WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 22-Aug-15

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW15_T207_04**

Investigator(s): SLI, ATH | Landform (hillside, terrace, hummocks etc.): Hillside

Local relief (concave, convex, none): concave | Slope: 3.0 % / 1.7 ° | 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 black spruce forest on gentle hillside. Hiking to plot, areas with willow understory often had pools with standing water. this upland black spruce forest virtuallly indistinguishable from adjacent wetland black spruce forest in imagery, map this as an upland inclusion.

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

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Picea mariana	30	☑	FACW
2. Picea glauca	1	☐	FACU
3.	0	☐	
4.	0	☐	
5.	0	☐	
Total Cover:	31		

50% of Total Cover: 15.5 | 20% of Total Cover: 6.2

Sapling/Shrub Stratum			
1. Picea mariana	20	☑	FACW
2. Salix reticulata	20	☑	FAC
3. Vaccinium vitis-idaea	15	☑	FAC
4. Vaccinium uliginosum	15	☑	FAC
5. Empetrum nigrum	15	☐	FAC
6. Betula nana	7	☐	FAC
7. Salix pulchra	7	☐	FACW
8. Arctous ruber	5	☐	FAC
9. Rhododendron tomentosum	5	☐	FACW
10. Dasiphora fruticosa	1	☐	FAC
Total Cover:	110		

50% of Total Cover: 55 | 20% of Total Cover: 22

Herb Stratum			
1. Carex bigelowii	5	☑	FAC
2. Equisetum arvense	5	☑	FAC
3. Saussurea angustifolia	1	☐	FAC
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
Total Cover:	11		

50% of Total Cover: 5.5 | 20% of Total Cover: 2.2

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (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	x 1 =	0
FACW Species	62	x 2 =	124
FAC Species	89	x 3 =	267
FACU Species	1	x 4 =	4
UPL Species	0	x 5 =	0
Column Totals:	152 (A)		395 (B)

Prevalence Index = B/A = 2.599

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 5

Total Cover of Bryophytes 85

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

Remarks: 5% lichen cover.

SOIL

Sampling Point: SW15_T207_04

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
0-2			100						Fibric organics	
2-4			100						Hemic organics	
4-7			100						Sapric organics	
7-12	10YR	3/4	100						Silt Loam	subrounded cobbles-boulders
12-20	2.5Y	3/3	100						Loam	subrounded cobbles-boulders

[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:

This is the third pit dug to 20+ inches, none had hydric soil indicators or any indicators of wetland hydrology. Pit 1: 0-4 fibric, 4-8 hemic, 8-18 7.5YR 2.5/3 silt loam with subrounded cobbles-boulders. Pit 2: very similar to pit described here, oganics over high chroma mineral soils.

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 primary indicators, only one secondary indicator.