## WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Denali Borough | Sampling Date: 05-Aug-13

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T201_04**

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

Local relief (concave, convex, none): rolling | Slope: 1.7 % / 1.0 ° | Elevation: 686

Subregion : Interior Alaska Mountains | Lat.: 63.364044547 | Long.: -148.943900824 | 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 ○<br>Hydric Soil Present? Yes ◉ No ○<br>Wetland Hydrology Present? Yes ◉ No ○ | **Is the Sampled Area within a Wetland?** **Yes** ◉ **No** ○ |

Remarks:

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

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** | | | |
| 1. Picea glauca | 3 | ☑ | FACU |
| 2. | 0 | ☐ | |
| 3. | 0 | ☐ | |
| 4. | 0 | ☐ | |
| 5. | 0 | ☐ | |
| **Total Cover:** | 3 | | |
| **Sapling/Shrub Stratum** | 50% of Total Cover: 1.5 | 20% of Total Cover: 0.6 | |
| 1. Picea glauca | 7 | ☐ | FACU |
| 2. Salix pulchra | 20 | ☑ | FACW |
| 3. Salix barclayi | 15 | ☑ | FAC |
| 4. Vaccinium uliginosum | 20 | ☑ | FAC |
| 5. Ledum decumbens | 7 | ☐ | FACW |
| 6. Empetrum nigrum | 10 | ☐ | FAC |
| 7. Vaccinium vitis-idaea | 5 | ☐ | FAC |
| 8. Vaccinium oxycoccos | 0.1 | ☐ | OBL |
| 9. | 0 | ☐ | |
| 10. | 0 | ☐ | |
| **Total Cover:** | 84.1 | | |
| **Herb Stratum** | 50% of Total Cover: 42.05 | 20% of Total Cover: 16.82 | |
| 1. Carex aquatilis | 7 | ☑ | OBL |
| 2. Equisetum arvense | 10 | ☑ | FAC |
| 3. Petasites frigidus | 10 | ☑ | FACW |
| 4. Calamagrostis canadensis | 3 | ☐ | FAC |
| 5. Rumex arcticus | 0.1 | ☐ | FAC |
| 6. | 0 | ☐ | |
| 7. | 0 | ☐ | |
| 8. | 0 | ☐ | |
| 9. | 0 | ☐ | |
| 10. | 0 | ☐ | |
| **Total Cover:** | 30.1 | | |
| 50% of Total Cover: | 15.05 | 20% of Total Cover: | 6.02 |

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 85.7% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL Species | 7.1 | x 1 = | 7.1 |
| FACW Species | 37 | x 2 = | 74 |
| FAC Species | 63.1 | x 3 = | 189.3 |
| FACU Species | 10 | x 4 = | 40 |
| UPL Species | 0 | x 5 = | 0 |
| Column Totals: | 117.2 (A) | | 310.4 (B) |

Prevalence Index = B/A = 2.648

**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 3

Total Cover of Bryophytes 95

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

Remarks:

## SOIL

**Sampling Point: SW13_T201_04**

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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-4 | 5YR | 2.5/1 | 100 | | | | | | Fibric Organics | |
| 4-12 | 5PB | 4/1 | 75 | 2.5YR | 5/6 | 25 | C | PL | Clay Loam | |
| | | | | | | | | | | |
| | | | | | | | | | | |
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| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

[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: active layer

Depth (inches): 12

**Hydric Soil Present?** Yes ◉ No ○

Remarks:

## 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):

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

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

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

Remarks: