WETLAND DETERMINATION DATA FORM - Alaska Region

Projec	t/Site: Susitna-Watana Hydroelectric Project	E	Borough/City:	Denali Bo	rough Sampling Date: 08-Aug-13				
Applica	ant/Owner: Alaska Energy Authority				Sampling Point: SW13_T169_04				
	gator(s): BAB		Landform (hill	fform (hillside, terrace, hummocks etc.): Hillside					
	relief (concave, convex, none): rolling		Slope:	% / 17.8					
	gion : Interior Alaska Mountains	l at ·	63.41781852						
		Lat	03.41701032	74					
	ap Unit Name:		• V	No ○	NWI classification: Upland				
Are \	regetation ☐ , Soil ☐ , or Hydrology ☐ regetation ☐ , Soil ☐ , or Hydrology ☐ regetation ☐	significantl naturally p wing san	y disturbed? roblematic?	Are "N (If nee	(If no, explain in Remarks.) lormal Circumstances" present? Yes ● No ○ eded, explain any answers in Remarks.) s, transects, important features, etc.				
	Hydrophytic Vegetation Present? Yes O No •		la la	the Com	mlad Araa				
	Hydric Soil Present? Yes O No •)	Is the Sampled Area within a Wetland? Yes ○ No ●						
	Wetland Hydrology Present? Yes O No •)	W	within a Wetland? Yes ○ No ●					
Rema	ETATION -Use scientific names of plants. Li	•		-	Dominance Test worksheet:				
Tro	e Stratum	Absolute % Cover		Indicator Status	Number of Dominant Species				
	Picea glauca	20	Species:	FACU	That are OBL, FACW, or FAC: 2 (A)				
2.		0	. 🔻		Total Number of Dominant				
3.					Species Across All Strata: 4 (B)				
4.		0	·		Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)				
5.					Parameter Turker was dealer at				
	Total Covers	20			Prevalence Index worksheet: Total % Cover of: Multiply by:				
Sap	oling/Shrub Stratum 50% of Total Cover:	10 20%	of Total Cover	:4	OBL Species $0 \times 1 = 0$				
		20	~	FAC	FACW Species $0 \times 2 = 0$				
	Betula nana	30		FAC FAC	FAC Species x 3 =				
2. 3.	Vaccinium uliginosum Vaccinium vitis-idaea	5	. 🔻	FAC	FACU Species 28.2 x 4 = 112.8				
4.	Empetrum nigrum	10		FAC	UPL Species 0 x 5 = 0				
5.	Salix scouleriana	1	·	FAC					
6.	Rosa acicularis	1		FACU	Column Totals: <u>105.2</u> (A) <u>343.8</u> (B)				
7.	Salix glauca	1		FAC	Prevalence Index = B/A = 3.268				
8.	- Calif Gradua				Hydrophytic Vegetation Indicators:				
9.					Dominance Test is > 50%				
10.		0			Prevalence Index is ≤3.0				
Her	Total Cover: 50% of Total Cover:			15.6	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)				
1.	Mertensia paniculata	_ 1		FACU	Problematic Hydrophytic Vegetation ¹ (Explain)				
2.	Solidago multiradiata	- 1		FACU	¹ Indicators of hydric soil and wetland hydrology must				
3.	Anthoxanthum monticola ssp. alpinum	0.1		UPL	be present, unless disturbed or problematic.				
4.	Chamaenerion angustifolium			FACU	Plot size (radius, or length x width)				
5.	Cornus canadensis		✓	FACU	% Cover of Wetland Bryophytes				
6.					(Where applicable)				
					% Bare Ground				
					Total Cover of Bryophytes30				
		0							
1		0			Hydrophytic				
10.		7.2			Vegetation				
10.	Total Cover : 50% of Total Cover:		of Total Cover	1.44	Present? Yes No •				

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SOIL Sampling Point: SW13_T169_04

Color (moist) Sp. Color (moist) Sp. Color (moist) Sp. Color (moist) Sp. Type Loc. Texture Remote Remo	Profile Description: (Describ	pe to the depth no Matrix	eeded to docume		onfirm the abs		cators)		
4-9 107/R 3/5 100 Loamy Sand what gravets 9-19 2.5Y 3/4 100 Sandy Loam what gravets 1 Type: C=Concentration. D=Depletion. RM=Reduced Matrix 2 Location: PL=Pore Lining. RC=Root Channel. M=Matrix 1 Hydric Soil Indicators: Indicators: Indicators for Problematic Hydric Soils? Alaska Gleyed Without Hue SY or Redder Histic Epipedon (A2) Alaska Aprise was less (T5) Underhying Layer Other (Explain in Remarks) Alaska Redox (A14) Alaska Redox (A15) Alaska Redox (A16) Alaska Redox (A17) Alaska Redox (A18) Alaska Redox (A18) Alaska Redox (A19) Alaska Red	: .	(moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
9-19 2.57 3/4 100 Sandy Loam wirang graves **Type: C=Concentration. D=Depletion. RM=Reduced Matrix ** Location: PL=Pore Lining. RC=Root Channel. M=Matrix ** Hydric Soil Indicators:	0-4		100					Fibric Organics	
Type: C=Concentration. D=Depletion. RM=Reduced Matrix Tippe: C=Concentration. D=Depletion. RM=Reduced Matrix Indicators for Problematic Hydric Soils?	4-9 10YR	3/6	100					Loamy Sand	w/ang gravels
Type: C=Concentration. D=Depletion. RM=Reduced Matrix Tocation: PL=Prore Lining, RC=Root Channel. M=Matrix Hydric Soil Indicators:	9-19 2.5Y	3/4	100					Sandy Loam	w/ang gravels
Hydric Soil Indicators: Histosol or Histel (A1)									7. 33.
Hydric Soil Indicators: Histosol 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	n. D=Depletion				_		nnel. M=Matrix	-
Histic Epipedon (A2)	Hydric Soil Indicators	:				4	oils:	1	
Hydroge Sulfide (A4)		•				-			ue 5Y or Redder
Thick Dark Surface (A12)					•	•		, , ,	m)
Alaska Gleyed (A13) alaska Redox (A14) 4 Give details of color change in Remarks 6 Give details of change in Remarks 6 Give details of change in Remarks 6 Give details of change in Rema	_ ' ' ' ' ' '	•			With 2.5Y H	lue		Other (Explain in Remark	(S)
Alaska Redox (A14)				³ One indicator o	f hvdrophvti	ic vegetatio	on, one prin	narv indicator of wetland h	vdrology,
Alaska Gleyed Pores (A15) *Give details of color change in Remarks Restrictive Layer (if present): Type: Depth (inches): *Remarks: no hydric soil indicators observed **HYDROLOGY **Wetland Hydrology Indicators: Primary Indicators (anv one is sufficient) High Water Table (A2) Sparsely Vegetated Concave Surface (B8) Oxidized Rhizospheres along L Saturation (A3) Marl Deposits (B15) Presence of Reduced Irno (C4) Water Marks (B1) Hydrogen Sulfide Odor (C1) Salt Deposits (C5) Sediment Deposits (B2) Dry-Season Water Table (C2) Stunted or Stressed Plants (D1 Drift Deposits (B3) Other (Explain in Remarks) Geomorphic Position (D2) Algal Mat or Crust (B4) Irno Deposits (B5) FAC-neutral Test (D5) **Field Observations: **Surface Water Present? Yes No Depth (inches): **Surface Position (P2) Depth (inches): **Surface Water Present? Yes No Pepth (inches): **Surface Water									7
Restrictive Layer (if present): Type: Depth (inches): Remarks: no hydric soil indicators observed Hydric Soil Present? Yes No Present Notice Secondary Indicators (two or more Primary Indicators (and or more Secondary Indicators (two or more Primary Indicators (and or stressed Plants (B1)) Surface Water (A1)		(A1E)		4 Give details of o	color change	e in Remark	(S		
Type: Depth (inches): Remarks: no hydric soil indicators observed AyDROLOGY									
PYDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one is sufficient) Surface Water (A1) Surface Water (A2) Saturation (A3) Water Marks (B1) Drift Deposits (B2) Drift Deposits (B3) Iron Deposits (B3) Iron Deposits (B3) Iron Deposits (B3) Surface Soil Cracks (B6) Dry-Season Water Table (C2) Suthat or Crust (B4) Iron Deposits (B5) Surface Water Present? Secondary Indicators (two or more more water Stained Leaves (B9) Drainage Patterns (B10) Drainage Patterns (B		ent):							- " 0 " 0
HYDROLOGY Wetland Hydrology Indicators: Secondary Indicators (two or more Primary Indicators (any one is sufficient) Surface Water (A1) High Water Table (A2) Saturation (A3) Marl Deposits (B15) Sediment Deposits (B2) Drift Deposits (B3) Other (Explain in Remarks) Secondary Indicators (two or more Primary Indicators (any one is sufficient) Water Stained Leaves (B9) Drainage Patterns (B10) Marl Deposits (B15) Presence of Reduced Iron (C4) Salt Deposits (B15) Sediment Deposits (B2) Dry-Season Water Table (C2) Stunted or Stressed Plants (D1 Geomorphic Position (D2) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Feld Observations: Surface Water Present? Yes No Depth (inches): Depth (inches): Depth (inches): Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available: Remarks:	* *							Hydric Soil Present	? Yes ○ No •
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one is sufficient) Surface Water (A1) High Water Table (A2) Sparsely Vegetated Concave Surface (B8) Saturation (A3) Marl Deposits (B15) Presence of Reduced Iron (C4) Water Marks (B1) Hydrogen Sulfide Odor (C1) Salt Deposits (B2) Dry-Season Water Table (C2) Stunted or Stressed Plants (D1 Drift Deposits (B3) Other (Explain in Remarks) Surface Soil Cracks (B6) Feld Observations: Surface Water Present? Yes No Depth (inches): Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available: Secondary Indicators (two or more Recondary Indicators (two or more Primary Indicators (B10) Indicators (B10) Indicators (B10) Indicators (B10) Indicators (B10) Indicators (B10) Indicators (B10) Indicators (B10) Indicators (B10) Indicators (B10) Indicators (B10) Indicators (B10) Indicators (B10) Indicators (B10) Indicators (B10) Indicators (B10) Indicators (B10) Indicators (B10) Indicators (B1	Берит (післез).								
Wetland Hydrology Indicators:									
Primary Indicators (any one is sufficient) Surface Water (A1)	HYDROLOGY								
□ Surface Water (A1) □ Inundation Visible on Aerial Imagery (B7) □ Drainage Patterns (B10) □ High Water Table (A2) □ Sparsely Vegetated Concave Surface (B8) □ Oxidized Rhizospheres along L□ Saturation (A3) □ Marl Deposits (B15) □ Presence of Reduced Iron (C4) □ Salt Deposits (C5) □ Sediment Deposits (B2) □ Dry-Season Water Table (C2) □ Stunted or Stressed Plants (D1 □ Drift Deposits (B3) □ Other (Explain in Remarks) □ Geomorphic Position (D2) □ Algal Mat or Crust (B4) □ Surface Soil Cracks (B6) □ FAC-neutral Test (D5) □ Surface Soil Cracks (B6) □ Depth (inches):									
High Water Table (A2)		one is sufficien	t)						• •
Saturation (A3)					_				
Water Marks (B1)	_ ` `				cave Surfac	ce (B8)		hizospheres along Living Roots (C3)	
Sediment Deposits (B2)	` '				. ,				• •
□ Drift Deposits (B3) □ Other (Explain in Remarks) □ Geomorphic Position (D2) □ Algal Mat or Crust (B4) □ Iron Deposits (B5) □ Microtopographic Relief (D4) □ Surface Soil Cracks (B6) □ FAC-neutral Test (D5) Field Observations: Surface Water Present? Yes □ No ● Depth (inches): Water Table Present? Yes □ No ● Depth (inches): Saturation Present? Yes □ No ● Depth (inches): Saturation Present? (includes capillary fringe) Yes □ No ● Depth (inches): Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available: Remarks:		(D2)							
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☐ Iron Deposits (B5) ☐ Microtopographic Relief (D4) ☐ Surface Soil Cracks (B6) ☐ FAC-neutral Test (D5) Field Observations: Surface Water Present? Yes ○ No ② Depth (inches): Water Table Present? Yes ○ No ② Depth (inches): Saturation Present? Yes ○ No ② Depth (inches): Saturation Present? Yes ○ No ② Depth (inches): Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available: Remarks:		D4)		Uther (Expla	ain in Remar	rks)			` '
Surface Soil Cracks (B6) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Depth (inches): Depth (inches): Depth (inches): Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available: Remarks:	_ `	B 4)							
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Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches):		(DO)						FAC-Heutra	ii Test (D5)
Water Table Present? Yes No Depth (inches): Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available: Remarks:		Yes (No (Denth (inch	oc).				
Saturation Present? (includes capillary fringe) Depth (inches): Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available: Remarks:					,		347 - 41		12 V O N- O
(includes capillary fringe) Yes No Depth (inches): Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available: Remarks:				Depth (inch	es):		wetiai	na nyarology Presen	t? Yes ○ No •
Remarks:		e) Yes	No 💿	Depth (inch	es):				
	Describe Recorded Data	(stream gauge	, monitor well,	aerial photos, pre	evious inspe	ction) if ava	ailable:		
	Demarks:								
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	no wetiana nyarology ina	iicators observe	eu						

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