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_03**

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

Local relief (concave, convex, none): convex | Slope: % / 2.1 ° | Elevation: 900

Subregion : Interior Alaska Mountains | Lat.: 62.8725228314 | Long.: -148.60149479 | Datum: NAD83

Soil Map Unit Name: | **NWI classification: PSS1B**

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: upper slope/shoulder above wet meadow, borderline low tall abundant betnan, small barren depressions that prob have standig water seasonally

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

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

Sapling/Shrub Stratum — 50% of Total Cover: 0 — 20% of Total Cover: 0

1.	Betula glandulosa	65	☑	FAC
2.	Salix pulchra	5	☐	FACW
3.	Rhododendron tomentosum	20	☐	FACW
4.	Rhododendron groenlandicum	5	☐	FAC
5.	Empetrum nigrum	35	☑	FAC
6.	Spiraea stevenii	10	☐	FACU
7.	Vaccinium uliginosum	25	☐	FAC
8.	Vaccinium vitis-idaea	1	☐	FAC
9.	Picea glauca	0.1	☐	FACU
10.		0	☐	
	Total Cover:	166		

Herb Stratum — 50% of Total Cover: 83.05 — 20% of Total Cover: 33.22

1.	Cornus suecica	15	☑	FAC
2.	Rubus arcticus (IAM)	10	☑	FACU
3.	Rubus chamaemorus	5	☐	FACW
4.	Calamagrostis canadensis	3	☐	FAC
5.	Trientalis europaea	1	☐	FACU
6.	Equisetum arvense	3	☐	FAC
7.	Anemone multifida	2	☐	UPL
8.	Artemisia norvegica	1	☐	FACU
9.	Carex aquatilis	5	☐	OBL
10.	Diphasiastrum alpinum	1	☐	FACU
	Total Cover:	46		

50% of Total Cover: 23 — 20% of Total Cover: 9.2

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	5	x 1 =	5
FACW Species	30	x 2 =	60
FAC Species	152	x 3 =	456
FACU Species	23.1	x 4 =	92.40
UPL Species	2	x 5 =	10
Column Totals:	212.1 (A)		623.4 (B)

Prevalence Index = B/A = 2.939

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 1

Total Cover of Bryophytes 65

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

Remarks: hylspl 35, stereo 5, cladis 15, neparc 10, carbig? 2 just emerging

SOIL

Sampling Point: SW13_T182_03

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	
2-10	5YR 3/3	55					Sandy Loam	10 yr2/2 organics 45% cryoturbated
10-12	10YR 3/3	100					Loamy Sand	few small gravel

[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): 12

Hydric Soil Present? Yes ◉ No ○

Remarks:
positive reaction to alpha, alpha-dipyridyl. cryoturbated soils.

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): 10
Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 8

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:
weak but positive reaction to alpha, alpha-dipyridyl. really wet.