WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 19-Aug-15

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW15_T321_01**

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

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

Subregion : Cook Inlet 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 ○	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	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	5	☑	FACU
2.		0	☐	
3.		0	☐	
4.		0	☐	
5.		0	☐	
	Total Cover:	5		
	Sapling/Shrub Stratum	50% of Total Cover: 2.5	20% of Total Cover: 1	
1.	Empetrum nigrum	20	☑	FAC
2.	Vaccinium uliginosum	15	☑	FAC
3.	Betula nana	10	☐	FAC
4.	Rhododendron tomentosum	7	☐	FACW
5.	Vaccinium vitis-idaea	5	☐	FAC
6.	Picea glauca	5	☐	FACU
7.	Spiraea stevenii	0.1	☐	FACU
8.		0	☐	
9.		0	☐	
10.		0	☐	
	Total Cover:	62.1		
	Herb Stratum	50% of Total Cover: 31.05	20% of Total Cover: 12.42	
1.	Cornus suecica	5	☑	FAC
2.	Festuca altaica	2	☑	FAC
3.	Anthoxanthum monticola ssp. alpinum	2	☑	UPL
4.	Spinulum annotinum	2	☑	FACU
5.	Calamagrostis canadensis	1	☐	FAC
6.	Diphasiastrum complanatum	0.1	☐	FACU
7.		0	☐	
8.		0	☐	
9.		0	☐	
10.		0	☐	
	Total Cover:	12.1		
	50% of Total Cover: 6.05	20% of Total Cover: 2.42		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 57.1% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	7	x 2 =	14
FAC Species	58	x 3 =	174
FACU Species	14.2	x 4 =	56.80
UPL Species	0	x 5 =	0
Column Totals:	79.2 (A)		244.8 (B)

Prevalence Index = B/A = 3.091

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 25

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: 30% lichen cover

SOIL

Sampling Point: SW15_T321_01

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
0-3.5	7.5YR	2/2	100						Sapric Organics	
3.5-8	10YR	3/4	100						Loam	
8-13	7.5YR	2.5/3	100						Sandy Loam	
13-20	2.5Y	4/3	100						Sandy Clay 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: sandy clay loam

Depth (inches): 13

Hydric Soil Present? Yes ○ No ◉

Remarks:

subangular to subrounded gravels to cobbles. no hydric soil 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:

D3--sandy clay loam