WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Denali Borough | Sampling Date: 31-Jul-13

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T158_04**

Investigator(s): CTS, AMD | Landform (hillside, terrace, hummocks etc.): Flat

Local relief (concave, convex, none): concave | Slope: 3.0 % / 1.7 ° | Elevation: 738

Subregion : Interior Alaska Mountains | Lat.: 63.365951777 | Long.: -148.757721186 | 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.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum			
1. Picea mariana	20	☑	FACW
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
Total Cover:	20		
Sapling/Shrub Stratum	50% of Total Cover: 10	20% of Total Cover: 4	
1. Betula nana	30	☑	FAC
2. Spiraea stevenii	1	☐	FACU
3. Vaccinium uliginosum	15	☑	FAC
4. Salix pulchra	10	☐	FACW
5. Ledum decumbens	5	☐	FACW
6. Vaccinium vitis-idaea	1	☐	FAC
7. Salix barclayi	0.1	☐	FAC
8. Arctostaphylos rubra	0.1	☐	FAC
9. Vaccinium oxycoccos	0.1	☐	OBL
10.	0	☐	
Total Cover:	62.3		
Herb Stratum	50% of Total Cover: 31.15	20% of Total Cover: 12.46	
1. Carex bigelowii	15	☑	FAC
2. Petasites frigidus	15	☑	FACW
3. Rubus chamaemorus	0.1	☐	FACW
4. Tephroseris atropurpurea	0.1	☐	FAC
5. Pedicularis labradorica	0.1	☐	FACW
6. Equisetum scirpoides	0.1	☐	FACU
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
Total Cover:	30.4		
50% of Total Cover:	15.2	20% of Total Cover: 6.08	

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	50.2	x 2 =	100.4
FAC Species	61.3	x 3 =	183.9
FACU Species	1.1	x 4 =	4.400
UPL Species	0	x 5 =	0
Column Totals:	112.7 (A)		288.8 (B)

Prevalence Index = B/A = 2.563

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 1

Total Cover of Bryophytes 60

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

Remarks: Lichen = 10

SOIL

Sampling Point: SW13_T158_04

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
0-12			100					Fibric Organics	
12-18	5GY	4/1	100					Sandy Clay	

[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: Active layer

Depth (inches): 18

Hydric Soil Present? Yes ◉ No ○

Remarks:

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): 7
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 5

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks: