Date: January 31, 2017

To: Tom Slocum on behalf of
Whidbey Island Conservation District
P.O. Box 490 – 1 NE 4th St,
Coupeville, WA 98239360 510-2587
tom@skagitcd.org

Subject: Summary of Groundwater Monitoring Well Installation and Geotechnical Evaluation for the Greenbank Marsh Restoration Issues Assessment Project; Greenbank, Whidbey Island, Washington.

Dear Mr. Slocum,

On behalf of the Whidbey Island Conservation District (WICD), Element Solutions (Element) supervised the installation of 2 ground water monitoring wells and gathered geotechnical data for analysis and evaluation on Island County Tax Parcels S7050-00-00A03-0 and S7050-00-00A04-0, hereafter the "study area". The study area totals approximately 2.45 acres and adjoins a large wetland area (marsh) that totals approximately 20.5-acres. The wetland and study area collectively are located in Section 04, 08, 09, Township 30N, and Range 02 East of the Willamette Meridian (Lat/Lon: 48.109892°, -122.567621°).

Project Background

Whidbey Island Conservation District (WICD) recently received a grant from the Washington Salmon Recovery Funding Board to evaluate specific land use issues and site conditions that are relevant to the potential design and implementation of alternative measures to restore tidal connectivity and nearshore ecological functions in Greenbank Marsh. Greenbank Marsh is a roughly 20-acre relict coastal wetland system (tidal marsh) located in the community of Greenbank on Whidbey Island. The marsh system consists of a large predominatly freshwater wetland that connects through a county road and drainage infrastructure to a smaller, brackish tidal lagoon. The lagoon in turn connects to Holmes Harbor through a small tidegate and stormwater outfall pipe. The study area is privately owned by the Greenbank Beach and Boat Club, Inc. (GBBC) and its parent organization, the Holmes Harbor Estates homeowners association.

Previous study area investigation included wetland mapping and assessment. Information from the wetland assessment is integrated into this geotechnical characterization.

The geotechnical assessment included the installation of the two (2) groundwater monitoring wells and the geotechnical conditions summary conducted by Element with the purpose of providing the WICD preliminary information of the physical characteristics of the study area and to develop an understanding of the groundwater hydrodynamics. This information and the subsequent monitoring data will be used to evaluate how the various proposed restoration and tide gate modifications might

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affect or impact the overall marsh groundwater, flood conveyance, and ecological systems and interactions.

Groundwater Monitoring Well Installation

The well installation occurred on August 18, 2016 and was performed by the drilling company Environmental Services Network (ESN), with supervision from Jeff Ninnemann (L.G.) of Element. Two wells were installed along the southwestern property boundary (Appendix A: Figure 1), using a direct push track rig (AMI 9100 SK).

Monitoring well MW-1 was placed in a low lying emergent meadow area that was within the wetland complex, but not below the frequently tidally inundated portion of the marsh. MW-1 was driven down to 15-ft below ground surface (bgs). The well installation consisted of a 2" PVC casing, 10-ft screen (5-ft to 15-ft interval), slot size of 0.010, a 10/20 silica sand pack from 3-ft to 15-ft, a bentonite backfill from 1-ft to 3-ft, and a flush mounted monument with concrete surface seal from 0-ft to 1-ft. The well was assigned a unique Ecology tag # of BJW648. This finished well had a surveyed elevation of 7.40-ft (NAVD 88).

Monitoring well (MW-2) was placed on the southern end of the beach parking lot, which is located at the apex of a beach berm that is a prominent feature of the shoreline in this area. MW-2 was driven to 14-ft bgs and installation was consistent with MW-1 installation with the exception of screen interval of 4-ft to 14-ft. The well was assigned a unique Ecology tag # of BJW647. This finished well had a surveyed elevation of 11.28-ft (NAVD 88).

The borehole logs are presented with the well info and geological stratigraphic descriptions in Appendix B. Additionally, the drillers (ESN) ecology start cards and well logs are included in Appendix C. We understand that both wells have since been sampled for groundwater by the WICD with successful sample recovery, and water table data. During the months of September and November (2016) the WICD conducted one-month rounds of water table and salinity sampling.

Subsurface Geotechnical Investigation

The study area is mostly undeveloped with a coastal lagoon and wetland complex that occupies the northwestern 2/3 of the subject property. Development in the southeastern portion of the study area includes a flood levee with a tidal gate that crosses roughly the middle of the study area and a boat launch, gravel parking lot and picnic area occupy the southeastern edge of the property. The vegetation in the undeveloped areas is dominated by emergent meadow-type plants with a small patch of scrub-shrub species in the northwestern corner of the property.

The topography of the study area from east to west includes a rise associated with the beach berm along the shoreline, the flood levee, and a shallow topographic rise in the northwestern corner of the property. The study area in summary is a low-elevation basin bound by upland topography to the west and north and the beach berm to the east. The study area and greater wetland complex was interpreted to have historically been a transitional freshwater, tidally influenced marsh estuary and coastal lagoon complex that was diked and partially drained for farming sometime before 1904.

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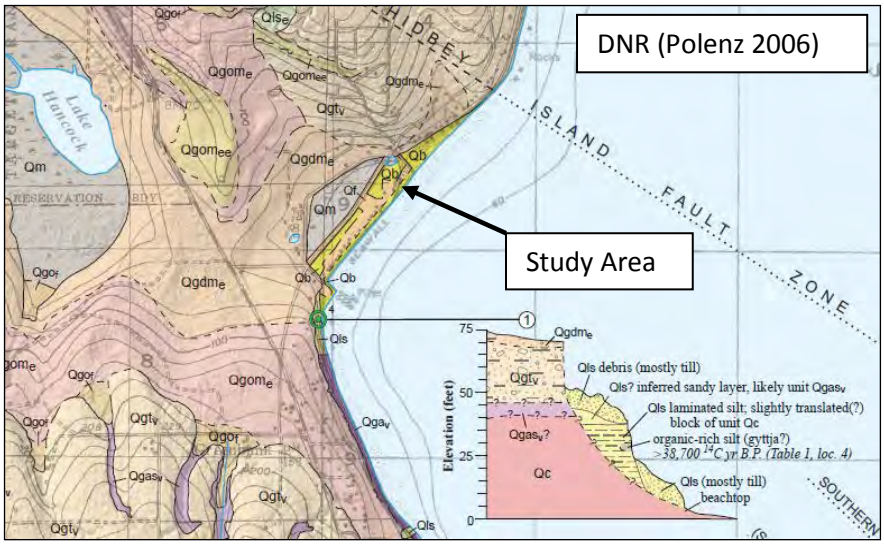
The geology of the study area is mapped as Holocene Marsh, Bog, or Swamp (Qm), Fill (Qf), and Beach (Qb) deposits that are adjacent to, and likely overlay, a complex series of Pleistocene glacial deposits including Everson Glaciomarine Drift from the Everson Interstade ($Qgdm_e$), Glacial Till from the Vashon Stade (Qgt_v), Advance Outwash sand from the Vashon Stade ($Qgas_v$), Pre-Fraser non-glacial deposits, undivided (Qc) (Polenz 2006). The bluffs along the beach areas north and south of the study area are covered by Landside deposits (Qls) from the Holocene and late Pliestocene (Polenz 2006). Additionally, the area around Greenbank occurs within a tectonically active area known as the Southern Whidbey Island Fault Zone. The relationships between the geological units within the study area are shown in the plain view and stratigraphic section shown in the image above.

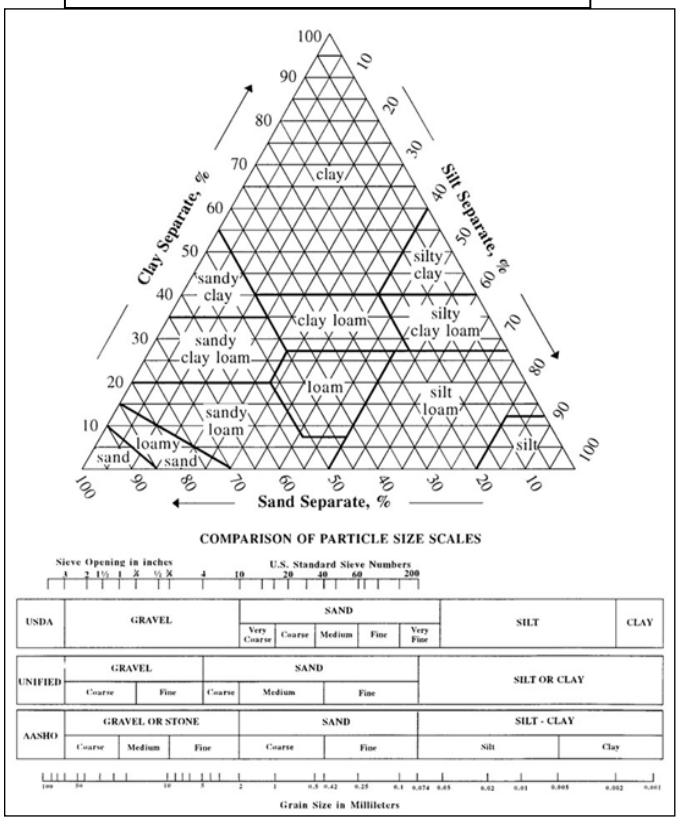


The USDA has mapped four soils types on the subject property as itemized and summarized below:

1. **Semiahmoo muck**, 0 to 2 percent slopes (Map Unit 1002), Beaches-Endoaquents, tidal-Xerorthents association, 0 to 5 percent slopes (Map Unit 1025), Bozarth-Pilepoint complex, 2 to 8 percent slopes (Map Unit 2017), and Hoypus sandy loam, 3 to 25 percent slopes (Map Unit 3001).Semiahmoo muck, 0 to 2 percent slopes: Semiahmoo muck soils are very deep and very poorly drained. They formed from a highly decomposed plant material with a thin layer of volcanic ash mixed with diatomaceous earth. Typically, the surface layer is a muck. The upper part of the subsoil also is silt loam, and the lower part is mostly muck and mucky peat.

2. **Beaches-Endoaquents**, tidal-Xerorthents association: Beaches-Endoaquents soils are very deep and very poorly drained.

USDA Soil Texture Classification System



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They formed from beach sand and feeder bluffs. Typically, the soil profile consists of very gravelly sands to depth.

3. **Bozarth-Pilepoint complex**, 2 to 8 percent slopes: Bozarth-Pilepoint complex soils are not very deep and somewhat poorly drained. They formed from eolian sands over glaciomarine deposits. Typically, the surface layer is a sandy loam. The upper part of the subsoil also is fine sandy loam, and the lower part is mostly sandy loams and silt loams.

4. **Hoypus sandy loam**, 3 to 25 percent slopes: Hoypus sandy loam soils are very deep and somewhat excessively drained. They formed from glacial outwash deposits. Typically, the surface layer is a slightly decomposed plant material. The upper part of the subsoil is generally a sandy loam or loamy sand, and the lower part is mostly very gravelly loamy sand or extremely gravely sand.

The subsurface investigation conducted through the inspection of the bore logs confirmed the USDA assessment of the soil type. The top 1.5-ft to 2.0-ft bgs of each bore hole was dug using a hand shovel and was closely inspected by the archeologist representative from Equinox Research and Consulting International Inc. (ERCI) for sensitive cultural resources. Additionally, each of the driven samples was also inspected by ERCI for sensitive cultural resources. No culture resources were discovered during the shoveling or borings for the monitoring well installations. More information on the cultural resources can be found in the "Archaeological Investigation Report: Greenbank Marsh Restoration Issues Assessment, Island County, Washington" by ERCI 2016. The borings were logged using the Unified Soil Classification System (USCS) and are presented in detail in Appendix B.

MW-1 was dominated by sand that ranged from fine to coarse grained, with a small percent of fine gravels, and generally lacked fines (Table 1). The lower depths of the bore hole include fine gravel, with a small percent of coarse sand. The entire soil profile was loose and generally had shell fragments within the matrix. The groundwater table at the time of boring was approximately 1.5-ft bgs (~5.9 feet NAVD 88).

MW-2 had a layer of fill material that extend down to a depth of 2-ft bgs (Table 2). The soil profile of MW-2 below the fill was similar to MW-1 and was dominated by sand that ranged from fine to coarse grained, with a small percent of fine gravels, and generally lacked fines. The entire soil profile was loose and generally had shell fragments within the matrix. The groundwater table at the time of boring was approximately 6.5-ft bgs (~4.78 feet NAVD 88).

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Table 1. MW-1 Soil Profile Summary

Depth Below Ground Surface (ft)	Estimated Elevation (NAVD 88)	Material Description	USDA	USCS
0	7.4	Fine Gravelly Medium-Coarse SAND, Light grey-dark grey-dark brown, no odor, root/shell fragments, loose, beach sands, wet	Sand	SW
6.5	0.9			
6.5	0.9	Fine Gravelly Coarse SAND, Light grey-dark grey-dark brown-light brown, no odor, loose, beach sands, shell fragments, wet	Sand	SP
8.5	-1.6			
8.5	-1.6	Fine Gravelly Fine-Coarse SAND w trace silts, Light grey-dark grey-dark,brown, no odor, loose, beach sands, shell fragments, wet	Loamy Sand	SW
11.5	-4.6			
11.5	-4.6	Coarse sandy FINE GRAVEL, Light grey-dark grey, loose, wet, shell fragments	Gravel	GP
15	-8.1			

Table 2. MW-2 Soil Profile Summary

Depth Below Ground Surface (ft)	Estimated Elevation (NAVD 88)	Material Description	USDA	USCS
0	11.28	Silty Fine-Coarse SAND with Medium-Coarse Gravels/Cobbles, Light Brown, no odor, loose, dry, fill	Loamy Sand	SM
2	9.28			
2	9.28	Fine Gravelly Medium-Coarse SAND clean, Light grey-dark grey, no odor, shell fragments, wood chips, loose, beach sands, dry	Sand	SW
8.5	0.78			
8.5	0.78	Fine Gravelly Coarse SAND, Light grey-dark grey, no odor, loose, beach sands, shell fragments, wet	Sand	SP
15	-5.72			

Conclusions

The background research and the field investigation confirmed that the majority of the study area consists of unconsolidated Holocene beach deposits to depths of at least 15 feet bgs and that groundwater occurs generally near-surface and at a fairly uniform elevation of approximately 5 feet (NAVD 88); however, subsequent groundwater monitoring will be needed to confirm the hydrologic relationship between the two monitoring sites as well as the influence from upland and tidal hydrology over time. The near surface soils within the surface water inundated areas of the study area were evaluated during the previous

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wetland study and determined to be dominated by unconsolidated organic muck and silt deposits which is consistent with the USDA soil mapping. Additionally it was confirmed that the developed areas around the parking lot contained a thin layer of compacted anthropogenic fill material overlaying unconsolidated Holocene beach deposits. The bearing capacity of the soil encountered at the study is likely low given the organic content and loose nature of the soils.

If you have any questions about this report or other matters, please contact me a (360) 671-9172.

Respectfully,
Element Solutions

Jeff Ninnemann, LG
Senior Wetland Ecologist/Environmental Geologist
Element Solutions
jninnemann@elementsolutions.org

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Appendix A – Figure

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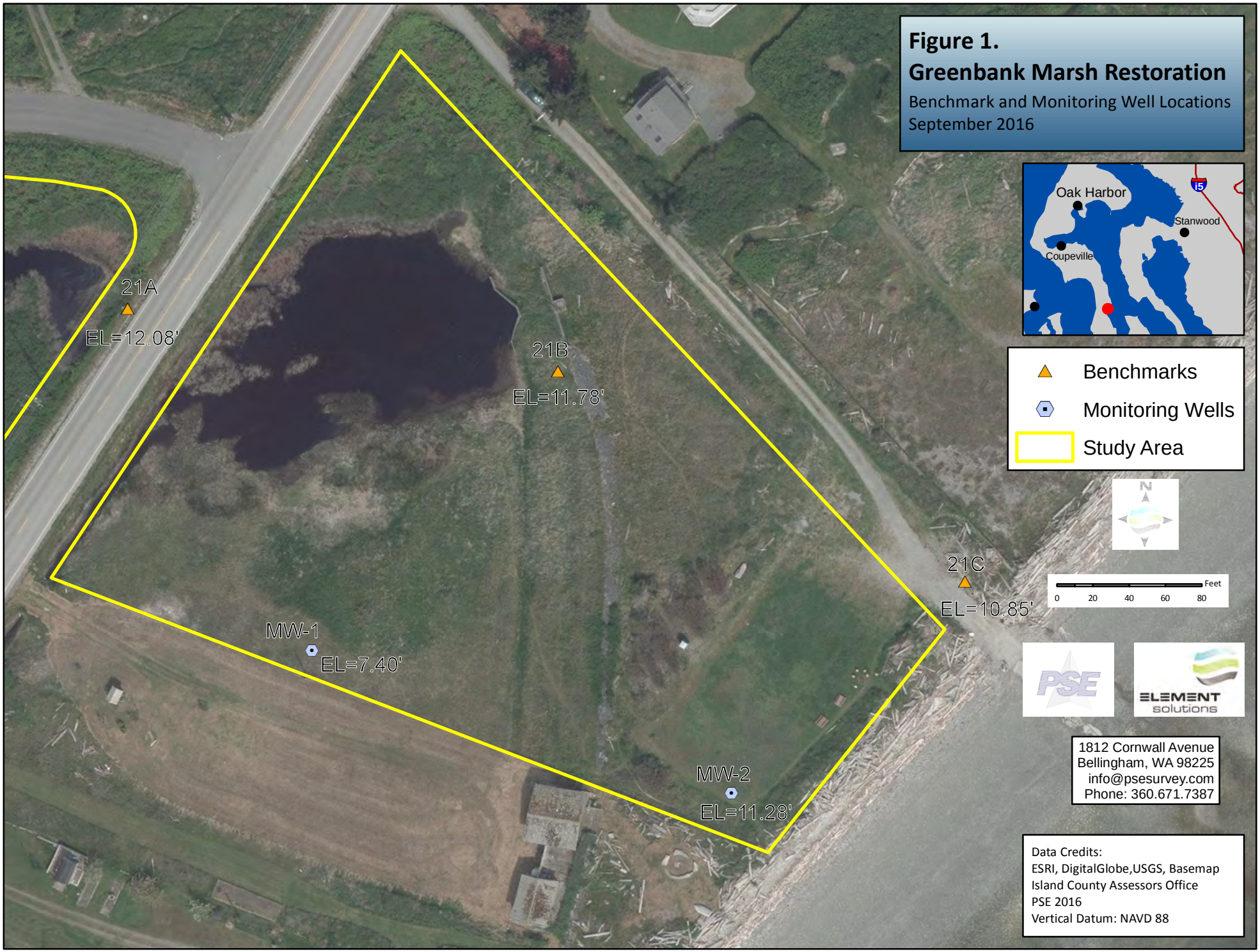

Path: P:\Pse Project\2016179\ENVRMNT\GIS\Figure 1..mxd

Appendix B – Element Solutions Well Logs

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Element Solutions

1812 Cornwall Avenue
Bellingham, WA 98225
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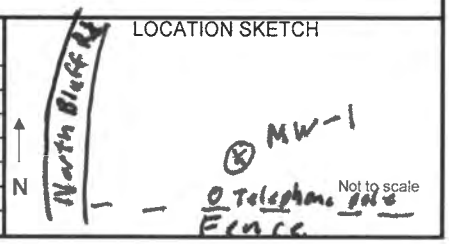
BOREHOLE NUMBER	Monitoring Well #1
PROJECT	Greenbank Marsh Restoration Assessment
LOCATION	Greenbank, Whidbey Island, WA
PROJECT NUMBER	2016179
LOGGED BY	Jeff Ninnemann
DATE	18-Aug-16

SAMPLE INFORMATION							Depth (ft)	STRATA	DESCRIPTION
Sample ID	Time	Sample Depth (ft)	%Recovery	PID	Sheen	Blow Counts			USCS group name, density, moisture, color, minor, MAJOR constituents, odor, sheen, organics, biology, weathering, cementation, geologic interpretation, etc.
	0835		Shovel					SW	Hand Shoveled: Fine Gravelly Medium-Coarse SAND, Light grey-dark grey-dark Brown, no odor, root/shell fragments, loose, beach sands, wet
							1--		
								▽	water table
							2--	SW	
1st Drive 1.5-8.5									
			45%				3--		
								SW	Fine Gravelly Medium-Coarse SAND, Light grey-dark grey-dark Brown, no odor, root/shell fragments, loose, beach sands, wet
							4--		
							5--		
							6--		
2nd Drive 1.5-11.5							7--	SP	Fine Gravelly Coarse SAND, Light grey-dark grey-dark brown-light brown, no odor, loose, beach sands, shell fragments, wet
			75%				8--		
							9--	SW	Fine Gravelly Fine-Coarse SAND w trace silts, Light grey-dark grey-dark, brown, no odor, loose, beach sands, shell fragments, wet

DRILLING CONTRACTOR	ESN
DRILLING METHOD	Direct Push
DRILLING EQUIPMENT	AMI 9100 SK track
COORDINATES	409518 Northing
	1216768 Easting
SURFACE ELEVATION	7.4-feet
DATUM	(NAVD88)

LOCATION SKETCH



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BOREHOLE NUMBER	Monitoring Well #1
PROJECT	Greenbank Marsh Restoration Assessment
LOCATION	Greenbank, Whidbey Island, WA
PROJECT NUMBER	2016179
LOGGED BY	Jeff Ninnemann
DATE	18-Aug-16

SAMPLE INFORMATION									DESCRIPTION
Sample ID	Time	Sample Depth (ft)	%Recovery	PID	Sheen	Blow Counts	Depth (ft)	STRATA	USCS group name, density, moisture, color, minor, MAJOR constituents, odor, sheen, organics, biology, weathering, cementation, geologic interpretation, etc.
								SW	Fine Gravelly Fine-Coarse SAND w trace silts, Light grey-dark grey-dark, brown, no odor, loose, beach sands, shell fragments, wet
2nd Drive 8.5-11.5							11--		
								GP	poor recovery; Coarse sandy FINE GRAVEL, Light grey-dark grey, loose, wet, shell fragments
							12--		
			25%						
							13--		
3rd drive 11.5-16.5									Screen 5 to 15-feet
							14--		
							15--		bottom of screen and well
							16--		
									Bottom of bore hole
							17--		
									Ecology Tag #BJW648
							18--		
							19--		

DRILLING CONTRACTOR	ESN
DRILLING METHOD	Direct Push
DRILLING EQUIPMENT	AMI 9100 SK track
COORDINATES	409518 Northing
	1216768 Easting
SURFACE ELEVATION	7.4-feet
DATUM	(NAVD88)

LOCATION SKETCH

See Page 1

N

Not to scale

Element Solutions

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Bellingham, WA 98225
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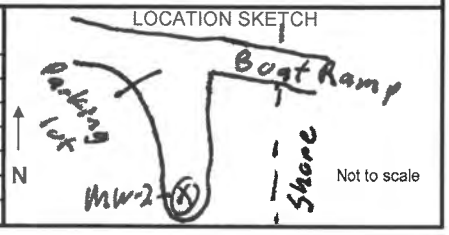
BOREHOLE NUMBER	Monitoring Well #2
PROJECT	Greenbank Marsh Restoration Assessment
LOCATION	Greenbank, Whidbey Island, WA
PROJECT NUMBER	2016179
LOGGED BY	Jeff Ninnemann
DATE	18-Aug-16

SAMPLE INFORMATION									DESCRIPTION
Sample ID	Time	Sample Depth (ft)	%Recovery	PID	Sheen	Blow Counts	Depth (ft)	STRATA	USCS group name, density, moisture, color, minor, MAJOR constituents, odor, sheen, organics, biology, weathering, cementation, geologic interpretation, etc.
	9:45		Shovel					SM	Hand Shoveled: Silty Fine-Coarse SAND with Medium-Coarse Gravels/Cobbles, Light Brown, no odor, loose, dry, fill
							1--		10YR5/3
1st Drive 2-7							2--		
			50%				3--		
								SW	Fine Gravelly Medium-Coarse SAND clean, Light grey-dark grey no odor, shell fragments, wood chips, loose, beach sands, dry
							4--		
							5--		
							6--	SW	Fine Gravelly Medium-Coarse SAND clean, Light grey-dark grey no odor, shell fragments, wood chips, loose, beach sands, dry
								▽	water table
2nd Drive 7-12							7--		
			50%				8--		
							9--	SP	Fine Gravelly Coarse SAND, Light grey-dark grey, no odor, loose, beach sands, shell fragments, wet

DRILLING CONTRACTOR	ESN
DRILLING METHOD	Direct Push
DRILLING EQUIPMENT	AMI 9100 SK track
COORDINATES	409440.1 Northing
	1216999 Easting
SURFACE ELEVATION	11.28-feet
DATUM	(NAVD88)

LOCATION SKETCH



Element Solutions

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BOREHOLE NUMBER	Monitoring Well #2
PROJECT	Greenbank Marsh Restoration Assessment
LOCATION	Greenbank, Whidbey Island, WA
PROJECT NUMBER	2016179
LOGGED BY	Jeff Ninnemann
DATE	18-Aug-16

SAMPLE INFORMATION									DESCRIPTION
Sample ID	Time	Sample Depth (ft)	%Recovery	PID	Sheen	Blow Counts	Depth (ft)	STRATA	USCS group name, density, moisture, color, minor, MAJOR constituents, odor, sheen, organics, biology, weathering, cementation, geologic interpretation, etc.
									Fine Gravelly Coarse SAND, Light grey-dark grey,
								SP	no odor, loose, beach sands, shell fragments, wet
2nd Drive			50%						
7-12							11--		
									Fine Gravelly Coarse SAND, Light grey-dark grey,
							12--	SP	no odor, loose, beach sands, shell fragments, wet
			100%						
							13--		
3rd drive									Screen 4 to 14-feet
15-Dec									
									bottom of screen and well
							14--		
									Bottom of bore hole
							15--		
							6--		
									Ecology Tag #BJW647
							7--		
							8--		
							9--		

DRILLING CONTRACTOR	ESN
DRILLING METHOD	Direct Push
DRILLING EQUIPMENT	AMI 9100 SK track
COORDINATES	409440.1 Northing
	1216999 Easting
SURFACE ELEVATION	11.28-feet
DATUM	(NAVD88)

LOCATION SKETCH

See page 1

N

Not to scale

Appendix C – Ecology's Drillers Start Cards and Well Logs

1812 Cornwall Avenue Bellingham WA 98225
(360) 671-9172 *info@elementsolutions.org*

DEPARTMENT OF ECOLOGY
State of Washington

Notice of Intent to Construct an Resource Protection Well

Notification Number
RE13213

This form and required fees **MUST BE RECEIVED** by the Department of Ecology **72 HOURS BEFORE** you construct a well.

Submit one completed form for each job site and required fee (check or money order only) to:
Department of Ecology Cashiering Unit, P.O. Box 47611, Olympia, WA 98504-7611

NOTE: Please print. Processing your Notice of Intent may be delayed if all fields are not filled in completely.

1. Property Owner: Greenbank Beach And Boat CLub — Phone Number:
   Mailing Address: PO Box 75 — City: Greenbank — State: WA — Zip Code: 98253
2. Agent (if different from above): — Phone Number:
   Mailing Address: — City: — State: — Zip Code:
3. Well Location

Tax Parcel Number, Township, Range, Section, ¼, and ¼ ¼ are Required. Latitude and longitude (if available).

County Name: Island - 15

Well Site Street Address: N Bluff Rd And Shoreline Dr — City: Greenbank — State: WA — Zip Code: 98239

Tax Parcel Number	Township	Range	Section	¼ (within 160 acres)	¼ -¼ (within 40 acres)
S70500000A030	30N	2E	4	SW	SW

Latitude Degrees	Latitude Time: min sec	Horizontal Collection Method
Longitude Degrees	Longitude Time: min sec	

4. Estimated Start Date: 8/18/2016 12:00:00 AM — Project Name: Greenbank
5. Professional's License Number:
6. Well Drilling Company Name: ESN NORTHWEST — Phone Number: None Supplied
7. Well Driller Name: RICHARD BATES — Driller License Number: 3174
8. **Send the entire form.**
   Please copy the notification number (located in the upper and lower right corners) and keep in a safe place. Use this reference number when communicating with the Department of Ecology.

Total Number of wells to be constructed
Fee Amount: $40.00 per well

Total Number of wells = 2 x $ 40 each

Total Due and Amount Enclosed $80.00

This notification number must be provided to your driller:

RE13213

anisa@esnnw.com

Your Notice of Intent has been processed as of 8/11/2016 This message being sent at (8/30/2016)

Okay

ESN-NW
1210 Eastside Street SE
Suite 200
Olympia, Wa 98501

DAILY WORK REPORT

Phone: (360)459-4670
Fax: (360)459-3432

MATERIALS USED: PVC:	START: 8:00	FINISH: 11:30	OT:	JOB DATE: 8-18-16
PVC Screen: 3/4" 1" 2" 20'	Operator: Richard	Helper: cole	3rd:	Job#:
PVC Riser 3/4" 1" 2" 10'	CLIENT:			Drill Rig: BoB
Pre-Pack Screen 3/4" 1" 2"	JOB LOCATION:			Sup Truck: New LAR
Pre-Pack Riser 3/4" 1"	Probe Auger Geotech LAR Other			Trailer: BoB Tc
Slip Caps	WORK COMPLETED:	Well Development: Ø	Reg Concrete Cores: Ø	Other:
Thrd End Caps 2	Holes Total: 2	Water Samples: Ø	Geoprobe 7800 Cores:	
J-Plugs 2	Broken Tools/		Sub Coring # & Size Ø	
Other:	Notes: 75 ft for Fury thru 60, 80 (130)			
Misc Well:	RENTALS:			

8" Mon Reg: 2 Steel:	Tag Number	Hole Number	Description	Liners
5" Mon Stick-up	BJW 648	1	Sand with small Gravels 8-15 Set well @ 15 (5) to 4'	
Bollards General:	BJW	2	" Set well @ 14	
Med. Bent. 1	647			
No. 8 Bent.				
Grout				
Sand 1				
Concrete 4				
Quickset Ø				
Asphalt				
Other:				
Other:				
55 g Drum Ø				
Mini Drum Ø				
Plywood Ø				
Probe/Sampling:				
Poly Tubing				
Teflon Tubing				
MC Liner 4'				
MC Liner 5' 30'				
DT Liner 4'				
DT Liner 5'				
HP Liner 2'				
Liner End Caps				
Bailers				
Filters				
Tedlar Bags				
H2O Pts				
Rod Pts				
Casing Pts: 2" 3" 2				
Casing Pts: 4"				
G.P. Pts				
Easy Draws				
Other Containers				

Operator Signature:

Client Signature:

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. RE13213

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☒ Construction
☐ Decommission

ORIGINAL INSTALLATION Notice of Intent Number:

Consulting Firm

Unique Ecology Well IDTag No. BJW 648

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 above are true to my best knowledge and belief.

☐ Driller ☐ Engineer ☒ Trainee

Name (Print Last, First Name) Bates, Richard

Driller/Engineer /Trainee Signature

Driller or Trainee License No. 3174T

If trainee, licensed driller's Signature and License Number:
Chris Hardin 2508

Type of Well *("x in box)*

☒ Resource Protection
☐ Geotech Soil Boring

Property Owner Grennbank Beach and Boat Club

Site Address N Bluff Rd and Shoreline Dr

City Greenbank County Island

Location Sw1/4-1/4 SW1/4 Sec 04 Twn 30 R 02

EWM ☒ or WWM ☐

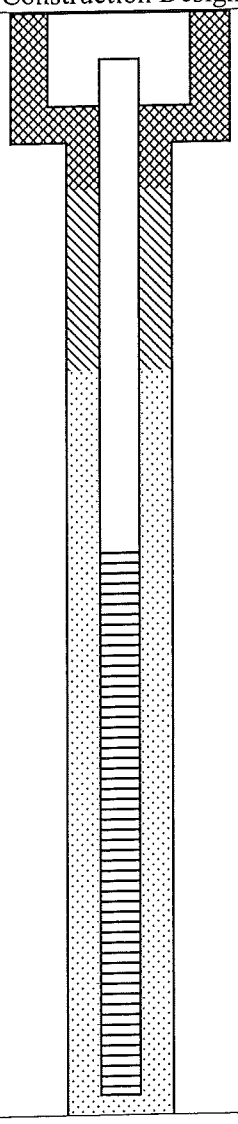
Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____
Long Deg ____ Min ____ Sec ____

Tax Parcel No. S70500000A030

Cased or Uncased Diameter 4.25' Static Level ____

Work/Decommission Start Date 8/18/16

Work/Decommission Completed Date 8/18/16

Construction Design	Well Data	Formation Description
	MONUMENT TYPE: flush CONCRETE SURFACE SEAL: 0-1 ANNULAR SPACE: BACKFILL: 1-3' TYPE: bentonite PVC BLANK: 0-4' SCREEN: 4-15' SLOT SIZE: .010 TYPE: 2" sch 40 SAND PACK: 3-15' MATERIAL: 10/20 silica sand DRILLING METHOD: DPT WELL DEPTH: 15' BORING DIAMETER:	sandy gravel

SCALE: 1"= ____ PAGE 1 OF 2

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. RE13213

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☒ Construction
☐ Decommission

ORIGINAL INSTALLATION Notice of Intent Number:

Consulting Firm

Unique Ecology Well IDTag No. BTW 647

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 above are true to my best knowledge and belief.

☐ Driller ☐ Engineer ☒ Trainee

Name (Print Last, First Name) Bates, Richard

Driller/Engineer /Trainee Signature

Driller or Trainee License No. 3174T

If trainee, licensed driller's Signature and License Number:
Chris Harnden 2508

Type of Well *("x in box)*

☒ Resource Protection
☐ Geotech Soil Boring

Property Owner Grennbank Beach and Boat Club

Site Address N Bluff Rd and Shoreline Dr

City Greenbank County Island

Location Sw1/4-1/4 SW1/4 Sec 04 Twn 30 R 02

EWM ☒ or WWM ☐

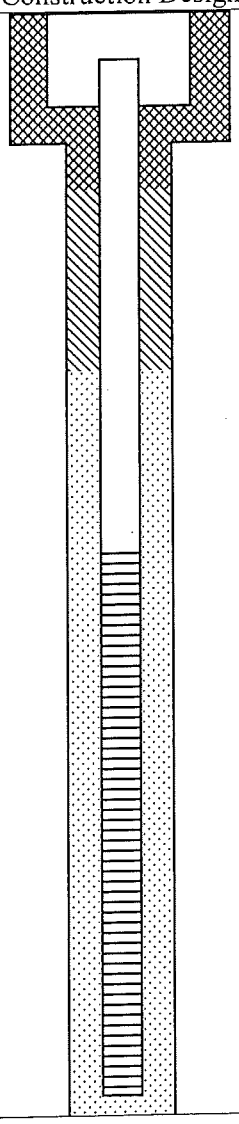
Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____
Long Deg ____ Min ____ Sec ____

Tax Parcel No. S70500000A030

Cased or Uncased Diameter 4.25" Static Level

Work/Decommission Start Date 8/18/16

Work/Decommission Completed Date 8/18/16

Construction Design	Well Data	Formation Description
	MONUMENT TYPE: flush CONCRETE SURFACE SEAL: 0-1 ANNULAR SPACE: BACKFILL: 1-4' TYPE: bentonite PVC BLANK: 0-4' SCREEN: 4-14' SLOT SIZE: .010 TYPE: 2" sch 40 SAND PACK: 3-14' MATERIAL: 10/20 silica sand DRILLING METHOD: DPT WELL DEPTH: 14' BORING DIAMETER:	sandy gravel

SCALE: 1"= ____ PAGE 2 OF 2