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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Southwest Region Office
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December 13, 2024

Robert Webster
City of Winlock
PO Box 777/323 NE First St.
Winlock, WA 98596
winplan@cityofwinlock.com

Re: Further Action opinion for the following contaminated Site:

Site name: Winlock School Bus Garage
Site address: King Rd & Byham Rd Winlock, 98596-9417 Lewis
Facility/Site ID: 23232326
Cleanup Site ID: 8363

Dear Robert Webster:

The Washington State Department of Ecology (Ecology) is providing an opinion on the recent cleanup investigation activities at the Winlock School Bus Garage facility (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), chapter 70A.305 Revised Code of Washington (RCW).

The recent cleanup activities were overseen by Ecology's Southwest Region Toxics Cleanup Program (TCP) and supported by the leaking underground storage tanks (LUST) Backlog Funding Project. The funding granted to this project is intended to address the large backlog of LUST sites in the state of Washington, while also prioritizing overburdened communities. The funding is intended to evaluate the current status of contamination documented on inactive LUST sites.

This letter provides our opinion and analysis. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), chapter [70A.305](#) RCW.¹

¹ <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305>

Opinion

Ecology has determined that further remedial action is necessary to clean up contamination at the Site. Ecology bases this opinion on an analysis of whether the remedial action meets the substantive requirements of MTCA and its implementing regulations specified in chapter 70A.305 RCW and chapter [173-340](#) WAC (collectively called MTCA).²

Site description

This opinion applies to only the Site described in this section. The Site is defined by the nature and extent of contamination associated with the following release(s).

- Gasoline range total petroleum hydrocarbons (TPH-G) in soil and groundwater.
- Ethylbenzene, total xylenes, 2-dichloroethane (EDC), and methyl tertiary-butyl ether (MTBE) in the soil.
- Lead in the groundwater.

Enclosure A includes the Site description, history, and diagrams, as currently known to Ecology.

Releases from multiple sites can affect a parcel of real property. Ecology has no information that other sites affect the parcel(s) associated with this Site.

Basis for the opinion

Ecology bases this opinion on information in the documents listed in Enclosure B. This opinion is void if information in any of the listed reviewed documents is materially false or misleading.

You can request these documents by filing a public [records request](#).³ For help making a request, contact the Public Records Officer at recordsofficer@ecy.wa.gov or call (360) 407-6040. Before requesting, check if the documents are available on the [Site webpage](#).⁴

² <https://apps.leg.wa.gov/WAC/default.aspx?cite=173-340>

³ <https://ecology.wa.gov/About-us/Accountability-transparency/Public-records-requests>

⁴ <https://ecyapeem/facilitysite/FacilitySite/FacilitySiteDetails/23232326>

Analysis of the cleanup

Ecology has concluded that further remedial action is necessary to clean up Site contamination. Ecology bases this conclusion on the following analysis.

Characterizing the Site

Ecology has determined your Site characterization isn't sufficient for setting cleanup standards and selecting a cleanup action. Enclosure A describes the Site.

Limited Site Assessment Overview

In 2024, Ecology funded a limited Site assessment⁵ to investigate the nature and extent of contamination left on Site after a 1995 interim action. During this assessment, six soil borings were advanced near understood contamination limits using a GeoProbe 7822DT. No soil borings achieved the planned terminal depth of 15 feet below ground surface (bgs) due to tip refusal in a very dense fine sand encountered between 8 and 12 ft bgs. Two boring locations, GEI057-B5 (B5) and GEI057-B6 (B6), were converted to temporary groundwater wells. Additionally, two existing permanent monitoring wells on-Site, MW-1 and MW-2, were sampled for hazardous substances previously detected on-Site and those contaminants required by WAC 173-340-900, Table 830-1.

Specifically, soil and groundwater samples were analyzed for TPH-G; benzene, toluene, ethylbenzene, and xylenes (BTEX); 1,2-dichloroethane (EDC); methyl tertiary-butyl ether (MTBE); 1,2-dibromoethane (EDB); and lead.

Two soil samples, GEI057-B2 (B2) (located under the northeast portion of the garage) and GEI057-B4 (B4) (located on the east-southeast portion of the parcel, adjacent to the fence and Olequa Creek) encountered TPH-G concentrations exceeding the MTCA Method A unrestricted land use cleanup levels (MTCA-A CULs). Specifically, soil from B2 at 6-7 ft bgs bore TPH-G 1,100 milligrams per kilogram (mg/kg) and B4 at 7 - 8 ft bgs detected TPH-G at 980 mg/kg. Gasoline was detected below the MTCA-A CULs in a soil sample collected from B6 at 6-7 ft bgs. Ethylbenzene, total xylenes, EDC, and MTBE were detected in the soil samples at concentrations below MTCA-A CULs. The hazardous substances observed during this investigation are congruent with the 1995 UST release documents.⁶ The following describes additional remedial investigation data needs at the Site.

⁵ Geoengineers, *Site Assessment- Winlock Bus Garage*, July 24, 2024.

⁶ Industrial Safety and Training Inc, *Site Characterization Report on Winlock School Bus Garage*, May 14, 1995.

Soil Characterization

Additional soil sampling near boring B2 and B4 is needed. Contaminated soil above MTCA-A CULs remains on the Site, and the extent of contamination has not been fully delineated as required by WAC 173-340-350.

The 2024 limited assessment indicates soil contamination remains on Site beneath the northeast corner of the bus garage structure (B2) and the southeast corner of the property (B4) adjacent to Olequa Creek (Figure 2). Additional sampling between the 2024 detection depths and the direct contact point of compliance (15 ft bgs) is needed to vertically define the site. Additional sampling and analysis is also needed to laterally define the detections exceeding the MTCA-A CULs. Once the soil contamination is vertically and horizontally characterized, the soil should be remediated to the maximum extent possible.

1. Groundwater Characterization

Four monitoring wells were previously installed at the Site. However, monitoring wells MW-3 and MW-4 were not able to be located during the 2023 site reconnaissance visit. Ecology presumes the wells have been covered or removed during subsequent development efforts at the Site. During the 2024 Site assessment, MW-1, MW-2, B5, and B6 were analyzed for known and suspected Site hazardous substances.

Laboratory analysis of groundwater collected from B5 indicates detections less than the MTCA-A CULs of TPH-G, total lead, and dissolved lead. The soil-to-groundwater pathway is considered incomplete.

No further groundwater characterization is required at this Site.

2. Vapor Intrusion Pathway

Ecology needs to review data supporting a Tier 1 vapor intrusion (VI) assessment at the Site. The VI risk has not been assessed at the Site, however, soil concentrations of TPH-G suggest that the pathway should be evaluated. Ecology recognizes the current Property use includes automotive maintenance and may contribute petroleum vapors to indoor air. Despite this, Ecology needs to review sufficient data to evaluate whether VI may contribute additional petroleum vapors to indoor air creating an unsafe atmosphere for employees.

Ecology recommends evaluating sub-slab soil gas near B2 and below the maintenance garage to evaluate whether a VI source is present at the Site. Ecology suggests completing this work during conditions favorable for advective transport such as when barometric pressure is low or falling, indoor heating is active, and there has not been significant precipitation which may inhibit gas flow in the subsurface. Collect sufficient meteorologic data to support whether samples were collected when conditions are favorable for advective transport.

3. Sediment Pathway

To evaluate whether or not Olequa Creek has been impacted by the historical petroleum release, Ecology recommends sampling sediment in Olequa Creek in at least three locations. This is the minimum number of sediment stations required to determine if a sediment site of potential concern is present, consistent with WAC 173-204.

Setting Site cleanup standards

Ecology has determined the cleanup levels and points of compliance you set for the Site do not meet the substantive requirements of MTCA. Cleanup levels are the concentrations of a hazardous substance in soil, water, air, or sediment that are determined to be protective of human health and the environment. At this Site, MTCA Method A unrestricted cleanup levels (MTCA-A CULs) were used as screening levels to evaluate TPH-G, BTEX, EDC, MTBE, and lead contamination detected at the Site.

Based on observations and analytical data produced during the 2024 limited Site assessment, Ecology has completed a terrestrial ecological evaluation (TEE) using the simplified TEE pathway analysis.⁷ The TEE ends after comparing Site data was compared to [WAC 173-340-900](#), Table 749-2 values,⁸ which are less stringent than the MTCA-A CULs. Therefore, the MTCA Method A CULs are likely sufficient for Site soil and groundwater. The TEE and supporting map view figure can be found in Enclosure A. Standard MTCA Method B cleanup levels would likely be sufficient to screen concentrations of Site hazardous substances in soil vapor or indoor air, if applicable. Ecology has reviewed the available data and determined the applicable local, state, and federal laws and regulations do not influence the cleanup levels at this time. Additional consideration of applicable local, state, and federal laws may be needed as additional data is collected.

⁷ [WAC 173-340-7492\(2\)\(b\)](#)

⁸ <https://apps.leg.wa.gov/WAC/default.aspx?cite=173-340-900>

Selecting the Site cleanup action

Ecology has determined the Site cleanup action selected does not meet the substantive requirements of MTCA.

In 1995, an interim action in the form of a source area excavation and disposal effort was completed at the Site. The excavation did not completely remove the PCS from Site, nor did it address groundwater contamination and does not constitute a cleanup action.⁹

Implementing the cleanup action

Ecology has determined your cleanup actions do not meet the standards set for the Site.

In 1995, Industrial Safety and Training, Inc. removed approximately 2,000 yds³ of petroleum-contaminated soil (PCS) and disposed of the PCS off-site. Additional soil and groundwater contamination was known to remain on-site.¹⁰ Groundwater was monitored between 1995 and 1998 with detections of benzene above MTCA Method A CULs.¹¹ As discussed above, further Site characterization and remediation is needed.

Ecology recommends further cleanup to address remaining petroleum-contaminated soil (PCS) to the maximum extent practicable. In particular, near 2024 boring B4 on the southeastern portion of the property where contaminated soil was observed (6-7 feet bgs) at less than the direct contact point of compliance. Further excavation and disposal of PCS in this area would afford the Site to utilize Ecology's Model Remedies.

Model Remedies

The Model Remedies were created to facilitate streamlined cleanup of simple petroleum contaminated sites. Sites qualifying to use a model remedy do not need to complete a feasibility study and disproportionate cost analysis before selecting a cleanup action. This Site likely qualifies provided additional soil removal is completed to the maximum extent practicable

⁹ WAC 173-340-360(3)(a)

¹⁰ Industrial Safety and Training Inc., *Site Characterization Report on Winlock School Bus Garage*, May 14, 1995.

¹¹ Associated Environmental Group LLC, *Groundwater Monitoring Report, Winlock School District Bus Garage*, October 2, 1998.

Path Forward to No Further Action

Based on the available data Ecology suggests two routes to pursue Site closure, both of which have a corresponding model remedy.

Model Remedy 1: This closure route depends on additional remedial action to address all soil contamination in excess of the MTCA Method A CULs. Additional monitoring wells would need to be installed and continued groundwater monitoring would also be needed to demonstrate the MTCA Method A CULs were also met in that media as well. This route would result in an unencumbered closure, that is the no further action determination would not depend on deed restrictions or further monitoring.

Model Remedy 6: This cleanup path forward depends on additional remedial action to remove remnant soil contamination near B4 to the maximum extent practicable. A reasonable worst-case scenario may be adopted for contamination near B2, under the garage, requiring the establishment of the building slab as a protective cap. This method would require an environmental covenant restricting disturbance of the building slab without prior notification of Ecology. A cap monitoring, maintenance, repair, and reporting plan would need to be implemented at the Site until Ecology determines contamination is no longer a risk to human health or the environment. The environmental covenant could be terminated if additional cleanup work is completed at a later date which meets cleanup standards at the Site.

For this Site, Ecology recommends learning about and applying to the standard Voluntary Cleanup Program (VCP) for further technical assistance. For more information about the VCP and the cleanup process, please visit our [Voluntary Cleanup Program website](http://www.ecology.wa.gov/vcp),¹² or contact Tim Mullin at (360) 999-9589 or tim.mullin@ecy.wa.gov.

Limitations of the opinion

Opinion doesn't 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.

¹² <http://www.ecology.wa.gov/vcp>

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW [70A.305.040](#)(4).¹³

Opinion doesn't 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 [70A.305.080](#)¹⁴ and WAC [173-340-545](#).¹⁵

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 [70A.305.170](#)(6).¹⁶

Grant availability

As a local government, you may qualify for an Independent Remedial Action Grant from Ecology, after completing your independent cleanup and receiving a no further action determination through the VCP. Grant applications are accepted on an ongoing basis. Visit Ecology's [independent remedial action grants](#)¹⁷ webpage for more information about eligibility and how to apply.

Before groundbreaking remedial actions begin, a cultural resources consultation is required to be conducted by Ecology, another state agency, or federal agency under the requirements of WAC [173-340-815](#).¹⁸ Ecology conducted a cultural resources consultation prior to completing the work identified in this Site assessment. When Ecology is the lead agency for your project, request a cultural resources consultation by submitting a completed [Ecology cultural resources review form](#).¹⁹ For more information, visit our [cultural resource review](#)²⁰ webpage.

¹³ <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305.040>

¹⁴ <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305.080>

¹⁵ <https://apps.leg.wa.gov/WAC/default.aspx?cite=173-340-545>

¹⁶ <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305.170>

¹⁷ <https://ecology.wa.gov/About-us/Payments-contracts-grants/Grants-loans/Find-a-grant-or-loan/Independent-remedial-action-grants>

¹⁸ <https://app.leg.wa.gov/WAC/default.aspx?cite=173-340-815>

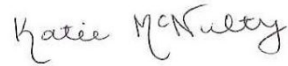
¹⁹ <https://apps.ecology.wa.gov/publications/SummaryPages/ECY070537.html>

²⁰ <https://ecology.wa.gov/About-us/Payments-contracts-grants/Grants-loans/Find-a-grant-or-loan/Area-wide-groundwater-investigation-grants/Cultural-resources-review>

Contact us for more information

Thank you for allowing Ecology to aid in the remedial investigation efforts completed thus far on the Site. If you have any questions about this opinion, please contact me at (360) 407-6221 or katie.mcnulty@ecy.wa.gov.

Sincerely,



Katie McNulty, LG
Southwest Regional Office
Toxics Cleanup Program

KM:at

Enclosures (2):

A – Site description, history, and diagrams

B – Basis for the opinion: List of reviewed documents

cc:

Tim Mullin, LHG, Ecology; tim.mullin@ecy.wa.gov

Angela Harkins, Ecology; angela.harkins@ecy.wa.gov

Ecology Site File

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Enclosure A

Site description, history, and diagrams

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Site description and history

The Site is currently understood to be limited to Lewis County tax parcel 006033000000 (the Property) which is owned by the City of Winlock (Figure 1). The Property is currently used by the City of Winlock School District as the school bus service, maintenance, and parking location. Olequa Creek is to the adjacent east of the parcel. The Property is improved with a maintenance garage and office on the southwestern portion of the property, a gravel lot used for school bus parking on the northern portion of the property, and a diesel AST in secondary containment, fueling area, located on the eastern portion of the Site.

In 1995, three underground storage tanks (USTs) were discovered and removed from the Site; a 1,000-unleaded gasoline, 1,000-gallon diesel, and a 1,000-gallon leaded gasoline tank. The 1,000-gallon unleaded gasoline tank was reported to have water in the tank prior to the removal while the other two tanks appeared to be in good condition. The leaded gasoline tank was reportedly abandoned in-place approximately 20 years prior to the removal of the tanks.

After the USTs were removed, petroleum-contaminated soil and groundwater were encountered in the tank nest. Prior to petroleum-contaminated soil (PCS) excavation, a 25 ft-long trench was dug to a depth of 10 ft bgs on the northern portion of the Site to intercept groundwater flowing into the proposed excavation area.²¹ The water collected in the trench bore detections of TPH-G, benzene, toluene, and xylenes above MTCA Method A CULs. The trench water was treated with activated carbon prior to discharge to Olequa Creek.²¹ After the trench was installed, 2000 yds³ of PCS was excavated and treated. Approximately 740 yds³ of PCS was left in-place beneath the foundation of the garage. An additional 110 yds³ of PCS was estimated to remain on the southern portion of the Site near King Rd.

During the 1995 interim action, four groundwater monitoring wells were installed. Between 1995 and 1998, the four groundwater monitoring wells were sampled for TPH-G and BTEX over five separate monitoring events. During periods when groundwater was seasonally high, monitoring well MW-1 showed trends of increasing concentrations while MW-2 showed trends of decreasing concentrations. In 1998, the concentration of benzene in groundwater (42 micrograms per Liter [µg/L]) sampled from MW-2 showed exceeded the MTCA Method A CUL, while the other three wells resulted in detections below the method detection level (MDL). In 2024, monitoring wells MW-3 and MW-4 were unable to be located, likely covered by gravel. During the 2024 limited assessment event, groundwater was collected from MW-1, MW-2, soil borings B5, and B6. (Figure 2) The groundwater analytical data indicated detections of 230 µg/L

²¹ Industrial Safety and Training, Inc., Site Characterization Report on Winlock School Bus Garage, May 14, 1995. Appendix B.

TPH-G, 0.011 µg/L total lead, and 0.0087 µg/L dissolved lead in B5, located on the south-southeastern portion of the Site in the gravel lot near the parcel boundary, while all other groundwater samples resulted in detections below the MDL.

The soil samples collected during the 2024 characterization event bore detections of TPH-G above MTCA Method A CULs in B2 (1,000 mg/kg) at 6-7 ft bgs and in B4 (980 mg/kg) at 7-8 ft bgs. B2 is located under the northeast portion of the garage onsite (Figure 2). B4 is located on the southeast portion of the parcel, adjacent to Olequa Creek (Figure 2). Soil samples collected at borings B2 through B6 all bore detections of TPH-G. Additionally, B2 bore detectable concentrations of ethylbenzene, total xylenes, EDC, and MTBE below the MTCA Method A CULs. Soil boring B4 exhibited detections of ethylbenzene and total xylenes below Method A CULs. No soil samples were collected to the compliance depth of 15 ft bgs, to the south of B4, or to the north or west of B4 (Figure2).

The geologic setting of the Site consists of mostly Quaternary alluvium with Tertiary sedimentary rocks and deposits near Olequa Creek²² on the southeastern portion of the parcel. While groundwater data is limited, groundwater has been shown to flow to the east-southeast towards Olequa Creek. Seasonal variation in groundwater has been observed on the Site, from 3 ft bgs to 13 ft bgs.²³

Potential receptors of remnant PCS at the Site include direct contact of workers who may perform excavation or groundwork activities at the Site. Contaminated soil may potentially include indoor occupants of structures via vapor intrusion. Sediment remains to be evaluated.

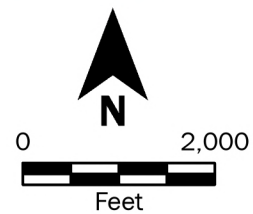
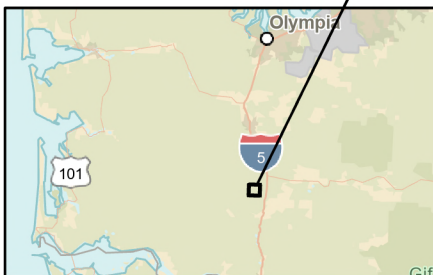
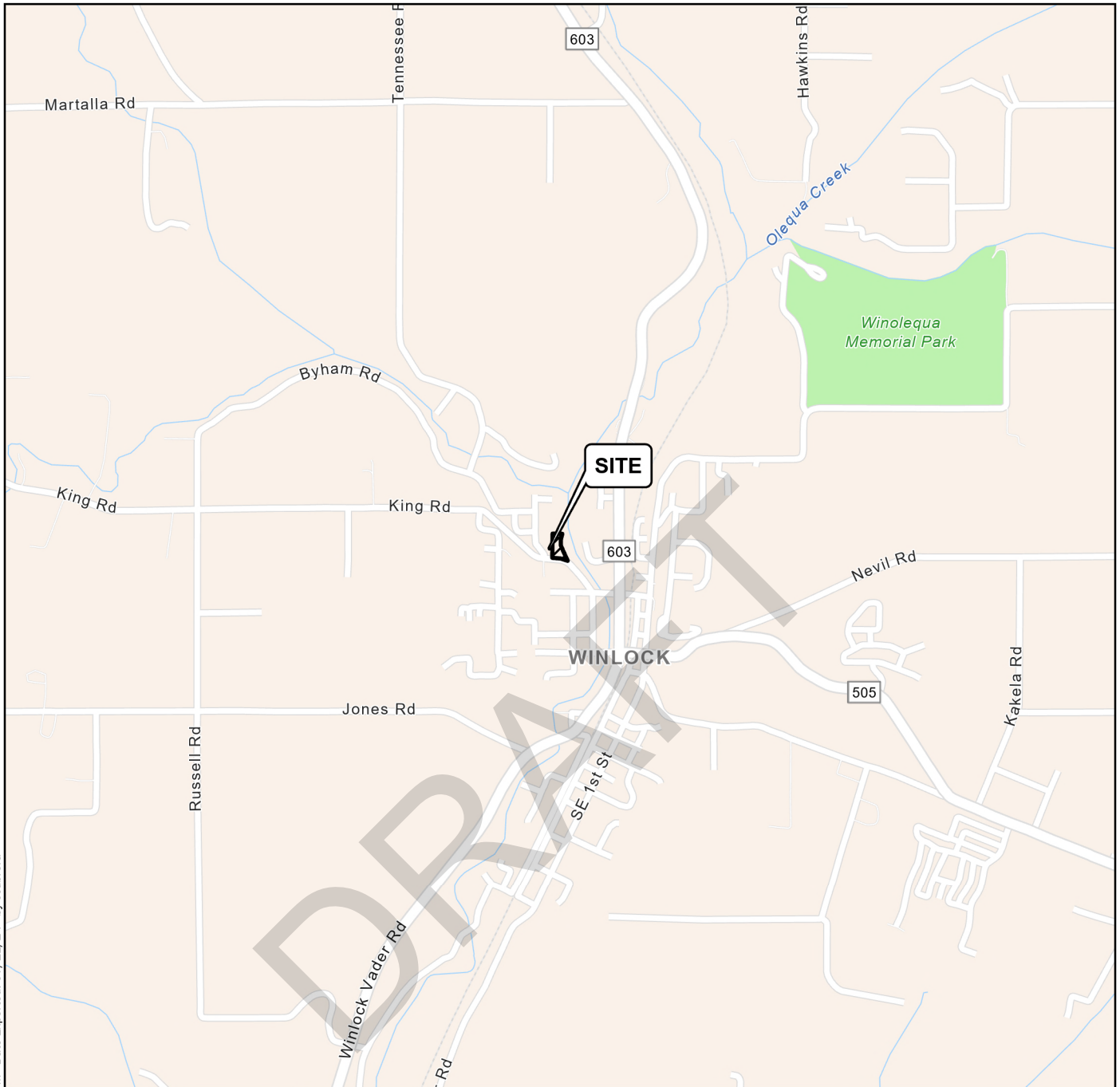
²² USGS

²³ AGI Technologies, *Groundwater Monitoring Well Sampling Results*, May 31, 1996. Table 1.

Site diagrams

Figure 1	Site Location
Figure 2	Sampling Locations
Figure 3	TEE Assessment

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Source(s):
• ESRI

Coordinate System: NAD 1983 UTM Zone 10N

Disclaimer: This figure was created for a specific purpose and project. Any use of this figure for any other project or purpose shall be at the user's sole risk and without liability to GeoEngineers. The locations of features shown may be approximate. GeoEngineers makes no warranty or representation as to the accuracy, completeness, or suitability of the figure, or data contained therein. The file containing this figure is a copy of a master document, the original of which is retained by GeoEngineers and is the official document of record.

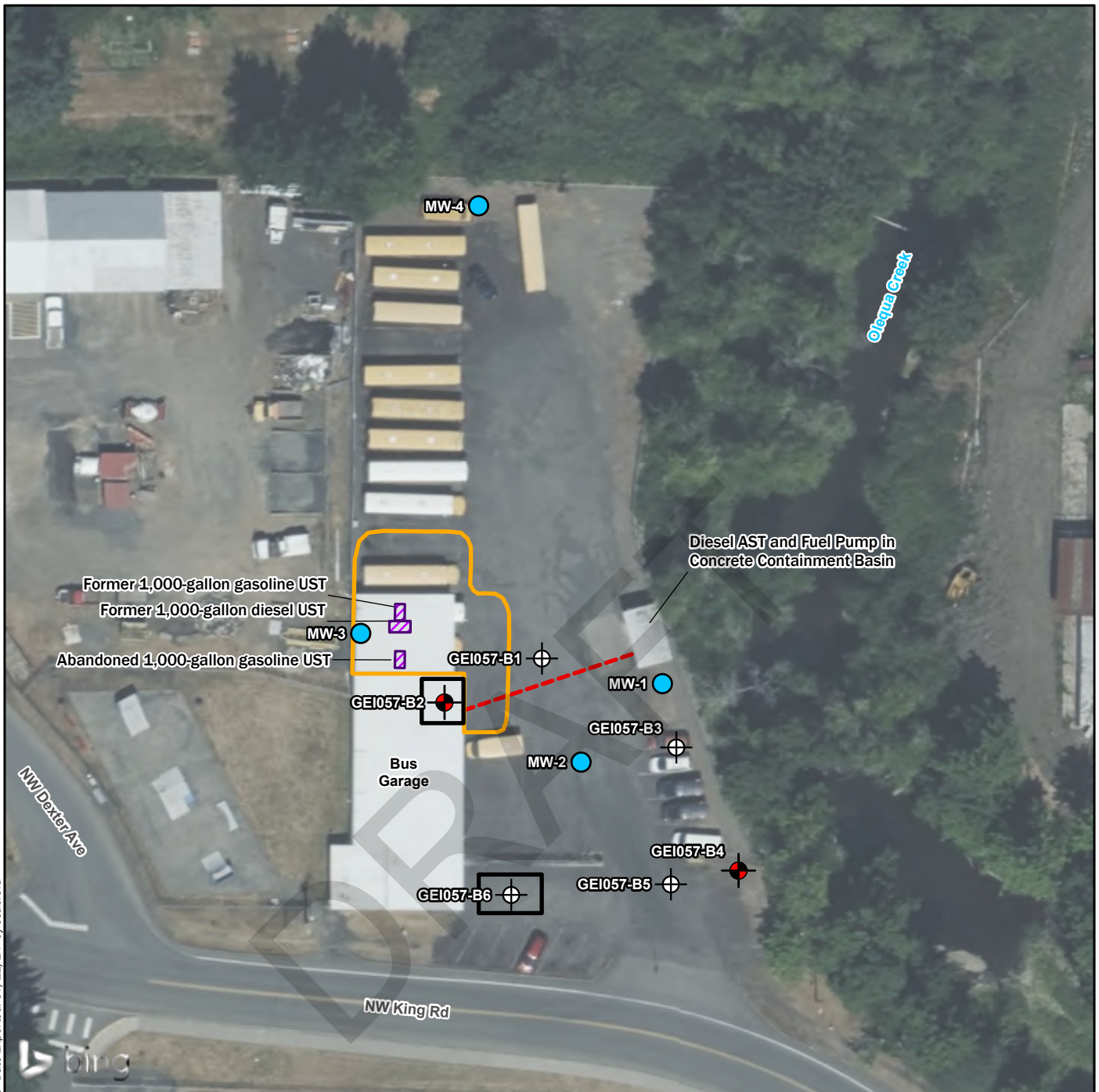
Vicinity Map

Winlock Bus Garage
Winlock, Washington



Figure 1

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Legend

- Existing Monitoring Well
- ⊕ Boring Number and Approximate Location
- GRPH Detected in Soil at Concentration Greater than the MTCA Method A CUL of 100 mg/kg
- Approximate Location of Underground Power Line
- Approximate Extent of 1994 Excavation
- Approximate Location of PCS remaining after 1994 Excavation (approximately 850 CY)
- Approximate Location of Former UST

Source(s): Bing Maps.

Coordinate System: NAD 1983 UTM Zone 10N

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Feet



Site Plan

Winlock Bus Garage
Winlock, Washington

GEOENGINEERS

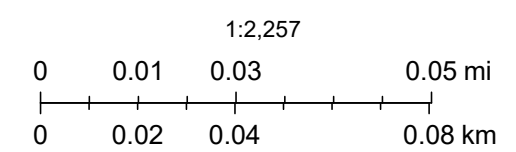
Figure 2

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Figure 3



August 1, 2024



WA Dept. of Ecology

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Enclosure B

Basis for the opinion: List of reviewed documents

Enclosure B

List of Documents

1. GeoEngineers, Site Assessment- Winlock Bus Garage, July 24, 2024.
2. Associated Environmental Group LLC, Groundwater Monitoring Report, Winlock School District Bus Garage, October 2, 1998.
3. AGI Technologies, Groundwater Monitoring Well Sampling Results, Winlock School District Bus Garage, May 31, 1996.
4. AGI Technologies, Groundwater Monitoring Well Installation and Sampling, Winlock School District Bus Garage, August 18, 1995.
5. Industrial Safety and Training Inc., Site Characterization Report on Winlock School Bus Garage, May 14, 1995.