

WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project Borough/City: Denali Borough Sampling Date: 30-Jul-13
 Applicant/Owner: Alaska Energy Authority Sampling Point: **SW13_T212_03**
 Investigator(s): SLI, EAC Landform (hillside, terrace, hummocks etc.): Hillside
 Local relief (concave, convex, none): hummocky Slope: 5.2 % / 3.0 ° Elevation: 678
 Subregion: Interior Alaska Mountains Lat.: 63.379710317 Long.: -148.910041332 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: lichen-rich dwarf shrub hummocks w carex and standing water inter-hummocks. overall a saturated system.	

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

<u>Tree Stratum</u>	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)
2. _____	0	<input type="checkbox"/>	_____	Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____	0	<input type="checkbox"/>	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
Total Cover:			<u>0</u>	
Sapling/Shrub Stratum	50% of Total Cover: <u>0</u>	20% of Total Cover: <u>0</u>		Prevalence Index worksheet:
1. <u>Betula nana</u>	3	<input type="checkbox"/>	FAC	Total % Cover of: Multiply by:
2. <u>Vaccinium uliginosum</u>	10	<input checked="" type="checkbox"/>	FAC	OBL Species <u>5</u> x 1 = <u>5</u>
3. <u>Arctostaphylos rubra</u>	5	<input checked="" type="checkbox"/>	FAC	FACW Species <u>3.1</u> x 2 = <u>6.2</u>
4. <u>Salix reticulata</u>	1	<input type="checkbox"/>	FAC	FAC Species <u>31.1</u> x 3 = <u>93.30</u>
5. <u>Ledum decumbens</u>	2	<input type="checkbox"/>	FACW	FACU Species <u>7.1</u> x 4 = <u>28.4</u>
6. <u>Vaccinium vitis-idaea</u>	1	<input type="checkbox"/>	FAC	UPL Species <u>0.1</u> x 5 = <u>0.500</u>
7. <u>Empetrum nigrum</u>	3	<input type="checkbox"/>	FAC	Column Totals: <u>46.4</u> (A) <u>133.4</u> (B)
8. <u>Andromeda polifolia (IAM)</u>	5	<input checked="" type="checkbox"/>	OBL	Prevalence Index = B/A = <u>2.875</u>
9. <u>Loiseleuria procumbens</u>	3	<input type="checkbox"/>	FACU	
10. <u>Picea glauca</u>	3	<input type="checkbox"/>	FACU	
Total Cover:			<u>36</u>	Hydrophytic Vegetation Indicators:
Herb Stratum	50% of Total Cover: <u>18</u>	20% of Total Cover: <u>7.2</u>		<input checked="" type="checkbox"/> Dominance Test is > 50%
1. <u>Tofieldia pusilla</u>	1	<input type="checkbox"/>	FAC	<input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0
2. <u>Carex bigelowii</u>	7	<input checked="" type="checkbox"/>	FAC	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
3. <u>Saussurea angustifolia</u>	0.1	<input type="checkbox"/>	FAC	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
4. <u>Petasites frigidus</u>	1	<input type="checkbox"/>	FACW	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. <u>Pedicularis capitata</u>	0.1	<input type="checkbox"/>	FACU	Plot size (radius, or length x width) <u>10m</u>
6. <u>Bistorta plumosa</u>	1	<input type="checkbox"/>	FACU	% Cover of Wetland Bryophytes (Where applicable) _____
7. <u>Eriophorum vaginatum</u>	0.1	<input type="checkbox"/>	FACW	% Bare Ground <u>5</u>
8. <u>Carex glacialis</u>	0.1	<input type="checkbox"/>	UPL	Total Cover of Bryophytes <u>30</u>
9. _____	0	<input type="checkbox"/>	_____	
10. _____	0	<input type="checkbox"/>	_____	
Total Cover:			<u>10.4</u>	Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
50% of Total Cover:	<u>5.2</u>	20% of Total Cover:	<u>2.08</u>	
Remarks: trace saxifraga sp, juncus sp, salix pulchra, salix richardsonii. 60% lichen cover, primarily on hummocks. cladina rangiferina, cladina spp, flavocetraria, stereocaulon.				

SOIL

Sampling Point: SW13_T212_03

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 ¹	Loc ²		
0-1.5	7.5YR	3/2	100					Fibric Organics	
1.5-4	7.5YR	2.5/1	100					Sapric Organics	
4-8	7.5YR	3/2	70	2.5Y	4/2	30	M	Sandy Loam	2 matrix colors
8-14	5PB	4/1	80	10YR	4/4	20	C	PL	Sandy Clay Loam

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

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

<p>Restrictive Layer (if present): Type: active layer, sa cl lo Depth (inches): 38, 8</p>	<p>Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/></p>
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Remarks:
 thixotropic soils at 8in. active layer depth determined via thaw probe. coarse fragments throughout mineral soils - 5% gravels 10% cobbles.

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (any one is sufficient)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Other (Explain in Remarks)	<p><u>Secondary Indicators (two or more are required)</u></p> <input type="checkbox"/> Water Stained Leaves (B9) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Salt Deposits (C5) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-neutral Test (D5)
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<p>Field Observations:</p> <p>Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): 6 Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): 7</p>	<p>Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/></p>
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Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available:

Remarks:
 small scattered pools of surface water in inter-hummock troughs. appear relatively permanent - unvegetated fine substrates, aquatic moss. don't think these meet the intent of A1 (surf water). rainfall from previous night perched above sa cl lo. water filling pit from top of sa cl lo layer.