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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
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January 30, 2023

Jeff Kaspar
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Re: Technical Assistance at the following contaminated Sites:

Site Name: Cornforth Campbell Motors Inc. a. k. a. Cornforth Dry Cleaner
Site Address: 107 3rd St SE, Puyallup, Pierce County, WA 98372
Facility/Site ID: 56415898
Cleanup Site ID: 1194
VCP Project ID: SW0397

Site Name: Cornforth Campbell Motors Inc. Main Facil a. k. a Wilen Cornforth Motors
Site Address: 115 2nd St SE, Puyallup, Pierce County, WA 98372
Facility/Site ID: 21357393
Cleanup Site ID: 5682
VCP Project ID: SW0398

Dear Jeff Kaspar:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Cornforth Campbell Motors Inc. a. k. a. Cornforth Dry Cleaner and Cornforth Campbell Motors Inc. Main Facil a. k. a. Wilen Cornforth Motors facilities (each project represents a separate Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA),[1] chapter 70A.305 Revised Code of Washington (RCW).[2]

[1] https://apps.ecology.wa.gov/publications/SummaryPages/9406.html
[2] https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305

Opinion

Ecology has determined that further remedial action is necessary to clean up contamination at the Sites.

Ecology appreciates the interim actions taken at the Sites. Data collected to date show two sites, a dry-cleaning Site and a petroleum Site, which, in the past, have been generally comingled. Current data are needed to determine if comingled petroleum and solvent plumes are still a concern and to determine if the petroleum cleanup is complete. However, interim actions taken at the Site have substantially reduced contaminant concentrations in the environment. This is the first opinion letter issued for the SW0397 and SW0398 projects since August 29, 2006. Further action is needed at both Sites because cleanup is ongoing and cleanup standards have not yet been met for either Site.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, chapter 70A.305 RCW, and its implementing regulations, Washington Administrative Code (WAC) chapter 173-340[3] (collectively "substantive requirements of MTCA"). The analysis is provided below.

Site Descriptions

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

Cornforth Campbell Motors Inc. a. k. a. Cornforth Dry Cleaner (SW0397):

- Tetrachloroethylene (PCE) into the soil and groundwater.
- Trichloroethylene (TCE) into the soil and groundwater.
- 1,1-Dichloroethylene (DCE; including 1,2-cis DCE and 1,2-trans DCE) into the soil and groundwater.
- Vinyl chloride into the soil and groundwater.

[3] https://apps.leg.wa.gov/WAC/default.aspx?cite=173-340

Cornforth Campbell Motors Inc Main Facil (SW0398):

- Gasoline range total petroleum hydrocarbons (TPH-G) into the soil and groundwater.
- Diesel range and oil range total petroleum hydrocarbons (TPH-D and TPH-O, collectively; TPH-D/O) into the soil and groundwater.
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) into the soil and groundwater.
- Methyl-tertiary butyl ether (MTBE) into the groundwater.
- Lead into the groundwater.

A detailed description of the Sites and history of activities can be found in Farallon Consulting, Inc.'s (Farallon's) July 7, 2021, report, *Cleanup Action Progress Report* (the Report). A brief description of the Sites is included as **Enclosure A**.

The Property is comprised of three Pierce County parcels. The dry cleaner facility (SW0397) was located on parcel 0420273133, and the Site also appears to extend onto a small portion of parcel 0420273371. Both parcels are currently owned by the Ezra Meeker Historical Society. The main facility Site (SW0398) is comprised of parcels 7060000020 and 7060000030, both owned by the City of Puyallup. Between the two facilities is the right-of-way of 3rd St SE. Portions of the rights-of-way for E Main Ave and Spring Street, along the north side of the properties. also appear to be part of the Site. All parcels are currently zoned as commercial.

The Property is also located within the projected boundaries of the Tacoma Smelter Plume facility (facility Site identification number [FSID] #62855481). At this time, we have no information that this Property is affected. This opinion does not apply to any contamination associated with the Tacoma Smelter Plume facility.

Basis for the Opinion

This opinion is based on the information contained in the documents listed in **Enclosure B.**

You can request these documents by filing a records request.[4] For help making a request, contact the Public Records Officer at publicrecordsofficer@ecy.wa.gov or call 360-407-6040. Before making a request, check whether the documents are available on Ecology's Cleanup Site Search web page.[5]

This opinion is void if any of the information contained in those documents is materially false or misleading.

[4] https://ecology.wa.gov/About-us/Accountability-transparency/Public-records-requests
[5] https://apps.ecology.wa.gov/cleanupsearch/

Analysis of the Cleanup

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

Characterizing the Sites

Ecology has determined your characterization of the Sites is not sufficient to establish cleanup standards and select a cleanup action. There are some areas where additional data are needed to confirm the remedial investigation is sufficiently complete to meet WAC 173-340-350(7). These data are also needed to determine if currently the petroleum and solvent plumes are comingled, and if the petroleum Voluntary Cleanup Program (VCP) project cleanup is complete.

For independent cleanups, like those conducted under the VCP, Ecology cannot provide oversight or approval.[6] Ecology can only concur or not concur with proposed or completed cleanup actions[7] and provide non-binding informal advice and technical assistance.[8] For binding commitments from Ecology, cleanup must be done under an order or consent decree.[9]

Completing the Site Remedial Investigation

WAC 173-340-350(7) requires the Site to be adequately characterized. It is Ecology's opinion that the full nature and extent of hazardous substances at these Sites remains to be determined. A "Site" or "facility" is defined in MTCA (WAC 173-340-200)[10] as; "…any site or area where a hazardous substance, other than a consumer product in consumer use, has been deposited, stored, disposed of, or placed, or otherwise come to be located." The Site extent and footprint is irrespective of Property boundaries.

Ecology needs additional information to concur that the remedial investigation is complete for these Sites. It appears that the primary groundwater flow direction for the Sites is approximately to the north-northwest. Groundwater gradient has been relatively flat. Monitoring well MW-15 appears to be a downgradient point for the Site, presuming the groundwater flow direction of north-northwest. It appears contaminant concentrations currently exceed MTCA cleanup levels in groundwater at MW-15. However, the Site appears delineated at monitoring wells MW-16 and MW-17.

Ecology recommends providing sufficient data to show that the SW0397 Site is adequately delineated to meet WAC 173-340-350(7) and provide a rose diagram of available calculated

[6] WAC 173-340-515(1)
[7] WAC 173-340-515(3)
[8] WAC 173-340-515(5)
[9] WAC 173-340-130(3)
[10] https://apps.leg.wa.gov/wac/default.aspx?cite=173-340-200

groundwater flow directions. For MW-15, continued groundwater monitoring is recommended. Ecology recognizes the railroad right-of-way likely restricts downgradient groundwater testing, and other delineation options should be considered. Vertical delineation of current Site hazardous substances in soil near the northeast corner of the Site may also be necessary. Vertical delineation and confirmatory sampling between monitoring well MW-18 back along a line to the source of release at the dry cleaner Site may also be needed.

Terrestrial Ecological Evaluation (TEE)

Farallon, in section 3.4.5 of its *Cleanup Action Plan*,[11] proposed exclusion from further terrestrial ecological evaluation at the Sites using the simplified TEE process under WAC 173-340-7492(2)(a)(ii). Ecology concurs with the proposal. To document your TEE for the Sites, please submit a completed Table 749-1 under WAC 173-340-900 and report the findings to Ecology in a future report and please submit a current TEE form.[12]

Depicting the Extents of Hazardous Substances and Utilities Map

Ecology recommends the continued estimation of the extent of each hazardous substance at the Sites be identified with isoconcentration contours (isopleths), using figures in plan view and cross-section view. These are helpful figures for our review. Continuing to maintain a detailed and current utility map for the Property and right-of-ways is also recommended.

Additionally, current isopleth figures or cross-sections are encouraged to support any potential future institutional controls and environmental covenant for the Sites, should those be eventually implemented.

Petroleum Release Evaluation Requests

Based on ADaPT Engineering, Inc.'s(ADaPT's) and Farallon's reports, it appears that three underground storage tanks (USTs) have been removed from the Sites: a gasoline UST, a waste oil UST, and a heating oil UST. Volumes for these former USTs are unknown. These USTs are not detailed in Ecology's UST database, but documentation for the gasoline and waste oil USTs are provided in an UST notification form dated March 6, 1986. A letter dated April 8, 1988, sent by Wilen-Cornforth Motors, Inc., appears to confirm removal of the gasoline and waste oil USTs.

Ecology detailed the interim actions to reduce petroleum contamination at the Sites in our opinion letter dated August 29, 2006. These interim actions included excavation of 1,100 tons of petroleum contaminated soil (PCS) and operating an air sparge (AS) and soil vapor extraction (SVE) system. Based on our August 29, 2006, opinion letter, sufficient compliant groundwater

[11] May 15, 2002
[12] https://apps.ecology.wa.gov/publications/SummaryPages/ECY090300.html

samples have been collected for Ecology to concur that petroleum Site hazardous substance concentrations in groundwater meet MTCA Method A cleanup levels. The concentrations of MTBE and total lead, though detected in groundwater sampled, never exceeded the corresponding MTCA Method A cleanup level. Monitoring was generally consistent with the Stage III monitoring requirements (e.g., four consecutive quarterly events in compliance with cleanup levels) under section 10.3 in Ecology's *Guidance for Remediation of Petroleum Contaminated Sites*.[13]

Ecology requests you collect sufficient current performance data to confirm that the petroleum cleanup meets cleanup standards. To do this, we recommend:

Please collect at least five confirmatory soil samples[14] in and around the former excavation where residual contaminated soil was left in place. See the figure attached in **Enclosure C.** Examples of where to locate the minimum of five borings would be near sample EX-011003-9 (northern limit of excavation), sample EX-011003-2 (southern limit of excavation), three within the former excavation footprint at EX011003-4, EX010903-4, and EX-010903-9.

Review the concentrations of petroleum substances in the confirmatory soil samples collected. Evaluate the potential for petroleum vapor intrusion based on current Ecology's *Guidance for Evaluating Vapor Intrusion in Washington State*.[15] Generally, if soil and groundwater concentrations for petroleum are less than the MTCA Method A cleanup levels, that is protective of the vapor intrusion pathway. It also appears that petroleum vapor concentrations collected in the 2010 Gore Soil Gas Survey Report were less than the generic MTCA Method B cleanup level for sub-slab soil gas for APH/TPH at 1,500 micrograms per cubic meter ($\mu g/m^3$). Additionally, distance from any existing and future buildings (see section 2.3 in vapor intrusion guidance) may be sufficient to screen out petroleum vapor intrusion risk at the Sites.

Upon successful cleanup of the petroleum contamination, a no further action determination from the Tacoma Pierce County Health District (TPCHD) for the former UST system will also be required prior to Ecology issuing any potential no further action determination by opinion letter for VCP SW0398.

Chlorinated solvents: Groundwater Monitoring Comments

1. Biostimulation injections were completed from October 1-November 6, 2019. Monitoring for PCE and its degradation products in groundwater has been completed twice, in December 2020 and September 2021.

[13] Publication 10-09-057, revised June 2016. https://apps.ecology.wa.gov/publications/documents/1010057.pdf
[14] Request is from page 4 in Ecology's August 29, 2006, opinion.
[15] Publication No. 09-09-047, March 2022. https://apps.ecology.wa.gov/publications/documents/0909047.pdf

2. To date, insufficient post-remedial groundwater data have been collected for Ecology to concur that the cleanup action taken meets cleanup standards for the Site (VCP SW0397). Ecology recognizes that additional data have been collected and are planned to be collected as of the writing of this opinion letter. Analytical data from groundwater samples collected from December 2020 and September 2021 show likely attenuation of PCE and TCE. This suggests that the excavation of PCE contaminated soils and subsequent biostimulation injections are working and have reduced contaminant concentrations for PCE and TCE in groundwater. However, concentrations of vinyl chloride in groundwater appear to be increasing, suggesting that while dechlorination is occurring and PCE and TCE are breaking down, more time appears to be needed to destroy all Site contaminants in groundwater.

3. To date, the calculated groundwater flow direction appears to be sufficiently covered for the dry-cleaner facility by monitoring wells MW-16 and MW-17. These wells appear to provide sufficient delineation points between Site contamination in groundwater and the Puyallup River. The Puyallup River is the closest surface water, located nearest to the Property at approximately 0.4 miles to the northeast.

4. To determine a trend in the contaminant concentration data, Ecology recommends collecting at least eight groundwater monitoring events. Consecutive quarterly groundwater monitoring is preferred to determine any trend. However, at a minimum, performance groundwater sampling should rotate through each quarter of the year, if collected over a multi-year period.

5. The original estimate of 2-3 years for the biostimulation to result in meeting cleanup standards at the Sites for PCE and its degradation products appears to need to be re-visited.[16] Ecology supports re-calculating the restoration timeframe needed for Site hazardous substance concentrations to meet cleanup levels. Per WAC 173-340-360(4)(f), extending the restoration time frame shall not be used as a substitute for active remedial measures, when such actions are practicable. Ecology will need to see a confirmed downtrend in all Site groundwater concentrations with a definitive restoration timeline to consider any no further action determination for the Site.

6. Ecology recommends collecting ethane and ethane sampling in groundwater to calculate the rate of breakdown of vinyl chloride into non-toxic products.

7. Ecology recommends installing monitoring wells near the former dry cleaner building footprint, to replace at least some monitoring wells decommissioned for the needed excavation. Post-excavation Site hazardous substance concentrations in soil are greatest

[16] Page 3-5 in Farallon's Cleanup Action Progress Report, July 7, 2021.

within the former dry cleaner building footprint (such as at sampling locations NE, WBS-N, or WBS-S). The monitoring well installation would also be necessary for the following:

a. Determine the effectiveness of the biostimulation injections in this area.

b. Adequately evaluate the vertical gradient of any residual contaminant concentrations in groundwater, it may be necessary to install well screens in different intervals.

c. Whenever on-site disposal, isolation, or containment is used as the selected cleanup alternative for the Site or a portion of the Site (such as a property), long-term monitoring is required. For example, if residual PCE in soil cannot be accessed and otherwise removed or treated, and Ecology concurs with the use of institutional and engineered controls, long-term monitoring is required.[17] At this Site, this means monitoring wells to monitor groundwater on a long-term basis.

8. Once sufficient groundwater data are collected, Ecology requests:

a. Evaluate the data for trends. This might include Mann-Kendall trend analysis using USEPA's free ProUCL 5.2 statistical software, or another statistical package.

b. Evaluate PCE, TCE, and vinyl chloride for monitored natural attenuation and determine the restoration time frame to meet cleanup levels for these Site hazardous substances.

c. Update the conceptual site model and draft a revised feasibility study and disproportionate cost analysis.

d. Consider evaluating Site conditions for solvent monitored natural attenuation (MNA) based on EPA's *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water*.[18]

Groundwater as Potable at this Site

Ecology considers Site groundwater to be potable unless a successful non-potability demonstration consistent under WAC 173-340-720(2) is made. Based on available data at this Site, it is Ecology's opinion that any non-potability demonstration for Site groundwater would likely be unsuccessful.

[17] WAC 173-340-410(3)
[18] Published September 1, 1998. Revised August 14, 2008. https://cfpub.epa.gov/si/si_public_record_Report.cfm?Lab=NRMRL&dirEntryID=99187

Ecology's State Environmental Policy Act (SEPA) Comments

At the time of writing this opinion letter, it is Ecology's understanding that the proposed future land use at the former main facility (SW0398) property (parcels 7060000020 and 7060000030) is as a parking lot and that the existing building will be torn down. Ecology commented on the City of Puyallup's proposal under the SEPA process on July 21, 2021.

Vapor Pathway Considerations

Concentrations of PCE, TCE, and vinyl chloride in soil and/or groundwater suggest a vapor intrusion potential persists at the Site.

1. Evaluate current concentrations in soil and groundwater for the potential for vapor intrusion based on current and future proposed land use.

2. Additional soil gas sampling for PCE and its breakdown products is recommended in those areas where concentrations in soil and groundwater continue to exceed the MTCA Method A screening levels. Soil gas sampling locations should consider future proposed land use as well as current use.

3. TCE Acute Risk Evaluation – Please evaluate current Site concentrations of TCE in groundwater for the potential for acute toxicity. Ecology suggests starting with the residential and/or commercial TCE in groundwater screening values, depending on the future land use proposed at the Site.

Financing Request Comments

Financing concerns for the Meeker Mansion Group were noted in an email to Ecology, dated February 17, 2022. Lending decisions are at the discretion of the lender. Ecology's determinations under WAC 173-340 are related to the cleanup only. However, it should be noted that financial assurances requirements per WAC 173-340-440(11) are currently on hold for VCP projects as of May 25, 2022.

Underground Injection Control (UIC)

Remedial injection points are Class 5 wells and generally require registration with Ecology's UIC program. Please continue to ensure all injections are permitted via the application process at: https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Underground-injection-control-program

Current UIC application processing times are about 60 days. The webpage provides details for the application process and contact information for questions.

Environmental Information Management (EIM) System

In accordance with WAC 173-340-840(5) and Toxics Cleanup Policy 840, please continue to upload to EIM all Site data collected from August 1, 2005 to present.[19] Site data collected prior to August 1, 2005 are encouraged to be uploaded, but this is not required. All data have to be uploaded, accepted, reviewed and approved before another opinion review will be completed or any no further action request will be considered.

Setting Cleanup Standards

Cleanup Standards: Under MTCA, cleanup standards consist of three primary components; points of compliance,[20] cleanup levels,[21] and applicable state and federal laws.[22]

Points of Compliance Points of compliance are the specific locations at the Site where cleanup levels must be attained. For clarity, Ecology provides a table of standard points of compliance.

Media	Points of Compliance
Soil-Direct Contact	Based on human exposure via direct contact, the standard point of compliance is throughout the Site from ground surface to fifteen feet below the ground surface. *WAC 173-340-740 (6)(d)*
Soil- Protection of Groundwater	Based on the protection of groundwater, the standard point of compliance is throughout the Site. *WAC 173-340-747*
Soil-Protection of Plants, Animals, and Soil Biota	Based on ecological protection, the standard point of compliance is throughout the Site from ground surface to fifteen feet below the ground surface. *WAC 173-340-7490(4)(b)*
Groundwater	Based on the protection of groundwater quality, the standard point of compliance is throughout the site from the uppermost level of the saturated zone extending vertically to the lowest most depth which could potentially be affected by the Site. *WAC 173-340-720(8)(b)*
Groundwater-Surface Water Protection	Based on the protection of surface water, the standard point of compliance is all locations where hazardous substances are released to surface water. *WAC 173-340-730(6)*
Air Quality	Based on the protection of air quality, the point of compliance is indoor and ambient air throughout the Site. *WAC 173-340-750(6)*
Sediment	Based on the protection of sediment quality, compliance with the requirements of 173-204 WAC. *WAC 173-340-760*

[19] https://apps.ecology.wa.gov/publications/documents/1609050.pdf
[20] WAC 173-340-200 "Point of Compliance."
[21] WAC 173-340-200 "Cleanup level."
[22] WAC 173-340-200 "Applicable state and federal laws," WAC 173-340-700(3)(c)

Cleanup Levels Cleanup levels are the concentrations of a hazardous substance in soil, water, air, or sediment that are determined to be protective of human health and the environment. At this Site, MTCA Method A cleanup levels have been proposed for Site hazardous substances in soil and groundwater. The MTCA Method B cleanup level is proposed for vinyl chloride in groundwater.

The following cleanup levels are proposed in the Report:

1. Vadose zone (unsaturated soil) – Standard MTCA Method A, or MTCA Method B protective of groundwater where no standard MTCA Method A cleanup level exists.

2. Saturated zone (saturated soil) – Standard MTCA Method B protective of groundwater for soil with COCs with direct contact with groundwater.

3. Groundwater – Standard MTCA Method A, or standard Method B where no standard MTCA Method A cleanup level exists.

Ecology concurs with using the most stringent Method B cleanup levels for contaminants which do not have a Method A concentration. Air cleanup levels (MTCA Method B) will also need to be established for the Site.

Additionally, for petroleum, as well as PCE and its degradation products, MTCA Method A cleanup levels are sufficient. However, a cleanup level more stringent than the Method A cleanup level may be required if using the MTCA Method A cleanup level would result in exceedance of a cleanup level in other media (for example, groundwater protective of the vapor intrusion pathway).[23] A common situation is that the cleanup level for TCE in groundwater cleanup level protective of vapor intrusion has to be adjusted to less than the MTCA Method A cleanup level. For instance, the Method A cleanup level for TCE in groundwater is 5 micrograms per liter (µg/L), but frequently, to be protective of the vapor intrusion pathway, the MTCA Method B cancer cleanup level for TCE in groundwater is necessary, at 1.4 µg/L. See WAC 173-340-702(8).

Air Cleanup Levels

Where soil and groundwater cleanup levels continue to exceed the Site cleanup levels, Ecology requests you collect performance soil gas data to confirm the current nature and extent of petroleum and chlorinated solvents present in soil vapor at your Sites. Based on potential soil vapor conditions as of the writing of this letter, to be sufficiently protective of indoor air for any future building construction, Ecology recommends installing vapor barriers and mitigation systems for any building proposed to be constructed over the footprint of the chlorinated solvents in soil or groundwater.

[23] WAC 173-340-702

The presence of PCE in soil vapor and TCE in groundwater at the Site, regardless of source, represents a potential risk for indoor air receptors. Chlorinated solvents can move great distances and through preferential pathways that make them particularly challenging to evaluate.

Cumulative Effects

For sites with multiple hazardous substances, when using MTCA Method B, the hazard index and the total excess cancer risk must be evaluated per WAC 173-340-705. Potentially comingled petroleum and chlorinated solvents at your Sites may create a greater risk to receptors than either set of hazardous substance would be on their own. This is regardless of the source of the contamination.

Please ensure, should you propose any MTCA Method B cleanup levels for the Sites, that the result for the hazard index not exceeding a value of HQ=1, and to assure the total excess cancer risk does not exceed a value of $1x10^{-5}$. Should this analysis be needed, please provide sufficient documentation in a future deliverable for Ecology to determine that MTCA requirements for cumulative effects have been met. Where MTCA Method A cleanup levels are established, this cumulative effects analysis has already been incorporated as part of the cleanup level and typically does not need to be done separately, with TCE in groundwater protective of vapor intrusion frequently being an exception.

Applicable Laws and Regulations (ARARs) Farallon considered ARARs in section 3.1 of their *Cleanup Action Plan*.[24] Generally, Ecology concurs with the list of ARARs presented. Based on changes in cleanup knowledge and approaches over the last 20 years, Ecology also considered applicable requirements related to air and vapor. Puget Sound Clean Air Agency requirements do not appear to affect the proposed cleanup levels at the Sites. Adjusting groundwater concentrations to a standard more stringent than MTCA Method A to be protective of the vapor intrusion pathway may be needed, and should be evaluated further.

An online tool[25] is currently available to help you evaluate the current local requirements that may be necessary. All cleanup actions conducted under MTCA shall comply with applicable state and federal laws.[26] The person conducting a cleanup action shall identify all applicable local, state, and federal laws. The department shall make the final interpretation on whether these requirements have been correctly identified and are legally applicable or relevant and appropriate.[27]

[24] May 15, 2002.
[25] https://apps.oria.wa.gov/opas/index.asp
[26] WAC 173-340-710(1)
[27] WAC 173-340-710(2) Note – MTCA Method A includes ARARs and concentration-based tables (WAC 173-340-700(5)(a)) If MTCA Method A remains in use as proposed Site cleanup levels, identify non-concentration based technical and procedural requirements. If Method B or C cleanup levels are proposed, also include concentration-based requirements.

Ecology recommends reviewing the current applicable local, state, and federal laws and report to Ecology any changes about how current applicable local, state, and federal laws specifically affect the proposed cleanup.

Selecting the Cleanup Action

Ecology has determined that additional remedial investigation and evaluation of cleanup alternatives is necessary at the Site before selecting a final cleanup action or determining that the interim actions completed are sufficient to concur with a request for Site closure. Ecology does support the interim cleanup actions already taken at the Site, as active remediation was necessary for both petroleum and chlorinated solvent cleanups.

Collect Performance Data (WAC 173-340-410[1][b])

Continued regularly collected groundwater data are needed to evaluate the effectiveness of the remedial injections, support any case for monitored natural attenuation in groundwater, and determine compliance with groundwater cleanup levels.

Ecology also recommends collecting performance soil gas/vapor data in areas with the greatest residual concentrations of PCE and its degradation products in soil and groundwater.

As long as groundwater and soil gas/vapor data exceed cleanup levels, it should be presumed that contaminant concentrations in soil exceeding cleanup levels also persist. Though performance soil samples would be necessary to demonstrate contaminant concentrations in soil meet cleanup standards at the Site, in order to obtain an unencumbered no further action (NFA) determination that does not require engineered and institutional controls memorialized by an environmental covenant and supported by long term monitoring.

Supplemental Feasibility Study (FS) and Disproportionate Cost Analysis (DCA)

While Ecology supports those cleanup actions already taken at this Site, it does not appear that the cleanup actions taken yet meet cleanup standards for the Site.

Once collection of any needed additional soil, groundwater, and soil gas/vapor data have been completed, consider a supplemental FS/DCA to evaluate additional cleanup alternatives. The updated FS/DCA is also needed to document that further use of a permanent alternative (for example, digging up all remaining contaminated soil or additional biostimulation injections) is disproportionately costly to the environmental benefits. Ecology can consider costs during the FS/DCA, to the extent allowed under WAC 173-340-702(6).[28]

[28] https://apps.leg.wa.gov/wac/default.aspx?cite=173-340-702

If a property-specific no further action is being considered for any parcel, please keep in mind:

The Site must be fully delineated and characterized to select a cleanup action which results in the cleanup of a parcel associated with the Site. Ecology's default definition for a parcel extends to the centerline of adjacent rights-of-way. For a property specific NFA, the City of Puyallup's concurrence would be necessary to leave Site hazardous substance concentrations exceeding cleanup levels in one or more of their rights-of-way.

Comments on Monitored Natural Attenuation (MNA)

Please review Ecology's comments in **Enclosure D** about details around any potential MNA approach for groundwater at your Site.

Comments on Environmental Covenants

Eventually, if institutional and engineered controls are needed at the Site, Ecology provides comments in **Enclosure E**. These comments are provided attached to this letter for future reference. Both Site-specific and general environmental covenant comments are provided. Please keep in mind that MTCA requires permanent cleanup solutions to the extent practicable.

Additionally, as stated earlier in this letter, using an environmental covenant (as an example) to extend the restoration timeframe as a substitute for active remedial measures, is prohibited under WAC 173-340-360(4)(f). Active remedial measures, such as excavation and biostimulation injections, have been successfully used at this Site, and should be further considered through an updated FS/DCA.

Compliant Groundwater Results

"Clean" groundwater results are demonstrated by one of two options for petroleum Sites with confirmed exceedances of cleanup levels in groundwater:

1. By Stage III monitoring under section 10.3 in Ecology's *Guidance for Remediation of Petroleum Contaminated Sites*. In practice, at Sites like this one, this typically means at least four consecutive quarters of concentrations of Site hazardous substances in groundwater less than cleanup levels.

2. The statistical analysis presented in WAC 173-340-720(9).

In order to determine groundwater compliance for the PCE and its degradation products, the statistical analysis under WAC 173-340-720(9) is often needed at a Site like this in order to demonstrate compliance for concentrations in groundwater, above the four consecutive quarterly event requirement for petroleum compliance in groundwater.

However, if institutional and engineered controls are needed, it may not be necessary to achieve compliance at every monitoring well before closing the Site.

Compliance for Site hazardous substances concentrations is completed on a well-by-well basis.

Fully compliant groundwater results may not be needed prior to closing a site with institutional and engineered controls and environmental covenant, should that be supported by the new FS/DCA results (and Ecology concurs).

Implementing the Cleanup Action

The following interim actions have been completed at the Site:

- An air sparge, soil vapor extraction, and ozone system operated on the main facility site with the goal of remediating petroleum hydrocarbons at the Site. Operation of this system appears to have had the additional benefit of reducing subsurface chlorinated solvent concentrations as well.
- Excavation in January 2003 of 1,100 tons of petroleum contaminated soil (PCS). Disposal of soil by thermal desorption at TPS Technologies, Inc. at Tacoma, Washington.
- In June and July 2006, hydrogen peroxide injections near MW-12 and MW-14.
- In June 2019, 1,218 tons of PCE contaminated soil was excavated, transported, and disposed of at Pierce County's LRI Landfill in Graham, Washington.
- In July 2019, 4,480 tons of PCE contaminated soil was excavated, transported, and disposed of at Pierce County's LRI Landfill.
- As part of a biostimulation program to break down PCE and its degradation products, 118 temporary injection points advanced to varying depths of 8-30 feet below ground surface (bgs). The injections were completed between October 1 and November 6, 2019.

Additional interim actions are encouraged at the Site. Active remedial measures should be used to clean up Site contaminants, to the maximum extent practicable.

Unencumbered Site or Property NFA

For a Site or property within the Site to receive a no further action determination from Ecology without institutional and engineered controls and an environmental covenant, Site cleanup standards must be met throughout the Site or that property (one or more parcels). This means all contaminant concentrations are less than the applicable Site cleanup levels, these cleanup levels are met for all points of compliance for all affected media, and any applicable state and federal laws have been incorporated into the cleanup.

Limitations of the Opinion

1. Opinion Does Not Settle Liability with the State.

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

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

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

2. Opinion Does Not Constitute a Determination of Substantial Equivalence.

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you performed is substantially equivalent. Courts make that determination.
See RCW 70A.305.080 and WAC 173-340-545.[29]

3. State is Immune from Liability.

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. See RCW 70A.305.170(6).

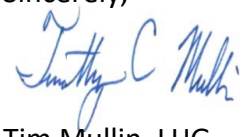
[29] https://apps.leg.wa.gov/WAC/default.aspx?cite=173-340-545

Contact Information

Thank you for choosing to clean up the Site under the VCP. Please do not hesitate to request additional services as your cleanup progresses. We look forward to working with you.

For more information about the VCP and the cleanup process, please visit our Voluntary Cleanup Program webpage.[30] If you have any questions about this opinion, please contact me at 360-999-9589 or tim.mullin@ecy.wa.gov.

Sincerely,



Tim Mullin, LHG
Toxics Cleanup Program
Southwest Regional Office

TCM/tam

Enclosures: A – Site Description
B – Document List
C – Figure for Petroleum Release Confirmatory Soil Sampling Locations
D – Groundwater Monitored Natural Attenuation (MNA) Comments
E – Environmental Covenant Reference Information

cc by email: Kathy Johnson; kathy@cornforthcampbell.com
Kurt Johnson; kurt@cornforthcampbell.com
Rachael Brown, City of Puyallup, RNBrown@PuyallupWA.gov
Ken Davies, City of Puyallup; KenDavies@PuyallupWA.gov
Quyen Keeton, TPCHD; UST@tpchd.org
Ecology Site File

[30] https://www.ecy.wa.gov/vcp

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Enclosure A

Site Description

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Property History and Current Use: The Sites are located at 107 3rd St SE and 115 2nd St SE, Puyallup. The dry cleaner facility was located on parcel 0420273133, 0.35 acres in size, and is currently owned by the Ezra Meeker Historical Society. The main facility Site is comprised of parcels 7060000020 and 7060000030, both owned by the City of Puyallup, totaling 1.202 acres. Between the two facilities is the right-of-way of 3rd St SE. Portions of the rights-of-way for E Main Ave and Spring Street also appear to be part of the Site. All parcels are currently zoned as commercial.

Property Vicinity: The Site is located in a mostly commercial district, with some residential areas located about 600 feet to the northeast and southeast.

Soils and Geology: The Site is located within the Puyallup River Valley. Local topography is flat. The Site is located at approximately 50 feet above mean sea level. Subsurface soils consist of interbedded sands, silts, and gravelly sands, with varying amounts of gravel and fines. Organic material has also been reported in some boring logs. Local lithology has been interpreted as fluvial deposits overlying glacial drift deposits. The maximum depth explored at the Site is 36 feet below ground surface (bgs).

Groundwater: Based on sampling the monitoring well network from September 2001 to present, depth to groundwater fluctuates from approximately 5 to 13 feet below top of casing. Groundwater flow direction has been calculated as primarily to the north-northeast and northeast.

Surface/Storm Water/Septic Systems: The Site is serviced by city water and sewer. Stormwater systems are present for all three parcels and connect to service in 3rd St SE.

There is no naturally occurring surface water at the Site. The nearest natural surface water is the Puyallup River, located approximately 0.35 miles northeast of the Site.

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Enclosure B

Documents List

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Documents List

1. Farallon Consulting, Inc. (Farallon), *Addendum to Cleanup Action Progress Report*, November 14, 2021.
2. Farallon, *Cleanup Action Progress Report*, July 7, 2021.
3. Ecology, *Contained-in Determination for Contaminated Soils from Cornforth Campbell Motors*, Dry Cleaner Site, July 15, 2019.
4. Ecology, *Contained-in Determination for Contaminated Soils from Cornforth Campbell Motors*, Dry Cleaner Site, July 9, 2019.
5. Ecology, *Contained-in Determination for Contaminated Soils from Cornforth Campbell Motors*, Dry Cleaner Site, June 11, 2019.
6. Farallon, *Technical Information Report*, September 13, 2018.
7. Farallon, *Hydrogeologic Report*, May 22, 2018.
8. Farallon, *Request for Contained in Determination*, August 16, 2017.
9. Farallon, *Site Characterization Work*, June 11, 2013.
10. Gore Surveys, *Gore Soil Gas Survey*, October 25, 2010.
11. Farallon, *Cleanup Action Progress Report*, *January Through December 2009*, April 2010.
12. Farallon, *Cleanup Action Progress Report*, *January Through December 2008*, April 2009.
13. Farallon, *Contained-in Determination Request,* January 15, 2009.
14. Farallon, *Cleanup Action Progress Report*, *March 2007 Through January 2008*, February 2008.
15. Farallon, *Cleanup Action Progress Report*, *March 2006 Through February 2007*, June 2007.
16. Farallon, *First Quarter 2006 Cleanup Action Progress Report*, April 26, 2006.
17. Farallon, *Third Quarter 2005 Cleanup Action Progress Report*, December 19, 2005.
18. Farallon, *Cleanup Action Progress Report*, *April 2004 to July 2005,* October 7, 2005.
19. Farallon, *Fourth Quarter 2004 Cleanup Action Progress Report*, February 16, 2005.

20. Farallon, *Third Quarter 2004 Cleanup Action Progress Report*, December 28, 2004.

21. Farallon, *Second Quarter 2004 Cleanup Action Progress Report*, November 8, 2004.

22. Farallon, *Cleanup Action Progress Report*, *March 2003 to March 2004,* July 14, 2004.

23. Farallon, *Cleanup Action Progress Report*, November 26, 2003.

24. Farallon, *Third Quarter 2003 Cleanup Action Progress Report*, November 19, 2003.

25. Farallon, *Request for Contained-in Determination*, March 14, 2003.

26. Farallon, *Addendum to the Dry Cleaner Site and Car Lot Site Cleanup Action Plans*, June 19, 2002.

27. Farallon, *Well Installation Report*, May 28, 2002.

28. Farallon, *Groundwater Status Report*, May 28, 2002.

29. Farallon, *Request for Contained-in Determination*, February 5, 2002.

30. Farallon, *Subsurface Assessment Report*, December 21, 2001.

31. ADaPT Engineering, Inc. (ADaPT), *Revised Phase II Environmental Site Assessment*, Former Dry Cleaning Facility, August 3, 2001.

32. ADaPT, *Phase II Environmental Site Assessment*, Former Dry Cleaning Facility, June 26, 2001.

33. ADaPT, *Phase I Environmental Site Assessment*, February 21, 2001.

Enclosure C

Figure for Petroleum Release Confirmatory Soil Sampling Locations

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FORMER GARAGE

BUILDING VACANT

3rd St E

MW-3

MW-4

MW-13

MW-14

DEPTH	GRO	B	T	E	X
5'	2,000	ND	24	26	170

EX-011003-9

DEPTH	GRO	B	T	E	X
6.5'	31	ND	0.09	0.2	1.2

EX-011003-8

DEPTH	GRO	B	T	E	X
8.5'	31	1.2	3.2	0.7	3.8

EX-011003-4

DEPTH	GRO	B	T	E	X
7.5'	19	ND	ND	0.1	0.9

EX-011003-7

DEPTH	GRO	B	T	E	X
9.5'	ND	ND	ND	ND	ND

EX-010703-1

DEPTH	GRO	B	T	E	X
8'	ND	ND	ND	ND	ND

EX-010703-3

EX-011003-6

DEPTH	GRO	B	T	E	X
7'	5	0.05	ND	ND	ND

EX-010903-3

DEPTH	GRO	B	T	E	X
10'	75	ND	ND	1	0.7

EX-010903-4

DEPTH	GRO	B	T	E	X
10'	240	2.2	0.3	5.5	30

EX-010903-8

DEPTH	GRO	B	T	E	X
8'	ND	ND	ND	ND	ND

EX-011003-1

EX-010903-7

DEPTH	GRO	B	T	E	X
10'	ND	0.09	ND	ND	ND

EX-011003-5

EX-010903-9

DEPTH	GRO	B	T	E	X
10'	14	0.8	ND	0.3	0.7

EX-011003-3

DEPTH	GRO	B	T	E	X
6'	ND	ND	ND	ND	ND

DEPTH	GRO	B	T	E	X
3.5'	ND	ND	ND	ND	ND

EX-010903-2

DEPTH	GRO	B	T	E	X
10'	300	2.1	15	5.7	33

EX-011003-2

DEPTH	GRO	B	T	E	X
5'	160	ND	ND	0.4	0.5

0 10

APPROXIMATE SCALE IN FEET

N

LEGEND

MW-4 SHALLOW MONITORING WELL

MW-5 DEEP MONITORING WELL

EX-010903-2 SOIL SAMPLE LOCATION

APPROXIMATE AREA OF EXCAVATION

PROPERTY BOUNDARY

SD STORMDRAIN

CATCH BASIN

RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)
DEPTH IN FEET BELOW GROUND SURFACE
DRO = DIESEL RANGE ORGANICS
GRO = GASOLINE RANGE ORGANICS
ORO = OIL RANGE ORGANICS

B = BENZENE
T = TOLUENE
E = ETHYLBENZENE
T = TOTAL XYLENES
MTCA = MODEL TOXICS CONTROL ACT
ND = NOT DETECTED ABOVE THE LABORATORY METHOD REPORTING LIMIT INDICATED IN TABLE 1

BOLD INDICATES CONCENTRATIONS EXCEED MTCA METHOD A CLEANUP LEVELS

FARALLON CONSULTING
320 3rd Avenue NE,
Issaquah, WA 98027

FIGURE 3

CAR LOT SITE PLAN SHOWING EXCAVATIO
SOIL SAMPLE LOCATIONS, AND
ANALYTICAL RESULTS
CORNFORTH-CAMPBELL MOTORS
PUYALLUP, WASHINGTON

FARALLON PN: 748-001

Drawn By: DEW	Checked By: CB/AM	Date: 7/17/03	Disk Reference: 748001

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Enclosure D

Groundwater Monitored Natural Attenuation Comments

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Groundwater Monitored Natural Attenuation (MNA) Comments

1. A demonstration of the effectiveness of MNA for groundwater would need to be completed. Please see Ecology publication No. 05-09-091, *Guidance on Remediation of Petroleum-Contaminated Ground Water by Natural Attenuation*, July 2005. MNA is much more involved than just compliance groundwater monitoring. For PCE, the statistical principles for petroleum could be adapted, or follow another of many available guidance from USEPA or another state.

2. As required under WAC 173-340-360(3)(b), permanent cleanup actions are preferred. This means active remediation is supported first, and MNA as a final cleanup action when it becomes disproportionately costly to the environmental benefits to employ active remediation at the Site. The excavation and chemical injections which have been completed already at the Site are examples of active remediation.

3. Any plume in groundwater has to be fully delineated. The contaminant plume or plumes in groundwater have to be shown to be stable or shrinking. To demonstrate a stable or shrinking plume requires wells inside the plume to evaluate concentrations of Site hazardous substances over time, collection of geochemical parameters and groundwater parameters, collection of depth to groundwater measurements to determine seasonal fluctuations and monitor groundwater flow direction, and collecting any additional parameters to show plume attenuation (such as dissolved methane or gasoline oxygenates).

4. Additionally, sampling results from monitoring wells outside the plume are needed to delineate the upgradient, downgradient, and cross-gradient concentrations of Site hazardous substances in groundwater and model the plume geometry.

5. To determine a trend in groundwater sampling results, at least eight sampling events are needed. Typically for an MNA demonstration, many more consecutive sampling events are needed to show on a statistical basis that any contaminant plume in groundwater is stable or shrinking.

6. Show the results of the statistical analysis in a future deliverable confirming the stable or shrinking plume. Available options to show statistical significance for a downward trend in various Site hazardous substances concentrations could be a linear regression in Microsoft Excel®, or with Mann-Kendall trend analysis in MTCAStat or ProUCL 5.2.[31]

[31] ProUCL 5.2 is free for download from the USEPA at: https://www.epa.gov/land-research/proucl-software.

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Enclosure E

Environmental Covenant Reference Information

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Environmental Covenant Reference Information

Draft Covenant: If applicable based on the additional data collection and evaluation presented earlier in this opinion letter, Ecology will eventually need a draft covenant memorializing proposed institutional and engineered controls for all impacted properties. Also provide the environmental covenant in electronic word-processing-compatible format.[32] Include the following information with the draft covenant:

1. **Plan View Maps and Geologic Cross Sections:** Include delineated concentration (1) isopleth plan view maps and (2) geologic cross sections showing the extents of remaining contamination at the Site. Include the boundaries of the MTCA facility, the affected Properties, and the location of any rights of way or easements. Indicate where insufficient data are available to delineate to natural background concentrations. These maps will be used to indicate where contamination remains at the Site after closure. For consistency with other sites in our program, Ecology prefers that data for these maps are provided in units of milligrams per kilogram (mg/kg) for soil, micrograms per liter (µg/L) for groundwater, and microgram per meter cubed (µg/m^3).

2. **Title Search:** Provide a complete title search as part of Exhibit A, legal description.

3. **Land Survey:** Provide a land survey of impacted properties and rights-of-way, including platting and dedications.

4. **Review the Title Search and Land Survey to Determine if Existing Easements Include any Area of Proposed Engineered or Institutional Controls:**

    a. Develop a plan view map or sketch of the locations of existing easements sufficient for Ecology to concur with your evaluation of whether any easements include the areas of proposed engineered or institutional controls.

    b. For each easement that intersects proposed controls at the Site, provide either of the following:

        i. A signed subordination agreement.

        ii. Sufficient evaluation of specific easement terms for Ecology to concur that the easement will not impact the integrity of the cleanup.

[32] See the word processing formatted document at: https://apps.ecology.wa.gov/publications/SummaryPages/1509054.html

Ecology recommends contacting easement owners prior to completing a draft environmental covenant. When reviewing easements, Ecology assumes that Property boundaries extend to the centerline of the adjacent rights of way.

5. **Local Government Notification Requirements:** Please document how the local government notification requirements of WAC 173-340-440(10) are completed. Ecology suggests providing the draft covenant and enclosure package to the local land use planning authority for review and comment. If comments are provided, update the draft covenant based on comments, and provide Ecology the correspondence, local government comments, and how those comments were addressed. If no response is received, include sufficient information for Ecology to concur that the correct local government agency was notified, the date they were notified, and that comments were sought. At this Site, Ecology believes that the appropriate local land use planning authority is likely the City of Puyallup.

6. **Long-Term Groundwater Monitoring and Cap Monitoring Plan:** Ecology will need long-term monitoring of the existing groundwater monitoring well network to ensure the remedy is effective. A long-term groundwater and cap monitoring and reporting plan will be needed. That plan needs to also include contingency planning, if the remedy is not effective.

   Ecology suggests proposing a fifteen-month confirmation groundwater monitoring frequency for the first five years of post-closure monitoring, so that four quarters of seasonal groundwater results are obtained over the five years prior to Ecology's first required regular review.

   Reporting on the cap condition may be conducted at the same time as long-term monitoring and should be detailed in the monitoring plan. An initial inspection with photographs and description of the cap to be monitored should be included with the plan.

   The plan should also include provisions to ensure that all environmental data is provided in accordance with WAC 173-340-840(5) and Ecology Toxics Cleanup Program Policy 840[33] (Data Submittal Requirements).

8. **Contingency Plan:** A long-term groundwater and soil vapor contingency plan is required. That plan should describe those actions that will be conducted if long-term monitoring results exceed predetermined levels, or if cap maintenance or other maintenance is needed, such as repairing groundwater monitoring wells, or what to do if the cap is damaged.

[33] https://apps.ecology.wa.gov/publications/SummaryPages/1609050.html

The contingency plan may be triggered during regular inspection of the cap and monitoring well integrity, or by exceedances of cleanup levels at a point of compliance during long-term monitoring. A simple and adequate contingency plan would include and detail, as applicable, that when specific levels are detected during long-term monitoring, additional confirmation sampling would be performed within 30 days of the initial receipt of results. If the cap were damaged, indoor air sampling and analysis would be conducted and the cap repaired.

Additional follow-up groundwater sampling would include all required testing for detected hazardous substances and related compounds. The contingency plan should include proposed analytes for contingency sampling in an analytical schedule. Results of performance and confirmation sampling for a contingency plan would be provided to Ecology within 90 days of the laboratory result date if no exceedances of criteria are detected, or within 30 days of the laboratory report result date if exceedances are detected, or for follow-up confirmation sampling.

If confirmation sampling reveals the continued presence of contaminants above predetermined levels, the contingency plan should include that a work plan to further evaluate conditions beneath the Site would be submitted to Ecology within 60 days of receipt of results of confirmation sampling.

9. **Rights-of-Way:** If contamination is proposed to be left in rights-of-way exceeding cleanup standards, or exceeding soil vapor cleanup screening levels where an engineered control such as a sidewalk is needed to reduce human exposure to contaminated soil vapor, a subordination agreement with the right-of-way holder would be required for implementing an environmental covenant. Grantor and/or subordinate agreements may be required with adjacent Property owners or right-of-way holders, determined by the extents of the Site. Alternately, consider a property-specific no further action approach excluding rights-of-way. Ecology recommends contacting rights-of-way holders (and adjacent property owners) prior to completing a draft environmental covenant.

10. **Financial Assurances.** As of May 25, 2022, per TCP program manager determination, financial assurance requirements for VCP cleanup sites are on hold. At this time, financial assurances per WAC 173-340-440(11) would not be required to be met prior to implementing institutional or engineered controls or an environmental covenant at the Site.