WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 20-Aug-15

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW15_T305_03**

Investigator(s): GVF | Landform (hillside, terrace, hummocks etc.): Palsa

Local relief (concave, convex, none): hummocky | Slope: 0.0 % / 0.0 ° | Elevation:

Subregion : Interior Alaska Mountains | Lat.: | Long.: | Datum: WGS84

Soil Map Unit Name: | **NWI classification:** PSS3/1B

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: Palsa, surrounded by emergent meadows.

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

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

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

	Sapling/Shrub Stratum			
1.	Rhododendron tomentosum	25	☑	FACW
2.	Vaccinium vitis-idaea	20	☑	FAC
3.	Vaccinium uliginosum	15	☐	FAC
4.	Betula nana	10	☐	FAC
5.	Empetrum nigrum	10	☐	FAC
6.	Rhododendron groenlandicum	5	☐	FAC
7.	Arctous ruber	3	☐	FAC
8.	Picea mariana	0.1	☐	FACW
9.	Vaccinium oxycoccos	0.1	☐	OBL
10.		0	☐	
	Total Cover:	88.2		

50% of Total Cover: 44.1 | 20% of Total Cover: 17.64

	Herb Stratum			
1.	Rubus chamaemorus	12	☑	FACW
2.	Carex bigelowii	0.1	☐	FAC
3.		0	☐	
4.		0	☐	
5.		0	☐	
6.		0	☐	
7.		0	☐	
8.		0	☐	
9.		0	☐	
10.		0	☐	
	Total Cover:	12.1		

50% of Total Cover: 6.05 | 20% of Total Cover: 2.42

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (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	0.1	x 1 =	0.1
FACW Species	37.1	x 2 =	74.2
FAC Species	63.1	x 3 =	189.3
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	100.3 (A)		263.6 (B)

Prevalence Index = B/A = 2.628

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) 5m

% Cover of Wetland Bryophytes (Where applicable)

% Bare Ground 70

Total Cover of Bryophytes 20

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

Remarks: bare ground is litter below dense shrubs

SOIL

Sampling Point: SW15_T305_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 %	Type [1]	Loc [2]	Texture	Remarks
0-20							Mucky Peat	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix [2] Location: PL=Pore Lining. RC=Root Channel. M=Matrix

Hydric Soil Indicators:

- [x] 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: permafrost
Depth (inches): 20

Hydric Soil Present? Yes (●) No ( )

Remarks:
palsa

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one is sufficient)

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [x] 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)
- [x] Shallow Aquitard (D3)
- [x] Microtopographic Relief (D4)
- [x] FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ( ) No (●) Depth (inches):
Water Table Present? Yes (●) No ( ) Depth (inches): 13
Saturation Present? (includes capillary fringe) Yes (●) No ( ) Depth (inches): 6

Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:
D3--permafrost. D4--palsa