## WETLAND DETERMINATION DATA FORM - Alaska Region

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

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T161_06**

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

Local relief (concave, convex, none): hummocky | Slope: 17.6 % / 10.0 ° | Elevation: 1330

Subregion : Interior Alaska Mountains | Lat.: 63.3313869406 | Long.: -148.507527737 | Datum: WGS84

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: well vegetated bench that is relatively wet compared to surrounding slopes

### 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 | | |

50% of Total Cover: 0 | 20% of Total Cover: 0

| | Sapling/Shrub Stratum | | | |
|---|---|---|---|---|
| 1. | Salix stolonifera | 8 | ☑ | UPL |
| 2. | Cassiope tetragona | 1 | ☐ | FACU |
| 3. | Spiraea stevenii | 1 | ☐ | FACU |
| 4. | Empetrum nigrum | 1 | ☐ | FAC |
| 5. | | 0 | ☐ | |
| 6. | | 0 | ☐ | |
| 7. | | 0 | ☐ | |
| 8. | | 0 | ☐ | |
| 9. | | 0 | ☐ | |
| 10. | | 0 | ☐ | |
| | **Total Cover:** | 11 | | |

50% of Total Cover: 5.5 | 20% of Total Cover: 2.2

| | Herb Stratum | | | |
|---|---|---|---|---|
| 1. | Polemonium pulcherrimum | 3 | ☐ | UPL |
| 2. | Antennaria monocephala | 2 | ☐ | UPL |
| 3. | Artemisia frigida | 2 | ☐ | UPL |
| 4. | Sedum rosea | 8 | ☑ | FAC |
| 5. | Trisetum spicatum | 1 | ☐ | FAC |
| 6. | Petasites frigidus | 2 | ☐ | FACW |
| 7. | Carex bigelowii | 4 | ☑ | FAC |
| 8. | Carex podocarpa | 2 | ☐ | FAC |
| 9. | Arctagrostis latifolia | 1 | ☐ | FACW |
| 10. | Anemone parviflora | 4 | ☑ | FACU |
| | **Total Cover:** | 29 | | |

50% of Total Cover: 14.5 | 20% of Total Cover: 5.8

**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 | 3 | x 2 = | 6 |
| FAC Species | 16 | x 3 = | 48 |
| FACU Species | 6 | x 4 = | 24 |
| UPL Species | 15 | x 5 = | 75 |
| Column Totals: | 40 (A) | | 153 (B) |

Prevalence Index = B/A = 3.825

**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 3

Total Cover of Bryophytes 50

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

Remarks: camlas, arnles, pryasa, pedcap, poaalp, sibpro trace bryophytes mostly moss

## SOIL

**Sampling Point: SW13_T161_06**

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 | Fibric Organics |
| 1-5 | 10YR | 4/2 | 85 | 10YR | 4/6 | 15 | C | PL | Silt Loam | few sub rounded to ang gravel and cobbles |
| 5-17 | 2.5Y | 5/2 | 80 | 10YR | 4/4 | 20 | C | PL | Sandy Loam | few sub rounded to ang gravel and cobbles |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

[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:
cannot apply bAlaska Redox w 2.5Y Hue as vegetation is not hydrophytic and no primary wetland hydrology indicators were 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:
during dry season. could be saturated most of the summer (frost and melting). looks like this has water flowing through occasionally. bpv above has drainage channels as well. could be seasonally saturated. N facing slope probably most of the time a snowbed.