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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Southwest Region Office

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December 6, 2022

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Scott Hooton
Port of Tacoma
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Re: Comments on First and Second Quarter Groundwater Reports, Request for Work Plan, and Resolution of Informal Dispute

- **Site Name:** Taylor Way and Alexander Avenue Fill Area (TWAIFA)
- **Site Address:** 1500 Block Taylor Way E, Tacoma, Pierce County, WA 98409
- **Agreed Order:** DE 14260
- **Enforcement Order:** DE 19410
- **Facility/Site ID:** 1403183
- **Cleanup Site ID:** 4692

Dear Tasya Gray and Scott Hooton:

Thank you for submitting the first and second quarter 2022 groundwater monitoring reports (reports) for review by the Department of Ecology.^{1,2} Ecology has the following comments on the reports and the recent sub-slab soil vapor sampling results from the Former Potter Property (Port of Tacoma, 2022):³ **To address the data gaps identified in the comments, it is necessary that additional soil and soil vapor sampling and well installation work be performed.**

1. **Need for additional shallow aquifer monitoring wells:** Review of shallow aquifer groundwater analytical results and groundwater elevation data from the reports shows that the extent of the shallow aquifer contamination plume above data gap work plan screening levels is not completely defined. **Therefore, additional shallow aquifer groundwater monitoring wells need to be installed in the following areas (exceedance constituents shown in parentheses):**
 - a. Southeast of **CTMW-20** (total petroleum hydrocarbons, diesel range organics, TPH-D; TPH oil range organics, TPH-O; and manganese), **CCW-8B** (TPH-D; TPH-O; 1-

¹ Dalton, Olmsted, & Fuglevand (DOF), *First Quarter 2022 Groundwater Data Analysis Report*, May 6, 2022.

² DOF, *Second Quarter 2022 Groundwater Data Analysis Report*, August 10, 2022.

³ Port of Tacoma, *Sub-Slab Vapor Sampling Results, Additional Sampling Event*, Letter from Scott Francis, Port of Tacoma, to John Collecchi, Handan Container Services, Inc., August 24, 2022.

methylnaphthalene; and manganese), and **CCW-1A** (tetrachloroethylene, PCE; trichloroethylene, TCE; vinyl chloride [VC]; and manganese) and **CCW-1B** (copper and manganese). Also, it appears that the TPH contamination above MTCA Method A Cleanup Levels for Ground Water that have been observed in Emerald Services wells MW-3R and MW-4 are originating from the TWAFA Site.

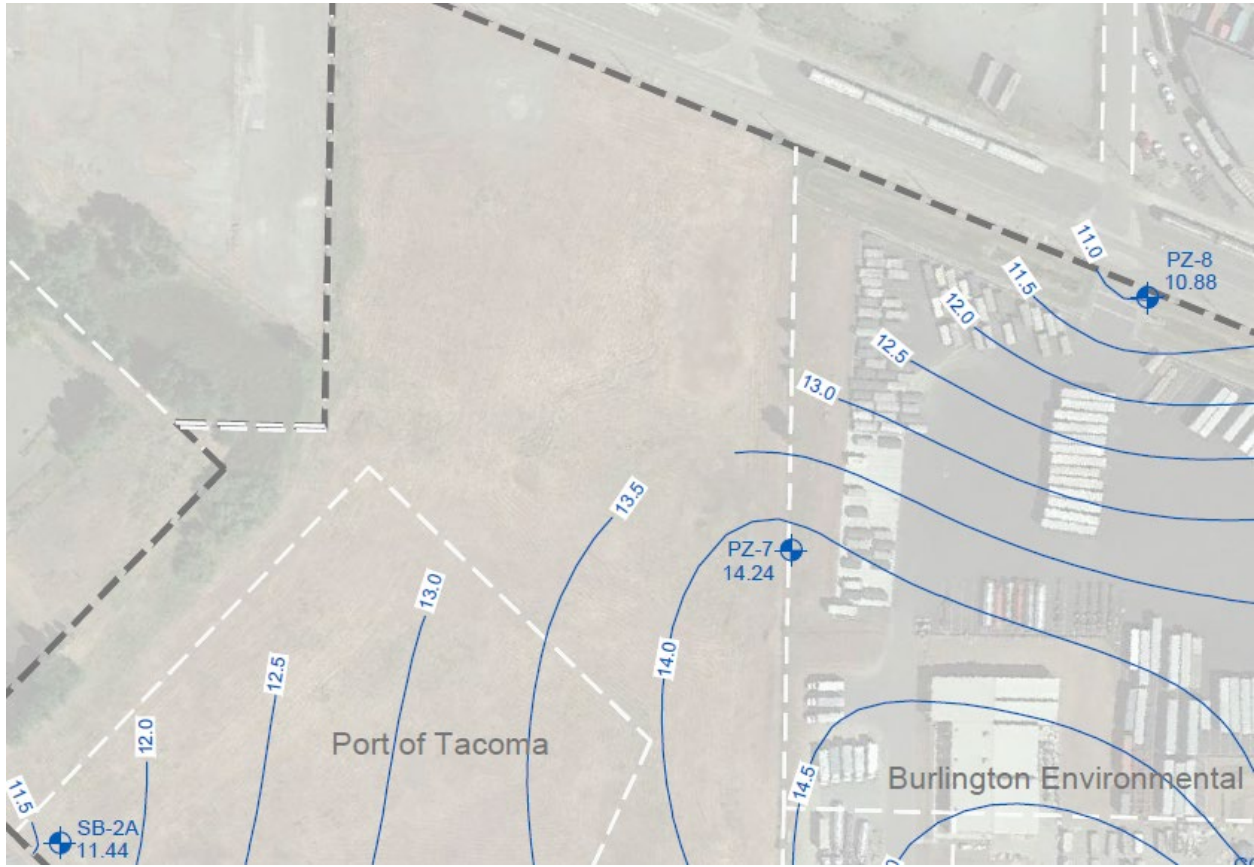
- b. East of **CCW-7B** (TPH gasoline range organics, TPH-G; TPH-D; TPH-O; 1,4-dichlorobenzene; benzene; VC; 1-methylnaphthalene; and manganese).
 - c. North-northeast of **TWA-1** (TPH-D; TPH-O; VC; benzene; and manganese), **TWA-2** (TPH-D + TPH-O; arsenic; copper; and manganese), and **TWA-3** (arsenic; copper; and manganese).
 - d. North and northwest of **CCW-3A** (TPH-D; TPH-O; benzene; arsenic; nickel; and zinc) and **CCW-3B** (TPH-G; TPH-D; TPH-O; benzene; VC; 1-methylnaphthalene; and manganese).
 - e. Halfway between **CTMW-15** and **CTMW-20**. An additional well is needed here to define groundwater concentrations of chlorinated volatile organic compounds (cVOCs), including PCE, TCE, and VC due to elevated sub-slab vapor concentrations detected beneath the Shop Building on the Former Potter Property (Port of Tacoma, 2022). Soil samples shall be collected during well installation to determine if soil contamination is affecting groundwater in this area.
 - f. Southwest of **SB-1A** (copper and manganese), **SB-2A** (manganese), and **CTMW-14** (copper).
 - g. Existing wells that are currently not part of the groundwater monitoring network should be evaluated to see if they can be utilized to partially meet this need in selected areas (for example Emerald Services wells MW-1, MW-2R, MW-3R, and MW-4; and Burlington Environmental wells PZ-7, PZ-8, and PZ-9). For more information on the Emerald Services well network, see Trihydro (2022).⁴
 - h. Please coordinate the timing of the fourth quarter 2022 groundwater monitoring event so that it occurs at the same time as the fourth quarter 2022 event for the Emerald Services facility. This will enable the groundwater elevation map from this quarter to include data from both the TWAFA Site and Emerald Services wells.
2. Need for additional intermediate (“deep”) aquifer monitoring wells: Review of the underlying intermediate⁵ aquifer (referred to as the “deep” aquifer in the report) groundwater analytical results and groundwater elevation data shows that the extent of the intermediate aquifer contamination plume above data gap work plan screening levels is not

⁴ Trihydro, 2021 *Annual Groundwater Monitoring Report, Emerald Services, Inc.*, April 14, 2022.

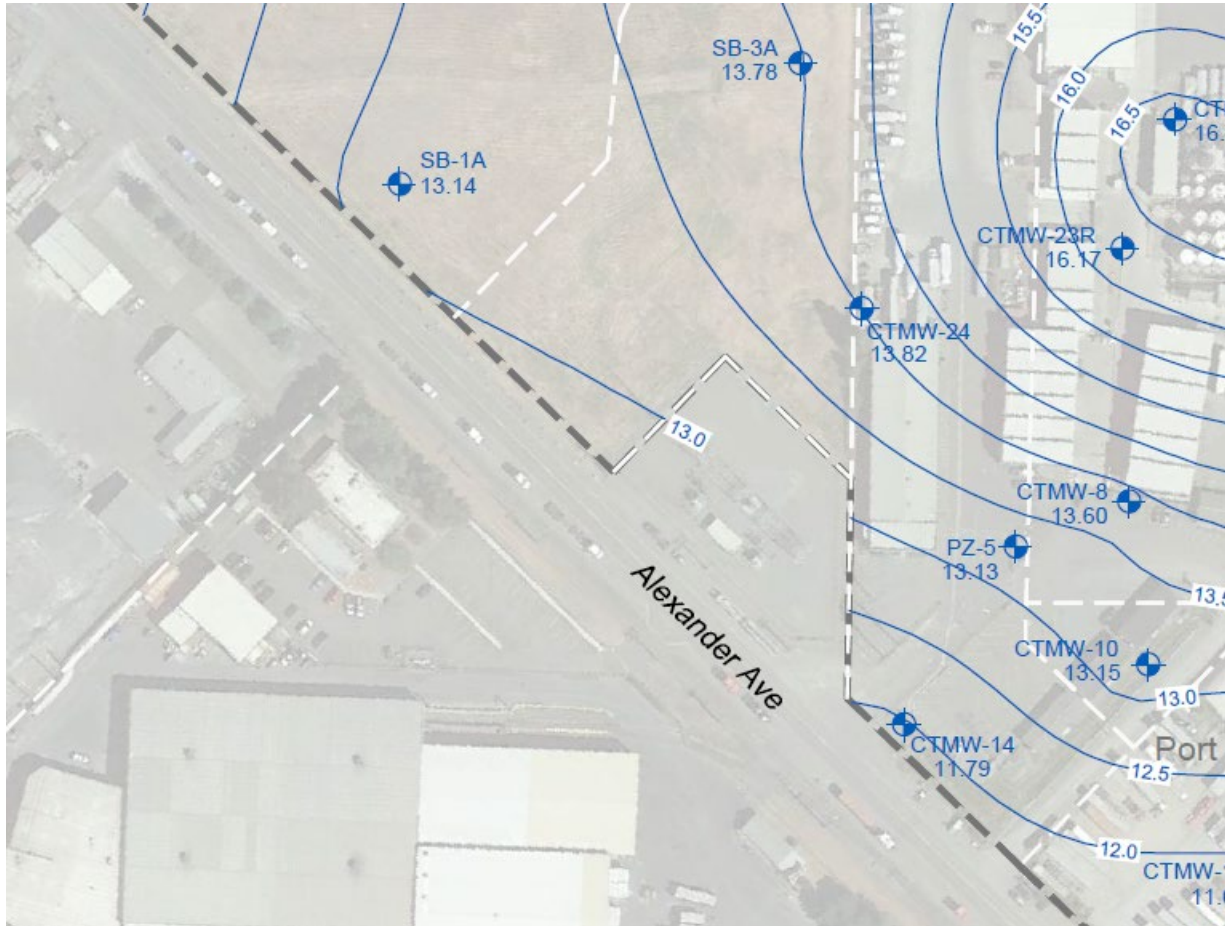
⁵ Within the Tacoma tide flats, the terminology for this aquifer can be confusing because it has been variously referred to as the “intermediate” and “deep” aquifer. GeoEngineers (*Final Report, 721 East Alexander Avenue and Adjacent Properties Data Summary, Tacoma, Washington*, January 25, 2010) describes the intermediate aquifer as being encountered below the upper silt aquitard to depths of 200 feet below ground surface (bgs) and it is subject to tidal influence by the Blair and Hylebos Waterways and Commencement Bay. There is also a deeper regional aquifer system that consists of a sequence of confined aquifers and aquitards at depths below 200 feet bgs.

completely defined. **Therefore, additional intermediate aquifer groundwater monitoring wells need to be installed in the following areas:**

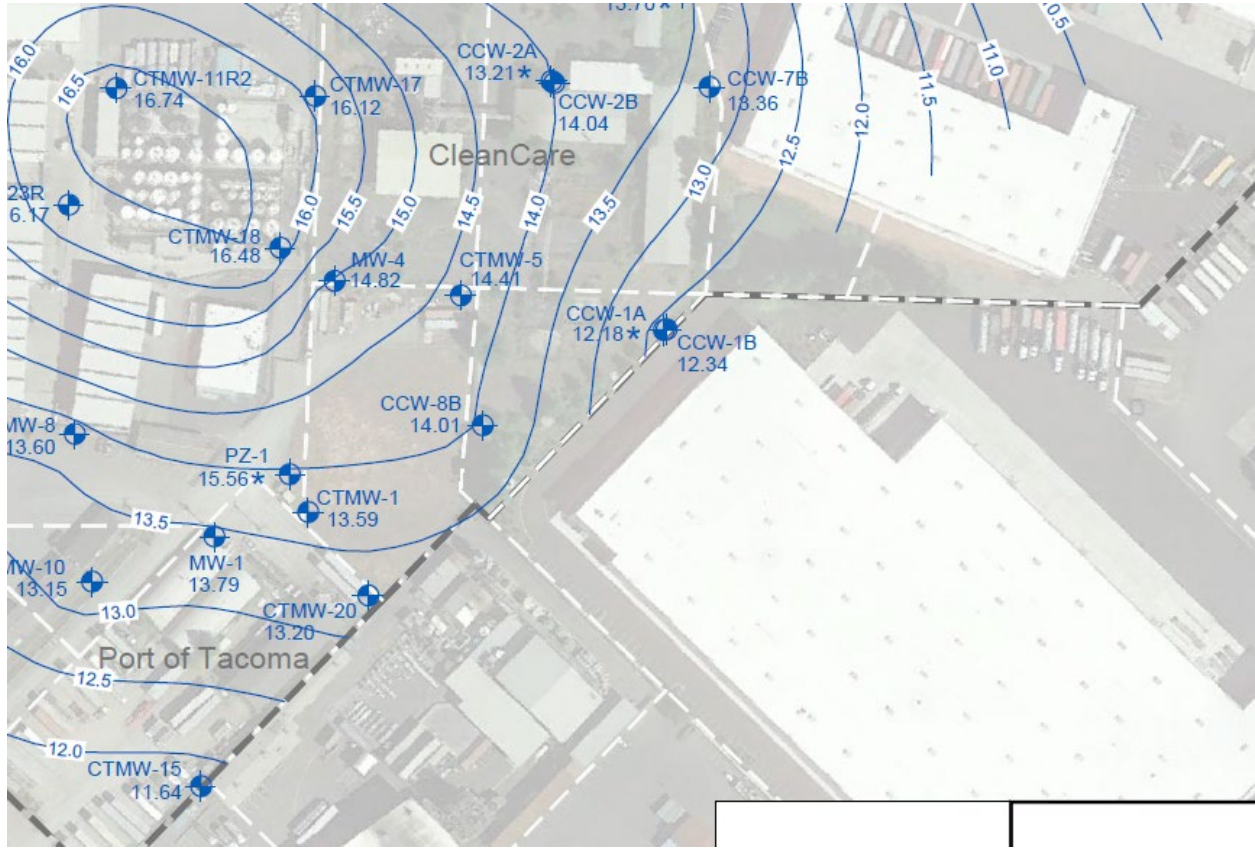
- a. South-southeast of **TWA-8D** (arsenic and manganese) and **CTMW-25D** (TPH-D; TPH-O; arsenic; chromium; and manganese).
 - b. South of **CCW-1C** (TPH-D + TPH-O and manganese), **TWA-6D** (arsenic, copper, chromium, and manganese), and **TWA-10D** (arsenic).
 - c. South-southwest of **TWA-7D** (arsenic, copper, and manganese).
 - d. Water level data from both quarters indicate that there is northerly groundwater flow from the northern portion of the Site. **Therefore, additional downgradient intermediate aquifer groundwater monitoring wells are needed in the following northern areas to further define the groundwater flow direction and contaminant concentrations:**
 - North-northeast of **CCW-3C** (TPH-D + TPH-O and manganese), **CCW-5C** (TPH-D + TPH-O and manganese), **CCW-6C** (TPH-D + TPH-O), **TWA-4D** (arsenic, copper, and manganese), and **TWA-5D** (TPH-D + TPH-O; copper; and manganese).
3. Groundwater elevation contour lines on figures should not stop at a parcel boundary, but should be connected with a solid or dashed line when possible. Please ensure that this is done on future report figures. Examples where contour lines should have been connected are shown below:



(From Figure 3, 1st quarter 2022 groundwater monitoring report)



(From Figure 3, 1st quarter 2022 groundwater monitoring report)



(From Figure 3, 1st quarter 2022 groundwater monitoring report)



(From Figure 4, 1st quarter 2022 groundwater monitoring report)

4. **“NJ” Data Validation Qualifier:** Based on both internal discussions and consultation with Manchester Environmental Laboratory’s quality assurance (QA) office and data validation chemist, Ecology concludes that the “NJ” qualifier in the results is not appropriate from the results where the “x” flag was the only reason noted. The data validation summary reports for both quarters assigned “NJ” qualifiers (tentatively identified and estimated) for results that the laboratory had flagged with an “x” (“the sample chromatographic pattern does not resemble the fuel standard used for quantitation”). This type of flag is a comment practice for a TPH-D result when the sample pattern does not match the standard and the result is reported as diesel range organics. The data could be qualified as estimated if there were other QA parameters out of limits, but that does not appear to be the case. **Therefore, please adjust the data reports to remove the “NJ” qualifier from the results where the “x” flag was the only reason noted.**
5. **Additional Characterization – Former Potter Property:** In addition to the new well and associated soil samples mentioned above, additional soil and soil vapor sampling are needed to further investigate the elevated sub-slab concentrations that were observed beneath Quonset Hut 2 and the Shop Building on the Former Potter Property (Figure 1):
 - a. **Quonset Hut 2, location TWA-SV-35:** Soil samples for total petroleum hydrocarbons, gasoline, diesel, and oil range organics (TPH-G, -D, and -O); volatile organic compounds (VOCs); semi-volatile organic compounds (SVOCs, including carcinogenic PAHs, cPAHs); polychlorinated biphenyls (PCBs), and metals are needed to investigate the source of the elevated TPH sub-slab concentrations and any residual contamination.
 - b. **Shop Building, location TWA-SV-41:** Soil samples for TPH, VOCs, SVOCs, PCBs, and metals are needed to investigate the source of the elevated TPH, PCE, and TCE sub-slab concentrations and any residual contamination. Additional sub-slab sample locations for TPH-APH and VOCs are also needed near the property line with Emerald Services to determine if there is a potential for elevated TPH and chlorinated VOCs soil vapor concentrations to be present beneath the adjacent Emerald Services building. If concentrations above applicable screening levels are found, then sub-slab sampling beneath the Emerald Services Building will also be necessary.
 - c. Ecology concurs with the Port of Tacoma’s intent to collect additional soil vapor samples and indoor air samples from the Potter Property buildings (Port of Tacoma, 2022).

The above comments were transmitted via email on October 13, 2022.⁶ In this transmittal, Ecology also requested that a work plan for additional soil and soil vapor sampling and well installation be submitted within 60 days and that the proposed indoor air sample locations for the Potter Property buildings also be provided. Several emails were exchanged in response, these are summarized below:

⁶ Ecology, *Comments on TWAFA reports and request for work plan*. Email from Steve Teel to Tasya Gray, DOF, and Scott Hooton, Port of Tacoma, October 13, 2022.

1. On October 27, 2022, the Port of Tacoma (Port) responded via email that they would like to discuss the timing and detail of Ecology's request for a work plan and expressed that it seems premature at this time.⁷ The Port also stated that their correspondence should be considered an Informal Dispute Notice.⁸
2. Via email to the Port, Ecology agreed that a meeting could be scheduled but requested that Tasya Gray, Dalton, Omsted, Fuglevand (DOF, Agreed Order Parties representative) also be invited.⁹
3. The Agreed Order (AO) Parties responded via email on November 3, 2022,¹⁰ with an attached letter,¹¹ and requested that Ecology read and consider the letter prior to scheduling a meeting. The AO Parties stated that they believe that Ecology's request for a work plan for additional investigation is premature and that discussions regarding the scope and timing for additional investigation at the Site should wait until after the currently approved scope of work under the Data Gaps Work Plan and submittal of the third and fourth quarter groundwater monitoring reports and the soil and groundwater data report. The AO Parties also expressed that they need time to review technical documents pertaining to the Emerald Services, Inc. facility. The AO Parties requested that the work plan requested by Ecology be postponed until after Ecology and the AO Parties meet during the first quarter 2023 (following submittal of the fourth quarter 2022 groundwater data analysis report) to discuss additional scope and timing of work.

Meeting with Ecology

A meeting was held on November 9, 2022, that was attended by Ecology (Steve Teel and Jerome Lambiotte), Port (Scott Hooton), and DOF (Tasya Gray), to discuss Ecology's response to the above issues. An email summary of the meeting was sent by Ecology¹² and is as follows:

1. Ecology agrees that the submittal of the work plan for most of the additional well installation and sampling requested by Ecology can be delayed until after Ecology, the AO Parties, and the Port of Tacoma meet during the first quarter of 2023. **However, there is a subset of this work that must not be delayed:**

⁷ Port of Tacoma, *Re: Comments on TWAFA reports and request for work plan*. Email from Scott Hooton to Steve Teel, Ecology, October 27, 2022.

⁸ The Informal Dispute Notice process is described in Section VIII.H of Enforcement Order DE 19410.

⁹ Ecology, *Re: Comments on TWAFA reports and request for work plan*. Email from Steve Teel to Scott Hooton, Port of Tacoma, November 3, 2022.

¹⁰ Dalton, Olmsted, Fuglevand (DOF), *Re: Comments on TWAFA reports and request for work plan*. Email from Tasya Gray to Steve Teel, Ecology, November 3, 2022.

¹¹ DOF, 2022, *Ecology October 13, 2022 email regarding "Comments on TWAFA reports and request for work plan."* November 3.

¹² Ecology, *Comments on TWAFA reports and request for work plan*. Email from Steve Teel to Scott Hooton, Port of Tacoma and Tasya Gray, DOF, November 9, 2022.

- a. **Southeast of CCW-1A:** Groundwater concentrations of TCE in well CCW-1A for the first and second quarters of 2022 were 22 and 24 micrograms per liter ($\mu\text{g/L}$), respectively. These concentrations exceed Ecology's vapor intrusion, groundwater screening level for commercial workers ($12 \mu\text{g/L}$). Well CCW-1A is located approximately 60 feet from the warehouse building at 3401 Lincoln Avenue (assessor's parcel no. 0321351051, owned by the Port of Tacoma). Additional soil vapor and/or groundwater sampling is needed to determine if there is a potential for vapor intrusion beneath this building.
 - b. **Additional characterization – former Potter Property:** Ecology requested that additional soil and soil vapor sampling be performed to further investigate the elevated sub-slab concentrations that were observed beneath Quonset Hut 2 and the Shop Building on the Former Potter Property. **It is urgent that the elevated sub-slab concentrations of TPH, PCE, and TCE at Shop Building sample location TWA-SV-41 be investigated further.** This investigation shall consist of additional sub-slab samples for total petroleum hydrocarbons (TPH) – air phase hydrocarbons (APH) and volatile organic compounds (VOCs) near the property line with Emerald Services to determine if there is a potential for elevated TPH and chlorinated VOCs soil vapor concentrations to be present beneath the adjacent Emerald Services building. If concentrations are above applicable screening levels, then sub-slab sampling beneath the Emerald Services Building will also be necessary. Ecology also recommends that soil samples for TPH, VOCs, semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and metals are needed to investigate the source of the elevated sub-slab concentrations and any residual contamination.
2. **Therefore, Ecology requires that a work plan be submitted within 60 days for the above two tasks (due by January 16, 2023).** Also, as previously requested, please provide the Port of Tacoma's proposed indoor air sample locations for the Potter Property buildings.

Meeting Follow-up

On November 15, 2022, Scott Hooton called Steve Teel, Ecology, to discuss Ecology's requirement for submittal of a work plan. As summarized in an email, it is Ecology's understanding that the Port agrees to prepare and submit a workplan for Ecology review within the required timeline.¹³ **Therefore, it is Ecology's understanding that the Informal Dispute has been resolved.**

The Port responded via email on November 17, 2022, stating that they appreciate Ecology's agreement to delay the well installation and that they are working with their consultant to develop work plans.¹⁴ The Port also wished to document the following additional details from

¹³ Ecology, *Resolution of Informal Dispute*. Email from Steve Teel to Scott Hooton, Port of Tacoma, November 16, 2022.

¹⁴ Port of Tacoma, *Re: Resolution of Informal Dispute*. Email from Scott Hooton to Steve Teel, Ecology, November 17, 2022.

the meeting discussion. Ecology responded to this email on the same day,¹⁵ Ecology's responses are also shown below:

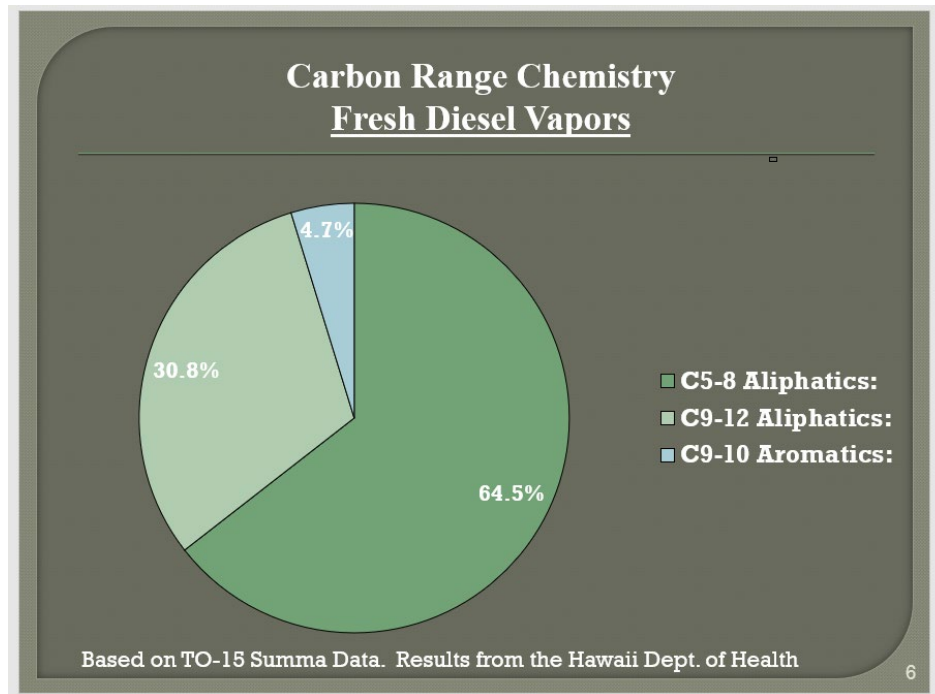
- *Port comment #1, Additional indoor air characterization – former Potter Property: Maul Foster (Port's consultant) is already under contract to prepare an Ecology-review draft workplan for the Potter Property, as Maul Foster recommended in the 10/6/2022 Vapor Intrusion Assessment Report. The Port can agree to install additional vapor probes. The Port would like to better understand the emphasis on the TPH, PCE and TCE in shop building location TWA-SV-41. The Port can install a probe in the shop building closer to the property line with Emerald Services. The Port expected more emphasis on the findings at TWA-SV-35 (coinciding with the historical presence of non-aqueous phase liquid) where concentrations of petroleum beneath the floor slab exceed screening levels by more than an order-of-magnitude above screening level exceedances at TWA-SV-41.*

Ecology response: Ecology has not received the above-referenced 10/6/2022 Vapor Intrusion Assessment Report. The extent of contamination at Quonset Hut 2 location TWA-SV-35 will need to be defined before the RI can be considered complete. However, the primary goal of this current workplan is to evaluate vapor intrusion risk potential. The indoor air samples that the Port is planning to collect within the buildings will help inform that risk. The results of the Quonset Hut 2 indoor air samples should be used to help determine if additional actions and/or sampling need to occur at -SV-35 in the near term or if this can be done later (as part of any other RI data gap work).

Based on the percentages of fractions, the source of the TPH may be fresh diesel, possibly from a release in the vadose zone (see below figure).

Location -SV-41 is of concern because of the proximity of the adjacent Emerald Services building and the uncertainty if TPH and/or PCE/TCE soil vapor concentrations from the TWAAFA Site have the potential to exceed sub-slab screening levels beneath that building.

¹⁵ Ecology, *Fw: Resolution of Informal Dispute*. Email from Steve Teel to Scott Hooton, Port of Tacoma, November 17, 2022.



- ***Port Comment #2:*** *The existing sub-slab probes were installed in December 2021, and high groundwater conditions prevented sampling air beneath the building slab until July 2022. We should expect similar sampling constraints in 2023.*

Ecology response: Ecology acknowledges that sub-slab sampling will need to be performed when the water-level is at an appropriate depth.

- ***Port Comment #3:*** *Although not requested by Ecology, the Port plans to propose sampling indoor (and ambient air) in their workplan, given the existing results and how they read Ecology's guidance. The Port understands that Ecology agrees with that approach.*

Ecology response: Yes, Ecology is in agreement with that.

- ***Port Comment #4:*** *The Port is planning to report/manage indoor air quality assessment at the Potter Property as a separate field effort/deliverable from the additional sub-slab vapor sampling because it will involve mobilizing different personnel/field equipment/reporting and due to implementation issues with high groundwater table. Let the Port know if that presents a concern.*

Ecology response: Ecology agrees that there can be separate deliverables.

- ***Port Comment #5, Soil and Groundwater Characterization - former Potter Property and Southeast of CCW-1A (3401 Lincoln Avenue – owned by the Port of Tacoma):*** *A workplan for this work will be submitted within 60-days of your note.*

Ecology response: Thank you for agreeing to submit this workplan.

- *Port Comment #6: DOF recently submitted November 2022 Data Gaps Data Report. It shows that no SVOCs or PCBs have been detected in soil above screening levels at the TWAAFA Site. We request that Ecology waive requirement to test soils for these constituents as part of this effort.*

Ecology response: Ecology will consider this request during our review of the workplan.

If you have any questions regarding this letter, please contact me at 360-890-0059 or steve.teel@ecy.wa.gov.

Sincerely,



Steve Teel, LHG
Cleanup Project Manager/Hydrogeologist
Toxics Cleanup Program
Southwest Region Office

Enclosure: Figure 1

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Ecology Site File

Enclosure





Figure 1

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Figure
Property Features and
Vapor Sample Locations

Port of Tacoma
 Former Potter Property
 1801 E Alexander Avenue
 Tacoma, Washington

Legend

-  Sub-Slab Vapor Pin
-  Building Footprint
-  Property Parcel (Floyd Snider, 2006)
-  Tax Parcel (Floyd Snider, 2006)



NOTE:
 All features are approximate.
 DOF - Dalton Olmsted & Figliavand
 PSC - Philip Services Corporation



Source:
 Aerial photograph obtained from ArcGIS Online.
 Tax parcels obtained from Port of Tacoma.

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