WETLAND DETERMINATION DATA FORM - Alaska Region

Applicant/Owner Agaska Energy Authority Sampling Point SW15_T325_04	Project/	/Site: Susitna-Watana Hydroelectric Project	ļ	Borough/City:	Matanusk	a-Susitna Borough Sampling Date: 25-Aug-15
Landform (hillside, terrace, hummocks etc.): Shoulder slope	Applica	nt/Owner: Alaska Energy Authority				Sampling Point: SW15 T325 04
Local relief (concave, convex, none): hummooky				Landform (hill	side, terrac	
Soli Map Unit Name: Are climatichydrologic conditions on the site typical for this time of year? Yes No (fif no, explain in Remarks.) Are Vegetation Soil or hydrology significantly disturbed? Are Vegetation Soil or hydrology Soil or hydrology significantly disturbed? Are Vegetation Soil or hydrology or hydrology	_					- · · · · · · · · · · · · · · · · · · ·
Are climatichydrologic 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 Normal Circumstances* present? Yes No Are Normal Circumstances* present? Yes No Is the Sampled Area within a Wetland? Yes N			l at ·			
Are climatichydrologic conditions on the site typical for this time of year? Yes ● No	_		Lut			
Are Vegetation		·		-0 Voo	● No ○	
Are Vegetation			-			
SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present?						
Hydrophytic Vegetation Present? Yes No No Set and Hydrology Present? Yes No No No Set and Hydrology Present? Yes No No No No No Set and Hydrology Present? Yes No No No No Set and Hydrology Present? Yes No No No No Set and Hydrology Present? Yes No No No No Set and Hydrology Present? Yes No						
Hydric Soil Present? Yes No				inpling point	locations	s, transcets, important reatures, etc.
Wetland Hydrology Present? Yes No No Within a Wetland? Yes No No Within a Wetland? Yes No No Within a Wetland? Yes No Wetland No No		, , , , , , , , , , , , , , , , , , ,		Is	the Sam	pled Area
VEGETATION - Use scientific names of plants. List all species in the plot.		· · · · · · · · · · · · · · · · · · ·				-
VEGETATION - Use scientific names of plants. List all species in the plot.		,		"		onana.
Tree Stratum	Rema	irks:				
Tree Stratum						
Tree Stratum	VEGE	TATION -Use scientific names of plants. Li	st all sn	ecies in the	nlot	
Number of Dominant Species		ose scientific flames of plants. El				Dominance Test worksheet:
1. Picea mariana	Troc	Stratum				
2.		Discourse discourse				
3.						
4.						
Total Cover: Sapling / Shrub Stratum Sow of Total Cover: 15 20% of Total Cover: 6 20						
Total Cover: 30 Tot	5.					Drawalawa Taday washabash
Sapling/Shrub Stratum 50% of Total Cover: 15 20% of Total Cover: 6 OBL Species 0 x 1 = 0		Total Cover:	30			
1. Vaccinium uliginosum 40	Sapl	ling/Shrub Stratum 50% of Total Cover:	15 20%	6 of Total Cover:	6	001.0
2. Betula glandulosa 20					FAC	
3. Vaccinium vitis-idaea		Retula dandulosa				
4. Rhododendron groenlandicum 7		Vaccinium vitio ideas				
5. Picea mariana 6. Empetrum nigrum 7. Salix pulchra 8. Rosa acicularis 9. Spiraea stevenii 1. Equisetum arvense 1. Equisetum arvense 2. Cornus suecica 3. Eriophorum vaginatum 4. Carex bigelowii 5. Picea mariana 7. SALCW 5. Column Totals: 137 (A) 374 (B) 7. FACW 7. FACW 7. FACW 8. Rosa acicularis 9. Spiraea stevenii 1. Equisetum arvense 1. Equisetum arvense 2. Cornus suecica 3. Eriophorum vaginatum 4. Carex bigelowii 5. Cornus canadensis 6. Petasites frigidus 7. FACW 7. FACW 8. Rosa acicularis 9. Prevalence Index = B/A = 2.730 9. Prevalence Index = B/A = 2.730 1. Hydrophytic Vegetation Indicators: ✓ Dominance Test is > 50% ✓ Prevalence Index = B/A = 2.730 1. Mydrophytic Vegetation Indicators: ✓ Prevalence Index = B/A = 2.730 1. Hydrophytic Vegetation Indicators: ✓ Prevalence Index = B/A = 2.730 1. Hydrophytic Vegetation Indicators: ✓ Prevalence Index = B/A = 2.730 1. Hydrophytic Vegetation Indicators: ✓ Prevalence Index = B/A = 2.730 1. Hydrophytic Vegetation Indicators: ✓ Prevalence Index = B/A = 2.730 1. Hydrophytic Vegetation Indicators: ✓ Prevalence Index = B/A = 2.730 1. Hydrophytic Vegetation Indicators: ✓ Prevalence Index = B/A = 2.730 1. Hydrophytic Vegetation Indicators: ✓ Prevalence Index = B/A = 2.730 1. Hydrophytic Vegetation Indicators: ✓ Prevalence Index = B/A = 2.730 1. Hydrophytic Vegetation Indicators: ✓ Prevalence Index = B/A = 2.730 1. Hydrophytic Vegetation Indicators: ✓ Prevalence Index = B/A = 2.730 1. Hydrophytic Vegetation Indicators: ✓ Prevalence Index = B/A = 2.730 1. Hydrophytic Vegetation Indicators: ✓ Prevalence Index = B/A = 2.730 1. Hydrophytic Vegetation Indicators: ✓ Prevalence Index = B/A = 2.730 1. Hydrophytic Vegetation Indicators: ✓ Prevalence Index = B/A = 2.730 1. Hydrophytic Vegetation Indicators: ✓ Prevalence Index = B/A = 2.730 1. Hydrophytic Vegetation Indicators: ✓ Prevalence Index = B/A = 2.730 1. Hydrophytic Vegetation Indicators: ✓ Prevalence Index = B/A = 2.730 1. Hydrophytic Vegetation Indicators: ✓ Prevalence Index = B/A		Dhadadandran arasılandisum				
6. Empetrum nigrum 7. Salix pulchra 8. Rosa acicularis 9. Spiraea stevenii 10.		Diago moriona	7			
7. Salix pulchra 8. Rosa acicularis 9. Spiraea stevenii 10.		F	-		FAC	
9. Spiraea stevenii 10.		·	2		FACW	Prevalence Index = B/A = 2.730
10.	8.	Rosa acicularis	2		FACU	Hydrophytic Vegetation Indicators:
Total Cover: 99 Herb Stratum 50% of Total Cover: 49.5 20% of Total Cover: 19.8 Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) 1. Equisetum arvense 2 ✓ FAC Problematic Hydrophytic Vegetation (Explain) 2. Cornus suecica 2 ✓ FAC Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. 3. Eriophorum vaginatum 1 ✓ FAC Plot size (radius, or length x width) 10m 4. Carex bigelowii 1 ✓ FACU Plot size (radius, or length x width) 10m 5. Cornus canadensis 1 ✓ FACW Processor on a separate sheet) 10m 6. Petasites frigidus 1 ✓ FACW Problematic Hydrophytic Vegetation (Explain) 1 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Plot size (radius, or length x width) 10m 6. Petasites frigidus 1 ✓ FACW Plot size (radius, or length x width) 10m	9.	Spiraea stevenii	1		FACU	✓ Dominance Test is > 50%
Herb Stratum 50% of Total Cover: 49.5 20% of Total Cover: 19.8 1. Equisetum arvense 2 ✓ FAC 2. Cornus suecica 2 ✓ FAC 3. Eriophorum vaginatum 4. Carex bigelowii 5. Cornus canadensis 6. Petasites frigidus 50% of Total Cover: 49.5 20% of Total Cover: 19.8 2 ✓ FAC 5 7 FAC 7 Problematic Hydrophytic Vegetation (Explain) 1 ✓ FACW 4. Problematic Hydrophytic Vegetation (Explain) 1 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. 4. Carex bigelowii 5. Cornus canadensis 6. Petasites frigidus 1 ✓ FACW 7 FACW 8 Problematic Hydrophytic Vegetation (Explain) 1 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Plot size (radius, or length x width) 10m % Cover of Wetland Bryophytes 15 (Where applicable)	10.		0		FACU	✓ Prevalence Index is ≤3.0
1. Equisetum arvense 2. Cornus suecica 2. Eriophorum vaginatum 3. Eriophorum vaginatum 4. Carex bigelowii 5. Cornus canadensis 6. Petasites frigidus 2. ✓ FAC 1 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. 4. Carex bigelowii 5. Cornus canadensis 6. Petasites frigidus 2. ✓ FAC 7 FAC 8 FAC 9 Problematic Hydrophytic Vegetation (Explain) 1 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. 4. Carex bigelowii 5. FAC 7 FAC 8 FAC 9 Plot size (radius, or length x width) 9 Cover of Wetland Bryophytes 15 (Where applicable)						
2. Cornus suecica 2	Herl	b Stratum 50% of Total Cover:	49.5 20			
3. Eriophorum vaginatum 1 ✓ FACW 4. Carex bigelowii 5. Cornus canadensis 1 ✓ FACU Petasites frigidus 1 ✓ FACW FACU FACW Where applicable)		<u> </u>				, , , , , , , , , , , , , , , , , , , ,
4. Carex bigelowii 5. Cornus canadensis 1						Indicators of hydric soil and wetland hydrology must
5. Cornus canadensis 1 FACU FACW Plot size (radius, or length x width) % Cover of Wetland Bryophytes (Where applicable)	J	· · · · · · · · · · · · · · · · · · ·				be present, unless disturbed of problematic.
6. Petasites frigidus 1 FACW (Where applicable) 6. Petasites frigidus 6. Petasites frigidus 1 FACW (Where applicable)				_		Plot size (radius, or length x width)
o (where applicable)	1	Defection (2-24)		V		% Cover of Wetland Bryophytes15
	J .				TACVV	
7						
o						Total Cover of Bryophytes 80
						Hydronhytic
Total Cover: 8 Vegetation	10.		8			Vegetation
50% of Total Cover: 4 20% of Total Cover: 1.6 Present? Yes No				6 of Total Cover:	1.6	Present? Yes No
Remarks: Foliose lichens10%	Rema	arks: Foliose lichens10%				

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SOIL Sampling Point: SW15_T325_04

	to document the indicator or confirm the absence of inc	icators)		
Depth Matrix	Redox Features			
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ²	Texture	Remarks
0-7		Fibr	ic Organics	
7-9		Hen	nic Organics	
9-12		Sap	ric Organics	
12-16		Sap	ric Organics	with mineral content
¹ Type: C=Concentration. D=Depletion. RM=	Reduced Matrix ² Location: PL=Pore Lining. F	C=Root Channel.	M=Matrix	
Hydric Soil Indicators:	Indicators for Problematic Hydric	Soils: ³		
Histosol or Histel (A1)	Alaska Color Change (TA4)	Alas	ska Gleyed Without Hi	ue 5Y or Redder
Histic Epipedon (A2)	Alaska Alpine swales (TA5)		lerlying Layer	
Hydrogen Sulfide (A4)	Alaska Redox With 2.5Y Hue	∐ Oth	er (Explain in Remark	s)
Thick Dark Surface (A12)	³ One indicator of hydrophytic vegetat	on one nrimary i	ndicator of wetland h	udrology
Alaska Gleyed (A13)	and an appropriate landscape position		Hulcator or wedana n	yurology,
Alaska Redox (A14)	⁴ Give details of color change in Rema	rks		
Alaska Gleyed Pores (A15)				
Restrictive Layer (if present):				0 0
Type:		Hye	dric Soil Present	? Yes ○ No •
Depth (inches): Remarks:				
Large (up to 25 cm diam) cobbles (subrounde	ed) starting at 4 in. Cannot infer saturation as th	ere is only one se	econdary wetland hyd	rology indicator.
HYDROLOGY				
HYDROLOGY Wetland Hydrology Indicators:			_Secondary Indic	ators (two or more are required)
Wetland Hydrology Indicators: Primary Indicators (any one is sufficient)			Water Stair	ned Leaves (B9)
Wetland Hydrology Indicators: Primary Indicators (any one is sufficient) Surface Water (A1)	☐ Inundation Visible on Aerial Imag	, , ,	Water Stain Drainage P	ned Leaves (B9) atterns (B10)
Wetland Hydrology Indicators: Primary Indicators (any one is sufficient) Surface Water (A1) High Water Table (A2)	Sparsely Vegetated Concave Surf	, , ,	Water Stain Drainage P Oxidized R	ned Leaves (B9) atterns (B10) nizospheres along Living Roots (C3)
Wetland Hydrology Indicators: Primary Indicators (any one is sufficient) Surface Water (A1) High Water Table (A2) Saturation (A3)	Sparsely Vegetated Concave Surf	, , ,	Water Stain Drainage P Oxidized R Presence o	ned Leaves (B9) atterns (B10) nizospheres along Living Roots (C3) f Reduced Iron (C4)
Wetland Hydrology Indicators: Primary Indicators (any one is sufficient) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	Sparsely Vegetated Concave Surf Marl Deposits (B15) Hydrogen Sulfide Odor (C1)	, , ,	Water Stain Drainage P Oxidized R Presence o Salt Depos	ned Leaves (B9) atterns (B10) nizospheres along Living Roots (C3) f Reduced Iron (C4) ts (C5)
Wetland Hydrology Indicators: Primary Indicators (any one is sufficient) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	Sparsely Vegetated Concave Surf Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)	, , ,	Water Stain Drainage P Oxidized R Presence o Salt Depos Stunted or	ned Leaves (B9) atterns (B10) nizospheres along Living Roots (C3) f Reduced Iron (C4) ts (C5) Stressed Plants (D1)
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