				- Alaska Region
Project/Site: Susitna-Watana Hydroelectric Project	B	orough/City:	Matanusk	a-Susitna Borough Sampling Date: 22-Aug-15
Applicant/Owner: Alaska Energy Authority				Sampling Point: SW15_T304_05
Investigator(s): BAB		Landform (hill	side, terrac	e, hummocks etc.): Bench
Local relief (concave, convex, none): hummocky		Slope: 3.5	% / 2.0	Elevation:
Subregion : Interior Alaska Mountains	Lat.:			Long.: Datum: WGS84
Soil Map Unit Name:				NWI classification: PSS1/4B
Are Vegetation D , Soil D , or Hydrology D n	ignificantly aturally pro	disturbed? oblematic?	(If nee	(If no, explain in Remarks.) ormal Circumstances" present? Yes ● No ○ ded, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map show	ing sam	pling point	locations	s, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No			the Sam thin a W	pled Area etland? Yes 💿 No 🔿
VEGETATION - Use scientific names of plants. Lis	t all spe	cies in the	plot. Indicator	Dominance Test worksheet:
	% Cover	Species?	Indicator	
1 Disso mariana			Status	Number of Dominant Species
1. Picea mariana	15		Status FACW	That are OBL, FACW, or FAC: (A)
Picea mariana 2.				
2				That are OBL, FACW, or FAC: 7 (A) Total Number of Dominant 7 (B) Species Across All Strata: 7 (B) Percent of dominant Species 7 (B)
2. 3. 4.	 			That are OBL, FACW, or FAC: 7 (A) Total Number of Dominant 7 (B)
2. 3. 4. 5.				That are OBL, FACW, or FAC: 7 (A) Total Number of Dominant Species Across All Strata: 7 (B) Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B) Prevalence Index worksheet: Image: Comparison of
2. 3. 4. 5. Total Cover:			FACW	That are OBL, FACW, or FAC: 7 (A) Total Number of Dominant 7 (B) Species Across All Strata: 7 (B) Percent of dominant Species 7 (B) That Are OBL, FACW, or FAC: 100.0% (A/B) Prevalence Index worksheet: Total % Cover of: Multiply by:
2. 3. 4. 5.		of Total Cover:	FACW	That are OBL, FACW, or FAC: 7 (A) Total Number of Dominant 7 (B) Percent of dominant Species 7 (B) Percent of dominant Species 100.0% (A/B) Prevalence Index worksheet: 100.0% (A/B) OBL Species 0 x 1 = 0
2. 3. 4. 5. Total Cover: Sapling/Shrub Stratum 50% of Total Cover: 7 1. Salix pulchra		of Total Cover:	FACW	That are OBL, FACW, or FAC:7(A)Total Number of Dominant Species Across All Strata:7(B)Percent of dominant Species That Are OBL, FACW, or FAC:100.0%(A/B)Prevalence Index worksheet: Total % Cover of:Multiply by:(A/B)OBL Species0x 1 =0FACW Species87x 2 =174
2. 3. 4. 5. Total Cover: Sapling/Shrub Stratum 50% of Total Cover: 7 1. Salix pulchra 2. Betula glandulosa	 	of Total Cover:	FACW FACW FAC	That are OBL, FACW, or FAC:7(A)Total Number of Dominant Species Across All Strata:7(B)Percent of dominant Species That Are OBL, FACW, or FAC:100.0%(A/B)Prevalence Index worksheet: Total % Cover of:Multiply by:(A/B)OBL Species0 $x 1 = 0$ (A/B)FACW Species87 $x 2 = 174$ (A/B)FAC Species77 $x 3 = 231$ (A/B)
2. 3. 4. 5. Sapling/Shrub Stratum 50% of Total Cover: 7 1. Salix pulchra 2. Betula glandulosa 3. Picea mariana	 	of Total Cover:	FACW FACW FACW FACW	That are OBL, FACW, or FAC:7(A)Total Number of Dominant Species Across All Strata:7(B)Percent of dominant Species That Are OBL, FACW, or FAC:100.0%(A/B)Prevalence Index worksheet: Total % Cover of:Multiply by:(A/B)OBL Species0 $x 1 =$ 0FACW Species87 $x 2 =$ 174FAC Species77 $x 3 =$ 231FACU Species0 $x 4 =$ 0
2. 3. 4. 5. Total Cover: Total Cover: 5. Total Cover: 7 1. Salix pulchra 2. Betula glandulosa 3. Picea mariana 4. Vaccinium uliginosum		of Total Cover:	FACW FACW FAC FACW FAC FACW	That are OBL, FACW, or FAC:7(A)Total Number of Dominant Species Across All Strata:7(B)Percent of dominant Species That Are OBL, FACW, or FAC:100.0%(A/B)Prevalence Index worksheet: Total % Cover of:Multiply by:(A/B)OBL Species0x 1 =0FACW Species87x 2 =174FAC Species77x 3 =231FACU Species0x 4 =0UPL Species0x 5 =0
2. 3. 4. 5. Total Cover: Sapling/Shrub Stratum 50% of Total Cover: 7 1. Salix pulchra 2. Betula glandulosa 3. Picea mariana 4. Vaccinium uliginosum 5. Empetrum nigrum	 	of Total Cover:	FACW FACW FAC FACW FAC FAC FAC	That are OBL, FACW, or FAC:7(A)Total Number of Dominant Species Across All Strata:7(B)Percent of dominant Species That Are OBL, FACW, or FAC:100.0%(A/B)Prevalence Index worksheet: Total % Cover of:Multiply by:(A/B)OBL Species0 $x 1 =$ 0FACW Species87 $x 2 =$ 174FAC Species77 $x 3 =$ 231FACU Species0 $x 4 =$ 0
2. 3. 4. 5. Total Cover: Total Cover: 5. Total Cover: 7 1. Salix pulchra 2. Betula glandulosa 3. Picea mariana 4. Vaccinium uliginosum		of Total Cover:	FACW FACW FAC FACW FAC FACW	That are OBL, FACW, or FAC:7(A)Total Number of Dominant Species Across All Strata:7(B)Percent of dominant Species That Are OBL, FACW, or FAC:100.0%(A/B)Prevalence Index worksheet: Total % Cover of:Multiply by:(A/B)OBL Species0x 1 =0FACW Species87x 2 =174FAC Species77x 3 =231FACU Species0x 4 =0UPL Species0x 5 =0

7.	Rhododendron groenlandi	cum			FAC		
8.	Vaccinium vitis-idaea		5		FAC	Hydrophytic Vegetation Indicators:	
9.			0			✓ Dominance Test is > 50%	
10.			0		FAC	✓ Prevalence Index is \leq 3.0	
		Total Cover:				Morphological Adaptations (Provide	supporting data in
Her	b Stratum	50% of Total Cover:	<u>60</u> 20% o	of Total Cover:	24	Remarks or on a separate sheet)	
1.	Rubus chamaemorus		15	\checkmark	FACW	Problematic Hydrophytic Vegetation	(Explain)
2.	Equisetum sylvaticum		8	\checkmark	FAC	¹ Indicators of hydric soil and wetland hydr	rology must
3.	Carex bigelowii		4		FAC	be present, unless disturbed or problemat	tic.
4.	Petasites frigidus		2		FACW	Plot size (radius, or length x width)	10m
5.			0			% Cover of Wetland Bryophytes	1011
6.			0			(Where applicable)	
7.			0			% Bare Ground	5
8.			0			Total Cover of Bryophytes	80
9.			0				
10.			0			Hydrophytic	
		Total Cover:		Vegetation			
		50% of Total Cover: <u>1</u>	4.5 20% of	f Total Cover:	5.8	Present? Yes • No ·	

Remarks:

0-4	(inches) Color	(moist)	%	Color (m	oist)	%	Type ¹	Loc 2	Texture		Rei	marks
9-13		(moise)	-70		ioist)	-70	Туре	LUC		Oi		
9-13	-								-			
13:16 5Y 4/1 70 7.5YR 4/6 30 C PL Loam "Type: C=Concentration. D=Depletion. RM=Reduced Matrix 2 Location: PL=Pore Lining. RC=Root Channel. M=Matrix "Type: C=Concentration. D=Depletion. RM=Reduced Matrix 2 Location: PL=Pore Lining. RC=Root Channel. M=Matrix "Histosol or Histel (A1) Alaska Apine swites (TA5) Alaska Calore drage (TA4) Histosol or Histel (A1) Alaska Apine swites (TA5) Other (Explain in Remarks) Histosol or Histel (A1) Alaska Redox With 2.5Y Hue Other (Explain in Remarks) Alaska Gleyed (A13) "One Indicators of hydrophytic vegetator, one primary indicator of wetland hydrology, and an appropriate indicators (Storo or more are required). Alaska Gleyed fores (A15) 4 Give details of color change in Remarks estrictive Layer (If present): Trundation Visible on Aerial Imagery (87) Drainage Patterns (810) Surface Water (A1) Inundation Visible on Aerial Imagery (87) Drainage Patterns (810) Surface Water (A1) General Enders (15) Sabarede of Rescere of Reduced Ion (C4)				-			- <u> </u>	-	-			
'Type: C-Concentration. D=Depletion. RM=Reduced Matrix ² Location: PL=Pore Lining. RC=Root Channel. M=Matrix 'type: C=Concentration. D=Depletion. RM=Reduced Matrix ² Location: PL=Pore Lining. RC=Root Channel. M=Matrix 'type: C=Concentration. D=Depletion. RM=Reduced Matrix ² Location: PL=Pore Lining. RC=Root Channel. M=Matrix 'type: C=Concentration. D=Depletion. RM=Reduced Matrix ² Location: PL=Pore Lining. RC=Root Channel. M=Matrix 'Histosol or Histel (A1) Alaska Calor Change (TA4) Alaska Calor Change (TA4) 'Histosol or Histel (A1) Alaska Redox With 2.5Y Hue Other (Explain in Remarks) 'Type: C=Concentration. (A12) Alaska Redox With 2.5Y Hue Other (Explain in Remarks) 'Alaska Gleyed K141) Alaska Gleyed K143) * One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present 'Alaska Gleyed K141) Alaska Gleyed K141) Hydric Soil Present? Yes No 'Lepth (Inches): 'Event (A1) Inundation Visible on Aerial Imagery (87) 'Depainse Patterne (R10) Inundation Visible on Aerial Imagery (87) Drainage Patterne (80) 'YDROLOGY Sparsely Vegetated Concave Surface (88) Oxidized Rhazospheres along Living Roots (C3) 'Ydrado Hydrology Indicators: Mater Marks (81) Hydroge Surface (81) D					A/6	20						
Yetric Soil Indicators: Indicators for Problematic Hydric Soils? Histosol or Histel (A1) Alaska Color Change (TA4) Indefitig Lyer Histosol or Histel (A1) Alaska Alpine swales (TA5) Undefitig Lyer Hydrogen Suffice (A12) Alaska Redox With 2.5Y Hue Other (Explain in Remarks) Alaska Gleyed (A13) One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present Alaska Gleyed Pores (A15) Give details of color change in Remarks estrictive Lyer (if present): Type: Type: Hydric Soil Present? YDROLOGY Secondary Indicators: Water Stained Leaves (B9) Oral indicator Silve of Noro Oracle and Remarks YDROLOGY Sparsely Vegetated Concave Surface (B8) Oral indicators (two or more are reaulied) Indicators (any one is sufficient) Inundation Visble on Aerial Imagery (B7) Oral details of color strasse along Living Roots (C3) Sparsely Vegetated Concave Surface (B8) Oxide Rhizopheres (A15) Presence of Reduced Iron (C4) Water Marks (B1) Hydrogen Sulfide (Ddor (C1) Saft Deposits (C5) Surface Soil Cracks (B6) Sectiment Deposits (B2) Dry-Season Water Table (A2) Saft Deposits (C4) Saft Deposits (C4) <td>13-10 51</td> <td></td> <td>70</td> <td>7.51K</td> <td>4/0</td> <td></td> <td><u> </u></td> <td>PL</td> <td>Loan</td> <td></td> <td></td> <td></td>	13-10 51		70	7.51K	4/0		<u> </u>	PL	Loan			
Yetric Soil Indicators: Indicators for Problematic Hydric Soils? Histosol or Histel (A1) Alaska Color Change (TA4) Indeflying Layer Histosol or Histel (A1) Alaska Alpine swales (TA5) Undeflying Layer Hydrogen Suffide (A4) Alaska Redox With 2.5Y Hue Other (Explain in Remarks) Alaska Gleyed (A13) Bone Indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present Alaska Gleyed Pores (A15) Give details of color change in Remarks estrictive Layer (If present): Type: Type: Petto functions: Petto Hydrology Indicators: Yes No C Water Stained Leaves (B9) Sparsely Vegetated Concave Surface (B8) Surface Water (A1) Inundation Visible on Aerial Imagery (B7) High Water Table (A2) Sparsely Vegetated Concave Surface (B8) Surface Water (A1) Hydrogen Suffide Odor (C1) Surface Water (B1) Hydrogen Suffide Odor (C1) Surface Mater (B1) Hydrogen Suffide Odor (C1) Surface Mater (B1) Hydrogen Suffide Odor (C1) Staturation (A3) Hydrogen Suffide Odor (C1) Staturation (C3) Hydrogen Suffide Odor (C1) Staturation Presents (B2) <td></td>												
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Histic Epipedon (A2) Alaska Alpine swales (TA5) Underlying Layer Hydrogen Sulfide (A4) Alaska Redox Wth 2.5Y Hue Other (Explain in Remarks) Thick Dark Surface (A12) Alaska Redox (A14) Intervine indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present Alaska Gleyed Pores (A15) * Give details of color change in Remarks strictive Layer (if present): Type: Depth (inches): Hydric Soil Present? Yes No etand Hydrology Indicators: Secondary Indicators (two or more are required) immarks: Surface Water (A1) High Water Table (A2) Sparsely Vegetated Concave Surface (B8) Surface Water (A1) Inundation Visible on Aerial Imagery (B7) High Water Table (A2) Sparsely Vegetated Concave Surface (B8) Surface Water (A1) Hydrogens Suffice Odor (C1) High Water Table (A2) Sparsely Vegetated Concave Surface (B3) Stuntet or Stressed Plants (D1) Drote (Explain in Remarks) Sediment Deposits (B1) Hydrogensuffice Odor (C1) Sediment Deposits (B3) Other (Explain in Remarks) Surface Water Resent? Yes No Depth (inches): Ballow Aquitard (D3) <tr< td=""><td>ydric Soil Indicators</td><td>:</td><td></td><td>Indicat</td><td>ors for Pro</td><td>blematio</td><td>: Hydric S</td><td>oils:³</td><td></td><td></td><td></td><td></td></tr<>	ydric Soil Indicators	:		Indicat	ors for Pro	blematio	: Hydric S	oils: ³				
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Alaska Gleyed (A13) ³ One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present. 4 Alaska Redex (A14) 4 Give details of color change in Remarks strictive Layer (if present): *Give details of color change in Remarks rype: Depth (inches): Type: Depth (inches): trictive Layer (if present): *Give details of color change in Remarks YDROLOGY Hydric Soil Present? Yes No Depth (inches): trianay Indicators (any one is sufficient) grandraw Vater (A1) Inundation Visible on Aerial Imagery (B7) Drainage Patterns (B10) High Water Table (A2) Sparsely Vegetated Concave Surface (B8) Ødized Rhizosheres along Living Roots (C3) Saturation (A3) Mari Deposits (B15) Presence or Reduced Iron (C4) Surface Vater (A1) Iron Deposits (B3) Other (Explain in Remarks) Geomorphic Position (D2) Shallow Aquitard (D3) Iron Deposits (B3) Other (Explain in Remarks) Geomorphic Position (D2) Shallow Aquitard (D3) Iron Deposits (B5) Shallow Aquitard (D3) Geomorphic Position (D2) Shallow Aquitard (D3) Iron Deposits (B5) Shallow Aquitard (D3) Microtoparphic Relief (D4) Shallow Aquitard (D3) Iron Deposits (B5) Depth (inches): 14 Maturation Present? <	Hydrogen Sulfide (A	4)		Alas	ka Redox W	ith 2.5Y F	lue		Other (Explain in Rem	arks)		
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Alaska Gleyed Pores (A15) 4 Give details of color change in Remarks estrictive Layer (if present): Type: Depth (inches): Hydric Soil Present? Yes Into O Pothology Indicators: Hydric Soil Present? Yes Into O YDROLOGY Secondary Indicators (two or more are required) /rtimary Indicators (any one is sufficient) Inundation Visible on Aerial Imagery (B7) Surface Water (A1) Inundation Visible on Aerial Imagery (B7) High Water Table (A2) Sparsely Vegetated Concave Surface (B8) Vater Marks (B1) Hydrogen Sulfide Odor (C1) Saturation (A3) Marl Deposits (B15) Drift Deposits (B2) Dry-Season Water Table (C2) Drift Deposits (B3) Other (Explain in Remarks) Geomorphic Position (D2) Shallow Aquitard (D3) Algal Mat or Crust (B4) Wetrand Hydrology Present? Yes No Iron Deposits (B5) Depth (inches): Surface Soil Cracks (B6) Depth (inches): 14 Water Table Present? Yes No Depth (inches): 14										a nyarolog	377	
estrictive Layer (if present): Type: Depth (inches): emarks:	_ 、 、 、	(415)		⁴ Give o	letails of col	lor change	e in Remarl	s				
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