WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 08-Aug-12

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW12_T44_53**

Investigator(s): SLI, KMK | Landform (hillside, terrace, hummocks etc.): Flat

Local relief (concave, convex, none): flat | Slope: 5.2 % / 3.0 ° | Elevation: 752

Subregion : Interior Alaska Mountains | Lat.: 62.890181578 | Long.: -148.466221643 | Datum: WGS84

Soil Map Unit Name: | **NWI classification: PSS1/EM1E**

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: pronounced microtopography, hummocks 1m high. Picea trees/shrubs on hummocks, standing water and emergents in hollows.

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

Tree Stratum	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1. Picea mariana	15	☑	FACW
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
Total Cover:	15		

Sapling/Shrub Stratum — 50% of Total Cover: 7.5 — 20% of Total Cover: 3

1. Betula nana	7	☑	FAC
2. Vaccinium uliginosum	5	☐	FAC
3. Empetrum nigrum	3	☐	FAC
4. Dasiphora fruticosa	7	☑	FAC
5. Vaccinium vitis-idaea	2	☐	FAC
6. Salix pulchra	10	☑	FACW
7. Picea glauca	1	☐	FACU
8. Picea mariana	15	☑	FACW
9.	0	☐	
10.	0	☐	
Total Cover:	50		

Herb Stratum — 50% of Total Cover: 25 — 20% of Total Cover: 10

1. Carex aquatilis	15	☑	OBL
2. Equisetum palustre	10	☑	FACW
3. Rubus chamaemorus	5	☐	FACW
4. Carex canescens (IAM)	3	☐	FAC
5. Sanguisorba canadensis	1	☐	FACW
6. Valeriana sitchensis	1	☐	FAC
7. Carex bigelowii	3	☐	FAC
8. Calamagrostis canadensis	3	☐	FAC
9.	0	☐	
10.	0	☐	
Total Cover:	41		

50% of Total Cover: 20.5 — 20% of Total Cover: 8.2

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	15	x 1 =	15
FACW Species	56	x 2 =	112
FAC Species	34	x 3 =	102
FACU Species	1	x 4 =	4
UPL Species	0	x 5 =	0
Column Totals:	106 (A)		233 (B)

Prevalence Index = B/A = 2.198

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: 45

Total Cover of Bryophytes: 50

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

Remarks: 2% unid herb, possibly first year valerian leaves.

SOIL

Sampling Point: SW12_T44_53

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc [2]	Texture	Remarks

[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:
assume hydric soils due to inundation and hydrophytic vegetation

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): 8
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:
standing water between hummocks, with iron floc on sediments. estimate 50% spruce hummocks, 50% emergents w standing water.