WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 25-Aug-15

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW15_T209_04**

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

Local relief (concave, convex, none): hummocky | Slope: 14.0 % / 8.0 ° | 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 ○	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks: Hillside with tall spruce. Channel described in previous plot (SW15_T209_03) runs adjacent to this plot.

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

	Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.	Picea glauca	10	☑	FACU
2.	Picea mariana	25	☑	FACW
3.		0	☐	
4.		0	☐	
5.		0	☐	
	Total Cover:	35		

50% of Total Cover: 17.5 | 20% of Total Cover: 7

	Sapling/Shrub Stratum			
1.	Alnus viridis	20	☑	FAC
2.	Picea glauca	1	☐	FACU
3.	Picea mariana	1	☐	FACW
4.	Ribes hudsonianum	0.1	☐	FAC
5.	Rosa acicularis	1	☐	FACU
6.	Salix pulchra	1	☐	FACW
7.	Spiraea stevenii	1	☐	FACU
8.	Linnaea borealis	2	☐	FACU
9.	Viburnum edule	0.1	☐	FACU
10.		0	☐	
	Total Cover:	27.2		

50% of Total Cover: 13.6 | 20% of Total Cover: 5.44

	Herb Stratum			
1.	Calamagrostis canadensis	10	☑	FAC
2.	Mertensia paniculata	5	☑	FACU
3.	Cornus suecica	1	☐	FAC
4.	Equisetum sylvaticum	5	☑	FAC
5.	Boykinia richardsonii	0.1	☐	UPL
6.		0	☐	
7.		0	☐	
8.		0	☐	
9.		0	☐	
10.		0	☐	
	Total Cover:	21.1		

50% of Total Cover: 10.55 | 20% of Total Cover: 4.22

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	27	x 2 =	54
FAC Species	36.1	x 3 =	108.3
FACU Species	20.1	x 4 =	80.40
UPL Species	0.1	x 5 =	0.500
Column Totals:	83.3 (A)		243.2 (B)

Prevalence Index = B/A = 2.920

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 20

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: open spruce forest, mix of picgla and picmar with tall alder understory.

SOIL

Sampling Point: SW15_T209_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
0-3			100						Hemic Organics	
3-4			100						Sapric Organics	
4-6	2.5Y	4/2	100						Sandy Clay Loam	few, faint redox concentrations in pore linings
6-12	10YR	2/2	90	10YR	4/4	10	C	PL	Silt Loam	
12-19	5Y	4/2	70	10YR	3/4	30	C	PL	Sandy Clay Loam	compacted? with fine to coarse subang gravels

[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): 6

Hydric Soil Present? Yes ○ No ◉

Remarks:
potentially relict redox features? layers patchy and discontinuous--cryoturbation?

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