WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Denali Borough | Sampling Date: 08-Aug-13

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T170_05**

Investigator(s): WAD, RWM | Landform (hillside, terrace, hummocks etc.): Toeslope

Local relief (concave, convex, none): convex | Slope: 19.4 % / 11.0 ° | Elevation: 826

Subregion : Interior Alaska Mountains | Lat.: 63.422832727 | Long.: -148.651807666 | Datum: WGS84

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

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: open white spruce forest

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

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum			
1. Picea glauca	45	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
Total Cover:	45		
Sapling/Shrub Stratum	50% of Total Cover: 22.5	20% of Total Cover: 9	
1. Salix pulchra	15	☑	FACW
2. Vaccinium uliginosum	5	☐	FAC
3. Vaccinium vitis-idaea	5	☐	FAC
4. Empetrum nigrum	5	☐	FAC
5. Alnus viridis ssp. crispa	15	☑	FAC
6. Betula glandulosa	1	☐	FAC
7. Picea glauca	1	☐	FACU
8. Salix barclayi	2	☐	FAC
9. Spiraea stevenii	2	☐	FACU
10.	0	☐	
Total Cover:	51		
Herb Stratum	50% of Total Cover: 25.5	20% of Total Cover: 10.2	
1. Equisetum sylvaticum	15	☑	FAC
2. Calamagrostis canadensis	5	☐	FAC
3. Petasites frigidus	8	☐	FACW
4. Mertensia paniculata	5	☐	FACU
5. Chamerion angustifolium	1	☐	FACU
6. Boykinia richardsonii	3	☐	UPL
7. Cornus suecica	10	☑	FAC
8.	0	☐	
9.	0	☐	
10.	0	☐	
Total Cover:	47		
50% of Total Cover:	23.5	20% of Total Cover:	9.4

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	23	x 2 =	46
FAC Species	63	x 3 =	189
FACU Species	54	x 4 =	216
UPL Species	3	x 5 =	15
Column Totals:	143 (A)		466 (B)

Prevalence Index = B/A = 3.259

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 5

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

SOIL

Sampling Point: SW13_T170_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
0-5			100						Fibric Organics	
5-9			100						Sapric Organics	
9-18	10YR	3/1	90	7.5YR	5/8	10	RM	PL	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: seasonal frost, ice rich

Depth (inches): 18

Hydric Soil Present? Yes ○ No ◉

Remarks:

cannot apply A2 as soils are not saturated, cannot infer saturation from secondary indicators.

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):

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: