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_T127_01**

Investigator(s): SLI, SCB | Landform (hillside, terrace, hummocks etc.): Mountainslope

Local relief (concave, convex, none): hummocky | Slope: % / 5.9 ° | Elevation: 120

Subregion : Southcentral Alaska | Lat.: 62.9417074916 | Long.: -149.006336808 | Datum: NAD83

Soil Map Unit Name: | **NWI classification: PEM1B**

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: alpine swale with small headwater streams. see SW13-T127-V01 for stream characterization. stream does not appear to flood community, this is a saturated system. cannot locate water table due to abundant cobbles-boulders.

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. Luetkea pectinata	10	☑	UPL
2. Harrimanella stelleriana	5	☑	FACW
3. Salix rotundifolia	5	☑	FAC
4. Cassiope tetragona	1	☐	FACU
5. Empetrum nigrum	0.1	☐	FAC
6. Cassiope lycopodioides	0.1	☐	UPL
7. Salix pulchra	0.1	☐	FACW
8. Salix reticulata	0.1	☐	FAC
9.	0	☐	
10.	0	☐	FAC
Total Cover:	21.4		

50% of Total Cover: 10.7 | 20% of Total Cover: 4.28

Herb Stratum			
1. Sanguisorba officinalis	3	☑	FACW
2. Micranthes hieraciifolia	1	☑	FAC
3. Rhodiola integrifolia	1	☑	FAC
4. Alopecurus magellanicus	1	☑	FACW
5. Equisetum arvense	1	☑	FAC
6. Anemone richardsonii	1	☑	FAC
7. Micranthes nelsoniana	1	☑	FAC
8. Arctagrostis latifolia	1	☑	FACW
9. Bistorta plumosa	0.1	☐	FACU
10. Veronica wormskjoldii	0.1	☐	FAC
Total Cover:	10.2		

50% of Total Cover: 5.1 | 20% of Total Cover: 2.04

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 10 (A)

Total Number of Dominant Species Across All Strata: 11 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 90.9% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	10.1	x 2 =	20.20
FAC Species	10.3	x 3 =	30.90
FACU Species	1.1	x 4 =	4.400
UPL Species	10.1	x 5 =	50.50
Column Totals:	31.6 (A)		106.0 (B)

Prevalence Index = B/A = 3.354

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 40

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

Remarks: trace unid carex, carbig, rumex arcticus, veronica wormskjoldii, artemesia arctica, carex crawfordii, lycopodium annotinum, eriang, arclat, pyrola grandiflora, sibbaldia procumbens, cassiope tetragona, petffi, polacu. bare ground = rock. total graminoid cover app. 10%

SOIL

Sampling Point: SW13_T127_01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-2			100						Fibric Organics	
2-6	10YR	3/2	100						Sapric Organics	
6-8	2.5Y	3/2	90	7.5YR	4/4	10	C	PL	Silt Loam	w high organic content
8-12	10YR	3/2	100						Sapric Organics	

[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:
Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:
subangular cobbles-boulders throughout soil profile

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): 2
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 11

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:
scattered pools of standing water in drainages throughout site, but do not believe these meet the intent of A1, Surface Water. drainages (R3UBH) characterized by SW13-T127-V01. soils saturated at 11in bgs, cannot locate water table (cobbles-boulders throughout soil profile) or shallow aquitard, thus not checking A3, Saturation. large alpine swale, water from adjacent slopes.