WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Denali Borough | Sampling Date: 01-Aug-13

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T202_01**

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

Local relief (concave, convex, none): flat | Slope: % / 9.3 ° | Elevation: 692

Subregion : Interior Alaska Mountains | Lat.: 63.39341414 | Long.: -148.537798167 | Datum: NAD83

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 glauca	25	☑	FACU
2.		0	☐	
3.		0	☐	
4.		0	☐	
5.		0	☐	
	Total Cover:	25		

50% of Total Cover: 12.5 | 20% of Total Cover: 5

	Sapling/Shrub Stratum			
1.	Salix reticulata	70	☑	FAC
2.	Salix richardsonii	40	☑	FACW
3.	Vaccinium uliginosum	30	☐	FAC
4.	Alnus viridis	30	☐	FAC
5.	Rhododendron groenlandicum	2	☐	FAC
6.	Salix pseudomonticola	1	☐	FAC
7.	Salix alaxensis	1	☐	FAC
8.	Salix glauca	1	☐	FAC
9.	Shepherdia canadensis	0.1	☐	FACU
10.	Vaccinium vitis-idaea	0.1	☐	FAC
	Total Cover:	175		

50% of Total Cover: 87.6 | 20% of Total Cover: 35.04

	Herb Stratum			
1.	Anemone richardsonii	25	☑	FAC
2.	Equisetum arvense	20	☑	FAC
3.	Parnassia palustris	1	☐	FACW
4.	Rubus arcticus (IAM)	1	☐	FACU
5.	Polemonium acutiflorum	1	☐	FAC
6.		0	☐	
7.		0	☐	
8.		0	☐	
9.		0	☐	
10.		0	☐	
	Total Cover:	48		

50% of Total Cover: 24 | 20% of Total Cover: 9.6

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	41	x 2 =	82
FAC Species	181.1	x 3 =	543.3
FACU Species	26.1	x 4 =	104.4
UPL Species	0	x 5 =	0
Column Totals:	248.2 (A)		729.7 (B)

Prevalence Index = B/A = 2.940

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 0

Total Cover of Bryophytes 70

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

Remarks: Lichen = 1. Carex sp. not flowering = Carbig? Empnig = 0.1, Vacoxy 0.1

SOIL

Sampling Point: SW13_T202_01

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					Hemic Organics	
4-9	2.5Y 3/1	100					Loam	Lots of gravel/small pebbles
9-11	5Y 2.5/1	100					Silt 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:

Restricted by boulders at 11. Seeps present but water moving down hillside mostly subsurface. Assume problematic hydric soils (soils lacking sufficient organic carbon) based on coarse material in soil profile. Surface material may be very young with retransported material from the road or water is perched on a bedrock restrictive layer.

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): 9
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 4

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks: