

Appendix A

Boring and Monitoring Well Logs

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GeoProbe Boring Log

Total Depth: 5.0 ft.

[illegible]**WHATCOM ENVIRONMENTAL SERVICES INC.**

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NS = No Sheen; VSS = Very Slight Sheen; SS = Slight Sheen; MS = Moderate Sheen; HS = Heavy Sheen

GeoProbe Boring Log

Date Completed: 7/30/2018

Total Depth: 5.0 ft.

[illegible]

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GeoProbe Boring Log

Total Depth: 5.0 ft.

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GeoProbe Boring Log

Total Depth: 10.0 ft.

[illegible]

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GeoProbe Boring Log

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: BLWA-7	Logged by: Thom Davis - WES
Location: Center south side of lift area	First Encountered Water: None
Date Completed: 7/30/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: BLWA-7	Logged by: Thom Davis - WES
Location: Center south side of lift area	First Encountered Water: None
Date Completed: 7/30/2018	Total Depth: 5.0 ft.

[illegible]

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GeoProbe Boring Log

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: BLWA-8	Logged by: Thom Davis - WES
Location: Northeast corner of lift area	First Encountered Water: None
Date Completed: 7/30/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: BLWA-8	Logged by: Thom Davis - WES
Location: Northeast corner of lift area	First Encountered Water: None
Date Completed: 7/30/2018	Total Depth: 5.0 ft.

[illegible]

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GeoProbe Boring Log

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: BLWA-9	Logged by: Thom Davis - WES
Location: Southeast boring in lift area	First Encountered Water: None
Date Completed: 7/30/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: BLWA-9	Logged by: Thom Davis - WES
Location: Southeast boring in lift area	First Encountered Water: None
Date Completed: 7/30/2018	Total Depth: 5.0 ft.

[illegible]

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GeoProbe Boring Log

Total Depth: 5.0 ft.

[illegible]

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GeoProbe Boring Log

Total Depth: 5.0 ft.

[illegible]

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GeoProbe Boring Log

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: OPALCO-4	Logged by: Thom Davis - WES
Location: Southeast of the slab	First Encountered Water: None
Date Completed: 7/31/2018	Total Depth: 5.0 ft.

Drilled by: Kyle Ceruti - Cascade

First Encountered Water: None

Total Depth: 5.0 ft.

[illegible]

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GeoProbe Boring Log

Total Depth: 4.0 ft.

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GeoProbe Boring Log

Total Depth: 5.0 ft.

[illegible]

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GeoProbe Boring Log

Total Depth: 5.0 ft.

[illegible]

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GeoProbe Boring Log

Total Depth: 5.0 ft.

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GeoProbe Boring Log

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SRWA-4	Logged by: Thom Davis - WES
Location: In the rail line at NW corner of area	First Encountered Water: 2.0 ft.
Date Completed: 8/1/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SRWA-4	Logged by: Thom Davis - WES
Location: In the rail line at NW corner of area	First Encountered Water: 2.0 ft.
Date Completed: 8/1/2018	Total Depth: 5.0 ft.

[illegible]

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GeoProbe Boring Log

Total Depth: 5.0 ft.

[illegible]

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GeoProbe Boring Log

Total Depth: 5.0 ft.

[illegible]

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GeoProbe Boring Log

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SRWA-7	Logged by: Thom Davis - WES
Location: Southwest corner of rail area	First Encountered Water: None
Date Completed: 8/1/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SRWA-7	Logged by: Thom Davis - WES
Location: Southwest corner of rail area	First Encountered Water: None
Date Completed: 8/1/2018	Total Depth: 5.0 ft.

[illegible]

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GeoProbe Boring Log

Total Depth: 15.0 ft.

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GeoProbe Boring Log

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: MW-2	Logged by: Thom Davis - WES
Location: South side of boat lift work area	First Encountered Water: 7.0 ft.
Date Completed: 7/30/2018	Total Depth: 15.0 ft.

Sheet: 1 of 1
Drilled by: Kyle Ceruti - Cascade
Logged by: Thom Davis - WES
First Encountered Water: 7.0 ft.
Total Depth: 15.0 ft.

[illegible]

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GeoProbe Boring Log

Total Depth: 15.0 ft.

[illegible]

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GeoProbe Boring Log

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: MW-4	Logged by: Thom Davis - WES
Location: At OPALCO pad, east corner	First Encountered Water: ~8.0 ft.
Date Completed: 7/31/2018	Total Depth: 15.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: MW-4	Logged by: Thom Davis - WES
Location: At OPALCO pad, east corner	First Encountered Water: ~8.0 ft.
Date Completed: 7/31/2018	Total Depth: 15.0 ft.

Depth	Description	Screening Depth	PID (ppm)	Sheen	Sample
0.0 to 3.0 ft.	Silty sandy gravel, brown, soft, dry.		0.0	NS	2 to 6 in.
3.0 to 6.0 ft.	Gravelly silty sand, brown to reddish brown , soft, moist.		0.0	NS	
6.0 to 7.0 ft.	Silty gravel, brown, soft, moist.		0.0	NS	
7.0 to 10.5 ft.	Organic sandy silt with gravel, dark brown to black, firm, moist to wet.		0.0	NS	
10.5 to 15.0 ft.	Gravelly silty coarse sand, reddish brown, slightly firm, wet.		0.0	NS	11'
	</				

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GeoProbe Boring Log

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: MW-5	Logged by: Thom Davis - WES
Location: Upland area to the east of shipyard	First Encountered Water: ~10.0 ft.
Date Completed: 8/1/2018	Total Depth: 15.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: MW-5	Logged by: Thom Davis - WES
Location: Upland area to the east of shipyard	First Encountered Water: ~10.0 ft.
Date Completed: 8/1/2018	Total Depth: 15.0 ft.

Depth	Description	Screening Depth	PID (ppm)	Sheen	Sample
0.0 to 1.0 ft.	Fine sandy silt with gravel, tan to brown, soft, dry.		0.0	VSS	2 to 6 in.
1.0 to 5.0 ft.	Clayey silt with minor coarse sand and gravel, brown, hard, dry to moist.		0.0	VSS	
No recovery from 5.0 to 10.0 ft. interval - material stuck in probe sleeve					
10.0 to 15.0 ft.	Silty clayey medium sand with gravel, olive brown, hard to firm, wet.		0.0	VSS	10'
Soil Sample Collection Depth					
* - indicates a weathered sheen.					

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GeoProbe Boring Log

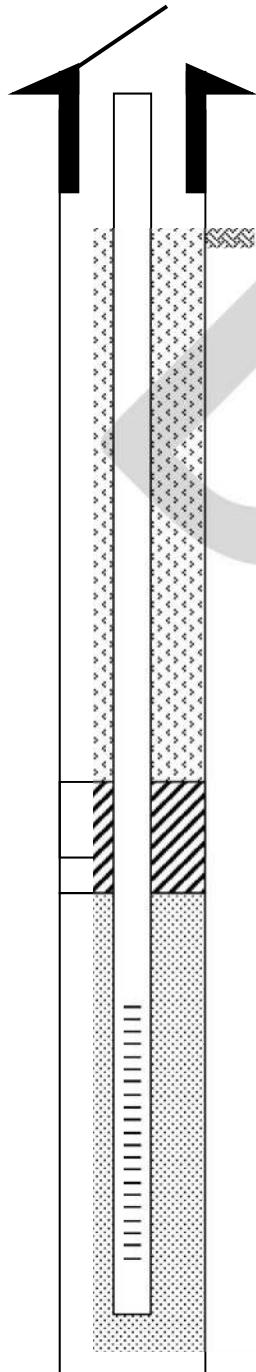
Total Depth: 40.0 ft.

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Well Design Specifications



Not to Scale

Elevations (feet): Top of Casing: 13.40 ft
Mean Sea Level (MSL) Ground Elevation: 13.80 ft

Coordinates: 563866.1635 E 1115539.121 N

Coordinate System:

Type of Casing: PVC (Pre-Packed Well Screen)

Casing Diameter: 2 inches

Screen Slot: 0.01 inch

Screen Style: Machine cut

Sand Pack: 2/12 Silica

Bentonite Seal: Medium Chip

Grout Type: N/A **Weight:**

Bore Hole Diameter: 4.0 inches

Drill Rig: GeoProbe

Drilled by: Kyle Ceruti - Cascade Drilling

Logged by: Thom Davis - Whatcom Env.

Completion Date: 7/30/2018

Date of Measurement	D-T-W (ft. bgs)	Water Level (ft. MSL)	Field pH	Field EC (mS/cm)
8/28/2018	8.23	5.17	7.76	0.364

Comments:

Project: Jensen's Shipyard Assessment

Location: North of Shop Building

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228 East Champion Street #101
Bellingham, WA 98225
(360) 752-9571

MW-1

Ecology Well ID:

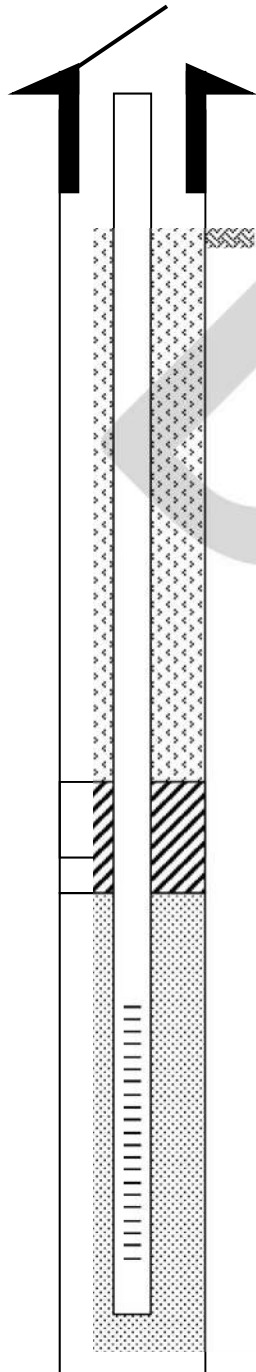
BKF-620

Elevations (feet):	Top of Casing:	10.84 ft
Mean Sea Level (MSL)	Ground Elevation:	11.30 ft
Coordinates:	563927.7653 E	1115534.623 N
Coordinate System:		
Type of Casing:	PVC (Pre-Packed Well Screen)	
Casing Diameter:	2 inches	
Screen Slot:	0.01 inch	
Screen Style:	Machine cut	
Sand Pack:	2/12 Silica	
Bentonite Seal:	Medium Chip	
Grout Type:	N/A	Weight:
Bore Hole Diameter:	4.0 inches	
Drill Rig:	GeoProbe	
Drilled by:	Kyle Ceruti - Cascade Drilling	
Logged by:	Thom Davis - Whatcom Env.	
Completion Date:	7/30/2018	

Comments:

	MW-2
Ecology Well ID:	BKF-621

Well Design Specifications



Depths in
Feet Below
Ground
Surface

1.5
2
3
12.5
13
13

Elevations (feet):
Mean Sea Level (MSL)

Top of Casing: 9.69 ft
Ground Elevation: 10.00 ft

Coordinates: 563889.1659 E 1115676.466 N

Coordinate System:

Type of Casing: PVC (Pre-Packed Well Screen)

Casing Diameter: 2 inches

Screen Slot: 0.01 inch

Screen Style: Machine cut

Sand Pack: 2/12 Silica

Bentonite Seal: Medium Chip

Grout Type: N/A **Weight:**

Bore Hole Diameter: 4.0 inches

Drill Rig: GeoProbe

Drilled by: Kyle Ceruti - Cascade Drilling

Logged by: Thom Davis - Whatcom Env.

Completion Date: 8/1/2018

Date of Measurement	D-T-W (ft. bgs)	Water Level (ft. MSL)	Field pH	Field EC (mS/cm)
8/28/2018	4.57	5.12	8.29	4.839

Comments:

Project: Jensen's Shipyard Assessment

Location: At Rail Works Area

Not to Scale

Whatcom Environmental Services

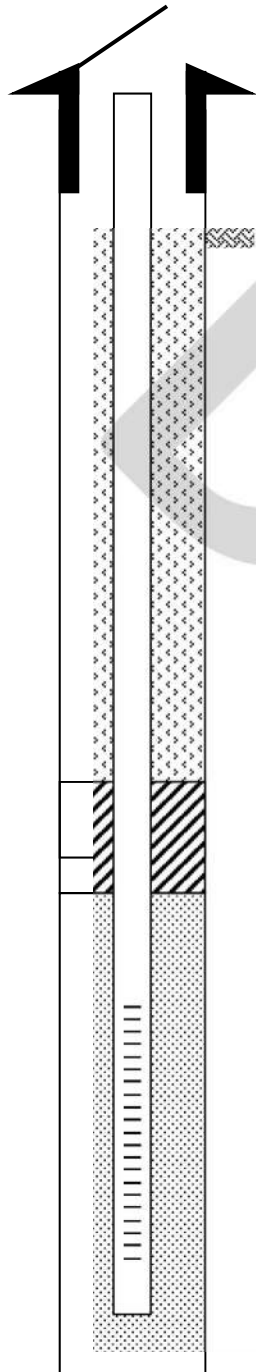
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Bellingham, WA 98225
(360) 752-9571

MW-3

Ecology Well ID:

BKF-625

Well Design Specifications



Not to Scale

Elevations (feet): Top of Casing: 12.90 ft
Mean Sea Level (MSL) Ground Elevation: 13.30 ft

Coordinates: 563970.725 E 1115384.588 N

Coordinate System:

Type of Casing: PVC (Pre-Packed Well Screen)

Casing Diameter: 2 inches

Screen Slot: 0.01 inch

Screen Style: Machine cut

Sand Pack: 2/12 Silica

Bentonite Seal: Medium Chip

Grout Type: N/A **Weight:**

Bore Hole Diameter: 4.0 inches

Drill Rig: GeoProbe

Drilled by: Kyle Ceruti - Cascade Drilling

Logged by: Thom Davis - Whatcom Env.

Completion Date: 7/31/2018

Date of Measurement	D-T-W (ft. bgs)	Water Level (ft. MSL)	Field pH	Field EC (mS/cm)
8/28/2018	8.09	4.81	7.99	0.351

Comments:

Project: Jensen's Shipyard Assessment

Location: Esatern corner of the OPALCO Pad

Whatcom Environmental Services

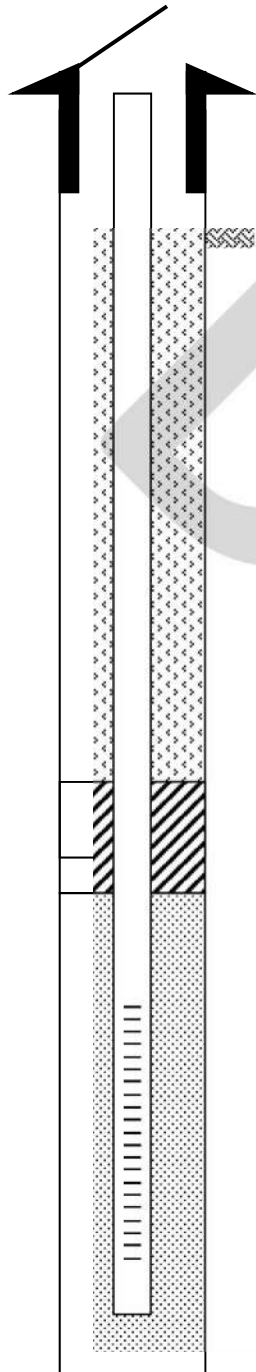
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(360) 752-9571

MW-4

Ecology Well ID:

BKF-622

Well Design Specifications



Elevations (feet): Top of Casing: 15.89 ft
Mean Sea Level (MSL) Ground Elevation: 16.20 ft

Coordinates: 563912.3454 E 1115827.778 N

Coordinate System:

Type of Casing: PVC (Pre-Packed Well Screen)

Casing Diameter: 2 inches

Screen Slot: 0.01 inch

Screen Style: Machine cut

Sand Pack: 2/12 Silica

Bentonite Seal: Medium Chip

Grout Type: N/A **Weight:**

Bore Hole Diameter: 4.0 inches

Drill Rig: GeoProbe

Drilled by: Kyle Ceruti - Cascade Drilling

Logged by: Thom Davis - Whatcom Env.

Completion Date: 8/1/2018

Depths in
Feet Below
Ground
Surface

Date of Measurement	D-T-W (ft. bgs)	Water Level (ft. MSL)	Field pH	Field EC (mS/cm)
8/29/2018	10.81	5.08	7.42	0.513

Comments:

Project: Jensen's Shipyard Assessment

Location: In grass east of shipyard

Not to Scale

Whatcom Environmental Services

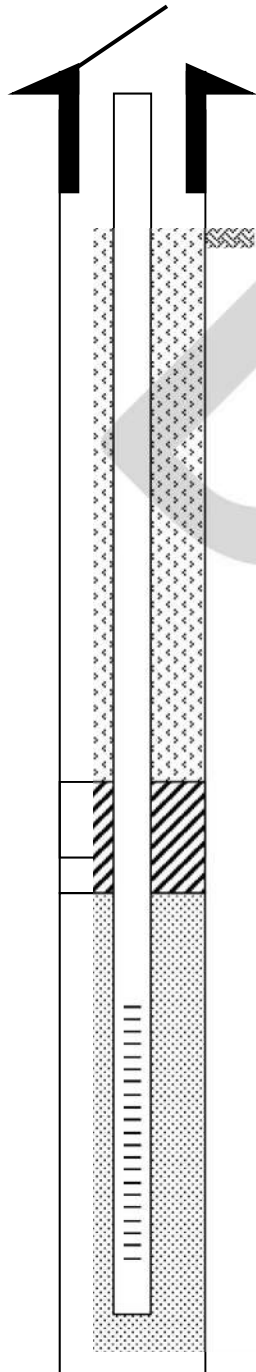
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 Bellingham, WA 98225
 (360) 752-9571

MW-5

Ecology Well ID:

BKF-624

Well Design Specifications



Not to Scale

Elevations (feet): Top of Casing: 33.69 ft
Mean Sea Level (MSL) Ground Elevation: 34.30 ft

Coordinates: 563762.4971 E 1115680.978 N

Coordinate System:

Type of Casing: PVC (Pre-Packed Well Screen)

Casing Diameter: 2 inches

Screen Slot: 0.01 inch

Screen Style: Machine cut

Sand Pack: 2/12 Silica

Bentonite Seal: Medium Chip

Grout Type: N/A **Weight:**

Bore Hole Diameter: 4.0 inches

Drill Rig: GeoProbe

Drilled by: Kyle Ceruti - Cascade Drilling

Logged by: Thom Davis - Whatcom Env.

Completion Date: 7/31/2018

Date of Measurement	D-T-W (ft. bgs)	Water Level (ft. MSL)	Field pH	Field EC (mS/cm)
8/29/2018	28.62	5.07	-	-

Comments:

Project: Jensen's Shipyard Assessment

Location: Upper Parking Lot - Background well

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MW-6

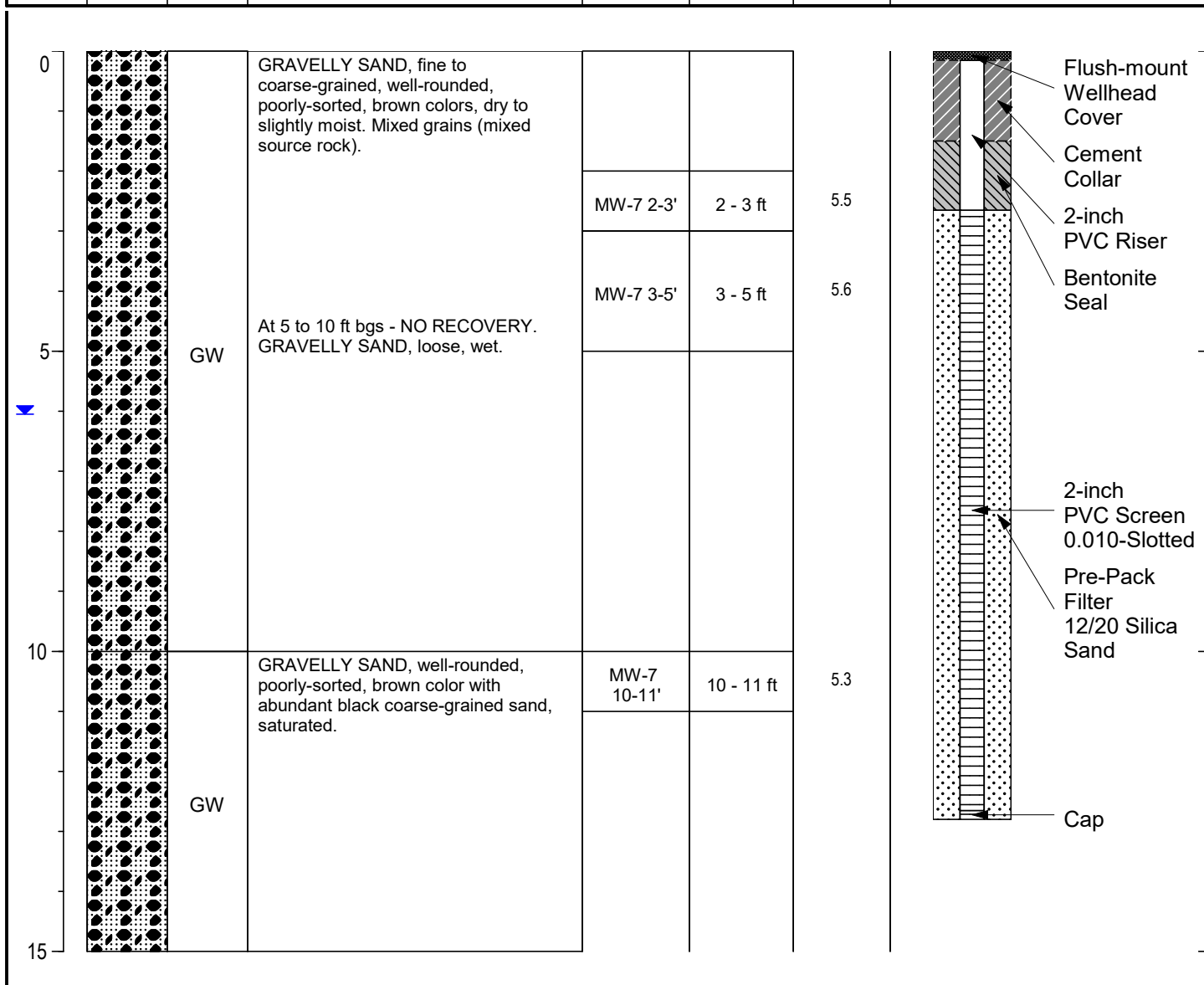
Ecology Well ID:

BKF-623

WELL LOG

BORING/WELL ID: **MW-7**
INSTALLED DEPTH: **12.85-ft bgs**

PROJECT INFORMATION				DRILLING INFORMATION				
PROJECT: Jensen & Sons Shipyard and Marina				DRILLING CO.: Holt Services/Michael Running				
SITE LOCATION: 1293 Turn Point Road Friday Harbor, WA				DRILLING METHOD: Hollow Stem Auger				
LOGGED BY: Rusty Jones				EQUIPMENT TYPE: Geoprobe 7822 DT Macrocore				
PROJECT MANAGER: G. Hainsworth				SAMPLING METHOD: MC5 5-ft cores				
DATES DRILLED/INSTALLED: 7/27/2022				TOC Elevation 8.87 ft MLLW				
LATITUDE: 48.525961° N				DRILLED DEPTH: 15-ft bgs				
LONGITUDE: 122.99990417° W				INITIAL WATER DEPTH: ~5-ft bgs				
				SCREENED INTERVAL: 2.6-12.6 ft bgs				
DEPTH	SOIL LOG	USCS	DESCRIPTION	SAMPLE ID	SAMPLE DEPTH (ft bgs)	PID (ppm) DPT	WELL CONSTRUCT.	WELL DESC.



NOTES: Installed adjacent to shoreline. Lithology logged from split spoon core samples.
Washington Department of Ecology Well ID BPK-577



Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

- ☒ Construction
☐ Decommission $\Rightarrow$ Original NOI No. _____

Ecology Well ID Tag No. BRK 577

Site Well Name _____

Consulting Firm Crete

Was a variance approved for this well/boring? ☐ Yes ☐ No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

☒ Driller ☐ Trainee ☐ Engineer

Name (Print Last, First Name) Running Michael

Driller/Engineer/Trainee Signature [Signature]

License No. 3905

Company Name Nolt Geosia Inc

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. DE23242

Type of Well:

- ☒ Resource Protection Well ☐ Injection Point
☐ Remediation Well ☐ Grounding Well
☐ Geotechnical Soil Boring ☐ Ground Source Heat Pump
☐ Environmental Boring ☐ Other _____

☒ Soil- ☐ Vapor- ☐ Water-sampling

Property Owner Pt. of Friday Harbor

Well Street Address 1000 1/2 Turn Point Rd

City Friday Harbor County San Juan

Tax Parcel No. _____

Location (see instructions):

WWM ☐ or EWM ☐

SW 1/4-1/4 NE 1/4, Section 13 Town 35N Range 3W

Latitude (Example: 47.12345) 48.526004

Longitude (Example: -120.12345) -122.9999230

(WGS 84 Coordinate System)

Borehole diameter 4.25 inches Casing diameter 2 inches

Static water level 5 ft below top of casing Date 7/27/22

☐ Above-ground completion with bollards ☒ Flush monument

☒ Stick-up of top of well casing _____ ft above ground surface

Start Date 7/27/22 Completed Date 7/28/22

Construction/Design

Well Data

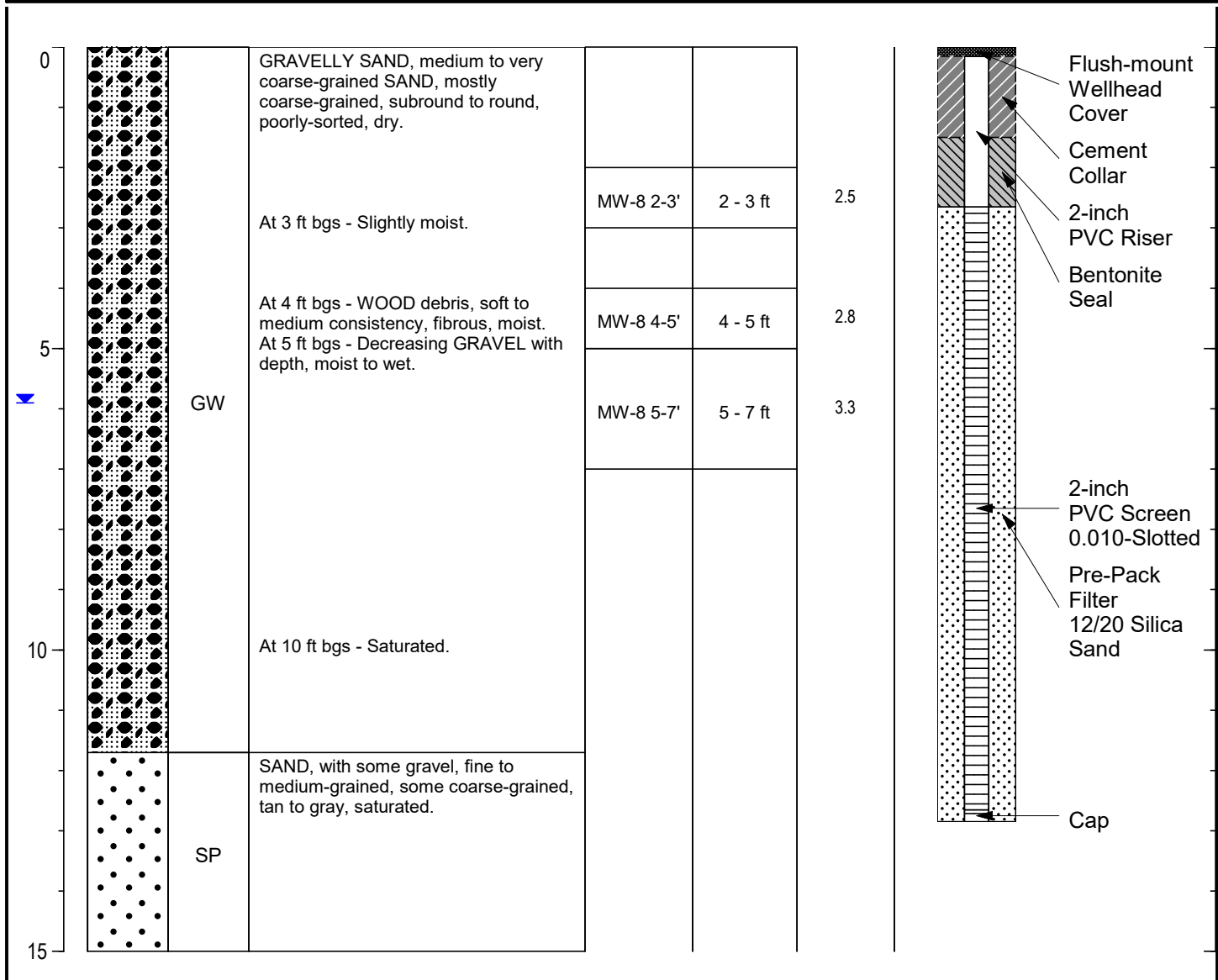
Formation Description

	MONUMENT TYPE: <u>9" Augh</u>	<u>0 - 5 ft.</u> sand & gravel
	CONCRETE SURFACE SEAL <u>1 ft.</u>	<u>5 - 10 ft.</u> sand w/ coarse gravel
	PVC BLANK <u>2" x 3'</u>	<u>10 - 15 ft.</u> silty sand and gravel
	BACKFILL <u>1.5 ft.</u> TYPE: <u>Medium Bentonite</u> <u>Chips</u>	
	PVC SCREEN <u>2" x 10'</u> SLOT SIZE: <u>10</u> TYPE: _____	
	GRAVEL PACK <u>10.5 ft.</u> MATERIAL: <u>12-20</u> <u>Silica Sand</u>	
	WELL DEPTH <u>13'</u>	
	REMARKS	

WELL LOG

BORING/WELL ID: **MW-8**
INSTALLED DEPTH: **12.80-ft bgs**

PROJECT INFORMATION				DRILLING INFORMATION				
PROJECT: Jensen & Sons Shipyard and Marina				DRILLING CO.: Holt Services/Michael Running				
SITE LOCATION: 1293 Turn Point Road Friday Harbor, WA				DRILLING METHOD: Hollow Stem Auger				
LOGGED BY: Rusty Jones				EQUIPMENT TYPE: Geoprobe 7822 DT Macrocore				
PROJECT MANAGER: G. Hainsworth				SAMPLING METHOD: MC5 5-ft cores				
DATES DRILLED/INSTALLED: 7/28/2022				TOC Elevation 9.39 ft MLLW				
LATITUDE: 48.52586639° N				DRILLED DEPTH: 15-ft bgs				
LONGITUDE: 122.99955889° W				INITIAL WATER DEPTH: 6-ft bgs				
				SCREENED INTERVAL: 2.6-12.6 ft bgs				
DEPTH	SOIL LOG	USCS	DESCRIPTION	SAMPLE ID	SAMPLE DEPTH (ft bgs)	PID (ppm) DPT	WELL CONSTRUCT.	WELL DESC.





Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

☒ Construction

☐ Decommission $\Rightarrow$ Original NOI No. _____

Ecology Well ID Tag No. BPK 578

Site Well Name _____

Consulting Firm Crete

Was a variance approved for this well/boring? ☐ Yes ☐ No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

☒ Driller ☐ Trainee ☐ Engineer

Name (Print Last, First Name) Runnins Michael

Driller/Engineer/Trainee Signature [Signature]

License No. 3205

Company Name Molt Serial Inc

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. DE23242

Type of Well:

☒ Resource Protection Well

☐ Remediation Well

☐ Geotechnical Soil Boring

☐ Environmental Boring

☐ Injection Point

☐ Grounding Well

☐ Ground Source Heat Pump

☐ Other _____

☒ Soil- ☐ Vapor- ☐ Water-sampling

Property Owner Pt of Friday Harbor

Well Street Address 1000000 Turn Point Rd

City Friday Harbor County San Juan

Tax Parcel No. _____

Location (see instructions):

WWM ☐ or EWM ☐

SW $\frac{1}{4}$ - $\frac{1}{4}$ NE $\frac{1}{4}$, Section 13 Town 35n Range 3w

Latitude (Example: 47.12345) 48.5260774

Longitude (Example: -120.12345) -123.0011354

(WGS 84 Coordinate System)

Borehole diameter 4.25 inches Casing diameter 2 inches

Static water level 5 ft below top of casing Date 7/27/22

☐ Above-ground completion with bollards ☒ Flush monument

☒ Stick-up of top of well casing _____ ft above ground surface

Start Date 7/27/22 Completed Date 7/28/22

Construction/Design

Well Data

Formation Description

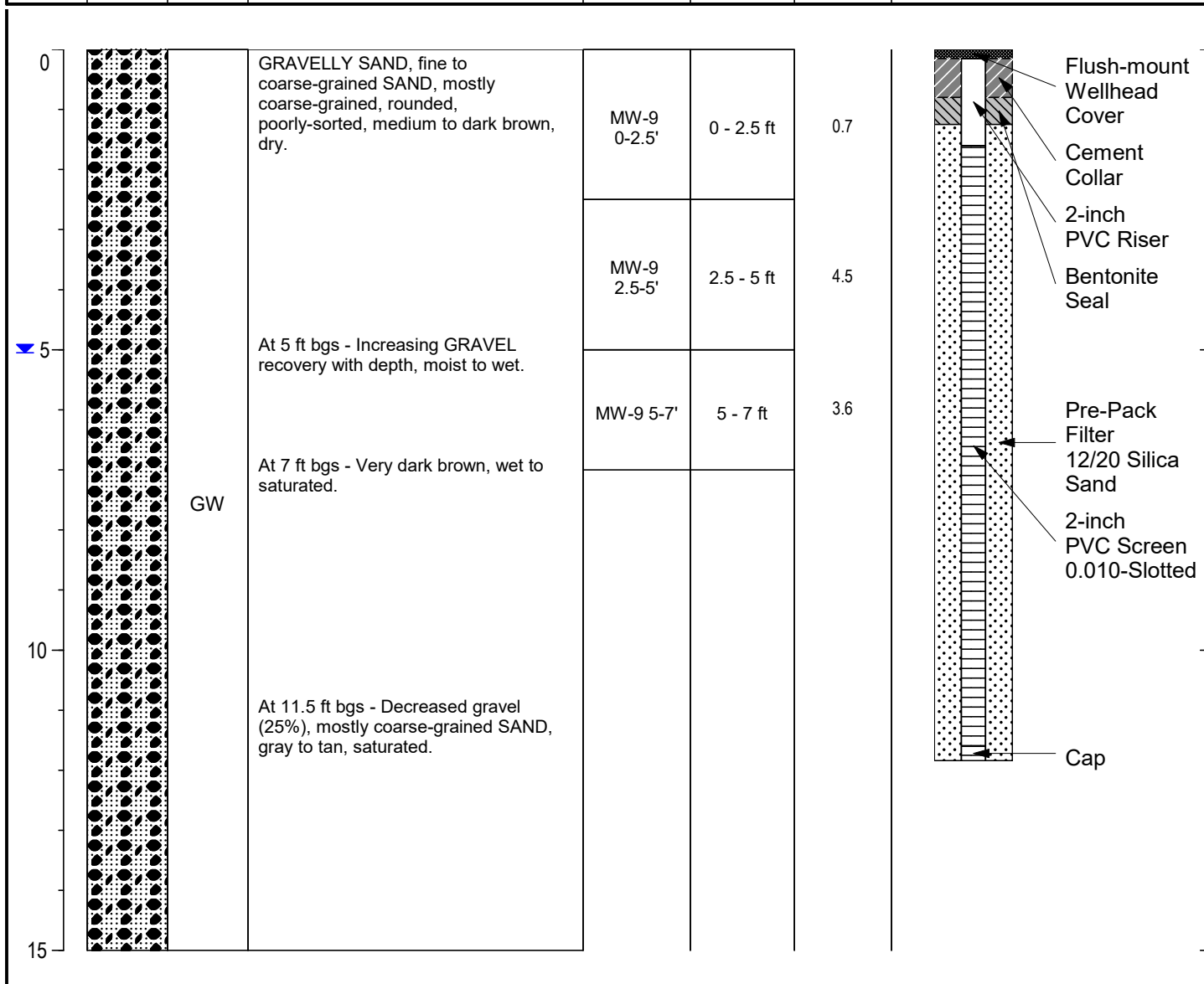
	MONUMENT TYPE:	<u>9" Flush</u>
	CONCRETE SURFACE SEAL	<u>1 ft</u>
	PVC BLANK	<u>2" x 3'</u>
	BACKFILL	<u>1.5 ft</u>
	TYPE:	<u>Medium Bentonite Chips</u>
	PVC SCREEN	<u>2" x 10'</u>
	SLOT SIZE:	<u>.10</u>
	TYPE:	
	GRAVEL PACK	<u>10.5 ft</u>
	MATERIAL:	<u>12-20 Silica Sand</u>
WELL DEPTH <u>13</u> ft		
Formation Description		
<u>0 - 5 ft</u> <u>sand & gravel</u>		
<u>5 - 10 ft</u> <u>sand w/ coarse gravel</u>		
<u>10 - 15 ft</u> <u>silty sand and gravel</u>		
<u>- ft</u>		
<u>- ft</u>		
REMARKS		

WELL LOG

BORING/WELL ID: **MW-9**
INSTALLED DEPTH: **11.84-ft bgs**

PROJECT INFORMATION				DRILLING INFORMATION			
PROJECT: Jensen & Sons Shipyard and Marina				DRILLING CO.: Holt Services/Michael Running			
SITE LOCATION: 1293 Turn Point Road Friday Harbor, WA				DRILLING METHOD: Hollow Stem Auger			
LOGGED BY: Rusty Jones				EQUIPMENT TYPE: Geoprobe 7822 DT Macrocore			
PROJECT MANAGER: G. Hainsworth				SAMPLING METHOD: MC5 5-ft cores			
DATES DRILLED/INSTALLED: 7/27/2022				TOC Elevation 9.34 ft MLLW			
LATITUDE: 48.52584028° N				DRILLED DEPTH: 15-ft bgs			
LONGITUDE: 122.99919278° W				INITIAL WATER DEPTH: ~5-ft bgs			
				SCREENED INTERVAL: 1.6-11.6 ft bgs			

DEPTH	SOIL LOG	USCS	DESCRIPTION	SAMPLE ID	SAMPLE DEPTH (ft bgs)	PID (ppm) DPT	WELL CONSTRUCT.	WELL DESC.
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Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

☒ Construction

☐ Decommission $\Rightarrow$ Original NOI No. _____

Ecology Well ID Tag No. BPK 576

Site Well Name _____

Consulting Firm Crete

Was a variance approved for this well/boring? ☐ Yes ☐ No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

☒ Driller ☐ Trainee ☐ Engineer

Name (Print Last, First Name) Running Michael

Driller/Engineer/Trainee Signature [Signature]

License No. 3205

Company Name Molt Service Inc

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. PE23242

Type of Well:

☒ Resource Protection Well

☐ Remediation Well

☐ Geotechnical Soil Boring

☐ Environmental Boring

☐ Soil- ☐ Vapor- ☐ Water-sampling

☐ Injection Point

☐ Grounding Well

☐ Ground Source Heat Pump

☐ Other _____

Property Owner Pt. of Friday Harbor

Well Street Address 1000000 Turn Post Rd

City Friday Harbor County San Juan

Tax Parcel No. _____

Location (see instructions):

WWM ☐ or EWM ☐

SW $\frac{1}{4}$ - $\frac{1}{4}$ NE $\frac{1}{4}$, Section 13 Town 35N Range 3W

Latitude (Example: 47.12345) 48.5260774

Longitude (Example: -120.12345) -123.0011354

(WGS 84 Coordinate System)

Borehole diameter 4.25 inches Casing diameter 2 inches

Static water level 5 ft below top of casing Date 7/27/22

☐ Above-ground completion with bollards ☒ Flush monument

☒ Stick-up of top of well casing _____ ft above ground surface

Start Date 7/27/22 Completed Date 7/28/22

Construction/Design

Well Data

Formation Description

	MONUMENT TYPE:	<u>9" Plug</u>
	CONCRETE SURFACE SEAL	<u>1 ft</u>
	PVC BLANK	<u>2" x 3"</u>
	BACKFILL	<u>1.5 ft</u>
	TYPE:	<u>Medium Bentonite Chips</u>
	PVC SCREEN	<u>2" x 10"</u>
	SLOT SIZE:	<u>10</u>
	TYPE:	_____
	GRAVEL PACK	<u>10.5 ft</u>
	MATERIAL:	<u>12-20 Silica Sand</u>
WELL DEPTH <u>13</u> ft		
FORMATION DESCRIPTION		
<u>0 - 5 ft</u> <u>Sand & gravel</u>		
<u>5 - 10 ft</u> <u>Sand w/ coarse gravel</u>		
<u>10 - 15 ft</u> <u>silty sand and gravel</u>		
_____ ft		
_____ ft		
_____ ft		
REMARKS		

Project: Jensen's Marina		Project Number: Agreed Order DE18071		Boring No. SWP-1			
Location: 1293 Turn Point Road, Friday Harbor WA		Client: Port of Friday Harbor		Sheet 1 of 1			
Logged By: Rusty Jones (CRETE)		Started: 7/25/2022 1100		Tooling: MacroCore MC5		Drilling Contractor: Holt Services	
Drill Crew: Michael Running		Completed: 7/25/2022 1155				Borehole Diameter: ~2" 3/4" PVC	
USA Ticket Number:		Backfilled: Bentonite Chips		Hammer Type/Weight:		Drill Rig Type: GeoProbe T822 RT	
		Groundwater Depth (ft bgs): ~9 (very approximate)				Total Depth of Boring (ft bgs): 15	
Depth (feet)		Sample Depth		PID (ppm)		Blow Counts (blows/feet)	
Sample ID, Depth, Time		Lithology/Notes					
		No distinct horizons or lithology variability					
0-5'		0.5'		0.7		45%	
5-10'		5.8		0.8		15%	
10-15'		6.8		0.8		70%	
5-10'		10-12'		1140		1140	
		0-5' Mixed Fill, sandy gravel, well-rounded, med.-dk brown, med.-c.g., dry-sli. moist					
		5-10' v. Poor REC. SAA, dry-sli. moist					
		10-12' SAA or slough, sl. moist					
		~12' moist to wet					
		~13' Inc. Gravel, dec. c.g. sand, wet GRAVEL w/ c.g. sand,					
		PVC temp well 3/4" Screened 5-15', no filter pack					
		- would go dry w/ per. pump readily, but wait 1-2 minutes to recharge					
		- Collected filtered & unfiltered metals					
		- DW @ ~9' bgs in PVC @ very end					

Project: Jensen's Marina		Project Number: Agreed Order DE18071		Boring No. AST-Z		
Location: 1293 Turn Point Road, Friday Harbor WA				Client: Port of Friday Harbor		
Logged By: Rusty Jones (CRETE)				Tooling: Macrocore MCS		
Drill Crew: Michael Running		Date	Started: 7.26.22 0730		Drilling Contractor: Holt Services	
USA Ticket Number:			Completed: 7.26.22 0845		Borehole Diameter: 2+ "	
		Backfilled: Bentonite Chips		Hammer Type/Weight:		Drill Rig Type: Geoprobe 7822 DT
Rec %		Groundwater Depth (ft bgs): 8.7 @ 0845				Total Depth of Boring (ft bgs): 15

Depth (feet)	Sample Depth	PID (ppm)	Blow Counts (blows/foot)	Sample ID, Depth, Time	Lithology/Notes
0-5'	0-2.5'	0.4	50%	AST-Z @ 0830 10+2	0-5' Poor Recovery Gravelly SAND, poorly-sorted, med-cq, well-rounded, med-dk brown, dry - sl. moist
5-10'	2.5-5'	0.5	50%	AST-Z @ 0830 10+2	5-10' S&A mostly 5-8' S&A, sl. moist @ 8-9' moist, inc. organic fines (minor) dk brown-black, 9-10' dk brown-black, no odor, moist to wet V. faint HC odor
10-15'	5-7.5'	0.9	85%	AST-Z @ 0830 10+2	10-15' Gravelly Sand, med-cq, poorly-sorted, well-rounded, GRAY, wet, faint hydrocarbon odors
10-12'	7.5-10'	41.2	25.4	AST-Z @ 0830 10+2	Grab sample pre-purged ~1-2 gal. PVC 3/4" Screen @ 4-14' Duplicate for TPH-Dx -Gx — DUP-220726- Low RS @ 0730 1-grab WQM reading after sampling temp 18°C DO 1.37 mg/L SPC 550 µS/cm TDS 358 mg/L PH 7.89 ORP -162.3 mV NTU 92.52 NTU

Project: Jensen's Marina		Project Number: Agreed Order DE18071		Boring No. AST-3				
Location: 1293 Turn Point Road, Friday Harbor WA		Client: Port of Friday Harbor		Sheet 1 of 1				
Logged By: Rusty Jones (CRETE)		Date	Started: 7.28.22 1035		Tooling: Macrocore MC5		Drilling Contractor: Holt Services	
Drill Crew: Michael Running			Completed: 7.28.22 1150				Borehole Diameter: 2+ inches	
USA Ticket Number:			Backfilled: Bentonite chips		Hammer Type/Weight:		Drill Rig Type: Geoprobe 7822 DT	
		Groundwater Depth (ft bgs): ~6.55 @ 1143		Total Depth of Boring (ft bgs): 15				

Depth (feet)	Sample Depth	PID (ppm)	Rec. %	Blow Counts (blows/foot)	Sample ID, Depth, Time	Lithology/Notes
0-5'	2-4'	4.8	50%		1110	1 x 0-5' DPT core
5-10'	4-5'	3.9	70%		1115	20-4' GRAVELLY SAND, fq-veg, mostly med-cg, poorly-sorted subrd-rd, dry-sl. moist, ~1.5" dia @ ~1.5-2' large wood (3-4" thick)
10-15'	5-7'	6.1	95%		1120	4-5' SAND, some Gravel, black, fq-cg (fq-med. mostly), moist-wet, rd, 3.1 cm dia, v. faint HC odor, fq organics
	8-10'	4.0			1120	5-10' SAT, dk brown-black, moist-wet, minor woody debris, v. faint reducing odors, fq organics
	10-12'	4.2			1130	10-15' SAT, dec. Gravel, smaller gravel, sat dk gray
						Grab GW sample from temp well 3/4" PVC screened 3.5-13.5' bgs no filter pack ~2-2.5-gal. pre-purged 1-grab WQAM reading: 18.3 °C DO 2.15 ↓ mg/L spc 1952 µS/cm TDS 1269 mg/L pH 9.41 ORP -58.2 mV Turb 143 NTU

Project: Jensen's Marina		Project Number: Agreed Order DE18071		Boring No. AST-4		 Sheet 1 of 1		
Location: 1293 Turn Point Road, Friday Harbor WA				Client: Port of Friday Harbor				
Logged By: Rusty Jones (CRETE)		Date	Started: 7.29.22 0645		Tooling: Hand auger		Drilling Contractor: Holt Services RS	
Drill Crew: NONE			Completed: 7.29.22 0800		4" sand bucket		Borehole Diameter:	
USA Ticket Number:			Backfilled: Soil cuttings		Hammer Type/Weight:		Drill Rig Type: N/A	
Groundwater Depth (ft bgs): N/A				Total Depth of Boring (ft bgs): 5				

Depth (feet)	Sample Depth	PID (ppm)	Blow Counts (blows/foot)	Sample ID, Depth, Time	Lithology/Notes
			100%		No appreciable odors other than septic-related
4-5'	3-4'	1.9	1.7	4-5' 3-4' 0755	Hand auger buckets ~2 buckets / 0.5' depth SAND w/ GRAVEL, fq-vcq, mostly med.-cg, subrd to rd grains of gravel, sl. moist, ≤3" gravel observed topsoil organics ~0-1' @ ~2' increase gray-black organics possibly staining BUT no appreciable odors associated w/ black packets @ ~3-3.5' + Bec. med. gray Faint fetid or reducing odors (adjacent septic system) 4-5' Gray-black, sl. moist to moist
	2.5-3'	3.5	2.5	2.5-3' 0750	
	2-2.5'	7.6	0.6	2-2.5' 0745	
	1-2'			1-2' 0-1'	
	0-1'			0-1'	

Project: Jensen's Marina		Project Number: Agreed Order DE18071		Boring No. SFD-4		
Location: 1293 Turn Point Road, Friday Harbor WA				Client: Port of Friday Harbor		
Logged By: Rusty Jones (CRETE)				Tooling: Macrocore MCS		
Drill Crew: Michael Running		Date	Started: 1/25/2022 1300		Drilling Contractor: Holt Services	
USA Ticket Number:			Completed: 1/25/2022 1350		Borehole Diameter: 2+ "	
			Backfilled: Bentonite chips		Hammer Type/Weight:	
			Groundwater Depth (ft bgs): ~9 (very approximate)		Drill Rig Type: GeoProbe 7822 DT	
					Total Depth of Boring (ft bgs): 15 ft	

Depth (feet)	Sample Depth	PID (ppm)	Rec. %	Blew Counts (blows/foot)	Sample ID, Depth, Time	Lithology/Notes
	0-1.5'	0.5	40%		0-1.5' 1310	0-5' PER RECOVER. C.G. sandy GRAVEL, dry-sl. moist, med-dk brown, well-rounded, up to 1.5" gravel
	1.5-3'	0.4			1.5-3' 1315	5-10' Gravelly sand, med-cg, sl. moist, moist by 8' med-dk brown
	3-5'	0.3			3-5' 1320	10-15' SAA, wet, dk brown @ ~12.5/13-15' dk gray
	5-10'	0.5	35%		5-10' 1325	Installed temp well 5-15' (screen)
	10-15'	—	45%		10-15' 1335	1335 Grab GW sample for NWTPH-Gx, -Dx, metals,
					SFD-4 5-15' 1335	

Project: Jensen's Marina		Project Number: Agreed Order DE18071		Boring No. BLWA-10		
Location: 1293 Turn Point Road, Friday Harbor WA				Client: Port of Friday Harbor		
Logged By: Rusty Jones (CRETE)		Date Started: 7.28.22 0710		Tooling: Macrocore MCS		
Drill Crew: Michael Running		Date Completed: 7.28.22 0745				Drilling Contractor: Holt Services
USA Ticket Number:		Backfilled: Bentonite chip		Hammer Type/Weight:		Borehole Diameter: 2+ inches
Re %		Groundwater Depth (ft bgs):				Drill Rig Type: Geoprobe TB22 DT
						Total Depth of Boring (ft bgs): 15

Lithology/Notes

No observed odors, staining, or artificial debris

Depth (feet)	Sample Depth	PID (ppm)	Blow Counts (blows/foot)	Sample ID, Depth, Time	Lithology/Notes
0-5'	0-1'	2.3	20% 35%	0-1' 0740	2 x 0-5' DPT cores 20, 35% Rec POOR RECOVERY
5-6'	1-3'	3.7	45%	1-3' 0745	0-5' GRAVELLY SAND, dry, med-veg, poorly-sorted sub to rounded; 51.5" dia gravel (variable source rock) disturbed FILL
6-7'	3-5'	5.9	80%	3-5' 0750	5-6.5' SAA, sl. moist, dec. sand in core
7-8'	5-6'	1.3		5-6' 0755	6.5-10' SANDY GRAVEL (GRAVELLY SAND) c9-veg, 52 cm dia wet-sat., sub-rd dk brown / some organics 7-9'
8-9'					10-11.5' SAA
9-10'					11.5-15' SAND, w/ GRAVEL dec. gravel, tan-gray, saturated sub-rd, fq-c9 (dec. grain size), sand is better sorted

7/28/2022 @ 1601 TO 11.81' BTOC DTW N/A post-development F

Project: Jensen's Marina		Project Number: Agreed Order DE18071		Boring No. BLWA-11		
Location: 1293 Turn Point Road, Friday Harbor WA				Client: Port of Friday Harbor		
Logged By: Rusty Jones (CRETE)		Started: 7.25.2022 1505		Tooling: MacroCore MCS		
Drill Crew: Michael Running		Date	Completed: 7.25.2022 1615		Drilling Contractor: Holt Services	
USA Ticket Number:			Backfilled: Bentonite chips		Borehole Diameter: 2+"	
		Groundwater Depth (ft bgs): ~6.2' bgs @ 1605		Hammer Type/Weight:		Drill Rig Type: GeoProbe 7822 DT
				Total Depth of Boring (ft bgs): 15		

Depth (feet)	Sample Depth	PID (ppm)	Rel. %	Blow Counts (blows/foot)	Sample ID, Depth, Time	Lithology/Notes
0-5'	0-5'	0-2.5'	45%	12.4	57' 0-2.5' 1525	0-5' GRAVELLY SAND, med.-cq @ 0-2' trace roots, dry, light-med. brown, well-rounded, 2-4' sl. moist @ 3' rust-red sand layer @ 4' black sand layer, cq sand
5-10'	5-10'	5-7'	55%	16.2	57' 2.5-5' 1530	5-10' SAA, med-dk brown, med-cq, wet by 7'
10-15'			70%		57' 1535	10-13' SLOUGH (dry) 13-15 Sandy Gravel, mostly cq, wet-sat, dk brown - dk gray, well-rounded, gravel up to 1.25"
					BLWA-11 @ 1650 1550	Grab Gw sample 16+4 bottles Pre-purged ~3-4 gal. (recharged very well) ran mostly clear by sampling time

Project: Jensen's Marina		Project Number: Agreed Order DE18071		Boring No. BLWA-12		 Sheet 1 of 1
Location: 1293 Turn Point Road, Friday Harbor WA				Client: Port of Friday Harbor		
Logged By: Rusty Jones (CRETE)		Started: 7.25.22 1405		Tooling: Macrocore MCS		
Drill Crew: Michael Running		Date	Completed: 7.25.22 1435		Drilling Contractor: Holt Services	
USA Ticket Number:			Backfilled: Bentonite chips		Borehole Diameter: 2+ "	
		Groundwater Depth (ft bgs):		Drill Rig Type: GeoProbe 7822 DT		Total Depth of Boring (ft bgs): 15
Rec %						

Depth (feet)	Sample Depth	PID (ppm)	Blow-Counts (blows/foot)	Sample ID, Depth, Time	Lithology/Notes
	0-5'	7.5	0-5' 40%	0-2' 1435 0.2	0-5' POOR RECOVERY. GRAVELLY SAND, dry, med-cg, poorly-sorted, well-rounded
	5-10'	0.8	5-10' 45%	3-5' 1435 0.8	5-10' POOR RECOVERY ~5-6' silt, sl moist ~6-8' becoming moist, silt @ ~8' CLAYEY SILT, w/ fq-med SAND, dk tan, moist-wet
	10-15'	0.4	10-15' 80%	5-7' 1435 0.4	9-10' GRAVELLY SILTY SAND, fq-med, black, abundant organics, minor small roots, wet @ ~9' minor wood seam, roots, wet, black
					10-15' decent Rec. 10-11.5' Gravelly sand, saturated, dk brown, well-rounded 11.5-15' med-cg, sandy GRAVEL, DK-GRAV, wet-saturated, well-rounded
					No Groundwater sample

Project: Jensen's Marina		Project Number: Agreed Order DE18071		Boring No. BLWA-13		CRETE CONSULTING, INC. Sheet 1 of 1
Location: 1293 Turn Point Road, Friday Harbor WA				Client: Port of Friday Harbor		
Logged By: Rusty Jones (CRETE)		Started: 7.27.22 0715		Tooling: Macrocore MCS		
Drill Crew: Michael Running		Date	Completed: 7.27.22 0822		Drilling Contractor: Holt Services	
USA Ticket Number:			Backfilled:		Borehole Diameter: 2+ inches	
			Hammer Type/Weight:		Drill Rig Type: Geoprobe 7822 BT	
			Groundwater Depth (ft bgs):			Total Depth of Boring (ft bgs):

Depth (feet)	Sample Depth	PID (ppm)	Blow Counts (blows/foot)	Sample ID, Depth, Time	Lithology/Notes
0-5'	0-2'	0.4	40% 45 35 40	0-2' 0740	No odors, no staining, no artificial debris observed No shells, no obvious contamination impacts
5-10'	3-5'	0.4	60% 45 35 40	3-5' 0750	0-5' GRAVELLY SAND, med-cg, well-rounded, browns, dk brown, sl. moist, poor RECOVERY
10-15'	5-8'	0.4	80% 45 35 40	5-8' 0800	~1' SLOUGH, SAA 5-8' SAA, more GRAVEL, less sand in core, wet ~8-10 SAND, black-dk brown, moist - wet, med. -cg, minor gravel, well-rounded
	8-10'	0.4	80% 45 35 40	8-10' 0810	~10-12.5' SAA (5-8') GRAVEL w/ SAND, slough? saturated ~12.5-15' SAA 8-10' SAND, saturated
				Grab Gwl sample from temporary, well 3/4" PVC, screen ~5-15' No filter pack Recharge nicely, but moderately turbid 1 x 1 Lumber for cPAPs or PCB duplicate No worm or ganging	

Project: Jensen's Marina		Project Number: Agreed Order DE18071		Boring No. SRWA-8				
Location: 1293 Turn Point Road, Friday Harbor WA		Client: Port of Friday Harbor		Sheet 1 of 1				
Logged By: Rusty Jones (CRETE)		Date	Started: 7.26.22 1305		Tooling: Macrocore MCS		Drilling Contractor: Holt Services	
Drill Crew: Michael Running			Completed: 7.26.22 1340				Borehole Diameter: 2 1/2 inches	
USA Ticket Number:			Backfilled: Bentonite chips		Hammer Type/Weight:		Drill Rig Type: Geoprobe 7822 DT	
		Groundwater Depth (ft bgs):				Total Depth of Boring (ft bgs): 10		
Depth (feet)	Sample Depth	PID (ppm)	Blow Counts (blows/foot) %	Sample ID, Depth, Time	Lithology/Notes			
0-5'	0-1'	1.6	60%, 65%	0-1' 1330	2 x 0-5' DPT pushes, 100%, 65% recovery Some GRASS at surface, minor roots 0-1' SAND w/ Gravel (some), well-rounded, vfg-med, mostly fg med. brown, sl. moist 1-5' SAA, minor variable GRAVEL, sl moist-moist, firm 5-10', SAA, SAND, vfg-fg mostly, minor med. dense sl. moist-moist, brown, minor-some GRAVEL, well * Jammed core barrel (dense) * No wet cuttings observed to 10' bgs			
5-10'	4-5'	1.8	75%	4-5' 1350				
	2-3'	1.7		2-3' 1340				

Project: Jensen's Marina		Project Number: Agreed Order DE18071		Boring No. SRWA-9			
Location: 1293 Turn Point Road, Friday Harbor WA				Client: Port of Friday Harbor			
Logged By: Rusty Jones (CRETE)		Started: 7.26.2022 1445		Tooling: Macrocore M65		Drilling Contractor: Holt Services	
Drill Crew: Michael Running		Completed: 7.26.2022 1645				Borehole Diameter: 2+ inches	
USA Ticket Number:		Backfilled: Bentonite chips		Hammer Type/Weight:		Drill Rig Type: Geoprobe 7822 DT	
		Groundwater Depth (ft bgs):				Total Depth of Boring (ft bgs): 15	

Depth (feet)	Sample Depth	PID (ppm)	Blew Counts (blows/foot)	Sample ID, Depth, Time	Lithology/Notes
0-5'	0-2.5'	2.2	45%	0-2.5' 2.2	temporary well in "lowland" area by old boat building structure in area where old barge was anecdotally/reported shored and "buried"
5-10'	2.5-5'	2.2	50%	2.5-5' 2.2	0-5' 2 DPT pushes 45-50% GRASS @ surface 0-5' POOR RECOVERY GRAVELLY SAND, dry, loose-med. dense, weathered rocks easily fractured w/ DPT
10-15'	5-10'	2.2	80%	5-10' 2.2	5-10' 2.5-1' slough SAND, fq-med, moist to wet, dk brown, minor-some well-rd gravel, <1" dia' rusty brown mottling (pockets & seams) throughout sampler jammed briefly (dense material, squished liner)
			90-100%	SRWA-9 @ 1545 6+4	Grab water from temp. well 3/4" PVC screened 3-13' bgs (13-15' collapsed prior to PVC insert) POOR RECHARGE → TOOK TO 1645 TO OBTAIN H ₂ O for bottle (2+ hour) INSUFFICIENT WATER FOR SPEC/COND./TEMP visually very turbid, no recharge to clear

Project: Jensen's Marina		Project Number: Agreed Order DE18071		Boring No. SRWA-10		
Location: 1293 Turn Point Road, Friday Harbor WA				Client: Port of Friday Harbor		
Logged By: Rusty Jones (CRETE)		Date		Tooling: Macrocore MCS		
Drill Crew: Michael Running		Started: 7.28.22 1325		Completed: 7.28.22 1450		Drilling Contractor: Holt Services
USA Ticket Number:		Backfilled: Bentonite chips		Hammer Type/Weight:		Borehole Diameter: 2+ inches
		Groundwater Depth (ft bgs): 7.75' @ 1440		Drill Rig Type: Geoprobe 7822 DT		Total Depth of Boring (ft bgs): 15

Depth (feet)	Sample Depth	PID (ppm)	Blow Counts (blows/foot)	Sample ID, Depth, Time	Lithology/Notes
0-5'	3-5'	1.8	40%	7-5-10' 5-7.5' 3-5' 1410 7	0-5' Limited Recovery SAND, some GRAVEL, subed-rd, fq-cg, minor veg, tan-med. brown, dry, gravel up to 1.5" observed 0-3', recently dug up and re-backfilled 3-5' appears relatively undisturbed, recent undisturbed bl. moist - moist
5-10'	5-7.5'	1.8	70%	7-5-10' 5-7.5' 3-5' 1410 7	5-10' Slough @ top of core SAND, less gravel, fq-cg, mostly fq-med, sat, moist - wet
10-15'	7-10'	2.1	85%	7-5-10' 5-7.5' 3-5' 1420 1	10-15 wet-sat, abundant gravel, some org. fines
SRWA-10 @ 1440 7+4					Grab GW sample from temp well 3/4" PVC, screened ~5-15' bgs Pre-purged ~1-1.5 gal. water 1-Grab GW sample w/ at Readings temp 13.2°C DO 1.65 mg/L Spc 251.3 us/cm TDS 163 mg/L pH 9.42 ORP 34.0 mV Turb. 189 NTU

Project: Jensen's Marina		Project Number: Agreed Order DE18071		Boring No. SRWA-11		
Location: 1293 Turn Point Road, Friday Harbor WA				Client: Port of Friday Harbor		
Logged By: Rusty Jones (CRETE)		Date	Started: 7.26.22 1400		Tooling: Macrocore MCS	
Drill Crew: Michael Running			Completed: 7.26.22 1418		Drilling Contractor: Holt Services	
USA Ticket Number:			Backfilled: Bentonite chips		Borehole Diameter: 2+ inches	
		Groundwater Depth (ft bgs): Probably dry, not checked		Hammer Type/Weight:		Drill Rig Type: Geoprobe 7822 DT
				Total Depth of Boring (ft bgs): 10		

Depth (feet)	Sample Depth	PID (ppm)	Blow Counts (blows/foot) %	Sample ID, Depth, Time	Lithology/Notes
0-5'	0-2.5'	1.9	50%	0-2.5'	1 x 0-5' DPT core ~50-60% Minor GRASS @ surface 0-1' Sand, some gravel, vfq-med, loose-firm, tan-brown, dry 1-5' SAA, dry-sl. moist, dec. GRAVEL
5-10'	2.5-5'	1.0		2.5-5'	5-10' Variable lithology 5-5.5' med-cq SAND, rusty brown bands/scams, sl. moist-moist dk brown 5.5-10' SILTY SAND w/ GRAVEL, vfq-med, dk brown, moist, various weathered minerals throughout (regolith), peppered stains (organics or minerals, well-rounded no noticeable artificial debris

Project: Jensen's Marina		Project Number: Agreed Order DE18071		Boring No. SRWA-12		
Location: 1293 Turn Point Road, Friday Harbor WA		Client: Port of Friday Harbor		Sheet 1 of 1		
Logged By: Rusty Jones (CRETE)		Date	Started: 7.28.22 1250		Tooling: Macrocore MCS	
Drill Crew: Michael Running			Completed: 7.28.22 1319		Drilling Contractor: Holt Services	
USA Ticket Number:			Backfilled: Bentonite chips		Borehole Diameter: 2+ inches	
		Groundwater Depth (ft bgs):		Hammer Type/Weight:		Drill Rig Type: Geoprobe 7822 DT
				Total Depth of Boring (ft bgs): 10		

Lithology/Notes

No observed odors, staining, or debris

3 x 0-5 DPT cores, 25, 20, 40% POOR RECOVERIES
 0-5' GRAVELLY SAND, fq-cg, well-sorted, sl. moist,
 med. brown, ≤ 2" dia gravel, minor vfg

5-10' SAA
 @ 7' dec. gravel, sl. moist - moist, med. dense
 dk tan - med. brown

Depth (feet)	Sample Depth	PID (ppm)	Blow Counts (blows/foot)	Sample ID, Depth, Time
0-5'	0-5'			
5-10'	5-10'			
7-10'	7-10'			
1.3	5.6	4.9	2.6	1.8
		20%	25%	
		50%	40%	20%
				4-5' 2-3' 0-1'
				1320 1315 1310

Project: Jensen's Marina		Project Number: Agreed Order DE18071		Boring No. SRWA-13							
Location: 1293 Turn Point Road, Friday Harbor WA		Client: Port of Friday Harbor		Sheet of							
Logged By: Rusty Jones (CRETE)		Date	Started: 7.26.22 0855		Tooling: Macrocore MC5		Drilling Contractor: Holt Services				
Drill Crew: Michael Running			Completed: 7.26.22 0955				Borehole Diameter: 2+ "				
USA Ticket Number:			Backfilled: Bentonite chips		Hammer Type/Weight:		Drill Rig Type: Geoprobe 7822DT				
		Groundwater Depth (ft bgs):		~1 (approx.)		Total Depth of Boring (ft bgs): 10					
											
Depth (feet)		Sample Depth		PID (ppm)		Blow Counts (blows/foot)		Sample ID, Depth, Time		Lithology/Notes	
5-10'		3-5' 0.5-1' 0-0.5'		0.5 4.0 2.4		33% 35% 25%		0-0.5' 0-0.5' 0-0.5'		No observed odors, staining, or obvious contamination 3 x 0-5' pushes → POOR RECOVERY SANDY GRAVEL med-cg, well-rounded, poorly-sorted, trace shell fragments 0-1 moist-wet 1+ wet-saturated thin concrete @ 0.5' *Combined 3 x 0-5' cores due to limited soil volume recovery.* Abundant gravel, limited sand matrix for Terracores 5-6/7' sat, saturated 6/7'-9' dec. gravel, most vcg sand, sat, gray ~9-10' FIRM, fq-med, compacted sand, wet, well-drained, tan, undisturbed/native	

Project: Jensen's Marina		Project Number: Agreed Order DE18071		Boring No. SRWA-14				
Location: 1293 Turn Point Road, Friday Harbor WA				Client: Port of Friday Harbor				
Logged By: Rusty Jones (CRETE)		Date	Started: 7-26-22 1000		Tooling: Macrocore MCS		Drilling Contractor: Holt Services	
Drill Crew: Michael Running			Completed: 7-26-22 1057				Borehole Diameter: 2+ inch	
USA Ticket Number:			Backfilled: Bentonite chips		Hammer Type/Weight:		Drill Rig Type: Geoprobe 7822 DT	
Rec %		Groundwater Depth (ft bgs):				Total Depth of Boring (ft bgs): 10		
Depth (feet)	Sample Depth	PID (ppm)	Blow Counts (blows/foot)	Sample ID, Depth, Time	Lithology/Notes			
5-10'	0-5'	4.0	2x 35-40%	0-1	No observed contamination odors, staining, etc.			
	3-5'	0.5	2x 35-40%	1-2	2 x 0-5' DPT cores 35%-40%			
				0-1	0-1' Grass (sea-grass?) at surface, abundant roots (0-0.5')			
					gravelly SAND, moist-wet, mostly med-cg, well-round			
				1-2	1-5' dec. gravel SAND, med-cg, browns to dk brown			
				1030	@ 1' wood or root (3-inch thick), wet, well-rounded - 3-0.75"			
				3-5'	5-10' 5-6.5' SAND, wet-sat.			
				1040	6.5-10' SAND, firm-hard, vfq-fq, trace med-cg, tan-gray			
					well-rounded, undisturbed/native			
					@ 8' small pocket peaty brown sand, native glittery			
					@ 9' up to 0.75" minor gravel, well-rounded			

Project: Jensen's Marina		Project Number: Agreed Order DE18071		Boring No. SRWA-15		
Location: 1293 Turn Point Road, Friday Harbor WA		Client: Port of Friday Harbor		Sheet 1 of 1		
Logged By: Rusty Jones (CRETE)		Started: 07/26/22 1200		Tooling: Macrocore MCS		Drilling Contractor: Holt Services
Drill Crew: Michael Running		Completed: 07/26/22 1225				Borehole Diameter: 2 1/2 inches
USA Ticket Number:		Backfilled: Bentonite chips		Hammer Type/Weight:		Drill Rig Type: Geoprobe 7822 DT
		Groundwater Depth (ft bgs): 3.7' @ 1222		Total Depth of Boring (ft bgs): 10		

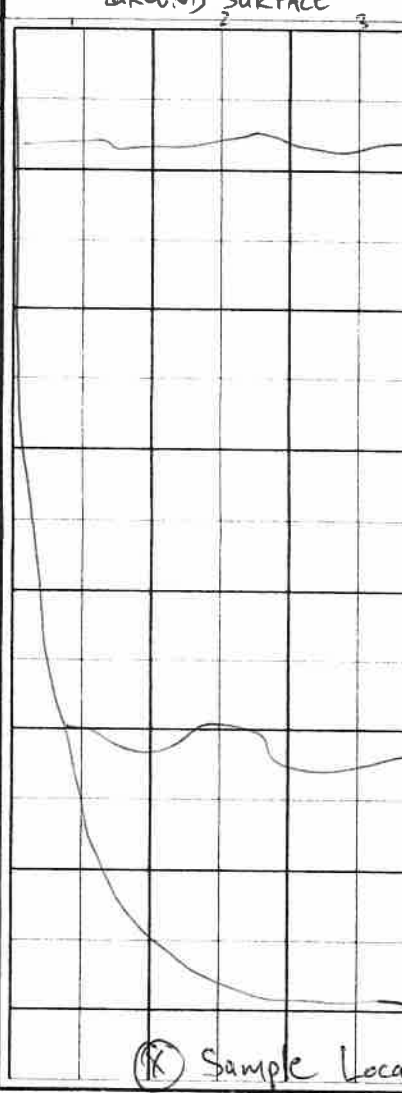
Depth (feet)	Sample Depth	PID (ppm)	Blow Counts (blows/foot)	Sample ID, Depth, Time	Lithology/Notes
5-10'	0-5'				
	2-3' 0.5-1' 0-0.5'	1.0 1.5 2.9	95-100%	2-3' 0.5-1' 0-0.5' 1230	2 x 0-5' DPT pushes FULL RECOVERY: 2-10 to 0.5' GRAVELLY SAND, med.-cg, well-rounded, poorly-sorted moist to wet, med-dk brown
				2-3' 0.5-1' 1240	0.5-5 SAND, vfg-fg, trace-minor med-cg, well-rounded v. trace small gravel, dk tan/med.-brown, dense UNDISTURBED/no indications of FILL, well-sorted trace rusty brown mottling in sparse pockets
			95%	2-3' 1250	5-10' SAND, vfg-med, w/ minor gravel, variable source rock gravel, well-rounded, wet, dense, less sorted than 0.5-5' more grain size variability

Collected
DUP-220726
@ 0800
for TPH-GX

Project: Jensen's Marina		Project Number: Agreed Order DE18071		Boring No. SYC-7, -6, -5		
Location: 1293 Turn Point Road, Friday Harbor WA				Client: Port of Friday Harbor		
Logged By: Rusty Jones (CRETE)		Date		Tooling: Macrocore MCS		
Drill Crew: Michael Running		Started: 7.27.22 1445		Completed: 7.27.22 1515		Drilling Contractor: Holt Services
USA Ticket Number:		Backfilled: Bentonite chips		Hammer Type/Weight:		Borehole Diameter: 2+ inches
Rec. %		Groundwater Depth (ft bgs):				Drill Rig Type: Geoprobe 7822 DT.
						Total Depth of Boring (ft bgs): 5 each

Depth (feet)	Sample Depth	PID (ppm)	Blow Counts (blows/foot)	Sample ID, Depth, Time	Lithology/Notes
0-5'	0-1'	3.2	40%	SYC-7 0-1' @ 1530	SYC-7 1 x 0-5' DPT core → POOR RECOVERY Asphalt @ surface 0-5' Gravelly Sand, dry-sl. moist, ^{sub to} well-sorted, browns, fq-veg, 51.5" dia, poorly sorted no odors, staining, or debris
0-5'	0-1'	3.3	DPT 10%	SYC-6 0-1' @ 1540	SYC-6 1 x 0-5' DPT core → No appreciable recovery LOIS' recovery *SAME AS SYC-7* but GRASS @ surface, v. dry used hand auger 0-1' loose sand w/ gravel, med-cg
0-5'	0-1'	4.3	60%	SYC-5 0-1' @ 1550	SYC-5 1 x 0-5' DPT core 0-5' GRAVELLY SAND, med-veg, poorly-sorted sub to well-sorted, sl. moist rocks/gravel easily fractured by DPT

Project: ISA Inspector: R. Jones Contractor: POFH Operator: Kyle Gropp
Job No.: POFH Date: 10.19.2020 Equipment: Kubota KX040-4
Location: Jensen's Shipyard Weather: Overcast, 50s°F Checked By: _____ Date: _____

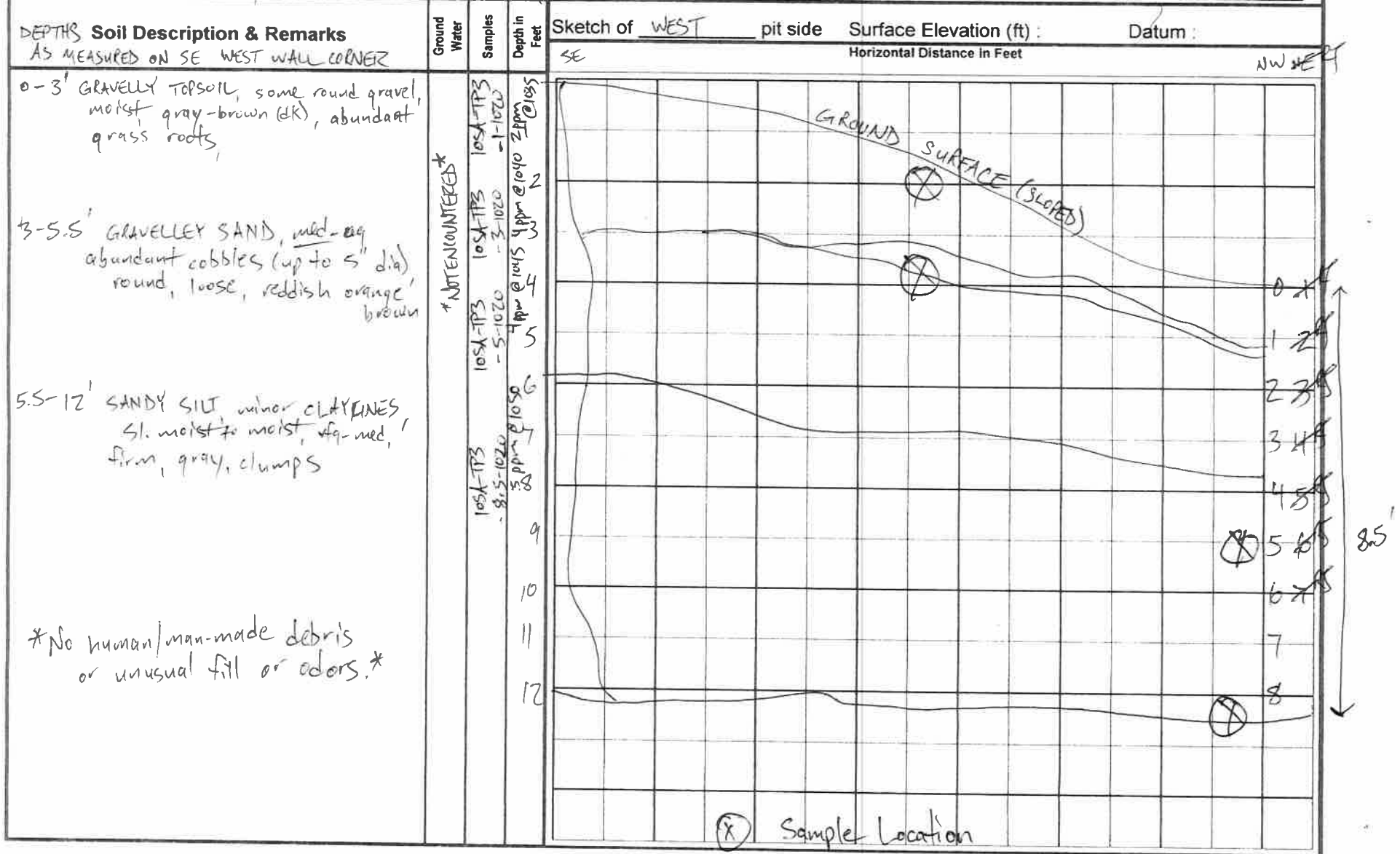
Soil Description & Remarks	Ground Water	Samples	Depth in Feet	Sketch of <u>WEST</u> pit side	Surface Elevation (ft):	Datum:
0-10" Organic-rich sandy topsoil, black, sl. moist = moist, grass roots. 10"-5' GRAVELLY SAND, round-subround cobbles (up to 3.5" size), brown, reddish-brown, trace-minor roots CLAYEY, SANDY SILT PS RJ 5-7-7.5' SILTY CLAY, non-plastic tan-gray, friable w/ pressure; gray sl. moist = moist, some fine-med SAND *Not a distinct/clean interface* med sand, *No man-made debris or fill observed, No garbage or metal debris.*	NOT ENCOUNTERED	ISA-TP1 --1-1020 @ 0.850	1 ppm 0.850	GROUND SURFACE  Horizontal Distance in Feet 1 2 3 4 5 6 7 (X) Sample Location		
		ISA-TP1 --3-1020 @ 0.855	2			
		ISA-TP1 --3-1020 @ 0.855	3			
		ISA-TP1 --5-1020 @ 0.883	5			
		ISA-TP1 --5-1020 @ 0.883	5			
		ISA-TP1 --7-1020 @ 0.850	7			
		ISA-TP1 --7-1020 @ 0.850	7			
		ISA-TP1 --7-1020 @ 0.850	7.5			

Project: IOSA Inspector: R. Jones Contractor: POFH Operator: Kyle Caropp
 Job No.: POFH Date: 10.19.2020 Equipment: Kubota KX040-4
 Location: Jensen's Shipyard Weather: Overcast, 50s°F, no to little wind Checked By: _____ Date: _____

Soil Description & Remarks	Ground Water	Samples	Depth in Feet	Sketch of <u>WEST</u> pit side		Surface Elevation (ft):	Datum:	
				Horizontal Distance in Feet				
0-1' Topsoil, organic-rich, black, sl. moist-moist Abundant GRASS roots		IOSA-TP2 -1-1020 @ 0030 Jppm	1					
1-3/3.5' GRAVELLY SAND, up to 3/6" cobbles, fg-med. grains, reddish orange/brown minor trace roots		IOSA-TP2 -3-1020 Hppm @ 0035	2					
		IOSA-TP2 -3-1020 Hppm @ 0035	3					
		IOSA-TP2 -5-1020 22 ppm @ 0140	4					
		IOSA-TP2 -5-1020 22 ppm @ 0140	5					
		IOSA-TP2 -8-1020 @ 0145 8 ppm	6					
		IOSA-TP2 -8-1020 @ 0145 8 ppm	7					
		IOSA-TP2 -8-1020 @ 0145 8 ppm	8					
		IOSA-TP2 -8-1020 @ 0145 8 ppm	9					

* NOT ENCOUNTERED *
 (X) Sample Location

Project: IOSA Inspector: R. Jones Contractor: POFH Operator: Kyle Gropp
Job No.: POFH Date: 10.19.2020 Equipment: Kubota KY040-4
Location: Jensen's Shipyard Weather: Mostly Sunny, 50s°F, Minor breeze Checked By: _____ Date: _____



Project: IOSA Inspector: R. Jones Contractor: POFH Operator: Kyle Grepp
Job No.: POFH Date: 10.19.2020 Equipment: Kubota KX040-4
Location: Jensen's Shipyard Weather: Overcast, 50°F Checked By: _____ Date: _____

Soil Description & Remarks	Ground Water	Samples	Depth in Feet	Sketch of <u>EAST</u> pit side	Surface Elevation (ft):	Datum:
0-12" TOPSOIL, roots, brown to dk brown, organic-rich, variable thickness 12"-3 to 4' GRAVELLY SAND, fg-med reddish brown, rounded cobbles, sl. moist-moist 3/4'-9' SANDY SILT, minor clay fines, moist, tan brown w/gray, fg-med, firm but friable *No observed man-made buried debris, no unusual unusual soils or odors.*	*Not encountered, *	10SA-TP4 0110 -1-1020 10SA-TP4 0115 -1-1020 10SA-TP4 0120 -3-1020 10SA-TP4 0125 -5-1020 10SA-TP4 0125 -9-1020	0 ppm 1 ppm 2 ppm 3 ppm 4 ppm 5 ppm 6 ppm 7 ppm 8 ppm 9 ppm	Sketch of <u>EAST</u> pit side Horizontal Distance in Feet 1 2 3 4 5 6 7 8 SLIGHTLY SLOPED GROUND SURFACE ⊗ Sample Location		

Project : IOSA Inspector : R. Jones Contractor : POFH Operator : Kyle/Erik
 Job No. : POFH Date : 10.19.2020 Equipment : Kubota KY0404 ~~RS~~ KY040-4
 Location : Jensen's Harbor/Shipyard Weather : Overcast, 50s°F, Minor to Some Breeze Checked By : _____ Date : _____

Soil Description & Remarks	Ground Water	Samples	Depth in Feet	Sketch of _____ pit side Surface Elevation (ft) : _____ Datum : _____
0-6" some organic-rich soils, sand topsoil, abundant roots roots, moist brown to dk brown ~6" to ~3.5' Mixed GRAVEL and SAND, Disturbed SOILS/FILL, med. brown, sl. moist cobbles *Some plastic sheeting 3.5 to 4.5/5' GRAVELLY SAND, dry cobbles reddish/orangish-brown, med.-eq. w/ some metal debris @ 4.5 - 5' most METAL debris car door? rebar, misc. sheet metal, all rusted Also some melted glassy slag material 5-7.5' Mixed GRAVELLY SAND, cobbles with SILT debris (clumps), sl. moist to moist, dk red-brown, *Some wood/Rebar/metal debris @ 7.5-8' SANDY SILT moist undisturbed hard, brown, vfy-med no clay fines	*Not Encountered	IOSA-TPS -1-1020 @ 1135 @ 1ppm IOSA-TPS -3-1020 @ 1240 @ 1ppm IOSA-TPS -5-510 ppm -5-1020 @ 1245 @ 1ppm IOSA-TPS -8-1020 @ 1250 @ 1ppm	0 1 2 3 4 5 6 7 8	Horizontal Distance in Feet 1 2 3 4 5 6 7 8 SE GROUND SURFACE Plastic Debris GRAVEL & SAND, sl. moist brown DRY GRAVELLY SAND (FILL), reddish brown WOOD/ROOTS Mixed SILT/SAND/GRAVEL undisturbed SILT Metal Debris/Door (boat fuel tank) (X) Sample Location

Project: IOSA Inspector: R. Jones Contractor: POFH Operator: Winter
Job No.: POFH Date: 10.19.2020 Equipment: Kubota KX040-4
Location: Jensen's Shipyard Weather: Overcast, 50s°F, breezy, Cool Checked By: _____ Date: _____

Soil Description & Remarks	Ground Water	Samples	Depth in Feet	Sketch of East pit side Surface Elevation (ft): <u>SLOPING</u> Datum: _____ Horizontal Distance in Feet
0 to 1.5' SANDY TOPSOIL, organic-rich, dk brown med-e.g. sl. moist - moist, rooty * Most manmade debris buried in upper 2-2.5 ft BGS. * * Observed: electrical box & conduit (abandoned) aluminum trim, rope, mesh sock, * On ground surface: wood, pallet debris propane gas canister, plywood rubber or plastic tubing, boat ball * 2-3' Transition Zone. Mixed SAND/Topsoil, some COBBLES, med. tan-brown Abundant TREE ROOTS ~3 to 7.5' SANDY SILT, some CLAY content, moist, tan to gray, fq-med, no gravel, no roots, no debris, seemingly undisturbed non-plastic, blocky cleavage	1 ppm * Not encountered *	10SA-TR6 -1-1020 @ 1130 10SA-TR6 -3-1020 @ 1435 10SA-TR6 -5-1020 @ 1440 10SA-TR6 -7.5-1020 @ 1440	1 2 3 4 5 6 7 8	⊗ Sample Location

Project: IOSA Inspector: R. Jones Contractor: POFH Operator: Winter
Job No.: Port of Friday Harbor Date: 10.19.2020 Equipment: Kubota KX040-4
Location: Jensen's Shipyard Weather: Overcast, low 50s°F, some wind (10 mph) Checked By: _____ Date: _____

Soil Description & Remarks	Ground Water	Samples	Depth in Feet	Sketch of <u>WEST</u> pit side		Surface Elevation (ft):	Datum:					
				Horizontal Distance in Feet								
				NORTH	1	2	3	4	5	6	7	SOUTH
GRASS @ SURFACE, dense 0-2' Mixed SANDY TOPSOIL, some gravel (rounded up to 2-3") med - c.g. moist dk brown organics abundant roots Beyond 2' Trace organics, minor roots ~2-4' Mixed sand & SILT, not a clean SANDY SILT interface, trace cementation ~3-7' SANDY SILT, tan to gray, moist, med. hard clumps, med-hard clumps, trace pockets of cementation	* Not encountered	IOSA-TP7 -1-1020 @ 1535 2ppm	1									
		IOSA-TP7 -3-1020 @ 1540 1ppm	2									
		IOSA-TP7 -5-1020 @ 1545 1ppm	3									
		IOSA-TP7 -7-1020 @ 1550 1ppm	4									
			5									
			6									
			7									
* No manmade debris outside of the buried 4 inch pipe at ~2-ft BGIS.* Appear to be outside of the former dumping area.				⊗ Sample Locations								

Project: IOSA Inspector: R. Jones Contractor: POFH Operator: Winter/Kyle
Job No.: POFH Date: 10.19.2020 Equipment: Kubota KX040-4
Location: Jensen's Shipyard Weather: Overcast, ~50°F, cool/wet, 0-10 mph Checked By: _____ Date: _____

Soil Description & Remarks	Ground Water	Samples	Depth in Feet	Sketch of <u>EAST</u> pit side	Surface Elevation (ft):	Datum:
				NORTH	Horizontal Distance in Feet	6 SOUTH
Heavy/dense GLASS @ surface.						
0-1' organic-rich TOPSOIL, sandy (med). dk brown to black, moist, abundant grass roots.		IOSA-TP8 -1-1020 @ 1025	1			
1-3' GRAVELLY SAND, rounded gravel (up to 2-3" dia) med-co, sl. moist to moist reddish tan to light brown, 75-90% SAND		IOSA-TP8 -3-1020 @ 1110	2			
3-7' SANDY SILT, tan to gray, occ. trace round gravel, sl. moist to moist firm to hard trace cementation in pockets trace CLAY fines		IOSA-TP8 -5-1020 @ 1145	3			
@ 6' erratic boulder (igneous texture)		IOSA-TP8 -7-1020 @ 1150	4			
No observed buried manmade debris. *No indications of gross/bulk contamination.*			5			
			6			
			7			

(X) Sample Location