WETLAND DETERMINATION DATA FORM - Alaska Region

Project	/Site: Susitna-Watana Hydroelectric Project		Boro	ough/City:	Matanusk	a-Susitna Borough Sampling Date: 07-Aug-13
Applica	ant/Owner: Alaska Energy Authority					Sampling Point: SW13_T142_04
	gator(s): WAD, RWM		Lar	ndform (hill	side, terrac	e, hummocks etc.): Toeslope
Local r	elief (concave, convex, none): planar			ope:		° Elevation: 122
	ion : Interior Alaska Mountains	l at	. 63	094018816		Long.: -148.277464867 Datum: NAD83
		Lut	. 00.	034010010		
	p Unit Name:				■ N= ○	NWI classification: Upland
	matic/hydrologic conditions on the site typical for this	•			No ○	(If no, explain in Remarks.) Iormal Circumstances" present? Yes ● No ○
	egetation ☐ , Soil ☐ , or Hydrology ☐	U	,	sturbed?		ionnai oli odinotanoco procont.
Are v	'egetation ☐ , Soil ☐ , or Hydrology ☐	naturally	y probi	ematic?	(If nee	eded, explain any answers in Remarks.)
SUMI	MARY OF FINDINGS - Attach site map sho	wing s	ampl	ing point	locations	s, transects, important features, etc.
	Hydrophytic Vegetation Present? Yes No	\supset				
	Hydric Soil Present? Yes ○ No ○	ullet				pled Area
	Wetland Hydrology Present? Yes No			wi	thin a W	etland? Yes ○ No •
Rema	arks: graminoid shrub meadow on lower slopes, humr					
VEGE	ETATION - Use scientific names of plants. L	ist all s	•	es in the	•	Dominance Test worksheet:
Tre	e Stratum	% Cov		Species?	Status	Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
1.			0			Total Number of Dominant
2.			0			Species Across All Strata:3(B)
3.			0			Percent of dominant Species
4.			0			That Are OBL, FACW, or FAC: 66.7% (A/B)
5.			0			Prevalence Index worksheet:
	Total Cove		_			Total % Cover of: Multiply by:
Sap	ling/Shrub Stratum 50% of Total Cover:	0 2	:0% of	Total Cover:	0	OBL Species x 1 =
1.	Vaccinium vitis-idaea		4		FAC	FACW Species 5 x 2 =10
2.	Empetrum nigrum		.0	✓	FAC	FAC Species <u>51</u> x 3 = <u>153</u>
3.	Salix polaris		5		FACW	FACU Species 2 x 4 = 8
4.	Vaccinium uliginosum		5		FAC	UPL Species <u>15</u> x 5 = <u>75</u>
5.	Salix reticulata	:	8		FAC	Column Totals:73 (A)246 (B)
6.	Dryas ajanensis	1	.5	✓	UPL	
7.			0			Prevalence Index = B/A = 3.370
8.			0			Hydrophytic Vegetation Indicators:
9.			0			✓ Dominance Test is > 50%
10.			0			Prevalence Index is ≤3.0
Her	Total Cove b Stratum 50% of Total Cover: _		7 20% of	Total Cover	: 9.4	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
1.	Festuca altaica	1	.5	✓	FAC	Problematic Hydrophytic Vegetation ¹ (Explain)
2.	Artemisia norvegica		2		FACU	¹ Indicators of hydric soil and wetland hydrology must
3.	Carex microchaeta		5		FAC	be present, unless disturbed or problematic.
	Carex bigelowii		4		FAC	Plot size (radius, or length x width)
5.			0			% Cover of Wetland Bryophytes
			0			(Where applicable)
			0			% Bare Ground
			0			Total Cover of Bryophytes
9.			<u> </u>			
4.5				Ш		Hydrophytic Vegetation
10.	T-1-10: -		١			veučlalion
10.	Total Cove 50% of Total Cover:			Total Cover	5.2	Present? Yes • No •

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SOIL Sampling Point: SW13_T142_04

Secondary Indicators (two or more are required) Secondary Indicators (two or more are required) Water Stained Leaves (B9) Water Stained Leaves (B9) Drainage Patterns (B10) Drainage Pattern	: .	latrix		firm the absence of indi	cators)		
1-3	Color (mol	st) %	Color (moist)	% Type ¹	<u>Loc</u> 2	Texture	Remarks
3-10 7.5YR 3/4 100 Coarse Sand 50% coarse Inginerés Type: C=Concentration. D=Deptetion. RM=Reduced Matrix	0-1	100				Fibric Organics	
1-Type: C=Concentration. D=Depletion. RM=Reduced Matrix 2-Location: PL=Pore Lining, RC=Root Channel. M=Matrix Hydric Soil Indicators:	1-3	100				Hemic Organics	
Hydric Soil Indicators: Histosol or Histel (A1)	3-10 7.5YR	3/4 100				Coarse Sand	50% coarse fragments
Hydric Soil Indicators: Histosol or Histel (A1)							-
Hydric Soil Indicators: Histosoil or Histel (A1)							
Hydric Soil Indicators: Histosol or Histel (A1)							
Hydric Soil Indicators: Histosol or Histel (A1)						-	
Hydric Soil Indicators: Histosol or Histel (A1)						-	
Histosol or Histel (A1)	¹Type: C=Concentration. D=	Depletion. RM=Reduc				nnel. M=Matrix	
Histic Epipedon (A2)	Hydric Soil Indicators:		Indicators for Pro	blematic Hydric S	oils: ³		
Hydrogen Sulfide (A4) Hydrogen Sulfide (A4) Hydrogen Sulfide (A4) Alaska Redox With 2.57 Hue John Indicator of wetland hydrology, and an appropriate landscape position must be present Alaska Redox (A14) Alaska Gleyed Pores (A15) Alaska Gleyed Poresent): Type: Hydric Soil Present? Yes No Alaska Redox With 2.57 Hue present Alaska Redox With 2.57 Hue present? Alaska Redox With 2.57 Hue present? Bydric Soil Present? Yes No Depth (Inches): Depth (Inches): Depth (Inches): Depth (Inches): Depth (Inches): Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available: Determine Surface Water Present? Yes No Depth (Inches): Depth (Inches): Determine Surface Water Present? Yes No Depth (Inches): Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available:	Histosol or Histel (A1)		Alaska Color Cha	ange (TA4)			ue 5Y or Redder
Thick Dark Surface (A12) Alaska Gleyed (A13) Alaska Redox (A14) Alaska Redox (A14) Alaska Redox (A15) Alaska Redox (A15) Alaska Redox (A15) Alaska Redox (A16) Alaska Redox (A17) Alaska Redox (A17) Alaska Redox (A18) Alaska Redox (A19) Alaska	Histic Epipedon (A2)			` ,		, , ,	
Alaska Gieyed (A13) Alaska Redox (A14) Alaska Redox (A14) Alaska Redox (A15) Alaska Redox (A15) Alaska Redox (A15) Alaska Redox (A15) *Give details of color change in Remarks *Hydric Soil Present? Yes No ● *Primary Indicators (two or more are required) Brain an appropriate landscape position must be present *Hydric Soil Present? Yes No ● *Primary Indicators observed **Primary Indicators (any one is sufficient) Brain Alaska Redox (A14) Brain Alaska Redox (A15) **Primary Indicators observed **Primary Indicators observed **Primary Indicators (any one is sufficient) Brain Alaska Redox (A16) Brain Alaska Redox (A16) Brain Alaska Redox (A17) Brain Alaska Redox (A17) Brain Alaska Redox (A18) Brain Alaska Redo	Hydrogen Sulfide (A4)		☐ Alaska Redox W	ith 2.5Y Hue		Other (Explain in Remark	S)
Alaska Redx (A15) Alaska Gleyed Pores (A15) Restrictive Layer (if present): Type: Depth (inches): Remarks: In hydric Soil Present? Yes No Present? Yes No Primary Indicators observed Water Stained Leaves (89) Hydric Soil Present? No more are required water (A1) In fundation Visible on Aerial Imagery (B7) Surface Water (A1) High Water Table (A2) Sparsely Vegetated Concave Surface (B8) Saturation (A3) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Sediment Deposits (C2) Dryf-Season Water Table (C2) Drift Deposits (B3) Other (Explain in Remarks) Geomorphic Position (D2) Algal Mat or Crust (B4) Iron Deposits (B5) Iron Deposits (B5) Surface Soil Cracks (B6) FAC-neutral Test (D5) Seatration Present? Yes No Depth (inches): Subscribe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available: Remarks:	_ ` ′		3 One indicator of h	vdronhytic vegetati	on one orin	nary indicator of wetland h	vdrology
Alaska Gleyed Pores (A15) 4 Give details of color change in Remarks testrictive Layer (if present):	_						yurology,
Assard sleyter Pores (ALS) Restrictive Layer (if present): Type: Depth (inches): Remarks: O hydric soil indicators observed Hydric Soil Present? Yes	_ ` ′		4 Give details of col	or change in Remar	ks		
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POROLOGY Vetand Hydrology Indicators: Secondary Indicators (two or more are required)						Under Call Bosses	. v () N. (a)
Application Company	* *					Hydric Soil Present	? Yes ∪ No ♥
Secondary Indicators: Secondary Indicators: Water Stained Leaves (B9)							
Primary Indicators (any one is sufficient) Surface Water (A1) High Water Table (A2) Sparsely Vegetated Concave Surface (B8) Oxidized Rhizospheres along Living Roots (C3) Saturation (A3) Marl Deposits (B15) Presence of Reduced Iron (C4) Sati Deposits (B1) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Sati Deposits (B1) Dry-Season Water Table (C2) Stunted or Stressed Plants (D1) Drift Deposits (B3) Other (Explain in Remarks) Geomorphic Position (D2) Shallow Aquitard (D3) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available:							
Surface Water (A1)							
High Water Table (A2)	Vetland Hydrology Indicat						
Saturation (A3)	Vetland Hydrology Indicat					Water Stai	ned Leaves (B9)
Water Marks (B1)	Vetland Hydrology Indicat Primary Indicators (any one is Surface Water (A1)			_		Water Stai	ned Leaves (B9) atterns (B10)
Sediment Deposits (B2)	Vetland Hydrology Indicat Primary Indicators (any one is Surface Water (A1) High Water Table (A2)		Sparsely Vege	tated Concave Surfa		Water Stai Drainage F Oxidized R	ned Leaves (B9) Patterns (B10) hizospheres along Living Roots (C3)
□ Drift Deposits (B3) □ Other (Explain in Remarks) □ Geomorphic Position (D2) □ Algal Mat or Crust (B4) □ Shallow Aquitard (D3) □ Iron Deposits (B5) □ Microtopographic Relief (D4) □ FAC-neutral Test (D5) □ Surface Soil Cracks (B6) □ FAC-neutral Test (D5) □ Surface Water Present? Yes □ No ● Depth (inches): Water Table Present? Yes □ No ● Depth (inches): Saturation Present? Yes □ No ● Depth (inches): Wetland Hydrology Present? Yes □ No ● Secribe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available:	Vetland Hydrology Indicat Primary Indicators (any one is Surface Water (A1) High Water Table (A2) Saturation (A3)		Sparsely Vege Marl Deposits	tated Concave Surfa (B15)		Water Stai Drainage F Oxidized R Presence of	ned Leaves (B9) Patterns (B10) hizospheres along Living Roots (C3) f Reduced Iron (C4)
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☐ Iron Deposits (B5) ☐ Microtopographic Relief (D4) ☐ Surface Soil Cracks (B6) ☐ FAC-neutral Test (D5) ☐ Surface Water Present? Yes ○ No ② Depth (inches): Water Table Present? Yes ○ No ③ Depth (inches): Saturation Present? Yes ○ No ④ Depth (inches): Security Present? Yes ○ No ④ Depth (inches): Depth (includes capillary fringe) Yes ○ No ④ Depth (inches): Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available:	Vetland Hydrology Indicate Primary Indicators (any one is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)		Sparsely Vege Marl Deposits Hydrogen Sulf Dry-Season W	tated Concave Surfa (B15) ide Odor (C1) later Table (C2)		Water Stai Drainage F Oxidized R Presence c Salt Depos Stunted or	ned Leaves (B9) Patterns (B10) hizospheres along Living Roots (C3) f Reduced Iron (C4) its (C5) Stressed Plants (D1)
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o hydrology indicators observed	Vetland Hydrology Indicat Primary Indicators (any one is 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) Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	Yes No • Yes No • Yes No • Yes No •	Sparsely Vege Marl Deposits Hydrogen Sulf Dry-Season W Other (Explain Depth (inches	tated Concave Surfa (B15) ide Odor (C1) ater Table (C2) in Remarks)	Wetlan	Water Stai Drainage F Oxidized R Presence of Salt Depos Stunted or Geomorph Shallow Ac Microtopog FAC-neutra	ned Leaves (B9) Patterns (B10) hizospheres along Living Roots (C3) of Reduced Iron (C4) hits (C5) Stressed Plants (D1) hit Position (D2) hit (D3) higher (D4) higher (D5)
	Primary Indicators (any one is 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) Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	Yes No • Yes No • Yes No • Yes No •	Sparsely Vege Marl Deposits Hydrogen Sulf Dry-Season W Other (Explain Depth (inches	tated Concave Surfa (B15) ide Odor (C1) ater Table (C2) in Remarks)	Wetlan	Water Stai Drainage F Oxidized R Presence of Salt Depos Stunted or Geomorph Shallow Ac Microtopog FAC-neutra	ned Leaves (B9) Patterns (B10) hizospheres along Living Roots (C3) of Reduced Iron (C4) hits (C5) Stressed Plants (D1) hit Position (D2) hit (D3) higher (D4) higher (D5)

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