

Geotechnical Data Report

Parcel 12 Habitat Mitigation Project
Wetland Enhancement and Re-Establishment
3802 Taylor Way
Tacoma, Washington

for
Port of Tacoma

February 5, 2026

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Wetland Enhancement and Re-Establishment
3802 Taylor Way
Tacoma, Washington

File No. 0454-175-00
February 5, 2026

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1.0 Introduction and Project Understanding

This geotechnical data report presents our geologic review and subsurface data for the Port of Tacoma (Port) Parcel 12 Habitat Mitigation Project site (Parcel 12 site) located at 3802 Taylor Way, generally southeast of the Port of Tacoma, in Tacoma, Washington. The project consists of wetland enhancement and re-establishment and enhancement of buffer habitat. Our geotechnical services are being provided in accordance with our existing Contract No. PA000000296 dated August 19, 2025 and Amendment No. 1.

Elevations referenced in the provided drawings are referenced to Mean Lower Low Water (MLLW) in the Port of Tacoma Vertical Datum (PoTVD). Accordingly, elevations referenced within this report refer to MLLW and should be considered approximate. The PoTVD is 2.67 feet below the North American Vertical Datum of 1988 (NAVD 88); therefore, 0 feet MLLW (PoTVD) is equal to -2.67 feet NAVD 88.

The purpose of our geotechnical services is to support design of proposed habitat improvements. These improvements are planned to be focused south and east of Fife Ditch within the project site. This report summarizes our review of geologic references for the project site and presents data collected from the explorations. Specific geotechnical design recommendations will be provided separately as the project design advances.

2.0 Site Conditions

2.1 SURFACE CONDITIONS

The project site is located generally southeast of the Port of Tacoma and north of the City of Fife, as shown in the Vicinity Map, Figure 1. The site consists of 5.25 acres of undeveloped land over two parcels (parcel Nos. 0320011090 and 0320011091). The triangular site is bounded by Washington State Route 509 to the north west, Taylor Way to the northeast and industrial and commercial properties to the south.

Fife Ditch flows along the northwest portion of the site. Slopes on the order of 1.5H:1V [horizontal:vertical] to 2H:1V are adjacent to Fife Ditch. The site is generally flat; there is a noticeable grade change in about the southwest center of the site running southeast to northwest.

Groundcover at the site typically consists of disturbed vegetation (small branches, vines, disturbed grasses) with some bare soil areas. Limited amounts of trash and small debris were also present at surface.

2.2 SITE AND REGIONAL GEOLOGY

2.2.1 *Geologic History*

Prior to about 14,000 years ago (14 ka), during the Vashon Stade of the Frasier Glaciation, the Puget Sound was covered by thick glacial ice. Between 14 ka and 13 ka, the glacial ice retreated northward uncovering deep marine embayments throughout the Puget Sound, including the Puyallup embayment, (Dragovich, et. al. 1994). The Vashon Stade ended about 13 ka when ice retreat opened the Strait of Juan de Fuca and allowed marine inundation of Puget Sound and the marine embayments. From about 13 ka to 9 ka, isostatic rebound after glacial retreat created an erosional environment in the Puyallup embayment and resulted in little to no marine deposition. After about 9 ka, isostatic rebound slowed and marine waters filled the embayments, resulting in increased deposition and the beginning of progradation of the Puyallup delta. During this period the Puyallup delta is thought to have been located approximately 15 miles upstream of Commencement Bay.

Approximately 5.7 ka, an eruption of Mount Rainier caused a massive mudflow known as the Osceola Mudflow. Calculations indicate the minimum volume of the Osceola Mudflow was about 0.89 cubic miles (4.8 billion cubic yards) and the estimated areal extent of the flow was at least 71 square miles. The Osceola Mudflow originated on the summit and northeastern flank of Mount Rainier and flowed down the White River valley, spilling into the Puyallup River valley and extending into the Puyallup embayment beyond the current location of the Port (Dragovich, et. al. 1994). In the vicinity of the Port this mudflow deposit is currently between about 250 to 300 feet below existing ground surface (bgs). After the Osceola Mudflow, progradation of the Puyallup delta continued.

Progradation continued, advancing the delta front down the Puyallup embayment past the city of Fife and to its current location. At about 5 ka, the Puyallup delta is thought to have advanced to the northwestern outskirts of the City of Puyallup. The average Puyallup delta progradation rate over the past 5,700 years is about 8 feet/year, indicating a very high sedimentation rate.

2.2.2 Published Geology

We reviewed a U.S. Geological Survey (USGS) geologic map of the site (Tabor, et al. 2014). This mapping indicates the area east of Fife Ditch is mapped as old alluvium (Q_{oa}). In the geologic literature, alluvium generally consists of loose silt, sand and gravel, with local inclusions of sandy to silty estuarine materials. In GeoEngineers' previous experience in the lower Puyallup River valley and Port vicinity, the composition of the alluvium ranges from very dense sand with trace silt to very soft silt with trace sand and includes a variety of relative densities. Alluvium thickness in the Port ranges from less than 50 feet near the northwest and southeast edges of the Port area to over 300 feet.

Modified land (artificial fill) is mapped to the area west of Fife Ditch.

2.2.3 Human Modification

As part of the growth of Tacoma and the Port, much of the Puyallup delta has been developed to create usable land. The Puyallup River and creeks throughout the delta were channelized and/or re-routed to control flooding and facilitate development. The Blair and Hylebos Waterways were dredged and built to their current configurations to improve shipping access and increase deep water shoreline. Fill, much of which was derived from dredging of the waterways, has been placed over most of the natural ground surface in the Port.

Based on our review of historical photos and our understanding of the dredging process, it is our interpretation that it is unlikely that dredge fill was placed at the Parcel 12 site. There does appear to be some fill placement at the site, as discussed further in Section 3.4 below; the fill placement is more likely associated with fill placed from ditch excavation and maintenance or other local sources, and not from dredge fill from the Blair and Hylebos waterways.

2.3 GEOTECHNICAL EXPLORATIONS

As part of our geotechnical services for the project, our field staff observed and logged nine borings (B-12, B-21, B-22, B-33, B-44, B-45, B-50, B-55 and B-76) at the site. Borings were completed using a Geoprobe direct push drill rig under subcontract to GeoEngineers. All borings were advanced to a depth of about 15 feet below ground surface (bgs). Additional subsurface explorations were completed at the site as part of archaeological and environmental evaluations, but those explorations were not observed or recorded by GeoEngineers. The numbering of the explorations is in sequence and consistent with the larger subsurface investigation program. Approximate boring locations are shown in the Site Plan, Figure 2.

Selected samples from the explorations were tested in the laboratory to evaluate engineering properties and to confirm or modify field classifications. Details and the results of our laboratory testing program are provided in Appendix A.

2.4 SUBSURFACE CONDITIONS

2.4.1 Soil Conditions

We interpret soil conditions encountered in the borings to consist of reworked soil and fill overlying native alluvial deposits.

Reworked soils were observed at the surface in borings B-12, B-21 and B-22. This layer was observed at the surface of these borings consisting of loose silty sand to medium stiff sandy silt with roots and other variable organic material. We interpret this layer to be native alluvium that has been reworked during historical farming practices or other earthwork disturbances. This layer was interpreted to extend to 8 to 18 inches bgs.

Fill material was observed at the surface in all other borings (borings B-33, B-44, B-45, B-50, B-55 and B-76). Fill encountered consisted of medium stiff silt with variable sand and organic content. The upper 6 to 12 inches of the fill soil contains increased roots and increased organic material. As noted in Section 3.2.3 above, we interpret that the fill to be derived from local sources. Fill thickness was on the order of approximately 2 to 4 feet.

The fill or reworked soil layers are underlain by native alluvium. The alluvium generally consisted of medium stiff sandy silt, loose to medium dense silty sand and limited layers of sand with silt. The alluvium was typically observed to consist of sandy silt with 50 to 70 percent fines content. In borings B-21 and B-22, layers of sand with lower fines content (silty sand and sand with silt) were observed. Based on soil conditions and historical aerial photographs, we interpret the zone in the vicinity of B-21 and B-22 may be a relic creek channel, while alluvium encountered in other areas of the site is more likely derived from overbank flood deposits.

2.4.2 Groundwater Conditions

Wet soils, indicative of the regional groundwater table, were typically encountered below about 7 to 11 feet bgs. Explorations were not left open long enough to allow groundwater levels to stabilize. We expect groundwater levels will typically be at the highest during the wet season (winter through spring months). In our experience groundwater within the Port can be tidally influenced to some degree. This is more prominent in locations where nearby creeks and rivers are also tidally influenced.

In addition to the regional groundwater, areas of perched groundwater may also be present. It is common for perched groundwater to be present near contacts where soil that is more permeable overlies soil that is less permeable (i.e., sand over silt). The quantity and location of perched groundwater, if encountered, at this site is expected to be dependent on routing and infiltration of surface water.

3.0 References

- Dragovich, J.D., P.T. Pringle, and T.W. Walsh (1994). "Extent and Geometry of the Mid-Holocene Osceola Mudflow in the Puget Lowland - Implications for Holocene Sedimentation and Paleography." Washington Geology, V. 22, No. 3 p. 3-26.
- Tabor, R.W., D.B. Booth and K.G. Troost. (2014). "Lidar-Revised Geologic Map of the Poverty Bay 7.5' Quadrangle, King and Pierce Counties, Washington". Scientific Investigation Map 3317. U.S. Department of the Interior, U.S. Geological Survey.

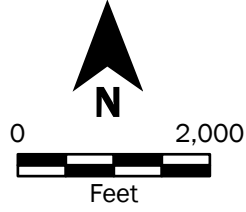
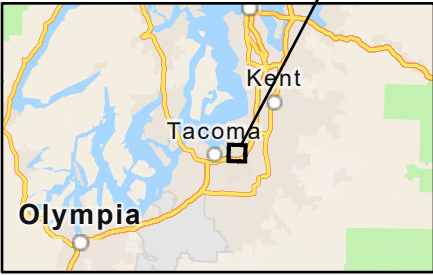
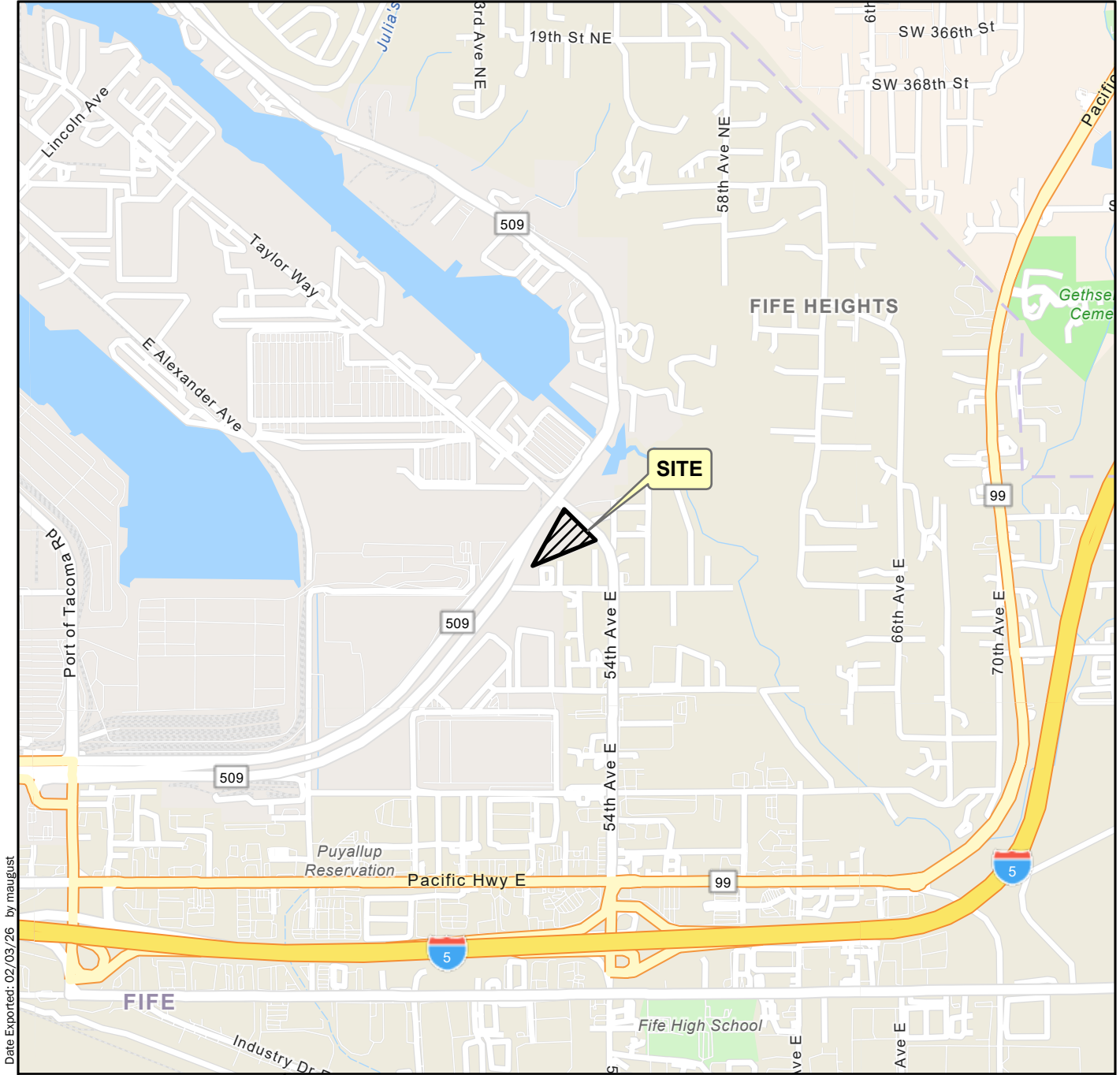
4.0 Limitations

We have prepared this geotechnical data report for the Parcel 12 Habitat Mitigation Project in Tacoma, Washington. The Port of Tacoma may distribute copies of this report to authorized agents and regulatory agencies as may be required for the project.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices for geotechnical engineering services in this area at the time this report was prepared. The conclusions, recommendations, and opinions presented in this report are based on our professional knowledge, judgment and experience. No warranty, express or implied, applies to the services or this report.

Please refer to Appendix B titled "Report Limitations and Guidelines for Use" for additional information pertaining to use of this report.

Figures



Source(s):
• ESRI

Coordinate System: NAD 1983 UTM Zone 10N

Disclaimer: This figure was created for a specific purpose and project. Any use of this figure for any other project or purpose shall be at the user's sole risk and without liability to GeoEngineers. The locations of features shown may be approximate. GeoEngineers makes no warranty or representation as to the accuracy, completeness, or suitability of the figure, or data contained therein. The file containing this figure is a copy of a master document, the original of which is retained by GeoEngineers and is the official document of record.

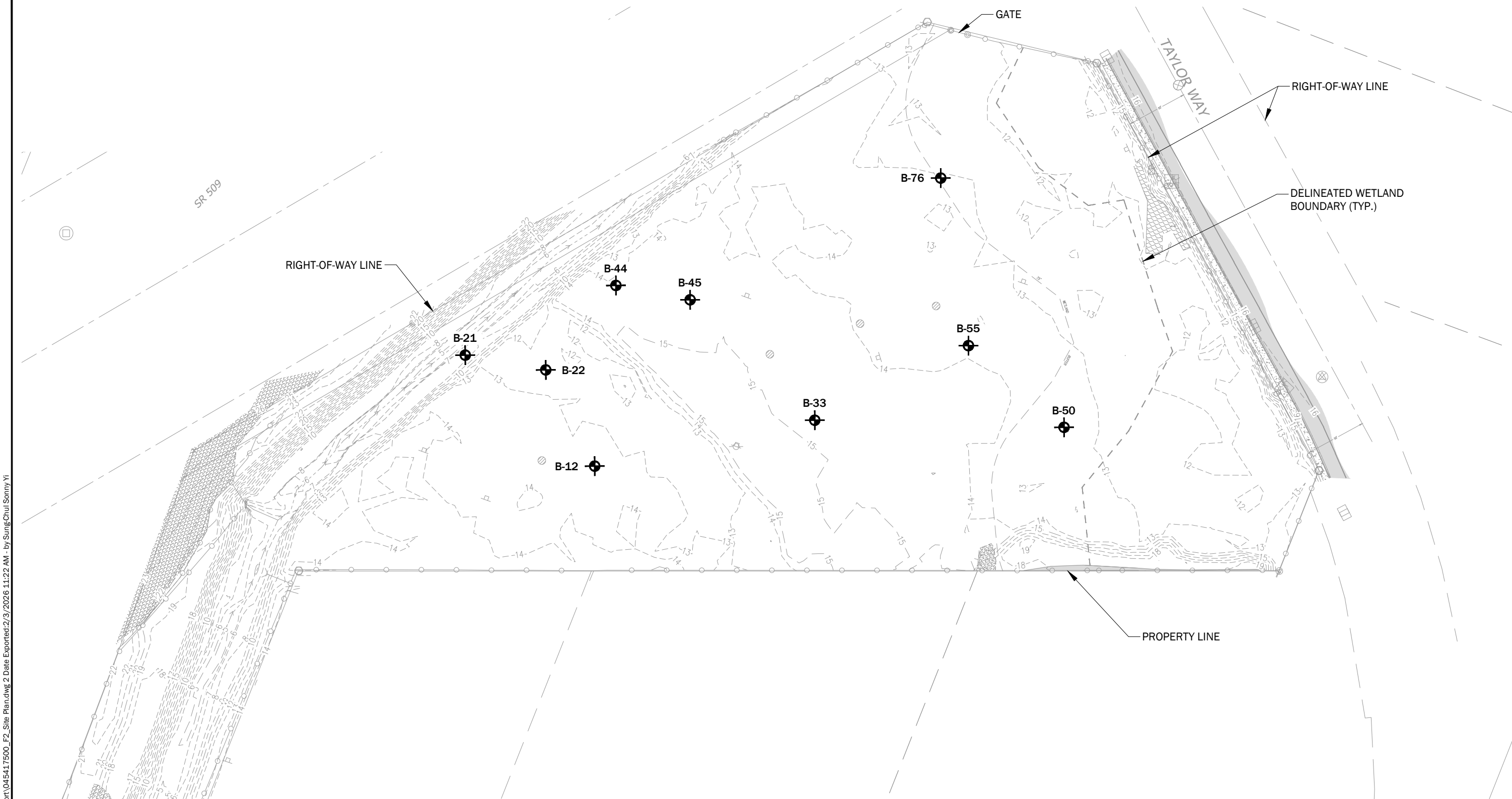
Vicinity Map

Port of Tacoma Habitat Mitigation Services Parcel 12
Tacoma, Washington



Figure 1

P:\0454175_GIS\454175_Project\aprx\045417500_F01_VM Date Exported: 02/03/26 by maugust



P:\0454175\CAD\00\Parcel 12 Geotech Report\045417500_F2_Site Plan.dwg 2 Date Exported:2/3/2026 11:22 AM - by SungChul Sonny Yi

Source(s):
• Survey topography from Sitts & Hill, dated April and May 2025
• GPS Data provided by AquaTerra on October 10, 2025

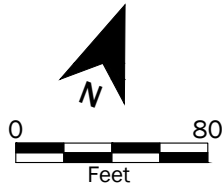
Projection: Washington Plane Coordinate system, South Zone, NAD 83/2011
Vertical Datum: MLLW , Per Port of Tacoma Survey Control Map, Dated 2016

Disclaimer: This figure was created for a specific purpose and project. Any use of this figure for any other project or purpose shall be at the user's sole risk and without liability to GeoEngineers. The locations of features shown may be approximate. GeoEngineers makes no warranty or representation as to the accuracy, completeness, or suitability of the figure, or data contained therein. The file containing this figure is a copy of a master document, the original of which is retained by GeoEngineers and is the official document of record.

Legend

-  Exist Ditch Thalweg
-  Exist Fence
-  Exist Monitoring Well
-  Exist Utility Pole
-  Exist Sign

B-12  Boring by GeoEngineers, 2025



Site Plan	
Port of Tacoma Habitat Mitigation Services Parcel 12 Tacoma, Washington	
	Figure 2

Appendices

Appendix A

Subsurface Explorations and Laboratory Testing

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
		CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS
		POORLY-GRADED SANDS, GRAVELLY SAND		SP	
FINE GRAINED SOILS	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SC	CLAYEY SANDS, SAND - CLAY MIXTURES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		ML	INORGANIC SILTS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY
	SILTS AND CLAYS	Liquid Limit LESS THAN 50		CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
		Liquid Limit LESS THAN 50		OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
		Liquid Limit LESS THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTY SOILS
HIGHLY ORGANIC SOILS	SILTS AND CLAYS	Liquid Limit GREATER THAN 50		CH	INORGANIC CLAYS OF HIGH PLASTICITY
		Liquid Limit GREATER THAN 50		OH	ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY
		Liquid Limit GREATER THAN 50		PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: Multiple symbols are used to indicate borderline or dual soil classifications

Sampler Symbol Descriptions

	Modified California Sampler (6-inch sleeve) or Dames & Moore
	Standard Penetration Test (SPT)
	Shelby tube
	Piston
	Direct-Push
	Bulk or grab
	Continuous Coring

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

"P" indicates sampler pushed using the weight of the drill rig.

"WOH" indicates sampler pushed using the weight of the hammer.

NOTE: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative of subsurface conditions at other locations or times.

ADDITIONAL MATERIAL SYMBOLS

SYMBOLS		TYPICAL DESCRIPTIONS
GRAPH	LETTER	
	AC	Asphalt Concrete
	CC	Cement Concrete
	CR	Crushed Rock/Quarry Spalls
	SOD	Sod/Forest Duff
	TS	Topsoil

Groundwater Contact



Measured groundwater level in exploration, well, or piezometer



Measured free product in well or piezometer

Graphic Log Contact



Distinct contact between soil strata



Approximate contact between soil strata

Material Description Contact



Contact between geologic units



Contact between soil of the same geologic unit

Laboratory / Field Tests

%F	Percent fines
%G	Percent gravel
AL	Atterberg limits
CA	Chemical analysis
CP	Laboratory compaction test
CS	Consolidation test
DD	Dry density
DS	Direct shear
EI	Expansion index
HA	Hydrometer analysis
MC	Moisture content
MD	Moisture content and dry density
Mohs	Mohs hardness scale
OC	Organic content
PM	Permeability or hydraulic conductivity
PI	Plasticity index
PL	Point load test
PP	Pocket penetrometer
SA	Sieve analysis
TX	Triaxial compression
UC	Unconfined compression
UU	Unconsolidated undrained triaxial compression
VS	Vane shear

Sheen Classification

NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen

Key to Exploration Logs

Start Drilled	9/29/2025	End 9/29/2025	Total Depth (ft)	15	Logged By Checked By	PJS MWR	Driller	Holocene Drilling, Inc.	Drilling Method	Direct Push
Surface Elevation (ft) Vertical Datum	14 MLLW			Hammer Data	N/A			Drilling Equipment	Geoprobe 6011DT	
Easting (X) Northing (Y)	1178594 706232			System Datum	WA State Plane South NAD83 (feet)			See "Remarks" section for groundwater observed		
Notes:										

Elevation (feet)	FIELD DATA					MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing				
0		36				SM			
						SM/ML			
					S-1 SA		8	50	
10					S-2				
5						Becomes gray-brown			
						Becomes gray			
						Becomes wet			Groundwater observed at approximately 6½ feet bgs
5					S-3				
10									
0					S-4				
15									

Notes: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Topographic Survey. Vertical approximated based on Topographic Survey.

Log of Boring B-12



Project: Port of Tacoma Habitat Mitigation Services Parcel 12
Project Location: Tacoma, Washington
Project Number: 0454-175-00

Figure A-2
Sheet 1 of 1

Start Drilled	9/29/2025	End 9/29/2025	Total Depth (ft)	15	Logged By Checked By	PJS MWR	Driller	Holocene Drilling, Inc.	Drilling Method	Direct Push		
Surface Elevation (ft) Vertical Datum			8 MLLW		Hammer Data			N/A		Drilling Equipment		Geoprobe 6011DT
Easting (X) Northing (Y)			1178463 706283		System Datum			WA State Plane South NAD83 (feet)		See "Remarks" section for groundwater observed		
Notes:												

Elevation (feet)	FIELD DATA					MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing				
0		36							
						SM			
						SM			
					S-1 SA		14	61	
					S-2				
5		36				SM			
					S-3				
						ML			
10		60							
					S-4				
						SP-SM			
15									

Notes: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Topographic Survey. Vertical approximated based on Topographic Survey.

Log of Boring B-21



Project: Port of Tacoma Habitat Mitigation Services Parcel 12
Project Location: Tacoma, Washington
Project Number: 0454-175-00

Figure A-3
Sheet 1 of 1

Drilled	Start 9/29/2025	End 9/29/2025	Total Depth (ft)	15	Logged By Checked By	PJS MWR	Driller	Holocene Drilling, Inc.	Drilling Method	Direct Push	
Surface Elevation (ft) Vertical Datum			12 MLLW		Hammer Data			N/A		Drilling Equipment	Geoprobe 6011DT
Easting (X) Northing (Y)			1178530 706294		System Datum			WA State Plane South NAD83 (feet)		See "Remarks" section for groundwater observed	
Notes:											

[illegible]

Notes: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Topographic Survey. Vertical approximated based on Topographic Survey.

Log of Boring B-22



Project: Port of Tacoma Habitat Mitigation Services Parcel 12
Project Location: Tacoma, Washington
Project Number: 0454-175-00

Figure A-4
Sheet 1 of 1

Drilled	Start 9/29/2025	End 9/29/2025	Total Depth (ft)	15	Logged By Checked By	PJS MWR	Driller	Holocene Drilling, Inc.	Drilling Method	Direct Push	
Surface Elevation (ft) Vertical Datum			15 MLLW		Hammer Data			N/A		Drilling Equipment	Geoprobe 6011DT
Easting (X) Northing (Y)			1178753 706328		System Datum			WA State Plane South NAD83 (feet)		See "Remarks" section for groundwater observed	
Notes:											

Elevation (feet)	Depth (feet)	FIELD DATA					Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
		Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing						
0			36					ML	Silt with Sand (ML), soft, brown, moist; fine sand; few organics: roots, wood. [Fill]			
						S-1 MC		ML	Silt with Sand (ML), soft to medium stiff, gray-brown, moist; iron oxide staining. [Alluvium]	10		
5			36			S-2 AL				22		AL (LL = 25; PI = 2)
						S-3			Becomes gray and wet			Groundwater observed at approximately 7½ feet bgs
10			48			S-4						
						S-5		SM	Silty Sand (SM), loose to medium dense, gray, wet; fine sand.			

Notes: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Topographic Survey. Vertical approximated based on Topographic Survey.

Log of Boring B-33



Project: Port of Tacoma Habitat Mitigation Services Parcel 12
Project Location: Tacoma, Washington
Project Number: 0454-175-00

Figure A-5
Sheet 1 of 1

Drilled	Start 9/29/2025	End 9/29/2025	Total Depth (ft)	15	Logged By Checked By	PJS MWR	Driller	Holocene Drilling, Inc.	Drilling Method	Direct Push
Surface Elevation (ft) Vertical Datum	14 MLLW			Hammer Data	N/A			Drilling Equipment	Geoprobe 6011DT	
Easting (X) Northing (Y)	1178561 706379			System Datum	WA State Plane South NAD83 (feet)			See "Remarks" section for groundwater observed		
Notes:										

Elevation (feet)	FIELD DATA					Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing						
0		36					ML	Silt with Sand (ML), soft, brown, moist; few organics: roots. [Fill]			
					S-1 MC			Increased roots from 2.4 to 3 feet	6		
10							SM	Sand Silt (ML), medium stiff, gray-brown, moist; roots to 3.3 feet. [Alluvium]			
5		36			S-2						
							SP-SM	Sand with Silt (SP-SM), loose, gray-brown, moist; fine to medium sand.			
							SM	Silty Sand (SM), medium dense, gray, wet; silt interbeds; fine sand.			Groundwater observed at approximately 6½ feet bgs
5					S-3						
10		54									
					S-4						
15											

Notes: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Topographic Survey. Vertical approximated based on Topographic Survey.

Log of Boring B-44



Project: Port of Tacoma Habitat Mitigation Services Parcel 12
Project Location: Tacoma, Washington
Project Number: 0454-175-00

Figure A-6
Sheet 1 of 1

Drilled	Start 9/29/2025	End 9/29/2025	Total Depth (ft)	15	Logged By Checked By	PJS MWR	Driller	Holocene Drilling, Inc.	Drilling Method	Direct Push	
Surface Elevation (ft) Vertical Datum			15 MLLW		Hammer Data			N/A		Drilling Equipment	Geoprobe 6011DT
Easting (X) Northing (Y)			1178623 706388		System Datum			WA State Plane South NAD83 (feet)		See "Remarks" section for groundwater observed	
Notes:											

Elevation (feet)	Depth (feet)	FIELD DATA				Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
		Interval	Recovered (in)	Blows/foot	Collected Sample						
	0		36				ML	Silt with Sand (ML), soft, brown, moist; fine sand; few organics: roots. [Fill]			
							ML	Sandy Silt (ML), medium stiff, gray-brown, moist; fine sand; trace organics.			
				S-1 %F					9	59	

Notes: See Figure A-1 for explanation of symbols.

Coordinates Data Source: Horizontal approximated based on Topographic Survey. Vertical approximated based on Topographic Survey.

Log of Boring B-45



Project: Port of Tacoma Habitat Mitigation Services Parcel 12

Project Location: Tacoma, Washington

Project Number: 0454-175-00

Figure A-7
Sheet 1 of 1

Start Drilled	9/29/2025	End 9/29/2025	Total Depth (ft)	15	Logged By Checked By	PJS MWR	Driller	Holocene Drilling, Inc.	Drilling Method	Direct Push	
Surface Elevation (ft) Vertical Datum			13 MLLW		Hammer Data			N/A		Drilling Equipment	Geoprobe 6011DT
Easting (X) Northing (Y)			1178950 706391		System Datum			WA State Plane South NAD83 (feet)		See "Remarks" section for groundwater observed	
Notes:											

Elevation (feet)	FIELD DATA					MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing				
0		36				ML Silt with Sand (ML), soft, brown, moist; fine sand; few organics: roots. [Fill]	9		
10					S-1 MC	ML Sandy Silt (ML), medium stiff, brown, moist. [Alluvium]			
5		36			S-2 SA	Becomes with iron oxide staining	25	68	
5						Becomes gray and wet			
10		42			S-3	Becomes with trace organics			
10						SM Silty Sand (SM), medium dense, gray, wet; fine sand.			
15					S-4	MH Silt (MH), medium stiff, gray, wet; trace organics.			
									Groundwater observed at approximately 6 feet bgs

Notes: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Topographic Survey. Vertical approximated based on Topographic Survey.

Log of Boring B-50



Project: Port of Tacoma Habitat Mitigation Services Parcel 12
Project Location: Tacoma, Washington
Project Number: 0454-175-00

Figure A-8
Sheet 1 of 1

Start Drilled 9/29/2025	End 9/29/2025	Total Depth (ft) 15	Logged By Checked By PJS MWR	Driller Holocene Drilling, Inc.	Drilling Method Direct Push
Surface Elevation (ft) Vertical Datum 14 MLLW		Hammer Data N/A		Drilling Equipment Geoprobe 6011DT	
Easting (X) Northing (Y) 1178853 706429		System Datum WA State Plane South NAD83 (feet)		See "Remarks" section for groundwater observed	
Notes:					

Elevation (feet)	FIELD DATA					MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing				
0		48			S-1 MC	Silt with Sand (ML), soft, brown, moist; few organics; few debris. [Fill]	7		
10									
5		48			S-2	Silt with Sand (ML), medium stiff, gray, moist. [Alluvium]			
5					S-3				
10		48				Becomes wet			Groundwater observed at approximately 10 feet bgs
						Becomes with trace peat lenses			
15					S-4				

Notes: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Topographic Survey. Vertical approximated based on Topographic Survey.

Start Drilled	9/29/2025	End 9/29/2025	Total Depth (ft)	15	Logged By Checked By	PJS MWR	Driller	Holocene Drilling, Inc.	Drilling Method	Direct Push	
Surface Elevation (ft) Vertical Datum			13 MLLW		Hammer Data			N/A		Drilling Equipment	Geoprobe 6011DT
Easting (X) Northing (Y)			1178785 706552		System Datum			WA State Plane South NAD83 (feet)		See "Remarks" section for groundwater observed	
Notes:											

Elevation (feet)	FIELD DATA					Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing						
0		36					ML	Silt with Sand (ML), soft, brown, moist; fine sand. [Fill]			
10							ML	Silt with Sand (ML), medium stiff, gray-brown, moist; mottled coloring. [Alluvium]			
5		24			S-1			Becomes with iron oxide staining.			
5							SM	Silty Sand (SM), loose to medium dense, moist to wet; fine sand. Grades gray and becomes wet			Groundwater observed at approximately 7 feet bgs
10		39			S-2						
10							ML	Silt (ML), stiff, gray, wet; trace organics; few interbeds.			
15					S-3						

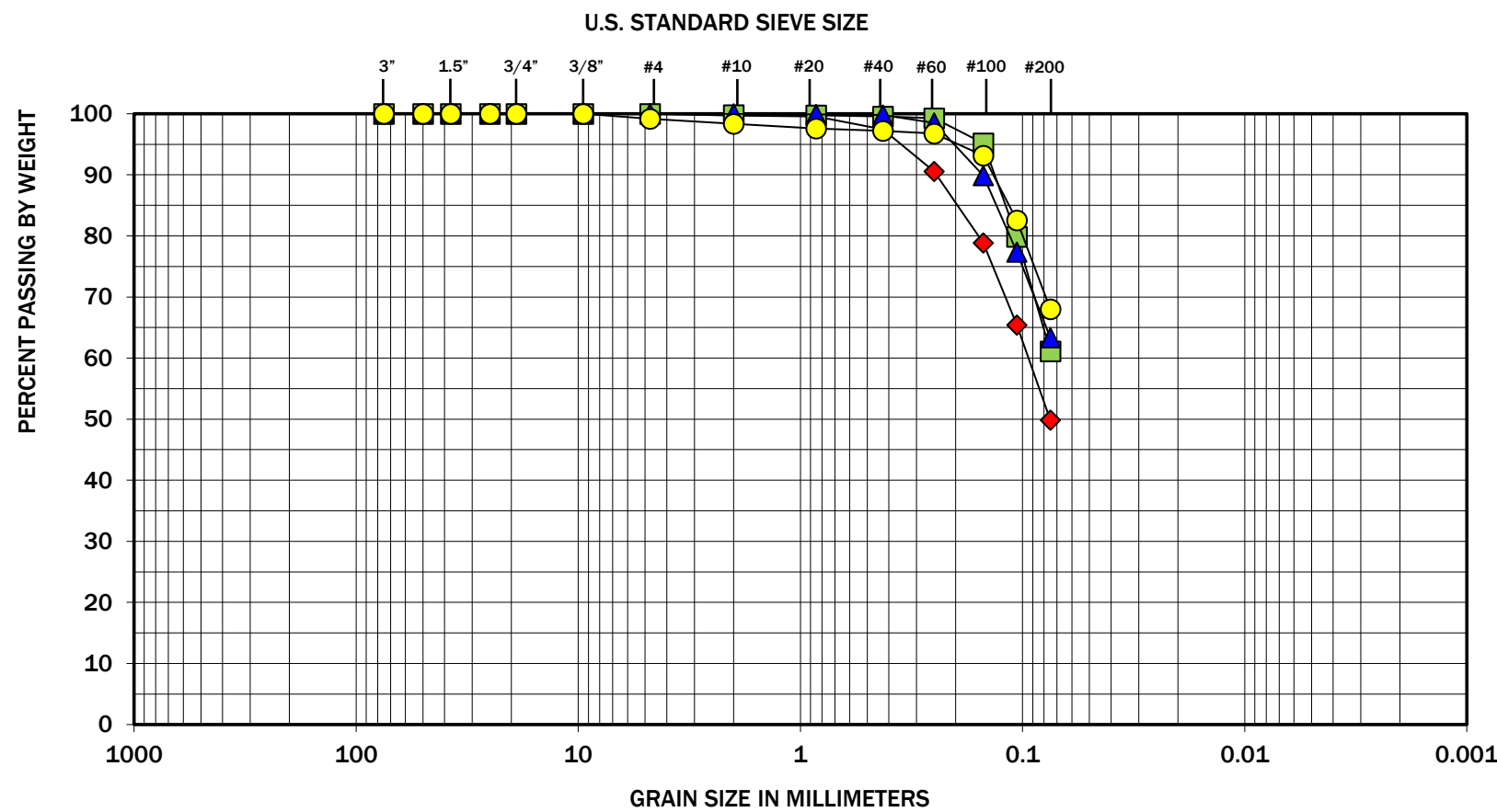
Notes: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Topographic Survey. Vertical approximated based on Topographic Survey.

Log of Boring B-76



Project: Port of Tacoma Habitat Mitigation Services Parcel 12
Project Location: Tacoma, Washington
Project Number: 0454-175-00

Figure A-10
Sheet 1 of 1



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Symbol	Boring Number	Depth (feet)	Moisture (%)	Soil Description
◆	B-12	2	8	Silty sand/Sandy silt (SM/ML)
■	B-21	2.5	14	Sandy silt (ML)
▲	B-45	6	24	Sandy silt (ML)
●	B-50	4	25	Sandy silt (ML)

Sieve Analysis Results

Port of Tacoma Habitat Mitigation Services Parcel 12
Tacoma, Washington

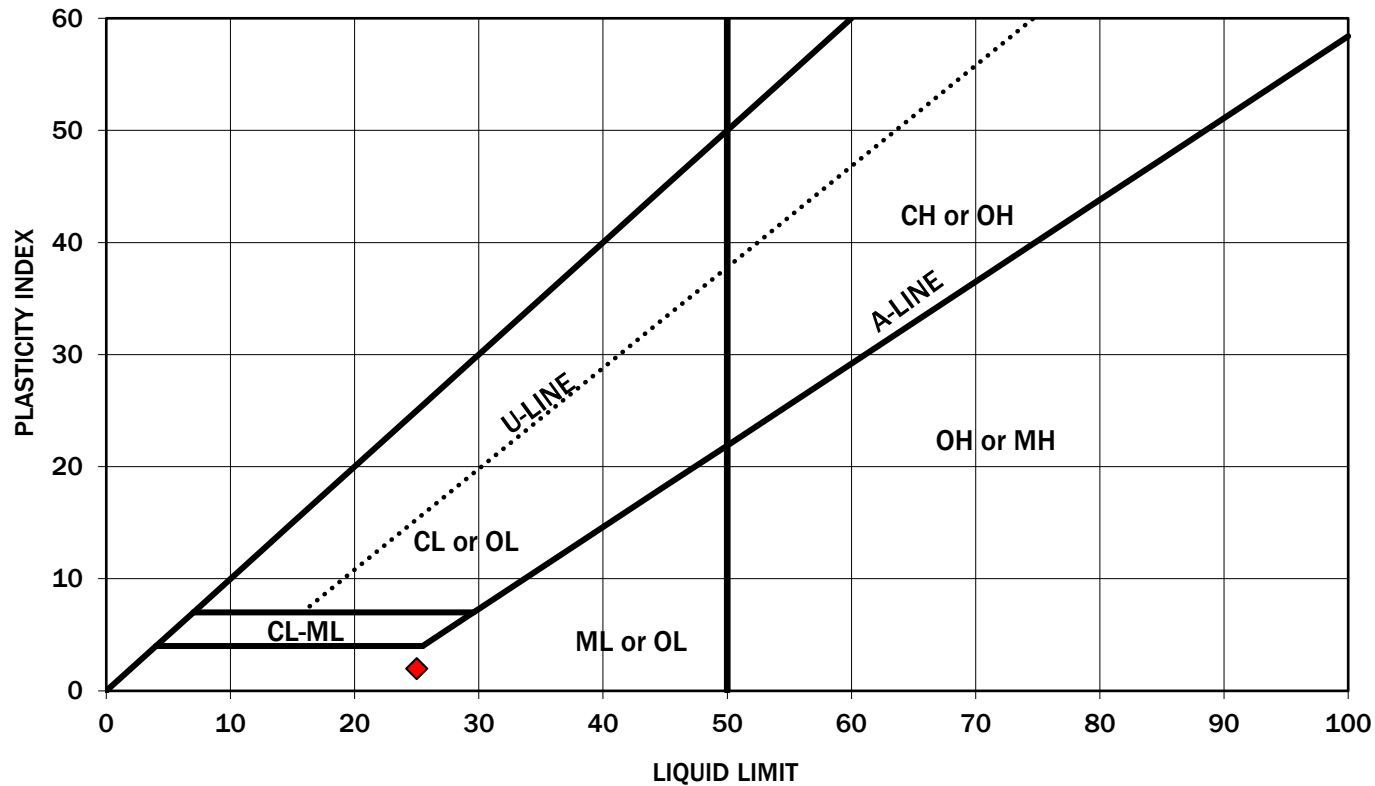
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Figure A-11

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The grain size analysis results were obtained in general accordance with ASTM D 6913.

PLASTICITY CHART



Symbol	Boring Number	Depth (feet)	Moisture Content (%)	Liquid Limit (%)	Plasticity Index (%)	Soil Description
◆	B-33	4.5	22	25	2	Silt (ML)

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The liquid limit and plasticity index were obtained in general accordance with ASTM D 4318.

Atterberg Limits Test Results

Port of Tacoma Habitat Mitigation Services Parcel 12
Tacoma, Washington



Figure A-12

Appendix B

Report Limitations and Guidelines for Use

Appendix B

Report Limitations and Guidelines for Use¹

This appendix provides information to help you manage your risks with respect to the use of this report.

REPORT USE AND RELIANCE

This report has been prepared for the Port of Tacoma, project design team members and their authorized agents, and for the project specifically identified in the report. The information contained herein is not applicable to other sites or projects. GeoEngineers structures its services to meet the specific needs of its clients. No party other than the Port of Tacoma, and their authorized agents may rely on the product of our services unless we agree to such reliance in advance and in writing. Within the limitations of the agreed scope of services for the Project, and its schedule and budget, our services have been executed in accordance with our signed agreement dated August 19, 2025, and generally accepted geotechnical practices in this area at the time this report was prepared. We do not authorize, and will not be responsible for, the use of this report for any purposes or Projects other than those identified in this report.

If changes to the Project or property occur after the date of this report, GeoEngineers cannot be responsible for any consequences of such changes in relation to this report unless we have been given the opportunity to review our interpretations and recommendations in the context of such changes. Based on that review, we can provide written modifications or confirmation, as appropriate.

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¹ Developed based on material provided by GBA, GeoProfessional Business Association; www.geoprofessional.org.