## WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Denali Borough | Sampling Date: 06-Aug-13

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T148_03**

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

Local relief (concave, convex, none): hummocky | Slope: 0.0 % / 0.0 ° | Elevation: 728

Subregion : Interior Alaska Mountains | Lat.: 63.389683604 | Long.: -148.595952392 | 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: bright green signature in aerial between obvious forest patches. shrubby, little standing water. closer to road and across road are PEM1F caraqu-dominated wetlands, possibly too small to map seperately.

### 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. Picea glauca | 7 | ☑ | FACU |
| 2. Betula nana | 7 | ☑ | FAC |
| 3. Vaccinium uliginosum | 7 | ☑ | FAC |
| 4. Dasiphora fruticosa | 5 | ☑ | FAC |
| 5. Salix reticulata | 5 | ☑ | FAC |
| 6. Picea mariana | 5 | ☑ | FACW |
| 7. Salix barclayi | 4 | ☐ | FAC |
| 8. Salix pulchra | 3 | ☐ | FACW |
| 9. Empetrum nigrum | 3 | ☐ | FAC |
| 10. Andromeda polifolia (IAM) | 1 | ☐ | OBL |
| **Total Cover:** | 47 | | |
| **Herb Stratum** | 50% of Total Cover: 23.5 | 20% of Total Cover: 9.4 | |
| 1. Carex aquatilis | 7 | ☑ | OBL |
| 2. Equisetum arvense | 3 | ☑ | FAC |
| 3. Equisetum variegatum var. alaskanum | 3 | ☑ | UPL |
| 4. Parnassia palustris | 1 | ☐ | FACW |
| 5. Equisetum fluviatile | 1 | ☐ | OBL |
| 6. Spiranthes romanzoffiana | 0.1 | ☐ | OBL |
| 7. Equisetum palustre | 0.1 | ☐ | FACW |
| 8. Platanthera hyperborea | 0.1 | ☐ | FACW |
| 9. Bistorta vivipara | 0.1 | ☐ | FAC |
| 10. | 0 | ☐ | |
| **Total Cover:** | 15.4 | | |
| 50% of Total Cover: 7.7 | 20% of Total Cover: 3.08 | | |

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 77.8% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL Species | 9.1 | x 1 = | 9.1 |
| FACW Species | ##### | x 2 = | 18.40 |
| FAC Species | 34 | x 3 = | 102 |
| FACU Species | 7 | x 4 = | 28 |
| UPL Species | 3 | x 5 = | 15 |
| Column Totals: | 62.3 (A) | | 172.5 (B) |

Prevalence Index = B/A = 2.769

**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 5

Total Cover of Bryophytes 90

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

Remarks: 2% each collected sedges. 1% vacvit, leddec. trace vacoxy, pedicularis

## SOIL

**Sampling Point: SW13_T148_03**

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 |
|---|---|---|---|---|---|---|---|---|---|
| 0-9 | 7.5YR | 3/2 | 100 | | | | | Fibric Organics | |
| 9-16 | 7.5YR | 3/1 | 100 | | | | | Hemic Organics | |
| 16-18 | 5YR | 3/1 | 100 | | | | | Silt Loam | high organic content |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

[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 cobble and gravel 40% at 13in

## 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): 0 |

**Wetland Hydrology Present?** Yes ◉ No ○

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

Remarks: