## WETLAND DETERMINATION DATA FORM - Alaska Region

Applica	t/Site: Susitna-Watana Hydroelectric Project	E	Borough/City:	Matanusk	ka-Susitna Borough Sampling Date: 02-Aug-13
	ant/Owner: Alaska Energy Authority				Sampling Point: SW13_T177_09
	gator(s): BAB		Landform (hill	side, terrac	ce, hummocks etc.): Lowland
Local	relief (concave, convex, none): concave		Slope:		° Elevation: 101
	gion : Interior Alaska Mountains	l at ·	63.077871327		Long.: -148.094400325 Datum: NAD83
	ap Unit Name:		03.077071321	3	
			? Yes	■ N= ○	NWI classification: PEM1/SS1F
Are \		significantly naturally p	y disturbed? roblematic?	Are "N (If nee	Iormal Circumstances" present? Yes  No Oeded, explain any answers in Remarks.)
	Hydrophytic Vegetation Present? Yes   No				
	Hydric Soil Present? Yes ● No C		Is	the Sam	pled Area
	Wetland Hydrology Present? Yes   No		wi	ithin a W	/etland? Yes ● No ○
Rem	·				
	ETATION - Use scientific names of plants. L	ist all spe Absolute % Cover	Dominant	•	Dominance Test worksheet:  Number of Dominant Species
1.		0			That are OBL, FACW, or FAC: 3 (A)
2.		0			Total Number of Dominant Species Across All Strata: 3 (B)
3.		0			Percent of dominant Species
4.		0			That Are OBL, FACW, or FAC: 100.0% (A/B)
5.		0			Prevalence Index worksheet:
	Total Cover				Total % Cover of: Multiply by:
Sar	oling/Shrub Stratum 50% of Total Cover:	0 20%	of Total Cover	0	OBL Species 30 x 1 = 30
1.	Salix pulchra	35	<b>✓</b>	FACW	FACW Species 36 x 2 = 72
2.					FAC Species <u>10</u> x 3 = <u>30</u>
3.		0			FACU Species 0 x 4 = 0
4.		0			UPL Species
5.		0			Column Totals: <u>76</u> (A) <u>132</u> (B)
6.		0			
7.		0			Prevalence Index = B/A = 1.737
8.		0			Hydrophytic Vegetation Indicators:
9.		0			Dominance Test is > 50%
		0			<ul><li>✓ Dominance Test is &gt; 50%</li><li>✓ Prevalence Index is ≤3.0</li></ul>
10.	Total Cover: 50% of Total Cover:	0 35			<ul> <li>✓ Prevalence Index is ≤3.0</li> <li>Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</li> </ul>
10.	Total Cover	0 35 17.5 20%	<b>✓</b>	7 OBL	<ul> <li>✓ Prevalence Index is ≤3.0</li> <li>☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</li> <li>☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)</li> </ul>
10. <u>Her</u> 1.	Total Cover  50% of Total Cover:  Carex aquatilis  Calamagrostis canadensis	0 35 17.5 20% 25 10		OBL FAC	<ul> <li>✓ Prevalence Index is ≤3.0</li> <li>Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</li> <li>Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)</li> <li>Indicators of hydric soil and wetland hydrology must</li> </ul>
10. Her 1. 2. 3.	Total Cover  50% of Total Cover:  Carex aquatilis  Calamagrostis canadensis  Comarum palustre	0 7: 35 17.5 20% 25 10 5	<b>✓</b>	OBL FAC OBL	<ul> <li>✓ Prevalence Index is ≤3.0</li> <li>☐ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</li> <li>☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)</li> </ul>
10. Her 1. 2. 3. 4.	Total Cover 50% of Total Cover: Carex aquatilis Calamagrostis canadensis Comarum palustre Sanguisorba canadensis	0 35 17.5 209 25 10 5	<b>✓</b>	OBL FAC	<ul> <li>✓ Prevalence Index is ≤3.0</li> <li>Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</li> <li>Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)</li> <li>Indicators of hydric soil and wetland hydrology must</li> </ul>
10.  Heil 1. 2. 3. 4. 5.	Total Cover 50% of Total Cover: Carex aquatilis Calamagrostis canadensis Comarum palustre Sanguisorba canadensis	0 35 17.5 20% 25 10 5 1	<b>✓</b>	OBL FAC OBL	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)  Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  Plot size (radius, or length x width)  Cover of Wetland Bryophytes
10. Her 1. 2. 3. 4. 5. 6.	Total Cover 50% of Total Cover: Carex aquatilis Calamagrostis canadensis Comarum palustre Sanguisorba canadensis	0 35 17.5 209 25 10 5 1 0	<b>✓</b>	OBL FAC OBL	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)  Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  Plot size (radius, or length x width)  Cover of Wetland Bryophytes (Where applicable)
10.  Hei 1. 2. 3. 4. 5. 6. 7.	Total Cover 50% of Total Cover:  Carex aquatilis  Calamagrostis canadensis  Comarum palustre  Sanguisorba canadensis	0 35 17.5 209 25 10 5 1 0 0	<b>✓</b>	OBL FAC OBL	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)  Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  Plot size (radius, or length x width)  Cover of Wetland Bryophytes (Where applicable)  Bare Ground  45
10.  Hei 1. 2. 3. 4. 5. 6. 7. 8.	Total Cover 50% of Total Cover:  Carex aquatilis  Calamagrostis canadensis  Comarum palustre  Sanguisorba canadensis	0 35 17.5 209 25 10 5 1 0 0	<b>✓</b>	OBL FAC OBL	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)  Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  Plot size (radius, or length x width)  Cover of Wetland Bryophytes (Where applicable)
10.  Heil 1. 2. 3. 4. 5. 6. 7. 8. 9.	Total Cover 50% of Total Cover: Carex aquatilis Calamagrostis canadensis Comarum palustre Sanguisorba canadensis	0 35 17.5 209 25 10 5 1 0 0	<b>✓</b>	OBL FAC OBL	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)  Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  Plot size (radius, or length x width)  Cover of Wetland Bryophytes (Where applicable)  Bare Ground  Total Cover of Bryophytes  5
10.  Heil 1. 2. 3. 4. 5. 6. 7. 8. 9.	Total Cover 50% of Total Cover:  Carex aquatilis  Calamagrostis canadensis  Comarum palustre  Sanguisorba canadensis	0 35 17.5 209 25 10 5 1 0 0 0 0	<b>✓</b>	OBL FAC OBL	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)  Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  Plot size (radius, or length x width)  Cover of Wetland Bryophytes (Where applicable)  Bare Ground  45

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SOIL

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

Depth
Redox Features

Sampling Point: SW13\_T177\_09

Depth	1atrix		Red				_		
(inches) Color (mo	st)	<u>%</u>	Color (moist)	<u>%</u>	Type <sup>1</sup>	_Loc_ <sup>2</sup>	Texture	Remarks	
								-	
								-	
						-			
				-		-			
Type: C=Concentration. D=	Depletion.	RM=Reduc					annel. M=Matrix		
ydric Soil Indicators:			Indicators for Pro	oblemati	c Hydric S	oils: <sup>3</sup>	_		
Histosol or Histel (A1)			Alaska Color Ch		•		Alaska Gleyed Without H	ue 5Y or Redder	
Histic Epipedon (A2)			Alaska Alpine sv				Underlying Layer		
Hydrogen Sulfide (A4)			☐ Alaska Redox W	/ith 2.5Y I	Hue	V	Other (Explain in Remark	(S)	
Thick Dark Surface (A12)			3 One indicator of	hudronhu	tic voqotatic	n one prin	mary indicator of wetland h	wdrology	
Alaska Gleyed (A13)			and an appropriate					lydrology,	
Alaska Redox (A14)			<sup>4</sup> Give details of co	lor chang	a in Damarl	/C			
Alaska Gleyed Pores (A15	)		GIVE details of co	nor criarig	c iii ixcinari				
estrictive Layer (if present):									
							Hydric Soil Present	? Yes 💿 No 🔾	
Type:							myane bon i resent		
Type: Depth (inches): emarks: esume hydric soil due to hydrometric soil due to	ophytic ve	getation an	d inundation.				Tryune 3011 1 E3CHC		
Depth (inches): emarks: ssume hydric soil due to hydi	rophytic ve	getation an	d inundation.				Tryune Son Tesene		
Depth (inches): emarks: esume hydric soil due to hydromothers  YDROLOGY		getation ar	d inundation.				•		
Depth (inches): emarks: sume hydric soil due to hydromorphic soil due t	tors:		d inundation.				_Secondary Indi	cators (two or more are required)	
Depth (inches): emarks: sume hydric soil due to hydrology YDROLOGY retland Hydrology Indicarimary Indicators (any one in	tors:			cible on A	erial Image	ry (R7)	Secondary Indi	ned Leaves (B9)	
Pepth (inches): emarks: sume hydric soil due to hydrology  YDROLOGY  Yetland Hydrology Indication on the inches in the control of the control	tors:		✓ Inundation Vi		_		Secondary Indi	ned Leaves (B9) Patterns (B10)	
Pepth (inches):  emarks: sume hydric soil due to hydromore  YDROLOGY  Yetland Hydrology Indication  Y Surface Water (A1)  High Water Table (A2)	tors:		✓ Inundation Vi	etated Co	_		Secondary Indi Secondary Indi Water Stai Drainage F	ned Leaves (B9) Patterns (B10) hizospheres along Living Roots (C3)	
Depth (inches): emarks: ssume hydric soil due to hydromore yDROLOGY fetland Hydrology Indication on the inches in the control of the control	tors:		✓ Inundation Vi ☐ Sparsely Vege ☐ Marl Deposits	etated Co (B15)	ncave Surfa		Secondary Indi  Water Stai  Drainage F  Oxidized R  Presence o	ned Leaves (B9) Patterns (B10) hizospheres along Living Roots (C3) of Reduced Iron (C4)	
Depth (inches): emarks: sume hydric soil due to hydrometric soil due to hydrom	tors:		✓ Inundation Vi ☐ Sparsely Vege ☐ Marl Deposits ☐ Hydrogen Sul	etated Cor (B15) fide Odor	ncave Surfa		Secondary Indi  Water Stai  Drainage F  Oxidized R  Presence o	ned Leaves (B9) Patterns (B10) hizospheres along Living Roots (C3) of Reduced Iron (C4)	
Depth (inches): emarks: sume hydric soil due to hydrometric soil due to hydrom	tors:		✓ Inundation Vi ☐ Sparsely Vege ☐ Marl Deposits	etated Col (B15) fide Odor Vater Tabl	ncave Surfa (C1) e (C2)			ned Leaves (B9) Patterns (B10) hizospheres along Living Roots (C3) of Reduced Iron (C4) hits (C5)	
Depth (inches):  emarks: sume hydric soil due to hydrology  YDROLOGY  Yetland Hydrology Indicaterimary Indicators (any one in the sum of the s	tors:		✓ Inundation Vi ☐ Sparsely Vege ☐ Marl Deposits ☐ Hydrogen Sul ✓ Dry-Season W	etated Col (B15) fide Odor Vater Tabl	ncave Surfa (C1) e (C2)		Secondary Indi Water Stai Drainage F Oxidized R Presence c Salt Depos Stunted or	ned Leaves (B9) Patterns (B10) hizospheres along Living Roots (C3) of Reduced Iron (C4) its (C5) Stressed Plants (D1)	
Depth (inches):  emarks: sume hydric soil due to hydrology  YDROLOGY  Vetland Hydrology Indicaterimary Indicators (any one incomplete in the inches in the	tors:		✓ Inundation Vi ☐ Sparsely Vege ☐ Marl Deposits ☐ Hydrogen Sul ✓ Dry-Season W	etated Col (B15) fide Odor Vater Tabl	ncave Surfa (C1) e (C2)		Secondary Indi Water Stai Drainage F Oxidized R Presence c Salt Depos Stunted or Geomorph Shallow Ac	ned Leaves (B9) Patterns (B10) hizospheres along Living Roots (C3) of Reduced Iron (C4) hits (C5) Stressed Plants (D1) hits (C5)	
Pepth (inches):  Pemarks:	tors:		✓ Inundation Vi ☐ Sparsely Vege ☐ Marl Deposits ☐ Hydrogen Sul ✓ Dry-Season W	etated Col (B15) fide Odor Vater Tabl	ncave Surfa (C1) e (C2)		Secondary Indi Water Stai Drainage F Oxidized R Presence c Salt Depos Stunted or Geomorph Shallow Ac	ned Leaves (B9) Patterns (B10) hizospheres along Living Roots (C3) of Reduced Iron (C4) its (C5) Stressed Plants (D1) ic Position (D2) quitard (D3) graphic Relief (D4)	
Pepth (inches):  emarks: sume hydric soil due to hydromatic soil due	<b>tors:</b> s sufficient)		✓ Inundation Vi ☐ Sparsely Vege ☐ Marl Deposits ☐ Hydrogen Sul ✓ Dry-Season W	etated Col (B15) fide Odor Vater Tabl	ncave Surfa (C1) e (C2)		Secondary Indi Water Stai Drainage F Oxidized R Presence o Salt Depos Stunted or Geomorph Shallow Ac Microtopog	ned Leaves (B9) Patterns (B10) hizospheres along Living Roots (C3) of Reduced Iron (C4) its (C5) Stressed Plants (D1) ic Position (D2) quitard (D3) graphic Relief (D4)	
Pepth (inches):  Pemarks:  Petland Hydrology Indical rimary Indicators (any one incompared incompa	<b>tors:</b> s sufficient)		✓ Inundation Vi ☐ Sparsely Vege ☐ Marl Deposits ☐ Hydrogen Sul ✓ Dry-Season W	etated Coi (B15) fide Odor Vater Tabl	ncave Surfa (C1) e (C2)		Secondary Indi Water Stai Drainage F Oxidized R Presence o Salt Depos Stunted or Geomorph Shallow Ac Microtopog	ned Leaves (B9) Patterns (B10) hizospheres along Living Roots (C3) of Reduced Iron (C4) its (C5) Stressed Plants (D1) ic Position (D2) quitard (D3) graphic Relief (D4)	
Pepth (inches):  Pemarks:	tors: s sufficient)		✓ Inundation Vi  Sparsely Vege  Marl Deposits  Hydrogen Sul  ✓ Dry-Season W  Other (Explain	etated Coo (B15) fide Odor Vater Tabl n in Rema	ncave Surfa (C1) e (C2)	ce (B8)	Secondary Indi Water Stai Drainage F Oxidized R Presence o Salt Depos Stunted or Geomorph Shallow Ac Microtopog	ned Leaves (B9) Patterns (B10) hizospheres along Living Roots (C3) of Reduced Iron (C4) hits (C5) Stressed Plants (D1) hic Position (D2) hitard (D3) higraphic Relief (D4) higraphic Relief (D4)	
Depth (inches):  emarks: sume hydric soil due to hydrology  YDROLOGY  Yetland Hydrology Indicates rimary Indicators (any one in the second of	tors: s sufficient)  Yes  Yes	No ○ No ●	✓ Inundation Vi ☐ Sparsely Vege ☐ Marl Deposits ☐ Hydrogen Sul ✓ Dry-Season W ☐ Other (Explain  Depth (inches	etated Cor (B15) fide Odor Vater Tabl n in Rema s): 8	ncave Surfa (C1) e (C2)	ce (B8)	Secondary Indi Water Stai Drainage F Oxidized R Presence o Salt Depos Stunted or Geomorph Shallow Ac Microtopog	ned Leaves (B9) Patterns (B10) hizospheres along Living Roots (C3) of Reduced Iron (C4) hits (C5) Stressed Plants (D1) hic Position (D2) huitard (D3) huitard (D4) huitard (D5)	
Pepth (inches):  Pemarks:	Yes Yes Yes	No ○ No ● No ●	✓ Inundation Vi Sparsely Vege Marl Deposits Hydrogen Sul ✓ Dry-Season W Other (Explain  Depth (inches	etated Coi (B15) fide Odor Vater Tablo n in Rema	(C1) e (C2) rks)	Wetla	Secondary Indi Water Stai Drainage F Oxidized R Presence o Salt Depos Stunted or Geomorph Shallow Ac Microtopog	ned Leaves (B9) Patterns (B10) hizospheres along Living Roots (C3) of Reduced Iron (C4) hits (C5) Stressed Plants (D1) hic Position (D2) huitard (D3) huitard (D4) huitard (D5)	
Pepth (inches):  Pemarks:	Yes Yes Yes	No ○ No ● No ●	✓ Inundation Vi Sparsely Vege Marl Deposits Hydrogen Sul ✓ Dry-Season W Other (Explain  Depth (inches	etated Coi (B15) fide Odor Vater Tablo n in Rema	(C1) e (C2) rks)	Wetla	Secondary Indi Water Stai Drainage F Oxidized R Presence o Salt Depos Stunted or Geomorph Shallow Ac Microtopog	ned Leaves (B9) Patterns (B10) hizospheres along Living Roots (C3) of Reduced Iron (C4) hits (C5) Stressed Plants (D1) hic Position (D2) huitard (D3) huitard (D4) huitard (D5)	
Depth (inches):  emarks: sume hydric soil due to hydromarks:  YDROLOGY  //etland Hydrology Indical rimary Indicators (any one in the indicators (any one in	Yes Yes Yes	No ○ No ● No ●	✓ Inundation Vi Sparsely Vege Marl Deposits Hydrogen Sul ✓ Dry-Season W Other (Explain  Depth (inches	etated Coi (B15) fide Odor Vater Tablo n in Rema	(C1) e (C2) rks)	Wetla	Secondary Indi Water Stai Drainage F Oxidized R Presence o Salt Depos Stunted or Geomorph Shallow Ac Microtopog	ned Leaves (B9) Patterns (B10) hizospheres along Living Roots (C3) of Reduced Iron (C4) hits (C5) Stressed Plants (D1) hic Position (D2) huitard (D3) huitard (D4) huit Test (D5)	
Pepth (inches):  Pemarks:  Sume hydric soil due to hydromarks:  Sume hydric soil due to hydromarks:  Petland Hydrology Indication (and one in the indicators (and one in the indicator	Yes Yes Yes	No ○ No ● No ●	✓ Inundation Vi Sparsely Vege Marl Deposits Hydrogen Sul ✓ Dry-Season W Other (Explain  Depth (inches	etated Coi (B15) fide Odor Vater Tablo n in Rema	(C1) e (C2) rks)	Wetla	Secondary Indi Water Stai Drainage F Oxidized R Presence o Salt Depos Stunted or Geomorph Shallow Ac Microtopog	ned Leaves (B9) Patterns (B10) hizospheres along Living Roots (C3) of Reduced Iron (C4) hits (C5) Stressed Plants (D1) hic Position (D2) hitard (D3) higher (D4) higher (D5) higher (D5)	

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