PUBLIC REVIEW DRAFT
CLEANUP ACTION PLAN

Newman's Chevron
2021 6th Street
Bremerton, Washington 98337

Ecology FSID No.: 1436359
Cleanup Site No.: 5252
Agreed Order No.: DE14246

by
Washington State Department of Ecology
September 2025

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Prepared for:
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LIST OF ACRONYMS

ARAR	Applicable or Relevant and Appropriate Requirement
bgs	below ground surface
CEMC	Chevron Environmental Management Company
COC	contaminant of concern
CSM	conceptual site model
DCA	disproportionate cost analysis
DCAP	draft cleanup action plan
DRO	diesel-range organics
EHD	environmental health disparities
FS	feasibility study
GRO	gasoline-range organics
HRO	heavy-range organics
mg/kg	milligrams per kilogram
MNA	monitored natural attenuation
MTCA	Model Toxics Control Act
NFA	No Further Action
PLP	Potentially Liable Person
POC	point of compliance
RI	remedial investigation
RIWP	remedial investigation work plan
SB	soil boring
TPH	total petroleum hydrocarbons
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VI	vapor intrusion
VPOC	vulnerable population and overburdened community
WAC	Washington Administrative Code

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NEWMAN'S CHEVRON

EXECUTIVE SUMMARY

This Draft Cleanup Action Plan (DCAP) was prepared for the Newman's Chevron site (the Site), located at 2021 6th Street in Bremerton, Washington. A Site vicinity map is included as Figure 1. This DCAP was prepared per the requirements of Agreed Order No. DE 14246 (the Agreed Order), which was entered into by the State of Washington, Department of Ecology (Ecology) and Chevron Environmental Management Company (CEMC), Nordic Properties, Inc. (Nordic), and Victory Business Park, LLC (Victory) in February 2018.

Service station operations are reported to have occurred at the Site beginning in the 1920s and continuing until 2008. Results of previous investigations and a remedial investigation (RI) completed in 2022 (Leidos, 2023) indicate that the Site has been impacted by petroleum hydrocarbons. Areas of contamination include an eastern tank basin containing three regulated underground storage tanks (USTs) associated with the most recent service station configuration at the Site, and a western tank basin containing three abandoned in-place USTs remaining from a previous service station configuration on the western portion of the Site. Petroleum impacts at the Site do not appear to impact groundwater, which is deep and was not encountered during environmental investigations. Based on the results of the RI, soil and soil vapor are the only environmental media of concern at the Site. Surface water is also not a medium of concern.

Following completion of the RI, Leidos prepared a feasibility study (FS) report (Leidos, 2024) to develop and evaluate cleanup action alternatives to enable selection of a cleanup action that meets the requirements of Washington's Model Toxics Control Act (MTCA). The FS evaluated five alternatives designed to address the potential exposure pathways identified and the cleanup standards developed for this Site. Based on the FS evaluation, Alternative 4 (Abandoned and Regulated UST System Closure and Soil Excavation, and Institutional Controls) was recommended for selection as the proposed cleanup action.

The proposed action involves removing up to six USTs and excavating soil at and near the locations identified with petroleum impacts at concentrations exceeding the location-specific MTCA Method B cleanup levels developed for the Site. These areas of known exceedances include two soil sample locations within the eastern tank basin and one location within the western tank basin. The action also includes a contingency plan, which, if necessary, would utilize institutional controls to address the potential for a soil vapor intrusion pathway to impact areas of the Site under possible future building or land use scenarios.

As required by MTCA, this DCAP was prepared to document the selected cleanup action and specify the cleanup standards and other requirements that the cleanup action must meet.

This DCAP and its supporting documents, which include the RI and FS reports, are subject to the public notification and participation requirements established by MTCA. Therefore, the findings and recommendations of these documents may be revised, as necessary, to address or otherwise incorporate public comments or concerns regarding selection of a cleanup action for the Site.

1 INTRODUCTION

This DCAP was prepared for the Newman's Chevron site (the Site), located at 2021 6th Street in Bremerton, Washington. A Site vicinity map is included as Figure 1. Preparation of this DCAP was performed pursuant to the requirements of Agreed Order No. DE 14246 (the Agreed Order), which was entered into by Ecology and CEMC, Nordic, and Victory in February 2018. This DCAP was prepared in accordance with the regulatory requirements established by the MTCA Cleanup Regulation, Chapter 173-340 of the Washington Administrative Code (WAC), Ecology Publication No. 94-06, revised January 2024.

1.1 PURPOSE

Per Chapter 173-340-380 WAC, "The purpose of a cleanup action plan is to document the selected cleanup action and to specify the cleanup standards and other requirements the cleanup action must meet."

1.2 PREVIOUS STUDIES

Preparation of this DCAP was based on the findings presented in the following major deliverables, prepared by Leidos on behalf of the Parties, per the requirements of the Agreed Order:

- **Public Review Draft Remedial Investigation Report (Leidos, 2023)** – The Remedial Investigation (RI) Report presented the findings and conclusions of environmental investigation activities performed to adequately characterize the Site, including the distribution of hazardous substances present and any potential threat they may pose to human health and the environment, as well as the development of cleanup standards. A summary of the findings of the RI is presented in Sections 3 and 4 of this DCAP.
- **Public Review Draft Feasibility Study Report (Leidos, 2024)** – The Feasibility Study (FS) Report presented the development and evaluation of cleanup action alternatives to enable a cleanup action to be selected for the Site. A summary of the findings of the FS is presented in Section 5 of this DCAP.

Additional details regarding previous studies at the Site can be found in complete versions of the above-referenced reports. Copies of these documents can be obtained electronically at Ecology's website (https://apps.ecology.wa.gov/cleanupsearch/site/5252#site-documents) or through a public records request to Ecology's Public Records Officer (https://ecology.wa.gov/footer-pages/public-records-requests. Assistance with public records requests can be obtained by email at: recordsofficer@ecy.wa.gov or by telephone at (360) 407-6040.

2 SITE DESCRIPTION

2.1 GENERAL SITE INFORMATION

- **Site Name:** Newman's Chevron
- **Alternate Names:** 6th Street Fuel
- **Address:** 2021 6th Street, Bremerton, WA 98337
- **Assessor Parcel Number:** Kitsap County 3717-002-015-0106
- **Ecology Cleanup Site ID:** 5252
- **Ecology Facility/Site ID:** 1436359
- **Ecology UST ID:** 7972
- **Ecology Agreed Order No.:** DE14246
- **Latitude/Longitude:** 47.56707/-122.64572
- **Township/Range/Section:** 24N 1E 14
- **Current Owner/Operator:** Victory Business Park, LLC
- **Potentially Liable Persons (PLPs):**
  - CEMC
  - Nordic (formerly known as Wilkins Distributing Company)
  - Victory
  - Karin Newman
- **Designated Project Coordinators:**
  - Washington Department of Ecology – Mr. Dale Myers
  - CEMC – Mr. James Kiernan
  - Nordic – Mr. Roger Jensen
  - Victory – Mr. Jim Reed
  - Primary Project Coordinator for the Parties – Mr. James Kiernan
- **Project Consultant:** Leidos – Mr. Russ Shropshire, PE

2.2 SITE DESCRIPTION AND SETTING

For the purposes of this document, the following terminology will apply:

- "Property" refers to the property located at 2021 6th Street, which was previously determined to be impacted by one or more releases of petroleum products resulting from past operations of a service station on the Property. The Property may also be referred to as "the former service station property".
- "Site" refers to the area where petroleum contamination, originating from the Property, has come to be located. A Site may include both on-Property and off-Property areas. The subject Site area is defined by the findings of the RI previously completed for the Site (Leidos, 2023).

The Property is located at the southeast corner of the intersection of Naval Avenue and 6th Street in Bremerton, Washington, as shown on Figure 2. The Property is identified by the Kitsap County Assessor as Parcel No. 3717-002-015-0106 and is approximately 0.39 acre in size. Title records for the Property indicate that the current parcel was formerly three separate parcels (Parcels I, II, and III). Legal descriptions of the Property still retain references to these former

parcel numbers. A map showing the current and former parcel boundaries is included as Figure 3.

The Property is currently occupied by a closed gasoline service station and convenience store. The retail building has an area of approximately 2,500 square feet and the canopy has an area of approximately 1,200 square feet. Three regulated underground storage tanks (USTs) are present in the northeastern portion of the Property (Figure 2). Ecology UST records indicate that these tanks were installed on October 30, 1990, and that their current status is "Temporarily Closed".

2.2.1 Adjacent Properties

The Property is bounded by 6th Street to the north followed by commercial businesses across 6th Street (a bank and store with parking lot); private residences to the east and southeast; a paved alley to the south followed by a tire shop and private residences; and Naval Avenue to the west. An ARCO service station is located to the west of the Property across Naval Avenue at 2101 6th Street. This ARCO station (former Budget Rent-a-Car) is identified as Ecology Facility/Site ID No. 53813326 and received a No Further Action (NFA) determination in September 2013 (Ecology, 2013a).

2.2.2 Topography

The Property lies at an elevation between approximately 106 and 110 feet above sea level (NAVD88). The property surface is generally level, but the western half slopes gently to the west. Concrete retaining walls border the Property on the east and south sides, and the walls are several feet in height. The alley and parcels south of the Property range in elevation from approximately 103 to 107 feet. The residential parcel to the east of the Property ranges from approximately 107 to 114 feet.

2.2.3 Surface Water

The Property is located approximately 4,900 feet south of Anderson Cove. Oyster Bay is located approximately 5,600 feet to the northwest, and Sinclair Inlet is approximately 3,700 feet to the south and 5,600 feet to the east of the Property. No surface water bodies are located in the nearby vicinity of the Site.

2.2.4 Climate

The Bremerton climate is characterized by mild temperatures and an extended rainy season, with an average annual rainfall of 56 inches. Average temperatures vary between 34°F and 45°F in the winter and 53°F to 75°F in the summer. The driest month of the year is typically July, with the rainy season extending from October to March.

Projections of climate change affecting Washington State include increasing carbon dioxide levels, warmer air temperatures, drier summers and reduced snowfall, more frequent and severe extreme weather events, rising sea levels, more acidic marine waters, warmer water temperatures, increasing frequency and severity of wildfires, and increasing frequency and severity of flooding (Ecology, 2012). The primary impact of climate change that will affect the Site includes more frequent and severe extreme weather events.

2.3 SITE HISTORY

As discussed in Section 2.2, the current tax parcel associated with the Property formerly consisted of three separate parcels (Parcels I, II and III; see Figure 3). The Agreed Order alleges that CEMC's affiliate, Texaco Inc. (Texaco), began leasing Parcel III (the westernmost parcel) in 1928, and that Texaco purchased Parcel III in 1943.

The Agreed Order alleges that Texaco began leasing Parcels I and II in 1961, and that a gasoline service station was reconfigured to occupy all three parcels. Kitsap County Assessor's records indicate that the current service station building and canopy were constructed at that time. The Agreed Order alleges that in 1981, Texaco sold Parcel III and assigned its interest in the leases of Parcels I and II to Wilkins Distributing Company (Wilkins), known now as Nordic. Wilkins subsequently sublet Parcels I and II to Robert and Karin Newman (the Newmans) in 1981. Wilkins then purchased Parcels I and II in 1985.

The Newmans operated the service station beginning in 1981. The Newmans purchased Parcels I, II, and III from Wilkins in 1990 and continued to operate the service station as Newman's Chevron until 2004, when the Property was sold to SJ-N-SJ Corporation (SJ-N-SJ). The deed from this sale, and all subsequent property transfers, reference the current tax parcel number (3717-002-015-0106).

SJ-N-SJ owned the Property and operated the service station from 2004 to 2006. In 2006, Chang S. Choe purchased the Property and continued to operate the service station until it was closed in 2008.

2.4 SITE USE

2.4.1 Current Site Use

The current owner, Victory, acquired the Property in December 2012. Service station infrastructure, including a convenience store building, three regulated USTs, and dispenser islands remain on the Property. However, they are believed to have been unused since the service station was closed in 2008. The convenience store building is currently vacant and Ecology UST records indicate that the status of the regulated USTs is "Temporarily Closed".

2.4.2 Land Use/Zoning

The Site is located in the incorporated Bremerton city limits within Kitsap County, Washington. The Property is zoned General Commercial (GC), which allows for high intensity commercial uses. The off-Property areas of the Site are zoned Low Density Residential (R-10), which are adjacent to the GC zone, located to the east and southeast of the Property (Figure 2).

2.4.3 Future Use Plans

Ecology is not aware of specific future use plans for the Property. However, based on its location and zoning, it is expected that the Property will either be reopened as a service station and convenience store location or redeveloped for other commercial use.

The three regulated USTs currently existing on the Property were installed in October 1990. Therefore, if the Property is to be operated as a service station again in the future, it is expected that these USTs would be replaced due to their age, as the life expectancy of current UST systems is on the order of 30 years.

3 SUMMARY OF REMEDIAL INVESTIGATION AND CONCEPTUAL SITE MODEL

This section provides a summary of the findings of the RI that was performed for the Agreed Order (Leidos, 2023). RI field activities were performed in a phased approach between August 2018 and October 2022. The findings of the RI were used to update and refine a conceptual site model (CSM) for the Site, which summarizes the collective information that is known or suspected about the presence of contamination at the Site, and the physical, chemical, or biological processes that may impact contaminant migration, transport to other media, or potential exposure by human and/or ecological receptors.

3.1 GEOLOGY AND HYDROGEOLOGY

3.1.1 Geology

Based on the results of soil boring and sampling activities during the RI, as well as available soil descriptions from pre-RI activities, the following four lithologic units have been identified at the Site:

- Unit A: Fill and recent deposits
- Unit B: Glacial lacustrine silt with clay
- Unit C: Glacial till and related material
- Unit D: Glacial advance outwash sand

Figure 4 shows the location of section line A-A', which is presented as a cross-sectional view in Figure 5. Additional details regarding each lithologic unit are provided below.

Unit A

The uppermost lithologic unit throughout the Site consists of fill material, other disturbed or redistributed soils, and possibly some other recent (Holocene) post-glacial deposits. This unit consists of sand, silt, silty sand, and gravel in varying proportions. The thickness typically ranges from 2 to 8 feet; however, in areas of the eastern tank basin and excavation pits, the fill thickness extends up to 12 feet (Figure 5). The fill material at most of the Site is not always readily distinguishable from the native material beneath it, so its presence and thickness based on observations during drilling are inferred in many places.

Unit B

Below Unit A is a silt layer with variable amounts of clay, minor fine-grained sand, and up to several percent gravel. The clay-rich silt is commonly finely laminated and varies from low to high plasticity; its consistency is typically soft to firm. This unit everywhere is underlain by Unit C (glacial till), and in places this unit may grade coarser downward into the till. Unit B is up to 13 feet thick and is only present in the eastern two-thirds of the Site; it pinches out to the west of borings SB-7 and SB-8 (Figure 5). This unit also pinches out north of SB-7 and was not identified in borings SB-1 and SB-2. Unit B was found in all seven borings drilled in 2000 outside the periphery of the eastern tank basin (B-1 to B-7; GSM, 2001). Unit B contains widely scattered fine gravel suspended within the fine-grained laminated matrix, and it appears to be gradational with Unit C. Thus, Unit B is believed to be a glacial-lacustrine deposit.

Note that another silt-rich unit is also present under Naval Avenue and in the northwestern portion of the Site based on borings (SB-21 and SB-29), up to 10 feet thick. However, this is a coarser silt unit without clay, and with a greater amount of gravel, and is considered to be part of Unit A.

Unit C

Below Units A and B is a lithologic unit that includes a heterogeneous mix of silt, sand, gravel, and minor clay, often with a fine matrix of silty sand. This unit includes some layers of medium-grained sand and gravelly sand. Unit C includes glacial till and related till-like material, which is marked by a greater hardness and a wide range of grain sizes, including significant but variable amounts of gravel. This unit, known as the Vashon till, is present across the Site and varies in thickness from approximately 8 feet to at least 17 feet (Figure 5). Within the western UST basin, the top of Unit C appears to be present at a depth of approximately 8 to 9 feet bgs. In the area immediately south of the eastern UST basin, the top of the till is present at approximately 15 to 16 feet bgs. The consistency of the till material is generally described as dense to very dense or firm to hard. The upper few feet of this unit is locally less dense and grades upward into silty sand and then into the silt of Unit B. The till was rarely observed to perch small seams of water (a few inches thick) on top of it.

Unit D

Below the glacial till is a unit of fine sand that has been observed wherever drilling extended beyond the base of the till. The sand typically ranges from very fine to medium-grained and includes trace amounts of coarse silt ranging up to 10 percent, with up to several percent gravel. The top of this sand was identified in 15 RI borings at depths ranging from 17 to 25 feet bgs. In RI borings that did not penetrate through Unit C, the top of Unit D would range to greater than 31.5 feet bgs. This Unit D sand was found to be greater than 28 feet thick in boring SB-1, to a drilled depth of 51.5 feet bgs. Drilling at the ARCO station to the west of the Site revealed that this unit extends to a depth of at least 80 feet bgs (Ecology 2013a). Based on the lithology of this unit and its thick presence below glacial till, Unit D likely represents Vashon glacial advance outwash material.

Lithology in Eastern UST Basin

The geology within the area of the former eastern UST basin is somewhat different than that shown on the cross-section (Figure 5) located just south of the basin. Pre-RI reports indicated that native shallow soils surrounding the former UST basin consisted of medium dense sandy silt (Units A and B). Within the tank basin, the former backfill material (sandy gravel) extended from near the surface to approximately 10 feet bgs, with medium dense sand from 10 to 12 feet bgs, and sandy silt (Unit B) from 12 to at least 14 feet bgs (the maximum excavation depth). As noted above, the borings labeled B-1 to B-7 (Figure 4) also identified the silt-rich Unit B around the outside periphery of the tank basin. The 2-foot-thick sand layer (10 to 12 feet bgs) was identified on the north, west, and south walls of the tank-pit excavation completed in 1990, but not in the two test pits excavated to 13 feet bgs near the southeast corner of the main tank basin (AGI, 1990). Based on the differing geology outside the tank basin, the sand layer at a depth of 10 to 12 feet bgs appears to be tank-bed material placed on top of excavated silt at the time of the UST installation (possibly 1961). Therefore, this tank-basin sand would laterally terminate against the silty soil of Unit B.

3.1.2 Hydrogeology

Groundwater was not encountered during RI field activities at the Site, except for a few thin seams of water perched in small pockets overlying glacial till. As stated in Section 3.4 of the RI Report (Leidos, 2023), the water table within the upper aquifer in this area is expected to be situated at approximately 70 feet bgs. This aquifer appears to be present within the lower portion of Unit D, the Vashon advance outwash sand. At the adjacent ARCO station, only one monitoring well was installed to the water table, and thus the direction of groundwater flow could not be determined (AGI, 1990; Ecology, 2013a).

3.2 CONTAMINANT RELEASE

Based on data from the RI and previous environmental investigations, as well as information that is known or suspected regarding service station operations at the Site between approximately 1928 and 2008, the following potential petroleum hydrocarbon sources have been identified at the Site:

- Past releases to the subsurface associated with leaking petroleum USTs;
- Past releases to soil associated with leaking product conveyance piping associated with the former service station configurations;
- Past releases to the ground surface or near-surface soils from UST overfills in the current or former UST basin areas; and
- Past releases to the ground surface associated with vehicle refueling or pump maintenance operations at the current or former dispenser island locations.

3.3 CONTAMINANTS OF CONCERN

MTCA defines a contaminant as "any hazardous substance that does not occur naturally or occurs at greater than natural background levels." Based on the results of the RI, and previous environmental investigations performed at the Site, the following hazardous substances have been identified as contaminants of concern (COCs):

- Gasoline-range organics (GRO)
- Diesel-range and heavy-range organics (DRO/HRO)
- Benzene
- Ethylbenzene
- Xylenes
- Naphthalene

3.4 EXTENT OF PETROLEUM IMPACTS

Residual petroleum impacts, consisting of the COCs identified above, have been determined to be present in vadose zone soils at the Site. The approximate extent of these impacts, based on MTCA Method A cleanup level exceedances for Site soil sample results, is depicted on Figures 5 and 6. The use of MTCA Method A cleanup levels on these figures is for screening-level purposes only. Further discussion regarding the selection of cleanup standards for the Site is presented in Section 4.

As shown on Figure 6, soil sampling results from the RI indicate that two distinct areas of petroleum impacted soil are present at the Site:

(1) MTCA Method A cleanup level exceedances for GRO and related constituents are present in the large area that comprises the eastern UST basin, the station building, pump islands, and extending to the east and southeast of the station.

(2) MTCA Method A cleanup level exceedances for DRO, GRO and related constituents are present in the smaller area of the western UST basin near Naval Avenue and extending to the northeast and west/southwest of the basin.

The first of these two areas appears to have originated from multiple release locations on the eastern portion of the Property, including the former regulated UST basin removed in 1990 and the service station pump islands, and it extends a short distance off-Property to the east and a shorter distance to the southeast. This impacted zone does not appear to reach the residential structure at 2005 6th Street; however, it may reach the western portion of the structure at 2007 6th Street. Petroleum contamination (exceeding Method A cleanup levels) in this zone has been identified at depths as shallow as 10 feet bgs in RI soil boring SB-7, near the southern pump island. Shallow impacts to soil at the former station were also detected in pre-RI soil sampling locations B, C, N, and W (AGI, 1990) and pre-RI soil borings BM-4 through BM-8 and BM-12, with impacts as shallow as 7 feet bgs (PEI, 2009). The contamination generally is deeper to the east and reaches its deepest level in boring SB-27, at a maximum sample depth of 26.5 feet bgs (Figure 5). In SB-27, a deeper sample at 29 feet bgs, within Unit C, showed all results as non-detect.

The second of these two areas likely originated from the western former tank basin on the Property, and it extends a short distance off-Property to the west/southwest under Naval Avenue. For RI soil samples, the petroleum contamination in this zone was identified at depths as shallow as 8 feet bgs in borings UST-2, UST-4, SB-20, and SB-24. This widespread area of shallow petroleum impact implies that contamination was able to be transported in an approximately horizontal direction, likely migrating on top of the till layer (Figure 5). The base of contamination was identified as being deepest at SB-17 at a maximum depth of 24.5 feet bgs. Figure 6 shows the area between SB-17, SB-24, and borings around the northern UST, where petroleum impacts to soil include both GRO and DRO.

The vertical extent of contamination in Site soil is identified within the fine-grained material of Units B and C in the eastern area, and Units A and C in the western area. The sample at 24-24.5 feet bgs in SB-17 was the only contaminated soil identified within Unit D, situated 3 feet below the upper contact and with uncontaminated soil below (results for the sample at 29.5 feet bgs were all non-detect or at reporting limits). Aside from this single sample, the low-permeability lithologies of Unit C appear to significantly retard the downward transport of infiltrating water, and in all but this one location act to keep the petroleum hydrocarbons from reaching Unit D. The very fine to medium sand with minor silt of Unit D appears to further impede the downward transport of hydrocarbon contamination (maximum depth of 24.5 feet bgs) and protect the deep underlying aquifer situated at approximately 70 feet bgs.

Based on the vertical extent of petroleum impacts to soil at the Site that exceed MTCA Method A cleanup levels (which are intended to be protective of groundwater), there appears to be a

sufficient interval of non-impacted soil (40+ feet), such that residual soil impacts leaching to groundwater is not a contaminant transport pathway of concern.

3.5 ENVIRONMENTAL MEDIA OF CONCERN

The RI evaluated the following environmental media that were identified as potential media of concern by the RIWP:

Evaluation of Potential Media of Concern		
Potential Media of Concern Evaluated by the RI	**Retained as a Medium of Concern?**	**Justification**
Soil	Yes	One or more hazardous substances have been detected in soil above naturally occurring background conditions. Therefore, soil is considered a medium of concern for the Site.
Groundwater	No	Groundwater has not been encountered at the Site within the maximum depth explored (51.5 feet bgs). As discussed in Section 3.1.2, groundwater at the Site is expected to be first encountered at a depth of approximately 70 feet bgs. This deep groundwater is separated from any Site contamination by 40+ feet of intervening relatively low-permeability soil of Units C and/or D. Therefore, groundwater is not considered a medium of concern for the Site.
Soil Vapor	Yes	As discussed in Section 3.5 of the RI, results of recent Tier 2 VI assessment activities indicate that the presence of petroleum contamination at the Site is not resulting in VI to existing buildings on the former service station property or nearby properties. However, Tier 1 results indicate that naphthalene has been detected in shallow soil vapor at concentrations that exceed current MTCA Method B screening levels for soil gas. Therefore, soil vapor is considered a medium of concern for potential future land use scenarios.
Surface Water	No	The RIWP identified surface water as a medium of potential concern due to groundwater's ability to infiltrate subgrade stormwater conveyance piping that may drain to surface water. However, based on the results of the RI, this potential contaminant transport pathway has been determined to be incomplete because groundwater is not present at the shallow depths where stormwater piping is present near the Site (generally less than 10 feet bgs).

3.6 POTENTIAL RECEPTOR AND TRANSPORT/EXPOSURE PATHWAY EVALUATION

3.6.1 Potential Receptors

Receptors are individuals or populations that are at risk of being exposed to hazardous substances at or originating from a contaminated site. Based on the location, setting, and expected future use of the Site, the RI evaluated the following potential receptors:

Evaluation of Potential Receptors		
Potential Receptors Evaluated by the RI	**Retained as a Receptor of Concern?**	**Justification**
Humans	Yes	The Site is located in a commercial and residential area in the City of Bremerton, Washington. Based on current and future expected land use on and in the vicinity of the Site, humans are considered receptors of concern for the hazardous substances present at the Site.
Terrestrial Ecological Organisms	No	Based on the exclusion criteria established by WAC 173-340-7491(1), terrestrial ecological organisms are not considered as receptors of concern for the Site. See Section 3.6.1.1 for additional details.
Aquatic Ecological Organisms	No	Based on results of the RI, surface water is not considered an environmental medium of concern. Therefore, aquatic ecological organisms are not considered receptors of concern for the Site.

3.6.1.1 Terrestrial Ecological Evaluation

For sites impacted by releases of hazardous substances to soil, WAC chapters 173-340-7490 through 173-340-7494 establish the requirement, and define the procedures, for conducting a terrestrial ecological evaluation (TEE) to determine whether conditions at the site may pose a threat to the terrestrial environment.

Within the TEE procedure, WAC 173-340-7491(1) provides an exclusion from the requirement to complete a TEE, for sites where there is less than 1.5 acres of contiguous undeveloped land on the site or within 500 feet of any area of the site.[1]

Based on the urban setting, and land use in the area within 500 feet of any portion of the Site, this exclusion from the requirement to complete a TEE is applicable to the Site. Therefore, terrestrial ecological organisms are not considered receptors of concern for the Site.

3.6.2 Exposure Pathway Analysis

Exposure pathways are the paths that hazardous substances may take from a source to a receptor. Exposure pathways include transport pathways (how a hazardous substance moves through and across different environmental media) and an exposure route (the path by which receptors may be exposed to hazardous substances). Examples of exposure routes include:

- Direct contact – Ingestion and/or dermal contact with hazardous substances
- Inhalation – Breathing hazardous substances in air (dust, vapor, or gases)

This section presents an analysis of potential exposure pathways for the two media of concern that have been identified for the Site: soil and soil vapor.

[1] This exclusion applies only for sites contaminated with hazardous substances other than those specified in WAC 173-340-7491(1)(c)(ii).

3.6.2.1 Potential Transport Pathways and Exposure Routes for Soil

The following tables provide an evaluation of potential transport pathways and exposure routes that may be associated with the presence of petroleum impacted soil at the Site.

Evaluation of Potential Transport Pathways – Soil		
Potential Transport Pathways	**Retained as a Transport Pathway of Concern?**	**Justification**
Migration of Non-Aqueous Phase Liquid (NAPL)	No	Based on the Site operating history and results of pre-RI investigations, most petroleum impacts to soil are expected to have occurred prior to 1990. Based on the expected age of these releases, petroleum impacts to soil would be expected to have reached stable conditions with no significant further migration.
Leaching to groundwater	No	The bottom-most extents of petroleum impacts to soil that exceed cleanup levels based on protection of groundwater (MTCA Method A) have been delineated well above the level of groundwater (at least 40 feet) at the Site; the water table is situated at approximately 70 feet bgs. Surface water infiltration through soils at the Site is limited due to the urban nature of the Site, which is predominantly covered by impermeable surfaces, and due to fine-grained soils at depth.
Volatilization to soil vapor	Yes	Petroleum-range hydrocarbon impacts to soil vapor have been confirmed by soil vapor sampling. However, the results of this work indicate that petroleum constituents in soil vapor are readily attenuated in shallow soils, which is likely due to the presence of sufficient oxygen to facilitate aerobic degradation.

Evaluation of Potential Exposure Routes – Soil	
Potential Exposure Routes	**Applicability**
Ingestion of, or dermal contact with, contaminated soil	**Exposure route of concern for future subsurface work –** The areas of soil impacted by petroleum-range hydrocarbons at the Site are mostly covered by buildings and pavement and are generally present at depths that would not be encountered by routine construction activities. Therefore, the potential for ingestion or dermal contact by human receptors is considered limited. However, potential ingestion or dermal contact exposures may be possible for workers or the public if impacted soils are exposed during future subsurface construction activities.
Inhalation of hazardous vapors and/or airborne particulates (i.e., dust) in outdoor air	**Exposure route of concern for future subsurface work –** Similar to above, under typical conditions the potential for exposure by inhalation of hazard vapors or dust in outdoor air from contaminated soil is limited. However, potential for exposure by inhalation may exist for workers or the public if impacted soils are exposed during future subsurface construction activities.

3.6.2.2 Potential Transport Pathways and Exposure Routes for Soil Vapor

The following tables provide an evaluation of potential transport pathways and exposure routes that may be associated with the presence of petroleum impacted soil vapor at the Site.

Evaluation of Potential Transport Pathways – Soil Vapor		
Potential Transport Pathways	**Retained as a Transport Pathway of Concern?**	**Justification**
Migration to indoor air	Yes	VI assessment results for work performed to date indicate that petroleum impacted soil vapor is not impacting indoor air quality in existing buildings on or near the Site. However, Tier 1 VIA sampling results indicate that naphthalene has been detected in shallow soil vapor at concentrations exceeding current MTCA Method B screening levels for sub-slab soil gas. Therefore, migration of impacted soil vapor to indoor air has been retained as a pathway of concern for future buildings or changes in land use at, or near, the Site.

Evaluation of Potential Exposure Routes – Soil Vapor	
Potential Exposure Routes	**Applicability**
Inhalation	**Exposure route of potential future concern -** Not an exposure route of concern under current land use. However, may need re-evaluation under future building construction or other land use changes.

4 CLEANUP STANDARDS DEVELOPMENT

This section provides a summary of the cleanup standards development process previously presented in the RI (Leidos, 2023) and FS (Leidos, 2024).

Cleanup standards define the objectives that must be achieved by a cleanup action. As defined in WAC 173-340-700, cleanup standards consist of the following three components:

- Cleanup levels for the hazardous substances present;
- The location(s) where these cleanup levels must be met, i.e., the point(s) of compliance; and
- Other regulatory requirements that apply to the site because of the type of action and/or location of the site. These requirements are specified in applicable state and federal laws and are generally established in conjunction with the selection of a specific cleanup action.

4.1 CLEANUP LEVELS

A cleanup level defines the concentration of a hazardous substance above which a contaminated medium (e.g., soil or groundwater) must be remediated in some manner (Ecology, 2024a).

4.1.1 Cleanup Levels for Soil

As previously discussed in greater detail in Section 5 of the RI report (Leidos, 2023), Leidos utilized MTCA Method B to develop site-specific cleanup levels for total petroleum hydrocarbons (TPH) in soil that would be protective of a direct contact exposure pathway at the Site. Because the Site appears to have been impacted by two discrete petroleum sources: 1) the eastern UST basin and pump islands; and 2) the orphaned UST basin in the western portion of the Property, site-specific Method B TPH cleanup values were calculated for each source area in order to account for potential compositional differences in the petroleum products that were historically stored/used in these areas. The cleanup levels for TPH in soil collectively address the presence of GRO, DRO, and HRO as COCs at the Site.

Cleanup Levels for TPH in Soil	
Method B TPH Cleanup Level for Soil (mg/kg)	**Applicable Site Area**
3,353	Soils impacted by petroleum releases from the dispenser islands and eastern UST basin.
2,477	Soils impacted by petroleum releases from the undocumented UST basin in the western portion of the Site.

The following additional cleanup levels, which represent MTCA Method B cleanup levels based on a direct contact exposure pathway, are necessary to address the remaining COCs at the Site:

- Benzene – 18 mg/kg
- Ethylbenzene – 8,000 mg/kg
- Xylenes – 16,000 mg/kg
- Naphthalene – 1,600 mg/kg

4.1.2 Cleanup Levels for Soil Vapor

Although soil vapor has been identified as a medium of concern, due to the potential to impact indoor air under a future land-use change, petroleum impacts to soil vapor will not drive the development of cleanup standards for the Site. At this time, MTCA does not include development of cleanup levels for soil vapor.

In the event of a future land-use change that may increase the potential for VI to indoor air, Ecology expects that MTCA Method B screening levels for soil gas, or Method B indoor air cleanup levels, will be used to evaluate the need for future VI evaluation or mitigation measures.

4.2 POINTS OF COMPLIANCE

Points of Compliance (POCs) are the locations on a site where cleanup levels must be met. MTCA defines the standard POC for each environmental medium (soil, groundwater, air, and surface water).

4.2.1 POCs for Soil

The standard POCs for the exposure pathways of concern for petroleum impacted soil at the Site are limited to:

- Direct contact – Soils from the ground surface to a depth of 15 feet bgs.

4.3 OTHER REGULATORY REQUIREMENTS

Chapter 173-340-710 WAC requires that all cleanup actions conducted under MTCA comply with applicable state and federal laws. Applicable state and federal laws include those that are legally applicable requirements, as well as those requirements that Ecology determines are relevant and appropriate. Applicable, relevant, and appropriate requirements are collectively referred to as ARARs.

Additional discussion regarding potential ARARs that may be associated with the proposed cleanup action for the Site is presented in Section 6.2.

4.4 PROPOSED CLEANUP STANDARDS

The following table presents a summary of the proposed cleanup standards for the Site. As discussed in Section 4.3, additional components of these cleanup standards, in the form of ARARs, may be required to be included in the cleanup standards for the Site.

Proposed Cleanup Standards			
Method B TPH Cleanup Level (mg/kg)	**Medium**	**Point of Compliance**	**Applicable Site Area**
3,353	Soil	Ground surface to a depth of 15 feet bgs	Soils impacted by petroleum releases from the dispenser islands and eastern UST basin.
2,477	Soil	Ground surface to a depth of 15 feet bgs	Soils impacted by petroleum releases from the undocumented UST basin in the western portion of the Site.

4.5 SUMMARY OF CLEANUP ACTION OBJECTIVES

Based on the evaluation of potential receptors and transport/exposure pathways presented in Section 3.6, and the development of cleanup standards for soil discussed in Sections 4.1 through 4.4, the following cleanup action objectives were identified for use in evaluating cleanup action alternatives for the Site:

- Achieve compliance with the cleanup standards for soil at the Site presented in Section 4.4; and
- Address the potential for naphthalene in shallow soil vapor to create a VI exposure pathway of concern due to redevelopment or other land use changes to properties that are part of the Site.

5 FEASIBILITY STUDY SUMMARY – DEVELOPMENT AND EVALUATION OF CLEANUP ACTION ALTERNATIVES

As defined by MTCA Cleanup Regulation, the purpose of a feasibility study is to develop and evaluate cleanup action alternatives to enable the selection of a cleanup action that meets the requirements and conforms to the expectations in Chapter 173-340 WAC.

For the Newman's Chevron Site, this process is documented by the Public Review Draft Feasibility Study Report (FS Report), dated May 3, 2024 (Leidos, 2024). The FS Report developed and evaluated five cleanup action alternatives, including:

- Alternative 1: Containment, monitored natural attenuation (MNA), and Institutional Controls;
- Alternative 2: Abandoned UST Closure and Soil Excavation, Containment, MNA, and Institutional Controls;
- Alternative 3: Abandoned UST Closure and Soil Excavation, soil vapor extraction, Containment, MNA, and Institutional Controls;
- Alternative 4: Abandoned and Regulated UST System Closure and Soil Excavation, and Institutional Controls; and
- Alternative 5: Abandoned and Regulated UST System Closure and Soil Excavation.

Based on the evaluation performed, Alternative 4 (Abandoned and Regulated UST System Closure and Soil Excavation, and Institutional Controls) was recommended for selection as the proposed cleanup action for the Site.

Although the results of the cleanup action alternatives evaluation indicated that Alternative 5 would provide the greatest benefit, Alternative 5 was expected to be significantly more expensive than the next most beneficial alternative, Alternative 4. Based on the results of the disproportionate cost analysis (DCA), the minimal benefit that would be provided by Alternative 5 over Alternative 4 would be disproportionate to the difference in estimated costs between these alternatives.

Additional details regarding the proposed cleanup action for the Site are presented in Section 6.

6 SELECTED REMEDY

6.1 DESCRIPTION OF THE PROPOSED CLEANUP ACTION

Under the proposed cleanup action, cleanup of the Site would be achieved by regulatory closure of both the abandoned and regulated UST systems present on the former service station property and excavation, to the POC for direct contact (15 feet bgs), of soils exceeding the Site-specific Method B TPH cleanup levels presented in Section 4.1.1, and shown in the following table.

Proposed Cleanup Standards			
Method B TPH Cleanup Level (mg/kg)	**Medium**	**Point of Compliance**	**Applicable Site Area**
3,353	Soil	Ground surface to a depth of 15 feet bgs	Soils impacted by petroleum releases from the dispenser islands and eastern UST basin.
2,477	Soil	Ground surface to a depth of 15 feet bgs	Soils impacted by petroleum releases from the undocumented UST basin in the western portion of the Site.

Based on analytical results of soil sampling performed at the Site to date, excavation is expected to be required at the following three discrete areas (Figure 7), in order to achieve the proposed cleanup standards for the Site:

Site Areas Requiring Excavation				
Soil Sample Location ID	**Sample Depth (feet bgs)**	**Investigation**	**Sample Date**	**Results**
Eastern Portion of Site, TPH Cleanup Level = 3,353 mg/kg				
B	10.5	Pre-RI AGI (1990)	8/1990	TPH detected at 4,875 mg/kg
BM-5	11-12	Pre-RI PEI (2009)	7/20/2009	GRO detected at 4,100 mg/kg and 4,400 mg/kg in duplicate sample
Western Portion of Site, TPH Cleanup Level = 2,477 mg/kg				
UST-2	8	RI Leidos (2018)	8/28/2018	GRO detected at 670 mg/kg DRO detected at 2,800 mg/kg (combined TPH = 3,470 mg/kg)

Remedial excavation activities are not planned in the off-property areas of the Site that include the residential property located at 2005/2007 6th Street and the City of Bremerton alley right-of-way immediately south of the former service station property. However, excavation activities related to the abandoned UST tank basin may need to extend into the Naval Avenue right-of-way.

To achieve regulatory closure of the abandoned and regulated USTs at the Site, it is expected that the USTs will be removed. However, if it is technically preferable to leave one or more of the USTs in place due to concerns about undermining or otherwise disturbing nearby adjacent structures, and the soil cleanup standards can be met with the UST(s) in place, then in-place closure will be allowable.

Although the above-referenced excavation is expected to achieve the proposed cleanup standards for the Site, it may not address the presence of naphthalene in shallow soil vapor at concentrations exceeding current MTCA Method B screening levels for sub-slab soil gas because the endpoints for an excavation intended to satisfy a soil vapor screening level cannot be technically defined. As previously discussed in Section 3.6.2.2, although the presence of naphthalene in shallow soil vapor is not an exposure route of concern under current land use at the Site, it may require further evaluation if there is a future building construction or land use change at the Site. Therefore, the proposed cleanup action will also include additional VI assessment to determine if the remedial excavation activities are successful in reducing levels of naphthalene in shallow soil vapor to concentrations below the current MTCA Method B screening level for naphthalene in soil gas (2.5 micrograms per cubic meter).

The post-excavation VI assessment will include one or more rounds of soil gas sampling for naphthalene using United States Environmental Protection Agency Method TO-17. Samples will be collected at existing soil vapor sampling probe locations SVP-1 through SVP-6, where naphthalene was previously detected at concentrations above the MTCA Method B screening level in samples collected in June 2021.

If results of the post-excavation VI assessment indicate that naphthalene in shallow vapor is no longer a transport pathway of concern, then no further action will be required to achieve the cleanup action objectives for the Site. However, if the results of the post-excavation VI assessment indicate that naphthalene is still present in shallow soils at concentrations exceeding the MTCA Method B screening level for soil gas, then the proposed cleanup action will implement a contingency plan to use institutional controls to address VI as an on-going transport pathway of concern. These institutional controls would require future assessment or mitigation of the potential VI pathway if there was a change in building construction or land use at the Site.

Based on the location, setting, and expected future use of the Site, potential future climate change impacts (see Section 2.2.4) would not result in changes to the resilience of the proposed cleanup action or affect the migration of the hazardous substances that will remain at the Site.

6.2 APPLICABLE, RELEVANT, AND APPROPRIATE REQUIREMENTS

As previously discussed in Section 4, in addition to cleanup levels and points of compliance, cleanup standards for a site must also include other regulatory requirements that apply because of the type of action and/or location of a site. Applicable state, federal, and local laws include those that are legally applicable requirements, as well as those requirements that Ecology determines are relevant and appropriate.

Table 1 presents ARARs that have been identified for the proposed cleanup action at the Site.

6.3 COMPLIANCE MONITORING

As specified by Chapter 173-340-410 WAC, compliance monitoring shall be required for all cleanup actions conducted under the MTCA Cleanup Regulation. Compliance monitoring consists of:

- Protection Monitoring – To confirm that human health and the environment are adequately protected during construction and the operation and maintenance period of an interim action or cleanup action as described in the health and safety plan.
- Performance Monitoring – To confirm that the interim action or cleanup action has attained cleanup standards and, if appropriate, remediation levels or other performance standards such as construction quality control measurements or monitoring necessary to demonstrate compliance with a permit or, where a permit exemption applies, the substantive requirements of other laws.
- Confirmation Monitoring – To confirm the long-term effectiveness of the interim action or cleanup action after cleanup standards and, if appropriate, remediation levels or other performance standards have been attained.

Unless otherwise directed by Ecology, compliance monitoring plans (CMPs) will be prepared for the proposed cleanup action and submitted to Ecology for review and approval. Protection monitoring will be addressed in the health and safety plan(s) (HASPs) for the cleanup action. Performance and confirmation monitoring plans may be addressed in separate plans or may be combined with other plans or submittals prepared for the cleanup action. CMPs will be prepared in accordance with the requirements specified by Chapter 173-340-410(3) WAC. A preliminary review draft CMP for the proposed cleanup action is presented in Appendix A.

6.4 CLEANUP ACTION IMPLEMENTATION

Implementation of the cleanup action shall be in compliance with Chapter 173-340-400 WAC, "Cleanup Action Implementation." It is expected that implementation of the cleanup action will include the following components.

6.4.1 Pre-Implementation Action – Development and Execution of a New Agreed Order or Consent Decree

Upon Ecology acceptance of this DCAP, the Parties will have completed the remedial activity required by the Agreed Order and complied with all other provisions of the Agreed Order. Based on discussions with Ecology, Leidos understands that Ecology intends to implement the cleanup action for the Site under a new Agreed Order or a Consent Decree. Therefore, development and execution of a new Agreed Order or Consent Decree between Ecology and the Parties will be the first requirement prior to beginning implementation of the cleanup action for the Site.

6.4.2 Preparation of Engineering Documents/Permits/Construction Plans and Specifications

Following execution of a new Agreed Order or Consent Decree for implementation of the cleanup action, the Parties will prepare necessary engineering documents, permits, and constructions plans and specifications as required by Chapter 173-340-400 WAC, and other applicable regulations. These documents are expected to include, but may not be limited to:

- Finalization of the CMP(s) to specify performance monitoring and confirmation monitoring required to implement the cleanup action, including a sampling and analysis plan (SAP) for soil performance monitoring and post-excavation VI assessment;
- HASP(s) specifying procedures to protect worker safety and protection monitoring to ensure that human health and the environment are adequately protected during the cleanup action;
- Construction plans and specifications for excavation backfill and shoring, if necessary to support structures adjacent to the cleanup action excavations;
- State Environmental Policy Act (SEPA) checklist to evaluate potential environmental impacts of the cleanup action;
- Ecology 30-Day Notice for UST closure; and
- City of Bremerton land use and right-of-way use permits.

An Inadvertent Discovery Plan (IDP), which outlines procedures to perform in the event of a discovery of archaeological materials or human remains, in accordance with applicable state and federal laws, has already been prepared for the proposed cleanup action and is included in this DCAP as Appendix B.

6.4.3 Project Planning and Schedule Coordination

Following preparation of engineering documents/permits/construction plans and specifications, the Parties will begin project planning and schedule coordination. These activities are expected to include, but may not be limited to:

- Subcontractor coordination
- Waste disposal profiling and transportation coordination.

6.4.4 Permanent Closure of UST Systems

Permanent closure of the abandoned and regulated UST systems will be performed by a decommissioner certified as having sufficient education and experience by the International Code Council (UST Decommissioning – U2) or otherwise certified in accordance with Chapter 173-360A-0930(4) WAC, Decommissioning.

Based on the results of the RI, and the Site's listing on Ecology's Contaminated Sites List (Cleanup Site ID: 5252), the Site has already been identified as a location where remediation is necessary. Therefore, as specified by Chapter 173-360A-0810(3) WAC, permanent closure of the USTs present at the Site does not require additional site assessment meeting the requirements of Chapter 173-360A-730 WAC.

As stated in Section 6.1, to achieve regulatory closure of the abandoned and regulated USTs at the Site, it is expected that the USTs will be removed. However, if it is technically preferable to leave one or more of the USTs in place due to concerns about undermining or otherwise disturbing nearby adjacent structures, and the soil cleanup standards can be met with the UST(s) in place, then in-place closure will be allowable.

Following permanent closure of the six USTs present at the Site, a Permanent Closure Notice form will be submitted to Ecology within 30 days.

6.4.5 Remedial Excavation and Soil Compliance Sampling

Following, or in conjunction with, permanent closure of the abandoned and regulated USTs, excavation will be performed to remove all soils on the Site exhibiting TPH concentrations above the site-specific Method B cleanup levels, above the POC (15 feet bgs). During the soil excavation activities, soil sampling will be conducted as performance monitoring to confirm that the cleanup action has attained the cleanup standards for the Site. Excavated soil will be transported offsite to an appropriately licensed treatment or disposal facility.

If deemed unsuitable for reuse as backfill, clean and/or minimally impacted overburden soil may also require offsite disposal. Additional soil sampling may be required to determine appropriate offsite disposal alternatives for overburden soils that cannot be reused as backfill at the Site.

Following confirmation that excavation activities have achieved the cleanup standards for the Site, each excavation will be backfilled according to the construction plans and specifications for the project.

6.4.6 Post-Excavation Vapor Intrusion Assessment

Following completion of the remedial excavation and soil compliance sampling, post-excavation VI assessment sampling will be performed to evaluate whether the presence of naphthalene in shallow soil vapor is still a potential exposure route of concern for the Site. The post-excavation VI assessment will include one or more rounds of soil gas sampling for naphthalene using United States Environmental Protection Agency Method TO-17. Samples will be collected at existing soil vapor sampling probe locations SVP-1 through SVP-6, where naphthalene was previously detected at concentrations above the MTCA Method B screening level in samples collected in June 2021. This work is expected to be performed at least 90 days after completion of the remedial excavation activities, in order to ensure re-equilibrium of shallow soil vapor conditions at the Site.

6.4.7 Contingency Plan Use of Institutional Controls

As discussed in Section 6.1, if the results of the post-excavation VI assessment indicate that naphthalene is still present in shallow soil vapor at concentrations exceeding the MTCA Method B screening level for soil gas, then the proposed cleanup action will implement a contingency plan to use institutional controls to address VI as an on-going transport pathway of concern. Additional discussion regarding the potential use of institutional controls as part of the cleanup action is included in Section 6.7.

6.4.8 Construction Documentation

As required by Chapter 173-340-400(6)(b) WAC, following completion of the cleanup action, the engineer responsible for the oversight of construction shall prepare as-built drawings and a report documenting all aspects of the cleanup action. The report shall also contain an opinion from the engineer, based on testing results and inspections, as to whether the cleanup action has been conducted in substantial compliance with the plans, specifications, and related documents.

6.5 SCHEDULE FOR IMPLEMENTATION

The following table provides an approximate timeline for activities related to implementation of the proposed cleanup action.

Approximate Timeline for Proposed Cleanup Action		
No.	**Activity/Phase**	**Expected Completion Date**
1	Development and execution of new Agreed Order or Consent Decree	180 days after finalization of CAP
2	Preparation of engineering documents/permits/construction plans and specifications	180 days after execution of new Agreed Order or Consent Decree
3	Project planning and schedule coordination	90 days after completion of engineering documents/permits/ construction plans and specifications
4	Permanent closure of UST systems	90 days after completion of project planning and coordination
5	Remedial excavation and soil compliance sampling	90 days after completion of project planning and coordination
6	Achieve the required cleanup levels at the points of compliance established for the Site (Restoration Time Frame)	One year after execution of new Agreed Order or Consent Decree
7	Begin post-excavation VI assessment	90 days after completion of remedial excavation, compliance soil sampling, and backfill
8	Complete post-excavation VI assessment, including data evaluation	One year after start of post-excavation VI assessment
9	Implement contingency plan for use of institutional controls (if required)	One year after completion of post-excavation VI assessment
10	Submit construction documentation and site closure request	90 days after completion of post-excavation VI assessment or following completion of implementing contingency plan for use of institutional controls (if required)
11	Five-year review (if required)	Five years after completion of contingency plan for use of institutional controls

6.6 RESTORATION TIME FRAME

As defined by Chapter 173-340 WAC, restoration time frame means the period of time needed to achieve the required cleanup levels at the POCs established for a site. As described above in Section 6.1, the proposed cleanup action is expected to achieve the required cleanup levels and the POCs for the Site upon completion of the remedial excavation activities. Therefore, the time required to implement the post-excavation VI assessment and other activities/phases that follow it are not included in the restoration time frame.

The start of the restoration time frame is expected to begin upon initiation of activities to implement the cleanup action. Note that the required time for completion of a new Agreed Order or Consent Decree is not included in this estimate of the restoration time frame (Section 6.4.1). Therefore, the restoration time frame would begin upon the execution of a new order or decree for the Site, with the preparation of engineering documents, permits, and construction plans and specifications.

As shown in the schedule of implementation in Section 6.5, the restoration time frame for the proposed cleanup action is expected to be approximately one year.

6.7 INSTITUTIONAL CONTROLS

As discussed in Section 6.1, it is possible that each of the cleanup action objectives identified in Section 4.5 will be addressed by permanent closure of the abandoned and regulated USTs and excavation of soils exceeding the Site cleanup standards. However, if the results of the post-excavation VI assessment indicate that naphthalene in shallow soil vapor is still a transport pathway of concern, then institutional controls will be necessary to eliminate the potential for a complete VI exposure pathway under a future building or land use change at the Site.

Final determination and design of institutional controls will be based on the results of the post-excavation VI assessment. However, it is expected that institutional controls required to address naphthalene in a potential shallow soil vapor transport pathway may include an environmental covenant that includes a deed restriction or other restrictive measures. It is expected that institutional controls to address a potential shallow soil vapor transport pathway may be required at the following properties that are part of, or immediately adjacent to, the Site:

- Former service station property located at 2021 6th Street;
- Residential property located at 2005/2007 6th Street; and
- Residential property located at 1936 5th Street.

If required, institutional controls for these properties would involve additional VI assessment, or mitigation, if a building or land use change was proposed with the potential to create a complete VI exposure pathway to naphthalene present in shallow soil vapor at the Site. For example, if one of these properties was to be redeveloped to include construction of a building with an occupied subgrade space, institutional controls would require:

1. VI assessment results demonstrating that the project would not create a complete VI exposure pathway for naphthalene in shallow soil vapor to indoor air in the proposed building; or
2. The proposed project to include a vapor mitigation system capable of eliminating the potential for a complete VI exposure pathway to indoor air in the proposed building.

If one or more institutional controls are required as part of the cleanup action, the following additional requirements will also apply to the cleanup action:

- Notice would have to be provided to, and comments sought from, the city or county department with land use planning authority for real property in the Site vicinity per Chapter 173-340-600(14) WAC.
- A periodic review by Ecology will be required per the requirements of Chapter 173-340-420 WAC.

6.8 PERIODIC REVIEW

As previously discussed in Section 6.7, per WAC 173-340-420(2)(a), a periodic review will be required for the Site **if** the cleanup action must utilize one or more institutional controls to address potential exposure pathways to hazardous substances at the Site.

A periodic review consists of a review by Ecology of post-cleanup site conditions and monitoring data to assure that human health and the environment are being protected. Periodic reviews must be conducted by Ecology at least every five years after the initiation of the cleanup action. Ecology may require PLPs to submit information required to conduct a periodic review.

As specified by WAC 173-340-420(4), when evaluating whether human health and the environment are being protected, the factors that Ecology shall consider include:

a) The effectiveness of ongoing or completed cleanup actions, including the effectiveness of engineered controls and institutional controls in limiting exposure to hazardous substances remaining at the site;
b) New scientific information for individual hazardous substances or mixtures present at the site;
c) New applicable state and federal laws for hazardous substances present at the site;
d) Current and projected site and resource uses;
e) The availability and practicability of more permanent remedies; and
f) The availability of improved analytical techniques to evaluate compliance with cleanup levels.

If, based on the results of a periodic review, Ecology determines that substantial changes in a cleanup action are necessary to protect human health and the environment at a site, Ecology will require that a revised cleanup action plan be prepared.

Sites with institutional controls shall remain subject to periodic reviews as long as the institutional controls are required by MTCA.

6.9 PUBLIC NOTIFICATION AND PARTICIPATION

As described by WAC 173-340-600, public participation is an integral part of Ecology's responsibilities under MTCA. Ecology's goal is to provide the public with timely information and meaningful opportunities for participation through the use of a public participation program that includes notice of proposed actions and opportunities for the public to provide comments.

For the Newman's Chevron Site, Ecology plans to consolidate the notice and comment opportunities for each of the three public review draft deliverables required under Agreed Order No. DE 14246. These deliverables include:

- Public Review Draft RI Report (Leidos, 2023);
- Public Review Draft Feasibility Study (Leidos, 2024); and
- Public Review Draft Cleanup Action Plan.

Public notice and comment opportunities will be provided as required by Chapter 173-340-600 WAC, with a public comment period of at least 30 days. During the public comment period for the above-referenced Site documents, if 10 or more persons request a public meeting, Ecology

will hold a public meeting for the purpose of receiving comments. Because the proposed cleanup action uses cleanup levels based on a site-specific risk assessment, the public notice must specifically identify and invite comments on this element of the cleanup plan. This notice must also include a statement indicating the availability of public participation grants.

To date, the Parties are not aware of any public concerns, including tribal rights and interests, regarding the methodologies or conclusions of the RI, FS, or DCAP. It is expected that public concerns, if any exist, will be identified during the public comment period for these documents, after which, any comments received will be addressed by Ecology and/or the Parties.

6.9.1 Consideration of Vulnerable Populations and Overburdened Communities

As required by Chapter 173-340-130 WAC, Ecology will consider the interests of likely vulnerable populations and overburdened communities (VPOCs) when assessing the public participation needs at a site. Ecology Implementation Memorandum No. 25: *Identifying Likely Vulnerable Populations and Overburdened Communities under the Cleanup Regulations* (Ecology, 2024b) provides guidance on what actions are needed to determine whether the population threatened by a contaminated site includes a likely VPOC. Per the test guidance provided by Implementation Memorandum No. 25, a potentially exposed population includes a likely VPOC if the population meets any one of the following three criteria:

1. The potentially exposed population is located in a census tract that ranks a 9 or 10 on the Environmental Health Disparities (EHD) Index from the Washington State Department of Health's EHD Map (https://fortress.wa.gov/doh/wtnibl/WTNIBL/).

   Findings: The Newman's Chevron Site is located in census tract 812, which has been assigned a rank of 6 on the EHD map.

2. The potentially exposed population is located in a census tract that is at or above the 80th Washington state percentile of the Demographic Index from the U.S. Environmental Protection Agency's (USEPA) Environmental Justice Screening and Mapping Tool, EJScreen (https://www.epa.gov/ejscreen).

   Findings: The Newman's Chevron Site is located in an area that is at the 52nd Washington state percentile of the Demographic Index according to EJScreen.

3. The potentially exposed population is located in a census tract that is at or above the 80th Washington state percentile of the Supplemental Demographic Index from the USEPA's EJScreen.

   Findings: The Newman's Chevron Site is located in an area that is at the 62nd Washington state percentile of the Supplemental Demographic Index according to EJScreen.

Therefore, based on findings for the test criteria established by Implementation Memorandum No. 25, the population that could be potentially exposed to hazardous substances originating from the Newman's Chevron Site does not include a likely VPOC.

7 REFERENCES

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Tables

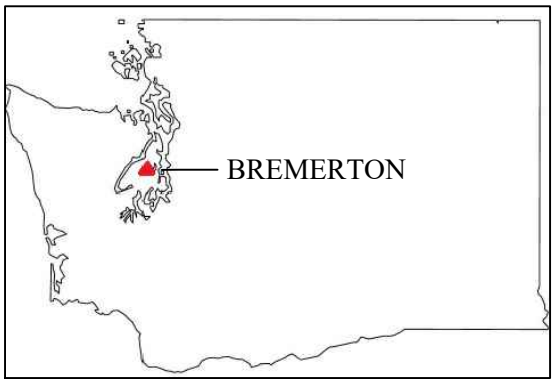
TABLE 1
APPLICABLE, RELEVANT, AND APPROPRIATE REQUIREMENTS (ARARS)
NEWMAN'S CHEVRON SITE
Bremerton, Washington

ARAR	Reference	Description/Scope	Applicability for the Site
Model Toxics Control Act Cleanup Regulation	• Chapter 173-340 WAC	Regulations govern the investigation and cleanup of sites in Washington state contaminated by the release of hazardous substances.	Implementation of the cleanup action will be subject to Parts 4, 5, and 6 of the MTCA Cleanup Regulation.
Washington Industrial Safety and Health Act	• Chapter 49.17 RCW	To create, maintain, continue, and enhance the industrial safety and health program of Washington state, which shall equal or exceed the standards prescribed by the Occupational Safety and Health Act of 1970.	Regulations are relevant for employees performing cleanup operations at the Site.
Safety Standards for Hazardous Waste	• Chapter 296-843 WAC	Establishes safety standards for hazardous waste, as adopted under the Washington Industrial Safety and Health Act.	Regulations are relevant for employees performing cleanup operations at uncontrolled hazardous waste sites, including those listed under Chapter 173-340 WAC.
Underground Storage Tank Regulations	• Chapter 173-360A WAC	Establishes a state-wide underground storage tank program to address the serious threat to human health and the environment posed by leaking underground storage tanks containing petroleum and other regulated substances.	Closure of the abandoned and regulated USTs at the Site will be subject to the requirements established by Part 8 of these regulations.
State Environmental Policy Act (SEPA) Rules	• Chapter 197-11 WAC	Establishes uniform requirements for compliance with SEPA to determine whether a proposal will have significant environmental impacts, and whether an environmental impact statement will be needed to analyze a proposal.	May be required as component of City of Bremerton Commercial Site Plan Review Application.

TABLE 1
APPLICABLE, RELEVANT, AND APPROPRIATE REQUIREMENTS (ARARS)
NEWMAN'S CHEVRON SITE
Bremerton, Washington

ARAR	Reference	Description/Scope	Applicability for the Site
Minimum Standards for Construction and Maintenance of Wells	• Chapter 173-160 WAC	Establishes minimum standards for the construction and decommissioning of all wells in the state of Washington.	Applicable for future repairs, modifications, or decommissioning of existing shallow soil vapor sampling probes at the Site, which were constructed and permitted as resource protection wells under this regulation.
Hazardous Waste Management / Dangerous Waste Regulations	• 40 CFR Part 261 • Chapter 70A.300 RCW • Chapter 173-303 WAC	Regulations relevant to the designation, planning, regulation, control, and management of hazardous and dangerous wastes.	May be relevant for the off-site transportation and/or disposal of petroleum impacted soil or other hazardous materials generated by the cleanup action.
Solid Waste Management	• Chapter 70A.205 RCW • Chapter 173-304 WAC • Chapter 173-350 WAC	Regulations relevant to solid waste handling, solid waste recovery, and/or recycling to prevent land, air, and water pollution and conserve natural, economic, and energy resources.	May be relevant for the off-site transportation and/or disposal of petroleum impacted soil or other hazardous materials generated by the cleanup action.
Transportation of Hazardous Material	• 49 USC, Chapter 51 • 49 CFR, Subchapter C	Regulations for the safe and secure transportation of hazardous materials in commerce.	May be relevant for the off-site transportation of petroleum impacted soil or other hazardous materials generated by the cleanup action.
City of Bremerton Building and Land Use Permits	• Bremerton Department of Community Development	City Department with authority to regulate and issue building and land use permits in the City of Bremerton.	May require one or more permits related to service station infrastructure demolition or land disturbance activities (e.g., grading permit, construction stormwater permit, etc.) included in the cleanup action.
City of Bremerton Right-of-Way Use	• Bremerton Municipal Code Chapter 11.02	Provides for the issuance of right-of-way use permits in order to regulate activities within the rights-of-way in the City of Bremerton.	May be required for UST closure and soil excavation activities proposed in the western portion of the former service station property, adjacent to the Naval Avenue right-of-way.

Figures



N

Newman's Chevron 2021 6th Street Bremerton, Washington	Site Vicinity Map DATE: 7/30/2025 | DRAWING: 204177_CAP Vicinity_Map.dwg	FIGURE 1

IMAGE SOURCE: GOOGLE EARTH, 2017.

SCALE

0 25 50 75ft

N

Newman's Chevron
2021 6th Street
Bremerton, Washington

Site Map

DATE: 7/30/2025

DRAWING: 204177 Ecology CAP Figures.dwg

FIGURE
2

LEGEND:

Approximate Current Parcel Boundary

Approximate Former Parcel Boundaries

Approximate Lot Boundaries

15 Kitsap County Assessor's Tax Lot Identification Number

Tax Description for Kitsap County Parcel # 3717-002-015-0106

Parcel I: Lots 15 and 16, and the East 5 feet of Lot 17, Block 2, Wm. Bremer's First Addition of the Cities of Bremerton and Charleston, as per plat recorded in Volume 3 of Plats, Page 4, records of Kitsap County, Washington.

Parcel II: The West 25 feet of Lot 17, and all of Lot 18, Block 2, Wm. Bremer's First Addition of the Cities of Bremerton and Charleston, as per plat recorded in Volume 3 of Plats, Page 4, records of Kitsap County, Washington.

Parcel III: The North 75 feet of Lots 19 and 20, Block 2, Wm. Bremer's First Addition of the Cities of Bremerton and Charleston, as per plat recorded in Volume 3 of Plats, Page 4, records of Kitsap County, Washington.

IMAGE SOURCE: GOOGLE EARTH, 2017.

SCALE

0 25 50 75ft

N

Newman's Chevron
2021 6th Street
Bremerton, Washington

Current and Former Property Boundaries

DATE: 7/30/2025

DRAWING: 204177 Ecology CAP Figures.dwg

FIGURE
3

LEGEND:

- SB-9 — RI Soil Boring Location (August 2018)
- SB-20 — RI Soil Boring Location (July 2019)
- SB-30 — RI Soil Boring Location (February 2020)
- SVP-1 — RI Soil Vapor Sampling Probe Location
- Approximate Location of Undocumented UST
- BM-1 — Pre-RI Soil Boring Location (PEI, 2009)
- B-2 — Pre- RI Soil Boring Location (Geoscience Management, 2000)
- Pre-RI Test Excavation and Confirmation Samples (Geoscience Management, 2000)
- N — Pre-RI Confirmation Soil Sample (AGI, 1990)
- Pre-RI Test Pit (AGI, 1990)
- Approximate Location of Former Service Bay Hoist
- A — A' Geologic Cross-Section Location Line

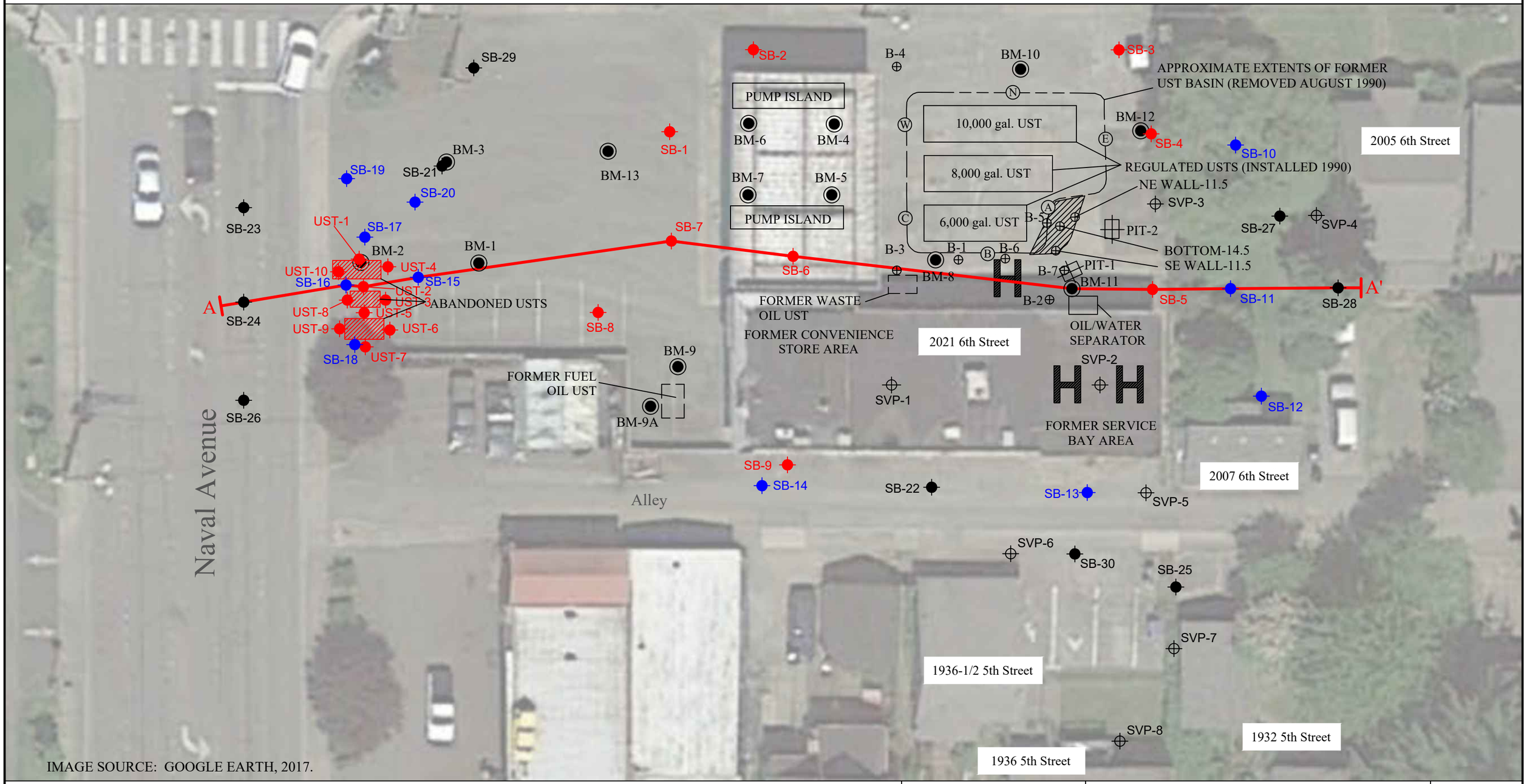


IMAGE SOURCE: GOOGLE EARTH, 2017.

SCALE

0 20 40 60ft

N

Newman's Chevron
2021 6th Street
Bremerton, Washington

Location of Cross-Section Line A-A'

DATE: 7/30/2025

DRAWING: 204177 Ecology CAP Figures.dwg

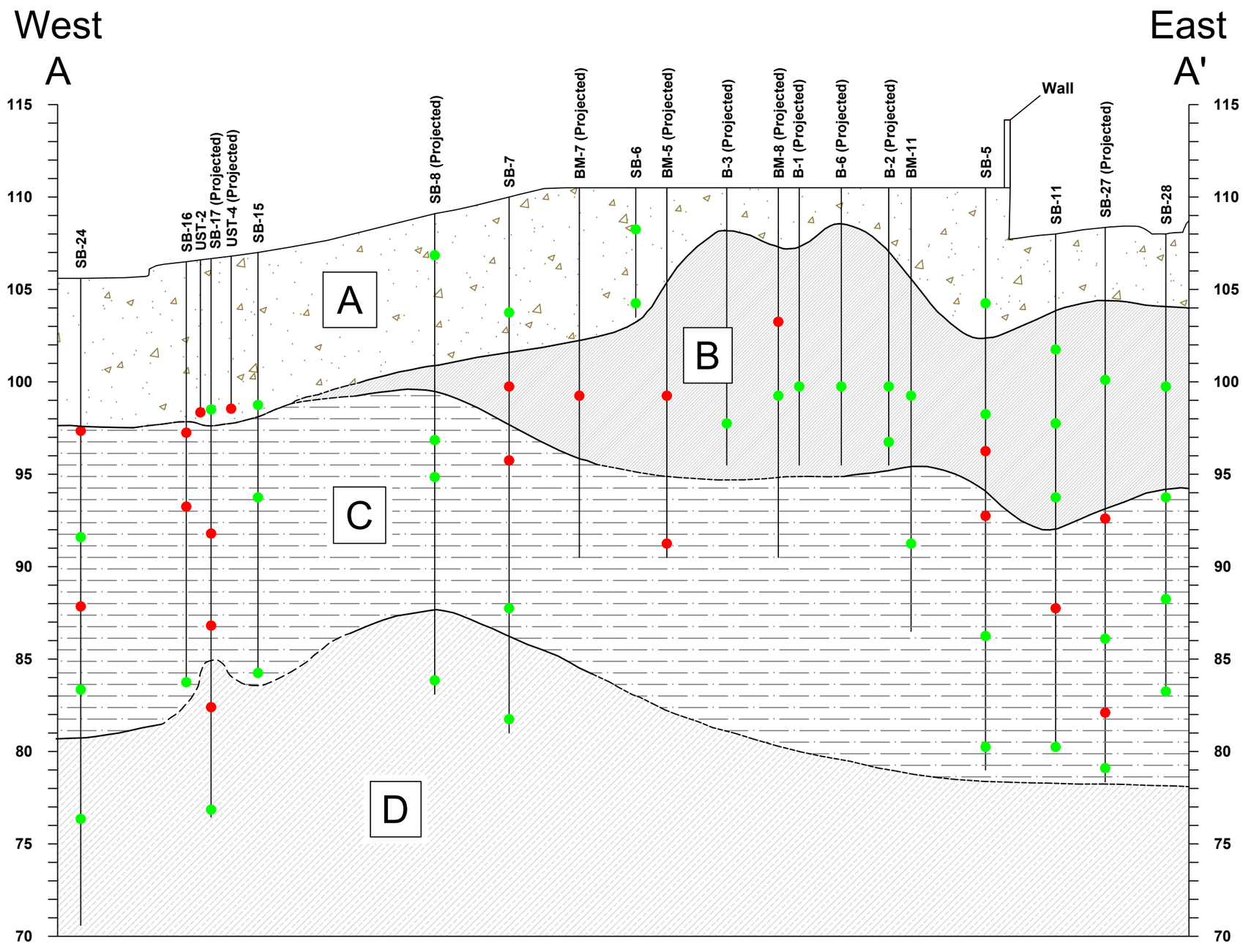
FIGURE 4

LEGEND:

- Soil Boring
- Contact line between soil types
- Contact line between soil types (inferred)
- Location of soil sample with laboratory results exceeding MTCA Method A cleanup levels for one or more analytes
- Location of soil sample with laboratory results less than MTCA Method A cleanup levels for all analytes

SOIL LITHOLOGY LEGEND:

- Unit A: Fill and recent deposits
- Unit B: Glacial lacustrine silt with clay
- Unit C: Glacial till and related material
- Unit D: Glacial advance outwash sand



0 12 24 48

HORIZONTAL SCALE: 1" = 24'
VERTICAL SCALE: 1" = 6'

Newman's Chevron
2021 6th Street
Bremerton, Washington

Geologic Cross-Section A-A'

DATE: 7/30/2025

DRAWING: 204177 CAP X-Section.dwg

FIGURE
5

LEGEND:

- SB-9 — RI Soil Boring Location (August 2018)
- SB-20 — RI Soil Boring Location (July 2019)
- SB-30 — RI Soil Boring Location (February 2020)
- SVP-1 — RI Soil Vapor Sampling Probe Location
- Approximate Location of Undocumented UST
- BM-1 — Pre-RI Soil Boring Location (PEI, 2009)
- B-2 — Pre- RI Soil Boring Location (Geoscience Management, 2000)
- Pre-RI Test Excavation and Confirmation Samples (Geoscience Management, 2000)
- N — Pre-RI Confirmation Soil Sample (AGI, 1990)
- Pre-RI Test Pit (AGI, 1990)
- H — Approximate Location of Former Service Bay Hoist
- Approximate Extent of Soil Containing Gasoline-Range Petroleum Impacts (GRO and/or BTEX) at Concentrations Greater than MTCA Method A Cleanup Levels
- Approximate Extent of Soil Containing GRO and DRO at Concentrations Greater than MTCA Method A Cleanup Levels

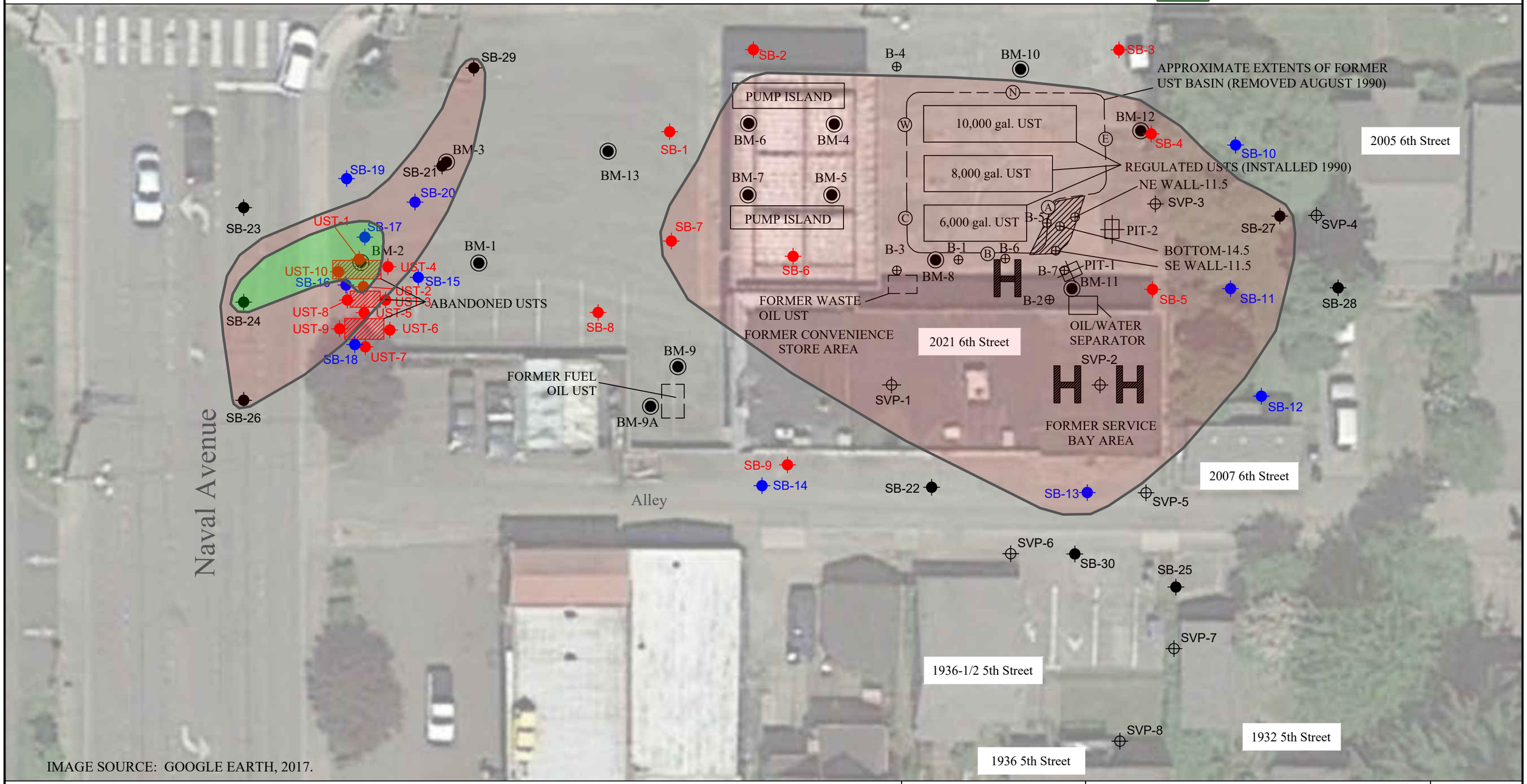


IMAGE SOURCE: GOOGLE EARTH, 2017.

SCALE

0 20 40 60ft

N

Newman's Chevron
2021 6th Street
Bremerton, Washington

Approximate Extents of Petroleum Impacted Soil

DATE: 7/30/2025

DRAWING: 204177 Ecology CAP Figures.dwg

FIGURE 6

LEGEND:

- SB-9 — RI Soil Boring Location (August 2018)
- SB-20 — RI Soil Boring Location (July 2019)
- SB-30 — RI Soil Boring Location (February 2020)
- SVP-1 — RI Soil Vapor Sampling Probe Location
- Approximate Location of Undocumented UST
- BM-1 — Pre-RI Soil Boring Location (PEI, 2009)
- B-2 — Pre- RI Soil Boring Location (Geoscience Management, 2000)
- Pre-RI Test Excavation and Confirmation Samples (Geoscience Management, 2000)
- N — Pre-RI Confirmation Soil Sample (AGI, 1990)
- Pre-RI Test Pit (AGI, 1990)
- H — Approximate Location of Former Service Bay Hoist
- Soil Sampling Data for Soil Samples Exceeding Site-Specific Method B Cleanup Levels Above the Standard Point of Compliance for Direct-Contact (15 feet bgs)

Soil Sample ID: B		
Depth (feet)	Date	Results
10.5	8/1990	TPH @ 4,875 mg/kg

Soil Sample ID: UST-2		
Depth (feet)	Date	Results
6	8/28/2018	GRO @ 670 mg/kg DRO @ 2,800 mg/kg

Soil Sample ID: BM-5		
Depth (feet)	Date	Results
11-12	7/20/2009	GRO @ 4,100 to 4,400 mg/kg

Soil Sample ID: B		
Depth (feet)	Date	Results
10.5	8/1990	TPH @ 4,875 mg/kg

SB-2, SB-3, SB-1, SB-19, SB-21, SB-20, SB-23, SB-17, SB-7, SB-6, SB-15, SB-16, SB-24, SB-8, SB-18, SB-26, SB-9, SB-14, SB-22, SB-13, SB-12, SB-4, SB-10, SB-5, SB-11, SB-27, SB-28, SB-30, SB-25

BM-3, BM-13, BM-1, BM-2, BM-9, BM-9A, BM-6, BM-4, BM-7, BM-5, BM-10, BM-12, BM-8, BM-11

B-4, B-1, B-3, B-6, B-7, B-2, B-5

UST-1, UST-10, UST-4, UST-2, UST-3, UST-8, UST-5, UST-9, UST-6, UST-7

SVP-3, SVP-4, SVP-2, SVP-5, SVP-6, SVP-7, SVP-8

PIT-1, PIT-2

PUMP ISLAND, PUMP ISLAND

10,000 gal. UST, 8,000 gal. UST, 6,000 gal. UST

APPROXIMATE EXTENTS OF FORMER UST BASIN (REMOVED AUGUST 1990)

REGULATED USTS (INSTALLED 1990)

NE WALL-11.5

BOTTOM-14.5

SE WALL-11.5

ABANDONED USTS

FORMER WASTE OIL UST

FORMER CONVENIENCE STORE AREA

FORMER FUEL OIL UST

OIL/WATER SEPARATOR

FORMER SERVICE BAY AREA

2005 6th Street

2021 6th Street

2007 6th Street

1936-1/2 5th Street

1936 5th Street

1932 5th Street

Naval Avenue

Alley

IMAGE SOURCE: GOOGLE EARTH, 2017.

SCALE

0 20 40 60ft

N

Newman's Chevron
2021 6th Street
Bremerton, Washington

Exceedences of Method B Soil Cleanup Levels

DATE: 7/30/2025

DRAWING: 204177 Ecology CAP Figures.dwg

FIGURE 7

In the eastern portion of the former service station property, the regulated USTs would be decommissioned to achieve regulatory closure. Shallow TPH impacts to soil (< 15 feet bgs) near soil boring locations B and BM-5 that exceed the site-specific Method B cleanup level for this area (3,353 mg/kg) would be addressed through excavation.

Soil Sample ID: BM-5		
Depth (feet)	Date	Results
11-12	7/20/2009	GRO @ 4,100 to 4,400 mg/kg

PUMP ISLAND

10,000 gal. UST

8,000 gal. UST

6,000 gal. UST

REGULATED USTS (INSTALLED 1990)

2005 6th Street

PUMP ISLAND

Soil Sample ID: UST-2		
Depth (feet)	Date	Results
6	8/28/2018	GRO @ 670 mg/kg DRO @ 2,800 mg/kg

Soil Sample ID: B		
Depth (feet)	Date	Results
10.5	8/1990	TPH @ 4,875 mg/kg

B

ABANDONED USTS

2021 6th Street

In the western portion of the former service station property, the abandoned USTs would be decommissioned to achieve regulatory closure. Shallow TPH impacts to soil (< 15 feet bgs) near soil boring location UST-2 that exceed the site-specific Method B cleanup level for this area (2,477 mg/kg) would be addressed through excavation.

Naval Avenue

Alley

2007 6th Street

If necessary, a contingency plan would be implemented to use institutional controls to provide notification and communicate land-use restrictions or other requirements until all soil vapor exposure routes of concern are addressed. Institutional controls may be required at the following properties:

- 2021 6th Street
- 2005/2007 6th Street
- 1936 5th Street

1936-1/2 5th Street

1932 5th Street

1936 5th Street

IMAGE SOURCE: GOOGLE EARTH, 2017.

SCALE

0 20 40 60ft

N

Newman's Chevron
2021 6th Street
Bremerton, Washington

Proposed Cleanup Action: Abandoned and Regulated UST System Closure and Soil Excavation, and Institutional Controls

DATE: 7/30/2025

DRAWING: 204177 Ecology CAP Figures.dwg

FIGURE
8

Appendix A
Compliance Monitoring Plan

REVISED PRELIMINARY REVIEW DRAFT
COMPLIANCE MONITORING PLAN
NEWMAN'S CHEVRON
2021 6th Street
Bremerton, Washington

July 30, 2025

Prepared for:
Washington State Department of Ecology – NW Region Office
15700 Dayton Ave. N
Shoreline, Washington 98133

Prepared by:
Leidos Inc.
11824 North Creek Parkway N, Suite 101
Bothell, Washington 98011

On Behalf of:
Chevron Environmental Management Company
5001 Executive Parkway, Suite 200
San Ramon, California 94583

Nordic Properties, Inc.
P.O. Box 84
Port Orchard, Washington 98366

and

Victory Business Park L.L.C.
1503 Lower Marine Drive
Bremerton, Washington 98312

leidos

REVISED PRELIMINARY REVIEW DRAFT
COMPLIANCE MONITORING PLAN
NEWMAN'S CHEVRON
2021 6th Street
Bremerton, Washington

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San Ramon, California

Nordic Properties, Inc.
Port Orchard, Washington

and

Victory Business Park L.L.C
Bremerton, Washington

Russell Shropshire, PE
Principal Engineer

leidos

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FIGURES

APPENDICES

REVISED PRELIMINARY REVIEW DRAFT
COMPLIANCE MONITORING PLAN
NEWMAN'S CHEVRON

1 INTRODUCTION

This preliminary review draft compliance monitoring plan (CMP) was prepared by Leidos, Inc. (Leidos), on behalf of Chevron Environmental Management Company (CEMC), Nordic Properties, Inc. (Nordic), and Victory Business Park L.L.C. (Victory) to support the proposed cleanup action to be conducted at the Newman's Chevron site (the Site), located at 2021 6th Street in Bremerton, Washington. A site map is included as Figure 1.

The preliminary review draft CMP has been prepared as an appendix to, and is intended to be used in conjunction with, the Draft Cleanup Action Plan (DCAP) for the Site.

2 OBJECTIVES AND LIMITATIONS

The objective of this preliminary review draft CMP is to partially fulfill the requirements specified by the Model Toxics Control Act (MTCA), as stated in Chapter 173-340-410 of the Washington Administrative Code (WAC), revised in January 2024 (Ecology, 2024), which requires compliance monitoring for all cleanup actions. Per this statute, compliance monitoring consists of:

- Protection monitoring – To confirm that human health and the environment are adequately protected during construction and the operation and maintenance period of an interim action or cleanup action as described in the health and safety plan (HASP);
- Performance monitoring – To confirm that the interim action or cleanup action has attained cleanup standards and, if appropriate, remediation levels or other performance standards such as construction quality control measurements or monitoring necessary to demonstrate compliance with a permit or where a permit exemption applies, the substantive requirements of other laws; and
- Confirmation monitoring – To confirm the long-term effectiveness of the interim action or cleanup action once cleanup standards and, if appropriate, remediation levels or other performance standards, have been attained.

Protection monitoring for the planned cleanup action is not addressed by this CMP. Instead, as allowed by WAC 173-340-410(2), General requirements, protection monitoring will be addressed by the future HASP(s) for the project.

The current preliminary review draft CMP is intended to address those portions of the performance and confirmation monitoring that are currently known or anticipated in association with the performance of the proposed cleanup action. However, the future final CMP for the project may require the inclusion of additional performance or confirmation monitoring requirements that have not yet been identified for the proposed cleanup action. Examples of such requirements may include construction quality control measurements or monitoring necessary to demonstrate compliance with a permit required by the local municipality. As allowed by WAC 173-340-410, additional performance and compliance monitoring may also be addressed in separate plans or submittals, such as those required by WAC 173-340-400.

As required by WAC 173-340-410, a sampling and analysis plan (SAP) for the project is included as Appendix A.

3 CLEANUP ACTION AND PERFORMANCE/CONFIRMATION MONITORING SCOPE

The proposed cleanup action was selected based on the results of the remedial investigation (RI) activities performed for the Site, which were documented in the RI Report (Leidos, 2023), and an evaluation of cleanup alternatives that was presented in the Feasibility Study Report (Leidos, 2024). Additional details regarding the proposed cleanup action are presented in the DCAP.

Under the proposed cleanup action, cleanup of the Site will be achieved by regulatory closure and planned removal[1] of the two underground storage tank (UST) systems present at the Site (including at least six individual USTs) and excavation of soils containing petroleum impacts exceeding location-specific MTCA Method B cleanup levels developed for the Site, to the point of compliance for direct contact (to a depth of 15 feet below ground surface [bgs]). Closure of the UST systems will also include removal of the dispenser islands and all ancillary UST piping. The locations of USTs and known exceedances of Method B soil cleanup levels at the Site are shown on Figure 2.

The three USTs present in the eastern portion of the Site were installed in 1990 and are labeled on Figure 2, and hereafter referred to as the regulated USTs. The three USTs located adjacent to Naval Avenue are believed to be associated with an earlier service station that operated on the western portion of the property prior to 1961. Ecology's UST program contains no record of these USTs. They are labeled on Figure 2, and hereafter referred to as the abandoned USTs.

The cleanup action also includes a contingency plan that, if necessary, will utilize institutional controls to address the potential for a soil vapor intrusion pathway to impact areas of the Site under possible future building or land use scenarios.

Based on the planned scope of the proposed cleanup action, the following performance/ confirmation monitoring tasks are currently anticipated.

- Collection and analysis of soil samples to:
  - Comply with site assessment requirements specified by WAC 173-360A-0730, which are applicable for the regulated UST system in the eastern portion of the Site;
  - Facilitate selection of appropriate soil reuse and/or disposal alternatives for overburden soils excavated for the project; and
  - Determine when sufficient soil excavation has been performed to achieve the soil cleanup standards for the Site.
- Collection and analysis of soil vapor samples for confirmation monitoring to assess the need for further action or institutional controls to address the potential for naphthalene in shallow soil vapor to create a vapor intrusion exposure pathway of concern in the event

[1] In-place closure of one or more underground storage tanks may be considered if removal of the tank(s) is expected to undermine soils supporting adjacent structures.

of future redevelopment or other changes in land use for properties that are part of the Site.

4 SOIL SAMPLE COLLECTION AND ANALYSIS

4.1 PREPARATION FOR EXCAVATION AND SOIL SAMPLING ACTIVITIES

Prior to beginning any intrusive subsurface activities associated with the proposed cleanup action, areas with known exceedances of the site-specific Method B soil cleanup levels will be located and mapped. A grid or other system will be developed to allow the location of all samples and subsurface features relative to an assigned datum using a three-dimensional coordinate system (i.e., northing, easting, and depth).

4.2 UST SYSTEM CLOSURE SITE ASSESSMENT SOIL SAMPLING

WAC 173-360A-0730 requires a site assessment to be performed when a UST system, or tank or piping run that is part of a UST system, undergoes permanent closure.

For the abandoned USTs in the western portion of the Site, this requirement is not applicable because a release from this UST system has been previously confirmed and reported to Ecology, and further remedial action is necessary to clean up the confirmed release (WAC 173-360A-0810(3)).

In the eastern portion of the Site, a petroleum release has also been confirmed and reported to Ecology, and further remedial action is also necessary to clean up the release. However, the confirmed release is believed to have resulted from the previous UST system in this portion of the Site, which was removed in 1990. Therefore, a site assessment meeting the requirements of WAC 173-360A-0730 will be required to complete closure for the regulated USTs that are currently present at the Site.

Site assessment activities will be performed by an International Code Council (ICC)-certified Washington State Site Assessor, a Washington State Licensed Hydrogeologist, or a Washington State Professional Engineer, as described in WAC 173-360A-0930(3).

The number and location of soil samples collected for the regulated UST system site assessment will be consistent with the guidance provided in Appendix B (Minimum number and location of soil samples) of Ecology Publication 21-09-050, "Site Assessment Guidance for Underground Storage Tank Systems" (Ecology, 2022).

Soil samples will be analyzed for the Site contaminants of concern (COCs) by the laboratory analytical methods presented in Section A.3.9 of the SAP (Appendix A).

4.3 SOIL SEGREGATION AND SAMPLING FOR REUSE AND DISPOSAL CLASSIFICATION

Implementation of the proposed cleanup action is expected to require excavation of overburden soils with low levels or no indications of petroleum hydrocarbon impact (that do not exceed the soil cleanup levels for the Site) in order to access the USTs and areas of soil that must be removed to complete the cleanup. Leidos will utilize the following procedures to assess excavated soils and determine appropriate reuse or disposal options for the soils encountered.

Leidos personnel will observe all soil excavation activities and record observations in a field logbook. Documentation will include a record of soil types and subsurface conditions encountered, visual and olfactory evidence of petroleum impact, and results of routine field screening. Soil logging and field screening procedures are presented in the SAP.

Based on excavation observations and field screening results, Leidos will direct the segregation of excavated soil. Soils are expected to be segregated and stockpiled into one or more of the following categories:

- Soils having no indications of petroleum impact;
- Soils having indications of mild to moderate petroleum impact; and
- Soils having indications of heavy petroleum impact.

However, direct-loading of soils to trucks may be utilized if sufficient space is not available for on-site stockpiling.

Prior to reuse or disposal, soil stockpiles will be sampled and analyzed to confirm compliance with any requirements of their intended reuse or disposal profile. Soil stockpile samples will be collected according to the procedures outlined in the SAP. Soil stockpile samples will be collected and analyzed according to the procedures specified in Section A.3 of the SAP. However, when necessary, soil stockpile samples may also be submitted for additional analyses required by an offsite disposal facility or to confirm their structural suitability for reuse as backfill at the Site.

4.4 SOIL EXCAVATION APPROACH AND PERFORMANCE MONITORING/SAMPLING

As previously discussed in Section 3, excavation has been proposed to address exceedances of Method B soil cleanup levels for Site, which are known to exist at three soil boring locations (UST-2, BM-5, and B) shown on Figure 2. Based on the discrete nature of these locations, it is expected that the petroleum impacts present at these locations will be addressed by three separate excavations. Each excavation will be advanced only to the depth and lateral extents necessary to demonstrate compliance with Site cleanup levels for soil, to the point of compliance for direct contact (15 feet bgs).

Prior to the start of each excavation, the location of the target soil boring will be determined to the extent possible based on current and historical Site figures and existing available information at the Site. For example, it is possible that the specific locations of soil borings UST-2 and BM-5 can be identified by the asphalt or concrete surface patches placed when these borings were abandoned. For soil boring B, evidence of the southern boundary of the 1990 UST excavation may be present to assist in identifying its approximate location. ***Therefore, will be important to identify these locations prior to any disturbance of these areas that may result from UST or other infrastructure removal, and to utilize a methodology that will allow these locations to be positively identified following any ground disturbing activities.***

At each location, excavation is expected to be completed in a series of approximately 5-foot lifts. The lateral extent of each excavation will be minimized to the extent possible, with a goal of limiting the length of each sidewall to a minimum of 3 feet (unless a larger excavation is warranted due to uncertainties regarding the location of the target soil boring). However, it is recognized that sidewall dimensions may increase due to soil sloughing, necessary sloping or

benching, or to address strong indications of petroleum contamination. At the completion of each 5-foot lift, Leidos personnel will log the soil types and subsurface conditions encountered and will collect at least five soil samples for field screening according to the procedures outlined in Section A3.3 of the SAP. These samples will include one sample from the bottom of the lift and one from each of the four excavation sidewalls within the depth range of the lift (see below). If required, additional samples will be collected to ensure that at least one soil sample is collected for every 20 feet of sidewall length and at least one sample is collected for every 400 square feet of exposed bottom area. Soil samples will be collected at depths/locations with staining or other indications of possible petroleum impact, when present. Field screening results will be used to direct how excavation soils are stockpiled for reuse or disposal, and to identify potential locations for collection of samples for laboratory analysis.

Successive excavation lifts will be advanced and associated field screening sample collection/ analysis performed until:

1. The excavation is advanced to a depth equal to or greater than 15 feet bgs; or
2. The excavation is advanced to a depth exceeding that of the known cleanup level exceedance for the associated target boring, and field screening results suggest that petroleum contamination is no longer present.

Following advancement of the excavation to the expected depth necessary to achieve the cleanup standards for the Site, the following performance monitoring soil samples will be collected and submitted for laboratory analysis:

- Bottom samples – At least one for every 400 square feet of exposed bottom area.
- Sidewall samples – At least four, consisting of at least one for every 20 feet of sidewall length for each excavation sidewall. Sidewall samples shall be collected:
    - From each sidewall, at the approximate depth that historic sampling results for that location indicated an exceedance of the soil cleanup levels for the Site (for example, at the location of soil boring BM-5, four sidewall samples will be collected at a depth of approximately 11 to 12 feet bgs); and
    - Other depths or locations from which field screening results for sidewall sample collected above 15 feet bgs display moderate or stronger indications of petroleum impact (i.e., visual indications of staining or the presence of residual petroleum product, moderate to strong odor, moderate to heavy sheening, or PID headspace readings greater than approximately100 parts per million).

Soil samples will be collected and analyzed according to the procedures specified in Section A.3 of the SAP, which is included as Appendix A to this CMP. When necessary, these samples will be submitted for analysis on an expedited turn-around-time, or an on-site laboratory may be utilized.

Upon receipt and evaluation of laboratory results, Leidos will perform a direct comparison of the sampling results for each excavation area to the soil cleanup levels for the Site. If all soil sampling results for an excavation are in compliance, then the excavation will be deemed complete and approved for backfill. However, if one or more sidewalls samples collected above a depth of 15 feet bgs contain impacts above the Site cleanup levels, then the excavation will be expanded (to the extent practicable without undermining adjacent infrastructure) to the distance necessary to address remaining residual impacts. Excavations will not be approved for backfill

until performance monitoring sampling results indicate that compliance with soil cleanup levels has been achieved in each excavation sidewall, or the Leidos Project Manager has determined that further expansion of an excavation area is not feasible due to adjacent structures.

5 POST-EXCAVATION SOIL VAPOR CONFIRMATION MONITORING

As discussed in Section 6.1 of the DCAP, although the planned remedial excavation is expected to achieve the cleanup standards established for the Site, it may not completely address the presence of naphthalene in shallow soil vapor at concentrations exceeding current MTCA Method B screening levels for soil gas. Therefore, the planned cleanup action includes confirmation monitoring, consisting of two rounds of soil gas sampling for naphthalene using United States Environmental Protection Agency Method TO-17. Samples will be collected at existing soil vapor sampling probe locations SVP-1 through SVP-6 (see Figure 2), where naphthalene was previously detected at concentrations above the MTCA Method B screening level of 2.5 micrograms per cubic meter (Leidos, 2023).

Two rounds of sampling will be performed, in order to include consideration of potential fluctuations of naphthalene concentrations in soil gas in response to seasonal changes in Site conditions, such as soil moisture levels, and weather conditions. One round of sampling will be performed during summer-like conditions. This round of sampling is expected to be performed between approximately late June to mid-September and is intended to be representative of seasonal conditions with lower levels of soil moisture, periods of higher and more stable barometric pressure, and higher temperatures. The other round of sampling will be performed during winter-like conditions. This round of sampling is expected to be performed between approximately early December and late February and is intended to be representative of seasonal conditions with higher levels of soil moisture, periods of lower and more variable barometric pressure, and lower temperatures.

The first round of post-excavation soil vapor confirmation monitoring will be performed at least 90 days after completion of the soil cleanup excavation, including collection of all soil compliance samples and placement and compaction of backfill.

If the analytical results from both sampling events show no exceedance of the naphthalene screening level, then post-excavation soil gas sampling will be considered complete. However, if any results from these sampling events indicate an exceedance of the naphthalene screening level, then further evaluation and discussion with Ecology will take place to determine if further action or institutional controls are warranted to complete the cleanup action.

Post-excavation soil vapor sampling procedures are presented in the SAP, which is included as Appendix A.

6 REFERENCES

Ecology, 2004. "Collecting and Preparing Soil Samples for VOC Analysis." Washington State Department of Ecology Implementation Memorandum #5, Publication No. 04-09-087. June.

Ecology, 2016. "Guidance for Remediation of Petroleum Contaminated Sites." Washington State Department of Ecology Publication No. 10-09-057. Revised June.

Ecology, 2022. "Site Assessment Guidance for Underground Storage Tank Systems." Washington State Department of Ecology Publication No. 21-09-050. Revised October.

Ecology, 2024. "Model Toxics Control Act." Washington State Department of Ecology Publication No. 94-06. Revised January.

Leidos, 2023. "Public Review Draft Remedial Investigation Report, Newman's Chevron." May 26.

Leidos, 2024. "Public Review Draft Feasibility Study Report, Newman's Chevron." May 3.

LIMITATIONS

This technical document was prepared on behalf of the Parties and is intended for their sole use and for use by the local, state, or federal regulatory agency that the technical document was sent to by Leidos. Any other person or entity obtaining, using, or relying on this technical document hereby acknowledges that they do so at their own risk, and Leidos shall have no responsibility or liability for the consequences thereof.

Site history and background information provided in this technical document are based on sources that may include interviews with environmental regulatory agencies and property management personnel and a review of acquired environmental regulatory agency documents and property information obtained from the Parties and others. Leidos has not made, nor has it been asked to make, any independent investigation concerning the accuracy, reliability, or completeness of such information beyond that described in this technical document.

Recognizing reasonable limits of time and cost, this technical document cannot wholly eliminate uncertainty regarding the vertical and lateral extent of impacted environmental media.

Opinions and recommendations presented in this technical document apply only to site conditions and features as they existed at the time of Leidos site visits or site work and cannot be applied to conditions and features of which Leidos is unaware and has not had the opportunity to evaluate.

All sources of information on which Leidos has relied in making its conclusions (including direct field observations) are identified by reference in this technical document or in appendices attached to this technical document. Any information not listed by reference or in appendices has not been evaluated or relied on by Leidos in the context of this technical document. The conclusions, therefore, represent our professional opinion based on the identified sources of information.

Figures

IMAGE SOURCE: GOOGLE EARTH, 2017.

leidos

SCALE

0 25 50 75ft

N

Newman's Chevron
2021 6th Street
Bremerton, Washington

Site Map

DATE: 9/29/2023

DRAWING: 204177 FS Report Figures.dwg

FIGURE
1

LEGEND:

- SB-9 — RI Soil Boring Location (August 2018)
- SB-20 — RI Soil Boring Location (July 2019)
- SB-30 — RI Soil Boring Location (February 2020)
- SVP-1 — RI Soil Vapor Sampling Probe Location
- Approximate Location of Undocumented UST
- BM-1 — Pre-RI Soil Boring Location (PEI, 2009)
- B-2 — Pre- RI Soil Boring Location (Geoscience Management, 2000)
- Pre-RI Test Excavation and Confirmation Samples (Geoscience Management, 2000)
- N — Pre-RI Confirmation Soil Sample (AGI, 1990)
- Pre-RI Test Pit (AGI, 1990)
- H — Approximate Location of Former Service Bay Hoist
- Soil Sampling Data for Soil Samples Exceeding Site-Specific Method B Cleanup Levels Above the Standard Point of Compliance for Direct-Contact (15 feet bgs)

Soil Sample ID: B		
Depth (feet)	Date	Results
10.5	8/1990	TPH @ 4,875 mg/kg

Soil Sample ID: UST-2		
Depth (feet)	Date	Results
6	8/28/2018	GRO @ 670 mg/kg DRO @ 2,800 mg/kg

Soil Sample ID: BM-5		
Depth (feet)	Date	Results
11-12	7/20/2009	GRO @ 4,100 to 4,400 mg/kg

Soil Sample ID: B		
Depth (feet)	Date	Results
10.5	8/1990	TPH @ 4,875 mg/kg

SB-1, SB-2, SB-3, SB-4, SB-5, SB-6, SB-7, SB-8, SB-9, SB-10, SB-11, SB-12, SB-13, SB-14, SB-15, SB-16, SB-17, SB-18, SB-19, SB-20, SB-21, SB-22, SB-23, SB-24, SB-25, SB-26, SB-27, SB-28, SB-30

BM-1, BM-2, BM-3, BM-4, BM-5, BM-6, BM-7, BM-8, BM-9, BM-9A, BM-10, BM-11, BM-12, BM-13

B-1, B-2, B-3, B-4, B-5, B-6, B-7

SVP-1, SVP-2, SVP-3, SVP-4, SVP-5, SVP-6, SVP-7, SVP-8

UST-1, UST-2, UST-3, UST-4, UST-5, UST-6, UST-7, UST-8, UST-9, UST-10

ABANDONED USTS

PUMP ISLAND

PUMP ISLAND

APPROXIMATE EXTENTS OF FORMER UST BASIN (REMOVED AUGUST 1990)

10,000 gal. UST

8,000 gal. UST

6,000 gal. UST

REGULATED USTS (INSTALLED 1990)

NE WALL-11.5

BOTTOM-14.5

SE WALL-11.5

PIT-1

PIT-2

FORMER WASTE OIL UST

FORMER CONVENIENCE STORE AREA

OIL/WATER SEPARATOR

FORMER FUEL OIL UST

FORMER SERVICE BAY AREA

Naval Avenue

Alley

2005 6th Street

2021 6th Street

2007 6th Street

1936-1/2 5th Street

1936 5th Street

1932 5th Street

IMAGE SOURCE: GOOGLE EARTH, 2017.

SCALE

0 20 40 60ft

N

leidos

Newman's Chevron
2021 6th Street
Bremerton, Washington

Exceedances of Method B Soil Cleanup Levels

DATE: 9/29/2023

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FIGURE 2

Appendix A:
Sampling and Analysis Plan

PRELIMINARY REVIEW DRAFT
APPENDIX A
SAMPLING AND ANALYSIS PLAN

TABLE OF CONTENTS

ATTACHMENTS

PRELIMINARY REVIEW DRAFT
APPENDIX A
SAMPLING AND ANALYSIS PLAN

A.1 INTRODUCTION AND OBJECTIVES

This Sampling and Analysis Plan (SAP) has been prepared by Leidos to comply with the requirements specified by Chapter 173-340-820 (Sampling and Analysis Plans) of the Washington Administrative Code (WAC). This SAP describes the sample collection, handling, and analysis procedures to be used for the proposed cleanup action for the Newman's Chevron site (the Site), located at 2021 6th Street in Bremerton, Washington.

The objective of this SAP is to specify the procedures to ensure that sample collection, handling, and analysis will result in data of sufficient quality to evaluate performance of the remedial actions specified by the Cleanup Action Plan (CAP) for the Site.

This SAP has been prepared as an appendix to, and is intended to be used in conjunction with, the Compliance Monitoring Plan (CMP) for the project.

A.2 GENERAL FIELD SAMPLING PROCEDURES

The following general field sampling procedures will apply to all work performed under the SAP.

A2.1 FIELD DOCUMENTATION

Field personnel will maintain detailed records of all field observations and sampling activities. These records will consist of information recorded in a bound project-specific field notebook, field forms, and photographs of the work performed.

The field notebook will be maintained by the Field Manager to provide a daily record of events. At the beginning of each entry, the following will be recorded:

- Date;
- Time;
- Weather and other site conditions;
- Personnel and contractors present; and
- List of on-site visitors and equipment present.

Field notebook entries will be in as much detail as necessary so that essential information is properly documented. All documentation in field notebooks will be in ink. If an error is made, corrections will be made by crossing a line through the error and entering the correct information. Corrections will be dated and initialed. No entries will be erased or rendered unreadable.

For each sample collected, the following information will be recorded in the field notebook or on a field data form specific to the sampling task:

- Sample identification (including identification of duplicate samples, if applicable);
- Sample type;
- Sample location;
- Sample description;

- Time of sample collection;
- Sampler's name;
- Record of weather, field, problems encountered, or other conditions that may impact or otherwise be relevant to evaluating the sample results;
- Results of field screening (if applicable); and
- References to photographs taken (if applicable).

A2.2 PROCEDURES TO PREVENT CROSS-CONTAMINATION

Personnel collecting environmental samples will take the following precautions to minimize potential sample contamination or cross-contamination between samples:

- New nitrile gloves will be used while taking all samples and disposed of after equipment has been decontaminated.
- Only equipment that is new, provided by the contracted analytical laboratory, and/or has been properly decontaminated according to the procedures specified by the SAP, will be used for environmental sample collection.

A2.3 FIELD INSTRUMENTS AND MONITORING EQUIPMENT CALIBRATION

All field instruments and monitoring equipment will be operated, calibrated, and maintained according to the manufacturer's guidelines. Operation, calibration, and maintenance will be performed by personnel properly trained in these procedures. Documentation of all routine and special maintenance and calibration conducted during the duration of the field activities will be recorded in the project logbook.

The photo-ionization detector (PID) calibration will be checked daily in the field in accordance with the manufacturer's recommended procedure using a laboratory-certified isobutylene gas standard. A calibration test will be performed as necessary in the field using the calibration gas to check if the instrument remains properly calibrated throughout the day.

A.3 SOIL LOGGING, FIELD SCREENING, AND SAMPLING PROCEDURES

A3.1 SOIL SAMPLE LOCATION IDENTIFICATION

In order to facilitate mapping and evaluation of the spatial distribution of sampling results, each soil sampling location will be assigned three coordinates (X,Y, and Z), where:

- X represents the Easting (distance east of a designated site datum);
- Y represents the Northing (distance north of a designated site datum); and
- Z represents the depth below the previously existing ground surface at the sampling location.

All distances will be approximately measured or estimated to the nearest foot.

When possible, an engineer's level and grade rod, or similar surveying equipment, will be used to determine the depth of each sampling location. However, alternative methods to

estimate sample location depth will be allowable when personnel cannot enter the excavation due to safety concerns.

When Site conditions allow, a grid will be marked along the excavation perimeter and/or sidewalls to facilitate assignment of sample location coordinates.

A3.2 SOIL SAMPLE IDENTIFICATION

Soil sample identifiers will include the following information:

- Sampling area identifier (see below);
- Sample media identifier (S = soil);
- Sequential number identifier; and
- Sampling date.

For the planned cleanup action at the Site, two discrete excavation areas are planned, one to address soils impacted by petroleum releases from the dispenser islands and eastern UST basin, and another to address soils impacted by petroleum releases from the undocumented UST basin in the western portion of the Site. Therefore, the following sampling area identifiers are proposed for the project[1]:

- EUB – Eastern UST basin and dispenser island excavation area
- WUB – Western UST basin excavation area

If sampling of soil stockpiles is required for the project, the sampling area identifier will be SS (soil stockpile) followed by the sequential number identifier for the stockpile being sampled.

Example Soil Sample IDs

1. The second soil sample collected from the eastern UST basin and dispenser island area excavation would be identified as, EUB-S-02-MMDDYY.
2. The third soil sample collected from the second soil stockpile generated for the project would be identified as, SS02-S-03-MMDDYY.

Quality assurance and quality control (QA/QC) samples such as equipment rinse blanks, trip blanks, and duplicate samples will be labeled with unique sample identifiers and the date at which the sample was collected. A record of the QA/QC samples collected will be kept in the field notebook along with the Chain of Custody form(s). The following format will be used for QA/QC samples:

Equipment Rinse Blanks

- ER-01-MMDDYY

Trip Blanks

- TB-01-MMDDYY

[1] Sampling area identifiers may be revised by the Field Manager based on conditions encountered in the field. For example, an additional sampling area identifier may be assigned specifically to the dispenser island area.

Duplicate Samples

- DUP-01-MMDDYY

A3.3 EXCAVATION LOGGING AND SOIL CLASSIFICATION/FIELD SCREENING

During excavation activities, field personnel will visually observe and perform routine inspections of excavated soils to characterize and approximately map the soil types present and evaluate them for indications of petroleum impact. The excavation log will also document the presence of any subgrade infrastructure, significant anthropomorphic objects of interest, or suspected cultural resources or human remains[2] encountered during the excavation activities.

Soils encountered in the excavation will be examined and the following items will be noted in the field logbook or boring log:

- Color;
- Moisture content (dry, damp, moist, or wet);
- Lithology (using Unified Soil Classification System);
- Geological interpretation, if possible (e.g., fill, topsoil, alluvium, till, etc.);
- Presence of sheen or light non-aqueous phase liquid (LNAPL);
- Other indications of contamination (e.g., discoloration); and
- Field screening results (see below).

Each sample will be field screened to obtain a relative estimate of its VOC concentration. This field screening will be performed by measuring the concentration of VOCs in the headspace above the sample in a closed container using a PID. Headspace vapor measurements will be performed by placing the soil into a sealed plastic bag (e.g., Ziploc), disaggregating the soil by hand, allowing the sample to equilibrate for at least five minutes, and then opening the bag slightly, inserting the instrument probe, and measuring the VOC concentration in the headspace.

Sheen testing will be conducted by placing soil in a pan of water and observing the water surface for signs of sheen. Sheens are classified as follows:

- ***Slight Sheen***: Light, colorless, dull sheen. The spread is irregular and dissipates rapidly.
- ***Moderate Sheen***: Light to heavy sheen, may show color/iridescence. The spread is irregular to flowing. Few remaining areas of no sheen are evident on the water surface.

[2] If any employee, contractor, or subcontractor believes that they have uncovered cultural resources or human remains, all work must stop immediately in the vicinity of the discovery. Consult the Inadvertent Discovery Plan for the project for further guidance on additional steps to protect the discovery and provide appropriate notification to the Project Lead and Ecology contacts.

- ***Heavy Sheen***: Heavy sheen with color/iridescence. The spread is rapid and the entire water surface may be covered with sheen.

A3.4 SOIL SAMPLING EQUIPMENT DECONTAMINATION PROCEDURES

Non-disposable field equipment used for soil sampling activities will be decontaminated prior to each use and between collection of each sample to reduce the potential for cross-contamination.

The decontamination procedure is provided as follows:

- Scrub with Liquinox and water to remove any visible dirt;
- Rinse thoroughly with potable water; and
- Rinse with distilled water and allow to air-dry in a clean area.

Equipment that has been decontaminated for future use may be stored in clean plastic containers or wrapped in new aluminum foil.

New, disposable nitrile gloves will be worn when handling clean sampling equipment to ensure that the equipment is not cross-contaminated.

Wash and rinse waters generated during decontamination procedures will be treated as though they are contaminated and will be contained in 55-gallon drums, marked and secured until a proper disposal method is developed and implemented based on analytical test results.

A3.5 SOIL SAMPLE COLLECTION FROM EXCAVATIONS

When conditions allow field personnel to safely enter an excavation, soil samples will be collected using reusable hand tools such as a hand trowel, shovel, or hand auger, that will be decontaminated before each use.

When conditions prevent field personnel from safely entering an excavation, soil samples may be collected from the bucket of the excavation equipment. When collecting soil samples from the excavator bucket, care will be taken to ensure that soil in the bucket is representative of the desired sample location (i.e., is newly exposed "fresh" soil and does not contain slough or residual soil from another location) and samples will be collected from the middle of the bucket from soils that have not contacted the sides of the bucket.

Soil samples being submitted for volatile organic compound (VOC) analysis will be collected and field preserved according to the guidance provided by the Washington State Department of Ecology Implementation Memorandum #5, "Collecting and Preparing Soil Samples for VOC Analysis" (Ecology, 2004).

The location of each sample will be mapped to the nearest foot using the coordinate system described in Section A3.1.

A3.6 SOIL SAMPLE COLLECTION FROM STOCKPILES

When necessary for soil stockpile characterization, soil stockpile samples will be collected as follows:

- The minimum number of samples to be submitted for chemical analysis shall meet or exceed the following[3]:

Cubic Yards of Soil	Number of Samples for Chemical Analysis
0-100	3
101-500	5
501-1000	7
1001-2000	10
2000	10 + 1 for each additional 500 cubic yards

- Discrete grab samples will be collected with hand tools 6 to 12 inches beneath the surface of the pile.
- Soil sample locations will be selected based on field instrument readings or other indications, such as staining, of where contamination is most likely to be present.
- If no indications of contamination are observed, the pile will be divided into sections and one sample will be collected from each section.
- Soil samples being submitted for VOC analysis will be collected and field preserved according to the Ecology guidance (Ecology, 2004).

A3.7 SOIL SAMPLING QA/QC SAMPLE COLLECTION

QA/QC samples to be collected in association with soil sampling field activities will include the following:

- Field duplicates – A set of two samples collected independently of one another at the same sampling location during the same sampling event. Field duplicates are designed to assess actual field variability, as compared to analytical duplicates or matrix spike duplicate analyses which measure laboratory variability. Duplicate samples will be collected at a rate of one for every 20 soil samples.
- Equipment rinse blanks – Blank samples designed to demonstrate that sampling equipment has been properly prepared and cleaned before field use and that cleaning procedures between samples are sufficient to minimize cross-contamination between sample locations. Equipment rinse sampling will be performed by collecting laboratory-supplied distilled water that has been used as the final rinse following equipment decontamination procedures. Equipment rinse blanks will be collected at a rate of one blank sample per sample collection method.
- Trip blanks – Blank samples prepared to assess ambient transport conditions. Trip blanks will be prepared by the selected analytical laboratory for soil sample analysis for volatile constituents. Trip blanks will be handled like a sample and shipped to the laboratory for analysis. One trip blank will accompany each sample cooler containing soil samples.

[3] Source: Table 6.9 of Ecology Publication No. 10-09-057, "Guidance for Remediation of Petroleum Contaminated Sites" (Ecology, 2016).

A3.8 SOIL SAMPLE HANDING AND CUSTODY PROCEDURES

Soil samples and soil sampling QA/QC samples will be immediately placed in a pre-chilled cooler on ice for sample preservation. Samples will be stored on ice, or refrigerated, to maintain their temperature at 4 degrees Celsius (°C) plus or minus (±) 2°C.

Samples will be shipped to the selected laboratory via overnight delivery, following industry-standard Chain of Custody protocols. Samples will be shipped in coolers containing sufficient ice to maintain the samples at 4°C ± 2°C.

A3.9 SOIL SAMPLE ANALYSIS

Soil samples, including field duplicate samples, will be analyzed for:

- Gasoline-range hydrocarbons (GRO) by Ecology method NWTPH-Gx;
- Diesel-range hydrocarbons (DRO) and heavy-oil-range organics (HRO) by Ecology method NWTPH-Dx;
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) by United States Environmental Protection Agency (USEPA) method 8260; and
- Naphthalene by USEPA method 8270.

Trip blank and equipment rinse samples will be submitted for the following analytes:

- GRO by Ecology method NWTPH-Gx; and
- BTEX by USEPA method 8260.

When necessary, stockpile soil samples may be submitted for additional analyses required by an offsite disposal location or to confirm structural suitability for reuse as backfill at the Site.

A.4 POST-EXCAVATION SOIL VAPOR SAMPLING PROCEDURES

Soil vapor sampling for post-excavation soil vapor confirmation monitoring will be conducted according to the following procedures. Soil vapor sample collection and analysis will be performed according to United States Environmental Protection Agency (USEPA) Method TO-17.

A4.1 SHALLOW SOIL VAPOR SAMPLING PROBES

Shallow soil vapor sampling locations for the post-excavation soil vapor concentration monitoring are expected to include existing soil vapor probes SVP-1 through SVP-6. However, if one or more of these soil vapor probes is damaged or decommissioned in association with the cleanup action at the Site, these soil vapor probes will be replaced according to the procedures specified in the Final Remedial Investigation Work Plan for the Site (Leidos, 2018).

A4.2 POST-EXCAVATION SOIL VAPOR SAMPLING EVENT SCHEDULING

The first round of post-excavation soil vapor confirmation monitoring will be performed at least 90 days after completion of the soil cleanup excavation, including collection of all soil compliance samples and placement/compaction of backfill materials.

Soil vapor sampling will not be performed during or within 48 hours after a significant rain event (greater than 1 inch of precipitation) due to the potential reduction of the effective diffusion coefficient and decrease in relative vapor saturation in the unsaturated zone. Soil vapor sampling will also not be performed during periods of high winds, or during other major storm events with the potential to cause significant and rapid changes in barometric pressure trends.

Collection of soil vapor samples will not be performed within the first 48 hours after construction/installation of any new sampling probes, in order to ensure that the surface seals of any newly installed probes are sufficiently cured and that soil vapor has equilibrated in and around the probes.

A4.3 SOIL VAPOR LABORATORY SELECTION

The contract laboratory selected for analysis of soil vapor samples shall be accredited by the Washington State Department of Ecology for analysis of soil vapor samples by the USEPA Method TO-17. The contract laboratory shall be capable of providing a reporting limit for the quantification of naphthalene by Method TO-17 that is less than or equal to 1.25 micrograms per cubic meter ($\mu g/m^3$).

A4.4 SOIL VAPOR SAMPLING EQUIPMENT

The following equipment will be provided by the selected laboratory for the project:

- TO-17 sorbent tubes for naphthalene[4]
  - One for each soil vapor sampling probe to be sampled
  - One field blank per sampling event
  - Spare tubes at 25% of the number of probes to be sampled, or two, whichever is greater
- Three 60-milliliter (mL) purging/sampling syringe assemblies
  - One for soil vapor sampling probe purging
  - One for soil vapor sample collection
  - One spare
- Fittings/ferrules to connect TO-17 sorbent tubes to existing Swagelok® valves at each soil vapor sampling probe
- Teflon® tubing (approximately one foot per sampling location)

When handling TO-17 sorbent sampling media and supplies, sampling personnel will wear clean nitrile gloves. At a minimum, gloves will be changed between each sampling location, and after handling tools or materials that may contain residue of solvents or petroleum-based products.

Tools and equipment that will be utilized for preparing or securing connections in the soil vapor sampling train will be decontaminated by washing in a solution of potable water and Liquinox soap, with a final rinse using distilled water.

[4] TO-17 sorbent sampling tubes must be refrigerated or stored on ice to maintain their temperature at 4 degrees Celsius (=/- 2 degrees) prior to and following the sample collection process.

A4.5 SOIL VAPOR SAMPLE LABELING

Soil vapor samples will be labeled according to the soil vapor probe ID and the date of collection, as listed below. The date and time of collection will be recorded in the field logbook and/or field sampling form and on the sample Chain of Custody.

- SVP-1-MMDDYY

One field blank sample will be collected per sampling event for quality assurance and quality control. The following format will be used to label field blank samples:

- FB-1-MMDDYY

A4.6 IN-FIELD SAMPLING PREPARATION AND LEAK TESTING

In the field, sampling personnel will complete the following pre-sampling preparation and leak testing activities prior to sample collection at each location.

A4.6.1 Soil Vapor Sampling Probe Inspection

At each soil vapor sampling probe location, the condition of the well box, above-grade tubing, and shutoff valve will be inspected for indications of damage. Soil vapor sampling probe and well box conditions will be recorded on the field data sheet for each sampling location.

A4.6.2 Soil Vapor Sampling Probe Purging

Prior to sample collection, each soil vapor sampling probe will be purged to remove stagnant air in the tubing, which may not be representative of shallow soil vapor conditions at the sampling location. The following procedure will be utilized:

1. The target purge volume for the soil vapor sampling probe will be calculated as follows:
    a. The approximate length of tubing installed below the ground surface will be determined by reviewing the as-built well diagram for each soil vapor sampling probe.
    b. The length of tubing above the ground surface will be approximately measured to the nearest foot in the field using a standard tape measure.
    c. The target purge volume will be approximately equivalent to three times the volume of dead-air space in the soil vapor sampling probe tubing in-place between the probe screen and shutoff valve. For Teflon® tubing with a ¼-inch outside diameter, the target purge volume is approximately 20 mL per foot of tubing. Therefore, for a soil vapor sampling probe constructed with 10 feet of ¼-inch Teflon® tubing (total length, both above and below grade), the target purge volume would be 200 mL.
2. The shutoff valve on the soil vapor sampling probe will be confirmed to be in the CLOSED position.
3. The Swagelok® endcap will be removed from the shutoff valve and a 60-mL purging syringe assembly will be connected to the soil vapor sampling probe at the shutoff valve using a ¼-inch Swagelok® tube fitting with a new rubber ferule, and

a short length of ¼-inch Teflon® tubing. The plunger of the syringe will be confirmed to be fully seated and the three-way valve on the syringe assembly will be turned so the OFF position is toward the valve vent.

4. The shutoff valve on the soil vapor sampling probe will be OPENED.
5. The plunger of the syringe will be pulled back to withdraw a specific measured volume of air from the soil vapor sampling probe. The three-way valve will be turned so the OFF position is toward the soil vapor sampling probe and the plunger will be pushed back to the fully seated starting position (this will vent, to the atmosphere, the volume of air that has been drawn from the soil vapor sampling probe).
6. The three-way valve will be turned so the OFF position is toward the valve vent, and Step 5 above will be repeated until the target purge volume for the sampling probe has been achieved.
7. Upon reaching the target purge volume, the shutoff valve on the soil vapor sampling probe will be turned to the OFF position and the purging apparatus will be removed from the shutoff valve.

Additional guidance on the use of disposable syringes for TO-17 sample collection is provided in Attachment A.

A4.6.3 Initial Leak Check Procedure

The initial leak check will be performed to identify potential air leaks that would allow ambient atmospheric air to be drawn into the sampling system, which would result in collection of a sample which may not be representative of shallow soil vapor conditions at the sampling location.

1. A new TO-17 sorbent sampling tube will be removed from its shipping packaging and the direction of sampling flow will be determined by checking the markings on the tube. The laboratory assigned identification number for the sorbent sampling tube will be recorded on the field data sheet for the sampling location. The Swagelok® nut, cap, and ferrule will be removed from the outlet side of the sorbent sampling tube and this end of the tube will be fitted into the tube holder of the sampling syringe assembly.
2. The Swagelok® nut and cap on the inlet side of the sorbent tube will be left in place and confirmed to be tight. The three-way valve on the sampling syringe will be turned to the OFF position, toward the valve vent connection.
3. The plunger of the sampling syringe will be pulled. If the plunger does not move or it immediately returns to the starting position, then the equipment will be considered acceptable for further leak testing. Otherwise, further evaluation of the sorbent tube and/or sampling syringe assembly will be conducted to determine the cause of the leak(s).

A4.6.4 Secondary Leak Check Procedure

The secondary leak check will be performed to identify potential air leaks between the sorbent tube and soil vapor sampling probe shutoff valve that would allow ambient atmospheric air to be drawn into the sampling system.

1. Using the connected sorbent tube and sampling syringe assembly from the initial leak check, the Swagelok® nut, cap, and ferrule will be removed from the inlet side of the sorbent sampling tube and this end of the sorbent tube will be connected to the shutoff valve of the soil vapor sampling probe with a Swagelok® tube fitting and new rubber ferrule.
2. The shutoff valve of the soil vapor sampling probe will be confirmed to be in the CLOSED position.
3. The three-way valve on the sampling syringe apparatus will be turned to the OFF position, toward the valve vent connection.
4. The plunger of the syringe will be pulled. If the plunger does not move or it immediately returns to the starting position, then the system is leak-tight and ready for sampling. Otherwise, further evaluation of the system will be conducted to determine the cause of the leak(s).

A4.7 SOIL VAPOR SAMPLE COLLECTION AND HANDLING

A4.7.1 Soil Vapor Sample Collection

Soil vapor sample collection at each sampling location will be performed immediately following satisfaction of the secondary leak check.

1. The shutoff valve on the soil vapor sampling probe will be turned to the OPEN position.
2. With the three-way valve placed in the OFF position toward the valve vent connection, the plunger of the sampling syringe will be pulled back to withdraw a specific measured volume of air from the soil vapor sampling probe. The three-way valve will then be turned to the OFF position toward the sorbent sampling tube (opening the valve vent to the atmosphere) and the plunger will be pushed back to the fully seated starting position, which will vent the collected air volume to the atmosphere.
3. The three-way valve will be turned to the OFF position toward the valve vent and Step 2 above will be repeated until the target sampling volume specified by the selected analytical laboratory has been achieved.
4. The three-way valve connection will be turned to the OFF position toward the valve vent and the shutoff valve on the soil vapor sampling probe will be turned to the CLOSED position. The sample collection time will be recorded on the field data sheet.
5. The sorbent sampling tube will be disconnected from the shutoff valve and sampling syringe assembly, and the Swagelok® endcaps will be reinstalled. See Attachment B for guidance on the proper technique for capping a TO-17 sampling tube.

A4.7.2 Field Blank Collection

1. A field blank sample will be collected by removing the Swagelok® endcaps of a TO-17 sorbent sampling tube in the field at the Site and then immediately resealing the endcaps.

A4.7.3 Sample Handling and Custody Procedures

1. Following sample collection and recapping of the TO-17 sorbent tube, the tubes will be repackaged in their original internal shipping containers (if applicable) and placed in a pre-chilled cooler on ice for sample preservation. Samples will be stored on ice, or refrigerated, to maintain their temperature at 4°C (± 2°C).
2. Samples will be shipped to the selected laboratory via overnight delivery on the day of sampling or the next business day, following industry-standard Chain of Custody protocols. Samples will be shipped in coolers containing sufficient ice to maintain the samples at 4°C (± 2°C).

A4.8 SOIL VAPOR SAMPLE ANALYSIS

All soil vapor samples will be submitted for the following analysis:

- Naphthalene by USEPA Method TO-17.

A.5 DATA VALIDATION

Environmental data collected to evaluate the performance of the cleanup action will undergo validation review at Quality Assurance Level 2.

A.6 REFERENCES

Ecology, 2004. "Collecting and Preparing Soil Samples for VOC Analysis." Washington State Department of Ecology Implementation Memorandum #5, Publication No. 04-09-087. June.

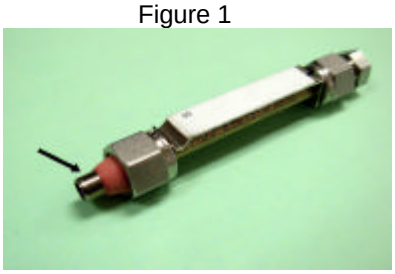
Ecology, 2016. "Guidance for Remediation of Petroleum Contaminated Sites." Washington State Department of Ecology Publication No. 10-09-057. Revised June.

Leidos, 2018. "Final Remedial Investigation Work Plan, Newman's Chevron." July 3.

Attachment A:
Instructions for Proper Capping of a TO-17 Tube

Instructions for proper capping of a TO-17 tube

Figure 1

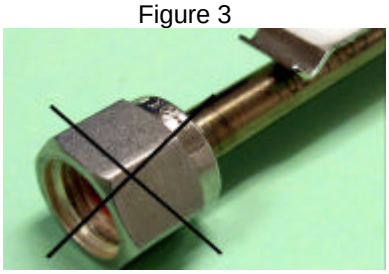


The bottom point of the ferrule should be 3/16” from edge of the tube.

Figure2

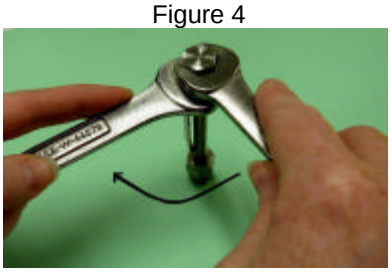
Slide the 1/4 nut against the ferrule.

Figure 3



It should **NOT LOOK** like this.

Figure 4

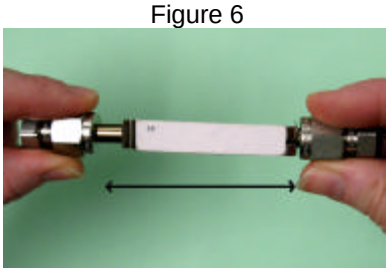


Attach Stainless Steel cap and turn clock wise **1/4" turn**.

Figure 5

Overtightning of Stainless cap will crimp the sample or the use of metal ferrules will permanently damage the sample tube. Damages may prevent sample analysis of the tube.

Figure 6



Gently pull Stainless steel caps apart to ensure proper tightness. Properly assembled tubes should be **no more 4 1/4" inches** in length from end to end.

Note: Please refreeze ice before shipping.

Attachment B:
Using Disposable Syringes for TO-17 Sample Collection

Using Disposable Syringes for TO-17 Sample Collection

Supplies:

- **TO-17 Sorbent Tubes** – Tubes are capped on each end with a Swagelok nut, pink ferrule and cap. Each tube is wrapped in uncoated aluminum foil and shipped in a tin box with activated charcoal granules.
- **Syringe assembly** – A 60 cc or 10 cc syringe is equipped with a 3-way valve and a tube holder.
- **Optional: Swagelok union and fitting** to connect sorbent tube sample inlet to 1/4" tubing.

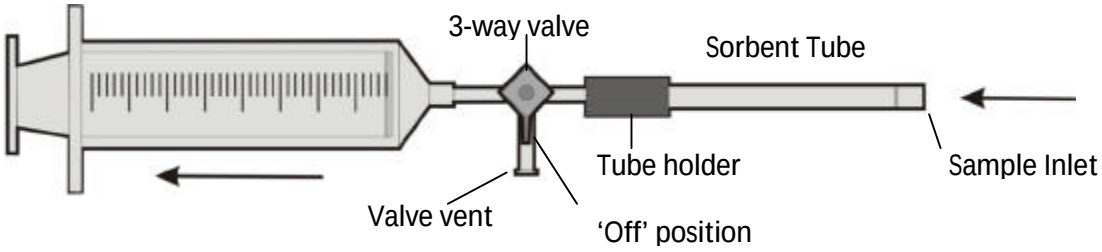
Leak Check Procedure:

1) Remove the Swagelok nut, cap, and ferrule from the outlet side of the sorbent tube.
2) Insert the sorbent tube into the tube holder on the syringe assembly.
3) Turn the valve so the 'Off' position is toward the valve vent, and make sure the Swagelok nut and cap on the tube inlet is tight.
4) Pull the plunger of the syringe.
5) If the plunger does not move or immediately returns to the starting position, then the system is leak-tight and ready for sampling.
6) Turn the 'Off' position toward the sorbent tube.

Sample Collection (See Figure 1 on page 2):

1) With the tube still in the tube holder, remove the cap from the inlet of the sorbent tube.
2) If collecting soil gas vapors from a ¼" tube, connect the Swagelok nut from the tube inlet to a union. Connect the ¼" probe tubing to the union using a Swagelok nut and ferrule. Check that this connection is secure by pulling on the sorbent tube and tubing. The sorbent tube and tubing should not move.
3) Turn the valve so the 'Off' position is toward the valve vent and pull the plunger to the desired volume.
4) If multiple aliquots are required, turn the valve so the 'Off' position is toward the sorbent tube and push the plunger back to the starting position, emptying the contents through the vent valve. ***Do not push the contents of the syringe through the sorbent tube.*** Repeat steps 3 and 4 as necessary.
5) When desired volume has been collected, remove sorbent tube from the tube holder and re-cap both ends using the original Swagelok nut, ferrule, and cap.
6) DO NOT OVERTIGHTEN THE SWAGELOK NUT. OVERTIGHTENING CAN CRIMP THE TUBE AND PREVENT ANALYSIS.
7) Record the sample volume on the COC.
8) Re-wrap tubes in aluminum foil and ship back in the tins under ice.
9) Return the syringe assembly with the tubes.

Sample collection: Turn valve so the 'Off' position is toward the valve vent; Pull plunger to desired volume.



Empty Syringe: Turn valve so the 'Off' position is toward the sorbent tube; Push plunger back to starting position.

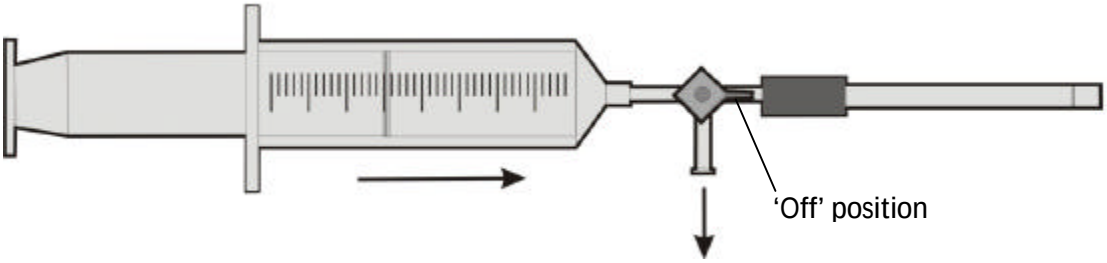


Figure 1. Schematic for sample collection using disposable syringes.

Note: In general, syringe assemblies may be reused for multiple samples. If extremely high concentrations are expected at a sampling location, a clean syringe assembly may be desirable for clean sites.

Appendix B
Inadvertent Discovery Plan

INADVERTENT DISCOVERY PLAN

PLAN AND PROCEDURES FOR THE DISCOVERY OF CULTURAL RESOURCES AND HUMAN SKELETAL REMAINS

To request ADA accommodation, including materials in a format for the visually impaired, call Ecology at 360-407-6000 or visit https://ecology.wa.gov/accessibility. People with impaired hearing may call Washington Relay Service at 711. People with a speech disability may call TTY at 877-833-6341.

Site Name(s): Newman's Chevron Site Location: 2021 6th St, Bremerton, WA

Project Lead/Organization: Russ Shropshire/Leidos County: Kitsap

If this Inadvertent Discovery Plan (IDP) is for multiple (batched) projects, ensure the location information covers all project areas.

1. INTRODUCTION

The IDP outlines procedures to perform in the event of a discovery of archaeological materials or human remains, in accordance with applicable state and federal laws. An IDP is required, as part of Agency Terms and Conditions for all grants and loans, for any project that creates disturbance above or below the ground. An IDP is not a substitute for a formal cultural resource review (Executive 21-02 or Section 106).

Once completed, **the IDP should always be kept at the project site** during all project activities. All staff, contractors, and volunteers should be familiar with its contents and know where to find it.

2. CULTURAL RESOURCE DISCOVERIES

A cultural resource discovery could be prehistoric or historic. Examples include (see images for further examples):

- An accumulation of shell, burned rocks, or other food related materials.
- Bones, intact or in small pieces.
- An area of charcoal or very dark stained soil with artifacts.
- Stone tools or waste flakes (for example, an arrowhead or stone chips).
- Modified or stripped trees, often cedar or aspen, or other modified natural features, such as rock drawings.
- Agricultural or logging materials that appear older than 50 years. These could include equipment, fencing, canals, spillways, chutes, derelict sawmills, tools, and many other items.
- Clusters of tin cans or bottles, or other debris that appear older than 50 years.
- Old munitions casings. ***Always assume these are live and never touch or move.***
- Buried railroad tracks, decking, foundations, or other industrial materials.
- Remnants of homesteading. These could include bricks, nails, household items, toys, food containers, and other items associated with homes or farming sites.

The above list does not cover every possible cultural resource. When in doubt, assume the material is a cultural resource.

3. ON-SITE RESPONSIBILITIES

If any employee, contractor, or subcontractor believes that they have uncovered cultural resources or human remains at any point in the project, take the following steps to ***Stop-Protect-Notify***. **If you suspect that the discovery includes human remains, also follow Sections 5 and 6.**

STEP A: Stop Work.

All work must stop immediately in the vicinity of the discovery.

STEP B: Protect the Discovery.

Leave the discovery and the surrounding area untouched and create a clear, identifiable, and wide boundary (30 feet or larger) with temporary fencing, flagging, stakes, or other clear markings. Provide protection and ensure integrity of the discovery until cleared by the Department of Archaeological and Historical Preservation (DAHP) or a licensed, professional archaeologist.

Do not permit vehicles, equipment, or unauthorized personnel to traverse the discovery site. Do not allow work to resume within the boundary until the requirements of this IDP are met.

STEP C: Notify Project Archaeologist (if applicable).

If the project has an archaeologist, notify that person. If there is a monitoring plan in place, the archaeologist will follow the outlined procedure.

STEP D: Notify Project and Washington Department of Ecology (Ecology) contacts.

Project Lead Contacts

Primary Contact		Alternate Contact	
Name:	Russ Shropshire	Name:	Tom Dubé
Organization:	Leidos	Organization:	Leidos
Phone:	(425) 482-3323	Phone:	(425) 482-3325
Email:	shropshirer@leidos.com	Email:	dubet@leidos.com

Ecology Contacts (completed by Ecology Project Manager)

Ecology Project Manager		Alternate or Cultural Resource Contact	
Name:	Dale Myers	Name:	
Program:	TCP-NW	Program:	
Phone:	(425) 389-2521	Phone:	
Email:	damy461@ecy.wa.gov	Email:	

STEP E: Ecology will notify DAHP.

Once notified, the Ecology Cultural Resource Contact or the Ecology Project Manager will contact DAHP to report and confirm the discovery. To avoid delay, the Project Lead/Organization will contact DAHP if they are not able to reach Ecology.

DAHP will provide the steps to assist with identification. DAHP, Ecology, and Tribal representatives may coordinate a site visit following any necessary safety protocols. DAHP may also inform the Project Lead/Organization and Ecology of additional steps to further protect the site.

Do not continue work until DAHP has issued an approval for work to proceed in the area of, or near, the discovery.

DAHP Contacts:

Name: Rob Whitlam, PhD
Title: State Archaeologist
Cell: 360-890-2615
Email: Rob.Whitlam@dahp.wa.gov
Main Office: 360-586-3065

Human Remains/Bones:

Name: Guy Tasa, PhD
Title: State Anthropologist
Cell: 360-790-1633 (24/7)
Email: Guy.Tasa@dahp.wa.gov

4. TRIBAL CONTACTS

In the event cultural resources are discovered, the following tribes will be contacted. See Section 10 for Additional Resources.

Tribe:	Suquamish Tribe	Tribe:	Port Gamble S'Klallam Tribe
Name:	Stephanie Trudel	Name:	Misty Ives
Title:	Tribal Historic Preservation Officer	Title:	Tribal Historic Preservation Officer
Phone:	(360) 394-8533	Phone:	(360) 516-0329
Email:	strudel@Suquamish.nsn.us	Email:	Pgst-thop@pgst.nsn.us
Tribe:	Squaxin Island Tribe	Tribe:	Snoqualmie Indian Tribe
Name:	Rhonda Foster	Name:	Steven Moses
Title:	Tribal Historic Preservation Officer	Title:	Director, Archaeology and Historic Preservation
Phone:	(360) 432-3850	Phone:	(425) 495-6097
Email:	rfoster@squaxin.us	Email:	steve@snoqualmietribe.us

Please provide contact information for additional tribes within your project area, if needed, in Section 11.

5. FURTHER CONTACTS (if applicable)

If the discovery is confirmed by DAHP as a cultural or archaeological resource, or as human remains, and there is a partnering federal or state agency, Ecology or the Project Lead/Organization will ensure the partnering agency is immediately notified.

Federal Agency:		State Agency:	
Agency:		Agency:	
Name:		Name:	
Title:		Title:	
Phone:		Phone:	
Email:		Email:	

6. SPECIAL PROCEDURES FOR THE DISCOVERY OF HUMAN SKELETAL MATERIAL

Any human skeletal remains, regardless of antiquity or ethnic origin, will at all times be treated with dignity and respect. Follow the steps under ***Stop-Protect-Notify.*** For specific instructions on how to handle a human remains discovery, see: *RCW 68.50.645: Skeletal human remains—Duty to notify—Ground disturbing activities—Coroner determination—Definitions*.

Suggestion: If you are unsure whether the discovery is human bone or not, contact Guy Tasa with DAHP, for identification and next steps. Do not pick up the discovery.

Guy Tasa, PhD State Physical Anthropologist
Guy.Tasa@dahp.wa.gov
(360) 790-1633 (Cell/Office)

For discoveries that are confirmed or suspected human remains, follow these steps:

1. Notify law enforcement and the Medical Examiner/Coroner using the contacts below. **Do not call 911** unless it is the only number available to you.

   Enter contact information below (required):
   - Local Medical Examiner or Coroner name and phone: Kitsap County Medical Examiner (360) 731-6843
   - Local Law Enforcement main name and phone: Bremerton Police Dept. (360) 473-5220
   - Local Non-Emergency phone number (911 if without a non-emergency number): (360) 473-5220
2. The Medical Examiner/Coroner (with assistance of law enforcement personnel) will determine if the remains are human or if the discovery site constitutes a crime scene and will notify DAHP.
3. **DO NOT speak with the media, allow photography or disturbance of the remains, or release any information about the discovery on social media.**
4. If the remains are determined to be non-forensic, Cover the remains with a tarp or other materials (not soil or rocks) for temporary protection and to shield them from being photographed by others or disturbed.

Further activities:

- Per RCW 27.44.055, RCW 68.50, and RCW 68.60, DAHP will have jurisdiction over non-forensic human remains. Ecology staff will participate in consultation. Organizations may also participate in consultation.
- Documentation of human skeletal remains and funerary objects will be agreed upon through the consultation process described in RCW 27.44.055, RCW 68.50, and RCW 68.60.
- When consultation and documentation activities are complete, work in the discovery area may resume as described in Section 8.

If the project occurs on federal lands (such as a national forest or park or a military reservation) the provisions of the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) apply and the responsible federal agency will follow its provisions. Note that state highways that cross federal lands are on an easement and are not owned by the state.

If the project occurs on non-federal lands, the Project Lead/Organization will comply with applicable state and federal laws, and the above protocol.

7. DOCUMENTATION OF ARCHAEOLOGICAL MATERIALS

Archaeological resources discovered during construction are protected by state law RCW 27.53 and assumed eligible for inclusion in the National Register of Historic Places under Criterion D until a formal Determination of Eligibility is made.

The Project Lead/Organization must ensure that proper documentation and field assessment are made of all discovered cultural resources in cooperation with all parties: the federal agencies (if any), DAHP, Ecology, affected tribes, and the archaeologist.

The archaeologist will record all prehistoric and historic cultural material discovered during project construction on a standard DAHP archaeological site or isolate inventory form. They will photograph site overviews, features, and artifacts and prepare stratigraphic profiles and soil/sediment descriptions for minimal subsurface exposures. They will document discovery locations on scaled site plans and site location maps.

Cultural features, horizons, and artifacts detected in buried sediments may require the archaeologist to conduct further evaluation using hand-dug test units. They will excavate units in a controlled fashion to expose features, collect samples from undisturbed contexts, or to interpret complex stratigraphy. They may also use a test unit or trench excavation to determine if an intact occupation surface is present. They will only use test units when necessary to gather information on the nature, extent, and integrity of subsurface cultural deposits to evaluate the site's significance. They will conduct excavations using standard archaeological techniques to precisely document the location of cultural deposits, artifacts, and features.

The archaeologist will record spatial information, depth of excavation levels, natural and cultural stratigraphy, presence or absence of cultural material, and depth to sterile soil, regolith, or bedrock for each unit on a standard form. They will complete test excavation unit level forms, which will include plan maps for each excavation level and artifact counts and material types, number, and vertical provenience (depth below

surface and stratum association where applicable) for all recovered artifacts. They will draw a stratigraphic profile for at least one wall of each test excavation unit.

The archaeologist will screen sediments excavated for purposes of cultural resources investigation through 1/8-inch mesh, unless soil conditions warrant 1/4-inch mesh.

The archaeologist will analyze, catalogue, and temporarily curate all prehistoric and historic artifacts collected from the surface and from probes and excavation units. The ultimate disposition of cultural materials will be determined in consultation with the federal agencies (if any), DAHP, Ecology, and the affected tribe(s).

Within 90 days of concluding fieldwork, the archaeologist will provide a technical report describing any and all monitoring and resultant archaeological excavations to the Project Lead/Organization, who will forward the report to Ecology, the federal agencies (if any), DAHP, and the affected tribe(s) for review and comment.

If assessment activities expose human remains (burials, isolated teeth, or bones), the archaeologist and Project Lead/Organization will follow the process described in **Section 6**.

8. PROCEEDING WITH WORK

The Project Lead/Organization shall work with the archaeologist, DAHP, and affected tribe(s) to determine the appropriate discovery boundary and where work can continue.

Work may continue at the discovery location only after the process outlined in this plan is followed and the Project Lead/Organization, DAHP, any affected tribe(s), Ecology, and the federal agencies (if any) determine that compliance with state and federal laws is complete.

9. ORGANIZATION RESPONSIBILITY

The Project Lead/Organization is responsible for ensuring:

- This IDP has complete and accurate information.
- This IDP is immediately available to all field staff at the sites and available by request to any party.
- This IDP is implemented to address any discovery at the site.
- That all field staff, contractors, and volunteers are instructed on how to implement this IDP.

10. ADDITIONAL RESOURCES

Informative Video

Ecology recommends that all project staff, contractors, and volunteers view this informative video explaining the value of IDP protocol and what to do in the event of a discovery. The target audience is anyone working on the project who could unexpectedly find cultural resources or human remains while excavating or digging. The video is also posted on DAHP's inadvertent discovery language website.

Ecology's IDP Video (https://www.youtube.com/watch?v=ioX-4cXfbDY)

Informational Resources

DAHP (https://dahp.wa.gov)

Washington State Archeology (DAHP 2003)
(https://dahp.wa.gov/sites/default/files/Field%20Guide%20to%20WA%20Arch_0.pdf)

Association of Washington Archaeologists (https://www.archaeologyinwashington.com)

Potentially Interested Tribes

Interactive Map of Tribes by Area
(https://dahp.wa.gov/archaeology/tribal-consultation-information)

WSDOT Tribal Contact Website
(https://wsdot.wa.gov/tribal/TribalContacts.htm)

11. ADDITIONAL INFORMATION

Please add any additional contact information or other information needed within this IDP.

Implement the IDP if you see…

Chipped stone artifacts.

Examples are:

- Glass-like material.
- Angular material.
- “Unusual” material or shape for the area.
- Regularity of flaking.
- Variability of size.

Stone artifacts from Oregon.

Stone artifacts from Washington.

Biface-knife, scraper, or pre-form found in NE Washington. Thought to be a well knapped object of great antiquity. Courtesy of Methow Salmon Rec. Foundation.

Implement the IDP if you see…

Ground stone artifacts.

Examples are:

- Unusual or unnatural shapes or unusual stone.
- Striations or scratching.
- Etching, perforations, or pecking.
- Regularity in modifications.
- Variability of size, function, or complexity.

Above: Fishing Weight - credit CRITFC Treaty Fishing Rights website.

Artifacts from unknown locations (left and right images).

Implement the IDP if you see…

Bone or shell artifacts, tools, or beads.

Examples are:

- Smooth or carved materials.
- Unusual shape.
- Pointed as if used as a tool.
- Wedge shaped like a “shoehorn”.
- Variability of size.
- Beads from shell (dentalium) or tusk.

Upper Left:*Bone Awls from Oregon.*

Upper Center: *Bone Wedge from California.*

Upper Right: *Plateau dentalium choker and bracelet, from Nez Perce National Historical Park, 19th century, made using Antalis pretiosa shells Credit: Nez Perce - Nez Perce National Historical Park, NEPE 8762, Public Domain.*

Above: *Tooth Pendants. Right: Bone Pendants. Both from Oregon and Washington.*

Implement the IDP if you see…

Culturally modified trees, fiber, or wood artifacts.

Examples are:

- Trees with bark stripped or peeled, carvings, axe cuts, de-limbing, wood removal, and other human modifications.
- Fiber or wood artifacts in a wet environment.
- Variability of size, function, and complexity.

Left and Below: *Culturally modified tree and an old carving on an aspen (Courtesy of DAHP).*

Right, Top to Bottom: *Artifacts from Mud Bay, Olympia: Toy war club, two strand cedar rope, wet basketry*.

Implement the IDP if you see…

Strange, different, or interesting looking dirt, rocks, or shells.

Human activities leave traces in the ground that may or may not have artifacts associated with them. Examples are:

- "Unusual" accumulations of rock (especially fire-cracked rock).
- "Unusual" shaped accumulations of rock (such as a shape similar to a fire ring).
- Charcoal or charcoal-stained soils, burnt-looking soils, or soil that has a "layer cake" appearance.
- Accumulations of shell, bones, or artifacts. Shells may be crushed.
- Look for the "unusual" or out of place (for example, rock piles in areas with otherwise few rocks).

Shell Midden pocket in modern fill discovered in sewer trench.

Underground oven. Courtesy of DAHP.

Shell midden with fire cracked rock.

Hearth excavated near Hamilton, WA.

Implement the IDP if you see…

Historic period artifacts (historic archaeology considered older than 50 years).

Examples are:

- Agricultural or logging equipment. May include equipment, fencing, canals, spillways, chutes, derelict sawmills, tools, etc.
- Domestic items including square or wire nails, amethyst colored glass, or painted stoneware.

Left: Top to Bottom: *Willow pattern serving bowl and slip joint pocket knife discovered during Seattle Smith Cove shantytown (45-KI-1200) excavation.*

Right: *Collections of historic artifacts discovered during excavations in eastern Washington cities.*

Implement the IDP if you see…

Historic period artifacts (historic archaeology considered older than 50 years).

Examples are:

- Railway tokens, coins, and buttons.
- Spectacles, toys, clothing, and personal items.
- Items helping to understand a culture or identity.
- Food containers and dishware.

Main Image: *Dishes, bottles, workboot found at the North Shore Japanese bath house (ofuro) site, Courtesy Bob Muckle, Archaeologist, Capilano University, B.C. This is an example of an above ground resource.*

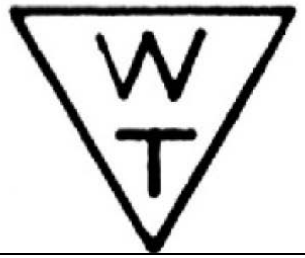
Right, from Top to Bottom: *Coins, token, spectacles and Montgomery Ward pitchfork toy discovered during Seattle Smith Cove shantytown (45-KI-1200) excavation.*

Implement the IDP if you see…

- Old munition casings – if you see ammunition of any type – ***always assume they are live and never touch or move!***
- Tin cans or glass bottles with an older manufacturer's technique – maker's mark, distinct colors such as turquoise, or an older method of opening the container.

Far Left: .303 British cartridge found by a WCC planting crew on Skagit River. Don't ever touch something like this!
Left: Maker's mark on bottom of old bottle.

Right: *Old beer can found in Oregon. ACME was owned by Olympia Brewery. Courtesy of Heather Simmons.*



Logo employed by Whithall Tatum & Co. between 1924 to 1938 (Lockhart et al. 2016).

Can opening dates, courtesy of W.M. Schroeder.

Implement the IDP if you see…

You see historic foundations or buried structures.

Examples are:

- Foundations.
- Railroad and trolley tracks.
- Remnants of structures.

Counter Clockwise, Left to Right: *Historic structure 45KI924, in WSDOT right of way for SR99 tunnel. Remnants of Smith Cove shantytown (45-KI-1200) discovered during Ecology CSO excavation, City of Spokane historic trolley tracks uncovered during stormwater project, intact foundation of historic home that survived the Great Ellensburg Fire of July 4, 1889, uncovered beneath parking lot in Ellensburg.*

Implement the IDP if you see...

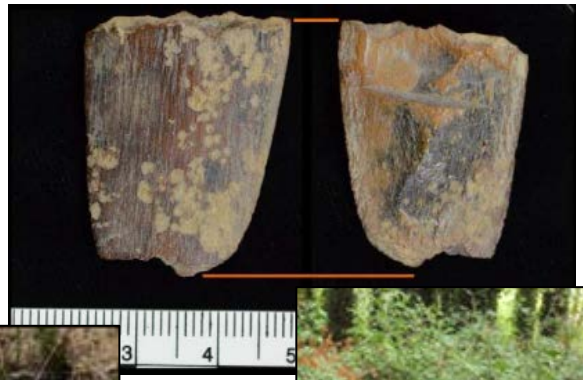
Potential human remains.

Examples are:

- Grave headstones that appear to be older than 50 years.
- Bones or bone tools--intact or in small pieces. It can be difficult to differentiate animal from human so they must be identified by an expert.
- These are all examples of animal bones and are not human.

Center: *Bone wedge tool, courtesy of Smith Cove Shantytown excavation (45KI1200).*

Other images (Top Right, Bottom Left, and Bottom) Center: Courtesy of DAHP.



Directly Above: This is a real discovery at an Ecology sewer project site.

What would you do if you found these items at a site? Who would be the first person you would call?

Hint: *Read the plan!*