WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 10-Jul-13

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T135_06**

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

Local relief (concave, convex, none): concave | Slope: 8.7 % / 5.0 ° | Elevation: 1044

Subregion : Southcentral Alaska | Lat.: 62.889755249 | Long.: -148.905586839 | Datum: WGS84

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 ○	**Is the Sampled Area within a Wetland?** **Yes ◉ No ○**
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks: many small drainage ways thru plot, slow

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		

50% of Total Cover: 0 | 20% of Total Cover: 0

	Sapling/Shrub Stratum			
1.	Salix pulchra	55	☑	FACW
2.	Vaccinium vitis-idaea	10	☐	FAC
3.	Empetrum nigrum	10	☐	FAC
4.	Vaccinium uliginosum	10	☐	FAC
5.	Spiraea stevenii	20	☑	FACU
6.	Salix barclayi	10	☐	FAC
7.	Salix reticulata	10	☐	FAC
8.		0	☐	
9.		0	☐	
10.		0	☐	
	Total Cover:	125		

50% of Total Cover: 62.5 | 20% of Total Cover: 25

	Herb Stratum			
1.	Rubus arcticus ssp. stellatus	5	☐	FAC
2.	Rubus chamaemorus	8	☑	FACW
3.	Sedum rosea	10	☑	FAC
4.	Aconitum delphinifolium	5	☐	FAC
5.	Valeriana capitata	8	☑	FAC
6.	Petasites frigidus	10	☑	FACW
7.	Luzula arcuata	2	☐	FACU
8.	Festuca altaica	3	☐	FAC
9.	Arctagrostis latifolia	5	☐	FACW
10.	Sanguisorba canadensis	5	☐	FACW
	Total Cover:	61		

50% of Total Cover: 30.5 | 20% of Total Cover: 12.2

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	83	x 2 =	166
FAC Species	81	x 3 =	243
FACU Species	22	x 4 =	88
UPL Species	0	x 5 =	0
Column Totals:	186 (A)		497 (B)

Prevalence Index = B/A = 2.672

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 80

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

Remarks: polacu 2, carpod 5, trispi 3, poaarc 2, aneric 5, verwor 2, carbig 3, thalictrum alpinum 2, spinulum annotinum 2, equisetum arvense 5, dodecatheon frigidum 5, artnor 3

SOIL

Sampling Point: SW13_T135_06

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
0-3			100						Fibric Organics	
3-16	10YR	3/2	95	5YR	3/4	5	C	PL	Sandy Loam	w 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: frost

Depth (inches): 16

Hydric Soil Present? Yes ◉ No ○

Remarks:

positive reaction to alpha, alpha-dipyridyl

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): 3

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

many small active drainage tracks w water. positive reaction to alpha, alpha-dipyridyl.