

## **Technical Memo**

Environmental Assessment Program

Department of Ecology

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SUBJECT: Technical Memo: **Tiger Oil Summitview Groundwater Results – October 2018**

Activity Tracker Code: 17-027

### **Background**

On October 24, 2018, a groundwater sample was collected from one downgradient monitoring well at the Tiger Oil Summitview site. This sample was collected to determine whether the site remains in compliance with the conditions of a No Further Action (NFA) determination issued by Ecology's Toxics Cleanup Program in April 2016 (Newschwander, 2016).

The site, located at 5511 Summitview Avenue in Yakima, Washington, operated as a retail gasoline station and convenience store until closure in 2001. A release of petroleum products was discovered during the removal of underground storage tanks (USTs) in 2005.

In 2014, assessment activities were conducted to confirm the presence and extent of contamination identified during the 2005 UST removal (GeoEngineers, 2015). Soil and groundwater samples were collected from 22 direct-push borings that were advanced across the site. Except for benzene, petroleum contaminants exceeding the Model Toxics Control Act (MTCA) Method A cleanup levels were detected in soil samples collected downgradient of the former tank location and two fuel islands. The contaminated soil is located beneath impermeable surfaces and public roadways.

During the 2014 assessment, gasoline-range petroleum hydrocarbons (GRPH), benzene, toluene, ethylbenzene, xylene (BTEX), and naphthalene were detected at concentrations exceeding the MTCA Method A cleanup levels in well SVMW-3, located slightly downgradient of the former tank location (Figure 1). Contaminants were not detected in groundwater samples from the off-site downgradient well SVMW-2. Petroleum hydrocarbons were detected in groundwater samples collected from the direct-push borings located between these two wells, but at concentrations below MTCA cleanup levels (GeoEngineers, 2015).

With the implementation of institutional controls that prevent activities that allow exposure, the residual contaminated soil is considered to not pose a threat to human health or the environment (Newschwander, 2016).

To comply with the NFA, groundwater samples were to be collected annually for five years from monitoring well SVMW-2. If MTCA Method A cleanup levels for groundwater were not exceeded during any of the annual monitoring events, groundwater monitoring was to be discontinued in 2021. Groundwater samples were not collected in October 2019. Well SVMW-2 is no longer accessible due to changes in the property's use.

## Methods and Results

In 2018, well SVMW-2 was sampled in accordance with the site-specific Sample and Analysis Plan (SAP) (GeoEngineers, 2014) and Ecology's SAP Addendum (Marti, 2017). Samples were submitted for analysis of BTEX, naphthalene, and total petroleum hydrocarbons as gasoline (TPH-G). All samples were analyzed by Ecology's Manchester Environmental Laboratory. Analytical results are summarized in Table 1.

Table 1: Field Measurements and Laboratory Results for Well SVMW-2, Tiger Oil Summitview, October 2018.

a. Field Measurements

TOC Well Depth (feet)	TOC Depth to Water (feet)	pH (Std. Uts)	SC (uS/cm)	DO (mg/L)	ORP (mV)
26	15.85	6.8	938	3.2	226

b. Laboratory Analysis - MTCA Method A Cleanup Levels (ug/L)

Analyte	Benzene	Toluene	Ethyl Benzene	Total-Xylene	Naphthalene	TPH-G
MTCA Cleanup Level	5	1000	700	1000	160	1000
Concentration (ug/L)	1 U	1 U	1 U	3 U	1 U	86

TOC: Top of Casing

SC: Specific Conductance

DO: Dissolved Oxygen

ORP: Oxidation Reduction Potential

U: Analyte was not detected at or above the reported value.

Bold: Analyte was present in the sample.

Dissolved-phase BTEX and naphthalene were not detected in the groundwater sample collected from downgradient well SVMW-2 during the October 2018 sample event. This is consistent with historical data for this monitoring location. TPH-G was detected at a concentration of 86 ug/L, which is slightly above the reporting limit of 70 ug/L.

The laboratory data quality control and quality assurance results indicate that analytical performance was good for all analysis. The data are considered of good quality and usable.

Analytical data for well SVMW-2 collected since 2014 are presented in Table 2. All data for this project are available at Ecology's Environmental Information Management (EIM) website at [www.ecology.wa.gov/eim](http://www.ecology.wa.gov/eim). Search Study ID: FS58425191.



Figure 1. Project study area and sample locations.

Table 2. Well SVMW-2 Groundwater Results (ug/L), September 2014 to October 2018.

Date	Benzene	Toluene	Ethyl Benzene	Total Xylene	Naphthalene	TPH-G
9/18/2014	0.2 U	1 U	1 U	3 U	2 U	100 U
12/12/2014	0.2 U	1 U	1 U	3 U	2 U	100 U
3/31/2015	0.2 U	1 U	1 U	3 U	2 U	100 U
5/19/2015	0.2 U	1 U	1 U	3 U	2 U	100 U
10/27/2016	1 U	1 U	1 U	3 U	1 U	70 U
9/28/2017	1 U	1 U	1 U	3 U	1 U	80
10/24/2018	1 U	1 U	1 U	3 U	1 U	86

In 2015, TPH-G was detected above the MTCA Method A cleanup level in well SVMW-5 at a concentration of 2100 ug/L. This well is located on the western edge of the plume. Because of the well's location and last reported results, it is recommend that well SVMW-5 be included in future monitoring programs.

## References

GeoEngineers, Inc., 2014. *Sampling and Analysis Plan Soil and Groundwater Assessment. Three Tiger Oil Sites, Yakima, Washington*. GEI File No. 0504-101-00, April 15, 2014.

GeoEngineers, Inc., 2015. *Phase II Site Assessment Report – Revision 1. Tiger Oil - Summitview, Yakima, Washington*. GEI File No. 0504-101-02, October 20, 2015.

Marti, P., 2017. Quality Assurance Project Plan Addendum: Sampling and Analysis Plan — Soil and Groundwater Assessment, Three Tiger Oil Sites Yakima, Washington. Washington State Department of Ecology, Olympia, WA. Publication No. 17-03-104.  
<https://fortress.wa.gov/ecy/publications/SummaryPages/1703104.html>.

Newschwander, J., 2016. Department Decision Recommendation: Tiger Oil Summitview, Yakima Washington. Toxics Cleanup Program, Washington State Department of Ecology, Yakima, WA.