## WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 03-Jul-13

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T182_05**

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

Local relief (concave, convex, none): | Slope: 1.7 % / 1.0 ° | Elevation: 898

Subregion : Interior Alaska Mountains | Lat.: 62.869616032 | Long.: -148.60749197 | Datum: WGS84

Soil Map Unit Name: | **NWI classification: PSS1/4B**

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: shrubby flat apprx 1m above adjacent wet meadow, not hummocks soil covered boulders

**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. Betula glandulosa | 5 | ☐ | FAC |
| 2. Betula nana | 15 | ☐ | FAC |
| 3. Vaccinium uliginosum | 30 | ☑ | FAC |
| 4. Salix fuscescens | 5 | ☐ | FACW |
| 5. Salix pulchra | 5 | ☐ | FACW |
| 6. Ledum decumbens | 20 | ☐ | FACW |
| 7. Empetrum nigrum | 30 | ☑ | FAC |
| 8. Spiraea stevenii | 2 | ☐ | FACU |
| 9. Vaccinium vitis-idaea | 2 | ☐ | FAC |
| 10. Andromeda polifolia (IAM) | 1 | ☐ | OBL |
| **Total Cover:** | 115 | | |
| **Herb Stratum** | 50% of Total Cover: 57.5 | 20% of Total Cover: 23 | |
| 1. Rubus chamaemorus | 3 | ☑ | FACW |
| 2. Carex bigelowii | 5 | ☑ | FAC |
| 3. Anemone narcissiflora | 1 | ☐ | FACU |
| 4. Lupinus arcticus | 2 | ☑ | FACU |
| 5. Eriophorum angustifolium | 2 | ☑ | OBL |
| 6. Pedicularis labradorica | 2 | ☑ | FACW |
| 7. Equisetum arvense | 2 | ☑ | FAC |
| 8. Picea glauca | 0.1 | ☐ | FACU |
| 9. | 0 | ☐ | |
| 10. | 0 | ☐ | |
| **Total Cover:** | 17.1 | | |
| | 50% of Total Cover: 8.55 | 20% of Total Cover: 3.42 | |

**Dominance Test worksheet:**

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

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 87.5% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL Species | 3 | x 1 = | 3 |
| FACW Species | 35 | x 2 = | 70 |
| FAC Species | 89 | x 3 = | 267 |
| FACU Species | 5.1 | x 4 = | 20.4 |
| UPL Species | 0 | x 5 = | 0 |
| Column Totals: | 132.1 (A) | | 360.4 (B) |

Prevalence Index = B/A = 2.728

**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 85

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

Remarks: surface water 2, exposed bolders, spphag 25 plesch 30, hylspl 10 cladis 5

## SOIL

**Sampling Point: SW13_T182_05**

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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-2 | | | 100 | | | | | | Fibric Organics | |
| 2-4 | | | | | | | | | Hemic Organics | |
| 4-8 | 5YR | 2.5/2 | 100 | | | | | | Fibric Organics | silty peat. and cobbles |
| 8-13 | 7.5YR | 3/3 | 100 | | | | | | Sandy Loam | gravel inclusion |
| 13-16 | 10YR | 3/6 | 100 | | | | | | Loam | gravel inclusion |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

[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: frost

Depth (inches): 15

**Hydric Soil Present?** Yes ◉ No ○

Remarks:

cryoturbated. positive reaction to alpha, alpha-dipyridyl (tunred a light pink).

## 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): 5 |
| Saturation Present? (includes capillary fringe) | Yes ◉ | No ○ | Depth (inches): 4 |

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

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

Remarks:

shallow watr table temporary or driven by perching on underlying bedrock?