

April 18, 2023

Joseph Hunt Washington State Department of Ecology Southwest Regional Office PO Box 47775 Olympia, Washington 98504

#### RE: RESPONSE TO OCTOBER 21, 2022 LETTER REGARDING FURTHER ACTION AT WOODWORTH & CO, INC. LAKEVIEW PLANT 2800 104TH STREET COURT SOUTH, LAKEWOOD, WASHINGTON VCP IDENTIFICATION NO: SW1012 FARALLON PN: 188-002

Dear Joseph Hunt:

Farallon Consulting, L.L.C. (Farallon) has prepared this letter to provide a response to the October 21, 2022 Washington State Department of Ecology (Ecology) Further Action Letter (Opinion Letter)<sup>1</sup> issued for the property at 2800 104<sup>th</sup> Street Court South in Lakewood, Washington (herein referred to as the Lakeview Facility) (Figures 1 and 2). The term "Site" used in the following sections, as defined under the Washington State Model Toxics Control Act Cleanup Regulation (MTCA), refers to the portions of the Lakeview Facility where hazardous substances have come to be located at concentrations exceeding applicable MTCA cleanup levels. In the Opinion Letter, Ecology stated that it supports issuance of a No Further Action determination, but needs additional data for demonstration that:

- Recently discovered releases of hazardous substances are appropriately delineated and remediated at the Site and providing assurances that future releases of hazardous substances will be prevented;
- Contamination within the shallow, deep, and regional aquifers will not enter the Lakewood Water District drinking water system;
- There are sufficient data for Ecology to adequately evaluate groundwater contaminant trends and restoration timeframes; and
- The lateral and vertical extents of contamination in select areas of the Site that Ecology is concerned about are adequately defined.

<sup>&</sup>lt;sup>1</sup> Letter Regarding Further Action at the following contaminated Site: Woodworth & Co Inc. Lakeview Plant, 2800 104<sup>th</sup> St Ct S, Tacoma, Pierce County, WA 98499 from Joseph Hunt of Ecology to Branislav Jurista of Farallon dated October 21, 2022.



Specific Ecology comments are paraphrased below in italics, followed by Farallon's responses concurring with Ecology in italic font and the responses rebutting Ecology's comment or requesting additional information in plain font. The location of each Ecology comment in the Opinion Letter are also referenced below.

Upon completion of the Ecology review of this letter, Woodworth Capital, Inc. and Farallon would like to schedule a meeting with Ecology to discuss the work elements presented herein to resolve the comments received. The goal is to reach mutual agreement prior to conducting a scope of work to address Ecology comments in the Opinion Letter.

#### SITE CHARACTERIZATION, SOIL

#### **GENERAL COMMENTS**

(Bottom of Page 3 and top of Page 4 of the Opinion Letter):

*Ecology Comment:* MTCA Method B could not be used at a site if MTCA Method A is proposed elsewhere at the site. In addition, Calculations should be redone because new contamination was discovered and MTCA Method B should be then used for both soil and groundwater within the same area.

**Farallon Response:** The recent guidance published by Ecology in December 2022<sup>2</sup> discusses that mixing various methods for total petroleum hydrocarbon (TPH) sites is allowed. Farallon requests that Ecology allows applying MTCA Method A cleanup levels for certain areas of concern and MTCA Method B for other areas, assuming that whichever method selected applies to both soil and groundwater within the specific area of concern. If Ecology concurs with mixing MTCA Method A and Method B cleanup levels at the Lakeview Facility, Farallon would like Ecology to clarify how many soil and/or groundwater samples would be required to be used in the MTCA Method B calculation workbook for a specific area of concern and whether the average value or most stringent result be applied to that specific area of concern. Upon receiving input from Ecology, Farallon will recalculate the MTCA Method B Site-specific cleanup levels or collect new data to perform calculations, as necessary.

<sup>&</sup>lt;sup>2</sup> Guidance on the Use of Method A, B, and C Cleanup Levels and Mixing Methods, Supporting material for Cleanup Levels and Risk Calculation (CLARC) dated December 2022, prepared by Washington State Department of Ecology – Toxics Cleanup Program.



#### SPECIFIC COMMENTS

#### Former Recycled Stockpile Area

(Middle of Page 4 of the Opinion Letter):

*Ecology Comment:* In the western area near MW-24, Ecology recommends that additional soil samples be analyzed for cPAH in the borings where soil samples that were positive for DRO and/or ORO. Further given the groundwater results in this area, additional investigation of TPH source material should be conducted to facilitate excavation and removal.

**Farallon Response:** Farallon concurs and will plan on collecting additional soil samples for carcinogenic polycyclic aromatic hydrocarbon (cPAH) analysis to further define/refine the extent of impacts in soil in this area. The soil sampling will be limited to proposed borings and monitoring well borings shown on Figure 3.

However, any additional excavation would be subject to groundwater analysis and trends and to a feasibility study that includes a disproportionate cost analysis. The soil removal may not be practicable due to several tens of feet of overlying reclamation fill that was placed on top of the former ground surface in this area.

#### Hot Mix Storage Area

(Middle of Page 4 of the Opinion Letter):

*Ecology Comment:* Ecology recommends, that as a contaminant of concern, cPAHs should be analyzed at terminal depths in soil samples all soil borings even though DRO and ORO are non-detect.

**Farallon Response:** Farallon will resample soil for cPAH analysis in areas proximate to borings B-19, B-30, and B-31 in the Hot Mix Storage Area, as recommended by Ecology. The soil sampling will be limited to proposed borings shown on Figure 4.

#### Equipment Storage Carport Area

(Bottom of Page 4 of the Opinion Letter): *Ecology Comment:* Ecology states that aerial and vertical extent of the B-12 soil contamination needs to be further defined.

**Farallon Response:** The vertical extent of total petroleum hydrocarbons as oil-range organics (ORO) and cPAH contamination in soil at boring B-12 has been defined by the analytical results for deeper soil samples collected from boring B-27, which was advanced adjacent to boring B-12 (Figure 5). Soil sample results for borings B-28 and B-35 define the lateral



extent to the north, boring B-26 to the east, boring B-25 to the southeast, and boring B-29 to the west. Both the vertical and lateral extent of contamination has been defined by the analytical results for the soil samples collected from these borings. Farallon is requesting further clarification from Ecology regarding the rationale for further evaluation of the extents of contamination based on the clarification herein.

#### Former Asphalt Testing/Laboratory/Roofer Shredder Area

(Top of Page 5 of the Opinion Letter):

*Ecology Comment:* Ecology states that further delineation of ORO impacts in the easterly and southerly directions of boring B-16 are necessary, and the vertical extent should be defined in more detail between 3 and 10 feet bgs.

**Farallon Response:** Boring B-22 was advanced adjacent to boring B-16 to define the vertical extent of cPAH contamination previously detected at 3 feet below ground surface (bgs) (Figure 6). The vertical extent of ORO impacts was previously defined with data for deeper soil samples from boring B-16. The lateral extent of ORO and cPAH contamination has been defined by soil sample data for boring B-24 to the north; for borings B-17 and B-23 to the east; for borings B-14, B-15, and B-21 to the south; and for boring B-13 to the west. Farallon is seeking clarification from Ecology why further delineation was requested, and regarding the necessity for sampling between 3 and 10 feet bgs.

#### SITE CHARACTERIZATION, GROUNDWATER

#### GENERAL COMMENTS

(Middle of Page 5 of the Opinion Letter):

*Ecology Comment:* Ecology states that it has requested that water samples be collected from both the Laurel Lane and Majestic Oaks domestic supply wells for analysis of VOCs.

**Farallon Response:** As discussed with Ecology in the meeting on June 28, 2017, Farallon and Woodworth provided evidence that the trichloroethene (TCE) plume in groundwater is fully delineated, in a stable to shrinking state, and contained in a centrally located area within the Lakeview Facility property boundary. Additional supporting information was provided in the August 31, 2021 Response Letter<sup>3</sup>. Both Laurel Lane and Majestic Oaks domestic supply wells are significantly distant from the Lakeview Facility and the areas of

<sup>&</sup>lt;sup>3</sup> Letter Regarding Response to August 20, 2019 Letter Regarding Further Action at the Woodworth & Co Inc. Lakeview Plant, 2800 104<sup>th</sup> Street Court South, Lakewood, Washington from Amanda Meugniot and Branislav Jurista of Farallon to Nicholas Acklam of Ecology dated August 31, 2021.



existing TCE contamination in groundwater, with the Laurel Lane well located over 2,000 feet northeast and Majestic Oaks well located over 2,500 feet northwest of the downgradient limit of the TCE plume (Figure 7). Existing groundwater data for the property fully define the extent of TCE plume in groundwater. If the water testing results for these wells are available from the Lakeview Water District or Tacoma-Pierce County Health Department, Farallon will provide such results in the next report for evaluation.

#### SPECIFIC COMMENTS

#### Northern Parcel Arsenic/Lead Plume Area and Regional Aquifer/On-Site Industrial Supply Well TCE Impact

(Middle and Bottom of Page 6 of the Opinion Letter):

*Ecology Comment:* Ecology requests further groundwater monitoring at these two areas.

**Farallon Response:** Two groundwater monitoring events will be conducted 6 months apart in 2023 to evaluate contaminant concentrations in groundwater and flow direction with respect to seasonal fluctuations. Figure 8 depicts the arsenic and lead plume, and Figures 9 and 10 depict the TCE plume areas in shallow and deep water-bearing zones, respectively, and the figures depict the locations of the monitoring wells to be sampled.

#### Former Recycled Stockpile Area

(Page 7 of the Opinion Letter):

*Ecology Comment:* <u>Western MW-24 Area</u> - Ecology requests further groundwater characterization to fully define the nature and extent of TPH contamination in this area.

**Farallon Response:** Farallon agrees to perform further characterization to fully define the extent of total petroleum hydrocarbons as diesel-range organics (DRO) and ORO impacts in this area of concern. Up to seven additional monitoring wells (including the two wells at the former temporary well MW-24T and boring B-36 locations) will be advanced to address Ecology's comment (Figure 3).

*Ecology Comment:* <u>Eastern MW-9R/MW16R Area</u> - Ecology requests recalculation of the site-specific MTCA Method B cleanup level for this area and additional data points for each water-bearing zone.

**Farallon Response:** Farallon agrees to recalculate the site-specific MTCA Method B cleanup level for this area (Figure 3). Farallon seeks further input from Ecology to clarify how many groundwater samples would be required to be used in the MTCA Method B calculation workbook for each water-bearing zone and each area of concern.



#### Equipment Storage Carport Area

(Middle of Page 8 of the Opinion Letter):

*Ecology Comment:* Ecology requests evaluation of shallow groundwater proximate to boring B-12 to assess the potential for groundwater impact.

**Farallon Response:** A shallow up-gradient monitoring well (MW-11) exists near the southern end of the equipment storage carport, and additional wells exist down-gradient of this area (monitoring wells MW-13 and MW-19) (Figure 5). Farallon is requesting further explanation from Ecology why additional evaluation is needed in this area.

#### Former Asphalt Testing/Laboratory/Roofer Shredder Area

(Middle of Page 8 of the Opinion Letter):

*Ecology Comment:* Ecology requests further characterization and evaluation of groundwater in the vicinity of boring B-16.

**Farallon Response:** DRO, ORO, and cPAHs have not been detected at concentrations exceeding MTCA Method A cleanup levels in any of the soil samples collected from depths ranging from 5 to 20 feet bgs in this area of concern, including the DRO and ORO results for soil samples collected from 10 and 17.5 feet in boring B-16 and cPAH results for a soil sample from 10 feet in boring B-22, adjacent to boring B-16 (Figure 6). MTCA Method A cleanup levels for soil are protective of the groundwater. The depth to groundwater in the Former Asphalt Testing/Laboratory/Roofing Shredder Area is 12 to 15 feet bgs. Therefore, sufficient soil information exists to demonstrate that the soil-to-groundwater pathway is incomplete, and that the additional groundwater characterization is not necessary.

Ecology Comment: Ecology requests further groundwater testing in this area of concern.

**Farallon Response:** Two groundwater monitoring events will be conducted 6 months apart in 2023 to evaluate contaminant concentrations in groundwater and flow direction with respect to seasonal fluctuations.

#### **OTHER COMMENTS**

#### **Deep Groundwater Delineation**

(Bottom of Page 8 of the Opinion Letter):

*Ecology Comment:* Ecology suggests that more wells be installed in the deep groundwater zone to complete evaluation of nature and extent across the site.



**Farallon Response:** A substantial number of wells screened within the deep water-bearing zone currently exists at the Lakeview Facility, including wells that are located hydraulically down-gradient of the contaminant plumes in groundwater. The down-gradient wells screened in the deep water-bearing zone do not exhibit exceedances of MTCA cleanup levels for groundwater; therefore, installation of additional wells is not warranted. Farallon seeks additional clarification from Ecology regarding their comment requesting installation of additional wells in the deep water-bearing zone.

#### Groundwater Monitoring

(Top of Page 9 of the Opinion Letter):

*Ecology Comment:* Ecology recommends sampling Site monitoring wells at regular intervals.

**Farallon Response:** Farallon plans to sample Site monitoring wells twice, 6 months apart in 2023.

#### Monitored Natural Attenuation

(Middle of Page 9 of the Opinion Letter):

*Ecology Comment:* Ecology requests reassessment of the natural attenuation at the Site.

**Farallon Response:** Farallon plans to sample Site monitoring wells twice, 6 months apart in 2023. Farallon will reassess natural attenuation of contaminants of concern at the Site, including DRO, ORO, and TCE, after additional groundwater monitoring is completed in 2023.

*Ecology Comment:* Ecology states that Cleanup Alternative 1 (institutional and engineering controls) does not protect human health and the environment or provide for a reasonable restoration time frame.

**Farallon Response:** Active cleanup was previously performed at the Site. After detailed evaluation of technically feasible cleanup alternatives and costs to clean up residual contamination, the disproportionate cost analysis process indicated that institutional and engineering controls with compliance groundwater monitoring are the most practicable cleanup action alternative that fully protects human health and the environment. Prior Ecology Opinion Letters from 2019<sup>4</sup> and older specifically stated that Ecology supports

<sup>&</sup>lt;sup>4</sup> Letter Regarding Further Action at the following Site: Woodworth & Co Inc. Lakeview Plant, 2800 104<sup>th</sup> Street Ct S, Tacoma, Pierce County, WA 98499 from Nicholas Acklam of Ecology to Branislav Jurista of Farallon dated August 30, 2019.



pursuing a No Further Action determination with institutional and engineering controls for this Site. Farallon seeks further explanation from Ecology why institutional and engineering controls do not comply with MTCA.

#### Vapor Intrusion/TCE

(Top of Page 10 of the Opinion Letter):

*Ecology Comment:* Ecology states that the Site must formalize an industrial use status in perpetuity via an environmental covenant or require an additional vapor intrusion assessment once reclamation is complete and before any land use designation changes via an environmental covenant.

**Farallon Response:** Farallon understands these concepts and will include a vapor intrusion assessment provision in the environmental covenant.

#### **Groundwater Geochemistry**

(Middle of Page 10 of the Opinion Letter):

*Ecology Comment:* Ecology concurs with using dissolved arsenic and lead concentrations as representative of Site groundwater.

**Farallon Response:** Farallon agrees with Ecology and will continue sampling groundwater for these dissolved metals in wells that have historically had detections of these contaminants of concern (Figure 8).

#### **Monitoring Wells**

(Top of Page 11 of the Opinion Letter):

*Ecology Comment:* Ecology recommends further evaluation of the lateral and vertical extent of TPH contamination in the deep aquifer near MW-16.

**Farallon Response:** Farallon will reevaluate the Method B calculations for groundwater in this area. However, a sufficient number of monitoring wells in both shallow and deep waterbearing zones exist up-, cross-, and down-gradient of monitoring wells MW-9R and MW-16R (Figures 11 and 12). Therefore, additional well installation and sampling is unnecessary.

*Ecology Comment:* Ecology states that well SVE-5 was decommissioned due to concerns regarding aquifer intercommunication and because SVE has been discontinued. There are other SVE wells that are or may be screened across the two aquifer zones (for example SVE-3, -5, -6, -7, -8, -9, and -10). To meet WAC 173-160-420(2), Ecology recommends decommissioning any other SVE wells that are interconnecting aquifers.



**Farallon Response:** Farallon will evaluate which soil vapor extraction (SVE) wells are screened across two water-bearing zones and will conduct decommissioning, as necessary.

#### Conceptual Site Model and Nature and Extent of Contamination

(Middle of Page 11 of the Opinion Letter):

*Ecology Comment:* Former Recycled Stockpile Area - Ecology recommends additional investigation to delineate the source of petroleum contamination area and to assess removal of any remaining contaminated soil that may serve as a source of petroleum detections at MW-24T and B-36.

**Farallon Response:** Farallon concurs and will conduct additional characterization in this area of concern, as discussed in previous responses.

Additional soil removal from this area may not be practicable due to the presence of the aforementioned overlying reclamation fill.

*Ecology Comment:* <u>Equipment Parking Area</u> - Based on the analytical results for soil samples, the calculated concentration of TPH in groundwater from monitoring well MW-13 exceeds the Method A cleanup level. Ecology recommends that additional delineation be conducted to evaluate and define the contaminant source at monitoring well MW-13.

**Farallon Response:** Farallon seeks clarification from Ecology if MTCA Method A or Method B is applicable to the Equipment Parking Area and/or the Site as a whole. The calculated TPH concentration in groundwater did not exceed the site-specific MTCA Method B cleanup level for TPH for this area of concern. Based on Ecology's response, Farallon will review the existing information and reevaluate if any additional delineation is warranted to further define the contaminant source and nature and extent of contamination at monitoring well MW-13. Additional borings for collection of soil and reconnaissance groundwater samples may be advanced to locally define the nature and extent of contamination, if warranted.

*Ecology Comment:* <u>Hot Mix Storage Area</u> - Ecology recommends that cPAH should be evaluated in soil and groundwater in this area to determine if soil contaminants are causing an impact.

Farallon Response: Agreed and discussed in previous responses.

*Ecology Comment:* <u>Equipment Storage Carport Area</u> - The contaminants and media of concern are ORO and cPAHs in soil, and DRO and ORO in shallow groundwater. ORO and



cPAH-impacted soil occur in an area approximately 30 by 45 feet to a depth of approximately 15 feet bgs. Given that residual ORO in soil is continuing to impact groundwater and that DRO should be a concern in soil given its presence in groundwater, additional investigation should be conducted in this area to assess those associations.

**Farallon Response:** Response provided in prior sections. No additional soil sampling is warranted, and monitoring wells exist in the general vicinity of this area.

*Ecology Comment:* Former Asphalt-Testing Laboratory Area - The contaminants and media of concern are ORO and cPAHs in shallow soil, and DRO, ORO, and TCE in shallow (SVE-5, MW-36) and deep water-bearing zone groundwater. ORO- and cPAH-impacted soil occur in the Former Asphalt-Testing Laboratory Area in an area approximately 25 by 50 feet to a maximum depth of approximately 10 feet bgs. The area around B-16 should be investigated further to facilitate excavation and removal of ORO-impacted soil. In addition, groundwater in the B-16 area should also be assessed for TPH impact.

**Farallon Response:** As discussed previously, the DRO, ORO, and cPAH impacts proximate to boring B-16 are limited to soil only, and sufficient data exist to demonstrate that the soil-to-groundwater pathway is incomplete (Figure 6). Farallon disagrees that additional characterization of soil or groundwater is necessary in this area regarding the DRO, ORO, and cPAH impacts.

Farallon will sample Site monitoring wells twice, 6 months apart in 2023.

*Ecology Comment:* <u>Groundwater</u> - Ecology suggests that further assessment be conducted that assesses the source of ORO impacts to deep groundwater in the MW-16R area. This assessment should evaluate vertical migration from the contaminated shallow water-bearing zone and consider the vapor wells SVE-3 and SVE-6 as potential conduits through the aquitard.

**Farallon Response:** Farallon will conduct additional sampling of SVE wells and evaluate if decommissioning of wells that are screened across multiple water-bearing zones is warranted. After the additional data are obtained, Farallon will reevaluate the preferred cleanup alternative for this area of concern.

#### <u>Feasibility Study/Cleanup Alternative Evaluation/Disproportionate Cost Analysis, Conditional</u> <u>Points of Compliance Update, Environmental Covenant, and Long Term Monitoring Plan</u>

(Page 13 and 14 of the Opinion Letter):



*Ecology Comment:* Ecology suggests that Feasibility Study, Cleanup Alternative Evaluation, Disproportionate Cost Analysis, Conditional Points of Compliance, Environmental Covenant, and Long Term Monitoring Plan be updated and reevaluated following completion of the additional characterization.

**Farallon Response:** Farallon concurs and will reevaluate these elements upon completion of the additional characterization.

#### CLOSING

Farallon appreciates the opportunity to provide environmental consulting services for this project. Please contact either of the undersigned at (425) 295-0800 if you have questions or need additional information.

Sincerely,

Farallon Consulting, L.L.C.

Braniolar

Brani Jurista, L.G., P.G. Principal Geologist

Jeffrey Kaspar, L.G., L.H.G. Principal Geologist

Attachments: Figure 1, Vicinity Map

Figure 2, Property Plan

- Figure 3, Soil and Groundwater Analytical Data, Former Recycled Stockpile Area
- Figure 4, Soil Analytical Data, Hot-Mix Storage Area
- Figure 5, Soil and Groundwater Analytical Data, Equipment Storage Carport Area

Figure 6, Soil and Groundwater Analytical Data, Former Asphalt-Testing Laboratory Area

Figure 7, Public Supply Wells Within 1-Mile of Lakeview Facility Figure 8, Groundwater Analytical Data, Arsenic and Lead Plume in Groundwater Area

Figure 9, TCE Concentrations in Shallow Water-Bearing Zone

Figure 10, TCE Concentrations in Deep Water- Bearing Zone

Figure 11, Groundwater Elevation Contours for Shallow Water-Bearing Zone (January 2020)

Figure 12, Groundwater Elevation Contours for Deep Water-Bearing Zone (January 2020)

cc: Jeff Woodworth, Woodworth Capital, Inc.

BJ/JK:elh





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	DECOMMISSIONED WELL				2800 104TH STREET COURT SOUTH
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- PROPOSED MONITORING WELL (FARALLON, 2023)
- ۲ BORING (2019 - 2021)
- DECOMMISSIONED WELL
- $\bullet$ MONITORING WELL SHALLOW WATER-BEARING ZONE
- MONITORING WELL DEEP WATER-BEARING ZONE
- EXCAVATION LIMITS (2010)
- RESIDUAL CONTAMINATED GROUNDWATER EXCEEDING
- MTCA CLEANUP LEVEL
- RESIDUAL CONTAMINATED SOIL EXCEEDING MTCA CLEANUP LEVEL
- PROPERTY BOUNDARY



Washington	FIGURE 3		
gham   Seattle	SOIL AND GROUNDWATER		
Oregon d   Baker City	ANALYTICAL DATA FORMER RECYCLED STOCKPILE AREA LAKEVIEW FACILITY		
California	2800 104TH STREET COURT SOUTH		
akland   Irvine	LAKEWOOD, WASHINGTON		
	FARALLON PN: 188-002		
By: BJ	Date: 4/17/2023 Disc Reference:		

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	DEPTH IN FEET BELOW GROUND SURFACE   DRO   ORO   CPAH TEC
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	BOLD = CONCENTRATIONS THAT EXCEED THE WASHINGTON STATE MODEL TOXICS
	CONTROL ACT CLEANUP REGULATION (MTCA) CLEANUP LEVEL
	< = ANALYTE NOT DETECTED AT OR EXCEEDING THE
	REPORTING LIMIT LISTED
	= SAMPLE NOT ANALYZED
	DRO = TOTAL PETROLEUM HYDROCARBONS (TPH)
	AS DIESEL-RANGE ORGANICS
	ORO = TPH AS OIL-RANGE ORGANICS
	CPAH = CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBON
	TEC = TOXIC EQUIVALENCE CONCENTRATION
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- $oldsymbol{O}$ PROPOSED BORING (FARALLON, 2023)
- BORING (2017) •
- ۲ BORING (2019 - 2021)

SOIL EXCEEDING MTCA METHOD A CLEANUP LEVEL

NOTES: 1. ALL LOCATIONS ARE APPROXIMATE. 2. FIGURES WERE PRODUCED IN COLOR. GRAYSCALE COPIES MAY NOT REPRODUCE ALL ORIGINAL INFORMATION.

	Washington Issaquah   Bellingham   Seattle	FIGURE 4
	Oregon Portland   Baker City	SOIL ANALYTICAL DATA HOT-MIX STORAGE AREA LAKEVIEW FACILITY
FARALLON Consulting	California Oakland   Irvine	2800 104TH STREET COURT SOUTH LAKEWOOD, WASHINGTON
Your Challenges. Our Priority.	farallonconsulting.com	FARALLON PN: 188-002
Drawn By: chartman	Checked By: BJ	Date: 4/17/2023 Disc Reference:
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- ulletBORING (2017)
- ۲ BORING (2019 - 2021)
- $\mathbf{\Phi}$ MONITORING WELL SHALLOW WATER-BEARING
- $\mathbf{\Phi}$ MONITORING WELL DEEP WATER-BEARING

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- RESIDUAL CONTAMINATED GROUNDWATER EXCEEDING MTCA METHOD A CLEANUP LEVEL
- RESIDUAL CONTAMINATED SOIL EXCEEDING MTCA METHOD A CLEANUP LEVEL
- EXCAVATION LIMITS (2010)
- PROPERTY BOUNDARY

#### NOTES:

- 1. ALL LOCATIONS ARE APPROXIMATE.
- 2. FIGURES WERE PRODUCED IN COLOR. GRAYSCALE COPIES MAY NOT REPRODUCE ALL ORIGINAL INFORMATION.

	Washington Issaquah   Bellingham   Seattle	FIGURE 5	
FARALLON CONSULTING	Oregon Portland   Baker City California Oakland   Irvine	SOIL AND GROUNDWATER ANALYTICAL DATA EQUIPMENT STORAGE CARPORT AREA LAKEVIEW FACILITY 2800 104TH STREET COURT SOUTH LAKEWOOD, WASHINGTON	
Your Challenges. Our Priority.	farallonconsulting.com	FARALLON PN: 188-002	
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#### OUNDWATER ANALYTICAL RESULTS AS: SAMPLE DATE | DRO | ORO | cPAH TEC ANALYTICAL RESULTS IN MICROGRAMS PER LITER.

- BOLD = CONCENTRATIONS THAT EXCEED THE WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION (MTCA) CLEANUP LEVEL < = ANALYTE NOT DETECTED AT OR EXCEEDING THE
- REPORTING LIMIT LISTED --- = SAMPLE NOT ANALYZED DRO = TOTAL PETROLEUM HYDROCARBONS (TPH)

- AS DIESEL-RANGE ORGANICS ORO = TPH AS OIL-RANGE ORGANICS CPAH = CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBON
- TEC = TOXIC EQUIVALENCE CONCENTRATION

# Ν SCALE IN FEET

#### **LEGEND**

- BORING (2017) •
- ۲ BORING (2019 - 2021)
- DECOMMISSIONED WELL
- $\phi$ MONITORING WELL SHALLOW WATER-BEARING ZONE
- $\mathbf{\Phi}$ MONITORING WELL DEEP WATER-BEARING ZONE
- AIR SPARGE WELL
- $\diamond$ AIR SPARGE/SOIL VAPOR EXTRACTION WELL PAIR
- $\bigcirc$ SOIL VAPOR EXTRACTION WELL
- RESIDUAL CONTAMINATED GROUNDWATER EXCEEDING MTCA METHOD A CLEANUP LEVEL
- RESIDUAL CONTAMINATED SOIL EXCEEDING MTCA METHOD A CLEANUP LEVEL

#### NOTES:

- ALL LOCATIONS ARE APPROXIMATE.
   FIGURES WERE PRODUCED IN COLOR. GRAYSCALE COPIES MAY NOT REPRODUCE ALL ORIGINAL INFORMATION.

	Washington Issaquah   Bellingham   Seattle	FIGURE 6
FARALLON CONSULTING	Oregon Portland   Baker City California Oakland   Irvine	SOIL AND GROUNDWATER ANALYTICAL DATA FORMER ASPHALT-TESTING LABORATORY AREA LAKEVIEW FACILITY 2800 104TH STREET COURT SOUTH LAKEWOOD, WASHINGTON
Your Challenges. Our Priority.	farallonconsulting.com	FARALLON PN: 188-002
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![](_page_17_Picture_4.jpeg)

![](_page_18_Figure_0.jpeg)

![](_page_19_Picture_0.jpeg)

### <u>LEGEND</u>

•	DECOMMISSIONED WELL MONITORING WELL SHALLOW WATER-	CURRENT EXTENT OF TCE PLUME IN SHALLOW WATER-BEARING ZONE GROUNDWATER		Washington Issaquah   Bellingham   Seattle	FIGURE 9
<del>.</del>	BEARING ZONE	SHALLOW WATER-BEARING ZONE NOT		Oregon	
÷	MONITORING WELL DEEP WATER- BEARING ZONE	PROPERTY BOUNDARY		Portland   Baker City	SHALLOW WATER-BEARING ZONE
	AIR SPARGE WELL		FARALLON	California Oakland   Invine	
$\diamond$	AIR SPARGE/SOIL VAPOR EXTRACTION WELL PAIR	GROUNDATER FLOW	CONSULTING		LAKEWOOD, WASHINGTON
	SOIL VAPOR EXTRACTION WELL		Your Challenges. Our Priority.	farallonconsulting.com	
		NOTES: 1. ALL LOCATIONS ARE APPROXIMATE.			FARALLON FN. 188-002
		2. FIGURES WERE PRODUCED IN COLOR. GRAYSCALE COPIES	Drawn By: chartman	Checked By: BJ	Date: 4/17/2023 Disc Reference:
		MAY NOT REPRODUCE ALL ORIGINAL INFORMATION.			Document Path: Q:\Projects\188 Woodworth\002 Woodworth\Mapfiles\041 Report 202107\001\Figure-09_TCE_SWBZ.mxd

![](_page_20_Picture_0.jpeg)

€ ⊕	DECOMMISSIONED WELL	APPROXIMATE DIRECTION OF GROUNDATER FLOW		Washington	FIGURE 10
		PROPERTY BOUNDARY		Oregon	TCE CONCENTRATIONS IN
	SOIL VAPOR EXTRACTION WELL			California	DEEP WATER-BEARING ZONE LAKEVIEW FACILITY
0	CURRENT EXTENT OF TCE PLUME IN DEEP WATER-BEARING ZONE AT CONCENTRATIONS EXCEEDING MTCA METHOD A CLEANUP LEVEL		FARALLON Consulting	Oakland   Irvine	2800 104TH STREET COURT SOUTH LAKEWOOD, WASHINGTON
$\bigcirc$	FORMER EXTENT OF TCE CONCENTRATIONS IN DEEP WATER-BEARING ZONE GROUNDWATER EXCEED MTCA METHOD A CLEANUP LEVEL (2010)		Your Challenges. Our Priority.	farallonconsulting.com	FARALLON PN: 188-002
		NOTES: 1. ALL LOCATIONS ARE APPROXIMATE. 2. FIGURES WERE PRODUCED IN COLOR. GRAYSCALE COPIES MAY NOT REPRODUCE ALL ORIGINAL INFORMATION.	Drawn By: chartman	Checked By: BJ	Date: 4/17/2023 Disc Reference: Document Path: Q:\Projects\188 Woodworth\002 Woodworth\Mapfiles\041 Report 202107\001\Figure-10_TCE_DWBZ.mxd

![](_page_21_Picture_0.jpeg)

<ul> <li>●</li> <li>●</li> </ul>	DECOMMISSIONED WELL MONITORING WELL SHALLOW WATER- BEARING ZONE	280.00 GROUNDWA (DASHED W	ATER ELEVATION CONTOUR WHERE INFERRED)		Washington Issaquah   Bellingham   Seattle	FIGURE 11
ک ا	AIR SPARGE/SOIL VAPOR EXTRACTION WELL PAIR SOIL VAPOR EXTRACTION WELL SHALLOW WATER-BEARING ZONE NOT ENCOUNTERED	(281.09) GROUNDWA [269.45] GROUNDWA USED IN CO NM NOT MEASI	TER FLOW /ATER ELEVATION (1/6/2020) /ATER ELEVATION NOT ONTOURING (1/6/2020) SURED	FARALLON	Oregon Portland   Baker City California Oakland   Irvine	GROUNDWATER ELEVATION CONTOURS FOR SHALLOW WATER-BEARING ZONE (JANUARY 2020) LAKEVIEW FACILITY 2800 104TH STREET COURT SOUTH
i	PROPERTY BOUNDARY	NOTES: 1. ALL LOCATIONS A 2. FIGURES WERE F MAY NOT REPRO	ARE APPROXIMATE. PRODUCED IN COLOR. GRAYSCALE COPIES ODUCE ALL ORIGINAL INFORMATION.	Your Challenges. Our Priority.   Drawn By: chartman	farallonconsulting.com Checked By: BJ	FARALLON PN: 188-002 Date: 4/17/2023 Disc Reference: Document Path: Q:\Projects\188 Woodworth\002 Woodworth\Mapfiles\041 Report 202107\001\Figure-11_GW_Contours.mxd

![](_page_22_Picture_0.jpeg)

<ul> <li></li> </ul>	DECOMMISSIONED WELL MONITORING WELL DEEP WATER- BEARING ZONE	280.00 GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)		Washington Issaquah   Bellingham   Seattle	FIGURE 12
۸ ج	AIR SPARGE WELL AIR SPARGE/SOIL VAPOR EXTRACTION WELL PAIR SOIL VAPOR EXTRACTION WELL PROPERTY BOUNDARY	(253.90) GROUNDWATER ELEVATION (1/6/2020) [279.98] GROUNDWATER ELEVATION NOT USED IN CONTOURING (1/6/2020) NM NOT MEASURED	FARALLON CONSULTING	Oregon Portland   Baker City California Oakland   Irvine	GROUNDWATER ELEVATION CONTOURS FOR DEEP WATER-BEARING ZONE (JANUARY 2020) LAKEVIEW FACILITY 2800 104TH STREET COURT SOUTH LAKEWOOD, WASHINGTON
		NOTES: 1. ALL LOCATIONS ARE APPROXIMATE. 2. FIGURES WERE PRODUCED IN COLOR. GRAYSCALE COPIES MAY NOT REPRODUCE ALL ORIGINAL INFORMATION.	Your Challenges. Our Priority.	farallonconsulting.com Checked By: BJ	FARALLON PN: 188-002         Date: 4/17/2023         Disc Reference:         Document Path: Q:\Projects\188 Woodworth\002 Woodworth\Mapfiles\041 Report 202107\001\Figure-12_GW_DeepContours.mxd