WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 18-Aug-15

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW15_T326_05**

Investigator(s): GVF | Landform (hillside, terrace, hummocks etc.): Footslope

Local relief (concave, convex, none): hummocky | Slope: 7.0 % / 4.0 ° | Elevation:

Subregion : Cook Inlet Mountains | Lat.: | Long.: | Datum: WGS84

Soil Map Unit Name: | **NWI classification: PSS1B**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ , Soil ☑ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? **Yes** ◉ **No** ○

Remarks:

VEGETATION - Use scientific names of plants. List all species in the plot.

	Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.	Picea mariana	22	☑	FACW
2.		0	☐	
3.		0	☐	
4.		0	☐	
5.		0	☐	
	Total Cover:	22		

Sapling/Shrub Stratum — 50% of Total Cover: 11 — 20% of Total Cover: 4.4

1.	Vaccinium uliginosum	30	☑	FAC
2.	Salix barclayi	12	☑	FAC
3.	Picea mariana	5	☐	FACW
4.	Empetrum nigrum	5	☐	FAC
5.	Rhododendron tomentosum	5	☐	FACW
6.	Vaccinium vitis-idaea	3	☐	FAC
7.	Betula nana	3	☐	FAC
8.	Linnaea borealis	1	☐	FACU
9.	Vaccinium oxycoccos	0.1	☐	OBL
10.	Rosa acicularis	0.1	☐	FACU
	Total Cover:	64.2		

Herb Stratum — 50% of Total Cover: 32.1 — 20% of Total Cover: 12.84

1.	Sanguisorba canadensis	5	☑	FACW
2.	Equisetum arvense	3	☑	FAC
3.	Cornus canadensis	1	☐	FACU
4.	Chamaenerion angustifolium	0.1	☐	FACU
5.	Geocaulon lividum	0.1	☐	FACU
6.	Rubus chamaemorus	0.1	☐	FACW
7.	Rumex arcticus	0.1	☐	FAC
8.		0	☐	
9.		0	☐	
10.		0	☐	
	Total Cover:	9.40		

50% of Total Cover: 4.700 — 20% of Total Cover: 1.880

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0.1	x 1 =	0.1
FACW Species	37.1	x 2 =	74.2
FAC Species	56.1	x 3 =	168.3
FACU Species	2.3	x 4 =	9.2
UPL Species	0	x 5 =	0
Column Totals:	95.6	(A)	251.8 (B)

Prevalence Index = B/A = 2.634

Hydrophytic Vegetation Indicators:

☑ Dominance Test is > 50%

☑ Prevalence Index is ≤3.0

☐ Morphological Adaptations [1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation [1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Plot size (radius, or length x width) 10m

% Cover of Wetland Bryophytes (Where applicable)

% Bare Ground 5

Total Cover of Bryophytes 90

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

Remarks:

SOIL

Sampling Point: SW15_T326_05

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-3									Fibric Organics	
3-5									Hemic Organics	
5-7									Sapric Organics	
7-14	10YR	2/2	100						Sandy Loam	
14-22	10YR	3/2	100						Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix [2] Location: PL=Pore Lining. RC=Root Channel. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol or Histel (A1)
- ☐ Histic Epipedon (A2)
- ☐ Hydrogen Sulfide (A4)
- ☐ Thick Dark Surface (A12)
- ☐ Alaska Gleyed (A13)
- ☐ Alaska Redox (A14)
- ☐ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils:[3]

- ☐ Alaska Color Change (TA4)[4]
- ☐ Alaska Alpine swales (TA5)
- ☐ Alaska Redox With 2.5Y Hue
- ☐ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- ☑ Other (Explain in Remarks)

[3] One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present

[4] Give details of color change in Remarks

Restrictive Layer (if present):
Type:
Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

semirounded cobbles below 6 in. Possibly missed horizon due to cobbly soil and water running into pit. Believe that C/PL are present, but due to water flowing into the pit and the cobbly matrix, we are unable to give accurate colors/percentages.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Other (Explain in Remarks)

Secondary Indicators (two or more are required)

- ☐ Water Stained Leaves (B9)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Salt Deposits (C5)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ Microtopographic Relief (D4)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ◉	No ○	Depth (inches): 14
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available:

Remarks:

water flowing into pit at 14in bgs. depth to saturation not recorded, but based depth to water and site pics, assume it is within upper 12 inches.