









Appendix B
Soil Boring Logs and
Well Completion Diagrams

PROJECT NUMBER: 704758CH.10.08.FI	BORING NUMBER: NSE-B2114-MW01
SHEET 1 OF 1	
<h2 style="margin: 0;">Borehole Log</h2>	









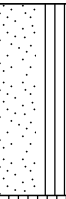

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI	LOCATION : NAVSTA Everett
COORDINATES : N 364590.94 ft, E 1300907.31 ft	ELEVATION : 15.5 ft NAVD88
DRILLING CONTRACTOR : Cascade Drilling	DRILLING METHOD AND DRILL RIG : Rotasonic, Boart Longyear LS250 4" core x 6" casing
WATER LEVEL : 10.0 ft bgs	Start : 7/27/22 10:30 END : 7/27/22 10:50 LOGGER : C. Dronfield, L. Tochko

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	COMMENTS
				SILT (ML) Brown, dry, some fine sand	Hand augered to 5 ft bgs for utility clearance by L. Tochko on 7/26/22
	5.0	HA-1		POORLY GRADED SAND (SP) Grayish brown, fine to coarse grained sand, trace gravel	
				POORLY GRADED SAND (SP) Gray, fine to coarse grained sand, some gravel	
5				POORLY GRADED SAND (SP) Very dark gray (5Y 3/1), moist, loose, very fine sand, trace silt and shell hash	
	4.5	S-1			
10				No recovery, water on core barrel	
15	4.0	S-2			
				POORLY GRADED SAND (SP) Very dark gray (10Y 3/1), wet, very loose to loose, very fine sand, trace silt	
20				Boring terminated at 20 ft bgs.	
25					
30					

NEW SOIL BORING LOG: CORONADO_LIBRARY.GLB; EVERETT.GPJ; CH2M GEOTECH_12.GDT; 10/5/23

PROJECT NUMBER: 704758CH.10.08.FI	BORING NUMBER: NSE-B2114-MW02
SHEET 1 OF 1	
<h2 style="margin: 0;">Borehole Log</h2>	


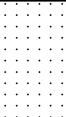




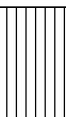



PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI	LOCATION : NAVSTA Everett
COORDINATES : N 364524.59 ft, E 1300836.69 ft	ELEVATION : 16.0 ft NAVD88
DRILLING CONTRACTOR : Cascade Drilling	DRILLING METHOD AND DRILL RIG : Rotasonic, Boart Longyear LS250 4" core x 6" casing
WATER LEVEL : 20.0 ft bgs	Start : 7/27/22 14:55 END : 7/27/22 15:35 LOGGER : C. Dronfield, L. Tochko

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>		
5	5.0	HA-1		SILT (ML) Brown, dry, some sand and gravel	Hand augered to 5 ft bgs for utility clearance by L. Tochko on 7/26/22		
				POORLY GRADED SAND (SP) Gray, dry, fine to coarse grained sand, trace silt and gravel			
	5.0	S-1		POORLY GRADED SAND (SP) Gray, dry, fine to coarse grained sand, trace shell hash			
				POORLY GRADED SAND (SP) Very dark gray (5Y 3/1), moist, very fine sand, little silt, trace shell hash, gravel, and wood			
			6.0	S-2			No recovery
							POORLY GRADED SAND (SP) Very dark gray (5Y 3/1), wet, very fine sand, little silt, trace shell hash, gravel, and wood
		POORLY GRADED SAND (SP) Very dark gray (5Y 3/1), moist, very fine sand, little silt, trace shell hash, gravel, and wood					
		SILT (ML) Very dark gray (5Y 3/1), moist to wet (17.9 - 18.1 ft bgs), soft, some very fine sand, trace clay					
	6.4	S-3		POORLY GRADED SAND (SP) Very dark gray (5Y 3/1), moist, very fine sand, little silt, trace clay			
				No recovery			
			POORLY GRADED SAND AND SILT (SP/ML) Very dark gray (5Y 3/1), wet, very loose and soft, very fine sand and silt in equal amounts				
30				SILT (ML) Very dark gray (5Y 3/1), moist, soft, trace clay			
				Boring terminated at 30 ft bgs.			
35							

NEW SOIL BORING LOG; CORONADO_LIBRARY.GLB; EVERETT.GPJ; CH2M GEOTECH_12.GDT; 10/5/23

PROJECT NUMBER: 704758CH.10.08.FI	BORING NUMBER: NSE-B2114-MW03
SHEET 1 OF 1	
<h2 style="margin: 0;">Borehole Log</h2>	

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI	LOCATION : NAVSTA Everett
COORDINATES : N 364308.56 ft, E 1300857.56 ft	ELEVATION : 15.6 ft NAVD88
DRILLING CONTRACTOR : Cascade Drilling	DRILLING METHOD AND DRILL RIG : Rotasonic, Boart Longyear LS250 4" core x 6" casing
WATER LEVEL : initially ~20 ft bgs, then 7.0 ft bgs Start : 7/28/22 13:30	
END : 7/28/22 13:55	
LOGGER : C. Dronfield	

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	COMMENTS
5	5.0	HA-1		SILT (ML) Brown, dry, some sand and gravel	Hand cleared with vac truck to 5 ft bgs for utility clearance on 7/27/22
				WELL GRADED SAND (SW) Olive gray (5Y 4/2), dry, very loose, very fine to coarse grained sand, trace silt and gravel	
10	4.0	S-1		No recovery	
				WELL GRADED SAND (SW) Olive gray (5Y 4/2), dry, very loose, very fine to coarse grained sand, trace silt and gravel	
				SILT (ML) Very dark gray (5Y 3/1), soft, some very fine sand lenses	
15	3.0	S-2		No recovery	
				SILT (ML) Very dark gray (5Y 3/1), soft, some very fine sand lenses	
25	5.7	S-3		No recovery - core barrel wet	
				POORLY GRADED SAND (SP) Very dark gray (5Y 3/1), wet, loose, very fine sand, trace to some shell hash 26.2 - 26.7 feet bgs	
				SILT (ML) Very dark gray (5Y 3/1), moist, soft, trace very fine sand and organic material (wood)	
30				Boring terminated at 30 ft bgs.	
35					

NEW SOIL BORING LOG; CORONADO_LIBRARY.GLB; EVERETT.GPJ; CH2M GEOTECH_12.GDT; 10/5/23

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-B6-MW01

SHEET 1 OF 2

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 447300.36 ft, E 1369819.24 ft

GROUND ELEVATION : 534.8 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling

DRILLING METHOD, EQUIPMENT: Rotosonic/Boart Longyear LS250 4" core x 6" casing

WATER LEVEL : 31.5 ft bgs

Start : 6/1/2022

END : 6/2/2022

LOGGER : G. Warren

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
4.5	HA-1			Asphalt and gravel sub-base CLAYEY GRAVEL (GC) Dark Brown (10YR 3/3), moist, fine to coarse gravel 3-6" diameter, some clay, some iron oxidation	Hand augered to 4.5 ft bgs for utility clearance
5.5	S-1			White/yellow rock POORLY GRADED GRAVEL WITH SAND (GP) Dark Grayish Brown (10YR 4/2), dry, dense, rounded gravel to cobbles, little medium to coarse grained sand	
10.0	S-2			CLAYEY GRAVEL (GC) Dark Yellowish Brown (10YR 4/4), moist, dense, gravel, little clay, iron oxidation	
15.0				WELL GRADED GRAVEL WITH SAND AND SILT (GW) Dark Yellowish Brown (10YR 4/4), moist, dense, fine to coarse gravel, sand, silt, orange clasts	
20.0				Asphalt fragments POORLY GRADED GRAVEL WITH SAND AND CLAY (GP-GC) Dark Grayish Brown (10YR 4/2), moist, dense, fine gravel, little fine to coarse grained sand, trace cobbles	
25.0	S-3			SILTY SAND (SM) Reddish brown, sand, little to some silt	
30.0	2.0	S-4		POORLY GRADED SAND (SP) Olive Brown (2.5Y 4/3), wet, loose, very fine to fine grained sand, trace silt No Recovery	
35.0					

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-B6-MW01

SHEET 2 OF 2

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 447300.36 ft, E 1369819.24 ft

GROUND ELEVATION : 534.8 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling



DRILLING METHOD, EQUIPMENT : Rotosonic/Boart Longyear LS250 4" core x 6" casing

WATER LEVEL : 31.5 ft bgs

Start : 6/1/2022

END : 6/2/2022

LOGGER : G. Warren

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
40	2.0	S-4			
45	7.0	S-5		CLAYEY SAND (SC) Very Dark Grayish Brown (10YR 3/2), moist, fine to coarse grained sand, little low plasticity clay, trace gravel	
				LEAN CLAY WITH GRAVEL (CL) Dark gray brown (10YR 3/2), moist, very stiff to hard, diamicton, plastic, with interbedded clay lenses, gray (G1 4/1)	
				No Recovery	
50				Boring terminated at 50 ft bgs.	

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER: 704758CH.10.08.FI	BORING NUMBER: NRSJC-B6-MW02
SHEET 1 OF 2	
<h2 style="margin: 0;">Borehole Log</h2>	

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI	LOCATION : NRS Jim Creek	
COORDINATES : N 447221.82 ft, E 1369701.01 ft	GROUND ELEVATION : 532.6 ft feet NAVD88	
DRILLING CONTRACTOR : Cascade Drilling	DRILLING METHOD, EQUIPMENT: Rotosonic/Boart Longyear LS250 4" core x 6" casing	
WATER LEVEL : 40.0 ft bgs	Start : 6/3/2022	END : 6/3/2022
LOGGER : G. Warren		

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
5	4.5	HA-1		POORLY GRADED GRAVEL WITH SAND (GP) Brown (10YR 4/3), moist, dense, rounded to subangular fine to coarse gravel up to 3" diameter, little medium coarse grained sand, trace silt	Hand augered to 4.5 ft bgs for utility clearance
5.5		S-1			
10				GRAVEL WITH SAND AND SILT (GP-GM) Brown (10YR 4/3), moist, fine gravel, little sand, few silt	
15		S-2		POORLY GRADED GRAVEL WITH SAND (GP) Gray, moist, fine gravel, little sand	
20				POORLY GRADED GRAVEL WITH SAND (GP) Gray, fine gravel, little sand, oxidation	
25		S-3		SILTY SAND (SM) Brown, (10YR 4/3), moist, very fine grained sand, some silt laminae, trace gravel	
30				POORLY GRADED SAND (SP) Brown, (10YR 4/3), fine grained sand	
35				WELL GRADED SAND WITH SILT (SW-SM) Brown (10YR 4/3), moist, fine to coarse grained sand, few silt, trace fine to coarse gravel	
				SILT/CLAY (ML/CL) Silt/Clay	
	4.0	S-4		WELL GRADED SAND WITH SILT (SW-SM) Brown (10YR 4/3), moist, fine to coarse grained sand, few silt, trace fine to coarse gravel	

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-B6-MW02

SHEET 2 OF 2

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 447221.82 ft, E 1369701.01 ft

GROUND ELEVATION : 532.6 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling

DRILLING METHOD, EQUIPMENT: Rotosonic/Boart Longyear LS250 4" core x 6" casing

WATER LEVEL : 40.0 ft bgs

Start : 6/3/2022

END : 6/3/2022

LOGGER : G. Warren

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
	4.0	S-4		No Recovery	
40				WELL GRADED SAND WITH SILT (SW-SM) Brown (10YR 4/3), moist, fine to coarse grained sand, few silt, trace fine to coarse gravel	
				POORLY GRADED SAND (SP) Brown, loose, wet, fine grained sand	
				SILT (ML) Brown, stiff, silt, laminae	
45	10.0	S-5		SILT/SANDY SILT (ML-SM) Dark Bluish Gray, moist, silt, fine grained sand	
				WELL GRADED SAND (SW) Gray, wet, loose, fine to coarse grained sand	
				LEAN CLAY (CL) Dark Bluish Gray, moist, very stiff, lean clay, plastic	
50				Boring terminated at 50 ft bgs.	

PROJECT NUMBER: 704758CH.10.08.FI	BORING NUMBER: NRSJC-B6-MW03
SHEET 1 OF 2	
<h2 style="margin: 0;">Borehole Log</h2>	

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI	LOCATION : NRS Jim Creek	
COORDINATES : N 447259.23 ft, E 1369622.51 ft	GROUND ELEVATION : 533.7 ft feet NAVD88	
DRILLING CONTRACTOR : Cascade Drilling	DRILLING METHOD, EQUIPMENT: Rotosonic/Boart Longyear LS250 4" core x 6" casing	
WATER LEVEL : 31.3 ft bgs	Start : 6/7/22 19:00	END : 6/8/22 19:00
LOGGER : I.Dinkelman, A.Vogt		

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	COMMENTS
4.5	HA-1				Hand augered to 4.5 ft bgs for utility clearance
5					
5.5	S-1			SILTY SAND WITH GRAVEL (SM) Brown (10YR 4/3), moist, loose to medium dense, fine to coarse grained sand, angular to subangular, little silt, little fine to coarse gravel, angular to subrounded, trace clay SILTY GRAVEL WITH SAND (GM) SILTY SAND WITH GRAVEL (SM) Olive Brown (2.5Y 4/3), moist, loose to medium dense, fine to coarse grained sand, angular to subangular, little fine to coarse gravel, angular to subangular, little silt, trace clay	
10					
9.0	S-2			SILTY SAND WITH GRAVEL (SM) WELL GRADED GRAVEL WITH SILT AND SAND (GW-GM) Dark Brown (10YR 3/3), moist, medium dense, fine to coarse gravel, subangular, some fine to coarse grained sand, angular to subangular, few silt, trace clay	Potential slough material in sample core
20					
2.5	S-3			SILTY SAND WITH GRAVEL (SM)	
25				No Recovery	
2.0	S-4				
30					
9.5	S-5			SILTY SAND (SM)	
35					
				SILTY SAND (SM)	
				SILTY SAND WITH GRAVEL (SM)	

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER: 704758CH.10.08.FI	BORING NUMBER: NRSJC-B6-MW03
SHEET 2 OF 2	
<h2 style="margin: 0;">Borehole Log</h2>	

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI	LOCATION : NRS Jim Creek	
COORDINATES : N 447259.23 ft, E 1369622.51 ft	GROUND ELEVATION : 533.7 ft feet NAVD88	
DRILLING CONTRACTOR : Cascade Drilling	DRILLING METHOD, EQUIPMENT: Rotosonic/Boart Longyear LS250 4" core x 6" casing	
WATER LEVEL : 31.3 ft bgs	Start : 6/7/22 19:00	END : 6/8/22 19:00
LOGGER : I.Dinkelman, A.Vogt		

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	COMMENTS
	9.5	S-5		SANDY FAT CLAY WITH GRAVEL (CH)	
40				FAT CLAY WITH SAND (CH) Dark Gray (4/N), moist, clay, fine grained sand, rapid dilatency, interbedded sandy silt at 44 ft and 47 ft	
45	10.0	S-6			Length of core was 11.25' due to swelling of clay material
50				Boring terminated at 50 ft bgs.	

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER: 704758CH.10.08.FI	BORING NUMBER: NRSJC-B6-MW04
SHEET 1 OF 1	
<h2 style="margin: 0;">Borehole Log</h2>	

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI	LOCATION : NRS Jim Creek	
COORDINATES : N 447284.04 ft, E 1369690.57 ft	GROUND ELEVATION : 533.8 ft feet NAVD88	
DRILLING CONTRACTOR : Cascade Drilling	DRILLING METHOD, EQUIPMENT: Rotosonic/Boart Longyear LS250 Rotosonic (4" core x 6" casing)	
WATER LEVEL : 31.2 ft bgs	Start : 6/8/2022	END : 6/9/2022
LOGGER : I.Dinkelman, A.Vogt		

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
5	5.0	HA-1		<div style="border: 2px solid black; padding: 20px; margin: 0 auto; width: 80%;"> Boring log data not available </div>	
10	5.0	S-1			
15	9.0	S-2			
20	1.0	S-3			
25	9.8	S-4			
30					
35	10.0	S-5			
40					

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 4/7/23

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-S1-MW05

SHEET 1 OF 1

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 446488.54 ft, E 1369835.45 ft

GROUND ELEVATION : 476.3 ft NAVD88

DRILLING CONTRACTOR : Cascade Drilling

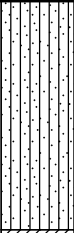


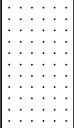




DRILLING METHOD, EQUIPMENT : Rotosonic/Boart Longyear LS250 4" core x 6" casing

WATER LEVEL : 4.7 ft bgs

Start : 6/16/22 19:00

END : 6/17/22 19:00

LOGGER : I.Dinkelman, J.Perry-Lemon

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
5	5.0	HA-1		SILTY SAND (SM) Very Dark Grayish Brown (10YR 3/2), moist, sand with silt	Hand augered to 5 ft bgs for cultural/utility clearance
10	5.0	S-1	 	SANDY LEAN CLAY (CL) Olive Brown (2.5Y 4/4), moist, soft, lean clay, slow dilatency, little silt WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM) Very Dark Grayish (2.5Y 3/2) wet, medium dense, fine to coarse gravel, angular, little fine to coarse grained sand, angular to subangular, little silt, few clay	
15	9.0	S-2	   	SILTY GRAVEL WITH SAND (GM) Dark Yellowish Brown (10YR 4/4), wet, medium dense to dense, fine to coarse gravel, angular to subrounded, some fine to coarse grained sand, little silt, few clay, few greater than 3-inch diameter WELL-GRADED SAND (SW) Dark Yellowish Brown (10YR 4/4), wet, medium dense to dense, fine to coarse grained sand WELL-GRADED SAND WITH GRAVEL (SW) Dark Grayish Brown (10YR 4/2), wet, fine to coarse grained sand, angular to subangular, little fine to coarse subangular gravel, few silt, trace clay WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM) Wet, medium dense, fine to coarse subangular to subrounded gravel, some fine to coarse grained sand, few silt, trace clay	
20				WELL-GRADED SAND WITH SILT (SW-SM) Dark Gray (10YR 4/1), wet, loose to medium dense, fine to coarse grained sand, subangular to subrounded, few silt, trace fine grained subangular sand, trace clay Boring terminated at 20 ft bgs.	

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER: 704758CH.10.08.FI	BORING NUMBER: NRSJC-S1-MW06
SHEET 1 OF 2	
<h2 style="margin: 0;">Borehole Log</h2>	

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI	LOCATION : NRS Jim Creek	
COORDINATES : N 446483.13 ft, E 1370007.10 ft	GROUND ELEVATION : 507.3 ft feet NAVD88	
DRILLING CONTRACTOR : Cascade Drilling	DRILLING METHOD, EQUIPMENT : Rotosonic/Boart Longyear LS250 4" core x 6" casing	
WATER LEVEL : 28.7 ft bgs	Start : 6/20/22 19:00	END : 6/21/22 19:00
LOGGER : I.Dinkelman, J.Perry-Lemon		

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
5	5.0	HA-1		POORLY GRADED SAND WITH GRAVEL (SP) Dark Grayish Brown (10YR 4/2), moist, loose, fine grained sand, little fine to coarse subrounded to rounded gravel, few silt	Hand augered to 5 ft bgs for cultural/utility clearance
	3.5	S-1		SILTY SAND WITH GRAVEL (SM) Dary Grayish Brown (10YR 4/2), moist, loose, fine grained sand, some silt, little fine to coarse subrounded to rounded gravel	
10				No Recovery	Burned wood (dure to wildland fire or for clearing) noted at ~7.5' bgs.
15	10.0	S-2		POORLY GRADED GRAVEL WITH CLAY (GP-GC) Dark Brown (10YR 3/3), moist, medium dense, fine subangular gravel, few clay	
				WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM) Moist, medium dense to dense, fine to coarse angular to rounded gravel, little fine to coarse grained sand, few silt, trace clay	
				SILTY GRAVEL WITH SAND (GM) Dark Yellowish Brown (10YR 3/4)M moist, medium dense to dense, fine to carse angular to subangular gravel, little fine to coarse grained sand, little silt, few clay	
20				POORLY GRADED SAND WITH SILT (SP-SM) Olive (5Y 4/3), wet, loose, medium grained sand, few silt, trace clay	
25	9.0	S-3			
30					
35	10.0	S-4			

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-S1-MW06

SHEET 2 OF 2

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 446483.13 ft, E 1370007.10 ft

GROUND ELEVATION : 507.3 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling

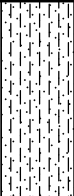
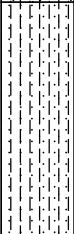


DRILLING METHOD, EQUIPMENT : Rotosonic/Boart Longyear LS250 4" core x 6" casing

WATER LEVEL : 28.7 ft bgs

Start : 6/20/22 19:00

END : 6/21/22 19:00

LOGGER : I.Dinkelman, J.Perry-Lemon

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
40	10.0	S-4			
45	10.0	S-5		WELL-GRADED SAND WITH SILT (SW-SM) Olive (5Y 4/3), wet, medium dense, fine to coarse grained sand, little silt, few gravel, few clay	
				FAT CLAY WITH SAND (CH) Dark Gray (5Y 4/1), moist, lean clay, little fine grained sand	
				FAT CLAY WITH SAND (CH) Very Dark Gray (3/N)M moist, lean clay, little fine grained sand	
50				Boring terminated at 50 ft bgs.	

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-S1-MW07

SHEET 1 OF 1

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 446413.21 ft, E 1369883.15 ft

GROUND ELEVATION : 477.0 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling

DRILLING METHOD, EQUIPMENT : Rotosonic/Boart Longyear LS250 4" core x 6" casing

WATER LEVEL : 4.1 ft bgs

Start : 6/20/22 19:00

END : 6/20/22 19:00

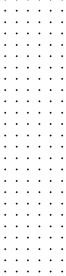
LOGGER : I.Dinkelman, J.Perry-Lemon

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
5	5.0	HA-1		SILTY SAND (SM) Very Dark Grayish Brown (10YR 3/2), moist, fine to coarse grained sand, little silt	
10	5.0	S-1		SILTY SAND (SM) Very Dark Grayish (2.5Y 3/2), wet, loose, fine to coarse grained sand, some silt, few clay, trace fine angular gravel SANDY LEAN CLAY (CL) Grayish Brown (2.5Y 5/2), wet, soft, medium plasticity, lean clay, little fine to medium grained sand, few silt WELL-GRADED SAND WITH GRAVEL (SW) Very Dark Gray (2.5Y 3/1), wet, loose to medium dense, fine to coarse grained sand, angular to subangular, few silt, trace clay, thin <1-inch sandy lean clay laminae, dark gray (10YR 4/1) at ~ 6.25	
15	8.0	S-2		SILTY GRAVEL WITH SAND (GM) Wet, medium dense to dense, fine to coarse angular to subangular gravel, little fine to coarse grained sand, little to some silt, few clay SANDY SILT (ML) Dark Grayish Brown (2.5Y 4/2), wet, soft, non-plastic to low plasticity, silt, some fine to medium grained sand, trace fine subangular to subrounded gravel SANDY SILT (ML) Very Dark Gray (3/N) wet, soft, non-plastic to low plasticity, silt with sand, few clay	
20				SILTY SAND (SM) Wet, medium dense, fine to coarse grained sand, some silt, trace fine subangular gravel, trace clay WELL-GRADED SAND WITH SILT AND GRAVEL (SW-SM) Dark Gray (4/N), wet, medium dense, fine to coarse grained sand, few to little fine to coarse subangular to subrounded gravel, few silt, trace clay LEAN CLAY WITH SAND (CL) Brown (7.5YR 4/4), wet, stiff, slow dilatency, clay, few silt, few gravel up to 1.5 diameter, with few well graded sand stringers Boring terminated at 20 ft bgs.	

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER: 704758CH.10.08.FI	BORING NUMBER: NRSJC-S1-SB20	SHEET 1 OF 1
Borehole Log		

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI	LOCATION : NRS Jim Creek		
COORDINATES : pending	GROUND ELEVATION : Not surveyed		
DRILLING CONTRACTOR : Cascade Drilling	DRILLING METHOD, EQUIPMENT: Rotosonic/Boart Longyear LS250 4" core x 6" casing		
WATER LEVEL : 1.0 ft bgs	Start : 5/24/22 19:00	END : 5/24/22 19:00	LOGGER : B.Davis,J.Perry-Lemon,M.Moore

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
	2.5	HA-1		WELL-GRADED SAND WITH GRAVEL (SW) Dark Brown (10YR 3/3), wet, loose, fine to medium grained sand, subangular to subrounded, few fine to coarse gravel	Hand augered to 2.5 ft bgs
Boring terminated at 2.5 ft bgs.					

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-S4-MW14

SHEET 1 OF 1

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 442870.92 ft, E 1373735.05 ft

GROUND ELEVATION : 609.6 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling

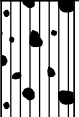

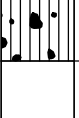

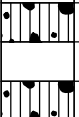
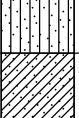
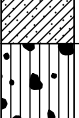
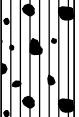




DRILLING METHOD, EQUIPMENT: Rotosonic/Boart Longyear LS250 4" core x 6" casing

WATER LEVEL : 18.1 ft bgs

Start : 6/29/22 19:00

END : 6/29/22 19:00

LOGGER : I.Dinkelman, J.Perry-Lemon, J.Couture

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
				Asphalt and gravel sub-base	Hand augered native material below asphalt
5	3.0	HA-1		SILTY GRAVEL WITH SAND (GM) Moist, fine to coarse gravel, little sand, little silt	
	5.0	S-1		Pulverized and broken rock	
10				SILTY GRAVEL WITH SAND (GM) Very Dark Gray (10YR 3/1), moist, gravel, little sand, little silt, trace clay	
	10.0	S-2		Pulverized/broken rock	
15				SILTY GRAVEL WITH SAND (GM) Dark Yellowish Brown (10YR 4/6), moist, gravel, little sand, little silt	
				Pulverized rock	
				SILTY GRAVEL WITH SAND (GM) Moist, gravel, little sand, little silt, trace clay	
				Pulverized Rock	
20				SILTY GRAVEL WITH SAND (GM) Moist, gravel, some sand, little silt, trace clay, trace cobble up to 3.0" diameter	
				SILTY SAND WITH GRAVEL (SM) Wet, sand, little gravel, little silt, trace clay	
25	10.0	S-3		CLAYEY SAND WITH GRAVEL (SC) Wet, sand, little gravel, little silt, trace clay	
30				SILTY GRAVEL WITH SAND (GM) Olive Brown (2.5Y 4/3), wet, gravel, little sand, little clay	
				CLAYEY GRAVEL WITH SAND (GC) Wet, gravel, little sand, little clay Boring terminated at 30 ft bgs.	

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-S4-MW15

SHEET 1 OF 1

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 442835.11 ft, E 1373780.14 ft

GROUND ELEVATION : 611.1 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling

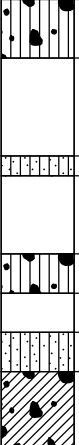
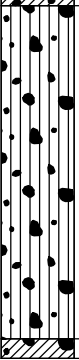
DRILLING METHOD, EQUIPMENT : Rotosonic/Boart Longyear LS250 4" core x 6" casing

WATER LEVEL : 18.4 ft bgs

Start : 6/30/22 19:00

END : 6/30/22 19:00

LOGGER : I.Dinkelman, J.Perry-Lemon

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
5	5.0	HA-1			Hand augered to 5 ft bgs
10	5.0	S-1		Pulverized rock/crushed rock	
15	10.0	S-2		SILTY GRAVEL WITH SAND (GM) Very Dark Grayish (2.5Y 3/2), moist, gravel, little sand, little silt, trace to few clay Pulverized rock SILTY SAND WITH GRAVEL (SM) Dark Grayish Brown (2.5Y 4/2), moist, sand, little gravel, little silt, trace clay Pulverized/crushed rock SILTY GRAVEL WITH SAND (GM) Very Dark Gray (2.5Y 3/1), moist, gravel, little sand, little silt, few clay, trace cobbles up to 3.5" diameter Pulverized rock SILTY SAND WITH GRAVEL (SM) Olive Brown (2.5Y 4/3), wet, sand, little gravel, little silt CLAYEY GRAVEL WITH SAND (GC) Dark Olive Gray (5Y 3/2), wet, gravel, some sand, little clay, little silt	
20	10.0	S-3		SILTY GRAVEL WITH SAND (GM) Gravel, little sand, little silt CLAYEY GRAVEL WITH SAND (GC) Gravel, little sand, little clay Boring terminated at 30 ft bgs.	
25					
30					

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT_NRS_JIM_CREEK_3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-S5-MW16

SHEET 1 OF 1

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 443119.83 ft, E 1374102.53 ft

GROUND ELEVATION : 615.3 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling

DRILLING METHOD, EQUIPMENT: Rotosonic/Boart Longyear LS250 4" core x 6" casing

WATER LEVEL : 18.2 ft bgs

Start : 6/27/22 19:00

END : 6/27/22 19:00

LOGGER : I.Dinkelman

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
1.5	HA-1			WELL-GRADED SAND WITH GRAVEL (GW) Dark Greenish Black (10Y 4/1), fine to coarse grained sand, few fine to coarse gravel	Hand augered to 1.5 ft bgs to collect soil sample and cultural screening
3.5	A-1			No Recovery	Air knifed from 1.5 to 5 ft bgs for utility clearance
5.0	S-1			SILTY SAND WITH GRAVEL (SM) Olive Brown (2.5Y 4/3), moist, medium dense, fine to coarse grained sand, angular to subangular, little silt, little fine to coarse angular to subangular gravel	
10.0	S-2			SILTY GRAVEL WITH SAND (GM) Dark Olive Brown (2.5Y 3/3), moist, medium dense to dense, fine to coarse angular to subangular gravel, some fine to coarse grained sand, little silt, few cobbles up to 4" diameter, trace clay	
15.0	S-2			CLAYEY GRAVEL WITH SAND (GC) Brown (10YR 4/3), moist, medium dense to dense, fine to coarse angular to subangular gravel, some fine to coarse grained sand, angular to subangular, little silt, little clay	
20.0	S-3			SILTY GRAVEL WITH SAND (GM) Brown (10YR 4/3), wet, fine to coarse gravel, some silt, little fine to coarse grained sand, few clay	
25.0	S-3			CLAYEY GRAVEL WITH SAND (GC) Fine to coarse gravel, some clay, few fine to coarse grained sand	
30.0				SILTY GRAVEL WITH SAND (GM) Olive Brown (2.5Y 4/3), fine to coarse gravel, some silt, little fine to coarse grained sand, trace to few clay, trace large cobbles/broken rock at 18 ft bgs (smooth on one side, angular on other side), wet at 17 ft bgs	
				SILTY SAND WITH GRAVEL (SM) Olive Brown (2.5Y 4/3), wet, fine to coarse grained sand, little silt, few clay	
				SILTY GRAVEL WITH SAND (GM) Olive Brown (2.5Y 4/4), wet, fine to coarse grained sand, some silt, few clay	
				SILTY SAND WITH GRAVEL (SM) Very Dark Grayish Brown (10YR 3/2), wet, fine to coarse grained sand, little gravel, little silt, few clay, trace cobbles up to 3.5" diameter	
				SILTY GRAVEL WITH SAND (GM) Olive Brown (2.5Y 4/3), wet, fine to coarse gravel, little silt, little sand, few clay	
				Boring terminated at 30 ft bgs.	

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-S5-MW18

SHEET 1 OF 1

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 442803.59 ft, E 1374234.34 ft

GROUND ELEVATION : 621.1 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling

DRILLING METHOD, EQUIPMENT : Rotosonic/Boart Longyear LS250 4" core x 6" casing

WATER LEVEL : 15.2 ft bgs

Start : 6/22/22 19:00

END : 6/23/22 19:00

LOGGER : I.Dinkelman, J.Perry-Lemon

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
	5.0	HA-1		No Recovery	Collected surface soil sample via hand auger on 5/25/22; air knifed to 5 ft bgs for utility clearance
5					
	5.0	S-1		SILTY GRAVEL WITH SAND (GM) Dark Grayish Brown (10YR 4/2), moist, medium dense, fine to coarse gravel, little silt, little gravel	
10				SILTY SAND WITH GRAVEL (SM) Dark Grayish Brown (10YR 4/2), moist, fine to coarse grained sand, little silt, little gravel	
				CLAYEY GRAVEL WITH SAND (GC) Moist, dense, fine to coarse angular to subangular gravel, some clay, some fine to coarse grained sand, angular to subangular, few silt, few cobbles up to 4" diameter, angular to subrounded	
15	10.0	S-2		Pulverized rock	
				SILTY GRAVEL WITH SAND (GM) Olive Brown (2.5Y 4/3), fine to coarse gravel, little silt, little fine to coarse grained sand, trace cobbles up to 3.5" diameter, angular	
20				SANDY SILT WITH GRAVEL (ML) Olive Brown (2.5Y 4/4), wet, silt, little fine to coarse grained sand, little fine to coarse gravel, trace clay	
				POORLY GRADED GRAVEL WITH SILT AND SAND (GP-GM) Olive Brown (2.5Y 4/3), wet, fine angular to subangular gravel, little fine to coarse grained sand, little silt, few clay	
25	10.0	S-3		SILTY GRAVEL WITH SAND (GM) Olive Brown (2.5Y 4/3), wet, fine to coarse gravel, little silt, little sand	
30				Boring terminated at 30 ft bgs.	

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT_NRS_JIM_CREEK_3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-S5-MW19

SHEET 1 OF 1

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 442943.50 ft, E 1374158.17 ft

GROUND ELEVATION : 615.5 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling

DRILLING METHOD, EQUIPMENT : Rotasonic/Boart Longyear LS250 4" core x 6" casing

WATER LEVEL : 11.6 ft bgs

Start : 6/23/22 19:00

END : 6/24/22 19:00

LOGGER : I.Dinkelman, J.Perry-Lemon

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
5	5.0	HA-1		WELL-GRADED SAND WITH GRAVEL (SW) Dark Grayish Brown (10YR 4/2), moist, loose, fine to coarse grained sand, little fine to coarse gravel	Hand augered for cultural/utility clearance to 5 ft bgs
10	5.0	S-1		CLAYEY GRAVEL WITH SAND (GC) Olive Brown (2.5Y 4/3), moist, medium dense, fine to coarse angular to subangular gravel, little clay, some fine to coarse grained sand angular to subangular, little silt, little clay, few cobbles up to 3.0" diameter	
10				Broken/pulverized bedded shale	
10				SILTY GRAVEL WITH SAND (GM) Strong Brown (7.5YR 4/6), moist, medium dense to dense, fine to coarse angular to subrounded gravel, some fine to coarse grained sand, angular to subangular, little silt, few clay	
15	10.0	S-2		Crushed/pulverized igneous and sedimentary rock	
15				SILTY GRAVEL WITH SAND (GM) Olive Brown (2.5Y 4/3), moist, medium dense to dense, fine to coarse angular to subrounded gravel, some fine to coarse grained sand, angular to subangular, little silt, few clay	
15				SILTY SAND WITH GRAVEL (SM) Grayish Brown (2.5Y 5/2) moist, medium dense to dense, fine to coarse grained sand, some silt, some fine to coarse angular gravel, few clay	
20				CLAYEY GRAVEL WITH SAND (GC) Dark Yellowish Brown (10YR 4/6).wet, dense, fine to coarse angular to subangular gravel, little clay, little fine to coarse grained sand, angular to subangular, trace large 4" cobbles at 11 ft bgs	
20				GRAVELLY FAT CLAY WITH SAND (CH) Olive Gray (5Y 4/2), wet, stiff, clay, fine to coarse gravel, little fine grained sand, few silt	
20				SILTY GRAVEL WITH SAND (GM) Dark Grayish Brown (2.5Y 4/2), wet, medium dense to dense, fine to coarse angular to subangular gravel, some fine to coarse grained sand, angular to subangular, some silt, few clay, trace cobbles	
25	10.0	S-3		Pulverized rock ~ 4.0" diameter, silty matrix	
25				SILTY GRAVEL WITH SAND (GM) Fine to coarse gravel, little silt, little fine to coarse grained sand	
30				Boring terminated at 30 ft bgs.	

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER: 704758CH.10.08.FI	BORING NUMBER: NRSJC-S5-SB21
SHEET 1 OF 1	
<h2 style="margin: 0;">Borehole Log</h2>	

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI	LOCATION : NRS Jim Creek
COORDINATES : <i>pending</i>	GROUND ELEVATION : Not surveyed
DRILLING CONTRACTOR : Cascade Drilling	DRILLING METHOD, EQUIPMENT: Rotosonic/Boart Longyear LS250 4" core x 6" casing
WATER LEVEL : ---	Start : 5/25/22 19:00 END : 5/25/22 19:00 LOGGER : B.Davis, J.Perry-Lemon

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	COMMENTS
	2.5	HA-1		WELL-GRADED SAND WITH GRAVEL (SW) Very Dark Gray (10YR 3/1), moist, loose to medium dense, medium to coarse grained angular sand, little fine to coarse gravel	Hand augered to 2.5 ft bgs
Boring terminated at 2.5 ft bgs.					

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-S6-MW08

SHEET 1 OF 1

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 444709.24 ft, E 1371835.73 ft

GROUND ELEVATION : 538.8 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling

DRILLING METHOD, EQUIPMENT : Rotosonic/Boart Longyear LS250 4" core x 6" casing

WATER LEVEL : 5.2 ft bgs

Start : 5/24/22 19:00

END : 6/15/2022

LOGGER : I.Dinkelman, J.Perry-Lemon

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
	1.0	HA-1		WELL-GRADED SAND WITH GRAVEL (SW) Dark Grayish Brown (10YR 4/2), moist, loose, fine to medium grained sand, little fine to coarse gravel, few silt No Recovery	Hand augered to collect surface soil sample
	3.5	A-1			Air knifed to 4.5 ft bgs for utility clearance; refusal due to small boulders
5				CLAYEY GRAVEL WITH SAND (GC) Gravel, little sand, little clay	
5.5		S-1			
10				SILTY SAND WITH GRAVEL (SM) Wet, fine to coarse grained sand, little fine to coarse angular to subangular gravel, some silt, few clay	
				SANDY SILT (ML) Wet, soft to medium, rapid dilatency, silt, little sand, trace clay	
				SILTY SAND (SM) Sand, little silt	
15	7.5	S-2		SILTY SAND (SM) Sand, little silt	
				WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM) Fine to coarse gravel, little sand, few silt	
20					
Boring terminated at 20 ft bgs.					

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-S6-MW09

SHEET 1 OF 1

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 444603.13 ft, E 1371904.00 ft

GROUND ELEVATION : 541.4 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling

DRILLING METHOD, EQUIPMENT: Rotosonic/Boart Longyear LS250 4" core x 6" casing

WATER LEVEL : 5.2 ft bgs

Start : 5/24/22 19:00

END : 6/19/2022

LOGGER : I.Dinkelman, J.Perry-Lemon

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
	3.5	HA-1		SILTY SAND WITH GRAVEL (SM) Very Dark Grayish Brown (10YR 3/2), moist, loose, fine to coarse grained sand, little silt, little fine subangular to subrounded gravel	
	1.5	HA-2		CLAYEY GRAVEL WITH SAND (GC) Gravel, little sand, few clay	
5				SILTY SAND WITH GRAVEL (SM) Sand, little gravel, little silt, moist SILTY GRAVEL WITH SAND (GM) Sand, little gravel, little silt, wet	Water observed at ~5.0'
10				No recovery SILTY GRAVEL WITH SAND (GM) Olive Brown (2.5Y 4/3), wet, medium dense, fine to coarse gravel, little fine to coarse grained sand, little silt, few clay SILTY SAND WITH GRAVEL (SM) Olive Brown (2.5Y 4/3), wet, medium dense, fine to coarse grained sand, little fine to coarse gravel, little silt	No recovery due to saturated cuttings
15	5.0	S-2			
20				Boring terminated at 20 ft bgs.	

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-S6-MW10

SHEET 1 OF 1

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 444703.88 ft, E 1371653.42 ft

GROUND ELEVATION : 546.3 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling


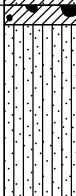
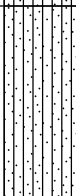
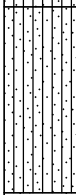


DRILLING METHOD, EQUIPMENT: Rotosonic/Boart Longyear LS250 4" core x 6" casing

WATER LEVEL : 15.1 ft bgs

Start : 6/10/22 19:00

END : 6/13/22 19:00





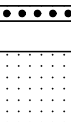



LOGGER : I.Dinkelman,A.Vogt

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	<div>SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u></div>	<u>COMMENTS</u>
5	5.0	HA-1		CLAYEY SAND (SC) Dark Grayish Brown (10YR 4/2), moist, loose to medium dense, fine to medium grained sand, little clay	Hand augered to 5 ft bgs for cultural/utility clearance
	5.0	S-1		CLAYEY GRAVEL WITH SAND (GC) Fine to coarse gravel, little clay, little fine to coarse grained sand SILTY SAND WITH GRAVEL (SM) Dark Olive Gray (5Y 3/2), medium dense, fine to coarse grained sand, little silt, little fine to coarse angular to subangular gravel, few clay	
	9.8	S-2		SILTY SAND WITH GRAVEL (SM) Very Dark Grayish Brown (10YR 3/2), moist, medium dense, fine to coarse grained sand, some silt, little fine to coarse angular to subangular gravel, trace clay	
	20			SILTY SAND WITH GRAVEL (SM) Dark Olive Brown (2.5Y 3/3), wet, medium dense, fine to coarse grained sand, some silt, little fine to coarse angular to subangular gravel, trace clay	
	25	10.0	S-3		
30				SILTY GRAVEL WITH SAND (GM) Dark Grayish Brown (2.5Y 4/2), wet, medium dense, fine to coarse angular to subangular gravel, some fine to coarse grained sand, little silt, few clay LEAN CLAY (CL) Dry to moist, lean clay	
Boring terminated at 30 ft bgs.					

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT_NRS_JIM_CREEK_3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER: 704758CH.10.08.FI	BORING NUMBER: NRSJC-S7-MW11
SHEET 1 OF 6	
<h2 style="margin: 0;">Borehole Log</h2>	

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI	LOCATION : NRS Jim Creek	
COORDINATES : N 444645.17 ft, E 1371117.40 ft	GROUND ELEVATION : 688.5 ft feet NAVD88	
DRILLING CONTRACTOR : Cascade Drilling	DRILLING METHOD, EQUIPMENT: Rotasonic/Terrasonic T150cc 7" core x 8" casing /4" core x 6" casing	
WATER LEVEL : 235.0 ft bgs	Start : 11/1/22 19:00	END : 11/3/22 19:00
LOGGER : D.Lubell		

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
5	5.0	HA-1		LEAN CLAY WITH GRAVEL (CL) Dark Grayish Brown (2.5Y 4/2), moist, lean clay, little fine to coarse gravel	Hand augered to 5 ft bgs for cultural/utility clearance
	5.0	S-1		WELL-GRADED GRAVEL WITH CLAY AND SAND (GW-GC) Brown (10YR 5/3), moist, loose to medium dense, fine to coarse subangular to subrounded gravel, little clay, little to few fine to coarse grained sand	
	5.0	S-2			
	5.0	S-2			
	20	10.0	S-3		
30	9.0	S-4		WELL-GRADED SAND WITH GRAVEL (SW) Dry, medium dense, fine to medium grained sand, little fine to coarse subangular to subrounded gravel, trace silt, trace weakly cemented sand WELL-GRADED SAND WITH GRAVEL (SW) Very Dark Gray (10YR 3/1), moist, fine to coarse grained sand, little fine subrounded gravel	
35	10.0	S-5			WELL-GRADED GRAVEL WITH SAND (GW) Olive Brown (2.5Y 4/3), dry, medium dense, fine to coarse subangular gravel, little fine to medium grained sand No Recovery
40				WELL-GRADED SAND WITH GRAVEL (SW) Very Dark Grayish Brown (10YR 3/2), dry to moist, dense, fine to coarse grained sand, little fine to coarse subangular to subrounded gravel, trace to few clay, trace cobbles up to 7 diameter	
				SANDY LEAN CLAY (CL) Moist, lean clay, some fine grained sand WELL-GRADED SAND (SW) Very Dark Grayish (2.5Y 3/2), moist, loose, fine to coarse grained sand, few fine subrounded gravel	
				POORLY GRADED SAND (SP) Moist fine grained sand, trace fine subrounded gravel	
45					

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-S7-MW11

SHEET 2 OF 6

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 444645.17 ft, E 1371117.40 ft

GROUND ELEVATION : 688.5 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling

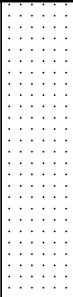
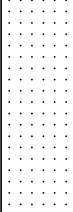


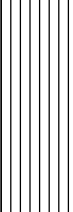


DRILLING METHOD, EQUIPMENT: Rotasonic/Terrasonic T150cc 7" core x 8" casing /4" core x 6" casing

WATER LEVEL : 235.0 ft bgs

Start : 11/1/22 19:00

END : 11/3/22 19:00

LOGGER : D.Lubell

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
50	10.0	S-6		LEAN CLAY (CL) Olive Brown (2.5Y 4/3), moist, low plasticity	
55				WELL-GRADED SAND WITH GRAVEL (SW) Very Dark Grayish (2.5Y 3/2), dry, loose to medium dense, fine to coarse grained sand, little fine to coarse subangular to subrounded gravel, trace silt	
60	10.0	S-7		POORLY GRADED SAND (SP) Moist, loose, fine grained sand	
65				WELL-GRADED SAND WITH GRAVEL (SW) Dark Grayish Brown (2.5Y 4/2), dry to moist, loose to medium dense, fine to coarse grained sand, little fine to coarse subangular to subrounded gravel, trace clay nodules, trace weakly cemented sand	
70	10.0	S-8		POORLY GRADED SAND (SP) Moist, loose, fine grained sand, trace fine subrounded gravel	
75				LEAN CLAY (CL) Olive Brown (2.5Y 4/3), moist, lean clay, low plasticity	
80	10.0	S-9		POORLY GRADED SAND (SP) Olive Brown (2.5Y 4/3), dry, loose, fine grained sand	
85				LEAN CLAY (CL) Olive Brown (2.5Y 4/3), dry to moist, lean clay, low plasticity	
90	9.0	S-10		SILT (ML) Dark Gray (4/N), dry, very stiff, little clay, trace rounded cobbles at 80.5-81 ft bgs	
				LEAN CLAY WITH SAND (CL) Moist, lean clay, little fine grained sand	
				Pulverized rock	

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-S7-MW11

SHEET 3 OF 6

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 444645.17 ft, E 1371117.40 ft

GROUND ELEVATION : 688.5 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling
















DRILLING METHOD, EQUIPMENT: Rotasonic/Terrasonic T150cc 7" core x 8" casing /4" core x 6" casing

WATER LEVEL : 235.0 ft bgs

Start : 11/1/22 19:00

END : 11/3/22 19:00

LOGGER : D.Lubell


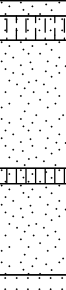
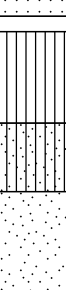
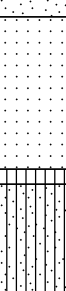
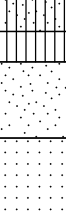

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	COMMENTS
	9.0	S-10		WELL-GRADED SAND WITH CLAY (SW-SC) Olive Brown (2.5Y 4/4), dry to moist, fine to coarse grained sand, few clay nodules 10-15%, few fine to coarse subrounded gravel, trace subangular cobbles	
95				WELL-GRADED SAND WITH GRAVEL (SW) Olive Brown (2.5Y 4/4), dry to moist, medium dense, fine to coarse grained sand, little fine to coarse subangular to subrounded gravel, trace cobbles, trace clay	
				No Recovery	
				SILT (ML) Dark Greenish Gray (5GY 4/1) moist, silt	
100	11.0	S-11		WELL-GRADED SAND WITH GRAVEL (SW) Olive Brown (2.5Y 4/3), dry, medium dense, fine to coarse grained sand, little fine to coarse subangular to subrounded gravel, trace cobbles, interbedded clay nodules and cemented sands 96-98 ft, trace rock flour 103-104 ft	8" casing advanced to 90 ft; start telescoping 6" casing
105				WELL-GRADED SAND WITH GRAVEL (SW) Very Dark Grayish Brown (10YR 3/2), dry, loose, fine to coarse grained sand, little fine to coarse gravel, trace silt, thin lenses of rock flour/pulverized cobbles	
110	9.0	S-12			
115				No recovery	
				WELL-GRADED SAND WITH GRAVEL (SW) Very Dark Grayish (2.5Y 3/2), dry, loose, fine to coarse grained sand, little fine to coarse subangular to subrounded gravel, trace silt, trace weakly cemented sand	
120	9.5	S-13		POORLY GRADED SAND (SP) Dark Grayish Brown (2.5Y 4/2), dry, loose, fine grained sand, weakly cemented sand	
				POORLY GRADED SAND (SP) Dry, loose, fine grained sand, trace fine subrounded gravel	
125				No recovery	
				Gray (2.5Y 5/1), pulverized rock	
				POORLY GRADED SAND (SP) Dark Grayish Brown (2.5Y 4/2), dry, loose, fine grained sand, weakly cemented sand	
130	10.0	S-14		WELL-GRADED SAND WITH GRAVEL (SW) Dry, loose, fine to coarse grained sand, little fine to coarse gravel, interbedded well graded sand with gravel/well graded gravel with sand (SW/GW), trace weakly cemented sand and gravel, trace cobble/rock fragments, increased gravel content 130-135 ft	
135					

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER: 704758CH.10.08.FI	BORING NUMBER: NRSJC-S7-MW11
SHEET 4 OF 6	
<h2 style="margin: 0;">Borehole Log</h2>	

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI	LOCATION : NRS Jim Creek	
COORDINATES : N 444645.17 ft, E 1371117.40 ft	GROUND ELEVATION : 688.5 ft feet NAVD88	
DRILLING CONTRACTOR : Cascade Drilling	DRILLING METHOD, EQUIPMENT: Rotosonic/Terrasonic T150cc 7" core x 8" casing /4" core x 6" casing	
WATER LEVEL : 235.0 ft bgs	Start : 11/1/22 19:00	END : 11/3/22 19:00
LOGGER : D.Lubell		

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	COMMENTS
140	10.0	S-15		SILTY SAND (SM) Dry, dense, fine grained sand, some silt, trace fine subrounded gravel WELL GRADED SAND WITH SILT (SW-SM) Very Dark Grayish (2.5Y 3/2), dry, loose to medium dense, fine to coarse grained sand, little silt, few fine to coarse subangular to subrounded gravel, trace pulverized/broken cobbles	
145				POORLY GRADED SAND (SP) Dark Olive Brown (2.5Y 3/3), dry, loose, fine grained sand WELL-GRADED SAND WITH SILT AND GRAVEL (SW-SM) Dry, loose to medium dense, fine to coarse grained sand, little fine to coarse subangular to subrounded gravel, few silt, trace pulverized/broken cobbles POORLY GRADED SAND (SP) Dry, loose, fine grained sand	
150	9.5	S-16		SILTY SAND (SM) Dry, loose to medium dense, fine grained sand, little silt POORLY GRADED SAND (SP) Very Dark Grayish (2.5Y 3/2), fine grained sand	
155				WELL-GRADED SAND WITH GRAVEL (SW) Dry, loose, fine to coarse grained sand, little fine to coarse subangular gravel sized granodiorite/pulverized rock fragments No Recovery SILT (ML) Dark Olive Brown (2.5Y 3/3), dry, silt SILTY SAND (SM) Dry, moist, loose to medium dense, fine grained sand, little silt	
160	10.0	S-17		POORLY GRADED SAND (SP) Dry, moist, loose, fine grained sand, trace silt, trace clay WELL-GRADED SAND (SW) Very Dark Grayish (2.5Y 3/2), moist, loose, fine to coarse grained sand, trace coarse subangular gravel, trace weakly cemented sand	
165				SILT (ML) Olive Brown (2.5Y 4/3), moist, silt SILTY SAND (SM) Moist, medium dense, fine grained sand, little silt	
170	10.0	S-18		SILT (ML) Moist, silt POORLY GRADED SAND (SP) Dark Grayish Brown (2.5Y 4/2), moist, loose, fine grained sand	
175				WELL-GRADED SAND WITH GRAVEL (SW) Olive Brown (2.5Y 4/3), dry, moist, medium dense, fine to coarse grained sand, little fine subrounded gravel, trace silt	
180	10.0	S-19			

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-S7-MW11

SHEET 5 OF 6

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 444645.17 ft, E 1371117.40 ft

GROUND ELEVATION : 688.5 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling

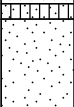
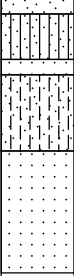
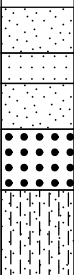

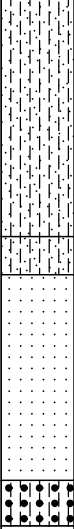
DRILLING METHOD, EQUIPMENT: Rotosonic/Terrasonic T150cc 7" core x 8" casing /4" core x 6" casing

WATER LEVEL : 235.0 ft bgs

Start : 11/1/22 19:00

END : 11/3/22 19:00

LOGGER : D.Lubell

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	COMMENTS
185	10.0	S-19		SILTY SAND (SM) Moist, loose, fine grained sand, little silt, trace fine subrounded gravel POORLY GRADED SAND (SP) Dry, loose, fine grained sand, trace fine subrounded gravel	
190	10.0	S-20		POORLY GRADED SAND (SP) Moist, fine grained sand SILTY SAND (SM) Moist, fine grained sand, little silt WELL-GRADED SAND WITH GRAVEL (SW) Medium dense, fine to coarse grained sand, little fine subangular gravel, trace silt, trace weakly cemented sand POORLY GRADED SAND WITH SILT (SP-SM) Moist, loose, fine grained sand, few silt WELL-GRADED SAND WITH GRAVEL (SW) Moist, loose to dense, fine to coarse grained sand, little fine subrounded gravel, trace to few weakly cemented sand/gravel with gravel increasing with depth	
200	10.0	S-21		POORLY GRADED SAND (SP) Very Dark Grayish (2.5Y 3/2), moist, loose, fine grained sand, trace fine subrounded gravel WELL-GRADED SAND WITH GRAVEL (SW) Dry, loose, fine to coarse grained sand, little fine to coarse gravel POORLY GRADED SAND (SP) Moist, loose, fine grained sand, trace silt, trace weakly cemented sand WELL-GRADED GRAVEL WITH SAND (GW) Moist, loose, fine to coarse gravel, little fine to coarse grained sand POORLY GRADED SAND WITH SILT (SP-SM) Olive Brown (2.5Y 4/3), moist, loose, fine grained sand, few silt, trace weakly cemented sand	
205	10.0	S-22		POORLY GRADED SAND WITH SILT (SP-SM) Dry to moist, loose fine grained sand, few silt, trace weakly cemented sand	
215	9.5	S-23		POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM) Very Dark Grayish (2.5Y 3/2), dry to moist, loose, fine grained sand, little fine to coarse gravel, few silt WELL-GRADED SAND WITH GRAVEL (SW) Dark Olive Brown (2.5Y 3/3), dry, loose, fine to medium grained sand, little fine to coarse subangular to subrounded gravel, broken/pulverized rocks light gray (5Y 7/1) from 218.2 to 218.5 ft bgs and 220.9 to 221.3 ft bgs WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM) Dry, loose, fine to coarse subangular to subrounded gravel, little fine to coarse	

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-S7-MW11

SHEET 6 OF 6

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 444645.17 ft, E 1371117.40 ft

GROUND ELEVATION : 688.5 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling

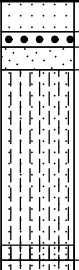
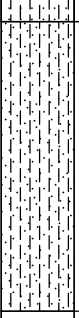
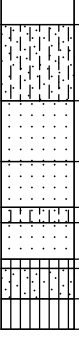
DRILLING METHOD, EQUIPMENT: Rotasonic/Terrasonic T150cc 7" core x 8" casing /4" core x 6" casing

WATER LEVEL : 235.0 ft bgs

Start : 11/1/22 19:00

END : 11/3/22 19:00

LOGGER : D.Lubell

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
230	9.5	S-24		grained sand, few silt No Recovery WELL-GRADED SAND WITH GRAVEL (SW) Dark Grayish Brown (2.5Y 4/2), dry, loose, fine to coarse grained sand, little fine to coarse subangular to subrounded gravel, few rock flour WELL GRADED GRAVEL WITH SAND (GW) Olive Brown (2.5Y 4/3), dry, loose, fine to coarse gravel, little fine to coarse grained sand, trace cobbles <3.5" diameter, trace oxidation POORLY GRADED SAND (SP) Olive Brown (2.5Y 4/3), dry to moist, fine grained sand, few fine to coarse subrounded gravel WELL-GRADED SAND WITH SILT AND GRAVEL (SW-SM) Dark Grayish Brown (2.5Y 4/2), dry, loose, fine to coarse grained sand, little fine to coarse subangular to subrounded gravel increasing with depth, few silt, trace cobbles at 233 ft, trace clay nodules at 234 ft, moist 233.5 to 234.5 ft WELL-GRADED SAND WITH SILT AND GRAVEL (SW-SM) Olive Brown (2.5Y 4/3), wet, loose, fine to coarse grained sand, little fine to coarse subangular to subrounded gravel, few silt No recovery POORLY GRADED SAND WITH SILT (SP-SM) Olive Brown (2.5Y 4/3), wet, loose, fine grained sand, few silt	
235					
240	9.0	S-25		No recovery POORLY GRADED SAND WITH SILT (SP-SM) Olive Brown (2.5Y 4/3), moist to wet, loose, fine grained sand, few silt	
245					
250	10.0	S-26		WELL-GRADED SAND WITH GRAVEL (SW) Wet, loose, fine to coarse grained sand, little fine to coarse gravel, trace to few silt WELL-GRADED SAND (SW) Very Dark Grayish (2.5Y 3/2), wet, fine to coarse grained sand, trace silt WELL-GRADED SAND WITH SILT AND GRAVEL (SW-SM) Olive Brown (2.5Y 4/3), wet, loose, fine to coarse grained sand, little fine to coarse subangular to subrounded gravel, few silt WELL-GRADED SAND (SW) Very Dark Grayish (2.5Y 3/2), fine to coarse grained sand, few fine to coarse gravel, cobble at 252.5 ft bgs SILT (ML) Olive Brown (2.5Y 4/3), moist, silt SILTY SAND (SM) Wet, loose, fine to coarse grained sand, little silt SILT WITH GRAVEL (ML) Dark Grayish Brown (2.5Y 4/2), dry, silt, little fine to coarse gravel Boring terminated at 255 ft bgs.	
255					

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-S7-MW12A

SHEET 1 OF 6

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 444562.41 ft, E 1371147.54 ft

GROUND ELEVATION : 689.2 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling



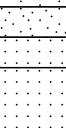
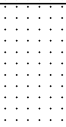
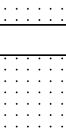
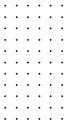


DRILLING METHOD, EQUIPMENT: Rotosonic/Terrasonic T150cc 7" core x 8" casing /4" core x 6" casing

WATER LEVEL : 238.0 ft bgs

Start : 10/4/22 19:00

END : 10/10/22 19:00








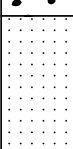

LOGGER : G. Warren, T. Chalmers

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
5	6.0	A-1		No Recovery	Air Knifed to 6 ft bgs
10	4.0	S-1		WELL-GRADED SAND WITH GRAVEL (SW) Dark Yellowish Brown (10YR 4/4), wet, medium dense, fine to medium sand, little coarse subangular gravel	
15	10.0	S-2		POORLY GRADED SAND WITH GRAVEL (SP) Wet, medium grained sand, little fine to coarse gravel	
20				POORLY GRADED SAND WITH GRAVEL (SP) Moist, dense, medium grained sand, little fine subangular gravel	
25	9.0	S-3		WELL-GRADED SAND WITH GRAVEL (SW) Moist, very dense, fine to medium grained sand, little fine subangular gravel WELL-GRADED SAND WITH GRAVEL (SW) Brown (10YR 4/3), moist, dense, fine to coarse grained sand, little fine subangular to rounded gravel	
30				WELL-GRADED SAND WITH GRAVEL (SW) Dark Grayish Brown (10YR 4/2), dry, very dense, fine to medium grained sand, little fine to coarse subangular gravel, few silt	
35	10.0	S-4		No Recovery WELL-GRADED SAND WITH GRAVEL (SW)	
40				LEAN CLAY WITH GRAVEL (CL) Dark Grayish Brown (10YR 4/2), moist, stiff, clay, little gravel	
45	10.0	S-5		WELL-GRADED SAND WITH GRAVEL (SW) Dark Grayish Brown (10YR 4/2), dry, very dense, medium to coarse sand, little fine subangular gravel POORLY GRADED SAND WITH GRAVEL (SP) Dark Grayish Brown (10YR 4/2), moist, dense, fine grained sand, little coarse subangular gravel	

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER: 704758CH.10.08.FI	BORING NUMBER: NRSJC-S7-MW12A
SHEET 2 OF 6	
<h2 style="margin: 0;">Borehole Log</h2>	

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI	LOCATION : NRS Jim Creek	
COORDINATES : N 444562.41 ft, E 1371147.54 ft	GROUND ELEVATION : 689.2 ft feet NAVD88	
DRILLING CONTRACTOR : Cascade Drilling	DRILLING METHOD, EQUIPMENT: Rotosonic/Terrasonic T150cc 7" core x 8" casing /4" core x 6" casing	
WATER LEVEL : 238.0 ft bgs	Start : 10/4/22 19:00	END : 10/10/22 19:00
LOGGER : G. Warren, T. Chalmers		

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	COMMENTS
50	10.0	S-5		WELL-GRADED SAND WITH GRAVEL (SW) Very Dark Gray (10YR 3/1), moist, very dense, fine to coarse grained sand, little coarse subangular gravel	
55	10.0	S-6		POORLY GRADED SAND WITH GRAVEL (SP) Very Dark Gray (10YR 3/1), moist, very dense, fine grained sand, little fine subangular gravel LEAN CLAY WITH GRAVEL (CL) Dark Yellowish Brown (10YR 4/4), moist, stiff, lean clay, little gravel, trace to few silt	
60				WELL-GRADED SAND WITH GRAVEL (SW) Dark Yellowish Brown (10YR 4/4), dense, medium to coarse grained sand, little fine subangular gravel	
65	10.0	S-7		WELL-GRADED SAND WITH GRAVEL (SW) Dark Yellowish Brown (10YR 4/4), dry, very dense, fine to medium grained sand, little fine subangular gravel	
70				POORLY GRADED GRAVEL WITH SAND (GP) Dark Yellowish Brown (10YR 4/4), dry, dense, fine subangular gravel, little fine to medium grained sand	
75	10.0	S-8			
80					
85	10.0	S-9		WELL-GRADED SAND WITH GRAVEL (SW) Very Dark Grayish Brown (10YR 3/2), dry, dense , fine to coarse grained sand, little fine subangular gravel	
90					

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-S7-MW12A

SHEET 3 OF 6

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 444562.41 ft, E 1371147.54 ft

GROUND ELEVATION : 689.2 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling












DRILLING METHOD, EQUIPMENT: Rotosonic/Terrasonic T150cc 7" core x 8" casing /4" core x 6" casing

WATER LEVEL : 238.0 ft bgs

Start : 10/4/22 19:00

END : 10/10/22 19:00

LOGGER : G. Warren, T. Chalmers

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
95	10.0	S-10		SILT WITH GRAVEL (ML) Very Dark Grayish Brown (10YR 3/2), dry, silt, little fine to coarse gravel	
100				POORLY GRADED GRAVEL WITH SAND (GP) Dark Gray (10YR 4/1), dry, very dense, fine subangular gravel, little medium grained sand	
105	9.0	S-11		SANDY SILT (ML) Brown (10YR 4/3), moist, stiff, silt, little fine grained sand	
				POORLY GRADED GRAVEL WITH SAND (GP) Dark Grayish Brown (10YR 4/2), dry, dense, coarse subangular gravel, little medium grained sand	
				SANDY LEAN CLAY (CL) Dark Grayish Brown (10YR 4/2), dry, hard, lean clay, little fine grained sand, few silt	
110				WELL-GRADED SAND WITH GRAVEL (SW) Brown (10YR 4/3), dry, dense, fine to coarse grained sand, little fine subangular gravel, few silt	
115	10.0	S-12		No Recovery	
120				WELL-GRADED SAND WITH GRAVEL (SW) Brown (10YR 4/3), dry, dense, fine to coarse grained sand, little fine subangular gravel, trace silt	
125	10.0	S-13			
130	4.0	S-14			
135	10.0	S-15			

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-S7-MW12A

SHEET 4 OF 6

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 444562.41 ft, E 1371147.54 ft

GROUND ELEVATION : 689.2 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling

DRILLING METHOD, EQUIPMENT: Rotosonic/Terrasonic T150cc 7" core x 8" casing /4" core x 6" casing

WATER LEVEL : 238.0 ft bgs

Start : 10/4/22 19:00

END : 10/10/22 19:00

LOGGER : G. Warren, T. Chalmers

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
140	10.0	S-15			
145					
150	9.0	S-16			
				No Recovery	
155				POORLY GRADED SAND WITH GRAVEL (SP) Brown (10YR 4/3), dry, very dense, coarse grained sand, little coarse subangular gravel	
160	8.0	S-17			
				No Recovery	
165				WELL-GRADED SAND WITH GRAVEL (SW) Dark Brown (10YR 3/3), moist, fine to coarse grained sand, fine subangular gravel	
170	9.0	S-18		SANDY SILT (ML) Dark Brown (10YR 3/3), moist, stiff, silt, little fine to medium grained sand	
				POORLY GRADED SAND (SP) Dark Grayish Brown (10YR 4/2), moist, dense, fine grained sand	
				No Recovery	
175				WELL-GRADED GRAVEL WITH SAND (GW) Dark Brown (10YR 3/3), moist, dense, fine to coarse subangular gravel, little fine grained sand	
	9.0	S-19		SANDY SILT (ML) Brown (10YR 4/3), moist, dense, silt, little fine grained sand, few fine subangular gravel	
				POORLY GRADED GRAVEL WITH SAND (GP) Brown (10YR 4/3), moist, dense, coarse subangular gravel, little fine to coarse grained sand	
180					

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-S7-MW12A

SHEET 5 OF 6

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 444562.41 ft, E 1371147.54 ft

GROUND ELEVATION : 689.2 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling

DRILLING METHOD, EQUIPMENT: Rotosonic/Terrasonic T150cc 7" core x 8" casing /4" core x 6" casing

WATER LEVEL : 238.0 ft bgs

Start : 10/4/22 19:00

END : 10/10/22 19:00

LOGGER : G. Warren, T. Chalmers

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
	9.0	S-19		POORLY GRADED SAND (SP) Grayish Brown (10YR 5/2), moist, very dense, fine grained sand	
				No recovery	
185				POORLY GRADED SAND (SP) Grayish Brown (10YR 5/2), moist, very dense, fine grained sand	
	9.0	S-20			
190				POORLY GRADED SAND WITH GRAVEL (SP) Dark Grayish Brown (10YR 4/2), moist, dense, fine grained sand, little fine subangular gravel	
				No recovery	
195				POORLY GRADED SAND WITH GRAVEL (SP) Dark Grayish Brown (10YR 4/2), moist, dense, fine grained sand, little fine subangular gravel	
	9.0	S-21		SANDY SILT (ML) Dark Grayish Brown (10YR 4/2), moist, stiff, silt, little fine grained sand	
200				POORLY GRADED SAND (SP) Very Dark Gray (10YR 3/1), moist, dense, medium grained sand, trace to few silt	
				No Recovery	
205				POORLY GRADED SAND WITH GRAVEL (SP) Brown (10YR 4/3), moist, dense, fine grained sand, little fine subangular gravel	
210	9.0	S-22			
				No Recovery	
215				POORLY GRADED SAND WITH GRAVEL (SP) Brown (10YR 4/3), moist, dense, fine grained sand, little fine subangular gravel, few to little pulverized cobbles	
220	8.0	S-23			
	9.0	S-24		WELL-GRADED SAND WITH GRAVEL (SW) Brown (10YR 4/3), dry, dense, fine to coarse grained sand, some coarse rounded gravel	
225					

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-S7-MW12A

SHEET 6 OF 6

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 444562.41 ft, E 1371147.54 ft

GROUND ELEVATION : 689.2 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling

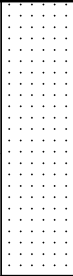
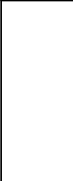

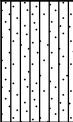
DRILLING METHOD, EQUIPMENT: Rotosonic/Terrasonic T150cc 7" core x 8" casing /4" core x 6" casing

WATER LEVEL : 238.0 ft bgs

Start : 10/4/22 19:00

END : 10/10/22 19:00

LOGGER : G. Warren, T. Chalmers

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
230	9.0	S-24			
235	4.0	S-25		No Recovery	
240				POORLY GRADED SAND (SP) Very Dark Grayish Brown (10YR 3/2), wet, dense, fine grained sand, trace silt	
245	7.0	S-26		SILTY SAND WITH GRAVEL (SM) Dark Gray (5Y 4/1), dry, hard, fine grained sand, little gravel, little silt	
Boring terminated at 247 ft bgs.					

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER: 704758CH.10.08.FI	BORING NUMBER: NRSJC-S7-MW13
SHEET 1 OF 6	
<h2 style="margin: 0;">Borehole Log</h2>	

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI	LOCATION : NRS Jim Creek	
COORDINATES : N 444574.39 ft, E 1371078.67 ft	GROUND ELEVATION : 692.4 ft feet NAVD88	
DRILLING CONTRACTOR : Cascade Drilling	DRILLING METHOD, EQUIPMENT: Rotasonic/Terrasonic T150cc 7" core x 8" casing /4" core x 6" casing	
WATER LEVEL : 237.0 ft bgs	Start : 10/14/22 19:00	END : 10/27/22 19:00
LOGGER : D.Lubell, G. Gardner		

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	COMMENTS
5	6.0	A-1		WELL-GRADED SAND WITH GRAVEL (SW) Light yellowish brown (10YR 4/4), dry, dense, fine to coarse grained sand, little fine to coarse subangular gravel	Air Knifed to 6 ft bgs
10	4.0	S-1		WELL-GRADED SAND WITH GRAVEL (SW) Dark Grayish Brown (10YR 4/2), moist, loose, fine to coarse grained sand, little fine to coarse subangular to subrounded gravel, trace silt	
15	5.0	S-2		WELL-GRADED GRAVEL WITH SAND (GW) Dark Grayish Brown (10YR 4/2), moist, loose, fine to coarse subangular to subrounded gravel, fine to coarse grained sand, trace silt	
20	5.0	S-3		POORLY GRADED SAND (SP) Dark Olive Brown (2.5Y 3/3), moist, loose, fine grained sand, trace coarse subrounded gravel, trace silt WELL-GRADED SAND WITH GRAVEL (SW) Olive Brown (2.5Y 4/4), dry, loose to medium dense, fine to coarse grained sand, fine to coarse subangular to subrounded gravel, trace silt, trace weakly cemented sand, gravels <50 mm, increasing gravels from 19-20 ft	
25	5.0	S-4		WELL-GRADED SAND WITH GRAVEL (SW) Dark Grayish Brown (2.5Y 4/2), moist, loose to medium dense, fine to coarse grained sand, little fine to coarse subangular to subrounded gravel, trace to few clay 5-10%, trace cobbles, angular, <140 mm	
30	5.0	S-6		WELL-GRADED SAND WITH GRAVEL (SW) Dark Grayish Brown (2.5Y 4/2), dry, loose, fine to coarse grained sand, little fine to coarse subangular to subrounded gravel, trace silt, trace clay WELL-GRADED SAND WITH CLAY AND GRAVEL (SW-SC) Dark Grayish Brown (2.5Y 4/2), moist, medium dense, fine to coarse grained sand, little fine to coarse subangular to subrounded gravel, trace cobbles 5" diameter, clay lens 4" thick at 37 ft, decreasing gravel content 37-40 ft	
35	5.0	S-7			
40	5.0	S-8		WELL-GRADED SAND WITH SILT AND GRAVEL (SW-SM) Dark Grayish Brown (2.5Y 4/2), moist, loose to medium dense, fine to coarse grained sand, little fine to coarse subrounded gravel, silt ~10%, trace cobbles <6" diameter	
45					

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-S7-MW13

SHEET 2 OF 6

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 444574.39 ft, E 1371078.67 ft

GROUND ELEVATION : 692.4 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling

DRILLING METHOD, EQUIPMENT: Rotosonic/Terrasonic T150cc 7" core x 8" casing /4" core x 6" casing

WATER LEVEL : 237.0 ft bgs

Start : 10/14/22 19:00

END : 10/27/22 19:00

LOGGER : D.Lubell, G. Gardner

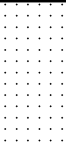











DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	COMMENTS
50	5.0	S-9		CLAYEY SAND (SC) Olive Brown (2.5Y 4/3), moist, stiff, fine grained sand, little clay, trace fine subrounded gravel	
				POORLY GRADED SAND (SP) Olive Brown (2.5Y 4/3), moist, loose, fine grained sand, trace silt	
				WELL-GRADED SAND WITH CLAY AND GRAVEL (SW-SC) Dark Grayish Brown (2.5Y 4/2), dry, loose, fine to coarse grained sand, weakly cemented fragments, little fine subangular gravel, few clay ~10%, trace silt	
	5.0	S-10		WELL-GRADED SAND WITH CLAY AND GRAVEL (SW-SC) Dark Grayish Brown (2.5Y 4/2), moist, loose, fine to coarse grained sand, weakly cemented fragments, little fine subangular gravel, few clay ~10%, trace silt	
				POORLY GRADED SAND (SP) Olive Brown (2.5Y 4/3), moist, loose, fine grained sand	
55				WELL-GRADED SAND WITH GRAVEL (SW) Light Olive Brown (2.5Y 5/3), dry, loose to weakly cemented, little fine to coarse subangular to subrounded gravel	
	5.0	S-11		POORLY GRADED SAND (SP) Olive Brown (2.5Y 4/3), moist, loose, fine grained sand, trace fine subrounded gravel	
60				LEAN CLAY WITH GRAVEL (CL) Olive Brown (2.5Y 4/3), moist, very stiff, little coarse subrounded gravel up to 50 mm	
	4.0	S-12		POORLY GRADED SAND (SP) Olive Brown (2.5Y 4/3), moist, loose, fine grained sand, trace clay nodules	
				WELL-GRADED SAND WITH CLAY AND GRAVEL (SW-SC) Olive Brown (2.5Y 4/3), moist, fine to coarse grained sand, little fine to coarse gravel, clay ~10%, trace weakly cemented sand	
				LEAN CLAY WITH GRAVEL (CL) Dark Grayish Brown (2.5Y 4/2), moist, stiff, lean clay, little coarse subrounded gravel, trace silt	
				LEAN CLAY (CL) Dark Grayish Brown (2.5Y 4/2), moist, very stiff, lean clay, low to medium plasticity, trace silt	
70				WELL-GRADED SAND WITH SILT AND GRAVEL (SW-SM) Olive Brown (2.5Y 4/3), dry, loose, fine to coarse grained sand, little fine to coarse subangular to subrounded gravel, silt ~10%, few weakly cemented sand, trace subangular cobbles up to 75mm	
	5.0	S-14			
75				Light Olive Brown (2.5Y 5/3), dry, loose, pulverized rock SW/GW, rock flour, trace silt, trace clay	
				WELL-GRADED SAND WITH GRAVEL (SW) Olive Brown (2.5Y 4/3), dry to moist, loose, fine to coarse grained sand, little fine to coarse subangular to subrounded gravel <50 mm, trace silt, weakly cemented sand, gravel decreasing/fining downward from 83-85 ft	
80					
	5.0	S-16			
85				WELL-GRADED SAND WITH GRAVEL (SW) Dark Yellowish Brown (10YR 4/4), dry to moist, loose, fine to coarse grained sand, little fine to coarse subangular to subrounded gravel, few silt 5-10%, rock flour with silt/clay matrix from 85-88 ft bgs	
	5.0	S-17			
90					

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER: 704758CH.10.08.FI	BORING NUMBER: NRSJC-S7-MW13
SHEET 3 OF 6	
<h2 style="margin: 0;">Borehole Log</h2>	

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI	LOCATION : NRS Jim Creek	
COORDINATES : N 444574.39 ft, E 1371078.67 ft	GROUND ELEVATION : 692.4 ft feet NAVD88	
DRILLING CONTRACTOR : Cascade Drilling	DRILLING METHOD, EQUIPMENT: Rotosonic/Terrasonic T150cc 7" core x 8" casing /4" core x 6" casing	
WATER LEVEL : 237.0 ft bgs	Start : 10/14/22 19:00	END : 10/27/22 19:00
LOGGER : D.Lubell, G. Gardner		

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	COMMENTS
95	5.0	S-18		WELL-GRADED SAND WITH GRAVEL (SW) Dark Grayish Brown (2.5Y 4/2), dry, loose, fine to coarse grained sand, little fine to coarse subangular to subrounded gravel <25 mm	
100				WELL-GRADED SAND WITH GRAVEL (SW) Dark Grayish Brown (2.5Y 4/2), moist, loose, fine to coarse grained sand, fine to coarse subrounded gravel	
105				WELL-GRADED SAND (SW) Dark Olive Brown (2.5Y 4/2), moist, loose, fine to coarse grained sand, few fine subrounded gravel 10-15%	
110				POORLY GRADED SAND AND GRAVEL (SP) Dark Olive Brown (2.5Y 3/2), moist, loose, fine grained sand, little fine subrounded gravel	
115				WELL-GRADED SAND WITH GRAVEL (SW) Dark Olive Brown (2.5Y 3/2), moist, loose, fine to coarse grained sand, fine subrounded gravel	
120				WELL-GRADED SAND WITH SILT AND GRAVEL (SW-SM) Olive Brown (2.5Y 4/3), dry, loose, fine to coarse grained sand, little fine to coarse subangular gravel, few silt/rock flour ~10%,	
125				POORLY GRADED SAND WITH SILT (SP-SM) Olive Brown (2.5Y 4/3), moist, loose, fine grained sand, few silt, trace subangular to subrounded gravel	
				SILTY SAND (SM) Olive Brown (2.5Y 4/3), moist, loose, fine grained sand, little silt	
				POORLY GRADED SAND (SP) Olive Brown (2.5Y 4/4), moist, loose, fine grained sand, trace silt, trace pulverized cobble lens at 124.5 ft bgs, trace fine surrounded gravels 124.5-125 ft bgs	
130	9.0	S-19		WELL GRADED SAND WITH GRAVEL (SW) Olive Brown (2.5Y 4/3), moist, loose, fine to medium grained sand, little rounded gravel, few silt	
				SILTY SAND (SM) Olive Brown (2.5Y 4/3), moist, dense, fine to medium grained sand, some silt, trace gravel	
				WELL-GRADED SAND WITH GRAVEL (SW) Olive Brown (2.5Y 4/3), dry, dense, fine to medium grained sand, little rounded gravel, few silt, moist 136-137 ft bgs	
135				No Recovery	

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-S7-MW13

SHEET 4 OF 6

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 444574.39 ft, E 1371078.67 ft

GROUND ELEVATION : 692.4 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling

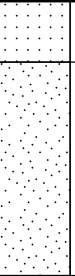
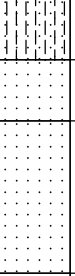
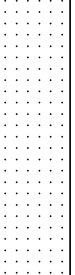
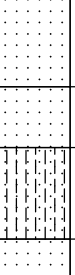
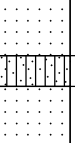
DRILLING METHOD, EQUIPMENT: Rotosonic/Terrasonic T150cc 7" core x 8" casing /4" core x 6" casing

WATER LEVEL : 237.0 ft bgs

Start : 10/14/22 19:00

END : 10/27/22 19:00

LOGGER : D.Lubell, G. Gardner


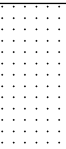






DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
140	9.0	S-20		WELL-GRADED SAND WITH GRAVEL (SW) Olive Brown (2.5Y 4/3), dry, dense, fine to medium grained sand, little rounded gravel, few silt, moist 136-137 ft bgs POORLY GRADED SAND (SP) Light Olive Brown (2.5Y 5/3), moist, medium dense, fine to medium grained sand, trace silt, silt stringer at 144 ft bgs	
145				No Recovery	
150	9.0	S-21		WELL-GRADED SAND WITH SILT (SW-SM) Olive Brown (2.5Y 4/3), moist, dense, fine to medium grained sand, few silt WELL GRADED SAND (SW) Olive Brown (2.5Y 4/3), moist, dense, fine to medium grained sand WELL-GRADED SAND WITH GRAVEL (SW) Dark Grayish Brown (2.5Y 4/2), dry, dense, fine to coarse grained sand, little coarse rounded gravel	
155				No Recovery	
160	9.0	S-22		WELL-GRADED SAND WITH GRAVEL (SW) Dark Grayish Brown (2.5Y 4/2), dry, dense, fine to coarse grained sand, little fine to coarse subrounded gravel, silt ~10%	
165					
170	9.0	S-23		WELL GRADED SAND (SW) Olive Brown (2.5Y 4/3), moist, dense, fine to medium grained sand, trace silt WELL-GRADED SAND WITH SILT AND GRAVEL (SW-SM) Olive Brown (2.5Y 4/3), dry, dense, fine to coarse grained sand, little fine to coarse subrounded gravel, few silt ~10% WELL-GRADED SAND WITH GRAVEL (SW) Olive Brown (2.5Y 4/3), dry to moist, dense, fine to coarse grained sand, little coarse subrounded gravel, trace silt	
175					
180	10.0	S-24		WELL GRADED SAND (SW) Dark Grayish Brown (2.5Y 4/2), dry, dense, fine to medium grained sand, few coarse subrounded gravel, trace silt SILTY SAND (SM) Dark Grayish Brown (2.5Y 4/2), moist, dense, fine grained sand, little silt WELL-GRADED SAND WITH GRAVEL (SW)	

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER: 704758CH.10.08.FI	BORING NUMBER: NRSJC-S7-MW13
SHEET 5 OF 6	
<h2 style="margin: 0;">Borehole Log</h2>	

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI	LOCATION : NRS Jim Creek	
COORDINATES : N 444574.39 ft, E 1371078.67 ft	GROUND ELEVATION : 692.4 ft feet NAVD88	
DRILLING CONTRACTOR : Cascade Drilling	DRILLING METHOD, EQUIPMENT: Rotosonic/Terrasonic T150cc 7" core x 8" casing /4" core x 6" casing	
WATER LEVEL : 237.0 ft bgs	Start : 10/14/22 19:00	END : 10/27/22 19:00
LOGGER : D.Lubell, G. Gardner		

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	COMMENTS
185	10.0	S-24		Dark Grayish Brown (2.5Y 4/2), dry, dense, fine to coarse grained sand, little fine subrounded gravel, trace silt	
190	10.0	S-25		WELL GRADED SAND (SW) Dark Grayish Brown (2.5Y 4/2), moist, dense, fine to medium grained sand, trace fine rounded gravel	
200	10.0	S-26		WELL-GRADED SAND WITH GRAVEL (SW) Dark Grayish Brown (2.5Y 4/2), dry to moist, fine to coarse grained sand, little fine to coarse subangular to subrounded gravel 15-20%	
210	10.0	S-27		WELL-GRADED SAND WITH GRAVEL (SW) Dark Grayish Brown (2.5Y 4/2), moist, dense, fine to coarse grained sand, little fine to coarse subangular to subrounded gravel, trace silt	
215				WELL-GRADED SAND WITH GRAVEL (SW) Dark Grayish Brown (2.5Y 4/2), dry, dense, fine to coarse grained sand, little fine to coarse subangular to subrounded gravel, trace silt, 3 oxidized silty lens at 213.5 ft bgs, broken cobble at 214 ft bgs,	
220	10.0	S-28		WELL-GRADED SAND WITH SILT AND GRAVEL (SW-SM) Dark Gray (2.5Y 4/1), moist, dense, fine to coarse grained sand, little fine to coarse subrounded gravel, few silt, dry lens from 216 to 216.3 ft bgs	
				WELL-GRADED SAND WITH GRAVEL (SW) Olive Brown (2.5Y 4/3), moist to dry, dense, fine to coarse grained sand, little fine to coarse subangular to subrounded gravel, 3" cobble at 222 ft bgs, dry at 219 ft bgs	
225				WELL GRADED SAND WITH SILT (SW-SM) Dark Grayish Brown (2.5Y 4/2), moist, dense, fine to medium grained sand, few	

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRSJC-S7-MW13

SHEET 6 OF 6

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRS Jim Creek

COORDINATES : N 444574.39 ft, E 1371078.67 ft

GROUND ELEVATION : 692.4 ft feet NAVD88

DRILLING CONTRACTOR : Cascade Drilling




DRILLING METHOD, EQUIPMENT: Rotasonic/Terrasonic T150cc 7" core x 8" casing /4" core x 6" casing

WATER LEVEL : 237.0 ft bgs

Start : 10/14/22 19:00

END : 10/27/22 19:00

LOGGER : D.Lubell, G. Gardner

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
230	10.0	S-29		silt ~20%, POORLY GRADED SAND (SP) Olive Brown (2.5Y 4/3), moist, fine to medium grained sand, trace silt with ~20% from 228-230 ft bgs	
235	10.0	S-30		WELL-GRADED SAND WITH GRAVEL (SW) Dark Grayish Brown (2.5Y 4/2), moist, dense, fine to coarse grained sand, little fine subrounded to subangular gravel, very moist 234 to 235 ft bgs LEAN CLAY WITH GRAVEL (CL) Dark Gray (Gley1, 4/N), moist 235-238, dry 238-240 ft bgs, moist 240-243 ft bgs, 243-250 ft bgs, lean clay, low plasticity, trace large broken cobbles at 239 ft bgs	
240					
245	6.0	S-31			
250				No Recovery Boring terminated at 250 ft bgs.	

NEW SOIL BORING LOG; CORONADO_LIBRARY_REVFT.GLB; EVERETT NRS JIM CREEK 3.GPJ; CH2M GEOTECH_12.GDT; 3/8/23

PROJECT NUMBER: 704758CH.10.08.FI	BORING NUMBER: NRCPB-B106-MW01
SHEET 1 OF 1	
<h2 style="margin: 0;">Borehole Log</h2>	

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI	LOCATION : NRC Pacific Beach
COORDINATES : N 707361.0091 ft, E 720211.25 ft	ELEVATION : 119.4 ft NAVD88
DRILLING CONTRACTOR : Cascade Drilling	DRILLING METHOD AND DRILL RIG : Rotasonic, Boart Longyear LS250 4" core x 6" casing
WATER LEVEL : 14.0 ft bgs	Start : 8/3/22 12:10 END : 8/3/22 15:40 LOGGER : C. Dronfield

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	COMMENTS
				Asphalt	
5	5.0	-		POORLY GRADED SAND WITH SILT (SP-SM) Very dark grayish brown (10YR 3/2), dry to moist, loose, very fine to fine sand, trace gravel	Hand cleared with vac truck/air knife to 5 ft bgs for utility clearance
				No recovery	
10	3.5	S-1		POORLY GRADED SAND WITH SILT (SP-SM) Very dark grayish brown (10YR 3/2), dry to moist, loose, very fine to fine sand, trace gravel, wood fragments	
	1.0	S-2		WELL GRADED GRAVEL (GW) Light gray (5Y 7/1), dry, very loose, little gravel, anthropogenic material (concrete), rock flour	
	3.0	S-3		Concrete	
				Concrete	
15				POORLY GRADED GRAVEL WITH SAND (GP) Olive brown (2.5Y 4/3), moist, very loose, rounded-subrounded gravel, fine to coarse grained sand, trace silt	
	7.7	S-4		CLAYEY SAND (SC) Olive brown (5Y 4/2), wet, medium dense, fine sand with fat clay, trace gravel	
				WELL GRADED GRAVEL WITH SAND (GW) Olive gray (5Y 4/2), moist to wet, very loose, fine to coarse gravel, fine to coarse sand, trace cobbles rounded and subrounded	
20				POORLY GRADED GRAVEL (GP) Dark yellowish brown (10YR 4/6), wet, very loose, fine rounded gravel, little sand, trace clay	
	5.0	S-5		WELL GRADED GRAVEL WITH SAND (GW) Olive gray (5Y 4/2), moist, very loose, fine to coarse rounded and subrounded gravel, fine to coarse sand	
				FAT CLAY (CH) Dark yellowish brown (10YR 4/2), moist, stiff, high plasticity	
				FAT CLAY (CH) Yellowish brown (10YR 5/8), wet to moist, soft, some rounded gravel and fine sand, high plasticity	
25				SILT (ML) Light yellowish brown (2.5YR 6/3), moist, medium stiff, non plastic	
				WELL GRADED SAND WITH GRAVEL (SW) Yellowish brown (10YR 5/6), moist, loose, fine to coarse sand, rounded gravel, trace clay	
				LEAN CLAY (CL) Pale olive (5Y 6/3), moist, stiff, low plasticity	
				SILT (ML) Pale olive (5Y 6/3), moist, stiff, non plastic	
30				Boring terminated at 25 ft bgs.	

NEW SOIL BORING LOG; CORONADO_LIBRARY.GLB; EVERETT.GPJ; CH2M GEOTECH_12.GDT; 10/5/23

PROJECT NUMBER: 704758CH.10.08.FI	BORING NUMBER: NRCPB-B106-MW02
SHEET 1 OF 1	
<h2 style="margin: 0;">Borehole Log</h2>	

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI	LOCATION : NRC Pacific Beach
COORDINATES : N 707320.9529 ft, E 720105.48 ft	ELEVATION : 118.1 ft NAVD88
DRILLING CONTRACTOR : Cascade Drilling	DRILLING METHOD AND DRILL RIG : Rotasonic, Boart Longyear LS250 4" core x 6" casing
WATER LEVEL : 10.0 ft bgs	Start : 8/4/23 08:50 END : 8/4/23 09:25 LOGGER : C. Dronfield

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
				Asphalt	Hand cleared with vac truck/air knife to 5 ft bgs for utility clearance on 8/3/22
5	5.0	-		WELL GRADED GRAVEL WITH SILT (GW-GM) Dark grayish brown (10YR 4/2), dry, dense, round-subangular gravel with road base gravel, some silt and very fine sand	
	5.0	S-1		FAT CLAY WITH GRAVEL (CH) Dark yellowish brown (10YR 4/6), moist, soft, rounded gravel, trace sand	
				WELL GRADED GRAVEL WITH SAND (GW) Dark yellowish brown (10YR 4/6) to dark grayish brown (2.5Y 4/2) below 8.2 feet bgs, dry, very loose, rounded gravel, some fine to coarse sand, trace clay	
10				WELL GRADED GRAVEL WITH SAND (GW) Brown (7.5YR 4/4), dry, very loose, rounded gravel, some fine to coarse sand, trace clay No recovery	
	8.4	S-2		WELL GRADED GRAVEL WITH SAND (GW) Yellowish brown (10YR 4/6) to olive gray (5Y 4/2), wet, very loose, rounded gravel, fine to coarse sand	
				POORLY GRADED SAND (SP) Olive gray (5Y 4/2), wet to moist, very loose, with little rounded gravel	
20				POORLY GRADED GRAVEL WITH SAND (GP) Dark yellowish brown (10YR 4/4), wet, very loose, fine rounded gravel, fine to coarse sand	
Boring terminated at 20 ft bgs.					
25					
30					

NEW SOIL BORING LOG; CORONADO_LIBRARY.GLB; EVERETT.GPJ; CH2M GEOTECH_12.GDT; 10/5/23

PROJECT NUMBER:
704758CH.10.08.FI

BORING NUMBER:
NRCPB-B106-MW03

SHEET 1 OF 1

Borehole Log

PROJECT : EVERETT_NS - NAVSTA Everett PFAS SI

LOCATION : NRC Pacific Beach

COORDINATES : N 707311.1815 ft, E 720036.02 ft

ELEVATION : 116.9 ft NAVD88

DRILLING CONTRACTOR : Cascade Drilling

DRILLING METHOD AND DRILL RIG : Rotasonic, Boart Longyear LS250 4" core x 6" casing

WATER LEVEL : 6.3 ft bgs

Start : 8/8/23 13:00

END : 8/8/23 13:15

LOGGER : C. Dronfield

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL / RECOVERY (ft)	CORE ID	GRAPHIC LOG	SOIL DESCRIPTION: <u>Soil name, USCS, color, moisture, density, description</u>	<u>COMMENTS</u>
				Asphalt	
	5.0	-		GRAVELLY SILT (ML) Dark grayish brown (10YR 4/2), dry, very stiff, grounded-subangular gravel SANDY FAT CLAY WITH GRAVEL (SC) Brownish yellow (10YR 6/6), moist, soft	Hand cleared with vac truck/air knife to 5 ft bgs for utility clearance
5					
	5.0	S-1		WELL GRADED GRAVEL WITH SAND (GW) Dark grayish brown (10YR 4/2) to 6.5 feet bgs, dark yellowish brown (10YR 4/6) 6.5 to 7.7 feet bgs, brown (10YR 5/3), moist to wet below 6.3 feet bgs, very loose, rounded-subrounded gravel, fine to coarse sand, trace clay	
10					
	8.0	S-2		WELL GRADED SAND (SW) Dark grayish brown (10YR 4/2), wet, very loose, fine to coarse sand, trace gravel POORLY GRADED GRAVEL WITH SAND (GP) Yellowish brown (10YR 5/4), wet, very loose, fine rounded gravel, fine to coarse sand, trace clay WELL GRADED SAND WITH GRAVEL (SW) Light olive brown (2.5Y 5/4) to 12.7 feet bgs, olive brown (2.5Y 4/4) to 13.7 feet bgs, wet, loose, fine to coarse sand, rounded gravel, trace clay WELL GRADED GRAVEL (GW) Light yellowish brown (2.5Y 6/4), wet, very loose, rounded fine to coarse gravel, trace clay WELL GRADED SAND WITH GRAVEL (SW) Olive brown (2.5Y 4/3), wet, very loose, fine to coarse sand, rounded gravel	
15				POORLY GRADED GRAVEL WITH SAND (GP) Yellowish brown (10YR 4/4), wet, very loose, fine rounded gravel, fine to coarse sand Boring terminated at 18 ft bgs.	
20					
25					
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NEW SOIL BORING LOG; CORONADO_LIBRARY.GLB; EVERETT.GPJ; CH2M GEOTECH_12.GDT; 10/5/23