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_07**

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

Local relief (concave, convex, none): | Slope: 0.0 % / 0.0 ° | Elevation: 1009

Subregion : Southcentral Alaska | Lat.: 62.892554879 | Long.: -148.914700389 | Datum: WGS84

Soil Map Unit Name: | **NWI classification: PSS4B**

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: relief is soil covered rocky mounds and pits, drained basin? soils collapsing in pit

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

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum			
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. Empetrum nigrum	35	☑	FAC
2. Cassiope tetragona	10	☑	FACU
3. Salix rotundifolia	8	☐	FAC
4. Salix fuscescens	8	☐	FACW
5. Salix pulchra	5	☐	FACW
6. Loiseleuria procumbens	5	☐	FACU
7. Betula nana	3	☐	FAC
8. Spiraea stevenii	3	☐	FACU
9. Diapensia lapponica	2	☐	UPL
10. Ledum decumbens	5	☐	FACW
Total Cover:	84		
Herb Stratum	50% of Total Cover: 42	20% of Total Cover: 16.8	
1. Carex bigelowii	12	☑	FAC
2. Eriophorum angustifolium	1	☐	OBL
3. Anthoxanthum monticola ssp. alpinum	5	☑	FACU
4. Vaccinium uliginosum	3	☐	FAC
5. Artemisia norvegica	2	☐	FACU
6. Carex membranacea	1	☐	FACW
7. Anemone narcissiflora	1	☐	FACU
8. Huperzia selago var. selago	1	☐	UPL
9. Tofieldia coccinea	0.1	☐	FAC
10. Arnica lessingii	0.1	☐	UPL
Total Cover:	26.2		
50% of Total Cover: 13.1	20% of Total Cover: 5.24		

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	1	x 1 =	1
FACW Species	19	x 2 =	38
FAC Species	61	x 3 =	183
FACU Species	26	x 4 =	104
UPL Species	3	x 5 =	15
Column Totals:	110 (A)		341 (B)

Prevalence Index = B/A = 3.100

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 2

Total Cover of Bryophytes 15

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: lichf 60, water 5, camlas 0.1, lyccla 1, fesalt 1, picgla 0.1, andpol 2.

SOIL

Sampling Point: SW13_T135_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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-1		100					Fibric Organics	
1-15	10Y 4/1	85	7.5YR 4/6	15	C	PL	Sandy Loam	lots of 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:
Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:
lots of frost boils. endded up digging in one otherwise would have hit cobbles.

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): 6
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 1

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks: