WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project		Borough/City:	Matanuska-Su	isitna Borough	_ Sampling D	ate: 09-Jul-13
Applicant/Owner: Alaska Energy Authority				Samp	ling Point:	SW13_T120_05
Investigator(s): JGK		Landform (hill	side, terrace, hu	ummocks etc.):	Hillside	
Local relief (concave, convex, none): hummocky		Slope:	%/°	Elevation: 87	70	
Subregion : Southcentral Alaska	Lat.:	62.708993673	Lor	ng.: -149.72843	8616	Datum: WGS84
Soil Map Unit Name:				NWI clas	sification: PS	SS1B
Are climatic/hydrologic conditions on the site typical for this Are Vegetation , Soil , or Hydrology Are Vegetation , Soil , or Hydrology	significant	ar? Yes tly disturbed? problematic?		(If no, explain al Circumstances explain any ans	s" present?	Yes 🔍 No 🔾 rks.)
SUMMARY OF FINDINGS - Attach site map sh	lowing sa	mpling point	locations, tra	ansects, impo	ortant featur	res, etc.
Hydrophytic Vegetation Present? Yes No	0		4h a O ann a la			

Hydric Soil Present? Wetland Hydrology Present?	Yes ⊙ Yes ⊙	No () No ()	Is the Sampled Area within a Wetland?	Yes \bullet No \bigcirc
Remarks: DUNN SITE 1481 SOIL 1482				

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

Tree Stratum % Cover Species? Status Number of Dominant Species 1. 0 0 That are OBL, FACW, or FAC: 4 (A) 2. 0 0 Total Number of Dominant Species 4 (B) 3. 0 0 Total Number of Dominant Species 100.0% (A/B) 5. 0 0 Total Number of Dominant Species That are OBL, FACW, or FAC: 4 (B) 5. 0 0 0 Percent of dominant Species That are OBL, FACW, or FAC: 100.0% (A/B) 5. 50% of Total Cover: 0 0 Prevalence Index worksheet: Total % Cover of: Multiply by: OBL Species 0 X 1 = 0 FACW FACW Species 35.1 X 2 = 70.2 FACW FACW Species 35.1 X 2 = 70.2 FACW FACU Species 15.2 X 4 = 60 UPL Species 0 X			Absolute	Dominant	Indicator	Dominance Test worksheet:
1. 0 0 0 That are OBL, FACW, or FAC: 4 (A) 2. 0 0 10 Total Number of Dominant Species 4 (B) 3. 0 0 0 Percent of dominant Species 4 (B) 4. 0 0 Percent of dominant Species 100.0% (A/B) 5. 0 0 Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B) 5. 0 0 Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B) 5. 0 0 Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B) 5. 0 0 Prevalence Index worksheet: Total % Cover of: Multiply by: OBL Species 0 x1 = 0 1. Salix pulchra 10 FAC FAC FACU Species 15.1 x2 = 70.2 5. Salix pseudomonticola 30 FAC FAC FACU Species 0 x4 = 60 0 6 Salix commutata 10 <td>Tree Stratum</td> <td></td> <td></td> <td></td> <td></td> <td></td>	Tree Stratum					
2.000003.0000004.0000005.0000005.0000006.5.000001.Salix richardsonii10FACWFACW002.Salix pulchra15FACWFAC Species0x1 =01.Salix pulchra10FACWFAC Species112.2x3 =336.63.Alnus viridis20VFACVFAC USpecies0x5 =05.Salix pseudomonticola30VFACColumn Totals:162.3(A)466.8(B)6.Salix commutata10FACPrevalence Index es B/A =2.8762.87619.00000001110.Total Cover:95050% of Total Cover:19100110.Total Cover:95010111110.Total Cover:95010111110.FAC00001111111111111111111111 <td< td=""><td></td><td></td><td>0</td><td></td><td></td><td>That are OBL, FACW, or FAC: (A)</td></td<>			0			That are OBL, FACW, or FAC: (A)
3. .	2					
4. 0						Species Across All Strata:4 (B)
5. 0 Prevalence Index worksheet: Total Cover: 0 20% of Total Cover: 0 1. Salix richardsonii 10 FACW 2. Salix pulchra 15 FACW 3. Alnus viridis 20 Image: FACW 4. Spiraea stevenii 10 FAC 5. 0 Image: Salix pulchra 10 5. 50% of Total Cover: 0 Image: Salix pulchra 3. Alnus viridis 20 Image: FAC 4. Spiraea stevenii 10 FAC 5. Salix pubchra 30 Image: FAC 5. Salix pseudomonticola 30 Image: FAC 6. Salix commutata 10 FAC 7. 0 Image: FAC Prevalence Index = B/A = 2.876 8. 0 Image: FAC Prevalence Index is \$3.0 9. 0 Image: FAC Prevalence Index is \$3.0 10. FAC Prevalence Index is \$3.0 Image: FAC 9. 0 Image: FAC Prevalence Index is \$3.0						
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Sapling/Shrub Stratum50% of Total Cover:020% of Total Cover:01.Salix richardsonii10FACW2.Salix pulchra15FACW3.Alnus viridis20 \checkmark FAC4.Spiraea stevenii10FACU5.Salix pseudomonticola30 \checkmark FAC6.Salix commutata10FAC7.0Image: Cover Sine Sine Sine Sine Sine Sine Sine Sine	5					Prevalence Index worksheet:
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1Control decom2.Salix pulchra15FAC3.Alnus viridis20 \checkmark 4.Spiraea stevenii10FAC5.Salix pseudomonticola30 \checkmark 6.Salix commutata10FAC7.0Column Totals:8.0FAC9.0Hydrophytic Vegetation Indicators:9.0Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)Morphological Adaptations 1 (Provide supporting data in Remarks or on a separate sheet)	Sapling/Shrub Stratum	50% of Total Cover:	0 20%	of Total Cover:	0	OBL Species x 1 =
2. Salix pulchra15 $FACW$ FAC Species112.2 $x 3 = 336.6$ 3. Alnus viridis20 \checkmark FAC $FACU$ $FACU$ $FACU$ $FACU$ 4. Spiraea stevenii10 $FACU$ $FACU$ $FACU$ $FACU$ $FACU$ $FACU$ $FACU$ 5. Salix pseudomonticola30 \checkmark FAC FAC O <	1. Salix richardsonii		10		FACW	FACW Species 35.1 x 2 = 70.2
3. Alnus viridis 20 \checkmark FAC 4. Spiraea stevenii 10 \vdash FAC 5. Salix pseudomonticola 30 \checkmark FAC 6. Salix commutata 10 \vdash FAC 7. 0	2. Salix pulchra		15		FACW	FAC Species <u>112.2</u> x 3 = <u>336.6</u>
4.Spiraea stevenii10FACFAC5.Salix pseudomonticola30 \checkmark FAC6.Salix commutata10FAC7.0 \square 8.0 \square 9.0 \square 10.0 \square 9.0 \square 10. \square \square Total Cover: 95Herb Stratum50% of Total Cover: 47.520% of Total Cover: 1919	3. Alnus viridis		20	\checkmark	FAC	FACU Species x 4 =60
5. Salix pseudomonticola 30 Image: FAC column Totals: 162.3 (A) 466.8 (B) 6. Salix commutata 10 FAC column Totals: 162.3 (A) 466.8 (B) 7 0 Prevalence Index = B/A = 2.876 8 0 Hydrophytic Vegetation Indicators: 9 0 0 Image: Vegetation Indicators: 10 0 0 Image: Vegetation Indicators: 9 0 0 Image: Vegetation Indicators: 0 Image: Vegetation Indicators: V V $10.$ 0 Image: Vegetation Indicators: V $10.$ 0 Image: Vegetation Indicators: V $10.$ 0 Image: Vegetation Indicators: V			10		FACU	UPL Species $0 \times 5 = 0$
6. Salix commutata 10 FAC 7. 0 Prevalence Index = $B/A = 2.876$ 8. 0 Hydrophytic Vegetation Indicators: 9. 0 Dominance Test is > 50% 10. 0 Prevalence Index is ≤ 3.0 Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	· ·	aala	20			
7. 0 \bigcirc			10		FAC	Column rotals. <u>102.5</u> (A) <u>400.8</u> (B)
8. 0 - Hydrophytic Vegetation Indicators: 9. 0 - Dominance Test is > 50% 10. 0 - Prevalence Index is ≤ 3.0 Herb Stratum 50% of Total Cover: 95 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) - 1						Prevalence Index = B/A =
9. 0						Hydrophytic Vegetation Indicators:
10. 0 □ Prevalence Index is ≤3.0 Image: Herb Stratum 50% of Total Cover: 95 10 50% of Total Cover: 47.5 20% of Total Cover: 19	9		0			
Total Cover: 95 Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) Herb Stratum 50% of Total Cover: 19 Remarks or on a separate sheet)						
Herb Stratum 50% of Total Cover: 47.5 20% of Total Cover: 19 Remarks or on a separate sheet)						
1 Calamagrostis canadensis 20 🔽 FAC Problematic Hydrophytic Vegetation ¹ (Explain)	Herb Stratum			% of Total Cover:	19	
	1. Calamagrostis ca	nadensis	20	\checkmark	FAC	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Sedum rosea 10 FAC ¹ Indicators of hydric soil and wetland hydrology must	2. Sedum rosea		10		FAC	¹ Indicators of hydric soil and wetland hydrology must
3. Chamerion angustifolium 3 FACU be present, unless disturbed or problematic.		ifolium	- <u> </u>		FACU	be present, unless disturbed or problematic.
4. Sanguisorba officinalis 10 FACW	· · · · ·	nolio	10		FACW	
5 Equisetum arvense 7 FAC FAC	5. Equisetum arvens	2			FAC	
6. Geranium erianthum 2 FACU % Cover of Wetland Bryophytes 0 (Where applicable)	6. Geranium erianth	122	- <u> </u>		FACU	
7. Carex bigelowii 15 FAC % Bare Ground 10	7. Carex bigelowii		15	\checkmark	FAC	
8. Viola epipsila 0.1 FACW Total Cover of Bryophytes 10	8. Viola epipsila		0.1		FACW	10
9 Veratrum viride 0.1 FAC					FAC	
10. Pyrola grandiflora 0.1 FAC Hydrophytic			0.1		FAC	Hydrophytic
Total Cover: 67.3 Inger Production	<u>,</u>	Total Cover	r: 673			
50% of Total Cover: <u>33.65</u> 20% of Total Cover: <u>13.46</u> Present? Yes \bigcirc No \bigcirc				of Total Cover:	13.46	Present? Yes • No O
Remarks: Tr rubarc trientalis andpol	Remarks: Tr rubarc tr			-		1

SOIL

Depth -		Matrix		Rec	dox Featu	ires		_	
(inches)	Color (mo	oist)	%	Color (moist)	%	Type ¹	_Loc_2	Texture	Remarks
0-2								Fibric Organics	P
2-2.5								Hemic Organics	
2.5-6	10YR	3/2	100			_		Silty Clay Loam	
6-8	5YR	2.5/1	100					Hemic Organics	
								-	P
,				,			-		
,								·	
¹ Type: C=Conc	centration. D	=Depletion.	. RM=Reduc	ced Matrix ² Location	1: PL=Por	e Lining. RC	C=Root Cha	annel. M=Matrix	
Hydric Soil Ind	dicators:	_	_	Indicators for Pr	oblemati	c Hydric So	oils: ³		
Histosol or H	Histel (A1)			Alaska Color Ch	nange (TA	4) ⁴		Alaska Gleyed Without H	ue 5Y or Redder
Histic Epipe	. ,			🗌 Alaska Alpine s	wales (TA	5)		Underlying Layer	
Hydrogen S				🗌 Alaska Redox V	Vith 2.5Y H	Hue	\checkmark	Other (Explain in Remark	s)
Thick Dark S	Surface (A12	<u>'</u>)		2					
Alaska Gleye	red (A13)			³ One indicator of and an appropriat				nary indicator of wetland h esent	ydrology,
Alaska Redo	ox (A14)					•	•		
Alaska Gleye	ed Pores (A1	.5)		⁴ Give details of co	olor chang	e in Remark	s		
estrictive Layer	(if present):	:							
T									? Yes 🖲 No 🔿
Type: Ice								Hydric Soil Present	r res \odot ino \bigcirc
Depth (inche Remarks: Positive alpha alp		rxn						Hydric Soll Present	r tes © no ⊂
Depth (inche Remarks:		rxn						Hydric Soll Present	? tes © No ⊂
Depth (inche Remarks: Positive alpha alp	pha dypiridyl	rxn						Hydric Soll Present	? tes © no ⊂
Depth (inche Remarks: Positive alpha alp IYDROLOG	pha dypiridyl								res in no c
Depth (inche Remarks: Positive alpha alp IYDROLOG Wetland Hydro	pha dypiridyl GY ology Indica	ators:	.)					_Secondary India	
Depth (inche Remarks: Positive alpha alp IYDROLOG Wetland Hydro Primary Indicato Surface Wa	pha dypiridyl GY ology Indica ors (any one ater (A1)	ators:	.)	Inundation V	isible on A	erial Image	ry (B7)	<u>Secondary India</u>	cators (two or more are required)
Depth (inche Remarks: ositive alpha alp MYDROLOG Vetland Hydro Primary Indicato Surface Wa Y High Water	pha dypiridyl GY ology Indica ors (any one ater (A1) r Table (A2)	ators:	 	Inundation V		-		Secondary India	<u>cators (two or more are required)</u> ned Leaves (B9) atterns (B10)
Depth (inche Remarks: ositive alpha alp MYDROLOG Vetland Hydro Primary Indicato Surface Wa Y High Water	pha dypiridyl GY ology Indica ors (any one ater (A1) r Table (A2)	ators:	 ;)		etated Cor	-		Secondary India Water Stain Drainage P Oxidized R V Presence o	cators (two or more are required) ned Leaves (B9) atterns (B10) hizospheres along Living Roots (C3) f Reduced Iron (C4)
Depth (inche Remarks: Positive alpha alp IVDROLOG Wetland Hydro Primary Indicato Surface Wa	pha dypiridyl GY ology Indica ors (any one ater (A1) r Table (A2) (A3)	ators:	 ;)	Sparsely Veg	etated Cor s (B15)	ncave Surfa		Secondary India UWater Stair Drainage P Oxidized Ri VPresence o Salt Depos	cators (two or more are required) ned Leaves (B9) atterns (B10) hizospheres along Living Roots (C3 f Reduced Iron (C4) its (C5)
Depth (inche Remarks: Positive alpha alp IYDROLOG Wetland Hydro Primary Indicato Surface Wa Migh Water Saturation (Water Mark Sediment D	pha dypiridyl GY ology Indica ors (any one ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2)	ators: is sufficient	 	Sparsely Veg Marl Deposits Hydrogen Su Dry-Season V	etated Cor s (B15) Ifide Odor Water Tabl	(C1) (C2)		Secondary India Secondary India Water Stair Drainage P Oxidized Ri V Presence o Salt Depos Stunted or	cators (two or more are required) ned Leaves (B9) atterns (B10) hizospheres along Living Roots (C3 f Reduced Iron (C4) its (C5) Stressed Plants (D1)
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Scarttered small wet depressions, positive alpha alpha dypiridyl rxn.