June 8, 2016
Project No. 0818.02.01

Mary Monahan
Washington State Department of Ecology
Central Regional Office
1250 West Alder Street
Union Gap, Washington 98903-0009

Re: Quarterly Progress Report – May 2016
Former Tiger Oil Site
Facility Site ID: 469, Cleanup Site ID: 4919
2312 West Nob Hill Boulevard, Yakima, Washington 98902

Dear Ms. Monahan:

On behalf of the City of Yakima, Maul Foster & Alongi, Inc. (MFA) conducted the third post-remedial action quarterly groundwater event at the former Tiger Oil site (the Site), located at 2312 West Nob Hill Boulevard in Yakima, Washington (see Figure 1). This event fulfills the quarterly groundwater-monitoring event requirement as specified in the Washington State Department of Ecology (Ecology) -approved interim remedial action completion report (MFA, 2015a), as well as the progress reporting requirement specified in Section IX, of the Amended Consent Decree (ACD), No. 02-2-00956-2, and the amended cleanup action plan (Section 9-1) (Ecology, 2014). Monitoring activities were conducted as described in the groundwater monitoring plan (GMP) (MFA, 2015b) and in accordance with the monitoring requirements outlined in the Washington State Model Toxics Control Act (MTCA) (Washington Administrative Code 173-340-410).

BACKGROUND

Quarterly monitoring is a requirement of the ACD. Quarterly monitoring has been ongoing at the Site since November 2015, following the interim remedial action completed in early May 2015. The interim remedial action included excavation of petroleum contaminated soil and application of bioremediation products with the clean backfill. An increase in contaminant concentrations in groundwater often occurs over the initial six-months to a year following completion of remedial actions similar to the action conducted at the Site. Therefore, groundwater monitoring/sampling activities began six months after bioremediation product application to allow the initial and anticipated increase in dissolved phase petroleum hydrocarbon concentrations to occur and groundwater conditions to begin to stabilize.

Groundwater-monitoring results are evaluated quarterly to assess the performance and protectiveness of the remedial action by comparing indicator hazardous substance (IHS) concentrations in all monitoring network wells to MTCA Method A cleanup levels (CULs), as defined in the GMP. Monitoring wells included in the monitoring well network were defined in the GMP, with the exception of KMW-5 and MWG-2, which were included following a request by Ecology after the November 2015 sampling event (see Figure 2) (MFA, 2015b).

FIELD PROCEDURES

MFA used a water level probe to measure static water levels in the wells included in the groundwater-monitoring well network (see Table 1). If light nonaqueous-phase liquid (LNAPL) (i.e., free product) was encountered, the thickness of the LNAPL was measured using an oil/water interface meter. LNAPL was encountered in four monitoring wells (MW-7, MW-11, MW-13, and MWG-3) during the May 2016 monitoring event. The approximate thicknesses of LNAPL at these wells are presented in Figure 3.

Groundwater-monitoring and -sampling activities were conducted in general accordance with industry standard sampling protocols. The integrity of the well seal and cap were observed to ensure that contamination from the surface would not enter the well (see Table 2). During the February 2016 event, monitoring wells KMW-7, MW-7, MW-9, and MW-10 were observed to need new compression plugs, gaskets, locks, and/or bolts. During the May 2016 sampling event, these missing and/or damaged items were replaced. Depth-to-water measurements at all wells designated for monitoring were measured before groundwater sampling activities began. Groundwater samples were collected only from wells included in the groundwater-monitoring well network that did not contain LNAPL. Water quality parameters were measured with a YSI meter (YSI 556MPS) and a turbidity meter (Hach 2100P) before sample collection and were recorded on field sampling data sheets (see Attachment A) and are summarized in Table 3. Thirteen groundwater samples, including a field duplicate, were collected using low-flow sampling techniques involving a peristaltic pump and disposable tubing. Groundwater-monitoring activities were conducted consistent with the sampling and analysis plan included as an appendix to the GMP (MFA, 2015b), with at least one pore volume extracted from the wells and field parameters stabilized before a sample was collected. A field duplicate was collected at monitoring well YMW-2.

Samples were submitted to OnSite Environmental, Inc., of Redmond, Washington, under standard chain-of-custody procedures. Samples were analyzed for IHSs, using the following analytical methods:

- Gasoline-range total petroleum hydrocarbons (TPH) by Northwest Total Petroleum Hydrocarbons Method Gx

- Benzene, toluene, ethylbenzene, and xylenes (BTEX) by U.S. Environmental Protection Agency Method 8021B

RESULTS AND DISCUSSION

Water level measurements, final field parameters, and analytical results are summarized in Tables 1, 3, and 4, respectively. Table 4 also includes analytical data from the wells sampled during monitoring events conducted in May and November 2015, and February 2016. The laboratory analytical report is included as Attachment B. A data validation memorandum, summarizing data evaluation procedures, usability of data, and deviations from field and/or laboratory methods, is included as Attachment C. Analytical data and the laboratory's internal quality assurance and quality control data were reviewed to assess whether they meet data quality objectives. The data were validated and are considered acceptable for their intended use.

Depth-to-water measurements and groundwater elevations are summarized in Table 1. The depth to water in monitoring wells with LNAPL was adjusted to account for the density of the LNAPL on top of the water column. Given the type of historical release at the Site, the density of gasoline (0.75 gram per cubic centimeter) was used to complete this adjustment. Groundwater flow direction during the May 2016 event was generally to the southeast, with an easterly tangent in the northern area of the Site, similar to previous observations (see Figure 4).

Figure 5 presents geologic cross-sections of two profiles of the Site from the northwest to southeast transect (A-A') and southwest to northeast transect (B-B'), both of which are identified in Figure 2. Additional features including the water table, LNAPL locations, and observed LNAPL thicknesses are also illustrated. An interpretation of LNAPL within the cross section was not provided due to the lack of information regarding the well screens and lithology of the well locations identified with LNAPL. Generally, the depths to water were slightly higher than recorded during the February 2016 event.

The LNAPL encountered in the four monitoring wells was clear and had a strong petroleum fuel odor. Monitoring wells with LNAPL present were not sampled because of the likelihood of highly elevated concentrations of IHSs in these wells, and laboratory analytical results of these samples would not be representative of the dissolved-phase gasoline petroleum hydrocarbons plume. Additional quarterly monitoring will allow for observation of the presence and thickness of LNAPL in the monitoring-well network over time. LNAPL thickness ranged from 0.04 to 0.32 foot, similar to the last event's observations (see Table 1).

Concentrations of gasoline-range TPH above the 800-micrograms-per-liter (ug/L) CUL were identified in the following monitoring wells (see Figure 6):

- MW-9: 26,000 ug/L
- YMW-1: 21,000 ug/L
- YMW-2: 8,500 ug/L
- YMW-3: 23,000 ug/L

Concentrations of benzene above the 5-ug/L CUL were identified in the following monitoring wells (see Figure 7):

- KMW-6: 69 ug/L
- KMW-7: 25 ug/L
- KMW-16: 7.6 ug/L
- MW-9: 1,500 ug/L
- YMW-1: 1,600 ug/L
- YMW-2: 240 ug/L
- YMW-3: 2,000 ug/L

Concentrations of ethylbenzene, toluene, and total xylenes generally decreased in the wells previously identified with IHSs exceeding associated laboratory detection limits during the February 2016 sampling event (see Table 4).

Overall, groundwater quality data over the past three quarterly groundwater events indicate the following:

- Groundwater analytical results from monitoring wells located within the direct vicinity of the interim remedial action, including YMW-2, YMW-3 and KMW-7, exhibited a notable increase in dissolved phase gasoline-range TPH and associated volatile organic compounds (VOCs), in particular, benzene, approximately eight months following completion of the remedial action. This increase was expected due to the application of the calcium oxy-hydroxide-based in situ bioremediation material, which accelerated the aerobic biodegradation process and is anticipated to be temporary. This trend of increasing dissolved phase gasoline-range TPH concentrations is similar to an expected trend of increases in oxygen reduction potential and dissolved oxygen, which is consistent with parameters observed during the November 2015 and February 2016 groundwater events (see Tables 3 and 4).

- As the aerobic biodegradation process of TPH and petroleum fuel associated VOCs proceeds, it is anticipated that the dissolved phase TPH concentrations will then

steadily decrease due to a stable ongoing source of oxygen enabling microorganisms to break down the petroleum hydrocarbons. This trend is becoming evident in the interim remedial action area wells (YMW-1 through YMW-3) and nearby downgradient well MW-9 (see Table 4 and Figures 6 and 7), where groundwater analytical results indicate a steady decrease in concentrations of TPH and BTEX from the February to May 2016 groundwater events.

- Increasing benzene concentrations downgradient of the interim remedial action area, such as exhibited at KMW-6, are also not unanticipated as the contaminant plume migrates away from the source area and in situ bioremediation continues to breakdown contaminants away from the source area.

- A continuing gradual decline in TPH and associated VOC concentrations is anticipated in future groundwater monitoring events as the controlled release of oxygen via the application of Regenesis Oxygen Release Compound Advanced continues to enable microorganisms to breakdown and transform organic contaminants into carbon dioxide, water, and microbial cell mass as part of the in situ bioremediation process.

Currently, it does not appear there is a seasonal and/or spatial trend impacting the groundwater table. However, the current data is limited to only three quarterly groundwater events.

There were no exceedances of IHSs exhibited in sentry wells during this sampling event. The locations of TPH and BTEX exceedances are within the source area and/or adjacent to and downgradient of the historical source area and the southeastern extent of the interim remedial action. Over the past three monitoring events (November 2015, and February and May 2016), the isoconcentration boundaries of gasoline-range TPH and benzene in groundwater have remained fairly consistent. This suggests the extent of the dissolved-phase plume is fairly well defined (shown in Figures 6 and 7); however, it will continue to be evaluated following the completion of each additional monitoring event.

Investigation-derived waste generated during the May 2016 sampling event was properly drummed and labeled, and is temporarily stored on Site pending final off-site disposal with the accumulation of additional drums as monitoring events progress.

SUMMARY

The following is a summary of findings and opinions of the May 2016 monitoring event relative to prior groundwater monitoring event results:

- LNAPL was present in four monitoring wells in the compliance network (MW-7, MW-11, MW-13, and MWG-3), which is consistent with the February 2016 sampling event. Thicknesses of LNAPL are presented in Table 1.

- The overall direction of groundwater migration at the Site appears to be generally to the southeast, consistent with former documentation of groundwater flow direction by MFA and others. However, as observed during the November 2015 and February 2016 groundwater events, there is also an easterly component of the groundwater flow direction in the east-southeastern area of the former Tiger Oil property.

- Dissolved phase gasoline-range TPH concentrations reported during the May 2016 event generally decreased in all monitoring wells relative to the February 2016 event, with the exception of concentrations reported in the sample collected from MW-9.

- Benzene concentrations generally decreased in all monitoring wells relative to the February 2016 monitoring event, with the exception of concentrations reported in samples collected from KMW-6 and KMW-16.

- Toluene, ethylbenzene, total xylenes concentrations generally decreased in wells with previous detections.

- It is anticipated that the dissolved-phase petroleum hydrocarbon plume will continue to fluctuate within the first year following completion of the interim remedial action. Continued quarterly monitoring events will assess IHS concentrations and potential trends in groundwater quality conditions at the Site.

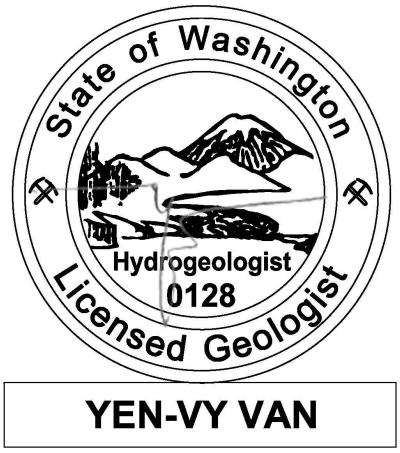
SCHEDULE

In accordance with the GMP (MFA, 2015b), the next quarterly monitoring event is scheduled for August 2016.

If you have any questions regarding this letter, please feel free to contact either of us.

Sincerely,

Maul Foster & Alongi, Inc.



Yen-Vy Van, LHG
Senior Hydrogeologist

Carolyn R. Wise, GIT
Staff Geologist

Attachments: Limitations
References
Tables
Figures
A—Field Sampling Data Sheets
B—Laboratory Analytical Report
C—Data Validation Memorandum

cc: Brett Sheffield, City of Yakima

LIMITATIONS

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

REFERENCES

Ecology. 2014. Amended cleanup action plan, Tiger Oil facility, 2312 West Nob Hill Boulevard, Yakima, Washington. Washington State Department of Ecology. June.

MFA. 2015a. Interim remedial action completion report—former Tiger Oil site, 2312 West Nob Hill Boulevard, Yakima, Washington. Maul Foster & Alongi, Inc., Bellingham, Washington. June 26.

MFA. 2015b. Groundwater monitoring plan—former Tiger Oil site, 2312 West Nob Hill Boulevard, Yakima, Washington. Prepared for the City of Yakima. Maul Foster & Alongi, Inc., Bellingham, Washington. August 26.

TABLES

Table 1
Water Level Data
City of Yakima
Former Tiger Oil Site
Yakima, Washington

Location	MP Elevation (feet, NAVD 88)	Measurement Date	LNAPL Thickness (feet)	Depth to Water (feet)	Change in Water Level (feet)[a]	Depth to Water Corrected for Presence of LNAPL (feet)[b]	Groundwater Elevation (feet, NAVD 88)
KMW-5	1082.85	5/27/2015	--	9.11	--	NA	1073.74
		2/1/2016	--	8.78	0.33	NA	1074.07
		5/9/2016	--	8.72	0.06	NA	1074.13
KMW-6	1083.58	5/28/2015	--	8.82	--	NA	1074.76
		11/3/2015	--	8.43	0.39	NA	1075.15
		2/1/2016	--	8.45	-0.02	NA	1075.13
		5/9/2016	--	8.36	0.09	NA	1075.22
KMW-7	1091.96	5/29/2015	--	13.47	--	NA	1078.49
		11/2/2015	--	12.64	0.83	NA	1079.32
		2/1/2016	--	12.85	-0.21	NA	1079.11
		5/9/2016	--	12.69	0.16	NA	1079.27
KMW-8	1092.11	5/29/2015	--	13.48	--	NA	1078.63
KMW-10	1090.63	5/29/2015	--	13.10	--	NA	1077.53
KMW-14	1082.40	5/28/2015	--	12.66	--	NA	1069.74
		11/3/2015	--	12.37	0.29	NA	1070.03
		2/1/2016	--	12.27	0.10	NA	1070.13
		5/9/2016	--	12.29	-0.02	NA	1070.11
KMW-15	1083.54	11/3/2015	--	10.90	--	NA	1072.64
		2/1/2016	--	10.86	-0.04	NA	1072.68
		5/9/2016	--	10.88	0.02	NA	1072.66
KMW-16	1083.27	5/28/2015	--	11.05	--	NA	1072.22
		11/3/2015	--	10.67	0.38	NA	1072.60
		2/2/2016	--	10.67	0.00	NA	1072.60
		5/9/2016	--	10.66	0.01	NA	1072.61
KMW-18	1085.34	5/27/2015	--	9.70	--	NA	1075.64
KMW-24	1087.47	5/29/2015	--	10.25	--	NA	1077.22
MW-7	1090.30	5/29/2015	1.44	13.78	--	12.70	1077.60
		11/4/2015	0.29	12.20	1.58	11.98	1078.32
		2/1/2016	0.29	12.30	-0.10	12.08	1078.22
		5/9/2016	0.32	12.21	0.09	11.97	1078.33
MW-9	1091.48	5/28/2015	--	14.20	--	NA	1077.28
		11/3/2015	--	13.98	0.22	NA	1077.50
		2/1/2016	--	14.21	-0.23	NA	1077.27
		5/9/2016	--	14.11	0.10	NA	1077.37

Table 1
Water Level Data
City of Yakima
Former Tiger Oil Site
Yakima, Washington

Location	MP Elevation (feet, NAVD 88)	Measurement Date	LNAPL Thickness (feet)	Depth to Water (feet)	Change in Water Level (feet)[a]	Depth to Water Corrected for Presence of LNAPL (feet)[b]	Groundwater Elevation (feet, NAVD 88)
MW-10	1092.11	5/29/2015	--	13.19	--	NA	1078.92
		11/2/2015	--	12.36	0.83	NA	1079.75
		2/1/2016	--	12.54	-0.18	NA	1079.57
		5/9/2016	--	12.35	0.19	NA	1079.76
MW-11	1091.68	5/29/2015	0.55	14.51	--	14.10	1077.58
		11/4/2015	0.01	13.35	1.16	13.34	1078.34
		2/1/2016	0.10	13.52	-0.17	13.45	1078.24
		5/9/2016	0.10	13.41	0.11	13.34	1078.35
MW-13	1091.27	5/28/2015	--	10.10	--	NA	1081.17
		11/4/2015	0.20	14.03	-3.93	13.88	1077.39
		2/1/2016	0.21	14.10	-0.07	13.94	1077.33
		5/9/2016	0.18	13.98	0.12	13.85	1077.43
MWG-1	1083.98	5/28/2015	--	9.71	--	NA	1074.27
MWG-2	1085.47	2/1/2016	--	8.90	--	NA	1076.57
		5/9/2016	--	8.78	0.12	NA	1076.69
MWG-3	1084.15	5/28/2015	--	7.60	--	NA	1076.55
		11/3/2015	0.06	7.10	0.50	7.06	1077.10
		2/1/2016	0.08	7.10	0.00	7.04	1077.11
		5/9/2016	0.04	7.00	0.10	6.97	1077.18
S-1	1088.82	5/28/2015	--	11.79	--	NA	1077.03
S-2	1085.74	5/27/2015	--	8.73	--	NA	1077.01
YMW-1	1089.05	5/29/2015	--	12.00	--	NA	1077.05
		11/4/2015	--	11.40	0.60	NA	1077.65
		2/1/2016	--	11.49	-0.09	NA	1077.56
		5/9/2016	--	11.36	0.13	NA	1077.69
YMW-2	1090.86	5/29/2015	--	13.73	--	NA	1077.13
		11/4/2015	--	13.10	0.63	NA	1077.76
		2/1/2016	--	13.17	-0.07	NA	1077.69
		5/9/2016	--	13.08	0.09	NA	1077.78
YMW-3	1089.53	5/29/2015	--	12.28	--	NA	1077.25
		11/4/2015	0.06	11.68	0.60	11.64	1077.90
		2/1/2016	--	11.75	-0.07	NA	1077.78
		5/9/2016	--	11.62	0.13	NA	1077.91

Table 1
Water Level Data
City of Yakima
Former Tiger Oil Site
Yakima, Washington

NOTES:

-- = free product (LNAPL) not observed; therefore, product thickness was not measured.

LNAPL = light nonaqueous-phase liquid.

MP = measuring point.

NA = not applicable.

NAVD 88 = North American Vertical Datum of 1988.

NM = not measured.

[a]Change in water level is relative to the two most recent sampling events.

[b]Water level corrected for presence of free product, using an assumed product density of 0.75 gram per cubic centimeter (American Petroleum Institute).

Table 2
Monitoring Wells Conditions Summary
City of Yakima - Former Tiger Oil Site
Yakima, Washington

Location	Date	Well Diameter (inches)	Monument	Gasket	Lock	Functional Compression Plug	Bolts	Notes
KMW-5	5/9/2016	4	Y	Y	Y	Y	3	--
KMW-6	5/9/2016	4	Y	Y	Y	Y	3	--
KMW-7	5/10/2016	4	Y	Y	Y	Y	3	--
KMW-14	5/9/2016	4	Y	Y	Y	Y	3	--
KMW-15	5/9/2016	4	Y	Y	Y	Y	3	--
KMW-16	5/9/2016	4	Y	Y	Y	Y	3	--
MW-7	5/10/2016	2	Y	Y	Y	Y	2	--
MW-9	5/10/2016	2	Y	Y	Y	Y	2	--
MW-10	5/10/2016	2	Y	Y	Y	Y	3	--
MW-11	5/10/2016	2	Y	Y	Y	Y	2	--
MW-13	5/10/2016	2	Y	Y	Y	Y	2	--
MWG-2	5/9/2016	2	Y	Y	Y	Y	3	--
MWG-3	5/9/2016	2	Y	Y	Y	Y	3	--
YMW-1	5/10/2016	2	Y	Y	Y	Y	2	--
YMW-2	5/10/2016	2	Y	Y	Y	Y	2	--
YMW-3	5/10/2016	2	Y	Y	Y	Y	2	--

NOTES:
Y = yes, component integrity checked and confirmed.

Table 3
Final Water Quality Field Parameters
City of Yakima
Former Tiger Oil Site
Yakima, Washington

Location	Date	pH	Temperature (degrees C)	Conductivity (uS/cm)	DO (mg/L)	ORP	Turbidity (NTU)
KMW-5	5/27/2015	7.02	18.01	1,098	0.34	28.6	7.03
	2/2/2016	6.63	14.75	879	1.49	256.6	6.06
	5/9/2016	7.31	16.05	881	2.28	-74.0	3.67
KMW-6	5/28/2015	7.98	16.45	816	1.78	-30.3	2.42
	11/3/2015	7.05	17.94	965	1.69	74.2	0.36
	2/1/2016	6.81	15.47	840	2.30	293.9	2.82
	5/9/2016	7.58	15.32	825	4.27	-104.0	2.51
KMW-7	5/29/2015	7.33	16.61	123	7.44	123.6	2.33
	11/2/2015	7.05	16.55	934	2.92	6.3	1.04
	2/3/2016	7.40	15.31	832	3.39	187.0	3.78
	5/10/2016	7.49	14.96	799	7.98	-50.6	3.12
KMW-8	5/29/2015	7.41	17.19	889	7.35	114.2	9.62
KMW-10	5/29/2015	7.27	21.30	795	5.24	132.6	3.81
KMW-14	5/28/2015	6.99	15.71	1,266	0.14	-33.5	6.88
	11/3/2015	6.51	17.93	1,230	0.22	-12.3	7.32
	2/2/2016	6.84	15.64	959	0.38	287.7	5.66
	5/9/2016	7.02	16.11	1,868	0.23	-102.8	5.24
KMW-15	11/3/2015	6.95	17.85	930	2.06	63.3	1.14
	2/2/2016	7.12	14.97	768	4.02	292.1	5.48
	5/9/2016	7.58	16.18	758	7.95	-58.4	2.42
KMW-16	5/28/2015	7.56	16.80	879	0.81	10.9	1.71
	11/3/2015	6.88	18.27	1,147	0.20	26.3	1.13
	2/2/2016	6.80	14.64	935	0.69	258.0	3.12
	5/9/2016	7.26	15.75	1,061	0.74	-82.8	3.76
KMW-18	5/27/2015	7.05	17.82	846	4.80	70.1	27.83
KMW-24	5/29/2015	7.51	15.96	771	7.41	22.4	1.52
MW-7	5/29/2015	--	--	--	--	--	--
	11/4/2015	--	--	--	--	--	--
	2/1/2016	--	--	--	--	--	--
	5/9/2016	--	--	--	--	--	--
MW-9	5/28/2015	7.09	22.55	1,186	1.57	-28.5	153.20
	11/3/2015	6.65	14.67	1,375	0.61	-40.2	15.83
	2/2/2016	6.58	10.00	1,198	0.50	244.2	14.40
	5/10/2016	7.04	17.26	1,184	0.40	-130.1	9.85

Table 3
Final Water Quality Field Parameters
City of Yakima
Former Tiger Oil Site
Yakima, Washington

Location	Date	pH	Temperature (degrees C)	Conductivity (uS/cm)	DO (mg/L)	ORP	Turbidity (NTU)
MW-10	5/29/2015	--	--	--	--	--	--
	11/2/2015	6.98	16.53	1,114	2.68	108.2	12.78
	2/3/2016	7.25	11.86	1,980	4.25	250.1	30.80
	5/10/2016	7.58	14.68	1,165	9.84	85.1	9.51
MW-11	5/29/2015	--	--	--	--	--	--
	11/4/2015	--	--	--	--	--	--
	2/1/2016	--	--	--	--	--	--
	5/9/2016	--	--	--	--	--	--
MW-13	5/28/2015	7.06	21.03	906	1.28	58.0	49.35
	11/4/2015	--	--	--	--	--	--
	2/1/2016	--	--	--	--	--	--
	5/9/2016	--	--	--	--	--	--
MWG-1	5/28/2015	7.45	17.08	843	4.71	24.1	2.62
MWG-2	2/3/2016	7.29	13.62	774	3.45	279.3	22.2
	5/9/2016	7.55	16.49	768	7.04	-48.3	1.94
MWG-3	5/28/2015	8.16	16.94	872	0.08	-156.0	1.34
	11/3/2015	--	--	--	--	--	--
	2/1/2016	--	--	--	--	--	--
	5/9/2016	--	--	--	--	--	--
S-1	5/28/2015	8.09	17.69	822	2.48	-7.7	2.32
S-2	5/27/2015	7.40	16.74	1,145	0.28	-86.4	2.25
YMW-1	5/29/2015	--	--	--	--	--	--
	11/4/2015	6.87	15.83	1,154	1.42	-46.3	4.98
	2/2/2016	6.87	15.15	1,202	0.33	232.6	6.03
	5/10/2016	7.33	16.67	1,054	1.47	-156.9	4.11
YMW-2	5/29/2015	--	--	--	--	--	--
	11/4/2015	6.98	16.40	987	1.52	48.3	4.11
	2/1/2016	6.37	14.98	1,110	0.79	327.9	8.98
	5/10/2016	7.32	16.93	919	2.62	-81.7	1.73
YMW-3	5/29/2015	--	--	--	--	--	--
	11/4/2015	--	--	--	--	--	--
	2/1/2016	6.50	15.09	1,505	0.39	208.3	2.77
	5/10/2016	7.41	16.11	1,393	0.40	-196.0	2.49

Table 3
Final Water Quality Field Parameters
City of Yakima
Former Tiger Oil Site
Yakima, Washington

NOTES:

-- = sample not analyzed or collected.

C = Celsius.

DO = dissolved oxygen.

NA = final field parameters not available.

NTU = nephelometric turbidity unit.

mg/L = milligrams per liter.

ORP = oxygen reduction potential.

uS/cm = microsiemens per centimeter.

Table 4
Summary of Groundwater Analytical Results
City of Yakima
Former Tiger Oil Site
Yakima, Washington

Location	Collection Date	Chemicals of Interest						
		Benzene	Ethylbenzene	Toluene	m,p-Xylene	o-Xylene	Xylenes[a]	Gasoline TPH
Units		ug/l	ug/l	ug/l	ug/l	ug/l	ug/L	ug/l
MTCA Method A Cleanup Level (ug/L)		5	700	1,000	NV	NV	1,000	800[b]
KMW-5	05/27/2015	1 U	1 U	1 U	1 U	1 U	1 U	100 U
	02/02/2016	1 U	1 U	1 U	1 U	1 U	1 U	100 U
	05/09/2016	1 U	1 U	2 U	1 U	1 U	1 U	100 U
KMW-6	05/28/2015	**47**	**1.6**	1 U	1 U	1 U	1 U	100 U
	11/03/2015	**15**	**18**	**7.4**	**28**	**7.6**	**35.6**	**410**
	02/01/2016	**42**	**22**	4 U	**5.4**	4 U	**7.4**	100 U
	05/09/2016	**69**	**33**	3 U	**2**	**1.2**	**3**	**270**
KMW-7	05/29/2015	**8.4**	**14**	**2**	**47**	**41**	**88**	**620**
	11/02/2015	**13**	**21**	1 U	**5.1**	1 U	**5.6**	**350**
	02/03/2016	**47**	**41**	1 U	**2.1**	1 U	**2.6**	**610**
	05/10/2016	**25**	**21**	2.3 U	1 U	1 U	1 U	**250**
KMW-8	05/29/2015	1 U	1 U	1 U	1	1 U	1 U	100 U
KMW-10	05/29/2015	**830**	**1,200**	**4,000**	**4,400**	**2,000**	**6,400**	**81,000**
KMW-14	05/28/2015	**1.9**	1 U	1 U	1 U	1 U	1 U	100 U
	11/03/2015	**5.5**	1 U	1 U	1 U	1 U	1 U	100 U
	02/02/2016	**3**	1 U	1 U	1 U	1 U	1 U	100 U
	05/09/2016	1 U	1 U	1.9 U	1 U	1 U	1 U	100 U
KMW-15	11/03/2015	1 U	1 U	1 U	1 U	1 U	1 U	100 U
	02/02/2016	1 U	1 U	1 U	1 U	1 U	1 U	100 U
	05/09/2016	1 U	1 U	1.1 U	1 U	1 U	1 U	100 U
KMW-16	05/28/2015	**60**	**9.6**	1 U	**4.6**	1 U	**5.1**	**280**
	11/03/2015	1 U	1 U	1 U	1 U	1 U	1 U	100 U
	02/02/2016	1 U	1 U	1 U	1 U	1 U	1 U	**200**
	05/09/2016	**7.6**	1 U	1 U	1 U	1 U	1 U	**200**
KMW-18	05/27/2015	1 U	1 U	1 U	1 U	1 U	1 U	100 U

Table 4
Summary of Groundwater Analytical Results
City of Yakima
Former Tiger Oil Site
Yakima, Washington

Location	Collection Date	Chemicals of Interest						
		Benzene	Ethylbenzene	Toluene	m,p-Xylene	o-Xylene	Xylenes[a]	Gasoline TPH
Units		ug/l	ug/l	ug/l	ug/l	ug/l	ug/L	ug/l
MTCA Method A Cleanup Level (ug/L)		5	700	1,000	NV	NV	1,000	800[b]
KMW-24	05/29/2015	1 U	1 U	1 U	1 U	1 U	1 U	100 U
		1.7	1 U	1 U	1 U	1 U	1 U	100 U
MW-9	05/28/2015	**1,200**	**740**	**1,900**	**1,800**	**980**	**2,780**	**28,000**
	11/03/2015	**1,800**	**720**	**1,400**	**1,500**	**740**	**2,240**	**18,000**
	02/02/2016	**1,800**	**850**	**1,500**	**1,700**	**970**	**2,670**	**19,000**
	05/10/2016	**1,500**	**960**	**1,700**	**1,900**	**910**	**2,810**	**26,000**
MW-10	11/02/2015	1 U	1 U	1 U	1 U	1 U	1 U	100 U
	02/03/2016	1 U	1 U	1 U	1 U	1 U	1 U	100 U
	05/10/2016	1 U	1 U	1 U	1 U	1 U	1 U	100 U
MW-13	05/28/2015	**32**	**1,500**	**510**	**8,700**	**3,800**	**12,500**	**92,000**
MWG-1	05/28/2015	1 U	1 U	1 U	1 U	1 U	1 U	100 U
MWG-2	02/03/2016	1 U	1 U	1 U	1 U	1 U	1 U	100 U
	05/09/2016	1 U	1 U	2.1 U	1 U	1 U	1 U	100 U
MWG-3	05/28/2015	**3,300**	**2,700**	**710**	**6,200**	**1,800**	**8,000**	**64,000**
S-1	05/28/2015	1 U	**7.2**	1 U	**2**	**1.2**	**3.2**	**200**
S-2	05/27/2015	**1,300**	**200**	10 U	**51**	10 U	**56**	**1,600**
YMW-1	11/04/2015	**990**	**470**	**1,400**	**1,000**	**430**	**1,430**	**11,000**
	02/02/2016	**2,200**	**840**	**3,900**	**2,400**	**950**	**3,350**	**29,000**
	05/10/2016	**1,600**	**750**	**2,500**	**2,100**	**650**	**2,750**	**21,000**
YMW-2	11/04/2015	**72**	**150**	**130**	**590**	**180**	**770**	**3,700**
		76	**160**	**140**	**640**	**200**	**840**	**4,100**
	02/01/2016	**380**	**300**	**630**	**1,700**	**810**	**2,510**	**13,000**
		380	**310**	**650**	**1,800**	**830**	**2,630**	**13,000**
	05/10/2016	**240**	**180**	**570**	**770**	**300**	**1,070**	**6,600**
		240	**190**	**590**	**800**	**310**	**1,110**	**8,500**

Table 4
Summary of Groundwater Analytical Results
City of Yakima
Former Tiger Oil Site
Yakima, Washington

Location	Collection Date	Chemicals of Interest						
		Benzene	Ethylbenzene	Toluene	m,p-Xylene	o-Xylene	Xylenes[a]	Gasoline TPH
Units		ug/l	ug/l	ug/l	ug/l	ug/l	ug/L	ug/l
MTCA Method A Cleanup Level (ug/L)		5	700	1,000	NV	NV	1,000	800[b]
YMW-3	02/01/2016	**3,100**	**1,200**	**1,800**	**4,000**	**1,700**	**5,700**	**31,000**
	05/10/2016	**2,000**	**980**	**1,100**	**2,300**	**910**	**3,210**	**23,000**

NOTES:

Detected results are indicated by bold font.

Shaded result values indicate exceedance of MTCA Method A cleanup level.

DUP = groundwater duplicate sample.

GW = groundwater sample.

MTCA = Model Toxics Control Act.

TPH = total petroleum hydrocarbons.

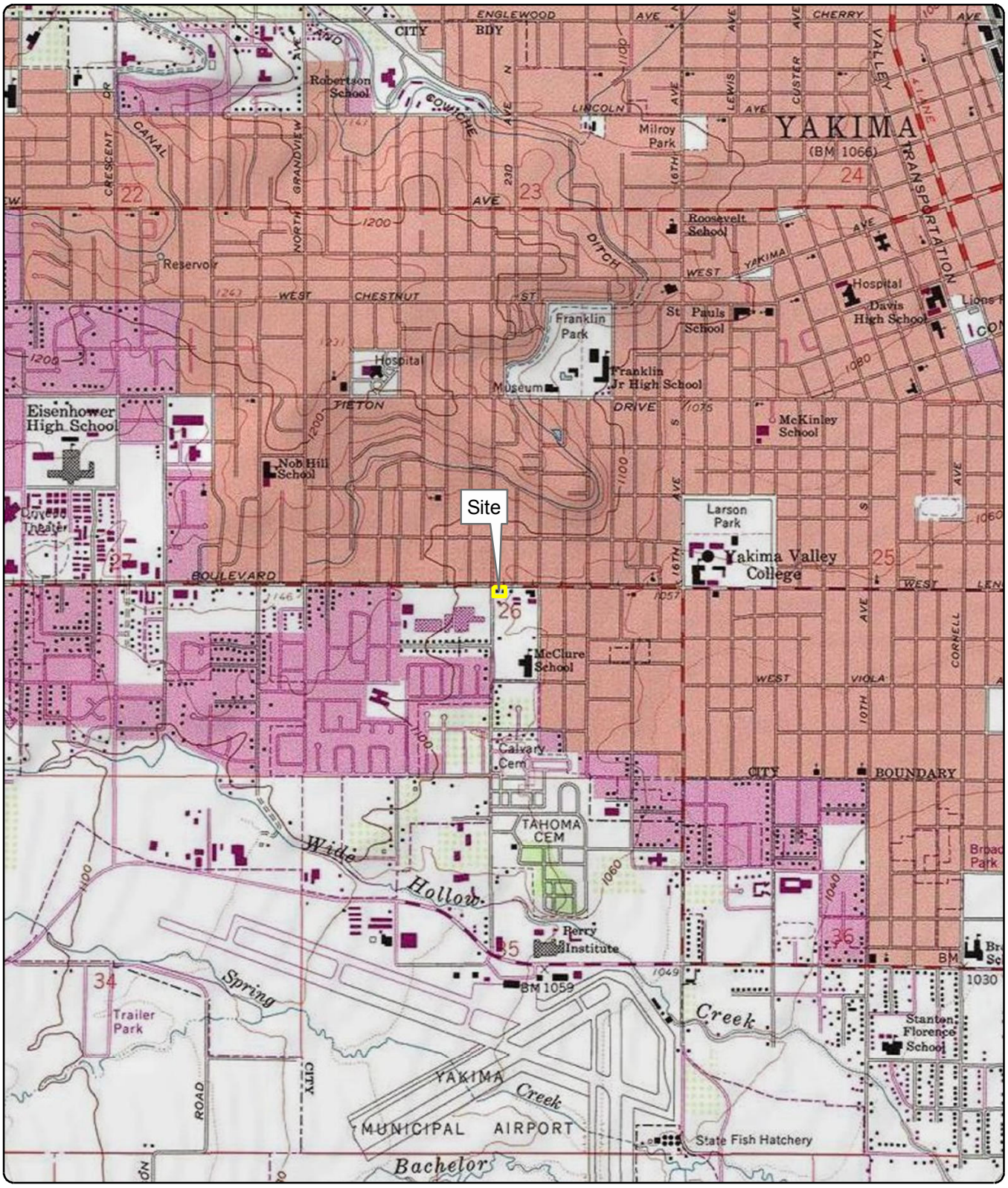
U = Result is non-detect.

ug/L = micrograms per liter.

[a]Xylenes = Sum of m,p- and o-xylene. Non-detect results are summed at half of the non-detect value. The highest non-detect value is used when both results are non-detect.

[b]MTCA Method A cleanup level for gasoline with benzene present.

FIGURES



Site Address: 2312 West Nob Hill Boulevard, Yakima, Washington 98902
Source: Taxlots obtained from City of Yakima GIS,
US Geological Survey (1990) 7.5-minute
topographic quadrangle: Yakima West
Section 26, Township 13 North, Range 18 East

Legend

Property Taxlot

Figure 1
Site Location

City of Yakima
Former Tiger Oil Site
Yakima, Washington

0 1,000 2,000
Feet

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Path: X:\0818.02 City of Yakima\Projects\GW Monitoring Plan\Fig1_Site Location.mxd
Print Date: 12/14/2015
Approved By: yvan
Produced By: jmiller
Project: 0818.02.01-01

Figure 2
Groundwater Monitoring Well Network

City of Yakima
Former Tiger Oil Site
Yakima, Washington

NOB HILL BOULEVARD

SOUTH 24TH AVENUE

KMW-8
A
MW-10
YMW-3
XOCHIMILCO MEXICAN RESTAURANT
KMW-7
MW-7
YMW-1
FORMER TIGER OIL CONVENIENCE STORE
MW-11
YMW-2
ONE LOVE SMOKE SHOP
KMW-10
B
MWG-3
KMW-24
B'
KMW-18
S-2
SAFEWAY SHOPPING CENTER PARKING LOT
KMW-5
KMW-6
KMW-15
KMW-16
MW-13
MW-9
S-1
MWG-2
MWG-1
KMW-14
A'

Legend

- GW Monitoring Network Well
- Monitoring Well
- Sentry Monitoring Well
- Cross Section Transect (see Figure 5)
- Former Tiger Oil Property Boundary

0 25 50
Feet

Sources: Aerial photograph obtained from Esri ArcGIS Online; Infiltration Gallery delineated by Maul Foster & Alongi, Inc.; stormwater line and taxlot boundaries obtained from City of Yakima; all other features obtained from PLSA Engineering & Surveying.

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Path: X:\0818.02 City of Yakima\Projects\Quarterly GW Monitoring\Fig2_GW Monitoring Well Network_TransectLine.mxd
Print Date: 2/29/2016
Approved By: mstringer
Produced By: cwise
Project: 0818.02.01.06

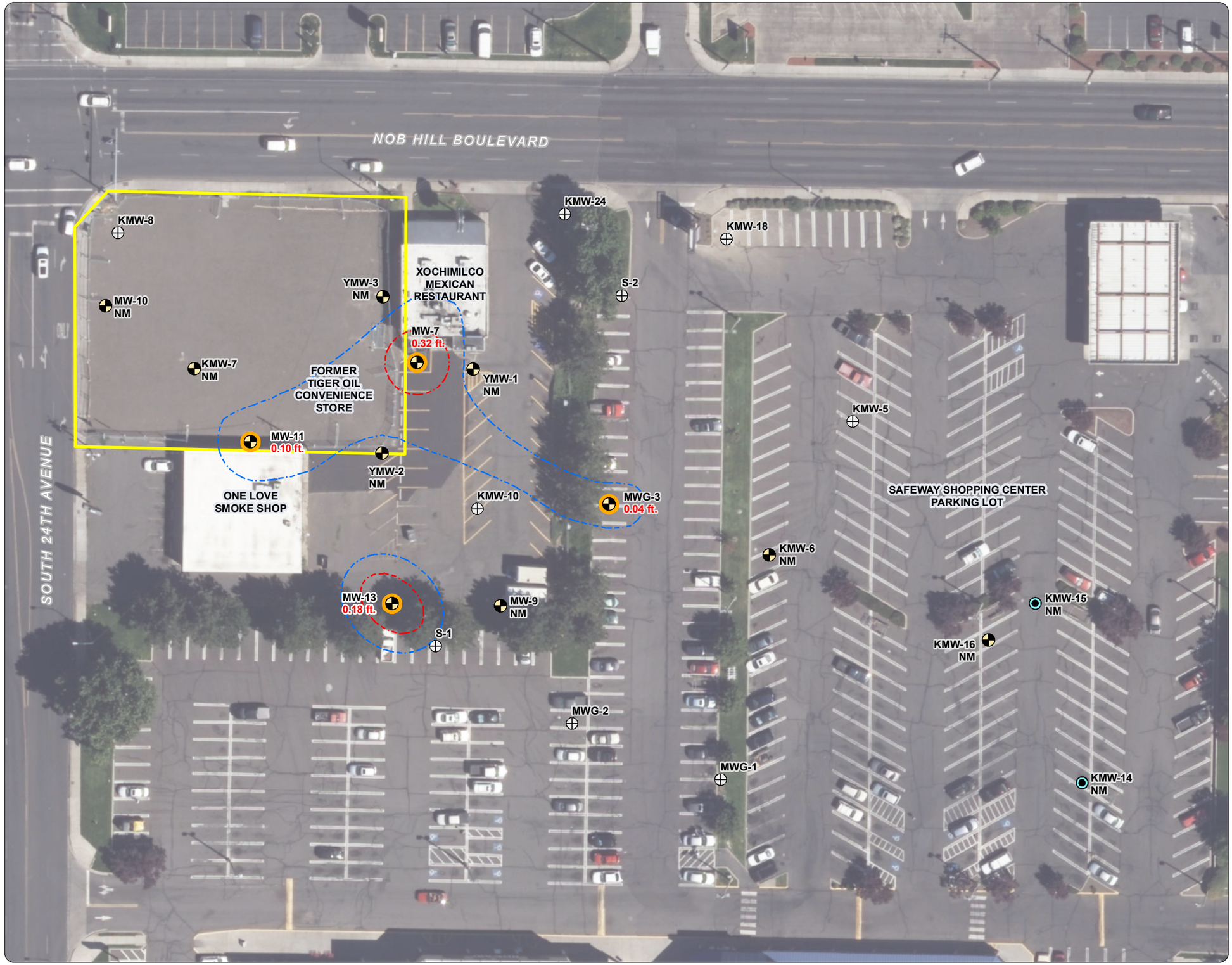

Figure 3
Light Nonaqueous-Phase Liquid Thickness Contour – May 2016

City of Yakima
Former Tiger Oil Site
Yakima, Washington

Legend

Approximate LNAPL Thickness Contours

- 0.01 ft contour
- 0.1 ft contour

- Monitoring Network Well
- Monitoring Well
- Sentry Monitoring Well
- Monitoring Well, LNAPL Present (thickness in feet)
- Former Tiger Oil Property Boundary

0 25 50
Feet

Notes:
1. Depth measurements are in feet below ground surface.
2. Not all the wells included in the figure are included in the monitoring well network.
3. LNAPL = light non aqueous-phase liquid
4. NM = not measured

Sources:
Aerial photograph obtained from Esri ArcGIS Online
Taxlot boundaries obtained from City of Yakima
All other features obtained from PLSA Engineering and Surveying.

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Print Date: 05/16/2016
Approved By: mstringer
Produced By: jmiller
Project: 0818.02.01-06

Figure 4
Groundwater Potentiometric Map
May 2016

City of Yakima
Former Tiger Oil Site
Yakima, Washington

MW-10
1079.76'

YMW-3
1077.91'

XOCHIMILCO
MEXICAN
RESTAURANT

KMW-7
1079.27'

YMW-1
1077.69'

FORMER
TIGER OIL
CONVENIENCE
STORE

MW-7
1078.33'

KMW-5
1074.13'

1,079'

MW-11
1078.35'

YMW-2
1077.78'

1,078'

MWG-3
1077.18'

SAFEWAY SHOPPING CENTER
PARKING LOT

ONE LOVE
SMOKE SHOP

KMW-6
1075.22'

MW-13
1077.43'

MW-9
1077.37'

KMW-15
1072.66'

KMW-16
1072.61'

1,077'

MWG-2
1076.69'

1,076'

1,075'

1,074'

1,073'

1,072'

1,071'

KMW-14
1070.11'

Legend

- Monitoring Network Well
- Groundwater Flow Direction
- Groundwater Elevation Contour (1 ft., NAVD 88)
- Former Tiger Oil Property Boundary

0 25 50
Feet

Source:
Aerial photograph obtained from Esri ArcGIS Online.

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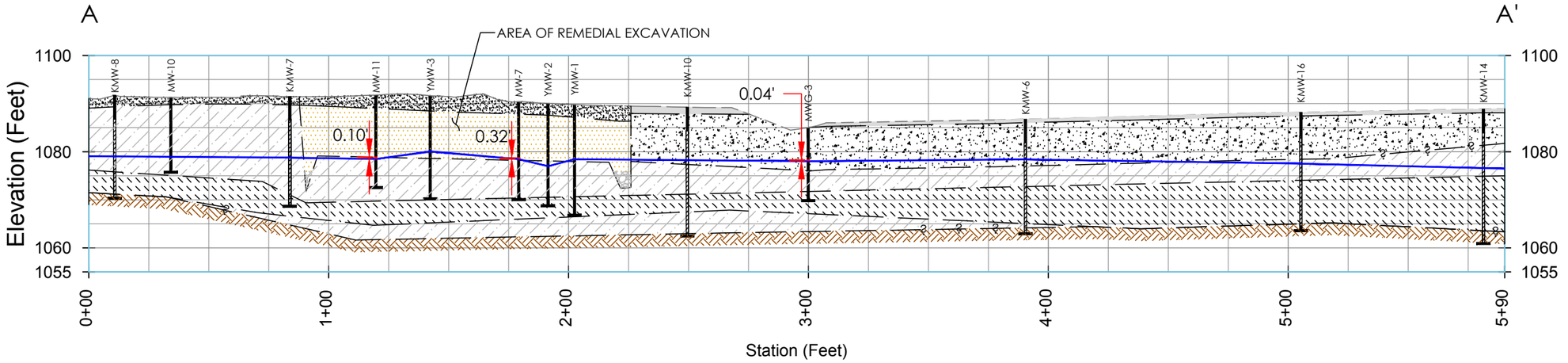
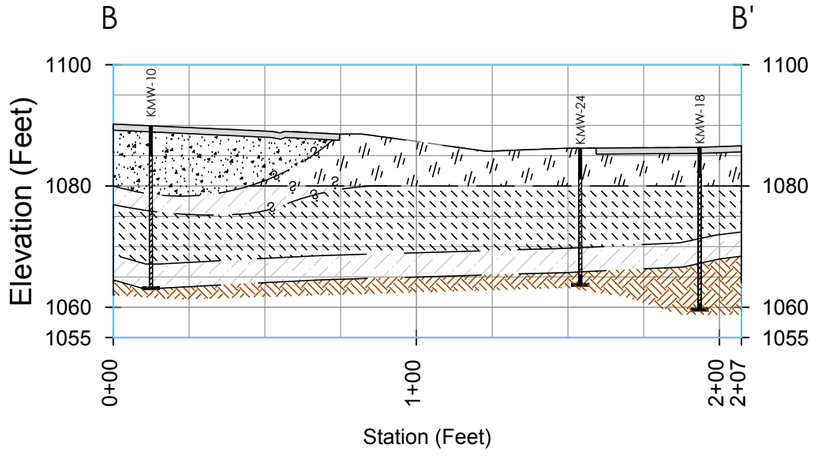
Path: X:\0818.02 City of Yakima\Projects\Quarterly GW Monitoring\Fig4_GW Elevation Contour 201605.mxd
Print Date: 5/27/2016
Approved By: mstringer
Produced By: rroberts
Project: 0818.02.01-06

WATER LEVEL AND LNAPL THICKNESS CROSS-SECTIONS
MAY 2016



PROFILE VIEW OF SECTION NW-SE TRANSECT
HORIZONTAL SCALE: 1" = 40' VERTICAL SCALE: 1" = 20'
VERTICAL EXAGGERATION: 2



PROFILE VIEW OF SECTION SW-NE TRANSECT
HORIZONTAL SCALE: 1" = 40' VERTICAL SCALE: 1" = 20'
VERTICAL EXAGGERATION: 2

LEGEND

- ASPHALT
- ML
- SW/SM
- GM/SP MIX
- SM/ML
- O/CL
- GM/GP
- QUARRY SPALLS
- GROUNDWATER LEVEL
- X.XX' — LIGHT NONAQUEOUS-PHASE LIQUID (LNAPL) THICKNESS AT WELL LOCATION
- SCREENED WELL CASING

REFER TO FIGURE 2 FOR PLAN VIEW OF TRANSECT LINES.

0 50' 100'

NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

MFA JOB #: 0818.01.02
ISSUE DATE: 05/16/16
CHECKED: Y. VAN
DRAWN: Z. PYLE

MAUL FOSTER ALONGI
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Vancouver, WA 98660
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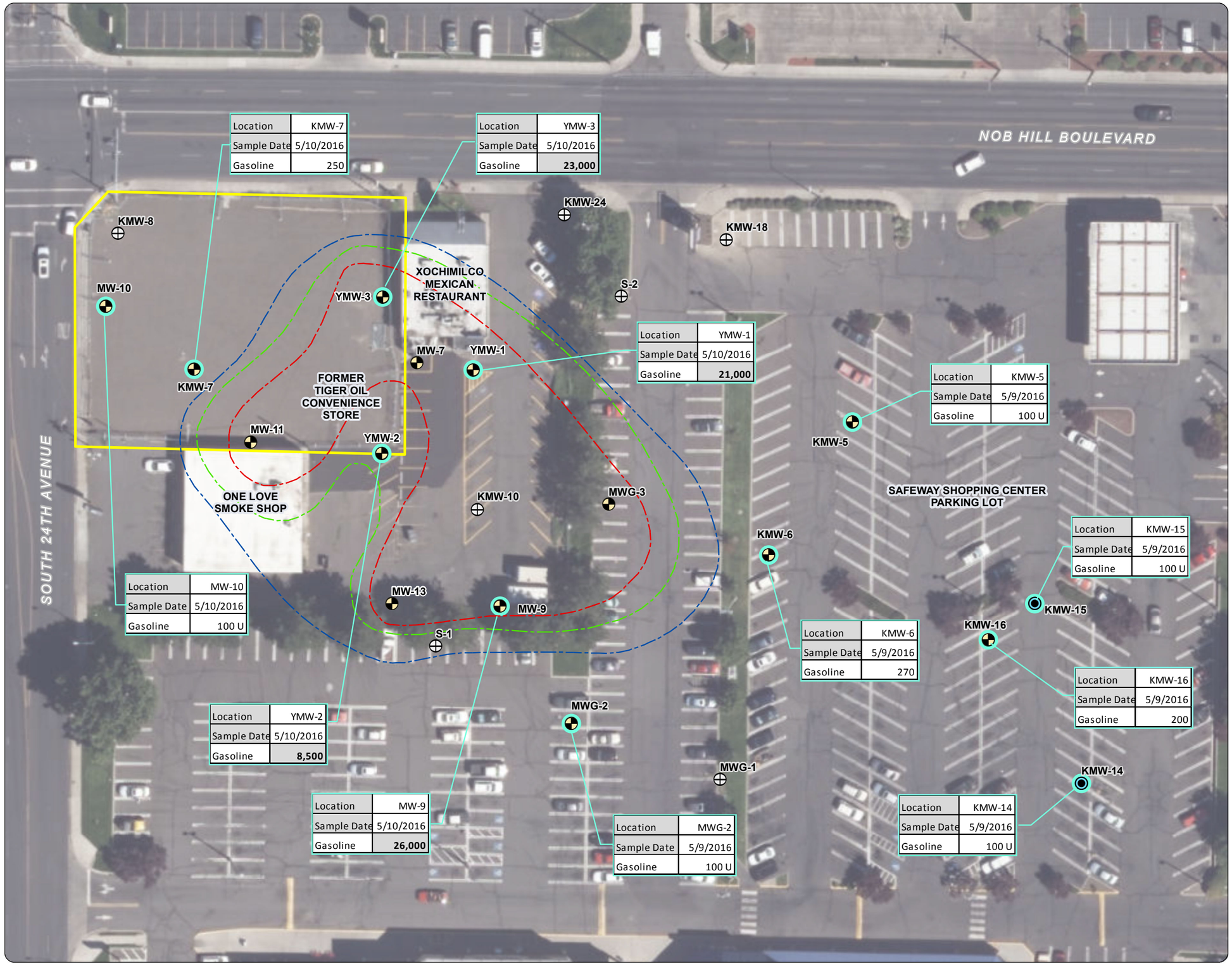
www.maulfoster.com

ASBUILT: INTERIM ACTION
TRANSECT CROSS-SECTIONS
FORMER TIGER OIL SITE
CITY OF YAKIMA
YAKIMA, WASHINGTON

FIGURE
5

Figure 6
Gasoline TPH Isoconcentration Contours – May 2016

City of Yakima
Former Tiger Oil Site
Yakima, Washington



Legend

Approximate Gasoline Isoconcentration

- 800 ug/L contour
- 5,000 ug/L contour
- 20,000 ug/L contour

- Monitoring Network Well
- Monitoring Well
- Sentry Monitoring Well
- Sample Analyzed
- Former Tiger Oil Property Boundary

0 25 50
Feet

Notes:
1. Monitoring Network Wells containing LNAPL were not sampled.
2. Shaded and bolded result values indicate exceedance of MTCA Method A cleanup level of 800 ug/L.
3. LNAPL = light nonaqueous-phase liquid
4. MTCA = Model Toxics Control Act
4. TPH = total petroleum hydrocarbons
5. U = Result is non-detect
6. ug/L = micrograms per liter

Sources: Aerial photograph obtained from Esri ArcGIS Online; Infiltration Gallery delineated by Maul Foster & Alongi, Inc.; stormwater line and taxlot boundaries obtained from City of Yakima; all other features obtained from PLSA Engineering & Surveying.

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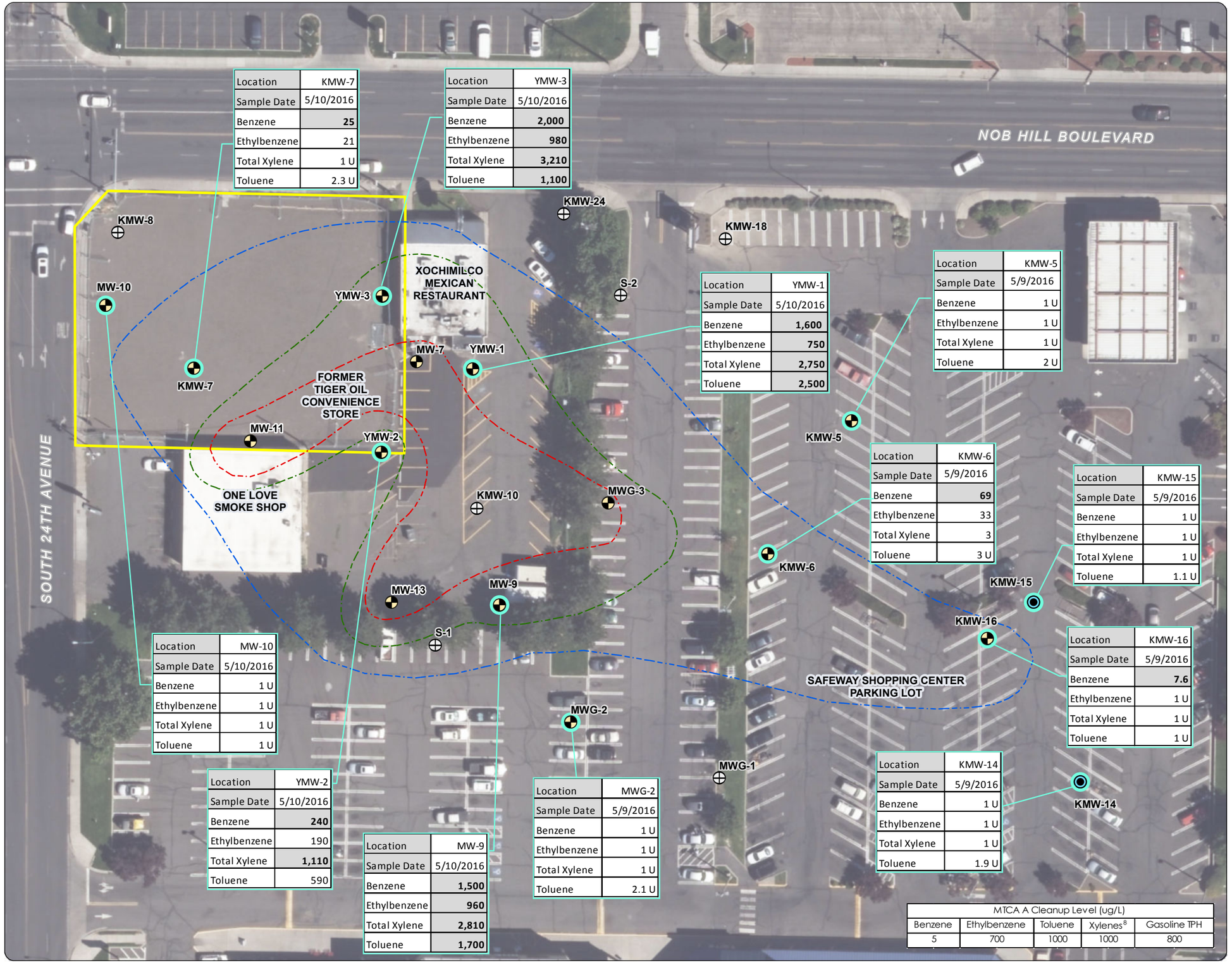
Path: X:\0818.02 City of Yakima\Projects\Quarterly GW Monitoring\Fig6_GasolineConcentration_201605.mxd
Print Date: 5/25/2016
Approved By: mstringer
Produced By: cwise
Project: 0818.02.01.06

Figure 7
Benzene Isoconcentration Contours – May 2016

City of Yakima
Former Tiger Oil Site
Yakima, Washington



Location	KMW-7
Sample Date	5/10/2016
Benzene	**25**
Ethylbenzene	21
Total Xylene	1 U
Toluene	2.3 U

Location	YMW-3
Sample Date	5/10/2016
Benzene	**2,000**
Ethylbenzene	**980**
Total Xylene	**3,210**
Toluene	**1,100**

Location	YMW-1
Sample Date	5/10/2016
Benzene	**1,600**
Ethylbenzene	**750**
Total Xylene	**2,750**
Toluene	**2,500**

Location	KMW-5
Sample Date	5/9/2016
Benzene	1 U
Ethylbenzene	1 U
Total Xylene	1 U
Toluene	2 U

Location	KMW-6
Sample Date	5/9/2016
Benzene	**69**
Ethylbenzene	33
Total Xylene	3
Toluene	3 U

Location	KMW-15
Sample Date	5/9/2016
Benzene	1 U
Ethylbenzene	1 U
Total Xylene	1 U
Toluene	1.1 U

Location	MW-10
Sample Date	5/10/2016
Benzene	1 U
Ethylbenzene	1 U
Total Xylene	1 U
Toluene	1 U

Location	KMW-16
Sample Date	5/9/2016
Benzene	**7.6**
Ethylbenzene	1 U
Total Xylene	1 U
Toluene	1 U

Location	YMW-2
Sample Date	5/10/2016
Benzene	**240**
Ethylbenzene	190
Total Xylene	**1,110**
Toluene	590

Location	MW-9
Sample Date	5/10/2016
Benzene	**1,500**
Ethylbenzene	**960**
Total Xylene	**2,810**
Toluene	**1,700**

Location	MWG-2
Sample Date	5/9/2016
Benzene	1 U
Ethylbenzene	1 U
Total Xylene	1 U
Toluene	2.1 U

Location	KMW-14
Sample Date	5/9/2016
Benzene	1 U
Ethylbenzene	1 U
Total Xylene	1 U
Toluene	1.9 U

MTCA A Cleanup Level (ug/L)				
Benzene	Ethylbenzene	Toluene	Xylenes[8]	Gasoline TPH
5	700	1000	1000	800

Legend

Approximate Benzene Isoconcentration

- 5 ug/L contour
- 1,000 ug/L contour
- 10,000 ug/L contour

- Monitoring Network Well
- Monitoring Well
- Sentry Monitoring Well
- Sample Analyzed
- Former Tiger Oil Property Boundary

0 25 50
Feet

Notes:
1. Monitoring Network Wells containing LNAPL were not sampled.
2. Shaded and bolded result values indicate exceedance of the MTCA Method A cleanup level.
3. BTEX = benzene, toluene, ethylbenzene, total xylenes
4. LNAPL = light nonaqueous-phase liquid
5. MTCA = Model Toxics Control Act
6. U = Result is non-detect
7. ug/L = micrograms per liter
8. Xylenes = the sum of m,p- and o-xylene. Non-detect results are summed at half of the non-detect value. The highest non-detect value is used when both results are non-detect.

Sources: Aerial photograph obtained from Esri ArcGIS Online; Infiltration Gallery delineated by Maul Foster & Alongi, Inc.; stormwater line and taxlot boundaries obtained from City of Yakima; all other features obtained from PLSA Engineering & Surveying.

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Path: X:\0818.02 City of Yakima\Projects\Quarterly GW Monitoring\Fig7_BTEXConcentration_201605.mxd
Project: 0818.02.01-06 Produced By: roberts Approved By: mstringer Print Date: 5/25/2016

ATTACHMENT A

FIELD SAMPLING DATA SHEETS

Maul Foster & Alongi, Inc.

400 E. Mill Plain Blvd, Suite 400, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	City of Yakima	**Sample Location**	KMW-5		
Project #	0818.02.01	**Sampler**	C. Wise		
Project Name	Tiger Oil - W. Nob Hill Blvd.	**Sampling Date**	5/9/2016		
Sampling Event	May 2016	**Sample Name**	KMW5-GW-050916		
Sub Area		**Sample Depth**	11		
FSDS QA:	AWV, 5/26/2016	**Easting**		**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
5/9/2016	12:15	18.86		8.72		10.1	6.59

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**
(2) Peristaltic Pump	12:56:00 PM	6.5	0.3	7.3	15.86	883	2.24	-70.5	4.42
	12:59:00 PM	6.74	0.3	7.3	15.83	882	2.25	-71.9	4.33
	1:06:00 PM	7.3	0.3	7.32	16.19	881	2.27	-73.8	3.84
Final Field Parameters	1:10:00 PM	7.62	0.3	7.31	16.05	881	2.28	-74	3.67

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify

Water Quality Observations: Clear. No odor or sheen.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	1:15:00 PM	VOA-Glass	3	No
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	3	

General Sampling Comments Began purge at 12:20.

Signature _____

Maul Foster & Alongi, Inc.

400 E. Mill Plain Blvd, Suite 400, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	City of Yakima	**Sample Location**	KMW-6				
Project #	0818.02.01	**Sampler**	C. Wise				
Project Name	Tiger Oil - W. Nob Hill Blvd.	**Sampling Date**	5/9/2016				
Sampling Event	May 2016	**Sample Name**	KMW6-GW-050916				
Sub Area		**Sample Depth**	12				
FSDS QA:	AWV, 5/26/2016	**Easting**		**Northing**		**TOC**	

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
5/9/2016	13:30	19.02		8.36		10.66	6.96

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**
(2) Peristaltic Pump	2:20:00 PM	7	0.3	7.49	14.91	828	4.14	-95.3	5.42
	2:25:00 PM	7.4	0.3	7.59	15.38	827	4.08	-103.6	3.75
	2:30:00 PM	7.8	0.3	7.58	15.29	826	4.3	-104.2	3.64
	2:35:00 PM	8.2	0.3	7.59	15.28	826	4.31	-104.1	2.66
Final Field Parameters	2:40:00 PM	8.6	0.3	7.58	15.32	825	4.27	-104	2.51

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify

Water Quality Observations: Black organic-like debris present during initial purge, then clear. No sheen. Slight odor.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	2:40:00 PM	VOA-Glass	3	No
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	3	

General Sampling Comments Began purge at 13:35.

Signature _____

Maul Foster & Alongi, Inc.

400 E. Mill Plain Blvd, Suite 400, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	City of Yakima	**Sample Location**	KMW-7				
Project #	0818.02.01	**Sampler**	C. Wise				
Project Name	Tiger Oil - W. Nob Hill Blvd.	**Sampling Date**	5/10/2016				
Sampling Event	May 2016	**Sample Name**	KMW7-GW-051016				
Sub Area		**Sample Depth**	15				
FSDS QA:	AWV, 5/26/2016	**Easting**		**Northing**		**TOC**	

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
5/9/2016	7:15	19.94		12.69		7.25	4.73

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**
(2) Peristaltic Pump	9:55:00 AM	4.5	0.3	7.38	14.99	797	8.29	-15.9	5.64
	10:00:00 AM	4.9	0.3	7.45	14.89	796	7.97	-40	4.97
	10:05:00 AM	5.3	0.3	7.49	14.97	798	7.96	-50.1	4.25
	10:10:00 AM	5.7	0.3	7.49	14.96	798	7.96	-50.5	3.77
Final Field Parameters	10:15:00 AM	6.1	0.3	7.49	14.96	799	7.98	-50.6	3.12

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify

Water Quality Observations: Clear. Slight odor. No sheen.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	10:20:00 AM	VOA-Glass	3	No
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	3	

General Sampling Comments Began purge at 9:15.

Signature _____

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Water Field Sampling Data Sheet

Client Name	City of Yakima	**Sample Location**	KMW-14
Project #	0818.02.01	**Sampler**	C. Wise
Project Name	Tiger Oil - W. Nob Hill Blvd.	**Sampling Date**	5/9/2016
Sampling Event	May 2016	**Sample Name**	KMW14-GW-050916
Sub Area		**Sample Depth**	15
FSDS QA:	AWV, 5/26/2016	**Easting**	**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
5/9/2016	9:20	18.75		12.29		6.46	4.22

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity
(2) Peristaltic Pump	9:55:00 AM	4.5	0.2	6.93	16.3	1223	0.54	-96.9	9.81
	10:00:00 AM	4.75	0.2	6.93	16.2	1243	0.47	-97.8	7.58
	10:05:00 AM	5	0.2	6.96	16.05	1364	0.35	-100	6.4
	10:10:00 AM	5.25	0.2	7	16.11	1522	0.3	-102.2	5.57
	10:15:00 AM	5.5	0.2	7.01	16.18	1765	0.28	-102.2	5.16
	10:20:00 AM	5.75	0.2	7.02	16.12	1861	0.25	-102.7	5.41
Final Field Parameters	10:25:00 AM	6	0.2	7.02	16.11	1868	0.23	-102.8	5.24

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify

Water Quality Observations: Red flakes present during initial purge.

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Groundwater	10:30:00 AM	VOA-Glass	3	No
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	3	

General Sampling Comments Began purge at 9:25.

Signature _____

Maul Foster & Alongi, Inc.

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Water Field Sampling Data Sheet

Client Name	City of Yakima	**Sample Location**	KMW-15
Project #	0818.02.01	**Sampler**	C. Wise
Project Name	Tiger Oil - W. Nob Hill Blvd.	**Sampling Date**	5/9/2016
Sampling Event	May 2016	**Sample Name**	KMW15-GW-050916
Sub Area		**Sample Depth**	13
FSDS QA:	AWV, 5/26/2016	**Easting**	**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
5/9/2016	11:05	19.63		10.88		8.75	5.71

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**
(2) Peristaltic Pump	11:55:00 AM	5.5	0.3	7.56	16.13	758	8.01	-62	4.38
	12:00:00 PM	5.9	0.3	7.57	16.16	757	7.98	-60.2	3.17
	12:05:00 PM	6.3	0.3	7.58	16.17	758	7.96	-58.7	2.79
Final Field Parameters	12:10:00 PM	6.7	0.3	7.58	16.18	758	7.95	-58.4	2.42

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify

Water Quality Observations: Clear. No odor or sheen.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	12:15:00 PM	VOA-Glass	3	No
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	3	

General Sampling Comments Began purge at 11:10.

Signature _____

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Water Field Sampling Data Sheet

Client Name	City of Yakima	**Sample Location**	KMW-16				
Project #	0818.02.01	**Sampler**	C. Wise				
Project Name	Tiger Oil - W. Nob Hill Blvd.	**Sampling Date**	5/9/2016				
Sampling Event	May 2016	**Sample Name**	KMW16-GW-050916				
Sub Area		**Sample Depth**	13				
FSDS QA:	AWV, 5/26/2016	**Easting**		**Northing**		**TOC**	

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
5/9/2016	7:55	20.31		10.66		9.65	6.3

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**
(2) Peristaltic Pump	8:50:00 AM	5.5	0.3	7.28	15.65	1001	0.94	-68	3.84
	8:55:00 AM	5.9	0.3	7.29	15.71	1013	0.8	-74.2	4.14
	9:00:00 AM	6.3	0.3	7.31	15.76	1041	0.78	-79.9	3.93
Final Field Parameters	9:05:00 AM	6.7	0.3	7.26	15.75	1061	0.74	-82.8	3.76

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify

Water Quality Observations: Clear. No odor or sheen.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	9:10:00 AM	VOA-Glass	3	No
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	3	

General Sampling Comments Began purge at 8:00.

Signature _____

Maul Foster & Alongi, Inc.

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Water Field Sampling Data Sheet

Client Name	City of Yakima	**Sample Location**	MW-7
Project #	0818.02.01	**Sampler**	C. Wise
Project Name	Tiger Oil - W. Nob Hill Blvd.	**Sampling Date**	
Sampling Event	May 2016	**Sample Name**	
Sub Area		**Sample Depth**	
FSDS QA:	AWV, 5/26/2016	**Easting**	**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
5/9/2016	7:25	18.49	11.89	12.21	0.32	6.28	1.02

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**
(2) Peristaltic Pump									
Final Field Parameters									

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify

Water Quality Observations:

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
			VOA-Glass		
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	0	

General Sampling Comments

Sample not collected due to presence of free product in well.

Signature _____

Maul Foster & Alongi, Inc.

400 E. Mill Plain Blvd, Suite 400, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	City of Yakima	**Sample Location**	MW-9				
Project #	0818.02.01	**Sampler**	C. Wise				
Project Name	Tiger Oil - W. Nob Hill Blvd.	**Sampling Date**	5/10/2016				
Sampling Event	May 2016	**Sample Name**	MW9-GW-051016				
Sub Area		**Sample Depth**	16				
FSDS QA:	AWV, 5/26/2016	**Easting**		**Northing**		**TOC**	

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
5/9/2016	7:35	18.62		14.11		4.51	0.74

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**
(2) Peristaltic Pump	4:20:00 PM	0.75	0.2	7	18.01	1194	0.98	-119.9	12.6
	4:25:00 PM	1	0.2	7.01	17.47	1190	0.54	-125.7	10.3
	4:30:00 PM	1.25	0.2	7.02	17.4	1188	0.5	-127.2	10.1
	4:35:00 PM	1.5	0.2	7.03	17.33	1186	0.47	-128.2	9.81
Final Field Parameters	4:40:00 PM	1.75	0.2	7.04	17.26	1184	0.4	-130.1	9.85

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify

Water Quality Observations: Very strong odor. Some organic-like particles present in purge water.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	4:40:00 PM	VOA-Glass	3	No
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	3	

General Sampling Comments Began purge at 14:50. Well began to quickly drawdown at 15:00. Allowed an hour to recharge prior to beginning second purge.

Signature _____

Maul Foster & Alongi, Inc.

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Water Field Sampling Data Sheet

Client Name	City of Yakima	**Sample Location**	MW-10		
Project #	0818.02.01	**Sampler**	C. Wise		
Project Name	Tiger Oil - W. Nob Hill Blvd.	**Sampling Date**	5/10/2016		
Sampling Event	May 2016	**Sample Name**	MW10-GW-051016		
Sub Area		**Sample Depth**	13.5		
FSDS QA:	AWV, 5/26/2016	**Easting**		**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
5/9/2016	7:00	14.8		12.35		2.45	0.4

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**
(2) Peristaltic Pump	8:35:00 AM	1	0.2	7.56	14.53	1236	9.79	99.8	12.6
	8:40:00 AM	1.25	0.2	7.55	14.59	1220	9.73	92.2	11.3
	8:45:00 AM	1.5	0.2	7.55	14.6	1216	9.7	92.7	10.8
	8:50:00 AM	1.75	0.2	7.57	14.63	1177	9.83	87.2	9.15
	8:55:00 AM	2	0.2	7.57	14.64	1173	9.82	85.6	9.82
Final Field Parameters	9:00:00 AM	2.25	0.2	7.58	14.68	1165	9.84	85.1	9.51

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify

Water Quality Observations: Clear. No sheen or odor.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	9:00:00 AM	VOA-Glass	3	No
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	3	

General Sampling Comments Began purge at 8:10.

Signature _____

Maul Foster & Alongi, Inc.

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Water Field Sampling Data Sheet

Client Name	City of Yakima	**Sample Location**	MW-11
Project #	0818.02.01	**Sampler**	C. Wise
Project Name	Tiger Oil - W. Nob Hill Blvd.	**Sampling Date**	
Sampling Event	May 2016	**Sample Name**	
Sub Area		**Sample Depth**	
FSDS QA:	AWV, 5/26/2016	**Easting**	**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
5/9/2016	7:10	14.89	13.31	13.41	0.1	1.48	0.24

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**
(2) Peristaltic Pump									
Final Field Parameters									

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify

Water Quality Observations:

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
			VOA-Glass		
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	0	

General Sampling Comments

Sample not collected due to the presence of free product in well.

Signature _____

Maul Foster & Alongi, Inc.

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Water Field Sampling Data Sheet

Client Name	City of Yakima	**Sample Location**	MW-13		
Project #	0818.02.01	**Sampler**	C. Wise		
Project Name	Tiger Oil - W. Nob Hill Blvd.	**Sampling Date**			
Sampling Event	May 2016	**Sample Name**			
Sub Area		**Sample Depth**			
FSDS QA:	AWV, 5/26/2016	**Easting**		**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
5/9/2016	7:40	17.83	13.8	13.98	0.18	3.85	0.63

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**
(2) Peristaltic Pump									
Final Field Parameters									

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify

Water Quality Observations:

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
			VOA-Glass		
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	0	

General Sampling Comments

Sample not collected due to presence of free product in well.

Signature _____

Maul Foster & Alongi, Inc.

400 E. Mill Plain Blvd, Suite 400, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	City of Yakima	**Sample Location**	MWG-2				
Project #	0818.02.01	**Sampler**	C. Wise				
Project Name	Tiger Oil - W. Nob Hill Blvd.	**Sampling Date**	5/9/2016				
Sampling Event	May 2016	**Sample Name**	MWG2-GW-050916				
Sub Area		**Sample Depth**	10.5				
FSDS QA:	AWV, 5/26/2016	**Easting**		**Northing**		**TOC**	

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
5/9/2016	15:00	13.69		8.78		4.91	0.8

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**
(2) Peristaltic Pump	3:20:00 PM	0.5	0.2	7.52	16.96	769	6.81	-48.9	2.79
	3:25:00 PM	0.75	0.2	7.52	16.83	768	6.99	-49.3	2.44
	3:30:00 PM	1	0.2	7.57	16.65	769	7.03	-50	1.83
Final Field Parameters	3:35:00 PM	1.25	0.2	7.55	16.49	768	7.04	-48.3	1.94

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify

Water Quality Observations: Clear. No odor or sheen.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	3:40:00 PM	VOA-Glass	3	No
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	3	

General Sampling Comments Began purge at 15:05.

Signature _____

Maul Foster & Alongi, Inc.

400 E. Mill Plain Blvd, Suite 400, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	City of Yakima	**Sample Location**	MWG-3		
Project #	0818.02.01	**Sampler**	C. Wise		
Project Name	Tiger Oil - W. Nob Hill Blvd.	**Sampling Date**			
Sampling Event	May 2016	**Sample Name**			
Sub Area		**Sample Depth**			
FSDS QA:	AWV, 5/26/2016	**Easting**		**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
5/9/2016	14:50	14.2	6.96	7	0.04	7.2	1.17

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**
(2) Peristaltic Pump									
Final Field Parameters									

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify

Water Quality Observations:

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
			VOA-Glass		
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	0	

General Sampling Comments

Sample not collected due to presence of free product in well.

Signature _____

Maul Foster & Alongi, Inc.

400 E. Mill Plain Blvd, Suite 400, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	City of Yakima	**Sample Location**	YMW-1
Project #	0818.02.01	**Sampler**	C. Wise
Project Name	Tiger Oil - W. Nob Hill Blvd.	**Sampling Date**	5/10/2016
Sampling Event	May 2016	**Sample Name**	YMW1-GW-051016
Sub Area		**Sample Depth**	14
FSDS QA:	AWV, 5/26/2016	**Easting**	**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
5/9/2016	7:30	19.69		11.36		8.33	1.36

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity
(2) Peristaltic Pump	11:00:00 AM	1.5	0.2	7.25	16.77	1130	1.92	-151.1	6.76
	11:05:00 AM	1.75	0.2	7.24	16.63	1090	1.64	-154.1	5.29
	11:10:00 AM	2	0.2	7.3	16.64	1079	1.57	-155.1	4.96
	11:15:00 AM	2.25	0.2	7.31	16.68	1064	1.51	-156.1	4.78
Final Field Parameters	11:20:00 AM	2.5	0.2	7.33	16.67	1054	1.47	-156.9	4.11

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify

Water Quality Observations: Clear. Strong odor. No sheen.

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Groundwater	11:30:00 AM	VOA-Glass	3	No
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	3	

General Sampling Comments Began purge at 10:35.

Signature _____

Maul Foster & Alongi, Inc.

400 E. Mill Plain Blvd, Suite 400, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	City of Yakima	**Sample Location**	YMW-2		
Project #	0818.02.01	**Sampler**	C. Wise		
Project Name	Tiger Oil - W. Nob Hill Blvd.	**Sampling Date**	5/10/2016		
Sampling Event	May 2016	**Sample Name**	YMW2-GW-051016		
Sub Area		**Sample Depth**	15		
FSDS QA:	AWV, 5/26/2016	**Easting**		**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
5/9/2016	7:50	19.74		13.08		6.66	1.09

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**
(2) Peristaltic Pump	2:22:00 PM	1.25	0.2	7.37	16.84	859	3.75	-79.8	4.82
	2:27:00 PM	1.5	0.2	7.37	16.9	868	3.56	-80.6	4.67
	2:32:00 PM	1.75	0.2	7.36	16.9	881	3.17	-81.6	3.61
	2:37:00 PM	2	0.2	7.34	16.84	895	2.85	-81.6	2.96
	2:42:00 PM	2.25	0.2	7.32	16.88	917	2.5	-81.6	2.44
Final Field Parameters	2:45:00 PM	2.5	0.2	7.32	16.93	919	2.62	-81.7	1.73

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify

Water Quality Observations: Clear. Strong odor. No sheen.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	2:45:00 PM	VOA-Glass	6	No
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	6	

General Sampling Comments

Collected DUP-GW-051016.
Began purge at 13:50.

Signature _____

Maul Foster & Alongi, Inc.

400 E. Mill Plain Blvd, Suite 400, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	City of Yakima	**Sample Location**	YMW-3				
Project #	0818.02.01	**Sampler**	C. Wise				
Project Name	Tiger Oil - W. Nob Hill Blvd.	**Sampling Date**	5/10/2016				
Sampling Event	May 2016	**Sample Name**	YMW3-GW-051016				
Sub Area		**Sample Depth**	14				
FSDS QA:	AWV, 5/26/2016	**Easting**		**Northing**		**TOC**	

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
5/9/2016	7:45	19.68		11.62		8.06	1.31

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**
(2) Peristaltic Pump	1:15:00 PM	1.75	0.2	7.34	16.15	1514	0.99	-180	7.63
	1:20:00 PM	2	0.2	7.36	16.81	1483	0.76	-187.5	4.58
	1:25:00 PM	2.25	0.2	7.39	16.2	1460	0.63	-190.6	4.28
	1:30:00 PM	2.5	0.2	7.4	16.12	1426	0.48	-193.7	3.86
	1:35:00 PM	2.75	0.2	7.41	16.1	1395	0.41	-195.1	3.37
Final Field Parameters	1:40:00 PM	3	0.2	7.41	16.11	1393	0.4	-196	2.49

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify

Water Quality Observations: Clear. Strong odor. No sheen.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	1:45:00 PM	VOA-Glass	3	No
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	3	

General Sampling Comments Began purge at 12:50.

Signature _____

ATTACHMENT B

LABORATORY ANALYTICAL REPORTS

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

May 18, 2016

Yen-Vy Van
Maul Foster & Alongi, Inc.
Bay Vista Tower
2815 2nd Avenue, Suite 540
Seattle, WA 98121

Re: Analytical Data for Project 0818.02.01-06
Laboratory Reference No. 1605-094

Dear Yen-Vy:

Enclosed are the analytical results and associated quality control data for samples submitted on May 11, 2016.

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: May 18, 2016
Samples Submitted: May 11, 2016
Laboratory Reference: 1605-094
Project: 0818.02.01-06

Case Narrative

Samples were collected on May 9 and 10, 2016 and received by the laboratory on May 11, 2016. 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: May 18, 2016
Samples Submitted: May 11, 2016
Laboratory Reference: 1605-094
Project: 0818.02.01-06

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**KMW16-GW-050916**					
Laboratory ID:	05-094-01					
Benzene	**7.6**	1.0	EPA 8021B	5-16-16	5-16-16	
Toluene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
o-Xylene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
Gasoline	**200**	100	NWTPH-Gx	5-16-16	5-16-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*84*	*71-111*				
Client ID:	**KMW14-GW-050916**					
Laboratory ID:	05-094-02					
Benzene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
Toluene	**1.9**	1.0	EPA 8021B	5-16-16	5-16-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
o-Xylene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
Gasoline	**ND**	100	NWTPH-Gx	5-16-16	5-16-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*82*	*71-111*				
Client ID:	**KMW15-GW-050916**					
Laboratory ID:	05-094-03					
Benzene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
Toluene	**1.1**	1.0	EPA 8021B	5-16-16	5-16-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
o-Xylene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
Gasoline	**ND**	100	NWTPH-Gx	5-16-16	5-16-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*83*	*71-111*				

Date of Report: May 18, 2016
Samples Submitted: May 11, 2016
Laboratory Reference: 1605-094
Project: 0818.02.01-06

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**KMW5-GW-050916**					
Laboratory ID:	05-094-04					
Benzene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
Toluene	**2.0**	1.0	EPA 8021B	5-16-16	5-16-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
o-Xylene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
Gasoline	**ND**	100	NWTPH-Gx	5-16-16	5-16-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*86*	*71-111*				
Client ID:	**KMW6-GW-050916**					
Laboratory ID:	05-094-05					
Benzene	**69**	1.0	EPA 8021B	5-16-16	5-16-16	
Toluene	**3.0**	1.0	EPA 8021B	5-16-16	5-16-16	
Ethyl Benzene	**33**	1.0	EPA 8021B	5-16-16	5-16-16	
m,p-Xylene	**2.0**	1.0	EPA 8021B	5-16-16	5-16-16	
o-Xylene	**1.2**	1.0	EPA 8021B	5-16-16	5-16-16	
Gasoline	**270**	100	NWTPH-Gx	5-16-16	5-16-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*88*	*71-111*				
Client ID:	**MWG2-GW-050916**					
Laboratory ID:	05-094-06					
Benzene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
Toluene	**2.1**	1.0	EPA 8021B	5-16-16	5-16-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
o-Xylene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
Gasoline	**ND**	100	NWTPH-Gx	5-16-16	5-16-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*84*	*71-111*				

Date of Report: May 18, 2016
Samples Submitted: May 11, 2016
Laboratory Reference: 1605-094
Project: 0818.02.01-06

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW10-GW-051016**					
Laboratory ID:	05-094-07					
Benzene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
Toluene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
o-Xylene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
Gasoline	**ND**	100	NWTPH-Gx	5-16-16	5-16-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*86*	*71-111*				
Client ID:	**KMW7-GW-051016**					
Laboratory ID:	05-094-08					
Benzene	**25**	1.0	EPA 8021B	5-16-16	5-16-16	
Toluene	**2.3**	1.0	EPA 8021B	5-16-16	5-16-16	
Ethyl Benzene	**21**	1.0	EPA 8021B	5-16-16	5-16-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
o-Xylene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
Gasoline	**250**	100	NWTPH-Gx	5-16-16	5-16-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*87*	*71-111*				
Client ID:	**YMW1-GW-051016**					
Laboratory ID:	05-094-09					
Benzene	**1500**	10	EPA 8021B	5-16-16	5-16-16	E
Toluene	**2300**	10	EPA 8021B	5-16-16	5-16-16	E
Ethyl Benzene	**750**	10	EPA 8021B	5-16-16	5-16-16	
m,p-Xylene	**1900**	10	EPA 8021B	5-16-16	5-16-16	E
o-Xylene	**650**	10	EPA 8021B	5-16-16	5-16-16	
Gasoline	**21000**	1000	NWTPH-Gx	5-16-16	5-16-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*71-111*				

Date of Report: May 18, 2016
Samples Submitted: May 11, 2016
Laboratory Reference: 1605-094
Project: 0818.02.01-06

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**YMW1-GW-051016**					
Laboratory ID:	05-094-09					
Benzene	**1600**	50	EPA 8021B	5-17-16	5-17-16	
Toluene	**2500**	50	EPA 8021B	5-17-16	5-17-16	
Ethyl Benzene	**800**	50	EPA 8021B	5-17-16	5-17-16	
m,p-Xylene	**2100**	50	EPA 8021B	5-17-16	5-17-16	
o-Xylene	**710**	50	EPA 8021B	5-17-16	5-17-16	
Gasoline	**23000**	5000	NWTPH-Gx	5-17-16	5-17-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*86*	*71-111*				
Client ID:	**YMW3-GW-051016**					
Laboratory ID:	05-094-10					
Benzene	**2100**	10	EPA 8021B	5-16-16	5-16-16	E
Toluene	**1100**	10	EPA 8021B	5-16-16	5-16-16	E
Ethyl Benzene	**1100**	10	EPA 8021B	5-16-16	5-16-16	E
m,p-Xylene	**2400**	10	EPA 8021B	5-16-16	5-16-16	E
o-Xylene	**1000**	10	EPA 8021B	5-16-16	5-16-16	E
Gasoline	**23000**	1000	NWTPH-Gx	5-16-16	5-16-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*88*	*71-111*				
Client ID:	**YMW3-GW-051016**					
Laboratory ID:	05-094-10					
Benzene	**2000**	50	EPA 8021B	5-17-16	5-17-16	
Toluene	**1100**	50	EPA 8021B	5-17-16	5-17-16	
Ethyl Benzene	**980**	50	EPA 8021B	5-17-16	5-17-16	
m,p-Xylene	**2300**	50	EPA 8021B	5-17-16	5-17-16	
o-Xylene	**910**	50	EPA 8021B	5-17-16	5-17-16	
Gasoline	**21000**	5000	NWTPH-Gx	5-17-16	5-17-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*85*	*71-111*				

Date of Report: May 18, 2016
Samples Submitted: May 11, 2016
Laboratory Reference: 1605-094
Project: 0818.02.01-06

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**YMW2-GW-051016**					
Laboratory ID:	05-094-11					
Benzene	**240**	10	EPA 8021B	5-16-16	5-16-16	
Toluene	**570**	10	EPA 8021B	5-16-16	5-16-16	
Ethyl Benzene	**180**	10	EPA 8021B	5-16-16	5-16-16	
m,p-Xylene	**770**	10	EPA 8021B	5-16-16	5-16-16	
o-Xylene	**300**	10	EPA 8021B	5-16-16	5-16-16	
Gasoline	**6600**	1000	NWTPH-Gx	5-16-16	5-16-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*80*	*71-111*				
Client ID:	**DUP-GW-051016**					
Laboratory ID:	05-094-12					
Benzene	**240**	10	EPA 8021B	5-16-16	5-16-16	
Toluene	**590**	10	EPA 8021B	5-16-16	5-16-16	
Ethyl Benzene	**190**	10	EPA 8021B	5-16-16	5-16-16	
m,p-Xylene	**800**	10	EPA 8021B	5-16-16	5-16-16	
o-Xylene	**310**	10	EPA 8021B	5-16-16	5-16-16	
Gasoline	**8500**	1000	NWTPH-Gx	5-16-16	5-16-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*86*	*71-111*				
Client ID:	**MW9-GW-0501016**					
Laboratory ID:	05-094-13					
Benzene	**1300**	10	EPA 8021B	5-16-16	5-16-16	E
Toluene	**1500**	10	EPA 8021B	5-16-16	5-16-16	E
Ethyl Benzene	**960**	10	EPA 8021B	5-16-16	5-16-16	
m,p-Xylene	**1700**	10	EPA 8021B	5-16-16	5-16-16	E
o-Xylene	**910**	10	EPA 8021B	5-16-16	5-16-16	
Gasoline	**26000**	1000	NWTPH-Gx	5-16-16	5-16-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*71-111*				

Date of Report: May 18, 2016
Samples Submitted: May 11, 2016
Laboratory Reference: 1605-094
Project: 0818.02.01-06

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW9-GW-0501016**					
Laboratory ID:	05-094-13					
Benzene	**1500**	50	EPA 8021B	5-17-16	5-17-16	
Toluene	**1700**	50	EPA 8021B	5-17-16	5-17-16	
Ethyl Benzene	**1000**	50	EPA 8021B	5-17-16	5-17-16	
m,p-Xylene	**1900**	50	EPA 8021B	5-17-16	5-17-16	
o-Xylene	**1000**	50	EPA 8021B	5-17-16	5-17-16	
Gasoline	**22000**	5000	NWTPH-Gx	5-17-16	5-17-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*83*	*71-111*				
Client ID:	**Trip Blanks**					
Laboratory ID:	05-094-14					
Benzene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
Toluene	**1.9**	1.0	EPA 8021B	5-16-16	5-16-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
o-Xylene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
Gasoline	**ND**	100	NWTPH-Gx	5-16-16	5-16-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*86*	*71-111*				

Date of Report: May 18, 2016
Samples Submitted: May 11, 2016
Laboratory Reference: 1605-094
Project: 0818.02.01-06

NWTPH-Gx/BTEX
METHOD BLANK QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0516W1					
Benzene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
Toluene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
o-Xylene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
Gasoline	**ND**	100	NWTPH-Gx	5-16-16	5-16-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*86*	*71-111*				
Laboratory ID:	MB0516W2					
Benzene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
Toluene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
o-Xylene	**ND**	1.0	EPA 8021B	5-16-16	5-16-16	
Gasoline	**ND**	100	NWTPH-Gx	5-16-16	5-16-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*84*	*71-111*				
Laboratory ID:	MB0517W1					
Benzene	**ND**	1.0	EPA 8021B	5-17-16	5-17-16	
Toluene	**ND**	1.0	EPA 8021B	5-17-16	5-17-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-17-16	5-17-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-17-16	5-17-16	
o-Xylene	**ND**	1.0	EPA 8021B	5-17-16	5-17-16	
Gasoline	**ND**	100	NWTPH-Gx	5-17-16	5-17-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*83*	*71-111*				

Date of Report: May 18, 2016
Samples Submitted: May 11, 2016
Laboratory Reference: 1605-094
Project: 0818.02.01-06

NWTPH-Gx/BTEX
DUPLICATE QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
Laboratory ID:	05-094-01									
	ORIG	DUP								
Benzene	**7.60**	**7.64**	NA	NA		NA	NA	1	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	**198**	**186**	NA	NA		NA	NA	6	30	
Surrogate:										
Fluorobenzene						*84* *87*	*71-111*			
Laboratory ID:	05-103-01									
	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						*86* *84*	*71-111*			
Laboratory ID:	05-134-01									
	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						*82* *82*	*71-111*			

Date of Report: May 18, 2016
Samples Submitted: May 11, 2016
Laboratory Reference: 1605-094
Project: 0818.02.01-06

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	05-094-01										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**59.3**	**54.3**	50.0	50.0	7.60	**103**	**93**	83-123	9	15	
Toluene	**52.9**	**48.2**	50.0	50.0	ND	**106**	**96**	83-124	9	16	
Ethyl Benzene	**51.9**	**48.7**	50.0	50.0	ND	**104**	**97**	82-123	6	15	
m,p-Xylene	**51.5**	**48.6**	50.0	50.0	ND	**103**	**97**	81-125	6	17	
o-Xylene	**50.0**	**48.2**	50.0	50.0	ND	**100**	**96**	82-123	4	15	
Surrogate:											
Fluorobenzene						*88*	*85*	*71-111*			
Laboratory ID:	05-134-01										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**51.3**	**52.5**	50.0	50.0	ND	**103**	**105**	83-123	2	15	
Toluene	**51.1**	**52.0**	50.0	50.0	ND	**102**	**104**	83-124	2	16	
Ethyl Benzene	**50.8**	**51.6**	50.0	50.0	ND	**102**	**103**	82-123	2	15	
m,p-Xylene	**50.6**	**51.5**	50.0	50.0	ND	**101**	**103**	81-125	2	17	
o-Xylene	**50.5**	**51.3**	50.0	50.0	ND	**101**	**103**	82-123	2	15	
Surrogate:											
Fluorobenzene						*91*	*87*	*71-111*			
SPIKE BLANKS											
Laboratory ID:	SB0516W1										
	SB		SB			SB					
Benzene	**47.0**		50.0			**94**		83-119			
Toluene	**45.8**		50.0			**92**		83-120			
Ethyl Benzene	**45.2**		50.0			**90**		82-120			
m,p-Xylene	**45.2**		50.0			**90**		80-122			
o-Xylene	**45.7**		50.0			**91**		80-120			
Surrogate:											
Fluorobenzene						*85*		*71-111*			
Laboratory ID:	SB0517W1										
	SB		SB			SB					
Benzene	**49.6**		50.0			**99**		83-119			
Toluene	**49.8**		50.0			**100**		83-120			
Ethyl Benzene	**48.8**		50.0			**98**		82-120			
m,p-Xylene	**48.9**		50.0			**98**		80-122			
o-Xylene	**49.1**		50.0			**98**		80-120			
Surrogate:											
Fluorobenzene						*84*		*71-111*			

Date of Report: May 18, 2016
Samples Submitted: May 11, 2016
Laboratory Reference: 1605-094
Project: 0818.02.01-06

NWTPH-Gx
CONTINUING CALIBRATION SUMMARY

Lab ID	True Value (ppm)	Calc. Value	Percent Difference	Control Limits
CCVH0516G-1	5.00	4.94	1	+/- 20%
CCVH0516G-2	5.00	4.93	1	+/- 20%
CCVD0516G-1	5.00	5.00	0	+/- 20%
CCVD0516G-2	5.00	4.89	2	+/- 20%
CCVH0517G-1	5.00	4.53	9	+/- 20%
CCVH0517G-2	5.00	4.68	6	+/- 20%
CCVD0517G-2	5.00	4.69	6	+/- 20%
CCVD0517G-3	5.00	4.90	2	+/- 20%

Date of Report: May 18, 2016
Samples Submitted: May 11, 2016
Laboratory Reference: 1605-094
Project: 0818.02.01-06

BTEX EPA 8021B
CONTINUING CALIBRATION SUMMARY

Analyte	Lab ID	True Value (ppm)	Calc. Value	Percent Difference	Control Limits
Benzene	CCVH0516B-1	50.0	48.4	3	+/- 15%
Toluene	CCVH0516B-1	50.0	48.4	3	+/- 15%
Ethyl Benzene	CCVH0516B-1	50.0	46.9	6	+/- 15%
m,p-Xylene	CCVH0516B-1	50.0	48.2	4	+/- 15%
o-Xylene	CCVH0516B-1	50.0	48.1	4	+/- 15%
Benzene	CCVH0516B-2	50.0	50.5	-1	+/- 15%
Toluene	CCVH0516B-2	50.0	49.9	0	+/- 15%
Ethyl Benzene	CCVH0516B-2	50.0	49.2	2	+/- 15%
m,p-Xylene	CCVH0516B-2	50.0	49.1	2	+/- 15%
o-Xylene	CCVH0516B-2	50.0	49.5	1	+/- 15%
Benzene	CCVH0516B-3	50.0	49.4	1	+/- 15%
Toluene	CCVH0516B-3	50.0	49.2	2	+/- 15%
Ethyl Benzene	CCVH0516B-3	50.0	48.5	3	+/- 15%
m,p-Xylene	CCVH0516B-3	50.0	48.3	3	+/- 15%
o-Xylene	CCVH0516B-3	50.0	48.3	3	+/- 15%
Benzene	CCVD0516B-1	50.0	52.8	-6	+/- 15%
Toluene	CCVD0516B-1	50.0	53.7	-7	+/- 15%
Ethyl Benzene	CCVD0516B-1	50.0	53.2	-6	+/- 15%
m,p-Xylene	CCVD0516B-1	50.0	54.6	-9	+/- 15%
o-Xylene	CCVD0516B-1	50.0	53.1	-6	+/- 15%
Benzene	CCVD0516B-2	50.0	51.2	-2	+/- 15%
Toluene	CCVD0516B-2	50.0	51.7	-3	+/- 15%
Ethyl Benzene	CCVD0516B-2	50.0	51.4	-3	+/- 15%
m,p-Xylene	CCVD0516B-2	50.0	52.5	-5	+/- 15%
o-Xylene	CCVD0516B-2	50.0	51.3	-3	+/- 15%
Benzene	CCVD0516B-3	50.0	47.0	6	+/- 15%
Toluene	CCVD0516B-3	50.0	47.8	4	+/- 15%
Ethyl Benzene	CCVD0516B-3	50.0	47.1	6	+/- 15%
m,p-Xylene	CCVD0516B-3	50.0	47.9	4	+/- 15%
o-Xylene	CCVD0516B-3	50.0	47.4	5	+/- 15%

Date of Report: May 18, 2016
Samples Submitted: May 11, 2016
Laboratory Reference: 1605-094
Project: 0818.02.01-06

BTEX EPA 8021B
CONTINUING CALIBRATION SUMMARY

Analyte	Lab ID	True Value (ppm)	Calc. Value	Percent Difference	Control Limits
Benzene	CCVH0517B-1	50.0	50.4	-1	+/- 15%
Toluene	CCVH0517B-1	50.0	51.1	-2	+/- 15%
Ethyl Benzene	CCVH0517B-1	50.0	49.6	1	+/- 15%
m,p-Xylene	CCVH0517B-1	50.0	50.8	-2	+/- 15%
o-Xylene	CCVH0517B-1	50.0	50.3	-1	+/- 15%
Benzene	CCVH0517B-2	50.0	49.6	1	+/- 15%
Toluene	CCVH0517B-2	50.0	49.1	2	+/- 15%
Ethyl Benzene	CCVH0517B-2	50.0	48.3	3	+/- 15%
m,p-Xylene	CCVH0517B-2	50.0	48.5	3	+/- 15%
o-Xylene	CCVH0517B-2	50.0	49.0	2	+/- 15%
Benzene	CCVD0517B-2	50.0	50.8	-2	+/- 15%
Toluene	CCVD0517B-2	50.0	51.0	-2	+/- 15%
Ethyl Benzene	CCVD0517B-2	50.0	50.8	-2	+/- 15%
m,p-Xylene	CCVD0517B-2	50.0	50.9	-2	+/- 15%
o-Xylene	CCVD0517B-2	50.0	50.6	-1	+/- 15%
Benzene	CCVD0517B-3	50.0	48.8	2	+/- 15%
Toluene	CCVD0517B-3	50.0	48.7	3	+/- 15%
Ethyl Benzene	CCVD0517B-3	50.0	48.3	3	+/- 15%
m,p-Xylene	CCVD0517B-3	50.0	48.2	4	+/- 15%
o-Xylene	CCVD0517B-3	50.0	48.2	4	+/- 15%

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-napthalene) 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: Maul Foster Alongi
Project Number: 0818.02.01-06
Project Name: Tiger Oil - W. Nob Hill
Project Manager: Yen-Vy Van
Sampled by: Carolyn Wise

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Laboratory Number: 05-094

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	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	KMW16-GW-050916	5/9/16	910	W	3		X															
2	KMW14-GW-050916	5/9/16	1030	W	3		X															
3	KMW15-GW-050916	5/9/16	1215	W	3		X															
4	KMW5-GW-050916	5/9/16	1315	W	3		X															
5	KMW6-GW-050916	5/9/16	1440	W	3		X															
6	MWG2-GW-050916	5/9/16	1540	W	3		X															
7	MW10-GW-051016	5/10/16	900	W	3		X															
8	KMW7-GW-051016	5/10/16	1020	W	3		X															
9	YMW1-GW-051016	5/10/16	1130	W	3		X															
10	YMW3-GW-051016	5/10/16	1345	W	3		X															

	Signature	Company	Date	Time
Relinquished	Carolyn Wise	MFA	5/11/16	1340
Received		OnSite	5/11/16	1340
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Chromatograms with final report ☐

Data Package: Standard ☒ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☒ Equis 4

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: Maul Foster Alongi
Project Number: 0818.02.01-06
Project Name: Tiger Oil - W. Nob Hill
Project Manager: Yen-Vy Van
Sampled by: Carolyn Wise

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Laboratory Number: 05-094

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	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	YMW2-GW-051016	5/10/16	1445	W	3		X															
12	DUP-GW-051016	5/10/16	1445	W	3		X															
13	MW9-GW-051016	5/10/16	1640	W	3		X															
14	Trip Blanks	~~5/10/16~~	—	W	3		X															

	Signature	Company	Date	Time
Relinquished	Carolyn Wise	MFA	5/11/16	1340
Received		OSE	5/11/16	1340
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Chromatograms with final report ☐

Data Package: Standard ☒ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☒ Equis 4

Sample/Cooler Receipt and Acceptance Checklist

Client: MFA

Client Project Name/Number: 0818.02.01-06

OnSite Project Number: 05-094

Initiated by: MW

Date Initiated: 5/11/16

1.0 Cooler Verification

1.1 Were there custody seals on the outside of the cooler?	Yes	No	N/A	1 2 3 4
1.2 Were the custody seals intact?	Yes	No	N/A	1 2 3 4
1.3 Were the custody seals signed and dated by last custodian?	Yes	No	N/A	1 2 3 4
1.4 Were the samples delivered on ice or blue ice?	Yes	No		1 2 3 4
1.5 Were samples received between 0-6 degrees Celsius?	Yes	No	Temperature: 6	
1.6 Have shipping bills (if any) been attached to the back of this form?	Yes	N/A		
1.7 How were the samples delivered?	Client	Courier	UPS/FedEx	OSE Pickup / Other

2.0 Chain of Custody Verification

2.1 Was a Chain of Custody submitted with the samples?	Yes	No	1 2 3 4
2.2 Was the COC legible and written in permanent ink?	Yes	No	1 2 3 4
2.3 Have samples been relinquished and accepted by each custodian?	Yes	No	1 2 3 4
2.4 Did the sample labels (ID, date, time, preservative) agree with COC?	Yes	No	1 2 3 4
2.5 Were all of the samples listed on the COC submitted?	Yes	No	1 2 3 4
2.6 Were any of the samples submitted omitted from the COC?	Yes	No	1 2 3 4

3.0 Sample Verification

3.1 Were any sample containers broken or compromised?	Yes	No		1 2 3 4
3.2 Were any sample labels missing or illegible?	Yes	No		1 2 3 4
3.3 Have the correct containers been used for each analysis requested?	Yes	No		1 2 3 4
3.4 Have the samples been correctly preserved?	Yes	No	N/A	1 2 3 4
3.5 Are volatiles samples free from headspace and bubbles greater than 6mm?	Yes	No	N/A	1 2 3 4
3.6 Is there sufficient sample submitted to perform requested analyses?	Yes	No		1 2 3 4
3.7 Have any holding times already expired or will expire in 24 hours?	Yes	No		1 2 3 4
3.8 Was method 5035A used?	Yes	No	N/A	1 2 3 4
3.9 If 5035A was used, which sampling option was used (#1, 2, or 3).	#		N/A	1 2 3 4

Explain any discrepancies:

1 - Discuss issue in Case Narrative

2 - Process Sample As-is

3 - Client contacted to discuss problem

4 - Sample cannot be analyzed or client does not wish to proceed

ATTACHMENT C

DATA VALIDATION MEMORANDUM

DATA QUALITY ASSURANCE/QUALITY CONTROL REVIEW

PROJECT NO. 0818.02.01 | JUNE 8, 2016 | CITY OF YAKIMA

Maul Foster & Alongi, Inc. (MFA) conducted an independent review of the quality of analytical results for groundwater monitoring samples collected at the Tiger Oil property at West Nob Hill Boulevard and 24th Avenue in Yakima, Washington. The samples were collected May 9 and 10, 2016.

OnSite Environmental, Inc. (OE) performed the analyses. OE report number 1605-094R was reviewed. The analyses performed and samples analyzed are listed below.

Analysis	Reference
BTEX	USEPA 8021B
Gasoline	NWTPH-Gx

NWTPH = Northwest Total Petroleum Hydrocarbons.
USEPA = U.S. Environmental Protection Agency.

Samples Analyzed		
Report 1605-094R		
KMW16-GW-050916	MWG2-GW-050916	YMW2-GW-051016
KMW14-GW-050916	MW10-GW-051016	DUP-GW-051016
KMW15-GW-050916	KMW7-GW-051016	MW9-GW-051016
KMW5-GW-050916	YMW1-GW-051016	Trip Blanks
KMW6-GW-050916	YMW3-GW-051016	-

DATA QUALIFICATIONS

Analytical results were evaluated according to applicable sections of USEPA procedures (USEPA, 2014) and appropriate laboratory and method-specific guidelines (OE, 2015; USEPA, 1986).

OE flagged some results with "E" to indicate exceedance of the upper calibration range of the instrument. All samples with "E" flagged results were also reported with results from diluted sample fractions; no action was required by the reviewer.

The data are considered acceptable for their intended use, with the appropriate data qualifiers assigned.

HOLDING TIMES, PRESERVATION, AND SAMPLE STORAGE

Holding Times

Extractions and analyses were performed within the recommended holding time criteria.

Preservation and Sample Storage

The samples were preserved and stored appropriately.

BLANKS

Method Blanks

Laboratory method blank analyses were performed at the required frequencies. All laboratory method blanks were non-detect at method reporting limits (MRLs).

Trip Blanks

A trip blank (Trip Blanks) was submitted for USEPA 8021B and NWTPH-Gx analyses. The trip blank sample had a detection of toluene above the MRL, at 1.9 micrograms per liter (ug/L). All associated samples with toluene results less than five times the trip blank concentration were qualified by the reviewer with "U" as non-detect at the reported value.

Sample	Component	Original Result (ug/L)	Qualified Result (ug/L)
KMW14-GW-050916	Toluene	1.9	1.9 U
KMW15-GW-050916	Toluene	1.1	1.1 U
KMW5-GW-050916	Toluene	2.0	2.0 U
KMW6-GW-050916	Toluene	3.0	3.0 U
MWG2-GW-050916	Toluene	2.1	2.1 U
KMW7-GW-051016	Toluene	2.3	2.3 U

U = the result is non-detect.
ug/L = micrograms per liter.

Equipment Rinsate Blanks

Equipment rinsate blanks were not submitted for analysis.

SURROGATE RECOVERY RESULTS

The samples were spiked with surrogate compounds to evaluate laboratory performance on individual samples. All surrogate results were within percent recovery acceptance limits.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

MS/MSD results are used to evaluate laboratory precision and accuracy. All MS/MSD samples were extracted and analyzed at the required frequency. All MS/MSD results were within acceptance limits for percent recovery and relative percent difference (RPD).

LABORATORY DUPLICATE RESULTS

Duplicate results are used to evaluate laboratory precision. All laboratory duplicate samples were extracted and analyzed at the required frequency. All laboratory duplicate results met RPD acceptance criteria.

LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE RESULTS

An LCS/LCSD is spiked with target analytes to provide information on laboratory precision and accuracy. The LCS/LCSD samples were extracted and analyzed at the required frequency. All LCS/LCSD results were within acceptance limits for percent recovery and RPD.

FIELD DUPLICATE RESULTS

Field duplicate samples measure both field and laboratory precision. One field duplicate (YMW2-GW-051016/DUP-GW-051016) was submitted for analysis. MFA uses acceptance criteria of 100 percent RPD for results that are less than five times the MRL, or 50 percent RPD for results that are greater than five times the MRL. Non-detect data are not used in the evaluation of field duplicate results. All field duplicate results met RPD acceptance criteria.

CONTINUING CALIBRATION VERIFICATION RESULTS

Continuing calibration verification (CCV) results are used to demonstrate instrument accuracy through the end of the sample batch. All CCVs were within acceptance limits for percent recovery.

REPORTING LIMITS

OE used routine reporting limits for non-detect results, except when samples required dilutions because of high analyte concentrations and/or matrix interferences.

DATA PACKAGE

The data packages were reviewed for transcription errors, omissions, and anomalies. None were found.

REFERENCES

OE. 2015. Quality assurance manual. Onsite Environmental Inc. Redmond, Washington. July 24.

USEPA. 1986. Test methods for evaluating solid waste: physical/chemical methods. EPA-530/SW-846 Update V. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. September (revision 1, July 2014).

USEPA. 2014. USEPA contract laboratory program, national functional guidelines for Superfund organic methods data review. EPA 540/R-014/002. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. August.