



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

1250 W Alder St • Union Gap, WA 98903-0009 • (509) 575-2490

September 14, 2018

Mr. Scott Rose
Associated Environmental Group, LLC
605 11th Avenue
Olympia, WA 98501

Re: Further Action needed at the following site:

- Name: Pit Stop Naches
- Address: 10121 Highway 12, Naches
- Facility/Site No.: 505
- Cleanup Site ID No: 4928
- VCP No.: CE0449

Dear Mr. Rose:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Pit Stop Naches site (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

Issues Presented and Opinions

1. Is further remedial action necessary to clean up contamination at the Site?

YES. Ecology has determined that further remedial action is necessary to address contamination at the Site.

Summary of the Opinion

“*Remedial Investigation Report, Naches Pit Stop*” prepared by AEG and dated September 10, 2018 was submitted for review by the Department of Ecology (Ecology) under the Voluntary Cleanup Program (VCP). That report presented results of soil and groundwater sampling conducted at the Site subsequent to “*Subsurface Investigation Report*” prepared by AEG and dated May 3, 2017, and Ecology’s comments on that report.



The September 10, 2018 report included the following recommendations:

“...AEG recommends the following: Submittal of this report to Ecology in consideration of closure with an environmental covenant. Consistent with Model Remedies Guidance, cleanup actions have been performed at this site to the extent practicable. What remains is localized, does not appear to be migrating, and is covered by impervious services. AEG would draft an Environmental Covenant and Long-Term Monitoring Plan for Ecology review upon approval to pursue closure via institutional controls.”

Ecology does not concur with the above recommendations for the following reasons:

- Ecology’s model remedy guidance was developed to allow for selection of proven remedial approaches without the need for a feasibility study for formal sites. For independent cleanup actions, use of model remedies allows for not incurring costs for Ecology review times, and also the potential use of a generic TPH soil cleanup level of 1,500 mg/kg. The use of the generic soil cleanup level of 1,500 mg/kg can potentially be applied at the Site to address the detection of gasoline range organics in soil at location B-4 at a depth of 14 feet below ground surface (ft bgs). However, the model remedy does not address the groundwater cleanup level exceedance at B-1. Cleanup is still needed for groundwater with contamination above cleanup levels (as was found at location B-1).
- Ecology typically applies environmental covenants to contamination that physically cannot be addressed, such as contamination under a building. The remaining contamination in groundwater at location B-1 is physically accessible and can be cleaned up via various remedial approaches. Examples of potentially applicable remedial approaches include pump-and-treat, air sparging, and monitored natural attenuation (MNA). Note that if MNA is the selected approach, then it must be conducted consistent with Ecology’s MNA guidance.
- The extent of groundwater contamination has not yet been defined. MW-9 is not located directly hydraulically downgradient of B-1, as further discussed below (see comment on Section 4.1, fifth bullet).
- Prior to being eligible for a No Further Action Determination (NFA), quarterly monitoring is needed, including at location B-1 where significant concentrations of diesel range organics (DRO) were found. Groundwater monitoring criteria for an NFA are clearly defined in Ecology’s Guidance for Remediation of Petroleum Contaminated Sites, revised June 2016, Section 10.3. As discussed in our June 2018 letter, Ecology recommends discontinuing further sampling of monitoring wells MW-4, MW-5, MW-6, MW-7, and MW-8, where no contaminant detections have occurred since 2016.

Continued quarterly sampling of MW-1, and MW-2, MW-9 and a new monitoring well co-located with B-1 is warranted.

Comments on the Remedial Investigation Report (RI)

Ecology also disagrees with a few of the conclusions drawn within the September 10, 2018 report:

- Section 4.1 third bullet states that cleanup level exceedances in MW-2 in January 2016 were “likely biased by suspended solids in the sample.” In Ecology’s experience, turbidity should not significantly affect gasoline range organics (GRO) and diesel range organics (DRO) concentrations. In particular, concentrations dropping from 61,000 µg/L DRO to <100 µg/L in a four month period does not appear to likely be attributable to turbidity. Rather, Ecology considers it more likely that groundwater flow directions shifted from a more southerly direction to the southeast. The groundwater data from B-1 is also consistent with this hypothesis.
- Ecology considers it likely that the area southeast of the May 1998 Excavation area (dispenser release area) and upgradient of B-1, has groundwater contaminant concentrations above cleanup levels. There is currently no data to support limiting the extent of contamination above cleanup levels in this area as shown in Figure 6. A plume map prepared by Ecology is attached.
- Ecology’s plume map also shows a plume adjacent to the Underground Storage Tank (UST) area, based on the location of the Pit 3 centered on the smaller USTs (see Appendix A from the 1991 report). If Pit 3 is actually co-located with B-3, then Ecology concurs with the lack of groundwater contamination in this area (see below comments on the RI Report).
- Section 4.1, fifth bullet states that permanent well MW-9 is located downgradient of B-1. The most recent potentiometric surface maps from March 2018 and March 2017 suggest a groundwater flow direction to the southeast. Note that the groundwater levels at MW-6 were slightly anomalous and it would appear to be appropriate to exclude them in water level contouring. MW-9 is located a few degrees east of south from B-1 and is therefore not located hydraulically downgradient of B-1. AEG had recommended in the May 2017 report the installation of a monitoring well at the southeast property corner. It appears that MW-9 was installed at a distance west of the southeast property corner (see attached Google Street View photo image of this area).
- Section 4.1, seventh bullet states that the sample at B-1 “was collected from a temporary well point...which is likely to result in a somewhat biased high concentration. Ecology disagrees with this conclusion. We are aware of no documented association elevated DRO and turbidity. Rather, a monitoring well sampling result may be biased low if an excessively long screened interval results in dilution of a contaminated sample.

Ecology also has the following additional comments on the RI Report:

- Ecology has a concern with respect to the accuracy of the base map in the southeast part of the property. Examination of aerial photograph and street view coverage suggest that the features in this area may not be accurately mapped. Please overlay the base map with an aerial photograph to correct it as appropriate. In addition, please add to the base map Pits 1, 2, 3, and 4 from the Exploratory Investigation for Petroleum Contaminants at the Pit Stop, dated July 1991 to the base map, since the test pits had significant soil and groundwater contamination in 1991. Depicting the pits is needed so that the sufficiency of 2017 soil sampling locations can be clearly assessed.
- The historical soil and groundwater results from 1991 should be included within the RI report for comparative purposes.

Description of the Site

This opinion applies only to the Site described below. The Site is defined by the nature and extent of contamination associated with the following releases:

- Petroleum hydrocarbons (gasoline and diesel and associated volatile constituents) into Soil and Groundwater.

Lead has been eliminated as a Site constituent of concern, as discussed in Ecology's June 2018 letter.

The Site is located at 10121 Highway 12, in Naches, Washington.

Basis for the Opinion

This opinion and analysis was based on the information contained in the following documents:

1. *"Remedial Investigation Report"* prepared by AEG and dated September 10, 2018.
2. Letter from Ecology to AEG dated June 28, 2018 requesting status update.
3. *"Subsurface Investigation Report"*, prepared by AEG and dated May 2017.
4. Letter from Ecology to AEG dated January 27, 2017 requesting further action.
5. *"Limited Site Cleanup at the BP-PIT Stop"*, prepared by Northwest Envirocon, Inc. and dated June 1998.
6. *"Exploratory Investigation for Petroleum Contaminants at the Pit Stop"*, prepared by White Shield, Inc. and dated July 1991.

Those documents are kept in the Central Regional Office (CRO) of Ecology for review by appointment only. You can make an appointment by calling the CRO public records coordinator at 509-454-7658. This opinion is void if any of the information contained in those documents is materially false or misleading.

Analysis of the Cleanup

Ecology has concluded that further remedial action is necessary to clean up contamination at the Site. That conclusion is based on the following analysis:

1. Characterization of the Site.

Extent of Soil Contamination

Soil characterization has been performed during several studies at the Site since 1991. In 2016 and 2017, soil contamination was characterized at fourteen (14) locations. Only one of those locations (B-4) had soil contamination above potential cleanup levels (GRO at 464 mg/kg at 14 ft bgs). No further characterization of soil contamination appears to be warranted at this time, pending validation of the 2017 soil boring locations discussed above.

Extent of Groundwater Contamination

As discussed above, the extent of groundwater contamination has not yet been defined. Further work to delineate the extent of groundwater contamination is needed. Based on groundwater data collected in 1991 (see table below), at least two releases have occurred at the Site; from the former dispenser area (near Pit 1) and from the UST area (Pit 2). Pit 4 was located downgradient of Pit 1. Based on the 1991 groundwater data, both releases included diesel and gasoline. It is unclear why DRO was not present in Pit 4 groundwater, given the very high concentrations found upgradient in Pit 1. In 2017, DRO was present in groundwater at location B-1 near Pit 4 at high concentrations (29,700 µg/L); however, GRO was not detected. It appears that the GRO in groundwater may have degraded (including to DRO) since 1991.

1991 Test Pit Groundwater Results

	Diesel Range Organics (µg/L)	Gasoline Range Organics (µg/L)	Benzen e (µg/L)	Toluen e (µg/L)	Ethylbenzen e (µg/L)	Xylene s (µg/L)
<i>Method A Cleanup Level</i>	500	1,000/800*	5	1,000	700	1,000
Pit 1	5,621,000	1,373,000	180	380	5,550	38,400
Pit 2	122,000	59,000	872	2,535	980	6,360
Pit 3	3,500	ND	<5	<5	<5	<5
Pit 4	ND	23,000	12	117	96	3,209

Bold results are above Method A cleanup levels

2. Establishment of cleanup standards.

Soil and groundwater results for site constituents have been compared with Method A cleanup levels:

Hazardous Substance	Method A Soil Cleanup Level (mg/kg)	Method A Groundwater Cleanup Level (µg/L)
Diesel Range Organics	2,000	500
Heavy Oil Range Organics	2,000	500
Gasoline Range Organics	30 (benzene present)	800 (benzene present)
	100 (benzene absent)	1,000 (benzene absent)
Benzene	0.03	5
MTBE	0.1	20
Toluene	7	1,000
Ethylbenzene	6	700
Xylenes	9	1,000
Lead	250	15

Ecology notes that there is potential to apply the model remedies generic TPH cleanup level of 1,500 mg/kg at the Site.

3. Selection of cleanup action.

Cleanup actions at the site have included exaction and offsite disposal of contaminated soils at the former dispenser area in 1998. No cleanup actions have taken place to address contaminated groundwater from this release nor have any cleanup actions apparently taken place to address contamination from the UST release.

4. Cleanup.

Aside from excavation and offsite disposal of contaminated vadose zone soils at the former dispenser area, no cleanup activities have taken place at the Site. Groundwater contamination from the former dispenser and UST areas have likely degraded since the releases were discovered in 1991; however, the DRO concentrations in groundwater at location B-1 were still quite high as of March 2017 (29/700 µg/L). Additional cleanup efforts are needed at the Site to address the contaminated groundwater.

Limitations of the Opinion

1. Opinion does not settle liability with the state.

Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion **does not**:

- Resolve or alter a person's liability to the state.
- Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70.105D.040(4).

2. Opinion does not constitute a determination of substantial equivalence.

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you performed is substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

3. State is immune from liability.

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. *See* RCW 70.105D.030(1)(i).

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Thank you for cleaning up the Site under the Voluntary Cleanup Program (VCP). For more information about the VCP and the cleanup process, please visit our web site:
www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm.

If you have any questions about this opinion, please contact me by phone at (509) 454-7835 or e-mail at frank.winslow@ecy.wa.gov.

Sincerely,



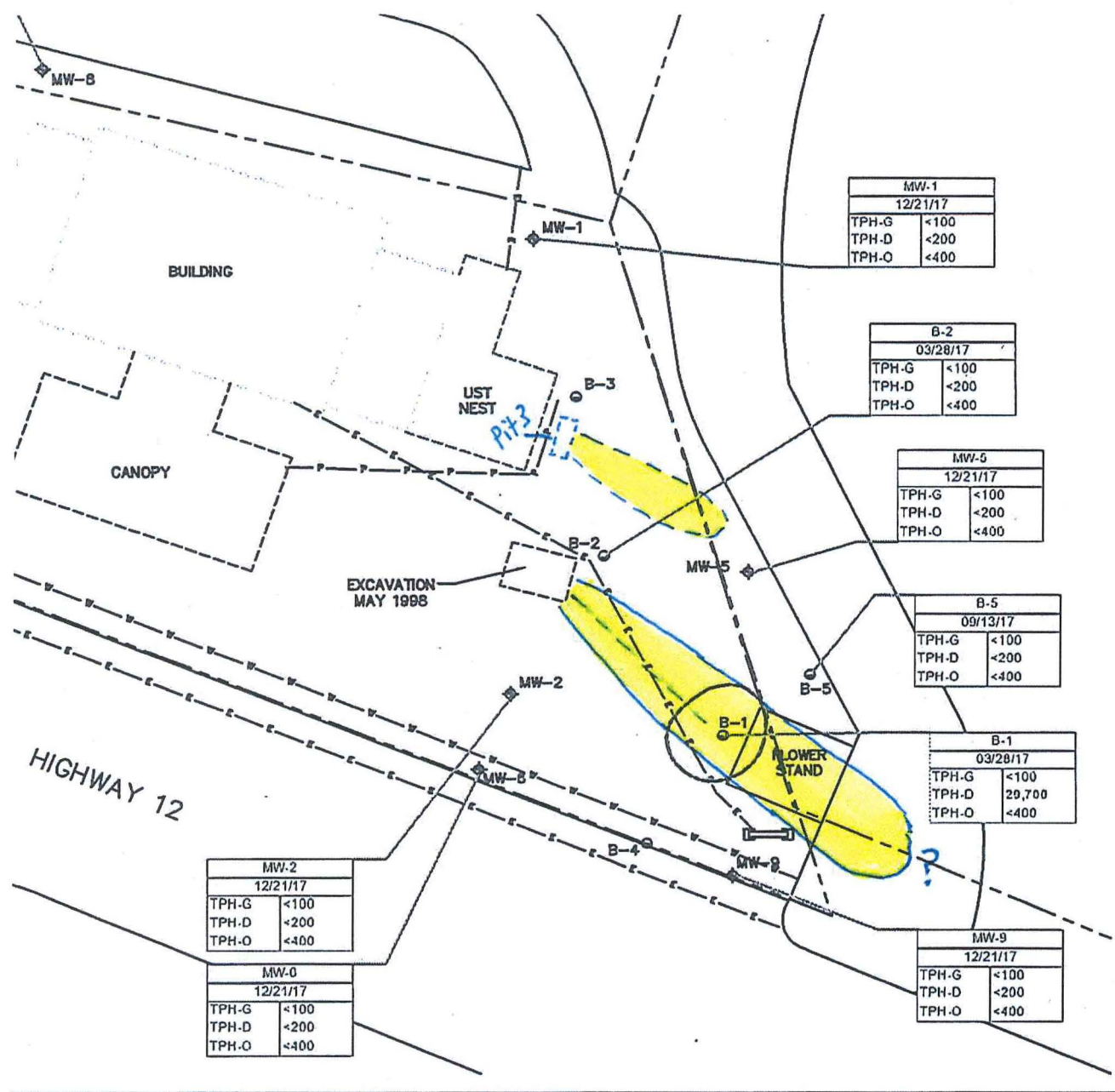
Frank P. Winslow
Site Manager
Toxics Cleanup Program
Central Regional Office

cc:

Han Chang

Ecology Site File

Enclosures (3)



AS HEAVY OIL (µg/L)
 MICROGRAMS PER LITER
 < NOT DETECTED ABOVE LIMIT NOTED
 RED BOLD VALUE INDICATES THE
 DETECTED CONCENTRATION EXCEEDS
 ECOLOGY MTCA METHOD A CUL

NOTES

1. THE LOCATIONS OF ALL FEATURES SHOWN ARE APPROXIMATE
2. THIS DRAWING IS FOR INFORMATION PURPOSES. IT IS INTENDED TO ASSIST IN SHOWING FEATURES DISCUSSED IN AN ATTACHED DOCUMENT.

REFERENCE

DRAWING CREATED FROM AERIAL PHOTOGRAPH AND NOTES PROVIDED BY AEG, LLC.

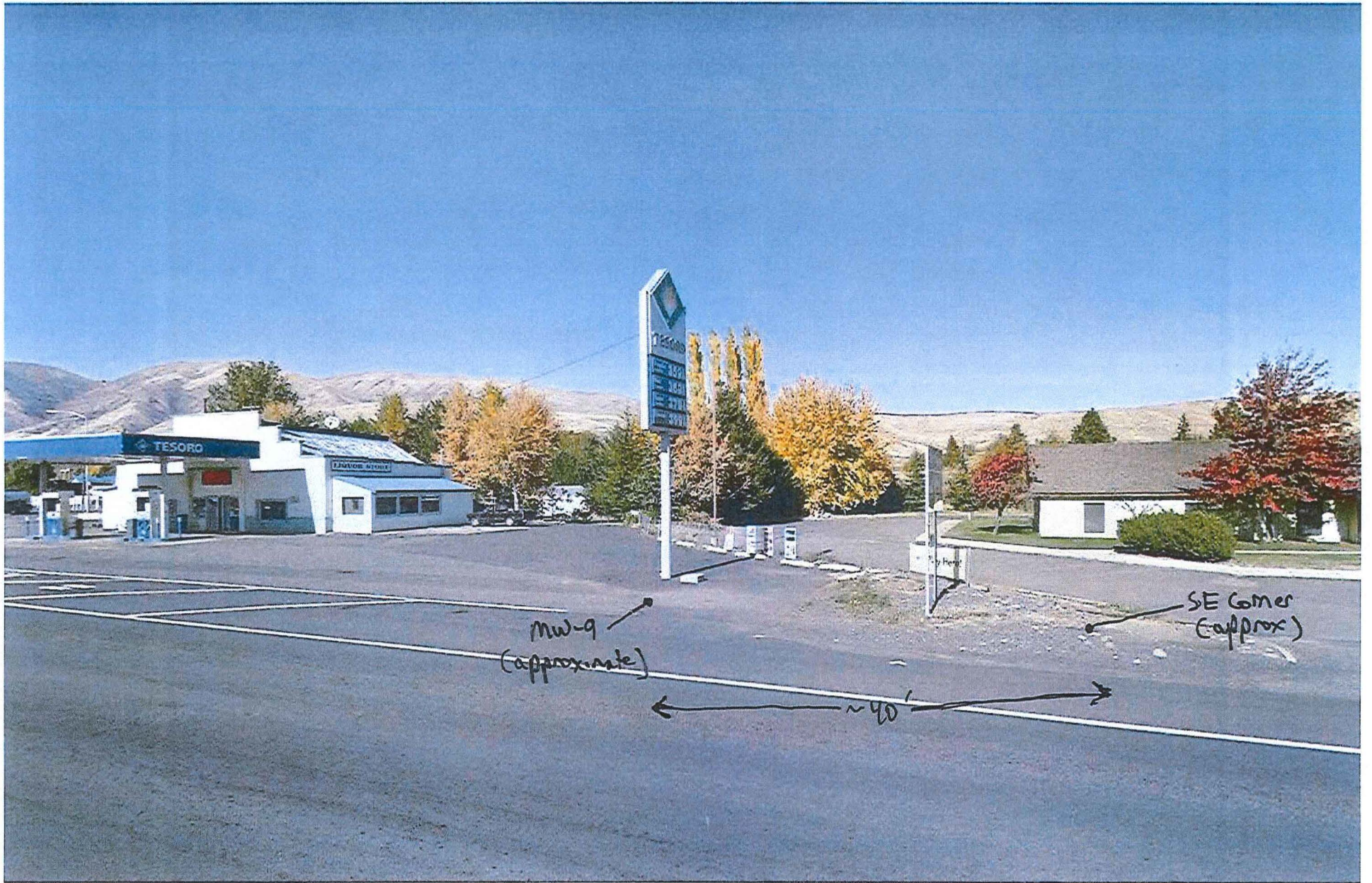


Associated Environmental Group, LLC

FIGURE 6

DIESEL PLUME MAP IN GROUNDWATER

PIT STOP NACHES
 10121 HIGHWAY 12
 NACHES, WASHINGTON



Source: Google



source: Google