

**WETLAND DETERMINATION DATA FORM - Alaska Region**

Project/Site: Susitna-Watana Hydroelectric Project Borough/City: Denali Borough Sampling Date: 31-Jul-13  
 Applicant/Owner: Alaska Energy Authority Sampling Point: SW13\_T205\_06  
 Investigator(s): SLI, EAC Landform (hillside, terrace, hummocks etc.): Valley bottom  
 Local relief (concave, convex, none): flat Slope: 1.7 % / 1.0 ° Elevation: 706  
 Subregion: Interior Alaska Mountains Lat.: 63.367480397 Long.: -148.799490333 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 <input checked="" type="radio"/> No <input type="radio"/><br>Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/><br>Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Remarks: <u>relict glacial outwash stream? community interlaced w openings of subrounded boulders having no interstitial soil. boulder patches high density - 20% of site.</u>  |   |

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

|                                  | Absolute % Cover    | Dominant Species?                   | Indicator Status    |      |
|----------------------------------|---------------------|-------------------------------------|---------------------|------|
| <b>Tree Stratum</b>              |                     |                                     |                     |      |
| 1. _____                         | 0                   | <input type="checkbox"/>            | _____               |      |
| 2. _____                         | 0                   | <input type="checkbox"/>            | _____               |      |
| 3. _____                         | 0                   | <input type="checkbox"/>            | _____               |      |
| 4. _____                         | 0                   | <input type="checkbox"/>            | _____               |      |
| 5. _____                         | 0                   | <input type="checkbox"/>            | _____               |      |
| <b>Total Cover:</b>              |                     | 0                                   |                     |      |
| <b>Sapling/Shrub Stratum</b>     |                     |                                     |                     |      |
|                                  | 50% of Total Cover: | 0                                   | 20% of Total Cover: | 0    |
| 1. <u>Dasiphora fruticosa</u>    | 40                  | <input checked="" type="checkbox"/> | FAC                 |      |
| 2. <u>Betula glandulosa</u>      | 25                  | <input checked="" type="checkbox"/> | FAC                 |      |
| 3. <u>Vaccinium uliginosum</u>   | 5                   | <input type="checkbox"/>            | FAC                 |      |
| 4. <u>Salix pulchra</u>          | 5                   | <input type="checkbox"/>            | FACW                |      |
| 5. <u>Salix reticulata</u>       | 1                   | <input type="checkbox"/>            | FAC                 |      |
| 6. <u>Salix barclayi</u>         | 1                   | <input type="checkbox"/>            | FAC                 |      |
| 7. _____                         | 0                   | <input type="checkbox"/>            | _____               |      |
| 8. _____                         | 0                   | <input type="checkbox"/>            | _____               |      |
| 9. _____                         | 0                   | <input type="checkbox"/>            | _____               |      |
| 10. _____                        | 0                   | <input type="checkbox"/>            | _____               |      |
| <b>Total Cover:</b>              |                     | 77                                  |                     |      |
| <b>Herb Stratum</b>              |                     |                                     |                     |      |
|                                  | 50% of Total Cover: | 38.5                                | 20% of Total Cover: | 15.4 |
| 1. <u>Equisetum arvense</u>      | 7                   | <input checked="" type="checkbox"/> | FAC                 |      |
| 2. <u>Carex scirpoidea</u>       | 20                  | <input checked="" type="checkbox"/> | FACU                |      |
| 3. <u>Saussurea angustifolia</u> | 0.1                 | <input type="checkbox"/>            | FAC                 |      |
| 4. <u>Carex podocarpa</u>        | 2                   | <input type="checkbox"/>            | FAC                 |      |
| 5. <u>Carex membranacea</u>      | 0.1                 | <input type="checkbox"/>            | FACW                |      |
| 6. <u>Carex magellanica</u>      | 0.1                 | <input type="checkbox"/>            | OBL                 |      |
| 7. _____                         | 0                   | <input type="checkbox"/>            | _____               |      |
| 8. _____                         | 0                   | <input type="checkbox"/>            | _____               |      |
| 9. _____                         | 0                   | <input type="checkbox"/>            | _____               |      |
| 10. _____                        | 0                   | <input type="checkbox"/>            | _____               |      |
| <b>Total Cover:</b>              |                     | 29.3                                |                     |      |
|                                  | 50% of Total Cover: | 14.65                               | 20% of Total Cover: | 5.86 |

**Dominance Test worksheet:**  
 Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)  
 Total Number of Dominant Species Across All Strata: 4 (B)  
 Percent of dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by:  
 OBL Species 0.1 x 1 = 0.1  
 FACW Species 5.1 x 2 = 10.2  
 FAC Species 81.1 x 3 = 243.3  
 FACU Species 20 x 4 = 80  
 UPL Species 0 x 5 = 0  
 Column Totals: 106.3 (A) 333.6 (B)  
 Prevalence Index = B/A = 3.138

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is > 50%  
 Prevalence Index is ≤ 3.0  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup> 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 60  
 Total Cover of Bryophytes 10

**Hydrophytic Vegetation Present?** Yes  No

Remarks: trace carex subgenus vigneae.

**SOIL**

Sampling Point: **SW13\_T205\_06**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

| Depth (inches) | Matrix        |     | Redox Features |   |                   |                  | Texture         | Remarks                |
|----------------|---------------|-----|----------------|---|-------------------|------------------|-----------------|------------------------|
|                | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |                 |                        |
| 0-3            | 7.5YR         | 3/1 | 100            |   |                   |                  | Fibric Organics |                        |
| 3-8            | 7.5YR         | 3/2 | 100            |   |                   |                  | Silt Loam       | w high organic content |
| 8-11           |               |     |                |   |                   |                  | Cobbles         |                        |
|                |               |     |                |   |                   |                  |                 |                        |
|                |               |     |                |   |                   |                  |                 |                        |
|                |               |     |                |   |                   |                  |                 |                        |
|                |               |     |                |   |                   |                  |                 |                        |
|                |               |     |                |   |                   |                  |                 |                        |

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix <sup>2</sup> Location: PL=Pore Lining. RC=Root Channel. M=Matrix

|   |   |
|---|---|
| <p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histosol or Histel (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Alaska Gleyed (A13)<br><input type="checkbox"/> Alaska Redox (A14)<br><input type="checkbox"/> Alaska Gleyed Pores (A15) | <p><b>Indicators for Problematic Hydric Soils:<sup>3</sup></b></p> <input type="checkbox"/> Alaska Color Change (TA4) <sup>4</sup><br><input type="checkbox"/> Alaska Alpine swales (TA5)<br><input type="checkbox"/> Alaska Redox With 2.5Y Hue<br><input type="checkbox"/> Alaska Gleyed Without Hue 5Y or Redder Underlying Layer<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|---|

<sup>3</sup> One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present  
<sup>4</sup> Give details of color change in Remarks

|   |   |
|---|---|
| Restrictive Layer (if present):<br>Type:<br>Depth (inches): | <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> |
|---|---|

Remarks:  
no hydric soil indicators

**HYDROLOGY**

|  |   |
|--|---|
| <p><b>Wetland Hydrology Indicators:</b></p> <p><u>Primary Indicators (any one is sufficient)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)<br><input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15)<br><input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Other (Explain in Remarks)<br><input type="checkbox"/> Algal Mat or Crust (B4)<br><input type="checkbox"/> Iron Deposits (B5)<br><input type="checkbox"/> Surface Soil Cracks (B6) | <p><u>Secondary Indicators (two or more are required)</u></p> <input type="checkbox"/> Water Stained Leaves (B9)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Salt Deposits (C5)<br><input type="checkbox"/> Stunted or Stressed Plants (D1)<br><input type="checkbox"/> Geomorphic Position (D2)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> Microtopographic Relief (D4)<br><input type="checkbox"/> FAC-neutral Test (D5) |
|--|---|

|   |   |
|---|---|
| <p><b>Field Observations:</b></p> Surface Water Present?    Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches):<br>Water Table Present?        Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches):<br>Saturation Present?            Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches):<br>(includes capillary fringe) | <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> |
|---|---|

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

Remarks:  
no wetland hydrology indicator