## 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_T161_09**

Investigator(s): BAB | Landform (hillside, terrace, hummocks etc.): Bench

Local relief (concave, convex, none): rolling | Slope: % / 6.6 ° | Elevation: 123

Subregion : Interior Alaska Mountains | Lat.: 63.3353426122 | Long.: -148.507509716 | Datum: NAD83

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

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:

**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 | | |
| | **Sapling/Shrub Stratum** | 50% of Total Cover: 0 | 20% of Total Cover: 0 | |
| 1. | Salix stolonifera | 8 | ☑ | UPL |
| 2. | Salix reticulata | 2 | ☐ | FAC |
| 3. | Luetkea pectinata | 2 | ☐ | UPL |
| 4. | | 0 | ☐ | |
| 5. | | 0 | ☐ | |
| 6. | | 0 | ☐ | |
| 7. | | 0 | ☐ | |
| 8. | | 0 | ☐ | |
| 9. | | 0 | ☐ | |
| 10. | | 0 | ☐ | |
| | **Total Cover:** | 12 | | |
| | **Herb Stratum** | 50% of Total Cover: 6 | 20% of Total Cover: 2.4 | |
| 1. | Festuca altaica | 20 | ☑ | FAC |
| 2. | Carex podocarpa | 8 | ☑ | FAC |
| 3. | Artemisia norvegica | 6 | ☑ | FACU |
| 4. | Calamagrostis canadensis | 5 | ☐ | FAC |
| 5. | Petasites frigidus | 5 | ☐ | FACW |
| 6. | Rhodiola integrifolia | 5 | ☐ | FAC |
| 7. | Oxyria digyna | 4 | ☐ | FACU |
| 8. | Luzula parviflora | 2 | ☐ | FAC |
| 9. | Sanguisorba canadensis | 2 | ☐ | FACW |
| 10. | Chamaenerion latifolium | 2 | ☐ | FAC |
| | **Total Cover:** | 59 | | |
| | | 50% of Total Cover: 29.5 | 20% of Total Cover: 11.8 | |

**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 | 0 | x 1 = | 0 |
| FACW Species | 7 | x 2 = | 14 |
| FAC Species | 44 | x 3 = | 132 |
| FACU Species | 10 | x 4 = | 40 |
| UPL Species | 10 | x 5 = | 50 |
| Column Totals: | 71 (A) | | 236 (B) |

Prevalence Index = B/A = 3.324

**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 5

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

Remarks: pyrasa, bisoff trace. rubarc 2%

## SOIL

**Sampling Point: SW13_T161_09**

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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-3 | | | 100 | | | | | | Fibric Organics | |
| 3-14 | 10YR | 2/2 | 100 | | | | | | Loamy Sand | w semi ang gravel and cobbles |
| 14-15 | 10YR | 3/2 | 100 | | | | | | Loam | |
| 15-18 | 2.5Y | 3/3 | 100 | | | | | | Sandy Loam | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

[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:
no hydric soil indicators observed

## 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:
no wetland hydrology indicators observed. looks like an old river terrace.