WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 24-Aug-15

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW15_T343_03**

Investigator(s): ERT, TXC | Landform (hillside, terrace, hummocks etc.): Hillside

Local relief (concave, convex, none): hummocky | Slope: 8.7 % / 5.0 ° | Elevation:

Subregion : Interior Alaska Mountains | Lat.: | Long.: | 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-canopy white spruce forest, plot at start of more dense canopy. low open-canopy birch-willow shrub outside of plot.

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

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Picea glauca	30	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
Total Cover:	30		

50% of Total Cover: 15 | 20% of Total Cover: 6

Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Vaccinium uliginosum	18	☑	FAC
2. Salix pulchra	15	☑	FACW
3. Salix richardsonii	15	☑	FACW
4. Alnus viridis ssp. crispa	8	☐	FAC
5. Empetrum nigrum	8	☐	FAC
6. Betula glandulosa	5	☐	FAC
7. Vaccinium vitis-idaea	4	☐	FAC
8.	0	☐	
9.	0	☐	
10.	0	☐	
Total Cover:	73		

50% of Total Cover: 36.5 | 20% of Total Cover: 14.6

Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Cornus canadensis	6	☑	FACU
2. Calamagrostis canadensis	1	☐	FAC
3. Orthilia secunda	1	☐	FACU
4. Equisetum arvense	0.1	☐	FAC
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
Total Cover:	8.1		

50% of Total Cover: 4.05 | 20% of Total Cover: 1.62

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	30	x 2 =	60
FAC Species	44.1	x 3 =	132.3
FACU Species	37	x 4 =	148
UPL Species	0	x 5 =	0
Column Totals:	111.1 (A)		340.3 (B)

Prevalence Index = B/A = 3.063

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) 5m

% Cover of Wetland Bryophytes (Where applicable) 0

% Bare Ground 0

Total Cover of Bryophytes

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: Poa sp. 0.1% salix are heavily browsed. 5m radius to stay within spruce, low open birch willow outside of spruce.

SOIL

Sampling Point: SW15_T343_03

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
0-3									Hemic Organics	Oe
3-4									Sapric Organics	Oa
4-10	10YR	4/3	100						Loamy Fine Sand	CB
10-12			100						Coarse Sand	C1. variagated soil color
12-18	2.5Y	3/2	85	10YR	3/4	15	C	PL	Very Fine Sandy Loam	C2. faint redox features

[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:
no hydric soil indicators. Curious sediment deposition, attribute it to subglacial flow, and/or retransported deposits from upslope esker deposits. Well drained soil.

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:
no wetland hydrology indicators