**DEQ Comment Response Matrix**
**Draft Riverbank Soil Reuse Characterization and Upland Receptor Screening Letter**
**Willamette Cove**

| Reviewer Comment No. | Section Name/ Topic | Section/Table/ Figure No. | DEQ Comments February 25, 2025 (Via Email) | Port/Metro Response/Action |
|---|---|---|---|---|
| General 1 | Sampling and Data Quality Objectives | N/A | The sampling and data quality objectives could be more clearly articulated. | The Port/Metro prepared the attached addendum to the *Revised Riverbank Soil Reuse Characterization and Upland Screening Letter* (Addendum) that details the discrete sampling objectives, proposed chemical analysis, and data evaluation. |
| General 2 | Independent Discovery Plan | N/A | What Independent Discovery Plan will be implemented during sampling activities (conducted by Apex)? | The Port/Metro assumes that DEQ intended to say Inadvertent Discovery Plan (IDP). The riverbank characterization drilling program was implemented by Maul Foster Alongi (MFA) as part of the In-Water Group activities. The only additional activity conducted by Apex was collection of discrete samples from the same soil column where MFA collected composite samples. For reference, the following was shared by MFA to the agencies: *Archaeological survey and investigation are based on sampling for potential cultural resources to infer the potential for cultural resources within the entirety of the Area of Potential Effect (APE). Although the potential is low, there remains a possibility that unidentified archaeological materials/resources exist in the APE, especially subsurface materials, or features. Therefore, if any cultural, historic, paleontological materials/resources, or human remains are encountered during the project planning or proposed construction activities, the Oregon SHPO must be contacted immediately in accordance with legislation regarding the Protection of Historic Properties/Discoveries without prior planning [Code of Federal Regulations Part 800. 13(b)] and Inadvertent discoveries [43 Code of Federal Regulations 10.4(b-d)].* |
| General 3 | Discrete Samples | N/A | It is our understanding that discrete soil samples are planned for every one foot within the "removal layer" (excepting overlying soil areas sampled as part of the Willamette Cove Uplands Remedial Design Investigation) and at two boring locations (mid-point and bottom) per Transect, 13 through 18. Please confirm and is there an estimate on the total number of discrete samples that will be collected by Apex for archive? | DEQ's understanding is correct. Discrete samples were collected at two boring locations (mid-point, and bottom) per Transect, 13 through 18. Boring locations are shown in Attachment A to the Addendum. A total of 117 discrete soil samples were collected and submitted to Apex Laboratories in Tigard to be archived in frozen storage. Additional details are presented in the Addendum. |
| General 4 | Decision Making for Archived Sample Analysis | N/A | At present it is proposed that in consultation with DEQ, analysis of the archived soil samples will be assigned based on review of the WC Group results. Please provide additional details on how the Port proposes making decisions on which archived samples to analyze. For instance, will all discrete samples or subset be analyzed at a boring location and for all analytes proposed (or subset) within the "removal layer" if the respective composite results (collected by the in-water WC Group) are below PTW or/and RALs? | Additional details on the approach for evaluating soil for potential reuse is provided in the Addendum (see also response to General comment 1). |
| General 5 | Leave Surface Screening | N/A | In terms of riverbank layback leave surface screening, it is our understanding the Port plans to compare the WC Group "leave" and "sub-leave" riverbank sampling results to the upland cleanup levels; however, this data contains limitations to sufficiently assess potential risks to upland receptors (following bank layback). DEQ's expectation that a similar sampling approach used in the upland Remedial Design Investigation will be necessary for future riverbank leave surface areas and potentially sub-leave surface depending on the riverbank cleanup/stabilization approach. We have had limited but preliminary discussions with the Port on potential strategies and timing. | Understood. The need for further verification sampling of the final riverbank leave surface will be discussed as part of the screening of the data collected by the WC Group. |

**DEQ Comment Response Matrix**
**Draft Riverbank Soil Reuse Characterization and Upland Receptor Screening Letter**
**Willamette Cove**

| Reviewer Comment No. | Section Name/ Topic | Section/Table/ Figure No. | DEQ Comments February 25, 2025 (Via Email) | Port/Metro Response/Action |
|---|---|---|---|---|
| General 6 | Cleanup Level Nomenclature | N/A | We also suggest a different term for cleanup levels other than CULs, to prevent confusion between in-water and upland criteria. For example, using remediation goals to represent upland cleanup levels. | The term remediation goal (RG) will be used to represent upland cleanup levels. |
| General 7 | Transect Location Figure | N/A | It would be helpful to include a figure with the proposed sample transect locations, as well as the transect cross-section figures of depicting proposed mid-point and bottom borings for transects 13-18 (similar to those presented in Appendix A in the Willamette Cove – Riverbank Characterization Work Plan Addendum prepared by MFA for the WC Group). Please include in future reporting. | The following figures are included as Attachment A to the Addendum and will be included in future reporting:<br>• Figure 3-1 from the Final Riverbank Characterization Work Plan (MFA, January 16, 2025) showing a plan view of the transects<br>• Figures 13 through 18 from the Willamette Cove—Riverbank Characterization Work Plan Addendum (MFA, January 17, 2025) |

# Riverbank Soil Reuse Characterization and Upland Receptor Screening – Addendum
# Willamette Cove
# ECSI No. 2066

This Addendum supplements the *Riverbank Soil Reuse Characterization and Upland Receptor Screening* (Apex, 2025), providing details on the proposed plan for analyzing the discrete samples that were collected in the removal layer.

## 1.0 Sampling Objective

The objective of this work is to determine if soil that will be excavated during bank layback at Willamette Cove will be suitable for re-use as fill during remediation of the uplands. This will be achieved by the following:

- Collect samples from the soil targeted for removal during bank layback.
- Use existing data and results of the chemical analyses conducted by the in-water design team (WC Group) to validate the conceptual site model.
- Based on the model, prior chemical analytical results, and preliminary composite sample results, select the target zone for evaluating on-site borrow for upland re-use.
- Conduct chemical analysis on samples from the target zone using incremental sampling method (ISM) protocols. Compare chemical analytical results to the upland remediation goals (RGs) to determine if the bank layback soil is suitable for re-use.

The remainder of this Addendum discusses the following:

- Conceptual site model (CSM),
- Area targeted for evaluation of potential re-use,
- Samples collected, and
- Proposed chemical analyses and data evaluation.

## 2.0 Conceptual Site Model

The bulk of the Willamette Cove upland was created with fill. Most of the filling on the Central and East parcels occurred in the early 1900s. Therefore, the general model for contamination on the Central and East Parcels is that the original fill was generally uncontaminated, and impacts over the years have been from surface releases. The upland chemicals of concern (COCs) (metals, polychlorinated biphenyls [PCBs], and semi-volatile

organic compounds) are relatively insoluble/immobile, so contamination on the Central and East Parcels is expected to decrease with depth.

To date, this CSM has been validated using data from the upland remedial design investigation (RDI) (Apex, 2023). As discussed in the upland basis of design report (Apex, 2024), the RDI data show that most COC concentrations on the Central and East Parcels decrease with depth in most locations. However, sampling to date has been primarily within the upper 3 feet, the zone most likely to have been disturbed over the years, so additional data are needed to further validate the CSM.

## 3.0 Area Targeted for Evaluation of Potential Re-Use

Attachment A reproduces Figure 3-1 from the WC Group riverbank sampling work plan (MFA, 2025a) showing the locations of riverbank sampling transects. Based on the CSM, the greatest potential for clean soil is on the Central and East Parcels, and the largest volumes (greatest bank layback) on these parcels correspond to Transects 13 (T13) through 18 (T18). Soil targeted for excavation within these transects will be evaluated for potential re-use.

## 4.0 Sample Collection

Attachment A reproduces Figure 3-3 from the WC Group riverbank sampling work plan (MFA, 2025a) depicting a conceptual cross-section of the sampling the WC Group conducted at each transect. The target zone soil for potential re-use corresponds to the Removal Layer Zone (yellow samples on the figure). Because the WC Group is only evaluating potential waste designation within that zone, they collected only a single composite sample at each transect within the potential re-use zone.

To allow more detailed evaluation of potential re-use of the soil, Apex collected discrete soil samples for each 1-foot increment in the depth range from 3 feet to the top of the Leave Surface Zone in the Midpoint and Bottom borings for transects T13 to T18. Attachment A includes copies of Figures 13 through 18 from the WC Group riverbank sampling workplan addendum (MFA, 2025b) showing cross sections at each transect. The following summarizes the number/location of samples collected for evaluating soil for potential re-use on Willamette Cove.

Location: Transects T13 through T18, generally located at the eastern 800 feet of the Central Parcel. Three borings were completed at each transect.

Samples Collected:

WC Group: The WC Group collected the following samples (see Figure 3-3 in Attachment A):

- Bulk composite sample of the Removal Layer for each transect (total of 6 composite samples)
- Composite samples of the Leave Surface Zone consisting of 5 subsamples composited over a depth range of 5 feet in each boring at each transect (total of 18 composite samples)
- Composite samples of the Sub-Leave Surface Zone consisting of 5 subsamples composited over a depth range of 5 feet in each boring at each transect (total of 18 composite samples)
- Discrete samples collected at 1-foot intervals in the Leave Surface and Sub-Leave Surface Zones in each boring at each transect (total of 180 discrete samples)

Upland Team: Although three borings were completed at each transect, only the Midpoint and Bottom boring locations penetrate through a substantive depth of soil targeted for removal by bank layback (for a total of 12 borings of interest). Discrete samples were collected at 1-foot intervals within the Removal Layer (depth of 3 feet below ground surface [bgs] to the top of the Leave Surface Zone) from the Midpoint and Bottom borings at each transect. The number of samples collected at each depth are listed below with the approximate representative soil volumes (derived from the cross sections in Attachment A).

| Depth Range (ft) | Number of Samples Collected | Soil Volume (cy) |
|---|---|---|
| 3-4 | 12 | 2,300 |
| 4-5 | 12 | 2,100 |
| 5-6 | 12 | 1,900 |
| 6-7 | 12 | 1,900 |
| 7-8 | 12 | 1,600 |
| 8-9 | 12 | 1,400 |
| 9-10 | 12 | 1,300 |
| 10-11 | 12 | 1,100 |
| 11-12 | 9 | 1,000 |
| 12-13 | 5 | 700 |
| 13-14 | 4 | 500 |
| 14-15 | 2 | 300 |
| 15-16 | 1 | 200 |
| Total | 117 | 16,300 |
| Total Below 4 feet | 105 | 14,000 |
| Total Below 5 feet | 93 | 11,900 |

## 5.0 On-Site Borrow Soil Sample Chemical Analyses

### 5.1 WC Group Sampling

The WC Group will analyze the Removal Layer, Leave Surface, and Sub-Leave Surface composite samples (42 total samples) for PCBs, polycyclic aromatic hydrocarbons (PAHs)/dibenzofuran, dioxin/furans, DDx, and metals. Additional follow-up analyses of composite and/or discrete samples may be conducted. See the WC Group work plan (MFA, 2025a) for specific details.

### 5.2 CSM Validation

Results of the WC Group composite sample analyses will be combined with the RDI data set to validate/adjust the CSM. Transects T13 through T18 are located within Decision Unit 19 (DU-19) and DU-26. These DUs were sampled during the RDI (Apex, 2023) in one-foot increments from 0 to 3 feet bgs. The WC Group composite soil data will consist of 42 samples collected over effective depth ranges of approximately 6 to 20 feet bgs. Combined, these data will provide a robust data set over the depth range of 0 to 20 feet to evaluate COC trends with depth and validate or adjust the CSM.

### 5.3 Identify Target Depth Range for Potential Re-Use

The results of the RDI (Apex, 2023) demonstrated that soil within the upper 3 feet of the uplands is not suitable for re-use. Composite soil samples from the Removal Layer will be prepared and analyzed using ISM protocols at incremental 1-foot depths below 3 feet to identify the depth range to evaluate for potential re-use. Using the CSM, we may predict the depth at which concentrations of COCs are expected to be below the RGs. Based on review of the RDI data for DU-19 and DU-26, COCs are below RGs within the upper 3 feet except for lead (Pb), mercury (Hg), and dioxin/furans (D/F).[1] The RDI data from DU-19 and DU-26 were used to predict RG exceedance factors for depths below 3 feet with results as follows:[2]

[1] Concentrations of COCs were determined to be below the RG prior to a depth of 3 feet if the best fit line intersected the RG at a depth of less than 3 feet. Data from DU-19 and DU-26 were evaluated both individually and as an average between the two DUs.

[2] Predicted RG exceedance factors were calculated as the ratio of the predicted COC concentration to the RG. Predicted COC concentrations were estimated using linear extrapolation to estimate the COC concentrations at the midpoint (3.5 feet and 4.5 feet) of each layer.

| | Predicted RG Exceedance Factor | | | |
|---|---|---|---|---|
| | Pb | Hg | D/F | Other* |
| 3- to 4-Foot Samples | 1.2 | 4 | 3 | <0.1 to 1.0 |
| 4- to 5-Foot Samples | 0.8 | 0.95 | 0.2 | <0.1 to 1.0 |

* RG exceedances greater than 0.6 represent background or detection limit values

These results predict that the 4- to 5-foot samples will have concentrations below RGs. To verify this prediction, three composite samples will be analyzed. Each composite sample will consist of 12 sub-samples corresponding to the depth ranges of 3-4 feet, 4-5 feet, and 5-6 feet. Each composite sample will be analyzed for the full suite of upland COCs as follows:

- PCB Aroclors by EPA Method 8082A
- PAHs (including dibenzofuran) by EPA Method 8270E
- D/F by EPA Method 1613B
- Metals (antimony, arsenic, chromium, copper, lead, mercury, nickel, selenium, and zinc) by EPA Method 6020B.

The results of these analyses, together with the updated CSM discussed in Section 5.2, will be used to define the depth range for further evaluation (i.e., the depth below which the data suggest concentrations are below RGs).

## 5.4 On-Site Borrow Target Zone Soil Chemical Analyses

The target zone for potential reuse will be evaluated by analyzing composite soil samples using ISM protocols. The current projection is that soil below a depth of 4 feet will be evaluated. A total of 105 discrete samples were collected below the depth of 4 feet. Assuming a minimum of 30 increments for each composite sample, three samples will be analyzed with increments divided vertically (upper, middle, and lower) over the full area. Therefore, the samples will be incremented as follows:

| Sample Number | Depth Range* | Number of Increments* |
|---|---|---|
| Borrow-1 | 4 to 7 feet | 36 |
| Borrow-2 | 7 to 10 feet | 36 |
| Borrow-3 | 10 to 16 feet | 33 |

* To be updated based on 1-foot-increment composite sample results

These samples will be analyzed for the full suite of upland COCs (see Section 5.3).

## 5.5 Summary of Proposed Chemical Analyses and Data Evaluation

In summary, the discrete samples collected for the on-site borrow evaluation will be composited and analyzed as summarized below. The samples will be prepared using ISM protocols and analyzed for the full suite of upland COCs (see Section 5.3).

- Three, 1-foot composite samples:
    - 12-point composite samples
    - Each sample covers the full area of transects T13 through T18
    - Depths of 3-4, 4-5, and 5-6 feet
- Three target on-site borrow composite samples (specific increments will be updated based on initial composite sample results):
    - 33- to 36-point composite samples
    - Each sample covers the full area of transects T13 through T18
    - Depths of 4-7, 7-10, and 10-16 feet

Results of the chemical analyses will be compared to RGs. If resulting concentrations are less than the RGs, the soil will be suitable for on-site re-use.

## 6.0 References

Apex, 2023. Draft Remedial Design Investigation Evaluation Report, Willamette Cove Upland Facility, Portland, Oregon. March 22, 2023.

Apex, 2025. Willamette Cove Upland Facility, Riverbank Soil Reuse Characterization and Upland Receptor Screening, ECSI No. 2066. February 13, 2025.

MFA (Maul Foster & Alongi, Inc.), 2025a. Final Riverbank Characterization Work Plan, Willamette Cove Project Area, Portland, Oregon. January 16, 2025.

MFA, 2025b. Willamette Cove—Riverbank Characterization Work Plan Addendum. January 17, 2025.

## 7.0 Attachments

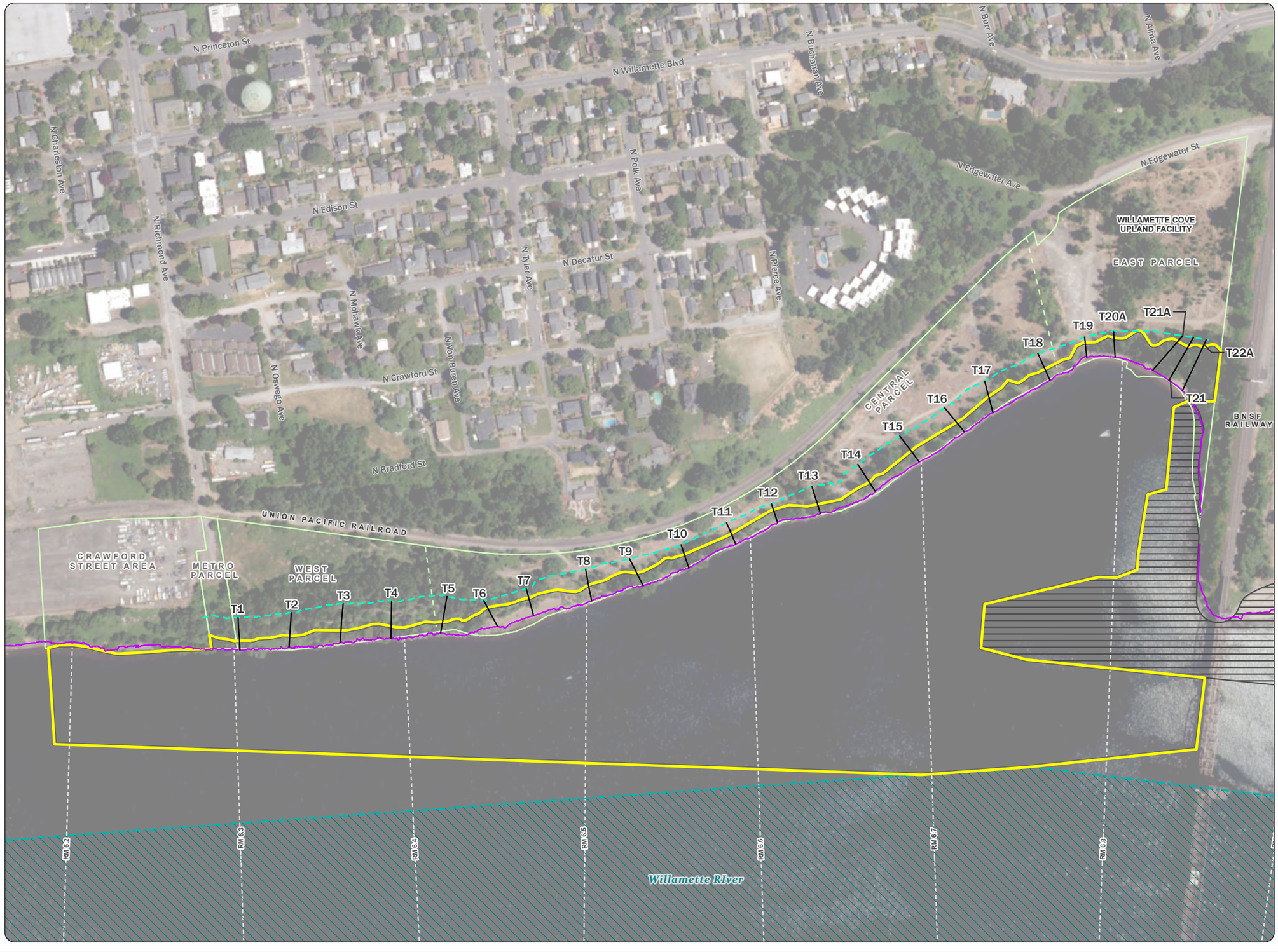
Attachment A – Select Figures from WC Group Riverbank Characterization Work Plan

# *Attachment A*

## Select Figures from WC Group Riverbank Characterization Work Plan

# Figure 3-1
# Proposed Riverbank Characterization Sampling Locations

Willamette Cove
Project Area
Portland, OR




**Legend**

- Transect
- Proposed Future Top of Bank
- Mean High Water (+13 feet NAVD 88)
- Project Area Boundary
- Adjacent Upland Parcel
- Adjacent Upland Subparcel
- McCormick & Baxter Cap
- Navigation Channel
- River Mile (RM)

**Notes**

Boring locations will be determined based on the survey.
The riverward boundary of the Crawford Street Area is at ordinary low water, as defined by USACE (2017).
The Project Area boundary line adjacent to the Willamette Cove Upland Facility is based on the 2022 Supplemental Pre-Design Investigation top of bank field survey.
BNSF = Burlington Northern and Santa Fe.
NAVD 88 = North American Vertical Datum of 1988.
USACE = U.S. Army Corps of Engineers.

0 250
Feet

**Data Sources**

Aerial photograph obtained from the City of Portland; tax lot data obtained from Oregon Metro; navigation channel obtained from the USACE.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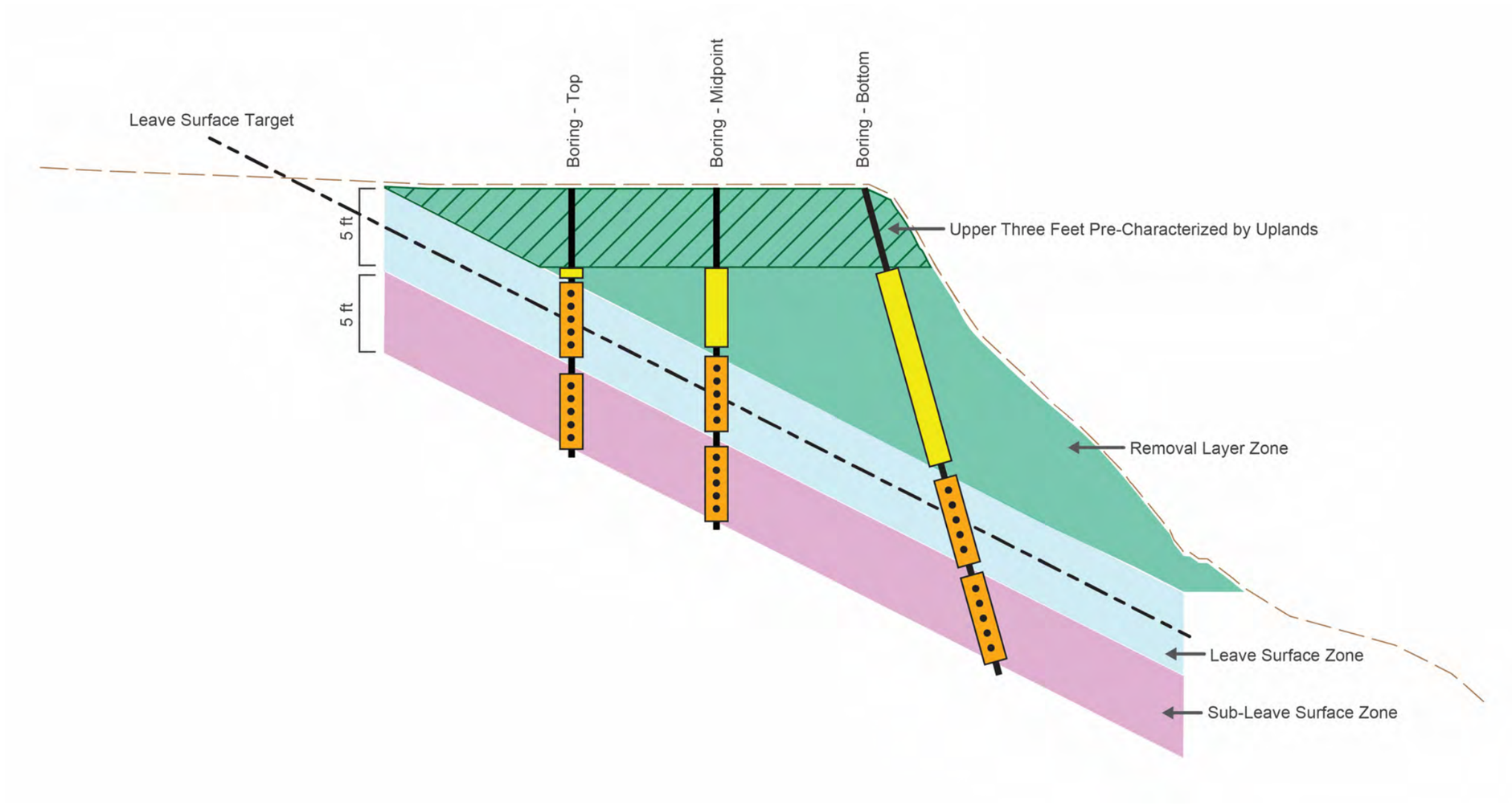
Path: C:\Workspace\O_MFA_Projects\M0232\341.006\Pro\M0232_34_006_001.aprx\Fig 3-1 Proposed Riverbank Characterization Sampling Locations
Print Date: 1/15/2025
Reviewed By: ddomenighini
Produced By: joberts
Project: M0232.34.006

# Figure 3-3
# Conceptual Sampling Approach

Willamette Cove
Project Area
Portland, OR




**Legend**

- Discrete Sample
- Leave and Sub-Leave Surface Composite Samples (Two Per Boring)
- Removal Layer Composite Sample (One Per Transect)

**Notes**
Not to Scale.
Discrete samples will be placed on hold with laboratory pending the results of the composite samples.
ft = feet.

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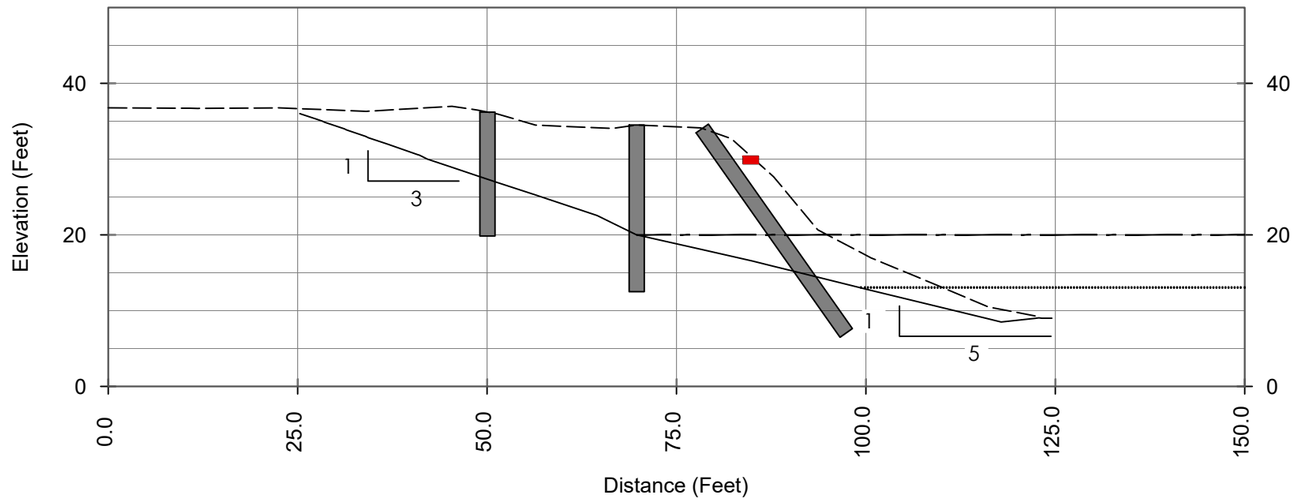
Path: X:\0_MFA_Projects\M0232\34\006\Pro\M0232_34_006_001.aprx\Fig 3-3 Conceptual Sampling Approach
Project: M0232.34.006 Produced By: eswanson Reviewed By: ddomenighini Print Date: 1/7/2025




PROFILE VIEW OF TRANSECT T13
HORIZONTAL SCALE: 1" = 20'  VERTICAL SCALE: 1" = 20'
VERTICAL EXAGGERATION: 1

LEGEND

- MHW (ELEV = 13')
- OHW (ELEV = 20')
- EXISTING RIVERBANK GRADE
- PROPOSED RIVERBANK GRADE
- PROPOSED BORING
- PREVIOUS RIVERBANK SAMPLE LOCATION

*NOTE: PREVIOUS SAMPLE LOCATIONS SHOWN ARE LIMITED TO RTL EXCEEDANCES (EXCLUDING DECISION UNIT SAMPLES) AND COULD BE LOCATED UP TO 90 FEET AWAY FROM THE PROPOSED TRANSECT. RED SAMPLE LOCATIONS INDICATE PTW EXCEEDANCES AND ORANGE SAMPLE LOCATIONS INDICATE OTHER RTL EXCEEDANCES.

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0 20' 40'

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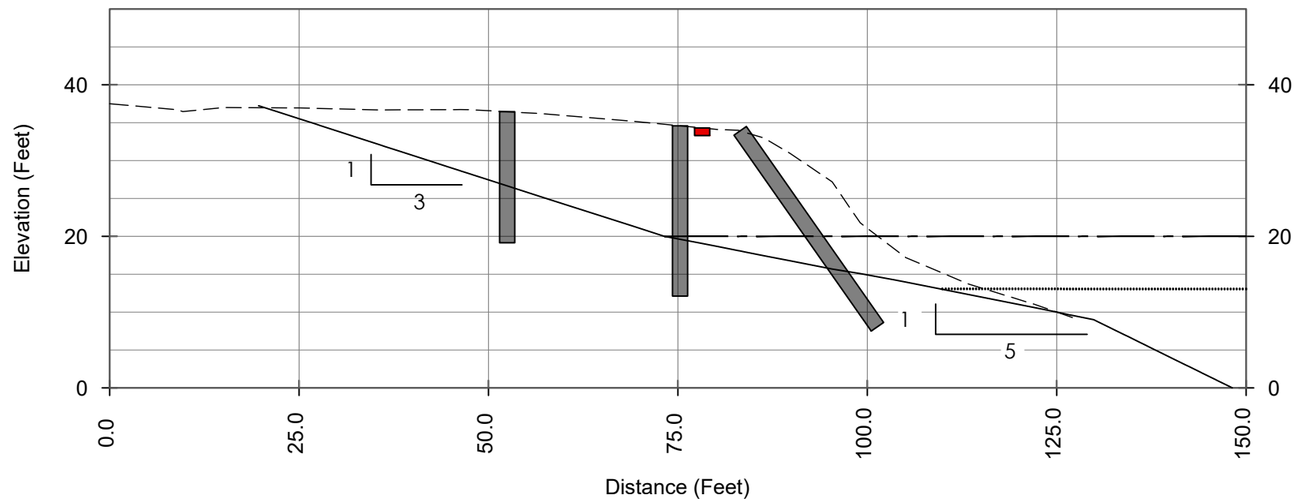
# Figure 13
## T13 Sample Cross Section w/ Proposed Boring Locations
Willamette Cove
Portland, Oregon




PROFILE VIEW OF TRANSECT T14
HORIZONTAL SCALE: 1" = 20'  VERTICAL SCALE: 1" = 20'
VERTICAL EXAGGERATION: 1

LEGEND

- MHW (ELEV = 13')
- OHW (ELEV = 20')
- EXISTING RIVERBANK GRADE
- PROPOSED RIVERBANK GRADE
- PROPOSED BORING
- PREVIOUS RIVERBANK SAMPLE LOCATION

*NOTE: PREVIOUS SAMPLE LOCATIONS SHOWN ARE LIMITED TO RTL EXCEEDANCES (EXCLUDING DECISION UNIT SAMPLES) AND COULD BE LOCATED UP TO 90 FEET AWAY FROM THE PROPOSED TRANSECT. RED SAMPLE LOCATIONS INDICATE PTW EXCEEDANCES AND ORANGE SAMPLE LOCATIONS INDICATE OTHER RTL EXCEEDANCES.

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# Figure 14
## T14 Sample Cross Section w/ Proposed Boring Locations
Willamette Cove
Portland, Oregon

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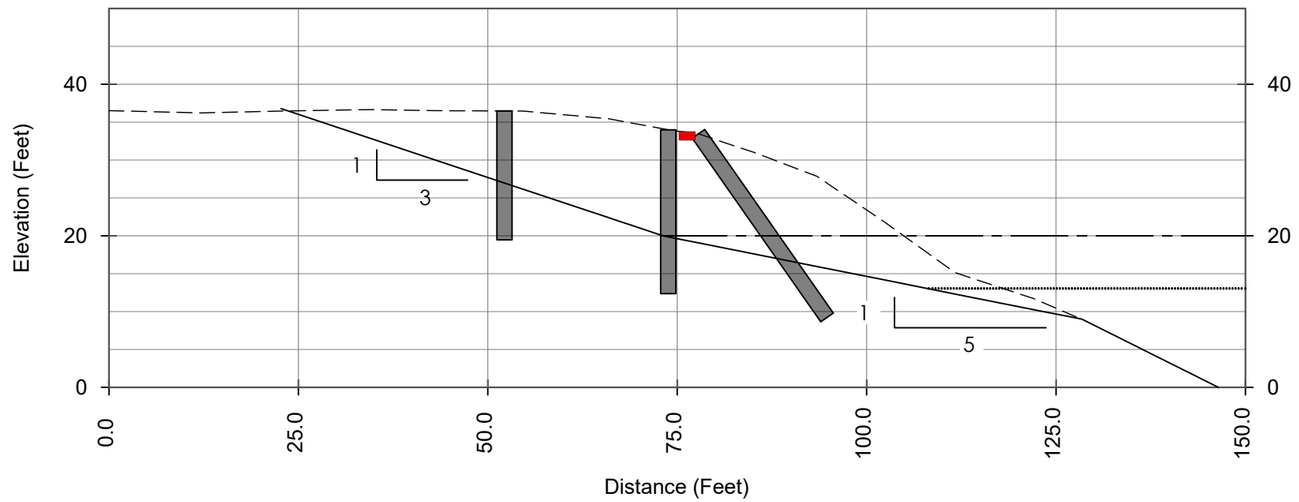
Date:1/17/2025 11:18:34 AM




PROFILE VIEW OF TRANSECT T15
HORIZONTAL SCALE: 1" = 20'  VERTICAL SCALE: 1" = 20'
VERTICAL EXAGGERATION: 1

LEGEND

- MHW (ELEV = 13')
- OHW (ELEV = 20')
- EXISTING RIVERBANK GRADE
- PROPOSED RIVERBANK GRADE
- PROPOSED BORING
- PREVIOUS RIVERBANK SAMPLE LOCATION

*NOTE: PREVIOUS SAMPLE LOCATIONS SHOWN ARE LIMITED TO RTL EXCEEDANCES (EXCLUDING DECISION UNIT SAMPLES) AND COULD BE LOCATED UP TO 90 FEET AWAY FROM THE PROPOSED TRANSECT. RED SAMPLE LOCATIONS INDICATE PTW EXCEEDANCES AND ORANGE SAMPLE LOCATIONS INDICATE OTHER RTL EXCEEDANCES.

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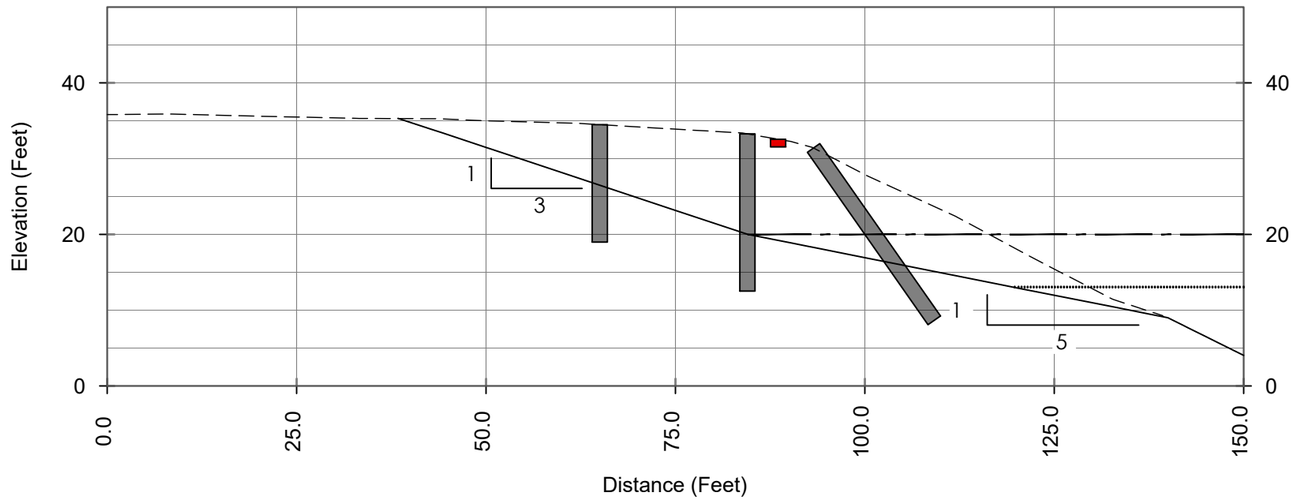
# Figure 15
## T15 Sample Cross Section w/ Proposed Boring Locations
Willamette Cove
Portland, Oregon




PROFILE VIEW OF TRANSECT T16
HORIZONTAL SCALE: 1" = 20'  VERTICAL SCALE: 1" = 20'
VERTICAL EXAGGERATION: 1

LEGEND

- MHW (ELEV = 13')
- OHW (ELEV = 20')
- EXISTING RIVERBANK GRADE
- PROPOSED RIVERBANK GRADE
- PROPOSED BORING
- PREVIOUS RIVERBANK SAMPLE LOCATION

*NOTE: PREVIOUS SAMPLE LOCATIONS SHOWN ARE LIMITED TO RTL EXCEEDANCES (EXCLUDING DECISION UNIT SAMPLES) AND COULD BE LOCATED UP TO 90 FEET AWAY FROM THE PROPOSED TRANSECT. RED SAMPLE LOCATIONS INDICATE PTW EXCEEDANCES AND ORANGE SAMPLE LOCATIONS INDICATE OTHER RTL EXCEEDANCES.

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# Figure 16
## T16 Sample Cross Section w/ Proposed Boring Locations
Willamette Cove
Portland, Oregon

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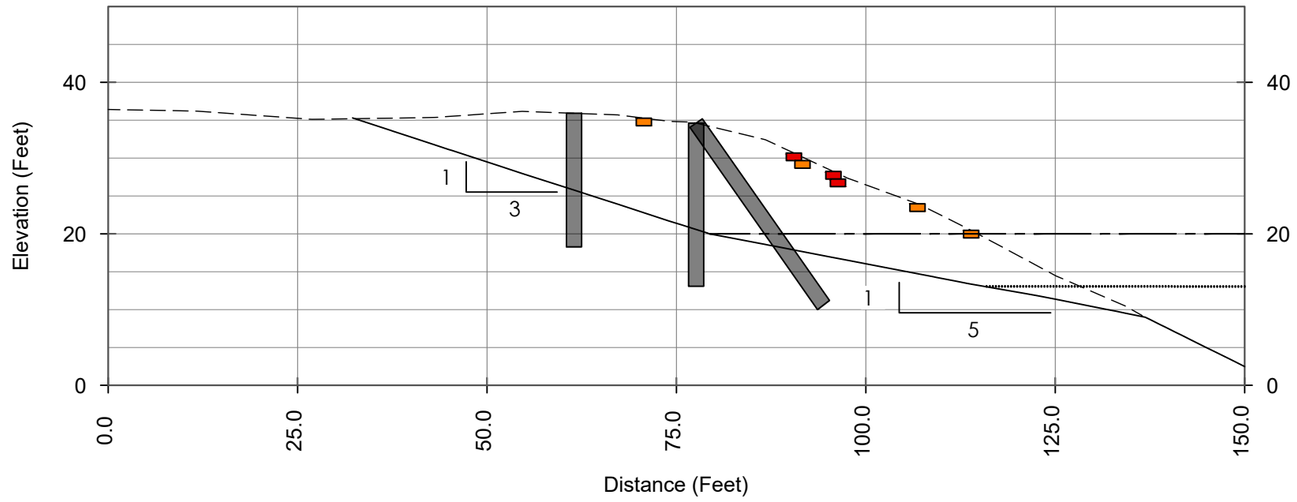
Date:1/17/2025 11:20:25 AM




PROFILE VIEW OF TRANSECT T17
HORIZONTAL SCALE: 1" = 20'  VERTICAL SCALE: 1" = 20'
VERTICAL EXAGGERATION: 1

LEGEND

- MHW (ELEV = 13')
- OHW (ELEV = 20')
- EXISTING RIVERBANK GRADE
- PROPOSED RIVERBANK GRADE
- PROPOSED BORING
- PREVIOUS RIVERBANK SAMPLE LOCATION

*NOTE: PREVIOUS SAMPLE LOCATIONS SHOWN ARE LIMITED TO RTL EXCEEDANCES (EXCLUDING DECISION UNIT SAMPLES) AND COULD BE LOCATED UP TO 90 FEET AWAY FROM THE PROPOSED TRANSECT. RED SAMPLE LOCATIONS INDICATE PTW EXCEEDANCES AND ORANGE SAMPLE LOCATIONS INDICATE OTHER RTL EXCEEDANCES.

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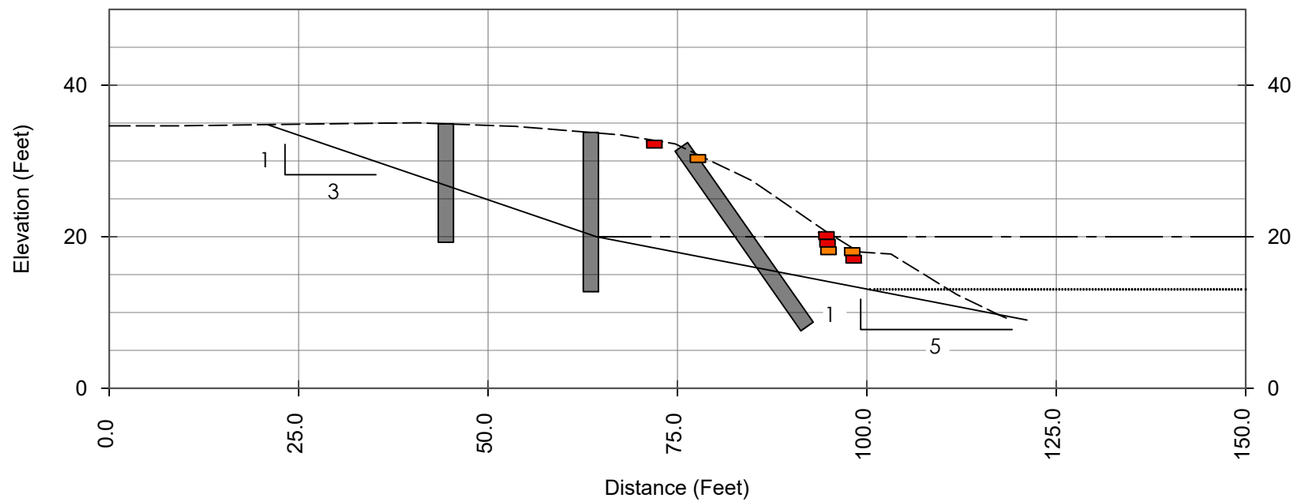
# Figure 17
## T17 Sample Cross Section w/ Proposed Boring Locations
Willamette Cove
Portland, Oregon




PROFILE VIEW OF TRANSECT T18
HORIZONTAL SCALE: 1" = 20'  VERTICAL SCALE: 1" = 20'
VERTICAL EXAGGERATION: 1

LEGEND

- MHW (ELEV = 13')
- OHW (ELEV = 20')
- EXISTING RIVERBANK GRADE
- PROPOSED RIVERBANK GRADE
- PROPOSED BORING
- PREVIOUS RIVERBANK SAMPLE LOCATION

*NOTE: PREVIOUS SAMPLE LOCATIONS SHOWN ARE LIMITED TO RTL EXCEEDANCES (EXCLUDING DECISION UNIT SAMPLES) AND COULD BE LOCATED UP TO 90 FEET AWAY FROM THE PROPOSED TRANSECT. RED SAMPLE LOCATIONS INDICATE PTW EXCEEDANCES AND ORANGE SAMPLE LOCATIONS INDICATE OTHER RTL EXCEEDANCES.

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0  20'  40'

NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

# Figure 18
## T18 Sample Cross Section w/ Proposed Boring Locations
Willamette Cove
Portland, Oregon

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