WETLAND DETERMINATION DATA FORM - Alaska Region

Projec	t/Site: Susitna-Watana Hydroelectric Project		Borough/City:	Denali Bo	orough Sampling Date: 06-Aug-13
Applic	ant/Owner: Alaska Energy Authority				Sampling Point: SW13_T160_05
	gator(s): CTS, AMD		Landform (hi	llside, terrac	ce, hummocks etc.): Swale
	relief (concave, convex, none): flat		- Slope:	% / 3.6	
	gion : Interior Alaska Mountains	l at ·	- · <u></u> 63.36790037	_	Long.: -148.824280143 Datum: NAD83
		Lat	03.30790037	17	
	ap Unit Name:		- 1/	No ○	NWI classification: PSS1B
Are \		significan naturally	tly disturbed? problematic?	Are "N (If nee	(If no, explain in Remarks.) Iormal Circumstances" present? Yes ● No ○ eded, explain any answers in Remarks.) s, transects, important features, etc.
	Hydrophytic Vegetation Present? Yes No	\supset			
	Hydric Soil Present? Yes ● No	\supset			pled Area
	Wetland Hydrology Present? Yes No	\supset	W	ithin a W	/etland? Yes ● No ○
Rem	* **				
	ETATION - Use scientific names of plants. L	ist all sp Absolut % Cove	e Dominant		Dominance Test worksheet: Number of Dominant Species
1.	Picea glauca	15		FACU	That are OBL, FACW, or FAC: 4 (A)
2.					Total Number of Dominant
3.			-		Species Across All Strata: 5 (B)
4.			-		Percent of dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)
5.					Parameter and an annual selection
	Total Cove	r: <u>15</u>	_		Prevalence Index worksheet: Total % Cover of: Multiply by:
Saj	oling/Shrub Stratum 50% of Total Cover:	7.5 20	% of Total Cove	:3	OBL Species 5 x1 = 5
1	Saliv reticulate	20	✓	FAC	FACW Species 36 x 2 = 72
1. 2.	Salix reticulata Vaccinium uliginosum	_ <u>30</u> 25		FAC	FAC Species 117 x 3 = 351
3.	Salix richardsonii	- <u>- 23</u>	_	FACW	FACU Species 20 x 4 = 80
4.	Rhododendron groenlandicum	15	-	FAC	UPL Species 0 x 5 = 0
5.	Salix pulchra	8		FACW	
6.	Rhododendron tomentosum	5		FACW	Column Totals: <u>178</u> (A) <u>508</u> (B)
7.	Empetrum nigrum	- <u></u>		FAC	Prevalence Index = B/A = 2.854
8.	Picea glauca	5		FACU	Hydrophytic Vegetation Indicators:
9.	Arctous ruber	4		FAC	✓ Dominance Test is > 50%
10.	Vaccinium vitis-idaea	2		FACU	✓ Prevalence Index is ≤3.0
He	Total Cover: 50% of Total Cover:			r: 23.8	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
1.	Equisetum arvense	30	✓	FAC	Problematic Hydrophytic Vegetation (Explain)
2.	Carex aquatilis	5	_	OBL	¹ Indicators of hydric soil and wetland hydrology must
3.	Carex bigelowii		_	FAC	be present, unless disturbed or problematic.
4.	Rubus chamaemorus			FACW	Plot size (radius, or length x width)
5.	Arctagrostis latifolia			FACW	% Cover of Wetland Bryophytes
6.	Tofieldia pusilla			FAC	(Where applicable)
			- =		% Bare Ground
			-		Total Cover of Bryophytes 80
		- 0	-		
10.			_		Hydrophytic
	Total Cove 50% of Total Cover:		_ % of Total Cove	: 8.8	Vegetation Present? Yes ● No ○
	20% OF IDIAL COURT				

US Army Corps of Engineers Alaska Version 2.0

SOIL Sampling Point: SW13_T160_05

(inches)	Color (n	noist)	%	Color (m	oist)	%	Type ¹	Loc ²	Texture	Remarks
0-5			100						Hemic Organics	
5-8			100						Fibric Organics	
8-12	5Y	2.5/1	80	7.5YR	4/6	20	С	PL	Silt Loam	Very fibric
										-
	-					-			-	
	-								-	_
Type: C=Co	ncentration. [D=Depletion	. RM=Reduc	ed Matrix	² Location	: PL=Pore	e Lining. RC	C=Root Cha	nnel. M=Matrix	
lydric Soil I	indicators:			Indicate	ors for Pro	blematic	Hydric S	oils: ³		
Histosol o	r Histel (A1)			Alask	ka Color Cha	ange (TA4	4		Alaska Gleyed Without I	Hue 5Y or Redder
/ Histic Epi	pedon (A2)				ka Alpine sv	•	•		Underlying Layer	
_ ′ -	Sulfide (A4)			Alask	ka Redox W	ith 2.5Y H	lue		Other (Explain in Rema	rks)
_	k Surface (A1	2)		3 One in	ndicator of h	nvdrophyt	ic vegetatio	n. one prin	nary indicator of wetland	hydrology.
	eyed (A13)				appropriate					,
Alaska Re	dox (A14) eyed Pores (A	15)		4 Give d	letails of col	lor change	e in Remark	(S		
	•									
•	er (if present)):								
Type: Act	ive layer								Hydric Soil Presen	t? Yes ● No 🔾
Depth (inc	hes): 12									
	hes): 12									
Depth (inc	hes): 12									
emarks:	OGY									
YDROLO	OGY Irology Indic									licators (two or more are required)
YDROLO Vetland Hyd	OGY Irology Indicators (any one		t)						Water Sta	nined Leaves (B9)
YDROLO Vetland Hyd Primary Indica Surface V	OGY Irology Indicators (any one Water (A1)	e is sufficien	t)		undation Vis		_		Water Sta	nined Leaves (B9) Patterns (B10)
YDROLO Vetland Hyd Primary Indica Surface V High Wat	OGY Irology Indicators (any one Water (A1) Iver Table (A2)	e is sufficien	t)	☐ Spa	arsely Vege	tated Con	_		Water Sta	nined Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (Ca
YDROLO /etland Hyd /rimary Indica Surface V High Wat Saturatio	OGY Irology India ators (any one Water (A1) arer Table (A2) n (A3)	e is sufficien	t)	Spa	arsely Vege Irl Deposits	etated Con (B15)	cave Surfa		Water Sta	nined Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3 of Reduced Iron (C4)
YDROLO YDROLO Yetland Hyd Trimary Indica Surface V High Wat Saturatio Water Ma	DGY Irology Indicators (any one Water (A1) er Table (A2) n (A3) arks (B1)	e is sufficien	t)	Spa	arsely Vege Irl Deposits drogen Sulf	etated Con (B15) fide Odor	cave Surfac		Water Sta	nined Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3 of Reduced Iron (C4) sits (C5)
YDROLO Vetland Hyd Primary Indica Surface V V High Wat V Saturatio Water Ma Sediment	PIGY Irology Indicators (any one Water (A1) Fier Table (A2) In (A3) Fier (B1) Fier (B2) Fier (B2) Fier (B3) Fier (B3	e is sufficien	t)	Spa	arsely Vege Irl Deposits drogen Sulf y-Season W	etated Con (B15) fide Odor /ater Table	cave Surfac		Water State Drainage Oxidized Presence Salt Depo	nined Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3 of Reduced Iron (C4) usits (C5) or Stressed Plants (D1)
YDROLO Vetland Hyd Primary Indica Surface V V High Wat V Saturatio Water Ma Sediment Drift Dep	OGY Irology Indicators (any one Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3)	e is sufficien	t)	Spa	arsely Vege Irl Deposits drogen Sulf	etated Con (B15) fide Odor /ater Table	cave Surfac		☐ Water Standard ☐ Drainage ☐ Oxidized ☐ Presence ☐ Salt Depo	nined Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3 of Reduced Iron (C4) sits (C5) or Stressed Plants (D1) hic Position (D2)
YDROLO Vetland Hyd Primary Indica Surface V V High Wat V Saturatio Water Ma Sediment Drift Dep	OGY Irology Indicators (any one Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) or Crust (B4)	e is sufficien	t)	Spa	arsely Vege Irl Deposits drogen Sulf y-Season W	etated Con (B15) fide Odor /ater Table	cave Surfac		□ Water Sta □ Drainage □ Oxidized □ Presence □ Salt Depo □ Stunted of ☑ Geomorp ☑ Shallow A	nined Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3 of Reduced Iron (C4) sits (C5) or Stressed Plants (D1) hic Position (D2)
YDROLC Vetland Hyd Verimary Indica Surface V Verimary Indica	OGY Irology Indicators (any one Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) or Crust (B4)	e is sufficien	t)	Spa	arsely Vege Irl Deposits drogen Sulf y-Season W	etated Con (B15) fide Odor /ater Table	cave Surfac		Water Sta Drainage Oxidized Presence Salt Depo Stunted of Geomorp Shallow A	nined Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3 of Reduced Iron (C4) sits (C5) or Stressed Plants (D1) hic Position (D2) quitard (D3)
YDROLC Vetland Hyd Verimary Indica Surface V Verimary Indica	DGY Irology Indicators (any one Water (A1) ter Table (A2) on (A3) orks (B1) t Deposits (B2) osits (B3) or Crust (B4) osits (B5) Soil Cracks (B6)	e is sufficien		Spa	arsely Vege Irl Deposits drogen Sulf y-Season W	etated Con (B15) fide Odor /ater Table	cave Surfac		Water Sta Drainage Oxidized Presence Salt Depo Stunted of Geomorp Shallow A	nined Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3 of Reduced Iron (C4) sits (C5) or Stressed Plants (D1) hic Position (D2) quitard (D3) ographic Relief (D4)
YDROLO Vetland Hyd Verliand Yndica Surface V V High Wat V Saturatio Water Ma Sediment Drift Dep Algal Mat Iron Dep Surface S	DGY Irology Indicators (any one Water (A1) Ever Table (A2) In (A3) In (A3) It Deposits (B2) It Deposits (B3) It or Crust (B4) It osits (B5) It osits (B5) It osits (B5) It osits (B6) It	e is sufficien	t) No •	Spa	arsely Vege Irl Deposits drogen Sulf y-Season W	etated Con (B15) fide Odor /ater Table n in Remai	cave Surfac		Water Sta Drainage Oxidized Presence Salt Depo Stunted of Geomorp Shallow A	nined Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3 of Reduced Iron (C4) sits (C5) or Stressed Plants (D1) hic Position (D2) quitard (D3) ographic Relief (D4)
YDROLO Vetland Hyd Verliand Hy	POGY Irology Indicators (any one Water (A1) For Table (A2) In (A3) For Crust (B4) For Crust (B4) For Crust (B5) For Crust (B6) For Crust (B6) For Crust (B7) For Crust (B8) For Present?	e is sufficient 2) Yes		Spa	arsely Vege Irl Deposits drogen Sulf y-Season W her (Explair	etated Con (B15) fide Odor /ater Table n in Reman	cave Surfac	ce (B8)	Water Sta Drainage Oxidized Presence Salt Depo Stunted of Geomorp Shallow A	nined Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3 of Reduced Iron (C4) sits (C5) or Stressed Plants (D1) hic Position (D2) equitard (D3) orgraphic Relief (D4) ral Test (D5)
YDROLO Vetland Hyd Primary Indica Surface W ✓ High Wate ✓ Saturatio Water Ma Sediment Drift Dep Algal Mat Iron Dep Surface S ield Observ Surface Water Water Table I Saturation Pr	Pogy Irology Indicators (any one Water (A1) Per Table (A2) In (A3) Per Table (B1) It Deposits (B3) It Deposits (B3) It Or Crust (B4) It Osits (B5) It Or Crust (B6) It Or Crust (B6) It Or Crust (B7) It Or Crust (B8) It Or Crust	e is sufficien e) Yes Yes	No ● No ○	Spa Ma Hyu Dry Otth	arsely Vege Irl Deposits drogen Sulf y-Season W her (Explain epth (inches	etated Con (B15) fide Odor /ater Table in in Remain (S):	cave Surfac	ce (B8)	Water Sta Drainage Oxidized Presence Salt Depo Stunted o ✓ Geomorp ✓ Shallow A Microtopo FAC-neutr	nined Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3 of Reduced Iron (C4) sits (C5) or Stressed Plants (D1) hic Position (D2) quitard (D3) ographic Relief (D4) ral Test (D5)
YDROLO Vetland Hyd Verimary Indica Surface V Verimary Indica Surface V Verimary Indica Surface V Verimary Indica Surface V Verimary Indica Verimary Indica Verimary Indica Sediment Drift Dep Algal Mat Iron Dep Surface S Veriface S Veriface V V	DGY Irology Indicators (any one Water (A1) For Table (A2) For (A3) For (A3) For (A3) For Crust (B4) For Crust (B4) For Crust (B5) For Crust (B6) For Present? For Present? For Present? For Essent? For Essent? For Essent?	Yes Yes	No O No O No O	Spi Ma Hyr Dry Ott	arsely Vege Irl Deposits drogen Sulf y-Season W ther (Explain epth (inches epth (inches	etated Con (B15) fide Odor /ater Table in in Remai	cave Surfac (C1) e (C2) rks)	Wetla	Water Sta Drainage Oxidized Presence Salt Depo Stunted o ✓ Geomorp ✓ Shallow A Microtopo FAC-neutr	nined Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3 of Reduced Iron (C4) sits (C5) or Stressed Plants (D1) hic Position (D2) quitard (D3) ographic Relief (D4) ral Test (D5)
YDROLO Vetland Hyd Verimary Indica Surface V Verimary Indica Surface V Verimary Indica Surface V Verimary Indica Surface V Verimary Indica Verimary Indica Verimary Indica Sediment Drift Dep Algal Mat Iron Dep Surface S Veriface S Veriface V V	Pogy Irology Indicators (any one Water (A1) Per Table (A2) In (A3) Per Table (B1) It Deposits (B3) It Deposits (B3) It Or Crust (B4) It Osits (B5) It Or Crust (B6) It Or Crust (B6) It Or Crust (B7) It Or Crust (B8) It Or Crust	Yes Yes	No O No O No O	Spi Ma Hyr Dry Ott	arsely Vege Irl Deposits drogen Sulf y-Season W ther (Explain epth (inches epth (inches	etated Con (B15) fide Odor /ater Table in in Remai	cave Surfac (C1) e (C2) rks)	Wetla	Water Sta Drainage Oxidized Presence Salt Depo Stunted o ✓ Geomorp ✓ Shallow A Microtopo FAC-neutr	nined Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3 of Reduced Iron (C4) sits (C5) or Stressed Plants (D1) hic Position (D2) quitard (D3) ographic Relief (D4) ral Test (D5)
YDROLO Vetland Hyd rimary Indica Surface V ✓ High Wat ✓ Saturatio Water Ma Sediment Drift Dep Algal Mat Iron Dep Surface S ield Observ Surface Water Water Table Is Saturation Pr includes cap escribe Recon	DGY Irology Indicators (any one Water (A1) For Table (A2) For (A3) For (A3) For (A3) For Crust (B4) For Crust (B4) For Crust (B5) For Crust (B6) For Present? For Present? For Present? For Essent? For Essent? For Essent?	Yes Yes	No O No O No O	Spi Ma Hyr Dry Ott	arsely Vege Irl Deposits drogen Sulf y-Season W ther (Explain epth (inches epth (inches	etated Con (B15) fide Odor /ater Table in in Remai	cave Surfac (C1) e (C2) rks)	Wetla	Water Sta Drainage Oxidized Presence Salt Depo Stunted o ✓ Geomorp ✓ Shallow A Microtopo FAC-neutr	nined Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3 of Reduced Iron (C4) sits (C5) or Stressed Plants (D1) hic Position (D2) quitard (D3) ographic Relief (D4) ral Test (D5)
YDROLO Yetland Hydrimary Indica Surface V High Water Ma Sediment Drift Dep Algal Mat Iron Dep Surface S Geld Observ Gurface Water Table I Saturation Pr includes cap	DGY Irology Indicators (any one Water (A1) For Table (A2) For (A3) For (A3) For (A3) For Crust (B4) For Crust (B4) For Crust (B5) For Crust (B6) For Present? For Present? For Present? For Essent? For Essent? For Essent?	Yes Yes	No O No O No O	Spi Ma Hyr Dry Ott	arsely Vege Irl Deposits drogen Sulf y-Season W ther (Explain epth (inches epth (inches	etated Con (B15) fide Odor /ater Table in in Remai	cave Surfac (C1) e (C2) rks)	Wetla	Water Sta Drainage Oxidized Presence Salt Depo Stunted o ✓ Geomorp ✓ Shallow A Microtopo FAC-neutr	nined Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3 of Reduced Iron (C4) sits (C5) or Stressed Plants (D1) hic Position (D2) quitard (D3) ographic Relief (D4) ral Test (D5)

U.S. Army Corps of Engineers Alaska Version 2.0