WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 30-Aug-15

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW15_T338_05**

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

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

Subregion : Interior Alaska Mountains | Lat.: | Long.: | Datum: WGS84

Soil Map Unit Name: | **NWI classification: PSS1E**

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: hummocky willow area with numerous pools of surface water and small channels feeding into larger channel which is visible on imagery

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	50	☑	FAC
2. Salix pulchra	10	☐	FACW
3. Ribes hudsonianum	5	☐	FAC
4. Betula glandulosa	5	☐	FAC
5. Picea mariana	1	☐	FACW
6. Rhododendron tomentosum	0.1	☐	FACW
7. Vaccinium uliginosum	0.1	☐	FAC
8. Vaccinium oxycoccos	0.1	☐	OBL
9.	0	☐	
10.	0	☐	OBL
Total Cover:	71.3		
Herb Stratum	50% of Total Cover: 35.65	20% of Total Cover: 14.26	
1. Equisetum arvense	10	☑	FAC
2. Calamagrostis canadensis	10	☑	FAC
3. Carex aquatilis	5	☐	OBL
4. Rumex arcticus	2	☐	FAC
5. Petasites frigidus	2	☐	FACW
6. Rubus arcticus(IAM)	2	☐	FACU
7. Polemonium acutiflorum	1	☐	FAC
8. Stellaria longipes	0.1	☐	FAC
9. Chamaenerion angustifolium	0.1	☐	FACU
10. Epilobium anagallidifolium	0.1	☐	FAC
Total Cover:	32.3		
50% of Total Cover: 16.15	20% of Total Cover: 6.46		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (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	5.1	x 1 =	5.1
FACW Species	13.1	x 2 =	26.20
FAC Species	83.3	x 3 =	249.9
FACU Species	2.1	x 4 =	8.4
UPL Species	0	x 5 =	0
Column Totals:	103.6 (A)		289.6 (B)

Prevalence Index = B/A = 2.795

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 20

Total Cover of Bryophytes 60

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

Remarks: open willow, mixed low and tall, high graminoid cover in wet areas between willow hummocks. few scattered picmar. bare ground = surface water. add trace of acodel, 1% arclat, juncas.

SOIL

Sampling Point: SW15_T338_05

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
0-9							Peat	
9-11							Mucky Peat	

[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:
refusal at 11, stones to boulders. possible histosol as entire profile is organic soil to underlying rocks

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): 8
Water Table Present?	Yes ◉	No ○	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:
20% of site covered by surface water. B10--numerous seeps and springs, drainage patterns. D4--hummocks.