WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 24-Aug-15

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW15_T315_07**

Investigator(s): EKJ, SCB | Landform (hillside, terrace, hummocks etc.): drainage

Local relief (concave, convex, none): hummocky | Slope: 7.0 % / 4.0 ° | Elevation:

Subregion : Cook Inlet Mountains | Lat.: | Long.: | Datum: WGS84

Soil Map Unit Name: | **NWI classification: PSS1/EM1B**

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: small permanent stream along north side, approx 2 ft wide, incised 1 ft, water depth 6 in, bottom large angular cobbles, no emergent vegetation, overhanging tall willows

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	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix pulchra	50	☑	FACW
2. Salix barclayi	10	☐	FAC
3. Dasiphora fruticosa	0.1	☐	FAC
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
Total Cover:	60.1		

50% of Total Cover: 30.05 | 20% of Total Cover: 12.02

Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Calamagrostis canadensis	25	☑	FAC
2. Dryopteris expansa	2	☐	FACU
3. Streptopus amplexifolius	1	☐	FACU
4. Sanguisorba canadensis	1	☐	FACW
5. Achillea millefolium	1	☐	FACU
6. Mertensia paniculata	1	☐	FACU
7. Viola palustris	1	☐	FACW
8. Rhodiola integrifolia	1	☐	FAC
9. Chamaenerion angustifolium	1	☐	FACU
10. Equisetum variegatum	0.1	☐	FACW
Total Cover:	34.1		

50% of Total Cover: 17.05 | 20% of Total Cover: 6.82

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (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	x 1 =	0
FACW Species	52.1	x 2 =	104.2
FAC Species	36.1	x 3 =	108.3
FACU Species	6	x 4 =	24
UPL Species	0	x 5 =	0
Column Totals:	94.2 (A)		236.5 (B)

Prevalence Index = B/A = 2.511

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 5

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

Remarks: tall open willow shrub, calcan in openings. add traces of polemonium acutiflorum, boykinia richardsonii, carbig

SOIL

Sampling Point: SW15_T315_07

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
0-1		100					Peat	
1-4	10YR 4/4	100					Sandy Loam	
4-21		100					Muck	w some fines. tephra at 10.5"?

[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:
Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:
Silty sand on organics in soil pit makes me think flooding?

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)
- [x] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [x] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 12

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:
although neither a water table nor a shallow aquitard was observed, this saturation is believed to be related to groundwater discharge (i.e. not episaturation) due to landscape position (drainage), small perennial stream flowing through plot, and thick organic development. D2--geomorphic position.