.0	50.0		**96**	**92**	79-114	4	11	
Surrogate:											
Fluorobenzene						*86*	*88*	*60-122*			

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

November 27, 2019

Mr. David Baumeister
OnSite Environmental, Inc.
14648 NE 95th Street
Redmond, WA 98052

Dear Mr. Baumeister,

On November 15th, 1 sample was received by our laboratory and assigned our laboratory project number EV19110118. The project was identified as your Project #6552-1, Laboratory Ref #11-127. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 PHONE 425-356-2600 FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	OnSite Environmental, Inc. 14648 NE 95th Street Redmond, WA 98052	DATE: ALS JOB#: ALS SAMPLE#:	11/27/2019 EV19110118 EV19110118-01
CLIENT CONTACT:	David Baumeister	DATE RECEIVED:	11/15/2019
CLIENT PROJECT:	Project #6552-1, Laboratory Ref #11-127	COLLECTION DATE:	11/12/2019 11:00:00 AM
CLIENT SAMPLE ID	MW-107	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
>C8-C10 Aliphatics	NWEPH	U	50	1	UG/L	11/20/2019	EBS
>C10-C12 Aliphatics	NWEPH	U	50	1	UG/L	11/20/2019	EBS
>C12-C16 Aliphatics	NWEPH	U	50	1	UG/L	11/20/2019	EBS
>C16-C21 Aliphatics	NWEPH	U	50	1	UG/L	11/20/2019	EBS
>C21-C34 Aliphatics	NWEPH	U	50	1	UG/L	11/20/2019	EBS
>C8-C10 Aromatics	NWEPH	U	50	1	UG/L	11/20/2019	EBS
>C10-C12 Aromatics	NWEPH	U	50	1	UG/L	11/20/2019	EBS
>C12-C16 Aromatics	NWEPH	U	50	1	UG/L	11/20/2019	EBS
>C16-C21 Aromatics	NWEPH	U	50	1	UG/L	11/20/2019	EBS
>C21-C34 Aromatics	NWEPH	U	50	1	UG/L	11/20/2019	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWEPH	**112**	11/20/2019	EBS
p-Terphenyl	NWEPH	**88.8**	11/20/2019	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	OnSite Environmental, Inc.	DATE:	11/27/2019
	14648 NE 95th Street	ALS SDG#:	EV19110118
	Redmond, WA 98052	WDOE ACCREDITATION:	C601
CLIENT CONTACT:	David Baumeister		
CLIENT PROJECT:	Project #6552-1, Laboratory Ref #11-127		

LABORATORY BLANK RESULTS

MB-111819W - Batch R351474 - Water by NWEPH

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
>C8-C10 Aromatics	NWEPH	U	UG/L	50	11/20/2019	EBS
>C10-C12 Aromatics	NWEPH	U	UG/L	50	11/20/2019	EBS
>C12-C16 Aromatics	NWEPH	U	UG/L	50	11/20/2019	EBS
>C16-C21 Aromatics	NWEPH	U	UG/L	50	11/20/2019	EBS
>C21-C34 Aromatics	NWEPH	U	UG/L	50	11/20/2019	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-111819W - Batch R351475 - Water by NWEPH

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
>C8-C10 Aliphatics	NWEPH	U	UG/L	50	11/20/2019	EBS
>C10-C12 Aliphatics	NWEPH	U	UG/L	50	11/20/2019	EBS
>C12-C16 Aliphatics	NWEPH	U	UG/L	50	11/20/2019	EBS
>C16-C21 Aliphatics	NWEPH	U	UG/L	50	11/20/2019	EBS
>C21-C34 Aliphatics	NWEPH	U	UG/L	50	11/20/2019	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	OnSite Environmental, Inc. 14648 NE 95th Street Redmond, WA 98052	DATE: ALS SDG#: WDOE ACCREDITATION:	11/27/2019 EV19110118 C601
CLIENT CONTACT:	David Baumeister		
CLIENT PROJECT:	Project #6552-1, Laboratory Ref #11-127		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R351474 - Water by NWEPH

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
>C8-C10 Aromatics - BS	NWEPH	90.7			70	130	11/20/2019	EBS
>C8-C10 Aromatics - BSD	NWEPH	82.0	10		70	130	11/20/2019	EBS
>C10-C12 Aromatics - BS	NWEPH	96.6			70	130	11/20/2019	EBS
>C10-C12 Aromatics - BSD	NWEPH	90.4	7		70	130	11/20/2019	EBS
>C12-C16 Aromatics - BS	NWEPH	106			70	130	11/20/2019	EBS
>C12-C16 Aromatics - BSD	NWEPH	103	3		70	130	11/20/2019	EBS
>C16-C21 Aromatics - BS	NWEPH	108			70	130	11/20/2019	EBS
>C16-C21 Aromatics - BSD	NWEPH	107	0		70	130	11/20/2019	EBS
>C21-C34 Aromatics - BS	NWEPH	114			70	130	11/20/2019	EBS
>C21-C34 Aromatics - BSD	NWEPH	117	2		70	130	11/20/2019	EBS

ALS Test Batch ID: R351475 - Water by NWEPH

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
>C8-C10 Aliphatics - BS	NWEPH	77.4			70	130	11/20/2019	EBS
>C8-C10 Aliphatics - BSD	NWEPH	75.2	3		70	130	11/20/2019	EBS
>C10-C12 Aliphatics - BS	NWEPH	93.5			70	130	11/20/2019	EBS
>C10-C12 Aliphatics - BSD	NWEPH	89.9	4		70	130	11/20/2019	EBS
>C12-C16 Aliphatics - BS	NWEPH	98.3			70	130	11/20/2019	EBS
>C12-C16 Aliphatics - BSD	NWEPH	99.9	2		70	130	11/20/2019	EBS
>C16-C21 Aliphatics - BS	NWEPH	102			70	130	11/20/2019	EBS
>C16-C21 Aliphatics - BSD	NWEPH	104	2		70	130	11/20/2019	EBS
>C21-C34 Aliphatics - BS	NWEPH	100			70	130	11/20/2019	EBS
>C21-C34 Aliphatics - BSD	NWEPH	103	3		70	130	11/20/2019	EBS

APPROVED BY

Laboratory Director

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ALS Group USA, Corp dba ALS Environmental

EV1911011B

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 · (425) 883-3881

Laboratory Reference #: 11-127

Laboratory: ALS Environmental

Attention: Rick Bagan

8620 Holly Drive Everett, WA 98208

Phone Number: (425) 356-2600

Turnaround Request

1 Day 2 Day 3 Day

Standard

Other:

Project Manager: David Baumeister

email: dbaumeister@onsite-env.com

Project Number: 6552-1

Project Name:

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analyses
	MW-107	11/12/19	11:00	W	1	EPH

Signature	Company	Date	Time	Comments/Special Instructions
Relinquished by:	OSE	11/15/19	1250	
Received by:	Alpha	11/15/19	1250	
Relinquished by:	Alpha	11/15/19	1511	
Received by:	ALS	11/15/19	2:11	
Relinquished by:				
Received by:				

Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: TAI
Project Number: 0552-1
Project Name:
Project Manager: Chuck Lie
Sampled by: Evan H. Eckles

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☒ 2 Days
- ~~☒ 3 Days~~ 3
- ☐ Standard (7 Days)
- ☐ _____ (other)

Laboratory Number: 11-127

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	EPH	VPH			% Moisture
1	MW-107	11-12	11:00	W	11				X					X									X	X			

	Signature	Company	Date	Time
Relinquished		TAI	11-12	14:25
Received		OSE	11/12/19	1425
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

X Added 11/15/19. DB (STA)

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

February 6, 2020

Chuck Lie
Terra Associates, Inc.
12220 113th Avenue NE, Suite 130
Kirkland, WA 98034

Re: Analytical Data for Project 6552-1
Laboratory Reference No. 2001-337

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on January 31, 2020.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: February 6, 2020
Samples Submitted: January 31, 2020
Laboratory Reference: 2001-337
Project: 6552-1

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-206**					
Laboratory ID:	01-337-01					
Benzene	**ND**	0.50	EPA 8021B	1-31-20	1-31-20	
Toluene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
o-Xylene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
Gasoline	**ND**	100	NWTPH-Gx	1-31-20	1-31-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*111*	*59-122*				
Client ID:	**MW-205**					
Laboratory ID:	01-337-02					
Benzene	**ND**	0.50	EPA 8021B	1-31-20	1-31-20	
Toluene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
o-Xylene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
Gasoline	**ND**	100	NWTPH-Gx	1-31-20	1-31-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*95*	*59-122*				
Client ID:	**MW-201**					
Laboratory ID:	01-337-03					
Benzene	**ND**	0.50	EPA 8021B	1-31-20	1-31-20	
Toluene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
o-Xylene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
Gasoline	**ND**	100	NWTPH-Gx	1-31-20	1-31-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*98*	*59-122*				

Date of Report: February 6, 2020
Samples Submitted: January 31, 2020
Laboratory Reference: 2001-337
Project: 6552-1

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-108**					
Laboratory ID:	01-337-04					
Benzene	**ND**	0.50	EPA 8021B	1-31-20	1-31-20	
Toluene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
o-Xylene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
Gasoline	**ND**	100	NWTPH-Gx	1-31-20	1-31-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*98*	*59-122*				
Client ID:	**MW-7a**					
Laboratory ID:	01-337-05					
Benzene	**ND**	0.50	EPA 8021B	1-31-20	1-31-20	
Toluene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
o-Xylene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
Gasoline	**ND**	100	NWTPH-Gx	1-31-20	1-31-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*59-122*				
Client ID:	**MW-109**					
Laboratory ID:	01-337-06					
Benzene	**ND**	0.50	EPA 8021B	1-31-20	1-31-20	
Toluene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
o-Xylene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
Gasoline	**ND**	100	NWTPH-Gx	1-31-20	1-31-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*99*	*59-122*				

Date of Report: February 6, 2020
Samples Submitted: January 31, 2020
Laboratory Reference: 2001-337
Project: 6552-1

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-202**					
Laboratory ID:	01-337-07					
Benzene	**1.3**	0.50	EPA 8021B	1-31-20	1-31-20	
Toluene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
Ethyl Benzene	**1100**	20	EPA 8021B	2-3-20	2-3-20	
m,p-Xylene	**4000**	50	EPA 8021B	2-4-20	2-4-20	
o-Xylene	**110**	20	EPA 8021B	2-3-20	2-3-20	
Gasoline	**15000**	2000	NWTPH-Gx	2-3-20	2-3-20	T
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*99*	*59-122*				
Client ID:	**MW-203**					
Laboratory ID:	01-337-08					
Benzene	**ND**	0.50	EPA 8021B	1-31-20	1-31-20	
Toluene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
o-Xylene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
Gasoline	**ND**	100	NWTPH-Gx	1-31-20	1-31-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*98*	*59-122*				
Client ID:	**MW-107**					
Laboratory ID:	01-337-09					
Benzene	**ND**	0.50	EPA 8021B	1-31-20	1-31-20	
Toluene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
o-Xylene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
Gasoline	**ND**	100	NWTPH-Gx	1-31-20	1-31-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*98*	*59-122*				

Date of Report: February 6, 2020
Samples Submitted: January 31, 2020
Laboratory Reference: 2001-337
Project: 6552-1

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-204**					
Laboratory ID:	01-337-10					
Benzene	**ND**	0.50	EPA 8021B	2-3-20	2-3-20	
Toluene	**ND**	1.0	EPA 8021B	2-3-20	2-3-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	2-3-20	2-3-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	2-3-20	2-3-20	
o-Xylene	**ND**	1.0	EPA 8021B	2-3-20	2-3-20	
Gasoline	**270**	100	NWTPH-Gx	2-3-20	2-3-20	O
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*102*	*59-122*				
Client ID:	**MW-6**					
Laboratory ID:	01-337-11					
Benzene	**ND**	0.50	EPA 8021B	1-31-20	1-31-20	
Toluene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
o-Xylene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
Gasoline	**ND**	100	NWTPH-Gx	1-31-20	1-31-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*98*	*59-122*				

Date of Report: February 6, 2020
Samples Submitted: January 31, 2020
Laboratory Reference: 2001-337
Project: 6552-1

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0131W1					
Benzene	**ND**	0.50	EPA 8021B	1-31-20	1-31-20	
Toluene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
o-Xylene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
Gasoline	**ND**	100	NWTPH-Gx	1-31-20	1-31-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*98*	*59-122*				
Laboratory ID:	MB0131W2					
Benzene	**ND**	0.50	EPA 8021B	1-31-20	1-31-20	
Toluene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
o-Xylene	**ND**	1.0	EPA 8021B	1-31-20	1-31-20	
Gasoline	**ND**	100	NWTPH-Gx	1-31-20	1-31-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*98*	*59-122*				
Laboratory ID:	MB0203W1					
Benzene	**ND**	0.50	EPA 8021B	2-3-20	2-3-20	
Toluene	**ND**	1.0	EPA 8021B	2-3-20	2-3-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	2-3-20	2-3-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	2-3-20	2-3-20	
o-Xylene	**ND**	1.0	EPA 8021B	2-3-20	2-3-20	
Gasoline	**ND**	100	NWTPH-Gx	2-3-20	2-3-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*104*	*59-122*				
Laboratory ID:	MB0204W1					
Benzene	**ND**	0.50	EPA 8021B	2-4-20	2-4-20	
Toluene	**ND**	1.0	EPA 8021B	2-4-20	2-4-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	2-4-20	2-4-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	2-4-20	2-4-20	
o-Xylene	**ND**	1.0	EPA 8021B	2-4-20	2-4-20	
Gasoline	**ND**	100	NWTPH-Gx	2-4-20	2-4-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*102*	*59-122*				

Date of Report: February 6, 2020
Samples Submitted: January 31, 2020
Laboratory Reference: 2001-337
Project: 6552-1

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	01-337-01									
	ORIG	DUP								
Benzene	**ND**	**ND**	NA	NA		NA	NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA	NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA	NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA	NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA	NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA	NA	NA	30	
Surrogate:										
Fluorobenzene						*111*	*100*	*59-122*		
Laboratory ID:	01-337-02									
	ORIG	DUP								
Benzene	**ND**	**ND**	NA	NA		NA	NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA	NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA	NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA	NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA	NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA	NA	NA	30	
Surrogate:										
Fluorobenzene						*95*	*102*	*59-122*		
SPIKE BLANKS										
Laboratory ID:	SB0131W1									
	SB	SBD	SB	SBD		SB	SBD			
Benzene	**53.3**	**51.6**	50.0	50.0		**107**	**103**	76-120	3	11
Toluene	**55.4**	**53.4**	50.0	50.0		**111**	**107**	80-116	4	12
Ethyl Benzene	**56.1**	**54.7**	50.0	50.0		**112**	**109**	80-116	3	12
m,p-Xylene	**55.7**	**55.2**	50.0	50.0		**111**	**110**	76-117	1	12
o-Xylene	**55.1**	**52.9**	50.0	50.0		**110**	**106**	79-114	4	11
Surrogate:										
Fluorobenzene						*110*	*106*	*59-122*		

Date of Report: February 6, 2020
Samples Submitted: January 31, 2020
Laboratory Reference: 2001-337
Project: 6552-1

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0203W1					
Diesel Range Organics	**ND**	0.20	NWTPH-Dx	2-3-20	2-3-20	
Lube Oil Range Organics	**ND**	0.20	NWTPH-Dx	2-3-20	2-3-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*108*	*50-150*				
Laboratory ID:	MB0203W1					
Diesel Range Organics	**ND**	0.20	NWTPH-Dx	2-3-20	2-3-20	X1
Lube Oil Range Organics	**ND**	0.20	NWTPH-Dx	2-3-20	2-3-20	X1
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*114*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	SB0203W1									
	ORIG	DUP								
Diesel Fuel #2	**0.515**	**0.480**	NA	NA		NA	NA	7	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*118* *110*	*50-150*			
Laboratory ID:	SB0203W1									
	ORIG	DUP								
Diesel Fuel #2	**0.595**	**0.562**	NA	NA		NA	NA	6	NA	X1
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	X1
Surrogate:										
o-Terphenyl						*126* *124*	*50-150*			

Date of Report: February 6, 2020
Samples Submitted: January 31, 2020
Laboratory Reference: 2001-337
Project: 6552-1

PAHs EPA 8270E/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-206**					
Laboratory ID:	01-337-01					
Naphthalene	**ND**	0.095	EPA 8270E/SIM	1-31-20	2-3-20	
2-Methylnaphthalene	**ND**	0.095	EPA 8270E/SIM	1-31-20	2-3-20	
1-Methylnaphthalene	**ND**	0.095	EPA 8270E/SIM	1-31-20	2-3-20	
Acenaphthylene	**ND**	0.095	EPA 8270E/SIM	1-31-20	2-3-20	
Acenaphthene	**ND**	0.095	EPA 8270E/SIM	1-31-20	2-3-20	
Fluorene	**ND**	0.095	EPA 8270E/SIM	1-31-20	2-3-20	
Phenanthrene	**ND**	0.095	EPA 8270E/SIM	1-31-20	2-3-20	
Anthracene	**ND**	0.095	EPA 8270E/SIM	1-31-20	2-3-20	
Fluoranthene	**ND**	0.095	EPA 8270E/SIM	1-31-20	2-3-20	
Pyrene	**ND**	0.095	EPA 8270E/SIM	1-31-20	2-3-20	
Benzo[a]anthracene	**ND**	0.0095	EPA 8270E/SIM	1-31-20	2-3-20	
Chrysene	**ND**	0.0095	EPA 8270E/SIM	1-31-20	2-3-20	
Benzo[b]fluoranthene	**ND**	0.0095	EPA 8270E/SIM	1-31-20	2-3-20	
Benzo(j,k)fluoranthene	**ND**	0.0095	EPA 8270E/SIM	1-31-20	2-3-20	
Benzo[a]pyrene	**ND**	0.0095	EPA 8270E/SIM	1-31-20	2-3-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0095	EPA 8270E/SIM	1-31-20	2-3-20	
Dibenz[a,h]anthracene	**ND**	0.0095	EPA 8270E/SIM	1-31-20	2-3-20	
Benzo[g,h,i]perylene	**ND**	0.0095	EPA 8270E/SIM	1-31-20	2-3-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*66*	*27 - 106*				
Pyrene-d10	*82*	*35 - 98*				
Terphenyl-d14	*101*	*41 - 129*				

Date of Report: February 6, 2020
Samples Submitted: January 31, 2020
Laboratory Reference: 2001-337
Project: 6552-1

PAHs EPA 8270E/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-205**					
Laboratory ID:	01-337-02					
Naphthalene	**0.25**	0.094	EPA 8270E/SIM	1-31-20	2-3-20	
2-Methylnaphthalene	**ND**	0.094	EPA 8270E/SIM	1-31-20	2-3-20	
1-Methylnaphthalene	**ND**	0.094	EPA 8270E/SIM	1-31-20	2-3-20	
Acenaphthylene	**ND**	0.094	EPA 8270E/SIM	1-31-20	2-3-20	
Acenaphthene	**ND**	0.094	EPA 8270E/SIM	1-31-20	2-3-20	
Fluorene	**ND**	0.094	EPA 8270E/SIM	1-31-20	2-3-20	
Phenanthrene	**ND**	0.094	EPA 8270E/SIM	1-31-20	2-3-20	
Anthracene	**ND**	0.094	EPA 8270E/SIM	1-31-20	2-3-20	
Fluoranthene	**ND**	0.094	EPA 8270E/SIM	1-31-20	2-3-20	
Pyrene	**ND**	0.094	EPA 8270E/SIM	1-31-20	2-3-20	
Benzo[a]anthracene	**ND**	0.0094	EPA 8270E/SIM	1-31-20	2-3-20	
Chrysene	**ND**	0.0094	EPA 8270E/SIM	1-31-20	2-3-20	
Benzo[b]fluoranthene	**ND**	0.0094	EPA 8270E/SIM	1-31-20	2-3-20	
Benzo(j,k)fluoranthene	**ND**	0.0094	EPA 8270E/SIM	1-31-20	2-3-20	
Benzo[a]pyrene	**ND**	0.0094	EPA 8270E/SIM	1-31-20	2-3-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0094	EPA 8270E/SIM	1-31-20	2-3-20	
Dibenz[a,h]anthracene	**ND**	0.0094	EPA 8270E/SIM	1-31-20	2-3-20	
Benzo[g,h,i]perylene	**ND**	0.0094	EPA 8270E/SIM	1-31-20	2-3-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*72*	*27 - 106*				
Pyrene-d10	*91*	*35 - 98*				
Terphenyl-d14	*97*	*41 - 129*				

Date of Report: February 6, 2020
Samples Submitted: January 31, 2020
Laboratory Reference: 2001-337
Project: 6552-1

PAHs EPA 8270E/SIM
QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0131W2					
Naphthalene	**ND**	0.10	EPA 8270E/SIM	1-31-20	1-31-20	
2-Methylnaphthalene	**ND**	0.10	EPA 8270E/SIM	1-31-20	1-31-20	
1-Methylnaphthalene	**ND**	0.10	EPA 8270E/SIM	1-31-20	1-31-20	
Acenaphthylene	**ND**	0.10	EPA 8270E/SIM	1-31-20	1-31-20	
Acenaphthene	**ND**	0.10	EPA 8270E/SIM	1-31-20	1-31-20	
Fluorene	**ND**	0.10	EPA 8270E/SIM	1-31-20	1-31-20	
Phenanthrene	**ND**	0.10	EPA 8270E/SIM	1-31-20	1-31-20	
Anthracene	**ND**	0.10	EPA 8270E/SIM	1-31-20	1-31-20	
Fluoranthene	**ND**	0.10	EPA 8270E/SIM	1-31-20	1-31-20	
Pyrene	**ND**	0.10	EPA 8270E/SIM	1-31-20	1-31-20	
Benzo[a]anthracene	**ND**	0.010	EPA 8270E/SIM	1-31-20	1-31-20	
Chrysene	**ND**	0.010	EPA 8270E/SIM	1-31-20	1-31-20	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270E/SIM	1-31-20	1-31-20	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270E/SIM	1-31-20	1-31-20	
Benzo[a]pyrene	**ND**	0.010	EPA 8270E/SIM	1-31-20	1-31-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.010	EPA 8270E/SIM	1-31-20	1-31-20	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270E/SIM	1-31-20	1-31-20	
Benzo[g,h,i]perylene	**ND**	0.010	EPA 8270E/SIM	1-31-20	1-31-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*64*	*27 - 106*				
Pyrene-d10	*97*	*35 - 98*				
Terphenyl-d14	*116*	*41 - 129*				

Date of Report: February 6, 2020
Samples Submitted: January 31, 2020
Laboratory Reference: 2001-337
Project: 6552-1

PAHs EPA 8270E/SIM
QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0131W2									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.291**	**0.264**	0.500	0.500	58	53	36 - 99	10	40	
Acenaphthylene	**0.401**	**0.367**	0.500	0.500	80	73	45 - 113	9	32	
Acenaphthene	**0.333**	**0.317**	0.500	0.500	67	63	43 - 119	5	33	
Fluorene	**0.361**	**0.335**	0.500	0.500	72	67	48 - 114	7	30	
Phenanthrene	**0.392**	**0.390**	0.500	0.500	78	78	49 - 113	1	24	
Anthracene	**0.397**	**0.388**	0.500	0.500	79	78	50 - 113	2	25	
Fluoranthene	**0.419**	**0.410**	0.500	0.500	84	82	57 - 118	2	22	
Pyrene	**0.441**	**0.463**	0.500	0.500	88	93	56 - 128	5	32	
Benzo[a]anthracene	**0.487**	**0.501**	0.500	0.500	97	100	59 - 127	3	24	
Chrysene	**0.485**	**0.495**	0.500	0.500	97	99	57 - 122	2	24	
Benzo[b]fluoranthene	**0.528**	**0.541**	0.500	0.500	106	108	58 - 123	2	26	
Benzo(j,k)fluoranthene	**0.491**	**0.491**	0.500	0.500	98	98	60 - 123	0	22	
Benzo[a]pyrene	**0.470**	**0.479**	0.500	0.500	94	96	54 - 121	2	24	
Indeno(1,2,3-c,d)pyrene	**0.501**	**0.507**	0.500	0.500	100	101	55 - 125	1	26	
Dibenz[a,h]anthracene	**0.484**	**0.496**	0.500	0.500	97	99	57 - 127	2	25	
Benzo[g,h,i]perylene	**0.489**	**0.498**	0.500	0.500	98	100	54 - 122	2	25	
Surrogate:										
2-Fluorobiphenyl					*67*	*62*	*27 - 106*			
Pyrene-d10					*98*	*98*	*35 - 98*			
Terphenyl-d14					*118*	*118*	*41 - 129*			

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

T-- The chromatogram is not similar to a typical gas.

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
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Company: TAI
Project Number: 0552-1
Project Name:
Project Manager: Chuck Lie
Sampled by: Evan H. Eckles

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days)
☐ _____ (other)

Laboratory Number: 01-337

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☒ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	NWTPH-Dx (Acid)				% Moisture
1	MW-202	1-30	8:40	W	5		X							X													
2	MW-205	1-30	9:40		5		X							X													
3	MW-201	1-30	11:30		3		X																				
4	MW-108	1-30	12:30		7		X		X														X				
5	MW-7a	1-30	13:40		3		X																				
6	MW-109	1-30	14:30		3		X																				
7	MW-202	1-30	15:40		5		X		X																		
8	MW-203	1-31	7:15		3		X																				
9	MW-107	1-31	6:30		7		X		X														X				
10	MW-204	1-31	8:00	↓	3		X																				

	Signature	Company	Date	Time
Relinquished		TAI	1-31-20	14:20
Received	Heather Liseur	OSE	1/3/20	1420
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐