## WETLAND DETERMINATION DATA FORM - Alaska Region

	a-Watana Hydroelectric Project		orough/City:	Matanusk	a-Susitna Borough Sampling Date: 31-Jul-12		
Applicant/Owner: A	laska Energy Authority				Sampling Point: SW12_T46_02		
_	I. KMK		Landform (hill	side, terrac	e, hummocks etc.): Bench		
Local relief (concave,	convex, none): flat		Slope:	% / 4.1	° Elevation: 929		
Subregion: Interior	Alaska Mountains	Lat ·	62.684277993		Long.: -147.6462125 Datum: NAD83		
Soil Map Unit Name:	waska Wourtains		02.004277000		NWI classification: Upland		
•	c conditions on the site typical for this	time of voor	2 Voc	No ○	(If no, explain in Remarks.)		
Are Vegetation  Are Vegetation	, Soil  , or Hydrology , Soil , or Hydrology	significantly naturally pr	y disturbed? oblematic?	Are "N (If nee	ormal Circumstances" present? Yes No Oded, explain any answers in Remarks.)		
Hydrophytic Ve	egetation Present? Yes   No	$\supset$					
Hydric Soil Pre	sent? Yes   No	C			mpled Area		
Wetland Hydro		lacksquare	wi	thin a W	etland? Yes O No 🗨		
	entle slope, no wetland hydrology indi se scientific names of plants. I						
		Absolute	Dominant	Indicator	Dominance Test worksheet:		
Tree Stratum		% Cover	Species?	Status	Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)		
1					Total Number of Dominant		
					Species Across All Strata:4(B)		
3.					Percent of dominant Species		
4. 5.					That Are OBL, FACW, or FAC: 100.0% (A/B)		
5.	Total Cove				Prevalence Index worksheet:		
Cauling /Church Chur			of Total Cover:	0	Total % Cover of: Multiply by:		
Sapling/Shrub Stra	Solver Total Cover.			0	OBL Species 0 x1 = 0		
1. Betula nana		45	<b>V</b>	FAC	FACW Species 21 x 2 = 42		
2. Vaccinium uli		60		FAC	FAC Species <u>155</u> x 3 = <u>465</u> FACU Species 1 x 4 = 4		
3. Vaccinium viti				FAC	FACU Species 1 x 4 = 4  UPL Species 0 x 5 = 0		
4. Empetrum nig				FAC			
-	n tomentosum			FACU	Column Totals: <u>177</u> (A) <u>511</u> (B)		
6. Picea glauca 7.		$- \frac{1}{0}$		FACU	Prevalence Index = B/A =		
8.					Hydrophytic Vegetation Indicators:		
					✓ Dominance Test is > 50%		
					✓ Prevalence Index is ≤3.0		
Herb Stratum	<b>Total Cove</b> 50% of Total Cover:		6 of Total Cover	32.2	Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)		
Equisetum sy	vaticum	10	<b>✓</b>	FAC	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)		
2. Carex bigelov	/ii	5	✓	FAC	<sup>1</sup> Indicators of hydric soil and wetland hydrology must		
3. Rubus chama	emorus	1		FACW	be present, unless disturbed or problematic.		
4		0			Plot size (radius, or length x width)		
5					% Cover of Wetland Bryophytes		
					(Where applicable)		
					% Bare Ground		
					Total Cover of Bryophytes95		
		$ \frac{0}{0}$					
10.	Total Cove		Hydrophytic Vegetation				
	50% of Total Cover:		of Total Cover:	3.2	Present? Yes • No •		
	3070 OI 10tal COVCI.		or rotal cover.	3.2			

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SOIL Sampling Point: SW12\_T46\_02

Geoder (molest)  Geolege (mol	Profile Descripti	ion: (Describe to	the depth ne	eded to docur	nent the inc		firm the abs		cators)		
## Henic Croanics    State		Color (mo	oist)	%	Color (n	noist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
S.5-6.S 7.5YR 3/2 100  6.5-8 5Y 4/2 70 10YR 4/6 20 C PL Snoty 5th 10% gravels  8-18 5Y 4/2 90 10YR 4/3 10 C PL Shry 5and  1 Type: C=Concentration. D=Depletion. RM=Reduced Matrix 2 Location: PL=Pore Lining, RC=Root Channel. M=Matrix  Hydric Soil Indicators:    History of Part o	0-4			100						Fibric Organics	
6.5-8 SY 4/2 70 10YR 4/6 20 C PL Sandy Sit 10% graves  8-18 5Y 4/2 90 10YR 4/3 10 C PL Silvy Sand  1-Type: C=Cancentration. D=Depiletion. RM=Reduced Matrix 2 Location: PL=Pore Lining, RC=Root Channel. M=Matrix    description of History of Hi	4-5.5			100						Hemic Organics	
8-18 SY 4/2 90 10YR 4/3 10 C PL Slly Sand  **Type: C=Concentration. D=Depletion. RM=Reduced Matrix. **2 Location: PL=Pore Lining, RC=Root Channel. M=Matrix  **Hydric Soil Indicators:	5.5-6.5	7.5YR	3/2	100		-				Silt	
8-18 SY 4/2 90 10YR 4/3 10 C PL Silty Sand  1 Type: C=Concentration. D=Depletion. RM=Reduced Matrix 2 Location: PL=Pore Lining, RC=Root Channel, M=Matrix  Hydric Soil Indicators: Indicators for Problematic Hydric Soils?   Alaska Gleyed Without Hue SY or Redder Underlying Layer	6.5-8		4/2		10YR	4/6	20		PL	Sandy Silt	10% gravels
Type: C=Concentration. D=Depletion. RM=Reduced Matrix 2 Location: PL=Pore Lining. RC=Root Channel. M=Matrix  Hydric Soil Indicators:   Indicators for Problematic Hydric Soils?   Alaska Gleyed Without Hue 5Y or Redder Underlying Layer Layer Underlying Layer Layer Underlying Lay	8-18			90						Silty Sand	
Hydric Soil Indicators:    Histosol or Histel (A1)			1/2		10110	1/3					
Hydric Soil Indicators:    Histosol or Histel (A1)		-				-			-		
Histosol or Histel (A1)	Type: C=Cor	ncentration. D=	=Depletion	. RM=Reduce	ed Matrix	<sup>2</sup> Location	: PL=Pore	e Lining. RO	=Root Cha	annel. M=Matrix	
Histosol or Histel (A1)	Hydric Soil T	ndicators:			Indicat	ors for Pro	oblematio	: Hvdric S	oils: <sup>3</sup>		
Histic Epipedon (A2)								4		Alaska Gleved Without H	ie 5Y or Redder
Hydrogen Sulfide (A4)		. ,					• .	•			ac 31 of fiedder
Thick Dark Surface (A12)   Alaska Gleyed (A13)   Alaska Gleyed (A13)   Alaska Gleyed (A14)   Alaska Gleyed Pores (A15)   Alaska Gleyed Pore	=	` '				•	•	•		Other (Explain in Remark	s)
Alaska Gleyed (A13)  Alaska Gleyed (A14)  Alaska Gleyed Pores (A15)  Restrictive Layer (if present):  Type:		` ,	)								
Alaska Redox (A14)  Alaska Gleyed Pores (A15)  Restrictive Layer (if present): Type: Depth (inches):  Remarks:  Hydric Soil Present? Yes ● No ○ Depth (inches):  Remarks:  Hydric Soil Present? Yes ● No ○ Depth (inches):  Remarks:  Hydric Soil Present? Yes ● No ○ Depth (inches):  Hydric Soil Present? Yes ● No ○ Depth (inches):  Hydric Soil Present? Yes ● No ○ Depth (inches):  Hydric Soil Present? Yes ● No ○ Depth (inches):  Hydric Soil Present? Yes ● No ● Depth (inches):  Water Stained Leaves (B9) Dvianale Patterns (B10) Dvianale		• •	,								ydrology,
Restrictive Layer (if present): Type: Depth (inches):  Remarks:  Hydric Soil Present? Yes  No  No  No  No  No  No  No  No  No  N								•	•	esent	
Type: Depth (inches):  Remarks:  HyDROLOGY  Wetland Hydrology Indicators: Secondary Indicators (two or more are required) Primary Indicators (any one is sufficient) Water Stained Leaves (B9)  Surface Water (A1) Inundation Visible on Aerial Imagery (B7) Drainage Patterns (B10)  Sutrace Water (A2) Sparsely Vegetated Concave Surface (B8) Oxidized Rhizospheres along Living Roots (C3)  Saturation (A3) Marl Deposits (B15) Presence of Reduced Iron (C4)  Water Marks (B1) Hydrogen Sulfide Odor (C1) Salt Deposits (C5)  Sediment Deposits (B2) Dry-Season Water Table (C2) Stunted or Stressed Plants (D1)  Grift Deposits (B3) Other (Explain in Remarks) Geomorphic Position (D2)  Jurion Deposits (B5) Microtopographic Relief (D4)  Surface Soil Cracks (B6) PAC-neutral Test (D5)  Field Observations:  Surface Water Present? Yes No Depth (inches):  Wetland Hydrology Present? Yes No Found to the path (inches):  Wetland Hydrology Present? Yes No Found to the path (inches):  Wetland Hydrology Present? Yes No Found to the path (inches):  Wetland Hydrology Present? Yes No Found to the path (inches):  Wetland Hydrology Present? Yes No Found to the path (inches):  Wetland Hydrology Present? Yes No Found to the path (inches):  Wetland Hydrology Present? Yes No Found to the path (inches):  Wetland Hydrology Present? Yes No Found to the path (inches):  Wetland Hydrology Present? Yes No Found to the path (inches):  Wetland Hydrology Present? Yes No Found to the path (inches):  Wetland Hydrology Present? Yes No Found to the path (inches):  Wetland Hydrology Present? Yes No Found to the path (inches):  Wetland Hydrology Present? Yes No Found to the path (inches):  Wetland Hydrology Present? Yes No Found to the path (inches):  Wetland Hydrology Present? Yes No Found to the path (inches):  Wetland Hydrology Present? Yes No Found to the path (inches):  Wetland Hydrology Present? Yes No Found to the path (inches):  Wetland Hydrology Present? Yes No Found to the path (inches):  Wetland Hydrology Present? Yes No Found to the path (inches):  Wetland Hy	Alaska Gle	yed Pores (A1	5)		<sup>4</sup> Give o	details of co	lor change	e in Remark	(S		
PHYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (any one is sufficient)  Sufface Water (A1)  High Water Table (A2)  Saturation (A3)  Marl Deposits (B15)  Sediment Deposits (B2)  Drift Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Surface Soli Cracks (B6)  Sufface Water (A2)  Saturation (A3)  Marl Deposits (B3)  Drift Deposits (B1)  Drif	Restrictive Laye	er (if present):									
HYDROLOGY  Wetland Hydrology Indicators:	Type:									Hydric Soil Present	? Yes 💿 No 🔾
HYDROLOGY  Wetland Hydrology Indicators:	Depth (inch	nes):									
Wetland Hydrology Indicators:    Primary Indicators (any one is sufficient)											
Primary Indicators (any one is sufficient)  Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Marl Deposits (B15)  Water Marks (B1)  Drainage Patterns (B10)  Presence of Reduced Iron (C4)  Saturation (A3)  Driving Roots (C3)  Presence of Reduced Iron (C4)  Saturation (A3)  Driving Roots (C3)  Presence of Reduced Iron (C4)  Saturation (A3)  Driving Roots (C3)  Presence of Reduced Iron (C4)  Saturation (A3)  Drift Deposits (B2)  Dry-Season Water Table (C2)  Stunted or Stressed Plants (D1)  Saturation Present (B5)  Microtopographic Relief (D4)  FAC-neutral Test (D5)  Field Observations:  Surface Water Present?  Yes  No  Depth (inches):  Wetland Hydrology Present?  Yes  No  No  Depth (inches):  Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available:  Remarks:	HYDROLO	GY									
□ Surface Water (A1) □ Inundation Visible on Aerial Imagery (B7) □ Drainage Patterns (B10) □ High Water Table (A2) □ Sparsely Vegetated Concave Surface (B8) □ Oxidized Rhizospheres along Living Roots (C3) □ 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 Water Present? Yes □ No ● Depth (inches): □ Depth (in	Wetland Hyd	rology Indica	itors:							Secondary Indi	cators (two or more are required)
High Water Table (A2)	Primary Indica	tors (any one	is sufficient	:)						Water Stair	ned Leaves (B9)
Saturation (A3)	Surface W	/ater (A1)			In	undation Vi	sible on A	erial Image	ry (B7)	Drainage P	atterns (B10)
Water Marks (B1)		` ,			☐ Sp	arsely Vege	etated Con	cave Surfa	ce (B8)		
Sediment Deposits (B2)		. ,			∐ Ma	arl Deposits	(B15)				. ,
□ Drift Deposits (B3) □ Other (Explain in Remarks) □ Geomorphic Position (D2) □ Algal Mat or Crust (B4) □ Shallow Aquitard (D3) □ 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? Yes □ No ● Depth (inches):  Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available:  Remarks:						-					
Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Surface Soil Cracks (B6) ☐ FAC-neutral Test (D5)  Field Observations: Surface Water Present? 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:											` '
☐ 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? Yes No Depth (inches): Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available:  Remarks:		. ,			∐ Ot	her (Explain	n in Rema	rks)			, ,
Surface Soil Cracks (B6)  Field Observations: Surface Water Present? Yes No Depth (inches): 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:		. ,									
Field Observations: Surface Water Present? Yes No Depth (inches): 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:		. ,								_	
Surface Water Present? Yes No Depth (inches):  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:		. ,								☐ FAC-neutra	l 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:			V (	N - (a)	_						
Saturation Present? (includes capillary fringe)  Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available:  Remarks:	Surface Water	r Present?			De	epth (inches	5):				
(includes capillary fringe)  Pes No Depth (inches):  Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available:  Remarks:			Yes 🤇	No 🖭	De	epth (inches	s):		Wetla	nd Hydrology Presen	t? Yes ○ No •
Remarks:			Yes C	No 💿	De	epth (inches	s):				
	Describe Recor	ded Data (stre	am gauge,	monitor we	ll, aerial p	hotos, prev	ious inspe	ction) if av	ailable:		
	Domarlici										
no wetiand nydrology indicators. Sit layer is moist, but not saturated, presumably from previous night's rain.			:  -	!							
	no wetiand nyo	irology indicate	ors. slit lay	er is moist, b	out not sa	turated, pre	sumably t	rom previo	us nignt's r	ain.	

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