WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 03-Jul-13

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T182_05**

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

Local relief (concave, convex, none): | Slope: % / 1.5 ° | Elevation: 891

Subregion : Interior Alaska Mountains | Lat.: 62.8696160322 | Long.: -148.607491971 | Datum: NAD83

Soil Map Unit Name: | **NWI classification: PSS1/4B**

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: shrubby flat apprx 1m above adjacent wet meadow, not hummocks soil covered boulders

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

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Picea glauca	0.1	☐	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
Total Cover:	0.1		

Sapling/Shrub Stratum — 50% of Total Cover: 0.05 — 20% of Total Cover: 0.02

1. Betula glandulosa	5	☐	FAC
2. Betula nana	15	☐	FAC
3. Vaccinium uliginosum	30	☑	FAC
4. Salix fuscescens	5	☐	FACW
5. Salix pulchra	5	☐	FACW
6. Rhododendron tomentosum	20	☐	FACW
7. Empetrum nigrum	30	☑	FAC
8. Spiraea stevenii	2	☐	FACU
9. Vaccinium vitis-idaea	2	☐	FAC
10. Andromeda polifolia (IAM)	1	☐	OBL
Total Cover:	115		

Herb Stratum — 50% of Total Cover: 57.5 — 20% of Total Cover: 23

1. Rubus chamaemorus	3	☑	FACW
2. Carex bigelowii	5	☑	FAC
3. Anemone narcissiflora	1	☐	FACU
4. Lupinus arcticus	2	☑	FACU
5. Eriophorum angustifolium	2	☑	OBL
6. Pedicularis labradorica	2	☑	FACW
7. Equisetum arvense	2	☑	FAC
8.	0	☐	
9.	0	☐	
10.	0	☐	
Total Cover:	17		

50% of Total Cover: 8.5 — 20% of Total Cover: 3.4

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 77.8% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	3	x 1 =	3
FACW Species	35	x 2 =	70
FAC Species	89	x 3 =	267
FACU Species	5.1	x 4 =	20.4
UPL Species	0	x 5 =	0
Column Totals:	132.1 (A)		360.4 (B)

Prevalence Index = B/A = 2.728

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 85

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

Remarks: surface water 2, exposed bolders, spphag 25 plesch 30, hylspl 10 cladis 5. No dominant trees as total tree cover <5%.

SOIL

Sampling Point: SW13_T182_05

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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2			100						Fibric Organics	
2-4									Hemic Organics	
4-8	5YR	2.5/2	100						Fibric Organics	silty peat. and cobbles
8-13	7.5YR	3/3	100						Sandy Loam	gravel inclusion
13-16	10YR	3/6	100						Loam	gravel inclusion

[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: frost

Depth (inches): 15

Hydric Soil Present? Yes ◉ No ○

Remarks:

cryoturbated. positive reaction to alpha, alpha-dipyridyl (tunred a light pink).

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): 5
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 4

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

shallow watr table temporary or driven by perching on underlying bedrock?