WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 04-Aug-13

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T119_09**

Investigator(s): BAB | Landform (hillside, terrace, hummocks etc.): Footslope

Local relief (concave, convex, none): hummocky | Slope: 32.4 % / 18.0 ° | Elevation: 800

Subregion : Interior Alaska Mountains | Lat.: 62.8280663118 | Long.: -147.786398325 | Datum: WGS84

Soil Map Unit Name: | **NWI classification:** PFO4B

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:

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

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum			
1. Picea mariana	5	☐	FACW
2. Picea glauca	30	☑	FACU
3.	0	☐	
4.	0	☐	
5.	0	☐	
Total Cover:	35		
Sapling/Shrub Stratum	50% of Total Cover: 17.5	20% of Total Cover: 7	
1. Betula nana	30	☑	FAC
2. Salix pulchra	20	☑	FACW
3. Vaccinium vitis-idaea	20	☑	FAC
4. Vaccinium uliginosum	5	☐	FAC
5. Salix barclayi	5	☐	FAC
6. Empetrum nigrum	8	☐	FAC
7. Picea glauca	2	☐	FACU
8. Picea mariana	8	☐	FACW
9.	0	☐	
10.	0	☐	
Total Cover:	98		
Herb Stratum	50% of Total Cover: 49	20% of Total Cover: 19.6	
1. Equisetum arvense	15	☑	FAC
2. Equisetum sylvaticum	15	☑	FAC
3. Petasites frigidus	15	☑	FACW
4. Calamagrostis canadensis	0.1	☐	FAC
5. Carex bigelowii	5	☐	FAC
6. Mertensia paniculata	10	☐	FACU
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
Total Cover:	60.1		
50% of Total Cover:	30.05	20% of Total Cover:	12.02

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 6 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 85.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	48	x 2 =	96
FAC Species	103.1	x 3 =	309.3
FACU Species	42	x 4 =	168
UPL Species	0	x 5 =	0
Column Totals:	193.1 (A)		573.3 (B)

Prevalence Index = B/A = 2.969

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 45

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

Remarks:

SOIL

Sampling Point: SW13_T119_09

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									Fibric Organics	
3-5									Hemic Organics	
5-24	5GY	5/1	70	10YR	4/4	30	C	PL	Sandy Clay	subrounded gravel, on the verge of sandy cl

[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: clay
Depth (inches): 5

Hydric Soil Present? Yes ◉ No ○

Remarks:

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): 3

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available:

Remarks: