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_T320_02**

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

Local relief (concave, convex, none): none | Slope: 21.2 % / 12.0 ° | 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 ○	**Is the Sampled Area within a Wetland?** **Yes ◉ No ○**
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks: Walked through vaccinium tundra between here and SW15_T320_01. SW15_T320_02 at brighter photosignature, seeps coming from hillside. very diverse plot, in contrast to adjacent vaccinium hillside.

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

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum			
1.		☐	
2.		☐	
3.		☐	
4.		☐	
5.		☐	
Total Cover:	0		
Sapling/Shrub Stratum	50% of Total Cover: 0	20% of Total Cover: 0	
1. Salix barclayi	30	☑	FAC
2. Vaccinium uliginosum	10	☑	FAC
3. Salix pulchra	10	☑	FACW
4. Empetrum nigrum	5	☐	FAC
5. Spiraea stevenii	5	☐	FACU
6. Dasiphora fruticosa	3	☐	FAC
7. Loiseleuria procumbens	3	☐	FACU
8. Salix reticulata	1	☐	FAC
9. Betula nana	0.1	☐	FAC
10.	0	☐	
Total Cover:	67.1		
Herb Stratum	50% of Total Cover: 33.55	20% of Total Cover: 13.42	
1. Veratrum viride	7	☑	FAC
2. Equisetum arvense	3	☑	FAC
3. Calamagrostis canadensis	3	☑	FAC
4. Sanguisorba canadensis	1	☐	FACW
5. Chamaenerion angustifolium	1	☐	FACU
6. Eriophorum angustifolium	0.1	☐	OBL
7. Juncus arcticus	0.1	☐	OBL
8. Carex membranacea	0.1	☐	FACW
9. Pyrola grandiflora	0.1	☐	FAC
10. Gentiana douglasiana	0.1	☐	FACW
Total Cover:	15.5		
50% of Total Cover: 7.75	20% of Total Cover: 3.1		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (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	0.2	x 1 =	0.2
FACW Species	11.2	x 2 =	22.40
FAC Species	62.2	x 3 =	186.6
FACU Species	9	x 4 =	36
UPL Species	0	x 5 =	0
Column Totals:	82.6 (A)		245.2 (B)

Prevalence Index = B/A = 2.969

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

Total Cover of Bryophytes

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

Remarks: traces of Aytherium felix-femina, Aconitum delphinifolium, Gymnocarpium dryopteris, Tofieldia pusilla, Juncus castaneus, Spiranthes romanzoffiana, Sanguisorba canadensis, Geranium erianthum, Sedum rosea, Senecio triangularis, Swertia perennis, Anthoxanthum monticola, Carex microchaeta, Luzula sp.

SOIL

Sampling Point: SW15_T320_02

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

Depth (inches)	Matrix Color (moist)		Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-4			100					Mucky Peat	
4-8			100					Muck	
8-20	2.5Y	4/2	100					Sandy Clay 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: sandy clay loam

Depth (inches): 8

Hydric Soil Present? Yes ◉ No ○

Remarks:

angular gravels to cobbles throughout profile

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): 8
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 6

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

B8--sparsely vegetated concave seeps in plot.
D2--footslope/toeslope, steps down to riverine feature at valley bottom.
D3--sandy clay loam.