Pull-1994 Cara La Dala			14.	and Dall and Dall Dall
Project/Site: (Trunt Lake				
Applicant/Owner: Icenai Hydro				Sampling Point: DP67
Investigator(s): JBCando C Schu				•
Local relief (concave, convex, none):				
Subregion: Lat:				
Soil Map Unit Name: Aleuvial Delita				
Are climatic / hydrologic conditions on the site typical for this				
Are Vegetation, Soil, or Hydrology sig				·
Are Vegetation, Soil, or Hydrology na	turally probl	ematic?	N ⇒ (If nea	eded, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map sho	wing sam	npling po	oint locatio	ons, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No	_	_		
Hydric Soil Present? Yes No	1	ı	e Sampled	
Wetland Hydrology Present? Yes No	$\overline{}$	Witn	in a Wetian	d? Yes No
Remarks: Representative of upl. ex		wirt	W in	old outwash fan. New recen
Succession of Conforwoods				
VEGETATION – Use scientific names of plants.				
· · · · · · · · · · · · · · · · · · ·	Absolute [Dominance Test worksheet:
Treé Stretum	% Cover	Species?	Status	Number of Dominant Species
1. Salix Alexensis	<u> </u>	<u> </u>	FAC	That Are OBL, FACW, or FAC:
2				Total Number of Dominant
3.				Species Across All Strata: 5 (B)
4	 -			Percent of Dominant Species
Total Cover:				That Are OBL, FACW, or FAC: 80 (A/B)
50% of total cover: 2.5	20% of t	total cove	r:	Prevalence index worksheet:
1. Dop wins Balsamistera	50	4	FACU	Total % Cover of: Multiply by:
2. Salix Sitchensons		Y	FAL	OBL species O x1 = 0
3. Salix alexensors			FAC	FACW species O x 2 = O
				FAC species <u>40</u> x3 = <u>120</u>
5.				FACU species <u>So</u> x 4 = <u>280</u>
6				UPL species O $x 5 = O$ (B) Column Totals: 90 (A) 320 (B)
Total Cover:	<u> 30</u>			Column Totals: <u>90</u> (A) <u>320</u> (B)
50% of total cover: <u>식0</u>	_ 20% of to	otal cover	: 16	Prevalence Index = B/A =
Herb Stratum	9	N.	22	Hydrophytic Vegetation Indicators:
1. Chamerian Intifelium.			FAC	∕ Dominance Test Is >50%
2. Agrostis gigantia			501	Prevalence index is ≤3.0
3. Calamagnistis canadensi	3 2 _	4—	FAC	Morphological Adaptations ¹ (Provide supporting
5.				data in Remarks or on a separate sheet)
			***************************************	Problematic Hydrophytic Vegetation ¹ (Explain)
7				¹ Indicators of hydric soil and welland hydrology must
8				be present unless disturbed or problematic.
9				
10.				
Total Cover:	5_			
50% of total cover: 2,5		otal cover	· 1	l
Plot size (radius, or length x width) 70' rael			30	Hydrophytic Vegetation
% Cover of Wetland Bryophytes Total Cove (Where applicable)			\$5	Present? Yes No
Remarks: Well establish letter	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	na 6	~101 iz	rgs, at wast 5 years
old(?&stimated?)			85~ 8 8	· ()
ひしいとうしいっていい	りかいし	3S LC	X5 * ≥X	!

Depth Matrix	Redox Features		
(inches) Color (moist) %	Color (moist) % Type ¹		· ·
<u>0-5</u>		Colobi	e 4 gravel
			PGGGGPHILION A'-1
	<u> </u>		
		* · · · · · · · · · · · · · · · · · · ·	
	·		
ype: C=Concentration, D=Depletion, RM=	Reduced Matrix, CS=Covered or Coated	Sand Grains.	ocation: PL=Pore Lining, M=Matrix.
ydric Soll Indicators:	Indicators for Problematic Hydric Se		te Claud Mithaut Hue EV or Dedder
Histosol or Histel (A1)	Alaska Color Change (TA4)⁴ Alaska Alpine Swales (TA5)		ka Gleyed Without Hue 5Y or Redder
Histic Epipedon (A2) Hydrogen Sulfide (A4)	Alaska Arpine Swales (TAb) Alaska Redox With 2.5Y Hue		nderlying Layer er (Explain in Remarks)
Hydrogen Sunide (A4) Thick Dark Surface (A12)	Alaska Nedox With 2.51 Tide	0(iii	er (Explain in Nemarks)
Alaska Gleyed (A13)	³ One indicator of hydrophytic vegetation	n one primary indi	eator of wetland hydrology
Alaska Gieyed (A13) Alaska Redox (A14)	and an appropriate landscape positi		
Alaska Regox (A14) Alaska Gleyed Pores (A15)	⁴ Give details of color change in Remar		unicss distersed or problematio.
estrictive Layer (if present):	GIVE details of color change in Neman	KG.	
estrictive Layer (it present).		l	
T		1	
Type:		المراجعة الم	all Duna and O. Mar. No. V
Depth (inches):			oil Present? Yes No X
Depth (inches):	eep pit - hit re		
Depth (inches): Remarks: Dug a B"d gravuls. V. d			
Depth (inches): Remarks: Dug a 5"d Gravels. V. d YDROLOGY		sistance 1,5,1+. Secondary	at trightly par
Depth (inches): Remarks: DUS a 5 11 d STAVELS. V. d YDROLOGY Wetland Hydrology Indicators:	cep pit - hit ro	Secondary Water	Indicators (2 or more required) stained Leaves (B9)
Depth (inches):	eep pit - hit re	Secondary Water K Drains	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10)
Depth (inches):	eep pit - hit re ing gravel/Sand	Secondary Water (BB) Oxidiz	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (C
Primary Indicators (any one indicator is sufficed Surface Water (A1) High Water Table (A2) Saturation (A3)	eep pit - hit re	Secondary Water Water (BB) Oxidiz Prese	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (Conce of Reduced Iron (C4)
Primary Indicators (any one indicator is sufficed Surface Water (A1) High Water Table (A2) Saturation (A3)	eep pit - hit re y gravel/Sand elent) Inundation Visible on Aerial Imagery (E Sparsely Vegetated Concave Surface of Marl Deposits (B15) Hydrogen Sulfide Odor (C1)	Secondary Water Water X Draina (BB) Oxidiz Prese Salt D	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (Cace of Reduced Iron (C4) eposits (C5)
Permarks: Dug a 5 11 d YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indicator is sufficed by the suffi	eep pit - mt ro	Secondary Water Water Oxidiz Prese Salt D Stunte	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (Cace of Reduced Iron (C4) eposits (C5) d or Stressed Plants (D1)
Permarks: Dug a 5 1 d YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indicator is sufficed by the suffic	eep pit - hit re y gravel/Sand elent) Inundation Visible on Aerial Imagery (E Sparsely Vegetated Concave Surface of Marl Deposits (B15) Hydrogen Sulfide Odor (C1)	Secondary Water Water (BB) Oxidiz Prese Salt D Stunte Geom	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (Conce of Reduced Iron (C4) eposits (C5) d or Stressed Plants (D1) orphic Position (D2) to elevan
Pepth (inches): Remarks: DUS A BID YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indicator is suffice Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	eep pit - mt ro	Secondary Water Water (BB) Oxidiz Prese Salt D Stunte Geom	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (Cace of Reduced Iron (C4) eposits (C5) d or Stressed Plants (D1) orphic Position (D2) to elevar
Permarks: Dug a 5 d d d d d d d d d d d d d d d d d d	eep pit - mt ro	Secondary Water Water ST) K Drains (BB) Oxidiz Prese Salt D Stunte Geom Shallo	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (Conce of Reduced Iron (C4) eposits (C5) d or Stressed Plants (D1) prophic Position (D2) to elevar w Aquitard (D3) popographic Relief (D4)
Per linches): Remarks: Proposits (B4) Lemarks: Proposits (B6) Proposits (B6) Remarks: Lemarks: Lemark: Lemark: Lemarks: Lemark: Lemark: Lemark: Lemark:	eep pit - mt ro	Secondary Water Water ST) K Drains (BB) Oxidiz Prese Salt D Stunte Geom Shallo	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (Cace of Reduced Iron (C4) eposits (C5) d or Stressed Plants (D1) orphic Position (D2) to elevar
Popth (inches): Remarks: DNS A 5 11 d YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indicator is sufficed by the suf	cient) Inundation Visible on Aerial Imagery (E. Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks)	Secondary Water Water Construct Secondary Water Construct Secondary Water Construct Secondary Water Construct Secondary Secondary Secondary Salt D Stunte Geom Shallo Microt FAC-N	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (Conce of Reduced Iron (C4) eposits (C5) d or Stressed Plants (D1) prophic Position (D2) to elevar w Aquitard (D3) popographic Relief (D4)
Proposits (B4) Incomposits (B4) Incomposits (B6) Poposits (B6)	cient) Inundation Visible on Aerial Imagery (E. Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks)	Secondary Water Water Construct Secondary Water Construct Secondary Water Construct Secondary Water Construct Secondary Secondary Secondary Salt D Stunte Geom Shallo Microt FAC-N	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (Conce of Reduced Iron (C4) eposits (C5) d or Stressed Plants (D1) prophic Position (D2) to elever w Aquitard (D3) popographic Relief (D4)
Pepth (inches): Remarks: DUS A 5 11 d YDROLOGY Vetland Hydrology Indicators: Primary Indicators (any one indicator is sufficed by the suf	cient) Inundation Visible on Aerial Imagery (E. Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks)	Secondary Water Water Construct Secondary Water Construct Secondary Water Construct Secondary Water Construct Secondary Secondary Secondary Salt D Stunte Geom Shallo Microt FAC-N	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (Conce of Reduced Iron (C4) eposits (C5) d or Stressed Plants (D1) orphic Position (D2) to elever w Aquitard (D3) opographic Relief (D4) leutral Test (D5)
Permarks: Proposition (Ba) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Water Present? Surface Water Present? Water Table Present? Water Table Present? Water Table Present? Water Table Present? Saturation Present? Saturation Present? Yes Naturation Present?	sient) Inundation Visible on Aerial Imagery (E Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks)	Secondary Secondary Water Water Oxidiz Prese Salt D Stunte Geom Shallo Microt FAC-N	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (Conce of Reduced Iron (C4) eposits (C5) d or Stressed Plants (D1) prophic Position (D2) to elevar w Aquitard (D3) popographic Relief (D4)
Pepth (inches): Remarks: DNS & 511 d YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indicator is sufficed by the suff	sient) Inundation Visible on Aerial Imagery (E Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks)	Secondary Secondary Water Water Oxidiz Prese Salt D Stunte Geom Shallo Microt FAC-N	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (Conce of Reduced Iron (C4) eposits (C5) d or Stressed Plants (D1) orphic Position (D2) to elevary w Aquitard (D3) opographic Relief (D4) leutral Test (D5)
Per la	sient) Inundation Visible on Aerial Imagery (E Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks)	Secondary Water Water The Secondary Water Water The Secondary Water Solidiz Prese Salt D Stunte Geom Shallo Microt FAC-N Wetland Hydrol	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (Conce of Reduced Iron (C4) eposits (C5) d or Stressed Plants (D1) porphic Position (D2) to elevan w Aquitard (D3) popgraphic Relief (D4) leutral Test (D5)

WETLAND DETERMINA	TION DATA FOR	M – Alaska Region
Project/Site: Covernt Labe	Borough/Citie M.61	7-17-1 Se Pass Sampling Date: DPOR
Applicant/Owner: Kenai Hudin	Boloughichy,ivcot	
	136 6.111.11	Sampling Point: DPOS
Local rellef (concave, convex, none):	Landform (niliside, teri	race, hummocks, etc.): 1 5 kp up from lake edge
	1-11-8-16 Loi	ng: -149, 205185 Datum:
Soil Map Unit Name: Alevvial Detaic Dup.		NWI classification: _P351/EMIB
Are climatic r hydrologic conditions on the site typical for this time of ye	ear?YesV_No_	(If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly	disturbed? No Are	"Normal Circumstances" present? Yes V No
Are Vegetation, Soil, or Hydrology naturally pr		eeded, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sa	ampling point locat	ions, transects, important features, etc.
Hydrophylic Vegetation Present? Yes No No	is the Sampled	1 Aron
Hydric Soil Present? Yes No	within a Wetlan	,
Wetland Hydrology Present? Yes No		
Remarks: Representative of 51st her		
VEGETATION – Use scientific names of plants. List all	species in the plot.	
Absolute	Dominant Indicator	Dominance Test worksheet:
Tree Stratum 1. Nove	Species? Status	Number of Dominant Species That Are OBL, FACW, or FAC:
2.	·	
3		Total Number of Dominant Species Across All Strata: (B)
Total Cover:		Percent of Dominant Species That Are OBL, FACW, or FAC:
50% of total cover: 20% of Sapling/Shrub Stratum	of total cover:	Prevalence Index worksheet:
1. Alnus viridis	Y FAC	Total % Cover of: Multiply by:
2. Sal. Sitchensis · 20	Y FAC	OBL species 0 x 1 = 10
3. gal alexensis 15	Y FAC	FACW species <u>S</u> x 2 = <u>10</u>
4		FAC species 50 x3= 240
5	· · · · · · · · · · · · · · · · · · ·	FACU species O x4= 0
6		UPL species 0 x5= 0
Total Cover: SO		Column Totals: 95 (A) 260 (B)
50% of total cover: 20% of	total cover:ID	Prevalence Index = B/A = 2.74
Herb Stratum 25	V	Hydrophytic Vegetation Indicators:
1. Acoustic singenter 14	and a composite state of sections are simulated to the factor of the section of t	
2. Equisetum huemale 5	FYCW.	X Prevalence Index is ≤3.0
3. Briophorum (hamissonis 5		Morphological Adaptations¹ (Provide supporting
Harostis statuniters	FAC	data in Remarks or on a separate sheet)
5. Panisetum Fluviate 5	OBL	Problematic Hydrophytic Vegetation¹ (Explain)
6. Culumagnostis canadensis 30	-Y-15AC-1	11. 8 6 6 11 8 6 8
8.	·	Indicators of hydric soil and welland hydrology must be present unless disturbed or problematic.
9.		The state of problemate.
10.		
Total Cover. 48		
50% of total cover: 22.5 20% of	total assume 9	
Plot size (radius, or length x width) 30 % Bare G		Hydrophytic
% Cover of Wetland Bryophytes Total Cover of Bryop (Where applicable)		Vegetation Present? Yes No
Remarks: photos		
705-710		

SOIL							Sampling Point: D 108
Profile Desc	cription: (Describe to the dept	h needed to docur	nent the I	ndicator	or confirm	n the absence of	f Indicators.)
Depth	Matrix	Redo Color (moist)	x Feature:	Tune	_Loc ²	Texture	Remarks
(inches)	Color (moist) %	Color (moist)		TAbe			
03							Brzanies
12-12	Gley # 25/104 90	54R4/6	10	<u> </u>	PL	Sn. 151	
	C100111 10110					• 1	
		ALAXA CONTROL					
	- AMERICAN - MARCON -						
			•			-	
		A STATE OF THE STA	. ——				
	·		.				
		ı					
Type: C=C	concentration, D=Deptetion, RM=	Reduced Matrix, C	S=Covere	d or Coat	ed Sand G	rains. ² Loca	tion: PL=Pore Lining, M=Matrix.
	Indicators:	Indicators for I	Problema	tic Hydri	: Soils³:		
Histoso	l or Histei (A1)	Alaska Col					Gleyed Without Hue 5Y or Redder
Histic E	pipedon (A2)	Alaska Alpi					lying Layer
Hydrog	en Sulfide (A4)	Alaska Red	lox With 2	.5Y Hue		Other (E	explain in Remarks)
_	ark Surface (A12)	1					5 akta and handrala cu
	Gleyed (A13)	*One indicator of	of hydroph	lytic vege	ation, one	primary indicator	r of wetland hydrology, ess disturbed or problematic.
	Redox (A14)	and an appro Give details of				st be present dine	ess distribed of problematic.
	Gleyed Pores (A15)	Give details of	COIOI CIIai	ilge ili i ve	IIIaiko.		
	Layer (if present):						
						Hydric Soil F	Present? Yes V No
	nches):				-11	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Remarks:	Similar + 6	oil indic	aveor	AH	Depl	eted be	low dave surrace
<u> </u>							
		•					
HYDROLO	nev .						
						Secondary Ind	icators (2 or more regulred)
1 '	ydrology Indicators: licators (any one indicator is suff	iclent)					ined Leaves (B9)
i		Inundation Visit	ie on Aer	ial imane	v (B7)	—	Patterns (B10)
	e Water (A1) /ater Table (A2)	Sparsely Veget					Rhizospheres along Living Roots (C3)
		Marl Deposits (.00 (==,		of Reduced fron (C4)
	Marks (B1)	Hydrogen Sulfic		21)		Salt Depo	sits (C5)
	ent Deposits (B2)	Dry-Season Wa				Stunted or	r Stressed Plants (D1)
ı —	eposits (B3)	Other (Explain				Geomorph	nic Position (D2)
1	Mat or Crust (B4)					Shallow A	quitard (D3)
	eposits (B5)					Microtopo	graphic Relief (D4)
. —	e Soil Cracks (B6)					FAC-Neut	ral Test (D5)
Field Obse	ervations:						
Surface Wa	ater Present? Yes	No Depth (i	nches): _				
Water Tab!	e Present? Yes	No Depth (i	nches): _	1 bgs			
Saturation	Present? Yes	No Depth (i	nches):	7 29	<u>⊱_</u> We	tiand Hydrology	Present? Yes 💢 No
Lincludes c	apillary fringe)			J	i) if available:	
Describe R	ecorded Data (stream gauge, m	omtoring well, aefla	priotos, [NEAIOR2 I	ισμαντιστιδ	N II everiable:	
Remarks:							
				÷			

Project/Site: Grant Lake	Borough/City:	Anne Puss	0
Applicant/Owner: Kenai Hydry	bolodgiboltyt		_
Investigator(s): J Blank C Schudell	1 df /LW-11	•	_ Sampling Point: <u>DP09</u>
Local relief (concave, convex, none):	Landiorm (niliside, i	.errace, hummocks, etc.): _	Lakeshore
Subregion: 2	Stope (%); t	2.06	170
	4-114-19	ong: - 140.200	Datum:
Soil Map Unit Name: Delter Alugural Del			
Are climatic / hydrologic conditions on the site typical for this time of		(If no, explain in	Remarks.)
Are Vegetation, Soil, or Hydrology significar	itly disturbed? No A	re "Normal Circumstances"	present? Yes 🐰 No
Are Vegetation, Soil, or Hydrology naturally	•	f needed, explain any answ	•
SUMMARY OF FINDINGS – Attach site map showing	sampling point loc	ations, transects, imp	ortant features, etc.
Hydrophytic Vegetation Present? Yes No	ls the Sampl	lad Area	
Hydric Soil Present? Yes No	within a Mich		s No
Wetland Hydrology Present? Yes No	- Mittill 4 AAGI	taliu? Yes	s No
Remarks: Pt. is representative of 4 observed thruint area	ue typreal	. SIS willow	-alder communit
VEGETATION - Use scientific names of plants. List a	I species in the pla		
J	ite Dominant Indicato		kahoois
Iree Stratum % Cov	er Species? Status	Number of Dominant S	
1. None		_ That Are OBL, FACW,	or FAC: (A)
2		Total Number of Domir	·····
3		Species Across All Stra	
4		Percent of Dominant S	
Total Cover:		That Are OBL, FACW,	or FAC: <u>100</u> (A/B)
. 50% of total cover: 20%	6 of total cover:	- Prevalence Index wor	
1. Alnua viridis 30	Y FAC	Total % Cover of:	Multiply by:
2. Sale Sitchensis 25			x1= <u>5</u>
3. Sul aloxensis 25	Y FAC	FACW speciesS_	x2= <u>/0</u>
4		FAC species <u>90</u>	x3= <u>770</u>
5		FACU species 0	x4= <u> </u>
6,		UPL species 0	x 5 = <u>O</u>
Total Cover; 80		Column Totals: _/00	(A) <u>て多く</u> (B)
50% of total cover: \$0 40 20%	of total cover: 1 6	- Prevalence Index	=B/A= 2.85
Herb Stratum		Hydrophytic Vegetation	
1. Agros. giganten 10	1 1	✓ Dominance Test is	
2. Cg. hamale 5	_ Y FACW	Prevalence Index is	
The state of the s	_ <u> </u>		ptations ¹ (Provide supporting
5. <u>Calamayrostis Canadensis 10</u>	-Y FAC	- data in Remarks	s or on a separate sheet)
6		 Problematic Hydror 	phytic Vegetation¹ (Explain)
7		. Indicators of buildings	9
7		be present unless distu	il and wetland hydrology must
8			
10			1
Total Cover; 20)		
50% of total cover: 20 20%			
	Ground	Hydrophytic	,
% Cover of Wetland Bryophytes Total Cover of Bry. (Where applicable)		Vegetation Present? Yes	; No
Remarks:			
protos 711-714 GPS 2	LY .		,
		•	

rofile Description: (Describe to th			J. 44,11111		•
Depth Matrix Inches) Color (moist)	% Color (moist)	Features % Type ¹	Loc ²	<u>Texture</u>	Remarks
			-		bra.
<u>)・レ</u>		Α		/3 /15	5 9
2-16 (sley) 25/N	1901, 54P 46 -	<u> </u>	- PL	20	Texture change
•					@ 10 bas to Sa
					_
, viii					MARKET MICHAEL STATE OF THE STA
					10,
ype: C=Concentration, D=Depletio	n DM-Dodused Matrix CS-	Covered or Cos	led Sand G	Frains 21 o	cation: PL=Pore Lining, M=Matrix.
ype: C=Concentration, D=Depletto ∤dric Soil Indicators:	Indicators for Pro	oblematic Hydr	ic Soils³:	70(10) Lo	<u> </u>
_ Histosot or Histel (A1)	Alaska Color			Alask	a Gleyed Without Hue 5Y or Redder
Histic Epipedon (A2)	Alaska Alpine				lerlying Layer
Hydrogen Sulfide (A4)	Alaska Redox	x With 2.5Y Hue		<u></u> ∕ Other	(Explain in Remarks)
Thick Dark Surface (A12)	•				
_ Alaska Gleyed (A13)	³ One indicator of t	hydrophytic veg	etation, one	primary Indica	tor of wetland hydrology,
_ Alaska Redox (A14)				st pe present u	nless disturbed or problematic.
_ Alaska Gleyed Pores (A15)	⁴Give details of co	olor change in R	amaiks.		
					,
Type: Depth (inches):	To Similar (A11).	to De	plete	Hydric Sol	11 Present? Yes V No
Type: Depth (inches):	To Similar (AII).	to De	plete	Hydric Sol	11 Present? Yes V No
Type: Depth (inches): emarks:	To Similar (AII).	40 De	plete		and the second s
Type: Depth (inches): emarks:	to Similar (A11).	to Da	plete	Secondary I	ndicators (2 or more required)
Type:	(AN).			Secondary I	ndicators (2 or more required) tained Leaves (B9)
Type: Depth (inches): emarks: /DROLOGY Vetland Hydrology Indicators: rimary Indicators (any one indicator _ Surface Water (A1)	(A). r is sufficient) Inundation Visible	on Aerial Image	ery (B7)	Secondary I Water-s Drainag	ndicators (2 or more required) Itained Leaves (B9) Je Patterns (B10)
Type: Depth (inches): emarks: /DROLOGY /etland Hydrology Indicators: rimary Indicators (any one indicator Surface Water (A1) High Water Table (A2)	r is sufficient) Inundation Visible Sparsely Vegetate	on Aerial Image ed Concave Sur	ery (B7)	Secondary I Water-s Drainag Oxidize	ndicators (2 or more required) stained Leaves (B9) ge Patterns (B10) d Rhizospheres along Living Roots (C
Type:	r is sufficient) Inundation Visible Sparsely Vegetate Marl Deposits (B1	o on Aerial Image ed Concave Sur 15)	ery (B7)	Secondary I Water-s Drainag Oxidize Presence	ndicators (2 or more required) stained Leaves (B9) se Patterns (B10) d Rhizospheres along Living Roots (C ce of Reduced Iron (C4)
Type: Depth (inches): emarks: //DROLOGY Vetland Hydrology Indicators: trimary Indicators (any one indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	r is sufficient) Inundation Visible Sparsely Vegetate Marl Deposits (B1	o on Aerial Image ed Concave Sur (5) Odor (C1)	ery (B7)	Secondary I Water-s Drainag Oxidize Presenc	ndicators (2 or more required) stained Leaves (B9) se Patterns (B10) d Rhizospheres along Living Roots (Coce of Reduced Iron (C4)
Type:	r is sufficient) Inundation Visible Sparsely Vegetate Marl Deposits (B1 Hydrogen Sulfide Dry-Season Wate	o on Aerial Imago ed Concave Sur (5) Odor (C1) er Table (C2)	ery (B7)	Secondary I Water-s Drainag Oxidize Presence Salt De Stunted	ndicators (2 or more required) Itained Leaves (89) Je Patterns (B10) d Rhizospheres along Living Roots (Coce of Reduced Iron (C4) Dosits (C5) I or Stressed Plants (D1)
Type: Depth (inches): Temarks: YDROLOGY Vetland Hydrology Indicators: Trimary Indicators (any one indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	r is sufficient) Inundation Visible Sparsely Vegetate Marl Deposits (B1	o on Aerial Imago ed Concave Sur (5) Odor (C1) er Table (C2)	ery (B7)	Secondary I Water-s Drainag Oxidize Presend Salt De Stunted Geomo	ndicators (2 or more required) stained Leaves (B9) se Patterns (B10) d Rhizospheres along Living Roots (Coce of Reduced Iron (C4)
Type:	r is sufficient) Inundation Visible Sparsely Vegetate Marl Deposits (B1 Hydrogen Sulfide Dry-Season Wate	o on Aerial Imago ed Concave Sur (5) Odor (C1) er Table (C2)	ery (B7)	Secondary I Water-s Drainag Oxidize Presend Salt De Stunted Geomo Shallow Microto	ndicators (2 or more required) stained Leaves (B9) se Patterns (B10) d Rhizospheres along Living Roots (Coce of Reduced Iron (C4) sposits (C5) I or Stressed Plants (D1) rphic Position (D2) r Aquitard (D3) spographic Relief (D4)
Type: Depth (inches): emarks: //DROLOGY Vetland Hydrology Indicators: rimary Indicators (any one indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	r is sufficient) Inundation Visible Sparsely Vegetate Marl Deposits (B1 Hydrogen Sulfide Dry-Season Wate	o on Aerial Imago ed Concave Sur (5) Odor (C1) er Table (C2)	ery (B7)	Secondary I Water-s Drainag Oxidize Presend Salt De Stunted Geomo Shallow Microto	ndicators (2 or more required) Itained Leaves (B9) Re Patterns (B10) Re Rhizospheres along Living Roots (Coce of Reduced Iron (C4) Roosits (C5) Roosits (C5) Roosits (C5) Roosits (C5) Roosits (C3)
Type: Depth (inches): emarks: PROLOGY Vetland Hydrology Indicators: rimary Indicators (any one indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6)	r is sufficient) Inundation Visible Sparsely Vegetate Marl Deposits (B1 Hydrogen Sulfide Dry-Season Wate Other (Explain In	o on Aerial Image ed Concave Sur (5) Odor (C1) er Table (C2) Remarks)	ery (B7)	Secondary I Water-s Drainag Oxidize Presend Salt De Stunted Geomo Shallow Microto	ndicators (2 or more required) stained Leaves (B9) se Patterns (B10) d Rhizospheres along Living Roots (Coce of Reduced Iron (C4) sposits (C5) I or Stressed Plants (D1) rphic Position (D2) r Aquitard (D3) spographic Relief (D4)
Type: Depth (inches): Temarks: YDROLOGY Vetland Hydrology Indicators: Trimary Indicators (any one indicator) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Yes	r is sufficient) Inundation Visible Sparsely Vegetate Marl Deposits (B1 Hydrogen Sulfide Dry-Season Wate Other (Explain In	o on Aerial Image ed Concave Sur (5) Odor (C1) er Table (C2) Remarks)	ery (B7)	Secondary I Water-s Drainag Oxidize Presend Salt De Stunted Geomo Shallow Microto	ndicators (2 or more required) stained Leaves (B9) se Patterns (B10) d Rhizospheres along Living Roots (Coce of Reduced Iron (C4) posits (C5) I or Stressed Plants (D1) rphic Position (D2) r Aquitard (D3) pographic Relief (D4)
Popular (inches): Itemarks: YDROLOGY Vetland Hydrology Indicators: Primary Indicators (any one indicator) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Ves	r is sufficient) Inundation Visible Sparsely Vegetate Marl Deposits (B1 Hydrogen Sulfide Dry-Season Wate Other (Explain In I	o on Aerial Image ed Concave Sur (5) Odor (C1) er Table (C2) Remarks)	ery (B7) /ace (B8)	Secondary I Water-s Drainag Oxidize Presend Salt De Stunted Geomo Shallow Microto	ndicators (2 or more required) Itained Leaves (B9) Itained Leaves (B10) Itained Leaves (B10) Itained Leaves (B10) Itained Leaves (B10) Itained Reduced Iron (C4) Itained (C5) Itained (C5) Itained (D6) Itained (D7) Itained (D8)
Type: Depth (inches): emarks: //DROLOGY Vetland Hydrology Indicators: rimary Indicators (any one indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Ves Saturation Present? Yes Saturation Present? Yes	r is sufficient) Inundation Visible Sparsely Vegetate Marl Deposits (B1 Hydrogen Sulfide Dry-Season Wate Other (Explain In	o on Aerial Image ed Concave Sur (5) Odor (C1) er Table (C2) Remarks)	ery (B7) /ace (B8)	Secondary I Water-s Drainag Oxidize Presend Salt De Stunted Geomo Shallow Microto	ndicators (2 or more required) stained Leaves (B9) se Patterns (B10) d Rhizospheres along Living Roots (Coce of Reduced Iron (C4) posits (C5) I or Stressed Plants (D1) rphic Position (D2) r Aquitard (D3) pographic Relief (D4)
Type: Depth (inches): emarks: //DROLOGY Vetland Hydrology Indicators: rimary Indicators (any one indicator) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Tield Observations: Surface Water Present? Ves. Saturation Present? Yes. Saturation Present? Yes.	r is sufficient) Inundation Visible Sparsely Vegetate Marl Deposits (B1 Hydrogen Sulfide Dry-Season Wate Other (Explain In	o on Aerial Image ed Concave Sur (5) Odor (C1) er Table (C2) Remarks)	ery (B7) /ace (B8)	Secondary I Water-s Drainag Oxidize Presence Salt De Stunted Geomo Shallow FAC-Ne	ndicators (2 or more required) Itained Leaves (B9) Itained Leaves (B10) Itained Leaves (B10) Itained Leaves (B10) Itained Leaves (B10) Itained Reduced Iron (C4) Itained (C5) Itained (C5) Itained (D1) Itained (D3) Itained (D3) Itained (D4) Itained (D5) Itained (D4) Itained (D5)
Type: Depth (inches): Temarks: Primary Indicators (any one indicator) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Ves Water Table Present? Yes	r is sufficient) Inundation Visible Sparsely Vegetate Marl Deposits (B1 Hydrogen Sulfide Dry-Season Wate Other (Explain In	o on Aerial Image ed Concave Sur (5) Odor (C1) er Table (C2) Remarks)	ery (B7) /ace (B8)	Secondary I Water-s Drainag Oxidize Presence Salt De Stunted Geomo Shallow FAC-Ne	ndicators (2 or more required) Itained Leaves (B9) Itained Leaves (B10) Itained Leaves (B10) Itained Leaves (B10) Itained Leaves (B10) Itained Reduced Iron (C4) Itained (C5) Itained (C5) Itained (D1) Itained (D3) Itained (D3) Itained (D4) Itained (D5) Itained (D4) Itained (D5)

Project/Site: Grant Lake	Almon Derr
Applicant/Owner: <u>Kenau</u> Hydro	Borough/City: Mouse Pass Sampling Date: 7-17-13
	Sampling Point: DD 10
Investigator(s): C. SCH OCLEC S. BIGNEY	Landform (hillside, terrace, hummocks, etc.):gravel (sland
Local relief (concave, convex, none): Yave	
Subjection: Lat: 130, 4	1720(a) Long: ~149.204078 Datum:
Soll Map Unit Name: Me enviral De taic Dep.	NWI classification: PEMIF
Are climatic / hydrologic conditions on the site typical for this time of ye	•
Are Vegetation, Soil, or Hydrology significantly	/ disturbed? No Are "Normal Circumstances" present? Yes _乂 No
Are Vegetation, Soil, or Hydrology naturally pro	oblematic? N) (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sa	ampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No	
Hydric Soil Present? Wetland Hydrology Present? Hydric Soil Present? Yes No	Is the Sampled Area
Wetland Hydrology Present? Yes No	within a Wetland? Yes X No
Remarks: grasses colonizing in shallow	w Lake HOO
VEGETATION - Use scientific names of plants. List all s	species in the plot.
Absolute	Dominant Indicator Dominance Test worksheet:
	Number of Dominant Species That Are ORL FACILY or FACILY
	matale OBL, I ACVV, 01 FAC(A)
3	Total Trumber of Dominant
4.	Species Across All Strata: (B)
Total Cover:	Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
50% of total cover: 20% o	- I man ile ODE, i ACVI, di i AC, (A/B)
Sapling/Shrub Stratum	Total % Cover of: Multiply by:
1. none	OBL species 20 may 25
2	EACH passion
3	EAC appelled 1800 was 1810
4	EACH engine
5.	UPL species x 5 =
Total Cover:	Column Totals:(A)
50% of total cover: 20% of	-
Herb Stratum	Hydrophytic Vegetation Indicators:
1. podagnostis, loaegnivalvis 4520	S Dominance Test is >50%
2. poas pallyistris top 2015	X Prevalence Index is <3.0
3. Carex lenticularis \$10	Morphological Adaptations (Provide supporting
4. Epiphonym chamissons 35	data in Remarks or on a separate sheet)
6.	Problematic Hydrophytic Vegetation¹ (Explain)
7.	Indicators of hydric soll and wetland hydrology must
8.	be present unless disturbed or problematic.
9	
10.	,
Total Cover: _ <u>より</u>	
50% of total cover: 25 20% of	f total cover: 1/0
Plot size (radius, or length x width) 10 rad. %Bale 6	Hydrophytic Source Vegetation
% Cover of Wetland Bryophytes Total Cover of Bryop	1
(Where applicable) Remarks:	
Remarks: Area may be converting buc	in to land photos 715-719
5	pno109 713 111

SOIL		Sampling Point: 10
Profile Description: (Describe to the depth	needed to document the indicator or confirm	n the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹ Loc ²	Texture Remarks
	2h to 710	
NO 21t -	photo 719 lake edge	
gravel island in	lake, edges	
- Choire Ispinee I. C		
		- Million Access
		2
	Reduced Matrix, CS=Covered or Coated Sand G	rains. ² Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :	N. J. Olava IMPlantilla FV a Dalla
Histosol or Histel (A1)	Alaska Color Change (TA4) ⁴	Alaska Gleyed Without Hue 5Y or Redder
Histic Epipedon (A2)	Alaska Alpine Swales (TA5)	Underlying Layer
Hydrogen Sulfide (A4)	Alaska Redox With 2.5Y Hue	Other (Explain in Remarks)
Thick Dark Surface (A12)	•	
Alaska Gleyed (A13)	³ One indicator of hydrophytic vegetation, one	
Alaska Redox (A14)		st be present untess disturbed or problematic.
Alaska Gleyed Pores (A15)	⁴Give details of color change in Remarks.	
Restrictive Layer (If present):		
Type:		,
Depth (inches):		Hydric Soil Present? Yes 🔀 No
Remarks: A	2 W/ HOO Soils gravel	17
thea Inundate	a with the source	JANO
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is suffici		Water-stained Leaves (B9)
∑ 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)
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)		Shallow Aquitard (D3)
Iron Deposits (B5)		Microtopographic Relief (D4)
Surface Soil Cracks (B6)		FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes X N	o Depth (inches): <u>4 12''</u>	
	o Depth (inches): O	
	o Depth (inches): O Wet	tland Hydrology Present? Yes X No
(includes capillary fringe)		
Describe Recorded Data (stream gauge, mor	itoring well, aerial photos, previous inspections)	, if available:
Remarks:		h- a 1- > >
Area is in the	lake, but appoars to	s be colonizingly plants.
1		

			ini - Alaska Region
Project/Site: Correspont Lake	Boro	ugh/City:	mse PAAL Sampling Date: 7-17-1
Applicant/Owner: (cenas Hydro			Sampling Point: DD -11
Investigator(s): Sch	udel Land	form (hillside, ter	rrace, hummocks, etc.): De bris fin
Local relief (concave, convex, none): ひょうしょく	Slope	e (%): 5	
Subregion: Aceuvial Colluvial fan L	at. 60.472	895 Lo	ong: -149,202,948' Datum
Subregion: ACeuvine Colluvial fan La Soil Map Unit Name:			NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for the			
Are Vegetation, Soil, or Hydrology	significantly distu	bed? Ato Are	"Normat Circumstances" present? Yes V' No
Are Vegetation, Soil, or Hydrology	naturally problem		needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map s		• • • •	·
			, and any analysis of the second seco
Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes		is the Sample	d Area
Wetland Hydrology Present?	Λυ ~.	within a Wetla	and? YesNoX
Remarks: 14 /0 / (416)			
Remarks: upland avea on N	orth en	حا کال کم	he thlet area
VEGETATION – Use scientific names of plants			
Tree Stratum	Absolute Don	ninant Indicator ecies? Status	Dominance Test worksheet:
1. None	<u> 70 00461</u>	clest Status	Number of Dominant Species That Are ORL FACW or FAC:
2.			(A)
3			Total Number of Dominant Species Across All Strata: Species Across All Strata: (B)
4			
Total Cove	г:		Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
50% of total cover:	20% of total	cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum 1. Salix barclay!	In s	1	Total % Cover of: Multiply by:
			OBL species
			FACW species 10 x2 = 20
3			FAC species 40 x 3 = 120
5			FACU species <u>50</u> x 4 = <u>100</u>
6			UPL species _ 0 _ x 5 = _ 0
Total Cove	r: 10		Column Totals: 100 (A) (B)
50% of total cover: _ \leq	20% of total	cover: 2	Prevalence Index = B/A = 3.4
Herb Stratum			Hydrophytic Vegetation Indicators:
1. Cha angustitolium	<u> 20 </u>	FACH	Dominance Test is >50%
2. <u>Danguisorba Canadensis</u>	- 10	<u>FACW</u>	Prevalence Index is ≤3.0
3. <u>Aeranium erianthum</u>	<u> </u>	_ BACIN	Morphological Adaptations¹ (Provide supporting
Heraeleium maximum	20 1	PAG	data in Remarks or on a separate sheet)
6. Conisetum arvense	- 40 - 1	<u>FACU</u>	Problematic Hydrophytic Vegetation¹ (Explain)
7. Artemesia tilesii	-121-	- FAC	¹ Indicators of hydric soil and wetland hydrology must
8. Calarragrostis annadensis	 . V	_ BACU	be present unless disturbed or problematic.
9.	· _ \	<u>FAC</u>	
10	-		
Total Cover	:_90		
50% of total cover: 식도	20% of total of	over: 18	
Plot size (radius, or length x width) 20' (acl.	% Bare Ground		Hydrophytic Vegetation
% Cover of Wetland Bryophytes Total Co (Where applicable)	ver of Bryophytes	0	Present? Yes X No
PW1748-753			
		. ,	

OIL			Sampling Point: DP 11
Profile Description: (Describe to the	depth needed to document the indicator or c	onfirm the absenc	e of indicators.)
Depth Matrix	Redox Features Color (moist) % Type Le	oc² Texture	Remarks
6-11			smell + large cobb
			- 117
AND			
	Dom ALAMAN MARKET PATENT		
		<u> </u>	
Type: C=Concentration, D=Depletion,	RM=Reduced Matrix, CS=Covered or Coated S		ocation: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:	Indicators for Problematic Hydric So		
Histosol or Histel (A1)	Alaska Color Change (TA4) ⁴		ka Gleyed Without Hue 5Y or Redder
Histic Epipedon (A2)	Alaska Alpine Swales (TA5)		derlying Layer Ir (Explain in Remarks)
Hydrogen Sulfide (A4)	Alaska Redox With 2.5Y Hue	Othe	(Explain in Remarks)
Thick Dark Surface (A12)	³ One indicator of hydrophytic vegetation	n one primary indic	ator of wetland hydrology.
Alaska Gleyed (A13) Alaska Redox (A14)	and an appropriate landscape position		
Alaska Gleyed Pores (A15)	Give detalls of color change in Remark		
Restrictive Layer (if present):			
• • •			•
Type:		ł	
Type: Depth (inches): Remarks: Soil pit to	b 11" bgs. Clearly		mydric, dry soil
Depth (inches):	b 11" bgs. Clearly ck fragments. Man		
Depth (inches):	o 11" bgs. Clearly ck fragments. Man	non-h	ydric, dry soil
Depth (inches):		Non-h Ny rook. Secondary	ydric, dry soil
Depth (inches):Remarks: Soil pit to Community Holds Holds Hydrology Indicators: Primary Indicators (any one indicator is	sufficient)	Non-h	Indicators (2 or more required) stained Leaves (B9)
Depth (inches):	sufficient) Inundation Visible on Aerial Imagery (B	Non-h Ny Yook Secondary Water- 7) Draina	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10)
Depth (inches):	sufficient) Inundation Visible on Aerial Imagery (B Sparsely Vegetated Concave Surface (I	Secondary Water- 7) Draina B8) Oxidize	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (C
Depth (inches):	sufficient) Inundation Visible on Aerial Imagery (B Sparsely Vegetated Concave Surface (I Marl Deposits (B15)	Secondary Water- 7) Draina B8) Oxidize Preser	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (Cance of Reduced Iron (C4)
Depth (inches):	sufficient) Inundation Visible on Aerial Imagery (B Sparsely Vegetated Concave Surface (I Mart Deposits (B15) Hydrogen Sulfide Odor (C1)	Secondary Water- 7) Draina B8) Oxidize Salt De	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (Cince of Reduced Iron (C4) aposits (C5)
Depth (inches): Remarks: Soil Pit to Without 4-Li to a IYDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	sufficient) Inundation Visible on Aerial Imagery (B' Sparsely Vegetated Concave Surface (I Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)	NON- NON-	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (Cince of Reduced Iron (C4) aposits (C5) d or Stressed Plants (D1)
Depth (inches): Remarks: Soil pit to C IYDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	sufficient) Inundation Visible on Aerial Imagery (B Sparsely Vegetated Concave Surface (I Mart Deposits (B15) Hydrogen Sulfide Odor (C1)	Secondary Water- 7) Draina B8) Oxidize Salt De Stunte Geome	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (Cince of Reduced Iron (C4) aposits (C5)
Depth (inches): Remarks: Soil pit to C IYDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	sufficient) Inundation Visible on Aerial Imagery (B Sparsely Vegetated Concave Surface (I Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)	Secondary Secondary Water- 7) — Draina B8) — Oxidize Preser Salt De Stunte Geome Shallo	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (Cince of Reduced Iron (C4) eposits (C5) d or Stressed Plants (D1) orphic Position (D2)
Depth (inches): Remarks: Soil pit to C IYDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	sufficient) Inundation Visible on Aerial Imagery (B Sparsely Vegetated Concave Surface (I Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)	Secondary Secondary Water- 7) — Draina B8) — Oxidize Preser Salt De Stunte Geome Shallo Microte	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (Cince of Reduced Iron (C4) eposits (C5) d or Stressed Plants (D1) orphic Position (D2) w Aquitard (D3)
Depth (inches): Remarks: Soil Pit to C IYDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Fleid Observations:	sufficient) Inundation Visible on Aerial Imagery (B Sparsely Vegetated Concave Surface (I Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks)	Secondary Secondary Water- 7) — Draina B8) — Oxidize Preser Salt De Stunte Geome Shallo Microte	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (C: nce of Reduced Iron (C4) eposits (C5) d or Stressed Plants (D1) orphic Position (D2) w Aquitard (D3) opographic Relief (D4)
Depth (inches): Remarks: Soil Pit to C IYDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Yes	sufficient) Inundation Visible on Aerial Imagery (B Sparsely Vegetated Concave Surface (I Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No L Depth (inches):	Secondary Secondary Water- 7) — Draina B8) — Oxidize Preser Salt De Stunte Geome Shallo Microte	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (C: nce of Reduced Iron (C4) eposits (C5) d or Stressed Plants (D1) orphic Position (D2) w Aquitard (D3) opographic Relief (D4)
Depth (inches): Remarks: Soil pit to C IYDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Fleid Observations: Surface Water Present? Water Table Present?	sufficient) Inundation Visible on Aerial Imagery (B Sparsely Vegetated Concave Surface (I Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches):	Secondary Secondary Water- 7) Draina B8) Oxidize Preser Salt De Stunte Geome Shallo FAC-N	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (C: nce of Reduced Iron (C4) eposits (C5) d or Stressed Plants (D1) orphic Position (D2) w Aquitard (D3) opographic Relief (D4) leutral Test (D5)
Depth (inches): Remarks: Soil Pit to C IYDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Fleid Observations: Surface Water Present? Water Table Present? Yes Saturation Present?	sufficient) Inundation Visible on Aerial Imagery (B Sparsely Vegetated Concave Surface (I Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No L Depth (inches):	Secondary Secondary Water- 7) Draina B8) Oxidize Preser Salt De Stunte Geome Shallo FAC-N	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (C3 nce of Reduced Iron (C4) eposits (C5) d or Stressed Plants (D1) orphic Position (D2) w Aquitard (D3) opographic Relief (D4) leutral Test (D5)
Depth (inches): Remarks: Soil pit for A Without 4-Lin for A IYDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Yes Saturation Present? Yes Includes capillary fringe)	sufficient) Inundation Visible on Aerial Imagery (B Sparsely Vegetated Concave Surface (I Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches):	Secondary Water- 7) Water- 7) Oridize Preser Salt De Stunte Geome Shallo Hicrote FAC-N	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (C3 nce of Reduced Iron (C4) eposits (C5) d or Stressed Plants (D1) orphic Position (D2) w Aquitard (D3) opographic Relief (D4) leutral Test (D5)
Depth (inches): Remarks: Soil Pit for A Semarks: Without 4-6 in to A Semarks: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Fleid Observations: Surface Water Present? Water Table Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge	sufficient) Inundation Visible on Aerial Imagery (B' Sparsely Vegetated Concave Surface (I' Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Secondary Water- 7) Water- 7) Oridize Preser Salt De Stunte Geome Shallo Hicrote FAC-N	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (C3) nce of Reduced Iron (C4) eposits (C5) d or Stressed Plants (D1) orphic Position (D2) w Aquitard (D3) opographic Relief (D4) leutral Test (D5)
Depth (inches): Remarks: Soil Pit to C IYDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge	sufficient) Inundation Visible on Aerial Imagery (B' Sparsely Vegetated Concave Surface (I' Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Secondary Water- 7) Water- 7) Oridize Preser Salt De Stunte Geome Shallo Hicrote FAC-N	Indicators (2 or more required) stained Leaves (B9) ge Patterns (B10) ed Rhizospheres along Living Roots (C3) nce of Reduced Iron (C4) eposits (C5) d or Stressed Plants (D1) orphic Position (D2) w Aquitard (D3) opographic Relief (D4) leutral Test (D5)

Manal Brook A. I	- 14 O. (5
Project/Site: Clark Greek Corndor Borough/City: Ma	
Applicant/Owner: Yen at Hydro	Sampling Point: DP 12
Investigator(s): C. Schodel J. Blank Landform (hillside, to	errace, hummocks, etc.): <u>Alamage</u>
Local relief (concave, convex, none): Slope (%): Slope (%):	
Subregion: Lat: <u>1,0,458302</u> L	ong: <u>-144, 341년26</u> Datum:
Soil Map Unit Name:	NWI classification: R3UB
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X	(If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbed? No Ar	
A 1/ 1/1 00 11 11 11 11 11 11 11 11 11 11 11 11	needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sampling point local	•
V	The state of the s
Hydrophytic Vegetation Present? Yes Y No Is the Sample No No	ed Area
Hydric Soil Present? Yes No within a Wetl Wetland Hydrology Present? Yes No within a Wetl	and? Yes No
Remarks: Documenting this community de a PSS R3 MB3H running down the middles	
VEGETATION – Use scientific names of plants. List all species in the plo	
Tree Stratum Absolute Dominant Indicator **Cover Species? Status**	
1. Taka mertensiana 10 Y FAT.	Monitor of Dominiant Species
2,	
3	Total Number of Dominant
4,	Species Across All Strata: (B)
Total Cover: 10	Percent of Dominant Species That Are OBL, FACW, or FAC: /OD (A/B)
50% of total cover; 5 20% of total cover; 2	Prevalence Index worksheet;
Sapling/Shrub Stratum 1. Ahus vividis 30 Y FA7.	Total % Cover of: Multiply by:
1. ATUS VITICIS SU Y FAC 2. Cornus Canadinsis 3 FACU	CRI appairs A
3. Arctostaphylus uva-ursi 3 UPL	FACW species 5 x2= 10
4. Men ziesia ferruginea 5 FACU	FAC species 100 x 3 = 300
5. Tsuga mertensiana 20 y FAC	FACU species 8 x 4 = 32
6.	UPL species <u>3</u> x 5 = <u>1</u> S
Total Cover: 158 11.10	Column Totals: 16 (A) 357 (B)
50% of total cover: 30.5 20% of total cover: 12.22	Prevalence Index = B/A = 3.08
Herb Stratum	Hydrophytic Vegetation Indicators:
1. Equisetm arvense 30 Y FAC	Dominance Test is >50%
2. Sanguistiba canadinsis 5 FACW	Prevalence Index is ≤3.0
3. Agrostis gigantea 10 y pac	Morphological Adaptations¹ (Provide supporting
An Cornus Carradensis 3 FACU	data in Remarks or on a separate sheet)
3. Calamagnostis languasis 10 y FAC	Problematic Hydrophytic Vegetation ¹ (Explain)
6	1 to attack a second of the se
0	¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
9.	problem and a problem and
10.	·
Total Cover: 45 48	
50% of total cover: 725 20% of total cover: 9 9.4	.
Plot size (radius, or length x width) 10 rad. 24 % Bare Ground 50	Hydrophytic
	Vegetation Present? Yes X No
% Cover of Wetland Bryophytes Total Cover of Bryophytes S (Where applicable) open we	i,
Remarks;	SITE S
pics 771-777	
	·

Profile Description: (Describe to the depth needed to document the indicator or conf	Sampling Point: 10712
Libitie pescription: /pescript to me walking managed and	firm the absence of indicators.)
Depth Matrix Redox Features	
(inches) Color (moist) % Color (moist) % Type Loc2	
No pit flowing + Standing water in plo	
flavora + standing laber in D/8	+
110001110 1 3191110110 4 4 1 1	
	2) a estion DI = Para Lining M-Matrix
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand	d Grains. ² Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: Indicators for Problematic Hydric Soils Histosol or Histel (A1) Alaska Color Change (TA4) ⁴	Alaska Gleyed Without Hue 5Y or Redder
Histosol of Histel (A1) Histic Epipedon (A2) Alaska Color Change (TA4) Alaska Alpine Swales (TA5)	Underlying Layer
Hydrogen Sulfide (A4) Alaska Redox With 2.5Y Hue	Other (Explain in Remarks)
Thick Dark Surface (A12)	
Alaska Gleyed (A13) 3 One indicator of hydrophytic vegetation, of	one primary indicator of wetland hydrology,
	must be present unless disturbed or problematic.
Alaska Gleyed Pores (A15)	
Restrictive Layer (if present):	
Type:	Hydric Soll Present? Yes X No
Depth (inches):	Try drib contribution (100 and 100 and
Remarks:	
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (2 or more required) .
Primary Indicators (any one indicator is sufficient)	Water-stained Leaves (B9)
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)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	O
Sediment Deposits (B2) Dry-Season Water Teble (C2)	Stunted or Stressed Plants (D1)
Sediment Deposits (B2) Dry-Season Water Teble (C2) Drift Deposits (B3) Other (Explain in Remarks)	Keomorphic Position (D2)
Sediment Deposits (B2) Dry-Season Water Teble (C2) Drift Deposits (B3) Algal Mat or Crust (B4) Dry-Season Water Teble (C2) Other (Explain in Remarks)	Geomorphic Position (D2)Shallow Aquitard (D3)
Sediment Deposits (B2) Dry-Season Water Teble (C2) Drift Deposits (B3) Other (Explain in Remarks) Algal Mat or Crust (B4) Iron Deposits (B5)	Keomorphic Position (D2)
Sediment Deposits (B2) Dry-Season Water Teble (C2) Drift Deposits (B3) Other (Explain in Remarks) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6)	✓ Geomorphic Position (D2)✓ Shallow Aquitard (D3)✓ Microtopographic Relief (D4)
Sediment Deposits (B2) Dry-Season Water Teble (C2) Drift Deposits (B3) Other (Explain in Remarks) Iron Deposits (B6) Surface Soil Cracks (B6) Field Observations:	✓ Geomorphic Position (D2)✓ Shallow Aquitard (D3)✓ Microtopographic Relief (D4)
Sediment Deposits (B2) Dry-Season Water Teble (C2) Drift Deposits (B3) Other (Explain in Remarks) Algal Mat or Crust (B4) Iron Deposits (B6) Surface Soil Cracks (B6) Surface Soil Cracks (B6) Surface Water Present? Yes No Depth (inches):	 ✓ Geomorphic Position (D2) _ Shallow Aquitard (D3) ✓ Microtopographic Relief (D4) _ FAC-Neutral Test (D5)
Sediment Deposits (B2) Dry-Season Water Teble (C2) Drift Deposits (B3) Other (Explain in Remarks) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Surface Water Present? Yes No Depth (inches):	✓ Geomorphic Position (D2)✓ Shallow Aquitard (D3)✓ Microtopographic Relief (D4)
Sediment Deposits (B2) Dry-Season Water Teble (C2) Drift Deposits (B3) Other (Explain in Remarks) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Surface Water Present? Yes No Depth (inches):	✓ Geomorphic Position (D2) Shallow Aquitard (D3) ✓ Microtopographic Relief (D4) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes
Sediment Deposits (B2) Dry-Season Water Teble (C2) Drift Deposits (B3) Other (Explain in Remarks) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Yes No Depth (inches): Under Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Depth (inches): Saturation Present?	✓ Geomorphic Position (D2) Shallow Aquitard (D3) ✓ Microtopographic Relief (D4) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes
Sediment Deposits (B2) Dry-Season Water Teble (C2) Drift Deposits (B3) Other (Explain in Remarks) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Yes No Depth (inches): Vater Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Seturation Present? Yes No Depth (inches): Depth (inches): Yes No Depth (inches): Yes No Depth (inches): Yes No Depth (inches): Yes No Depth (inches): Yes Yes No Depth (inches): Yes Yes No Depth (inches): Yes Yes Yes Yes No Depth (inches): Yes	✓ Geomorphic Position (D2) Shallow Aquitard (D3) ✓ Microtopographic Relief (D4) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes
Sediment Deposits (B2) Dry-Season Water Teble (C2) Drift Deposits (B3) Other (Explain in Remarks) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Surface Water Present? Yes No Depth (inches):	✓ Geomorphic Position (D2) Shallow Aquitard (D3) ✓ Microtopographic Relief (D4) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes
Sediment Deposits (B2) Dry-Season Water Teble (C2) Drift Deposits (B3) Other (Explain in Remarks) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Yes No Depth (inches): Vater Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Seturation Present? Yes No Depth (inches): Depth (inches): Yes No Depth (inches): Yes No Depth (inches): Yes No Depth (inches): Yes No Depth (inches): Yes Yes No Depth (inches): Yes Yes No Depth (inches): Yes Yes Yes Yes No Depth (inches): Yes	✓ Geomorphic Position (D2) Shallow Aquitard (D3) ✓ Microtopographic Relief (D4) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes ✓ No

			THE THE PART OF TH	
Projecusite: <u>Grant Creek Porndor</u>	Boro	ugh/Citv: M di	se Pass	Sampling Date: 7-18-18
Applicant/Owner: <u>Keynell</u> Hydro		-9.5 - 1.9.1 <u></u>		Sampling Point: DP 13
Investigator(s): C. Schudel J. Blank	land	Iform (hilleide, ter	race hummacks atal:	bulled along Dan
Local relief (concave, convex, none):	Slope	. 1941: 3	race, numinocks, etc.): _	draines
Subregion:		d (%):	- 	
Soil Map Unit Name:				
	Al-1- II		NWI cłassifi	
Are Vegetation	this time of year?	Yes <u>X</u> No _	(if no, explain in F	Remarks.)
Are Vegetation, Soil, or Hydrology	_ significantly distu			
Are Vegetation, Soil, or Hydrology		• •	eeded, explain any answe	
SUMMARY OF FINDINGS - Attach site map	showing sampl	ing point locat	ions, transects, impo	ortant features, etc.
Hydrophytic Vegetation Present? Yes X			-	
Hydric Soil Present? Yes		is the Sample	J Area	
Wetland Hydrology Present? Yes		within a Wetla	nd? Yes	s NoX_
	<u> </u>			-
Remarks: Uptome community pt.	is rypical	of ripla	ind Hembork	· Community,
				Ų,
VEGETATION - Use scientific names of plan		' -		
Tree Stratum	Absolute Don % Cover Spe	ninant Indicator ecies? Status	Dominance Test work	
1. Tsuga mertensiana	40	Y FAC	Number of Dominant S That Are OBL, FACW,	
2		<u> </u>	ļ	
3			Total Number of Domin Species Across All Stra	, ' <u>1</u> 1
4		 ,		
, Total Cov	_{rer:} 40		Percent of Dominant Sp That Are OBL, FACW, of	
50% of total cover: 2	O 20% of total	cover: 8	Prevalence Index work	(AVD)
Sapling/Shrub Stratum			Total % Cover of:	
1. Empetrim nigrim	<i></i>	Y FAC	OBL species O	
2. Arctostaphylls uva-ursi	— <u>~</u> —.—	<u>UPL</u>	FACW species 0	$\begin{array}{c} x1 = 0 \\ x2 = 0 \end{array}$
3. Men ziesla ferruginea 4. Vaccinium Ulizandsom	- - 5	<u>FACU</u>	FAC species 66	
5. Tsuga mertensiana		FAL	FACU species _ S	$\frac{x}{x} = \frac{1}{2} $
6. Ledum governandicum's	$-\frac{10}{1}$	FAC FAC	UPL species 5	$x_5 = \frac{25}{25}$
groenlandicom Total Cov		FAC	Column Totals: 76	(A) <u>243</u> (B)
50% of total cover: 18		31	·	
Herb Stratum	20% of total	cover:	Prevalence Index	
1. None		_	Hydrophytic Vegetatio	
2,			Dominance Test is	
3			Prevalence Index is	
4			Morphological Adap	otations ¹ (Provide supporting or on a separate sheet)
5				phytic Vegetation ¹ (Explain)
6			1 102101112110 1134100	nytic vegetation (Explain)
7			Indicators of hydric soil	and wetland hydrology must
8			be present unless distur	bed or problematic.
9			***	· · · · · · · · · · · · · · · · · · ·
10.	****			
	er;	·		
50% of total cover:	20% of total c	over:	Hydrophytic	
Plot size (radius, or length x width) 20' yaol.			Vegetation	
% Cover of Wetland Bryophytes Total C (Where applicable)	over of Bryophytes	90	Present? Yes	× No
Remarks:		<u>_</u>		
		photos -	778- 782	GPS 9
		0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
· · · · · · · · · · · · · · · · · · ·				f

rofile Description: (Descril	be to the depth nee	ded to document the indi	leator or confire	n the absence	of indicators.)
epth <u>Matrix</u>		Redox Features	Type ¹ Loc ²	Texture	Remarks
nches) Color (moist)	<u> % Col</u>	or (moist)%T	Type¹ Loc²		
<u>4-0</u>				<u>rools</u>	Ive layer
10-5 7.54R 3	3/4			organi	CS
5-12				cobble	· •
<u> </u>					
					F
Type: C=Concentration, D=L	Depletion, RM=Reduc	ced Matrix, CS=Covered or dicators for Problematic	or Coated Sand G	Grains. Loc	cation: PL=Pore Lining, M=Matrix.
lydric Soil Indicators:	, in	Alaska Color Change (T.		Ałacka	Gleyed Without Hue 5Y or Redder
Histosol or Histel (A1)		_ Alaska Color Change (1. _ Alaska Alpine Swales (T	•		erlying Layer
Histic Epipedon (A2)		_ Alaska Alpille Swales (1 _ Alaska Redox With 2.5Y			(Explain in Remarks)
Hydrogen Sulfide (A4) Thick Dark Surface (A12)		_ Alaska Nedox FYRII 2.01	11100		(<u></u>
Triick Dark Surface (A12) Alaska Gleyed (A13)	, 3C	ne indicator of hydrophytic	c vegetation, one	primary indicat	or of wetland hydrology,
Alaska Gleyed (A14)	•				iless disturbed or problematic.
Alaska Gleyed Pores (A1	5) ⁴ G	ive details of color change		·	
Restrictive Layer (if present					-
Type: bedrock					
10	11				
Depth (inches): 12				Hydric Soil	Present? Yes NoX
•				Hydrîc Soli	Present? Yes No X
Remarks:				Hydrîc Soli	Present? Yes No X
Remarks: YDROLOGY	DIS:				Present? Yes NoX
Remarks: YDROLOGY Wetland Hydrology Indicato		·		Secondary In	·
Remarks: YDROLOGY Wetland Hydrology Indicator Primary Indicators (any one In	ndicator is sufficient)	undation Visible on Aerial I	Imagery (B7)	Secondary In	idicators (2 or more required)
Primary Indicators (any one Ir Surface Water (A1)	ndicator is sufficient) In	undation Visible on Aerial I		Secondary In Water-st	idicators (2 or more required) ained Leaves (B9)
Pararks: YDROLOGY Wetland Hydrology Indicato Inmary Indicators (any one in Surface Water (A1) High Water Table (A2)	ndicator is sufficient) In Sp	undation Visible on Aerial I parsely Vegetated Concave arl Deposits (B15)		Secondary In Water-st Drainage Oxidized	dicators (2 or more required) ained Leaves (89) Patterns (B10)
YDROLOGY Wetland Hydrology Indicato Primary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3)	ndicator is sufficient) Ini Sp M:	parsely Vegetated Concave	e Surface (B8)	Secondary In Water-st Drainage Oxidized Presence	dicators (2 or more required) ained Leaves (B9) o Patterns (B10) I Rhizospḥeres along Living Roots (
YDROLOGY Wetland Hydrology Indicato Primary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	ndicator is sufficient) In: Sp M: H:	parsely Vegetated Concave arl Deposits (B15)	e Surface (B8)	Secondary In Water-st Drainage Oxidized Presence Salt Dep	dicators (2 or more required) ained Leaves (B9) a Patterns (B10) I Rhizospheres along Living Roots (e of Reduced Iron (C4)
Permarks: YDROLOGY Wetland Hydrology Indicator Primary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3)	ndicator is sufficient) Ini Sp M: Hy Dr	oarsely Vegetated Concave arl Deposits (B15) ydrogen Sulfide Odor (C1)	e Surface (B8)	Secondary In Water-st Drainage Oxidized Presence Salt Dep Stunted Geomory	dicators (2 or more required) ained Leaves (B9) a Patterns (B10) I Rhizospheres along Living Roots (ce of Reduced Iron (C4) assits (C5) or Stressed Plants (D1) phic Position (D2)
POROLOGY Wetland Hydrology Indicator Primary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	ndicator is sufficient) Ini Sp M: Hy Dr	oarsely Vegetated Concave arl Deposits (B15) ydrogen Sulfide Odor (C1) y-Season Water Table (C2	e Surface (B8)	Secondary In Water-st Drainage Oxidized Presenc Salt Dep Stunted Geomory Shallow	dicators (2 or more required) ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (ce of Reduced Iron (C4) Posits (C5) Or Stressed Plants (D1) Phic Position (D2) Aquitard (D3)
YDROLOGY Wetland Hydrology Indicato Primary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	ndicator is sufficient) Ini Sp M: Hy Dr	oarsely Vegetated Concave arl Deposits (B15) ydrogen Sulfide Odor (C1) y-Season Water Table (C2	e Surface (B8)	Secondary In Water-st Drainage Oxidized Presence Salt Dep Stunted Geomory Shallow	dicators (2 or more required) ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (ce of Reduced Iron (C4) osits (C5) or Stressed Plants (D1) phic Position (D2) Aquitard (D3) ographic Relief (D4)
YDROLOGY Wetland Hydrology Indicator Primary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	ndicator is sufficient) in: Sp M: H: Dr	oarsely Vegetated Concave arl Deposits (B15) ydrogen Sulfide Odor (C1) y-Season Water Table (C2	e Surface (B8)	Secondary In Water-st Drainage Oxidized Presence Salt Dep Stunted Geomory Shallow	dicators (2 or more required) ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (ce of Reduced Iron (C4) Posits (C5) Or Stressed Plants (D1) Phic Position (D2) Aquitard (D3)
YDROLOGY Wetland Hydrology Indicator Primary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6)	ndicator is sufficient) in: Sp M: H: Dr	oarsely Vegetated Concave arl Deposits (B15) ydrogen Sulfide Odor (C1) y-Season Water Table (C2	e Surface (B8)	Secondary In Water-st Drainage Oxidized Presence Salt Dep Stunted Geomory Shallow	dicators (2 or more required) ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (ce of Reduced Iron (C4) osits (C5) or Stressed Plants (D1) phic Position (D2) Aquitard (D3) ographic Relief (D4)
YDROLOGY Wetland Hydrology Indicator Primary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations:	ndicator is sufficient) ini Sp M: H; Or	parsely Vegetated Concave arl Deposits (B15) ydrogen Sulfide Odor (C1) ry-Season Water Table (C2 ther (Explain in Remarks) Depth (inches):	e Surface (B8)	Secondary In Water-st Drainage Oxidized Presence Salt Dep Stunted Geomory Shallow	dicators (2 or more required) ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (ce of Reduced Iron (C4) osits (C5) or Stressed Plants (D1) phic Position (D2) Aquitard (D3) ographic Relief (D4)
YDROLOGY Wetland Hydrology Indicator Primary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present?	ndicator is sufficient) ini Sp M: H; Or	parsely Vegetated Concave arl Deposits (B15) ydrogen Sulfide Odor (C1) ry-Season Water Table (C2 ther (Explain in Remarks)	e Surface (B8)	Secondary In Water-st Drainage Oxidized Presence Salt Dep Stunted Geomory Shallow Microtop FAC-Ne	idicators (2 or more required) ained Leaves (B9) b Patterns (B10) I Rhizospheres along Living Roots (in e of Reduced Iron (C4) rosits (C5) or Stressed Plants (D1) phic Position (D2) Aquitard (D3) rographic Relief (D4) utral Test (D5)
POROLOGY Wetland Hydrology Indicator Primary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present?		parsely Vegetated Concave arl Deposits (B15) ydrogen Sulfide Odor (C1) ry-Season Water Table (C2 ther (Explain in Remarks) Depth (inches):	e Surface (B8)	Secondary In Water-st Drainage Oxidized Presence Salt Dep Stunted Geomory Shallow Microtop FAC-Ne	dicators (2 or more required) ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (ce of Reduced Iron (C4) osits (C5) or Stressed Plants (D1) phic Position (D2) Aquitard (D3) ographic Relief (D4)
Por Por Posent? YDROLOGY Wetland Hydrology Indicator Primary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Vincludes capillary fringe)		parsely Vegetated Concave arl Deposits (B15) ydrogen Sulfide Odor (C1) y-Season Water Table (C2) ther (Explain in Remarks) Depth (inches): Depth (inches):	e Surface (B8)	Secondary In Water-st Drainage Oxidized Presence Salt Dep Stunted Geomory Microtop FAC-Ne	idicators (2 or more required) ained Leaves (B9) b Patterns (B10) I Rhizospheres along Living Roots (in e of Reduced Iron (C4) rosits (C5) or Stressed Plants (D1) phic Position (D2) Aquitard (D3) rographic Relief (D4) utral Test (D5)
Remarks: IYDROLOGY Wetland Hydrology Indicator Primary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)		parsely Vegetated Concave arl Deposits (B15) ydrogen Sulfide Odor (C1) y-Season Water Table (C2) ther (Explain in Remarks) Depth (inches): Depth (inches):	e Surface (B8)	Secondary In Water-st Drainage Oxidized Presence Salt Dep Stunted Geomory Microtop FAC-Ne	idicators (2 or more required) ained Leaves (B9) b Patterns (B10) I Rhizospheres along Living Roots (in e of Reduced Iron (C4) rosits (C5) or Stressed Plants (D1) phic Position (D2) Aquitard (D3) rographic Relief (D4) utral Test (D5)
Remarks: IYDROLOGY Wetland Hydrology Indicator Primary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Saturation Present?		parsely Vegetated Concave arl Deposits (B15) ydrogen Sulfide Odor (C1) y-Season Water Table (C2) ther (Explain in Remarks) Depth (inches): Depth (inches):	e Surface (B8)	Secondary In Water-st Drainage Oxidized Presence Salt Dep Stunted Geomory Microtop FAC-Ne	idicators (2 or more required) ained Leaves (B9) b Patterns (B10) I Rhizospheres along Living Roots (in e of Reduced Iron (C4) rosits (C5) or Stressed Plants (D1) phic Position (D2) Aquitard (D3) rographic Relief (D4) utral Test (D5)

Project/Site: Carant Creek Cornedor			sea Oses	
110,300,010.	Borou	igh/City:M_0		_ Sampling Date: 7 - 19 · 13
Applicant/Owner: Kingle Hydro	en-			Sampling Point: <u>DP 14</u>
Investigator(s): C. Schudel J. Blank			race, hummocks, etc.): _	depress our
Local relief (concave, convex, none):CON_CAV*	Slope		-	
Subregion: La	1: 100, 45 8			_
Soil Map Unit Name:	m2 000000000000000000000000000000000000	. J.		fication: PEMI/SSIE
Are climatic / hydrologic conditions on the site typical for the			•	
Are Vegetation, Soil, or Hydrology				
Are Vegetation, Soil, or Hydrology	naturally problem	atic?No (If ne	eeded, explain any answ	/ers in Remarks.)
SUMMARY OF FINDINGS - Attach site map sl	nowing sampli	ing point locat	ions, trańsects, imp	ortant features, etc.
Hydrophytic Vegetation Present? Yes X	lo			•
	lo	Is the Sampled		
landar and the second	lo	within a Wetla	nd? Ye	es <u>X</u> No
Remarks: Herbonceons-513 wotun	d w/a 8	mall [2	Aa 2 Stave wid	c] Restub Rank Mannie
through it	•		5	- munm
VEGETATION - Use scientific names of plants	. List all spec	ies in the plot.		
, .	· ·	ninant Indicator	Dominance Test wor	rksheet:
Tree Stratum		ecies? Status	Number of Dominant	Species
1. None			That Are OBL, FACW	l, or FAC: <u> </u>
2			Total Number of Dom	
3			Species Across All St	rata: 7 0 (B)
Total Cove	r:		Percent of Dominant	
50% of total cover:		l cover:	That Are OBL, FACW	(102)
Sapling/Shrub Stratum			Total % Cover of:	
1. Picea glasca	- 3 -	<u>FACU</u>		x 1 = 45
2. Salix barday	- 10 -	Y FAC		x2= 40
3. <u>Betala glandulosa</u> 4. Ledum dicumbins	<u> </u>	Y FAC	FAC species 26	
5. Ematrim high	- - 3 -	FAC FAC	FACU species 5	x4= 20
6. Vaccinium uliganosum	3	FAC	UPL species0	
Total Cove	- 	<u> </u>	Column Totals: 96	2 (A) <u>183</u> (B)
50% of total cover: 15.5		cover: 6,2	Prevalence inde	x = B/A =
Herb Stratum			Hydrophytic Vegetat	
1. Equisetim Gare fluviable	<u>30 </u>	OBL		
2. <u>Sangusurba cavadinsis</u> 3. Carex leptalea	- <u>10</u> _ `	FARW	X Prevalence Index	
4. Comarus Padustre	- <u> </u>	OBL	Morphological Ad	aptations ¹ (Provide supporting
5. Carex canescens	- 10	OBL FACW	l .	ks or on a separate sheet)
6. Carex media		FACW	Problematic Hydr	ophytic Vegetation ¹ (Explain)
7.	· —— —	. 1.1011	1 Indicators of hydric s	oil and wetland hydrology must
8.			be present unless dist	urbed or problematic.
9.				
10.				•
Total Cover				
50% of total cover: 32			Hydrophytic	
Plot size (radius, or length x width) 201 Yad		d 5 open Hu	Vegetation	X
% Cover of Wetland Bryophytes Total Co (Where applicable)	ver of Bryophyte:	90	Present? Y	es No
Remarks: Photos	GP:	5 2 sta		
746-803	GP	S 3 .	" west	
	\1 \1	4 dat S class	apt 14 (mer	condar whereart
JS Army Corps of Engineers		o chai	mergis in play.	mappen Alaska Version 2.0

SOIL						Sampling Point	: DY 14
Profile Description: (Desc				or confirm	the absence of i	indicators.)	
Depth <u>Mat</u> (inches) Color (mois		Redox Fe	atures %Type ¹	Loc²	Texture	Remarks	
mones/ Color (mole		Color (moist)	78 14pc			Temans	ypunasan
No a	_ ·		770733 MSMINNING TT.				
Stan	ding wa	ter in plat					
	-0				THE RESIDENCE OF THE PARTY OF T	13 811867-1	
							•
							· CEAR ATMENT
Tunas C-Canaantration De	Donistion BM-	Dadward Matrix CS=Co	wared or Cools	d Cond Co	rolpa ²) populi	on: PL=Pore Lining, N	A=Ndetsbe
Type: C=Concentration, D= lydric Soil Indicators:	Depletion, Rivi≂	ndicators for Probl	ematic Hydric	Solls ³ :	ains, Locatio	on: PL=Pore Lining, r	n=iviatrix.
Histosol or Histel (A1)	•	Alaska Color Ch	-	Collo .	Alaeka Gl	eyed Without Hue 5Y	or Redder
Histic Epipedon (A2)		Alaska Alpine Sv				ing Layer	OI IVEGGE!
Hydrogen Sulfide (A4)		Alaska Redox W			-	plain in Remarks)	
Thick Dark Surface (A12	?)	Alaska Nedox Vi	ALIT 2.51 FIGE	,	Onler (EX	piani in Nemares	
Alaska Gleyed (A13)		³ One indicator of hyd	rophytic vegeta	ation, one p	primary indicator o	f wetland hydrology,	
Alaska Redox (A14)		and an appropriate	e landscape po	sition must	t be present unles	s disturbed or problen	natic.
Alaska Gleyed Pores (A	15)	⁴ Give details of color	change in Ren	narks.	•		
Restrictive Layer (if preser							
Туре:							
Depth (inches):					Hydric Soil Pre	esent? Yes <u>×</u>	No
YDROLOGY						· · · · · · · · · · · · · · · · · · ·	
Wetland Hydrology Indicat	ors:				Secondary Indica	ators (2 or more requi	red)
Primary Indicators (any one		ient)			Water-staine	ed Leaves (B9)	
💢 Surface Water (A1)	_	_ Inundation Visible on	Aerial Imagery	(B7)	Drainage Pa	tterns (B10)	
X High Water Table (A2)	-	_ Sparsely Vegetated (Concave Surfac	æ (B8)	Oxidized Rh	izospheres along Lįvii	ng Roots (C3
✓ Saturation (A3)	•	_ Marl Deposits (B15)			Presence of	Reduced Iron (C4)	
Water Marks (B1)	·	_ Hydrogen Sulfide Od	or (C1)	•	Salt Deposits	s (C5)	
Sediment Deposits (B2)	_	_ Dry-Season Water Ta	able (C2)		Stunted or S	tressed Plants (D1)	
Drift Deposits (B3)	_	_ Other (Explain in Rer	narks)		Geomorphic	Position (D2)	
Algal Mat or Crust (B4)					Shallow Aqu	itard (D3)	
Iron Deposits (B5)					Microtopogra	aphic Relief (D4)	
Surface Soil Cracks (B6))				FAC-Neutral	Test (D5)	
field Observations:							
Surface Water Present?	Yes N	lo Depth (inches);	_			
Vater Table Present?	Yes N	lo Depth (inches lo Depth (inches lo Depth (inches);	<u> </u>			
Saturation Present? includes capillary fringe)	YesN	lo Depth (inches):	_ Wetla	and Hydrology P	resent? Yes X	No
Describe Recorded Data (str	eam gauge, mor	nitoring well, aerial photo	s, previous ins	pections),	if available;		
7							
Remarks:							
четаку;							
cemaiks,			, , , , , , , , , , , , , , , , , , , ,				
Remarks:						i .	

AACT CAMP DETEKIAII	NATION	DATA FOR	M – Alaska Region		
Project/Site: <u>Grant Creek Corridor</u>	Boroug	gh/City: _Moi	xe Paus	Sampling Date:	7-19-13
Applicant/Owner: Kuru Hydro			1	Sampling Point:	
Investigator(s): C. Schudel J. Blank	Landfo	orm (hillside, ter	race, hummocks, etc.)	hill side.	
Local relief (concave, convex, none):		(%): 3		ATTIME	
Subregion: Lat:			no: =149 3651	// Datum	
Soil Map Unit Name:					
Are climatic / hydrologic conditions on the site typical for this time of	of vear2 Va	No. X No.	NWI classifi	Cation: Uplant	<u> </u>
Are Vegetation, Soil, or Hydrology significa	orycari re	10 _ th	(if no, explain in i	Remarks.)	
Are Vegetation Soil or Hydrology significa	antry disturb	ear I Ale	"Normal Circumstances"	present? Yes^	No
Are Vegetation, Soil, or Hydrology naturally SUMMARY OF FINDINGS – Attach site map showing				·	etc.
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No X	,	is the Sample	i Area		}
Hydric Soll Present? Wetland Hydrology Present? Yes NoX		within a Wetia	nd? Yes	s No_	Υ
			•		
Remarks: Kepsontative of write Spru	a G	upland	forest		
VEGETATION - Use scientific names of plants. List	-	•			
Abso Tree Stratum % Co	olute Domi	nant Indicator cies? Status	Dominance Test worl		
1. Picea glasca 2		FAC V	Number of Dominant S That Are OBL, FACW,		
2.	•				(A)
3.			Total Number of Domir	nánt 3	
4			Species Across All Stra	ata; <u> </u>	(B) [
Total Cover: 26	0		Percent of Dominant S	pecies or FAC: 66	
50% of total cover: 10 20	——)% of total o	over: 4	That Are OBL, FACW, Prevalence Index wor	*·····	(A/B)
Sapling/Shrub Stratum			<u> </u>		
1. Retula glandulosa grantandicum 20		<u>FAC</u>	Total % Cover of: OBL species D	Multiply	by;
2. ledum desumbers grantandicum 20		FACE	FACW species O	x1= <u>0</u>	- [
3. Empetrum nigrum 10		FAC_	FAC species 52		
4. Arctostaphy lus uva-ursi 5		UPL	FACU species 31		
5. Spirea stevenii 10		<u>FACU</u>		^ <u> </u>	
Total Cover;	<u>~</u>		Column Totals: 88	(A) 30 S	
		19 1			
50% of total cover: 34 209	% of total co	over: 13.6	Prevalence Index		<u> </u>
1. Chamerion angustifolia		FACU	Hydrophytic Vegetation		
2. Agrostis gisantea 4	2	FAC	X Dominance Test is		İ
Calamagnish's canadensis 2		FAC	Prevalence Index is		1
4. (totals included of shrips)	7		Morphological Ada	ptations¹ (Provide si s or on a separate si	upporting
5			Problematic Hydron		
6				onytic vegetation (t	-xpiaili)
7			¹ Indicators of hydric soi	il and wetland hydro	logy must
8			be present unless distu	rbed or problematic.	
9					
10					
Total Cover:					
. 50% of total cover: 20%	% of total co	ver:	Undrophutt-	•	
Plot size (radius, or length x width) 201 (od. % Ba		_ · · · · · · · · · · · · · · · · · · ·	Hydrophytic Vegetation		
% Cover of Wetland Bryophytes Total Cover of Br (Where applicable)	ryophytes _	90 %	Present? Yes	s_X No	
Remarks: photos 804-80°	 7		1		
<i>f</i> 3. , 00	,		4.2	•	

SOIL	-					•	Sampling Point:	DP15
Profile Description: (Describ	e to the denti	needed to docu	ment the ir	ndicator	or confirm	the absence of inc		
Depth Matrix			ox Features				•	
(inches) Cofor (moist)		Color (moist)	%	Type ¹	_Loc ²	<u>Texture</u>	Remarks	·
6-0						live mos	s 4 noits	
0-4		.///			A	Diganics		-
4-10 2.54 4						Silt loan		

						4.0.13		-
							MEGOTO-MW 1000-1111	
						**************************************	1000	***************************************
¹ Type: C=Concentration, D=D	Depletion, RM=	Reduced Matrix, C	S=Covered	or Coate	d Sand G	rains. ² Location	: PL=Pore Lining, M	=Matrix.
Hydric Soil Indicators:		Indicators for	Problemat	ic Hydric	:Solls³:			
Histosol or Histel (A1)		Alaska Co	lor Change	(TA4)⁴			ed Without Hue 5Y o	r Redder
Histic Epipedon (A2)		Alaska Alp	ine Swales	(TA5)		Underlying	· · · · ·	
Hydrogen Sulfide (A4)		Alaska Re	dox With 2.	5Y Hue		Other (Expla	sin in Remarks)	
Thick Dark Surface (A12)		3						
Alaska Gleyed (A13)						primary indicator of v it be present unless of		atio
Alaska Redox (A14)	r \	and an appr Give details o				t de biesein diness i	istarbed of problem	auc.
Alaska Gleyed Pores (A1structive Layer (If present)		Give details o	COLOS CITATI	go iii ixei		T		
Type: bedrock	<i>i</i> .							
Depth (inches):	şl					Hydric Soil Pres	ent? Yes	No X
HYDROLOGY			***					
Wetland Hydrology Indicato	rs:						ors (2 or more requir	ed)
Primary Indicators (any one in	dicator is suffic	cient)				Water-stained		
Surface Water (A1)	_	Inundation Visi				Drainage Patte		D 4 400\
High Water Table (A2)	_	Sparsely Vege		ive Surfa	ce (B8)		ospheres along Livin	g Roots (U3)
Saturation (A3)		Mari Deposits					educed Iron (C4)	
Water Marks (B1)	min.	Hydrogen Sulfi				Salt Deposits	essed Plants (D1)	
Sediment Deposits (B2)	_	Dry-Season W Other (Explain				Geomorphic P		
Drift Deposits (B3)	_	Other (Explain	III Keinaiks	")		Shallow Aquita	• •	
Algal Mat or Crust (B4)							ohic Relief (D4)	
Iron Deposits (B5) Surface Soil Cracks (B6)						FAC-Neutral 1		
Field Observations:			·					
Surface Water Present?	Yes N	No <u> </u>	inches):					
Water Table Present?		No X Depth (ı	•		
Saturation Present?		No Depth (land Hydrology Pre	esent? Yes	No.2
(Includes capillary fringe) Describe Recorded Data (stre	am gauge, mo	nitoring well, aeria	il photos, pr	evious in	spections)	, if available:		
Remarks:								

Project/Site: Grant Creek Cornolor		Borou	gh/City:	Moose Pass	Sampling Date: 7-19-13
Applicant/Owner: <u>Kenal Hydro</u>					Sampling Dainty DO 11
Investigator(s): C. Schudel J. Blank		Landfe	orm (hillside	a terrace hummooks atoly	edia C
Local relief (concave, convex, none):		Slone	(0/2)	s, terrace, numiniocks, e(c.); _	Majnra outwash for
					• • •
Subregion: L	at(/ (// 14)	0 5	4 310 311 5	2 Long: ~ 149.36/3	3 X Datum:
Soll Map Unit Name:	1 * * * *			NWI classi	fication: Upland
Are Vocatation	nis time of ye	ar? Ye	es <u> </u>	No (If no, explain in	Remarks.)
Are Vegetation, Soil, or Hydrology	_ significantly	disturb	sed? No	Are "Normal Circumstances"	' present? Yes 🔀 No
Are Vegetation, Soil, or Hydrology	naturally pro	blema	tic? No	(If needed, explain any answ	ers in Remarks.)
SUMMARY OF FINDINGS – Attach site map	sh <mark>o</mark> wing sa	mplir	ng point la	ocations, transects, imp	ortant features, etc
Hydrophytic Vegetation Present? Yes Yes Hydric Soil Present? Yes		-	Is the Sam	npled Area	
Wolfond Undralagy Dros		į	within a W	/etland? Ye	s No_X
Remarks: 1.1 -1 -1	- X				
Upland herbacions	iommu	mity	y Wen	ted in numerou	s low-looking
VECETATION Has reintilly					
VEGETATION Use scientific names of plant					•
Tree Stratum	Absolute % Cover	Domi	inant Indica cies? <u>Stat</u>		
1. None	_70 COVEL	<u>ope</u> t	<u> Jest Jolai</u>	I MARKING OF DOUBLING S	Species 7
2.				That Are OBL, FACW,	or FAC: Z (A)
3.				Total Number of Domi	. 94.5
4				Species Across All Str	ata:
Total Cove	er:	-		Percent of Dominant S	Species or FAC: \$666 (A/R)
50% of total cover:			cover:	That Are OBL, FACW,	(TVD)
Sapling/Shrub Stratum	_			— Frevalence fildex wo	i
1. Vibirnum edde	_ <u>30</u>	<u> </u>	FAC	— LOBLesseles O	
2. Cornus cavedinsis	- 10 -		<u> </u>	FACIN species D	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
3. Bosa acicularis	5		<u>F</u> AC	FAC species So	
4				FACU species 60	~~
5				UPL species O	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
·	1100	~		Column Totals: 140	
	F 45 3		α\.		
50% of total cover: 22. Herb Stratum 17.		tolal co	over: 7	土 Prevalence Index	c = B/A = 3.43
1. Equisetim arvense	3D	Y	_ FAC	Hydrophytic Vegetation	
2. Horacleum maximum	10		FA (Dominance Test is	
3. Athyrium Filix-Femina	10	711	EA	T Provolence Index :	s ≤3.0
4. Gymnocarpum dryopteris			FAL	Morphological Ada	ptations ¹ (Provide supporting
5 Agrostis gigantia	40	-4-	FAE	— Juda iii Kentarki	s or on a separate sheet)
Convs canadensis	io		FAC	- I _ I TODICITIANO ITYOTO	phytic Vegetation ¹ (Explain)
7. Calamagnistis canadensis	<u> </u>	М	FA	1 Indicators of hydric so	il and wetland hydrology must
B	-	i		be present unless distu	rbed or problematic.
9					
10	· —			_	
Total Cover					•
50% of total cover: 43	20% of to	otal co	ver: 19 7	<u> </u>	ĺ
	. 5 % Bare Gr			Hydrophytic Vegetation	
	ver of Bryoph			Present? Yes	s_X No_ <u>茗</u>
Remarks:			-		
photos 828-8	30				
·					

ofile Description: (Descri				
epth <u>Matrix</u> nches) <u>Color (molst)</u>		Redox Features Color (molst) % Type¹	Loc ² Texture Remarks	
nches) <u>Color (molst)</u> Э- (o			live roots 4 organics	
			siltlam + roots	
0-7 104R31	4 100		<u> </u>	
ACMICINE SORTY				~=-w
No. of the last of				
71W44				
0.0	Santation DM	=Reduced Matrix, CS=Covered or Coated	Sand Grains. ² Location: PL=Pore Lining, M=M:	atrix.
ype: C=Concentration, D=t dric Soil Indicators:	pepiedon, raw	Indicators for Problematic Hydric S	oils³:	
Histosol or Histel (A1)		Alaska Color Change (TA4)⁴	Alaska Gleyed Without Hue 5Y or R	edder
Histic Epipedon (A2)		Alaska Alpine Swales (TA5)	Underlying Layer	
Hydrogen Sulfide (A4)		Alaska Redox With 2.5Y Hue	Other (Explain In Remarks)	
Thick Dark Surface (A12)			and the state of the state of	
Alaska Gleyed (A13)		³ One indicator of hydrophytic vegetat	on, one primary indicator of wetland hydrology,	
_ Alaska Redox (A14)			tion must be present unless disturbed or problematic	•
. Alaska Gleyed Pores (A1		⁴Give details of color change in Rema	iks.	
strictive Layer (if presen	i): / l.			
Type: Youks	i): ped rock 1"		Hydric Soil Present? Yes No	, ×
estrictive Layer (if presen Type: YOUCS J Depth (inches): emarks:	1): ped rock 7"		Hydric Soil Present? Yes No	<u>×</u>
Type: YOUKS Depth (inches):	n: ped rock 7"		Hydric Soil Present? Yes No	<u>×</u>
Type: <u>Youks</u> Tope:	n): ped rock 7"			.41
Type: YOUKS Depth (inches): emarks: DROLOGY etiand Hydrology Indicate	acd rock 7"		Secondary Indicators (2 or more required)	.41
Type: YOUKS Depth (inches): emarks: DROLOGY Total Hydrology Indicators (any one inches):	acd rock 7"	ficient)	Secondary Indicators (2 or more required) Water-stained Leaves (B9)	.41
Type: YOUKS Depth (inches): emarks: **DROLOGY **Tetland Hydrology Indicators (any one inches): Surface Water (A1)	acd rock 7"	ficient) Inundation Visible on Aerial Imagery	Secondary Indicators (2 or more required) Water-stained Leaves (B9) B7) Drainage Patterns (B10)	
Type: YOUKS Depth (inches): emarks: DROLOGY etiand Hydrology Indicate imary Indicators (any one inches) Surface Water (A1) High Water Table (A2)	acd rock 7"	ficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface	Secondary Indicators (2 or more required) Water-stained Leaves (B9) B7) Drainage Patterns (B10) (B8) Oxidized Rhizospheres along Living F	
Type: YOURS Depth (inches): emarks: DROLOGY etland Hydrology Indicate imary Indicators (any one inches): Surface Water (A1) High Water Table (A2) Saturation (A3)	acd rock 7"	ficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) B7) Drainage Patterns (B10)	
Type: YOURS Depth (inches): emarks: DROLOGY etland Hydrology Indicate imary Indicators (any one in some particular (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	acd rock 7"	ficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) B7) Drainage Patterns (B10) (B8) Oxidized Rhizospheres along Living F Presence of Reduced fron (C4)	
Type: YOURS Depth (inches): emarks: DROLOGY etland Hydrology Indicate imary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	acd rock 7"	ficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) B7) Drainage Patterns (B10) (B8) Oxidized Rhizospheres along Living F Presence of Reduced Iron (C4) Salt Deposits (C5)	
Type: YOURS Depth (inches): Pemarks: TOROLOGY Tetland Hydrology Indicatorimary Indicators (any one in sour acceptance Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	acd rock 7"	ficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) B7) Drainage Patterns (B10) (B8) Oxidized Rhizospheres along Living F Presence of Reduced fron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1)	
Type: YOCKS Depth (inches):	acd rock 7"	ficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) B7) Drainage Patterns (B10) (B8) Oxidized Rhizospheres along Living F Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2)	
Depth (inches): Depth (inches): DROLOGY etland Hydrology Indicate imary Indicators (any one i Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	ocd rock 7" prs: ndicator is sul	ficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) B7)	
Depth (inches): Depth (inches): DROLOGY etland Hydrology Indicate imary Indicators (any one i surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6	ocd rock 7" prs: ndicator is sul	ficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) B7)	
Type: YOCKS Depth (inches): Pemarks: PROLOGY Tetland Hydrology Indicate imary Indicators (any one in surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algai Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Tella Control (B6) Surface Soil Cracks (B6)	acd rock 7" pres: Indicator is sul	ficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) B7) Drainage Patterns (B10) (B8) Oxidized Rhizospheres along Living F Presence of Reduced fron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)	
Type: YOCKS Depth (inches): PROLOGY Tetland Hydrology Indicate imary Indicators (any one incomplete imary Indicators (B1) Surface Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Surface Water Present?	ors: ndicator is sul	ficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) B7) Drainage Patterns (B10) (B8) Oxidized Rhizospheres along Living F Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)	Roots (C
Type: YOCKS Depth (inches):	yes Yes	ficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches): No Depth (inches): No Depth (inches):	Secondary Indicators (2 or more required) Water-stained Leaves (B9) B7)	Roots (C
Type: YOCKS Depth (inches):	yes Yes	ficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches):	Secondary Indicators (2 or more required) Water-stained Leaves (B9) B7)	Roots (C
Type: YOCKS Depth (inches):	yes Yes	ficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches): No Depth (inches): No Depth (inches):	Secondary Indicators (2 or more required) Water-stained Leaves (B9) B7)	Roots (C

A			
Project/Site: <u>Chrant Creek Corndor</u>	Bo	rough/City: <u>Moo</u>	se Pass Sampling Date: 7-20-1
Applicant/Owner: Venau Hydro			Sampling Point: DP 17
Investigator(s): C. Schudel 'J. Blank	La	ndform (hillside, te	rrace, hummocks, etc.):dpression
Local relief (concave, convex, none):Concave_	Slo	ope (%): _ <i>O</i>	
Subregion: L	at: 40. 4.64	(0 %) Lo	ong: 149,357179 Datum:
Soil Map Unit Name:	,		NWI classification:
Are climatic / hydrologic conditions on the site typical for t	his time of year?	Yes X No	(If no, explain in Remarks.) P593/
Are Vegetation, Soil, or Hydrology	significantly dis	A 1 A	e "Normal Circumstances" present? YesX No
Are Vegetation, Soil, or Hydrology	-	41.	needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map	showing sam		
Hydrophytic Vegetation Present? Yes X	******	•	
Hydric Soil Present? Yes X		is the Sample	
1	No	within a Wetla	and? Yes No
Remarks: Typical peniss com			
VEGETATION – Use scientific names of plant	s Listalisne	ocies in the plot	
plante of plante		ominant Indicator	
Tree Stratum	% Cover S	Species? Status	Number of Dominant Species
1. Rone			That Are OBL, FACW, or FAC: 3 (A)
2			Total Number of Dominant 2
3			Species Across All Strata; 3 (B)
4		THE STATE OF THE S	Percent of Dominant Species
	er:		That Are OBL, FACW, or FAC: 100 (A/B)
50% of total cover: Sapling/Shrub Stratum	20% of to	tal cover:	Prevalence Index worksheet:
1. FMPetrum nigrum	7.0	Y FAC	Total % Cover of: Multiply by:
2. Picea mariaka		FACW	OBL species <u>10</u> x 1 = <u>10</u>
3. Picea glavea	_ <u> </u>	FACU	FACW species 18 x 2 = 36
4. Betvla glandilosa		Y FAC	FAC species 81 x3 = 243
5. Cornus paradensis Salix bardayi		FAe	FACU species 10 x4 = 40
a Magazin og uligi - igir	_		UPL species 2 x 5 = 10
Ledum decumbers 3 total Cover Arctostaphylus UNA-Ursi 2 total Cover 26	er: <u>53</u>		Column Totals: 121 (A) 389 (B)
Arctosta phylus UV 50% of total cover: 26	.S 20% of tot	al cover:10 - 6	Prevalence Index = B/A = 2.8
Telo Statum			Hydrophytic Vegetation Indicators:
1. Cornus canadensis	_ <u> </u>	FACU	
2. <u>Pubus chamaemorus</u> 3. Equiselm arvens?	<u> </u>	FACW	_X Prevalence Index is ≤3.0
4. Carex pausiflora	<u>40 </u>	Y FAC	Morphological Adaptations ¹ (Provide supporting
		OB L	data in Remarks or on a separate sheet)
5 Agnostis gigardea	_ <u> </u>	- FAE	Problematic Hydrophytic Vegetation (Exptain)
8. Palamagins canadensis		FAC	The direction of the state of t
_		•	Indicators of hydric soil and welland hydrology must be present unless disturbed or problematic.
8, 9	-		
10			
Total Cove	r: 68		
50% of total cover: _34		al cover: 13:1a	
Plot size (radius, or length x width)	% Bare Grou		Hydrophytic
% Cover of Wetland Bryophytes Total Co (Where applicable)			Vegetation Present?
• • • • • • • • • • • • • • • • • • • •			
Remarks: collected the StellyL			
pholos 319	55-3602		

OIL				
rofile Description: (Describe t	o the depth needed to document the indicator o	r confirm t	ne absence of indicators.)	
Depth Matrix	Redox Features		Texture Rema	arks
inches) Color (moist)	% Coloi (Hibist) 70 14bc			
3-0			116 Worz	
0-16			organic peat	
			O	
(A-15)(I) A-10(A-15)(I) A-10(A	**************************************			
	· · · · · · · · · · · · · · · · · · ·			
	letion, RM=Reduced Matrix, CS=Covered or Coated	d Sand Gra	ns. ² Location: PL=Pore Lin	ing, M=Matrix.
lydric Soil Indicators:	Indicators for Problematic Hydric	Solis":	Alexander Charmad Michigani Lin	a EV ar Baddar
✓ Histosol or Histel (A1)	Alaska Color Change (TA4) ⁴		Alaska Gleyed Without Hu Underlying Layer	e of prinequer
Histic Epipedon (A2)	Alaska Alpine Swales (TA5) Alaska Redox With 2.5Y Hue		Other (Explain in Remarks)
Hydrogen Sulfide (A4)	Alaska Redux VVRII 2.51 Flue		Ottlet (Explain in Francisco	,
Thick Dark Surface (A12) Alaska Gleyed (A13)	³ One indicator of hydrophylic vegeta	ation, one pr	imary indicator of wetland hydrol	ogy,
Alaska Redox (A14)	and an appropriate landscape pos			
Alaska Gleyed Pores (A15)	⁴ Give details of color change in Rem			
<pre><estrictive (if="" layer="" pre="" present):<=""></estrictive></pre>				
Type: None found		2		
Restrictive Layer (if present): Type: Nure found Depth (inches): Remarks:			Hydric Soil Present? Yes_	<u>X_</u> No
Type: None Found Depth (inches):	·		Hydric Soil Present? Yes_	<u>X</u> _ No
Type: <u>Nurk found</u> Depth (inches): Remarks:	•			
Type: None Fond Depth (inches): Remarks: YDROLOGY Wetland Hydrology Indicators:	•		Secondary Indicators (2 or more	
Type: None Fond Depth (inches): Remarks: YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indic	:ator is sufficient)		Secondary Indicators (2 or more Water-stained Leaves (B9)	
Type:	ator is sufficient) Inundation Visible on Aerial Imagery	(B7)	Secondary Indicators (2 or more Water-stained Leaves (B9) Drainage Patterns (B10)	required)
Type:	ator is sufficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surfac	(B7)	Secondary Indicators (2 or more Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres alon	required) g Living Roots (C:
Type: None Fond Depth (inches): Remarks: YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indic Surface Water (A1) X High Water Table (A2) X Saturation (A3)	ator is sufficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surfac Marl Deposits (B15)	(B7)	Secondary Indicators (2 or more Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres alon Presence of Reduced fron (C	required) g Living Roots (C:
Type:	ator is sufficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surfac Marl Deposits (B15) Hydrogen Sulfide Odor (C1)	(B7)	Secondary Indicators (2 or more Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Presence of Reduced Iron (C	required) g Living Roots (C: C4)
Type:	eator is sufficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)	(B7)	Secondary Indicators (2 or more Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Presence of Reduced Iron (C Salt Deposits (C5) Stunted or Stressed Plants (required) g Living Roots (C: C4)
Type:	ator is sufficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surfac Marl Deposits (B15) Hydrogen Sulfide Odor (C1)	(B7)	Secondary Indicators (2 or more Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Presence of Reduced Iron (C	required) g Living Roots (C: C4)
Type:	eator is sufficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)	(B7)	Secondary Indicators (2 or more Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres alone Presence of Reduced Iron (C Salt Deposits (C5) Stunted or Stressed Plants (Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)	required) g Living Roots (C: C4) D1)
Type:None	eator is sufficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)	(B7)	Secondary Indicators (2 or more Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres alone Presence of Reduced fron (C Saft Deposits (C5) Stunted or Stressed Plants (Geomorphic Position (D2) Shallow Aquitard (D3)	required) g Living Roots (C: C4) D1)
Type: None Aund Depth (inches): Remarks: YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indic Surface Water (A1) X High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations:	ator is sufficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks)	(B7)	Secondary Indicators (2 or more Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres alone Presence of Reduced Iron (C Salt Deposits (C5) Stunted or Stressed Plants (Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)	required) g Living Roots (C3 C4) D1)
Type: None Acade Depth (inches):	ator is sufficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) 'es No Depth (inches):	(B7)	Secondary Indicators (2 or more Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres alone Presence of Reduced Iron (C Salt Deposits (C5) Stunted or Stressed Plants (Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)	required) g Living Roots (C3 C4) D1)
Type: None Sound Depth (inches):	Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) /es No Depth (inches):	r (B7) ce (B8)	Secondary Indicators (2 or more Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Presence of Reduced Iron (C) Salt Deposits (C5) Stunted or Stressed Plants (C) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)	required) g Living Roots (C:C4) D1)
Type: None Sound Depth (inches):	ator is sufficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) Yes No Depth (inches): Yes No Depth (inches):	r (B7) ce (B8) Wetla	Secondary Indicators (2 or more Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Presence of Reduced Iron (C) Salt Deposits (C5) Stunted or Stressed Plants (C) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)	required) g Living Roots (C3C4) D1)
Type: None Sound Depth (inches):	Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) /es No Depth (inches):	r (B7) ce (B8) Wetla	Secondary Indicators (2 or more Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Presence of Reduced Iron (C) Salt Deposits (C5) Stunted or Stressed Plants (C) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)	required) g Living Roots (C:C4) D1)
Type: None Sound Depth (inches):	ator is sufficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) Yes No Depth (inches): Yes No Depth (inches):	r (B7) ce (B8) Wetla	Secondary Indicators (2 or more Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Presence of Reduced Iron (C) Salt Deposits (C5) Stunted or Stressed Plants (C) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)	required) g Living Roots (C3C4) D1)

Project/Site: Grant Creek Corridor Borough/City: 1	Moose Pass Sampling Date: 7-20-13
Applicant/Owner: Kina Hydio	Sampling Point: DPT&
	sampling Point: DPTIS.
Local relief (concave, convex, none): \(\sqrt{c} \) \(\sqrt{c} \	o, terrace, hummocks, etc.): <u>Manager</u>
	· Was see call
Subregion: Lat: <u>1๕0. 4545 48</u>	
Soil Map Unit Name:	NWI classification: wp and
	No (If no, explain in Remarks.)
	Are "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology naturally problematic? No	(If needed, explain any answers In Remarks.)
SUMMARY OF FINDINGS - Attach site map showing sampling point ke	ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes NoX Is the San	
Hydric Soil Present? Yes No X	npled Area
Wetland Hydrology Present? Yes No X within a W	Vetland? Yes No
Remarks: Typical white spruce / hembuch / pa	personal Enesternamen
	•
VEGETATION - Use scientific names of plants. List all species in the	
Absolute Dominant Indication	turn
1. Be Na papy rifera 20 y FA	I Number of Dominant Species 4
	TC .
3. Picca glavea 40 4 FAC	Total Number of Dominant Species Across All Strata: 4 (B)
4.	Opedes Across Air cirata,
Total Cover:	Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)
50% of total cover: 40 20% of total cover: 16	
Sapling/Shrub Stratum	Total IV Courses & Marking to be a
1. Arctosta Phylus Uva-Ursi 5 UP	OBI species O v1 = O
2. Ulisande Vaccinium eliganosin 10 FA	EACIN energies 0 v2= 0
3. Menzesia ferruginea 40 Y FAT	<u> </u>
4. Empetrum nigrim 10 FA	FACU anadas 11174 - 2/2/7
5. Tsuga mertensiana 5 FA	UDI arasias C us 7 C
6. Picea glavea 10 FAC	Column Totals: 16 D (A) 600 (B)
Total Cover: 80	• • • • • • • • • • • • • • • • • • • •
50% of total cover: 40 20% of total cover: 16	Prevalence Index = B/A = 3.75
1. None	Hydrophytic Vegetation Indicators:
2.	Dominance Test is >50%
3	Prevalence Index is ≤3.0
4	Morphological Adaptations¹ (Provide supporting
5	data in Remarks or on a separate sheet)
6	Problematic Hydrophytic Vegetation¹ (Explain)
7,	1 Indicators of hydric soil and wetland hydrology must
8	be present unless disturbed or problematic.
9.	
10,	
Total Cover:	_
50% of total cover: 20% of total cover:	
Plot size (radius, or length x width) 201 r a d % Bare Ground ♡	Hydrophytic Vegetation
% Cover of Wetland Bryophytes Total Cover of Bryophytes	Present? Yes No X
Remarks:	
	\$ 3163 - 3169
1	

SOIL								Sa	ampling Point	DP 18
Profile Des	cription: (Describe	to the depti	h needed to docun	nent the indi	cator or c	onfirm	the absence	of indicato	rs.)	
Depth (inches)	Matrix Color (moist)	<u></u> -	Redo: Color (moist)	x Features % T	ype¹ L	OC ²	Texture		Remarks	
3·0	<u> </u>		<u> </u>		164			455 4 1		
0-3	2.54412	<u> </u>					51/t/a		001	
	2.37 112	<u>-</u>			<u> </u>	·····			<i>A</i> .	
3-9		+	<u>.</u>				Jecui 1	<u>organii</u>	cS.	
										,
			HUW-NOON - NOON - N							<u> </u>
	·									
										•
						-				
	Concentration, D=De	pletion, RM=I					ins, ² Lo	cation: PL≔l	Pore Lining, N	∕I=Matrix.
1 1	Indicators:		indicators for P		-	ils":				
	l or Histel (A1)		Alaska Colo						hout Hue 5Y	or Redder
	pipedon (A2)			ie Swales (TA				erlying Laye		
	en Sulfide (A4) Park Surface (A12)		Alaska Redo	ox With 2,5Y	Hue		Other	(Explain in F	Remarks)	
	Gleyed (A13)		³ One indicator of	f hydrophylic	vegetation	n, one bi	rimary indicat	or of wetlan	d hydrology.	
	Redox (A14)		and an approp		-					nalic.
1 '	Gleyed Pores (A15)		⁴Give details of o				į		·	
Restrictive	Layer (if present):									
	bedrock									
Depth (ir	nches):9"						Hydric Soll	Present?	Yes	No <u>X</u>
HYDROLO	OGY									
Wetland Hy	drology Indicators	•					Secondary In	dicators (2 d	r more requir	ed)
Primary Ind	icators (any one indi	cator is suffic	ient)		The state of the s		Water-st	ained Leave	s (B9)	
Surface	Water (A1)		_ Inundation Visible	e on Aerial In	nagery (B7	7)	Drainage	Patterns (B	10)	
High W	ater Table (A2)	-	_ Sparsely Vegetal	ted Concave	Surface (E	B8)	Oxidized	Rhizospher	es along Livin	ıg Roots (C3)
1	ion (A3)	-	_ Marl Deposits (B			•		of Reduce	d Iron (C4) .	
<u> </u>	Marks (B1)		_ Hydrogen Sulfide			•	-	osits (C5)		
	ent Deposits (B2)		_ Dry-Season Wat				 -	or Stressed I		
ľ	posits (B3)	_	_ Other (Explain in	Remarks)				hic Position		
i —	at or Crust (B4)							Aquitard (D3	•	
	posits (B5) Soil Cracks (B6)							ographic Re ıtral Test (D		
Field Obser						Γ .		ittai iest (D	<u> </u>	
		Yes N	lo 🔀 Depth (inc	ches):						
Water Table			lo X Depth (inc							
Saturation F			lo <u> </u>			Wetla	nd Hydrolog	y Present?	Yes	No <u>X</u>
(includes ca Describe Re	pillary fringe) ecorded Data (strear	n gauge, mor	nitoring well, serial r	hotos, previo	us insoec	tions), if	available:			
	water follows				1					
Remarks:				-						
					•					
				•						

	·	Borough/Ci		Se Pass Sampling Date: 7.70.13
Applicant/Owner: Keneu Hydro	nu.	******		Sampling Point: DP据 19
Investigator(s): C. Schudel J. Blan				race, hummocks, etc.): <u>depression</u>
Local relief (concave, convex, none):				-
Subregion; Lat	<u>(e1), 4</u>	<u>54029</u>	Lor	ng:149.354706
Soil Map Unit Name:			TT REIMALS	NWI classification: PBI4十554度R
Are climatic / hydrologic conditions on the site typical for this	s time of ye	ar?Yes_	<u>≭_</u> No_	(If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology s	ignificantly	disturbed?	No Are	"Normal Circumstances" present? Yes X No
Are Vegetation, Soil, or Hydrology n	aturally pro	blematic?	No (If ne	eeded, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map sh				k
Hydrophylic Vegetation Present? Yes X N	0	١		
· · · · · · · · · · · · · · · · · · ·	٥		e Sampled	1/
	o	With	in a Wetlar	nd? Yes No No
Remarks:		<u>1</u>		*****
VEGETATION - Use scientific names of plants.	List all s	pecies in	the plot.	
Tree Stratum		Dominant		Dominance Test worksheet:
1. Nove	% Cover	Species?	Stetus	Number of Dominant Species
**************************************				That Are OBL, FACW, or FAC: (A)
2. 3.				Total Number of Dominant
4				Species Across All Strata: (B)
Total Cover				Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
50% of total cover: Sapling/Shrub Stratum	20% o	f total cove	r	Prevalence Index worksheet:
1. Salix barclayı	5		FAC	Total % Cover of: Multiply by:
2. Leolum de cumbens	-	<u> </u>	FACW	.OBL species 12 x1 = 12
3. Empetrm Algam	5.		FAC	FACW species <u>52</u> x2 = <u>104</u>
4. Betila granditisim	7	<u> </u>	FAC	FAC species 19 x3 = 57
5. Pran grava		4	FACU	FACU species 20 x4= 80
6. Androneda polifolia	7	Ÿ	FACW	UPL species <u>0</u> x 5 = <u>0</u>
Total Cover:	51			Column Totals; 103 (A) 253 (B)
50% of total cover: 25.5	20% of	total cover:	10.2	Prevalence Index = B/A = 7,46
Herb Stratum		, i	,-	Hydrophytic Vegetation Indicators:
1. Rubus chamae mons	30	<u> </u>	FACW	★ Dominance Test is >50%
2. Carex disperma 3. Swertha perennis	3_2		FACW	× Prevalence Index is ≤3.0
	3		FACW	Morphological Adaptations ¹ (Provide supporting
5. Equisatum flunatile			FACW	data in Remarks or on a separate sheet)
6. Errophorm chamissons	<u> </u>		OBL	Problematic Hydrophytic Vegetation ¹ (Explain)
7. Agyostis grantea	<u> </u>		OBL TAG	1 Indicators of hydric soil and wetland hydrology must
SULCAREX DAUSIFLORA	2		OBL	be present unless disturbed or problematic.
5. Calamagrostis canadensi	-		FAC	
10.	<u>,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, </u>		1710	
Total Cover:	52			
50% of total cover: 26		total cover:	10.4	
Plot size (radius, or length x width) 201 rad	% Bare G		0	Hydrophytic
•	er of Bryop		90	Vegetation Present? Yes No
Remarks:		chotos	317	76 - 3182 GPS 15
		1,	517	the - 3182 GPS 15

Profile Description: (Describe to the	ne depth needed to document the indica	tor or confirm	n the absence of l	Sampling Point: <u>DP/9</u>
Prome Description: (Describe to the Depth Matrix	Redox Features	01 00111111		
(inches) Color (moist)	% Color (moist) % Tyr	pe ¹ Loc ²	Texture	Remarks
2-0	•		live moss	
			reat	
0-17				
AND THE PROPERTY OF THE PROPER	BUTTERED LANGE LAN			
				•
			-	
		 	<u> </u>	
Type: C=Concentration D=Depletic	on, RM=Reduced Matrix, CS=Covered or C	oated Sand G	rains. ² Locatio	on: PL=Pore Lining, M=Matrix.
dydric Soil Indicators:	Indicators for Problematic Hy	dric Solis³:		
X Histosol or Histel (A1)	Alaska Color Change (TA4	,) ⁴	Alaska Gl	eyed Without Hue 5Y or Redder
Histic Epipedon (A2)	Alaska Alpine Swales (TA5	5)	Underly	ng Layer
Hydrogen Sulfide (A4)	Alaska Redox With 2.5Y H	ue	Other (Ex	plain in Remarks)
Thick Dark Surface (A12)				
Alaska Gleyed (A13)	³ One indicator of hydrophytic v			
Alaska Redox (A14)	and an appropriate landscap		st be present unies	s disturbed of problematic.
Alaska Gleyed Pores (A15)	⁴ Give details of color change in	Remains.		
Restrictive Layer (if present): Type: いいん もいへん				
• •			Undria Call Dr	esent? Yes X No
Depth (inches):	_			
Remarks:				ssenti res no
·			Ayunc son Fi	senti les no
YDROLOGY				ators (2 or more required)
YDROLOGY Wetland Hydrology Indicators:				ators (2 or more required)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one Indicator		agery (B7)	Secondary Indic	ators (2 or more required) ed Leaves (B9)
YDROLOGY Wetland Hydrology Indicators:	r Is sufficient)		Secondary Indic Water-staine Drainage Pa Oxidized Rh	ators (2 or more required) ed Leaves (B9) utterns (B10) izospheres along Living Roots (C3)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one Indicator Surface Water (A1)	r <u>is sufficient)</u> Inundation Visible on Aerial Ima Sparsely Vegetated Concave S Marl Deposits (B15)		Secondary Indic Water-staine Drainage Pa Oxidized Rh	ators (2 or more required) ed Leaves (B9) atterns (B10) izospheres along Living Roots (C3) Reduced Iron (C4)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one Indicator Surface Water (A1) High Water Table (A2)	r <u>is sufficient)</u> Inundation Visible on Aerial Ima Sparsely Vegetated Concave S Marl Deposits (B15) Hydrogen Sulfide Odor (C1)		Secondary Indic Water-staine Drainage Pa Oxidized Rh Presence of Salt Deposit	ators (2 or more required) ed Leaves (B9) atterns (B10) izospheres along Living Roots (C3) Reduced Iron (C4) s (C5)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one Indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	r Is sufficient) Inundation Visible on Aerial Ima Sparsely Vegetated Concave S Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)		Secondary Indic Water-staine Drainage Pa Oxidized Rh Presence of Salt Deposit Stunted or S	ators (2 or more required) ed Leaves (B9) atterns (B10) izospheres along Living Roots (C3) Reduced Iron (C4) s (C5) Stressed Plants (D1)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one Indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	r <u>is sufficient)</u> Inundation Visible on Aerial Ima Sparsely Vegetated Concave S Marl Deposits (B15) Hydrogen Sulfide Odor (C1)		Secondary Indic Water-stains Drainage Pa Oxidized Rh Presence of Salt Deposit Stunted or S K Geomorphic	ators (2 or more required) ad Leaves (B9) atterns (B10) izospheres along Living Roots (C3) Reduced Iron (C4) s (C5) stressed Plants (D1)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one Indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	r Is sufficient) Inundation Visible on Aerial Ima Sparsely Vegetated Concave S Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)		Secondary Indic Water-stains Drainage Pa Oxidized Rh Presence of Salt Deposit Stunted or S Geomorphic	ators (2 or more required) ad Leaves (B9) atterns (B10) izospheres along Living Roots (C3) Reduced Iron (C4) s (C5) stressed Plants (D1) Position (D2)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one Indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	r Is sufficient) Inundation Visible on Aerial Ima Sparsely Vegetated Concave S Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)		Secondary Indic Water-stains Drainage Pa Oxidized Rh Presence of Salt Deposit Stunted or S Geomorphic Shallow Aqu Microtopogr	ators (2 or more required) ad Leaves (B9) atterns (B10) izospheres along Living Roots (C3) Reduced Iron (C4) s (C5) stressed Plants (D1) r Position (D2) aphic Relief (D4)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one Indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6)	r Is sufficient) Inundation Visible on Aerial Ima Sparsely Vegetated Concave S Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)		Secondary Indic Water-stains Drainage Pa Oxidized Rh Presence of Salt Deposit Stunted or S Geomorphic	ators (2 or more required) ad Leaves (B9) atterns (B10) izospheres along Living Roots (C3) Reduced Iron (C4) s (C5) stressed Plants (D1) r Position (D2) aphic Relief (D4)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one Indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6)	r Is sufficient) Inundation Visible on Aerial Ima Sparsely Vegetated Concave S Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks)		Secondary Indic Water-stains Drainage Pa Oxidized Rh Presence of Salt Deposit Stunted or S Geomorphic Shallow Aqu Microtopogr	ators (2 or more required) ad Leaves (B9) atterns (B10) izospheres along Living Roots (C3) Reduced Iron (C4) s (C5) stressed Plants (D1) r Position (D2) aphic Relief (D4)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one Indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Weter Present? Yes	r Is sufficient) Inundation Visible on Aerial Ima Sparsely Vegetated Concave S Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches):		Secondary Indic Water-stains Drainage Pa Oxidized Rh Presence of Salt Deposit Stunted or S Geomorphic Shallow Aqu Microtopogr	ators (2 or more required) ad Leaves (B9) atterns (B10) izospheres along Living Roots (C3) Reduced Iron (C4) s (C5) stressed Plants (D1) r Position (D2) aphic Relief (D4)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one Indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Weter Present? Yes Water Table Present?	r Is sufficient) Inundation Visible on Aerial Ima Sparsely Vegetated Concave S Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches):	Surface (B8)	Secondary Indice Water-stains Drainage Pa Oxidized Rh Presence of Salt Deposit Stunted or S Geomorphic Shallow Aqu Microtopogr FAC-Neutra	ators (2 or more required) ed Leaves (B9) atterns (B10) izospheres along Living Roots (C3) Reduced Iron (C4) s (C5) stressed Plants (D1) e Position (D2) aphic Relief (D4)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one Indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Afgal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Weter Present? Water Table Present? Yes Saturation Present? Yes Situration Present? Yes	r Is sufficient) Inundation Visible on Aerial Ima Sparsely Vegetated Concave S Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches): X No Depth (inches):	Surface (B8)	Secondary Indic Water-stains Drainage Pa Oxidized Rh Presence of Salt Deposit Stunted or S Geomorphic Shallow Aqu Microtopogr FAC-Neutra	ators (2 or more required) ad Leaves (B9) atterns (B10) izospheres along Living Roots (C3) Reduced Iron (C4) s (C5) stressed Plants (D1) Position (D2) aphic Relief (D4) I Test (D5)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one Indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Afgal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Weter Present? Water Table Present? Yes Saturation Present? Yes Situration Present? Yes	r Is sufficient) Inundation Visible on Aerial Ima Sparsely Vegetated Concave S Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches):	Surface (B8)	Secondary Indic Water-stains Drainage Pa Oxidized Rh Presence of Salt Deposit Stunted or S Geomorphic Shallow Aqu Microtopogr FAC-Neutra	ators (2 or more required) ad Leaves (B9) atterns (B10) izospheres along Living Roots (C3) Reduced Iron (C4) s (C5) stressed Plants (D1) Position (D2) aphic Relief (D4) I Test (D5)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one Indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Weter Present? Yes Water Table Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gar	r Is sufficient) Inundation Visible on Aerial Ima Sparsely Vegetated Concave S Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches): X No Depth (inches):	Surface (B8)	Secondary Indic Water-stains Drainage Pa Oxidized Rh Presence of Salt Deposit Stunted or S Geomorphic Shallow Aqu Microtopogr FAC-Neutra	ators (2 or more required) ad Leaves (B9) atterns (B10) izospheres along Living Roots (C3) Reduced Iron (C4) s (C5) stressed Plants (D1) Position (D2) aphic Relief (D4) I Test (D5)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one Indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Afgal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Weter Present? Water Table Present? Yes Saturation Present? Yes Situration Present? Yes	r Is sufficient) Inundation Visible on Aerial Ima Sparsely Vegetated Concave S Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches): X No Depth (inches):	Surface (B8)	Secondary Indic Water-stains Drainage Pa Oxidized Rh Presence of Salt Deposit Stunted or S Geomorphic Shallow Aqu Microtopogr FAC-Neutra	ators (2 or more required) ad Leaves (B9) atterns (B10) izospheres along Living Roots (C3) Reduced Iron (C4) s (C5) stressed Plants (D1) Position (D2) aphic Relief (D4) I Test (D5)

Project/Site: Grant Creek Corndo	Bor	ough/City:	sampling Date: 7.20 - 13
Applicant/Owner: Lengt Hydro			Sampling Bolet DP7
Investigator(s): C-Schudel J. Ble	ink. Lar	ndform (hillside, ter	race hummocks etc.): al noession
Local relief (concave, convex, none): Concave	Sio	ne (%); ()	770000
Subregion:			ng: <u>-149.352.747</u> Datum:
Soil Map Unit Name:			
Are climatic / hydrologic conditions on the site typical for	thic time of year?	Vac X Na	
Are Vegetation, Soil, or Hydrology	_ significantly dist	nipeo / Ma Ate	"Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology SUMMARY OF FINDINGS – Attach site map			
		Thing point locat	ions, transcots, important leadures, etc.
Hydrophytic Vegetation Present? Yes X Hydric Soil Present? Yes X	No	Is the Sampled	
Wetland Hydrology Present?	No	within a Wetla	nd? YesNo
Remarks:			
			•
VEGETATION – Use scientific names of plant	s. List all spe	cies in the plot.	
Tree Stratum	Absolute Do	ominant Indicator	Dominance Test worksheet:
		pecies? Status	Number of Dominant Species That Are ORL FACW or FAC: 2
1			That Are OBL, FACW, or FAC: (A)
2			Total Number of Dominant
3			Species Across All Strata; 2 (B)
Total Cov	er;		Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
50% of total cover:	20% of tot	al cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum	-	*	Total % Cover of: Multiply by:
1. Betula glandulosa	- -2 -	FAC	OBL species 25 x1 = 25
2. led um depumbins	<u>_</u>	FAC	FACW species 25 x2= 50
3. Empetrum nigram		FAC	FAC species 18 x3 = 54
	_ <u>20</u> _	Y FACW	FACU species Q x4= 0
5. Vaccinium uliganisam		FAC	UPL species O x 5 = O
T.1.1.0	24		Column Totals: 68 (A) 129 (B)
Total Cov 50% of total cover: <u></u> <i>O</i>		مانع	
Herb Stratum	20% of tota	i cover:	Prevalence index = B/A = 1, 90
1. Drosera rotuditolia	5	OBL	Hydrophytic Vegetation Indicators:
2. Carex pauciflora	70 -	7 08L	∑ Dominance Test Is >50%
3. Rubus chamaemons	- <u> </u>	FACW	X Prevalence Index is ≤3.0
4			Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
5			Problematic Hydrophytic Vegetation ¹ (Explain)
6			robismatic riyotophiytic vegetation (Expiain)
7			¹ Indicators of hydric soil and wetland hydrology must
8			be present unless disturbed or problematic.
9			
10		,	
Total Cove	ar: 30		
50% of total cover:		cover: 6	
Plot size (radius, or length x width) 201 yaxk.	% Bare Grou		Hydrophytic Vegetation
% Cover of Wetland Bryophytes Total C (Where applicable)			Present? Yes No
Remarks:		\ .	otos \$183 - 318V · 0188
		611	0102 DION DISO

ns. 2Location: PL=Pore Lining, M=Matrix. Alaska Gleyed Without Hue 5Y or Redder
peart ns. ² Location: PL=Pore Lining, M=Matrix.
peart ns. ² Location: PL=Pore Lining, M=Matrix.
ns. ² Location: PL=Pore Lining, M=Matrix.
ns. ² Location: PL=Pore Lining, M=Matrix,
ns. ² Location: PL=Pore Lining, M=Matrix,
ns. ² Location: PL=Pore Lining, M=Matrix,
Alacka Gleved Without Hue 5Y or Redder
·
Underlying Layer
Other (Explain in Remarks)
imary indicator of wetland hydrology,
pe present unless disturbed or problematic.
•
3.2
Hydric Soil Present? Yes No
Secondary Indicators (2 or more required)
Water-stained Leaves (B9)
Drainage Patterns (B10)
 Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4)
Salt Deposits (C5)
Stunted or Stressed Plants (D1)
Geomorphic Position (D2)
Shallow Aquitard (D3)
Microtopographic Relief (D4)
FAC-Neutral Test (D5)
nd Hydrology Present? Yes No
f available:
31.011.0-12.1
)

^ k /		,,,,,,,	סתותול	SIZIN — MI	aska Regii	on			
Project/Site: <u>Grant Creek Coundar</u>		Boroug	gh/City:N	loose Po	281	Samplin	g Date; _	7.20	-1
Applicant/Owner: <u>Kenau Hydro</u>						Samplin	a Daint		
Investigator(s): C. Schudel J. Blank		Landfo	orm (hillside.	. terrace, hu	mmocks etc	· hullsial	g (0,,,t .4	<u> </u>	
Local relief (concave, convex, none):		Slope	(%)· 7-	, 101,7200, 112	irinioona, oto.,). <u> </u>		·	
Subregion:L	at: 60.40	ચોક્સ	9	Long É	-149 20	-164V n	a de conse		
Soil Map Unit Name;	,	×		Long gg	-1- nan	ssification:	atum:	1	
Are climatic / hydrologic conditions on the site typical for t	his time of va	ar2 Vo	no V N		INVVI CIA:	ssincation;	Open	<u> </u>	
Are Vegetation, Soil, or Hydrology	significantly	disturb	2042 Ato	Λ = 2 ¹ λ	(ir no, explain	in Remarks.)			
Are Vegetation, Soil, or Hydrology	, aiginitoantiy	hlamat	י פוז נטטי א פוז נטטי	HIE NOIMAI	i Circumstano	es" present? `	res	_ No _	
SUMMARY OF FINDINGS - Attach site map	showing sa	mplin	ig p o int lo	cations, t	ransects, ir	nportant fea	itures, e	etc.	
Hydrophytic Vegetation Present? Yes	No Y		****			***			
Hydric Soil Present? Yes			Is the Sam	pled Area					
Wetland Hydrology Present? Yes	No X		within a We	etland?		Yes	No <u>_</u> X	<u>`</u>	
Remarks: Point representation		<u> </u>	0	1 }					
Sprice appeared for	D	TYI	potal	Hume	vely p	aperbir	ch, c	onte	
VEGETATION – Use scientific names of plant			- 1- 1-	1 - 1	*				
- 2027A TON - OSE SCIENTIFIC HATTIES OF PIANTS			-						_
Tree Stratum	_% Cover	Spec	nant Indicat les? Statu		nance Test w				
1. Betvla papyrifera	70	<u> </u>	FAC	. I MUNID	er of Domina Are OBL, FAC	nt Species Wor FAC:	独1	(A	۸ .
2. Picea glavea	40	Y	FAC	'() [-27	(^	,
3					Number of Do es Across All		5	(B	Δ :
4.						•		(D,	<i>'</i>
Total Gove				That A	nt of Dominar Are OBL, FAC	nt Species W. or FAC:	Se 2	<u> </u>	/B\
50% of total cover: 3	<u>0</u> 20% of	f total c	over: 12		lence Index v				
1. Arctostaphylus uva. ursi	2		UPL	-	otal % Cover	_	Multiply t	ov:	
2. Men zisia ferriginea	70		<u>- 0F1</u> FAC	— I ∧nı .	pecies ()		= 0	-x	
3. Empetrum nignim	2	-1-	FAC	EACIA	species 10		= 20		
4. Linnarea borealis	3-		FAC	_	pecies3	x 3	_		
5	_ 		<u></u>	FACU		3 x4	= 372	_	
6				1 .			= <u>25</u>		ŀ
Total Cove	r: <u>28</u>			Colum	n Totals:	(A)	42	<u>6</u> (E	3)
50% of total cover:	20% of	total co	over: 5,6	, 	Prevalence inc	dex = B/A = _	2 84		ł
Herb Stratum		.		Hydro		ation Indicato			
1. Pubus chamaemorus	<u>& 10</u>	<u></u> У	_ FACU	<u>~</u>]		t is >50% N/€			
2. Chameron angustifolium 3. Trientalis emopea			_ FACU	<u>′</u>	evalence inde				
4. Licopodium annotinum	- - 2 -		FACL	_ ма	orphological A	daptations ¹ (P	rovide sú	poitrogg	
5. Cornus canadinas	- 3 -		<u> </u>	5	data in Rema	arks or on a se	parate sh	eet)	
6. (point) in berry) -cs		<u>J.</u>		— I — ' ''	oblematic Hyd	trophytic Vege	tation¹ (E	xplain)	
7. Geocaulon lividum	- -	-+-	FAC		lore of budgio	soil and wetlar			
3			· · · · · · · · · · · · · · · · · · ·	be pres	sent unless di	sturbed or prot	iu nyaro: olematic.	ogy must	
3.				-		· · · · · · · · · · · · · · · · · · ·			
10			*	-					
Total Cover	. 23			- [
50% of total cover: 11,5	,	otal cov	ver: 4.6		,				Ì
Plot size (radius, or length x width) 20' rad,	 _ % Bare Gr		P	Hydrop					-
% Cover of Wetland Bryophytes Total Co (Where applicable)			\$ं)	Vegeta Presen	it?	Yes	N∘ <u>×</u>		
Remarks:				<u> </u>					\dashv
Spring.									
ohotus	3191-0	13_			•				

rofile Description: (Describe to the de-	oth needed to document the indicator o	or confirm	the absence of indicators.)
Depth Matrix	Redox Features		·
nches) Color (moist) %	Color (moist) % Type ¹	Loc²	Texture Remarks
Ø)-3			Ive organic
3-13 7.54R4/10 100			Sandy loam + gravel
3-16 10 YR 4/1 100)		couple / bedrackes
			sandy elay
	Militaria		
			<u> </u>
			:
	M=Reduced Matrix, CS=Covered or Coate	d Sand Gra	ains. ² Location: PL=Pore Lining, M=Matrix.
ydric Soll Indicators:	Indicators for Problematic Hydric	Sons:	Marks Clayed Without Hus 5V or Pedder
Histosol or Histel (A1)	Alaska Color Change (TA4) ⁴		Alaska Gleyed Without Hue 5Y or Redder
_ Histic Epipedon (A2)	Alaska Alpine Swales (TA5)		Underlying Layer
Hydrogen Sulfide (A4)	Alaska Redox With 2.5Y Hue		Other (Explain in Remarks)
_ Thick Dark Surface (A12)	30no indicator of hydrophydio yegot	alion one r	primary indicator of wetland hydrology,
_ Alaska Gleyed (A13)	ond on appropriate landscape no	ation, one p eition must	t be present unless disturbed or problematic.
_ Alaska Redox (A14)	*Give details of color change in Rer		to process times distanced or processings.
_ Alaska Gleyed Pores (A15)	Give details of color crisings in tor		T
estrictive Layer (if present):			
			1
Type: bedrock Depth (inches): Remarks: Charcoal In Pit			Hydric Soil Present? Yes No
Depth (inches):			Hydric Soil Present? Yes No
Depth (Inches): 15" Remarks: Charcoal in pit ash			
Depth (inches):			Secondary Indicators (2 or more required)
Depth (inches):	(fficient)		Secondary Indicators (2 or more required) Water-stained Leaves (B9)
Depth (inches):	ifficient) Inundation Visible on Aerial Imager		Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10)
Depth (inches):	ifficient) Inundation Visible on Aerial Imager Sparsely Vegetated Concave Surfa		Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (6
Depth (inches):	ufficient) Inundation Visible on Aerial Imager Sparsely Vegetated Concave Surfa Marl Deposits (B15)		Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (Control of the Presence of Reduced Iron (C4)
Depth (inches):	ifficient) Inundation Visible on Aerial Imager Sparsely Vegetated Concave Surfa Marl Deposits (B15) Hydrogen Sulfide Odor (C1)		Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (CP) Presence of Reduced Iron (C4) Salt Deposits (C5)
Primary Indicators (any one indicator is sue Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	ifficient) Inundation Visible on Aerial Imager Sparsely Vegetated Concave Surfa Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)		Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (CP) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1)
Depth (inches):	ifficient) Inundation Visible on Aerial Imager Sparsely Vegetated Concave Surfa Marl Deposits (B15) Hydrogen Sulfide Odor (C1)		Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (Comparison of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Depth (inches):	ifficient) Inundation Visible on Aerial Imager Sparsely Vegetated Concave Surfa Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)		Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (Comparison of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3)
Depth (inches):	ifficient) Inundation Visible on Aerial Imager Sparsely Vegetated Concave Surfa Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)		Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Permarks: Charcoal In Pitary Primary Indicators (any one indicator is surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6)	ifficient) Inundation Visible on Aerial Imager Sparsely Vegetated Concave Surfa Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)		Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (Comparison of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3)
Depth (inches):	ifficient) Inundation Visible on Aerial Imager Sparsely Vegetated Concave Surfa Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks)	ce (B8)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Pepth (inches):	ifficient) Inundation Visible on Aerial Imager Sparsely Vegetated Concave Surfa Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches):	ce (B8)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Depth (inches):	Ifficient) Inundation Visible on Aerial Imager Sparsely Vegetated Concave Surfa Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches):	ce (B8)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Depth (inches):	Inflicient) Inundation Visible on Aerial Imager Sparsely Vegetated Concave Surfa Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No X Depth (inches): No X Depth (inches):	ce (B8)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Depth (inches):	Ifficient) Inundation Visible on Aerial Imager Sparsely Vegetated Concave Surfa Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches):	ce (B8)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Depth (inches):	Inflicient) Inundation Visible on Aerial Imager Sparsely Vegetated Concave Surfa Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No X Depth (inches): No X Depth (inches):	ce (B8)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)

WETLAND DE	TERMINATION DATA	FORM - A	Alaska	Region
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				vi – Aiaska n	•		
Project/Site: Grant Creek Corndor	Boro	ough/Cit	v: Mo	nse Pass		Sampling Date:	7-20-1
Applicant/Owner: C. Schude J. Blank <	<u> </u>	·				Sampling Point:	
Investigator(s): Keney Hydro 4	Land	dform (h	illside, teri		etc):	de Pression	1
Local relief (concave, convex, none):)e (%): _				(Upper ev	
Subregion: Lat:							,
Soil Map Unit Name:		3.17				Batum tion: 	156-5
Are climatic / hydrologic conditions on the site typical for this tin	ne of year?	Yes `	X No	(If no ex	nlain in Re	marke)	
Are Vegetation, Soil', or Hydrology signi	ificantly distu	irbed? /				esent? Yes <u>×</u>	P551/
Are Vegetation, Soil, or Hydrology natur				eeded, explain a			NO
SUMMARY OF FINDINGS – Attach site map show	nny sampi	iing po	nrit locat	ions, transec	ts, import	ant features,	etc.
Hydrophytic Vegetation Present? Yes X No _		in the	. Complet				-
Hydric Soil Present? Yes No			s Sampled n a Wetlar		V	Y	
Wetland Hydrology Present? Yes No		1				X No	
Remarks: Herbacions- S/B weten	nd w	1/00	uu :	stantil	5.DV.	111. 2-0	
<u> </u>			·				-d
VEGETATION - Use scientific names of plants. Li	st all spec	cies in	the plot.				V.,
Tree Stratum	bsolute Dor	minant	Indicator	Dominance T	est worksh	ieet:	
1. Picea glanca	Cover Sp	<u>ecies?</u> \/	Status	Number of Do	miлant Spe	cies 7	
2.	₩		FACU	That Are OBL,	FACW, or	FAC: 3	(A)
3.			***	Total Number	of Dominan	at .	
4				Species Acros	s All Strata:	4	(B)
Total Cover;	 15			Percent of Dor	ninant Spec	cles FAC: 75	
50% of total cover: 70,5		al cover:	3 . :	That Are OBL,			(A/B)
Sapling/Shrub Stratum		-		Prevalence In			
1. Betla glandulosa 2. Salix Barclayi 3	<u>5</u>	 -	FAC_	Total % Co		Multiply	
2. Saix bardayi	<u> </u>	 	FAC	FACW species	-		
3			<u> </u>	FAC species			
4				FACU species	-	^0- <u>-!マ・</u> x4=_b4	
5				UPL species		x5= <u>_0</u>	Ci comm
Total Cover:	35			Column Totals:		(A) <u>29</u>	(B)
50% of total cover: 17.5	20% of total	cover.	7				
Herb Stratum						B/A = 2.44	······································
- // · · · · · · · · · · · · · · · · · ·	<u> </u>	<u> -</u>	0BL	Hydrophytic V Number 2			
2. Chamerion angustifica	<u> </u>		FALU	X Prevalence			
3. Sanguisocha Canadusis	<u>5</u>		FACW			tions ^f (Provide s	Innodine
4. Publs chamaemorus	2	, 	ACW	data in	Remarks or	on a separate s	heet)
6. Canex canescens	20 		FAL	Problemati	c Hydrophy	tic Vegetation¹ (f	Explain)
7. Carex loliacea	<u> </u>		ACW	I ladlantara at L			
8. Calamagrostis cunadensis			0BL	be present unle	yonc son ar ss disturbe	nd wetland hydro d or problematic.	logy must
9.	<u> </u>	1 7	FAC.				
10							
Total Cover: U	9						Į
- · · · - · · · · · · · · · · · · · · ·	20% of total o	cover: 1	13.8				ĺ
	Bare Ground			Hydrophytic Vocatation			
% Cover of Wetland Bryophytes Total Cover of				Vegetation Present?	Yes	X No	
(Where applicable)							
Remarks: Collected Soulix Sp.							
plane 21a	15 0 A	au					ľ
photos 819	<u>v-51</u>	LIX			· · · · · · · · · · · · · · · · · · ·		

OIL rofile Description: (Describe	to the denth ne	eded to document the in	dicator or confi	irm the absence of i	naicators.)
	to the deport	Redox Features			
epth <u>Matrix</u> nches) <u>Color (moist)</u>	% C	olor (moist)%		Texture	Remarks
No PI	<u>'T</u>				
standi	ng wate	r in plot			
	O	1		<u> </u>	

Type: C=Concentration, D=De	nletion RM=Red	uced Matrix. CS=Covered	or Coated Sand	Grains. ² Locati	on: PL=Pore Lining, M=Matrix.
lydric Soil Indicators:	piction, run ruu	indicators for Problemat	ic Hydric Soils ³	:	
Histosol or Histel (A1)		Alaska Color Change	(TA4)⁴		eyed Without Hue 5Y or Redder
Histic Epipedon (A2)		Alaska Alpine Swales	(TA5)		ing Layer
Hydrogen Sulfide (A4)		Alaska Redox With 2.	5Y Hue	Other (Ex	plain in Remarks)
Thick Dark Surface (A12)		_			. č (S d. E.) donahamu
Alaska Gleyed (A13)		One indicator of hydrophy	tic vegetation, o	ne primary indicator	of Wetland hydrology,
Alaska Redox (A14)				nust be present untes	s disturbed or problematic.
Alaska Gleyed Pores (A15		Give details of color chan	ge in Remarks.		
Restrictive Layer (if present):					
Type:		unascommet		Undric Soil Pr	esent? Yes X No
Type: Depth (iriches): Remarks:				Hydric Soil Pa	esent? Yes X No
Depth (iriches):Remarks:				Hydric Soil Pr	resent? Yes X No
Depth (inches):Remarks:					
Depth (inches):Remarks: YDROLOGY Wetland Hydrology Indicator	s;			Secondary India	cators (2 or more required)
Depth (inches):Remarks: YDROLOGY Wetland Hydrology Indicator Primary Indicators (any one inc	s: licator is sufficier	nt)	al Impress (87)	Secondary India	cators (2 or more required) led Leaves (B9)
Depth (inches):Remarks: YDROLOGY Wetland Hydrology Indicator Primary Indicators (any one inc	s: licator is sufficier	nt) Inundation Visible on Aeri		Secondary India Water-stain Drainage P	cators (2 or more required) led Leaves (B9) latterns (B10)
Depth (inches): Remarks: YDROLOGY Wetland Hydrology Indicator Primary Indicators (any one inc X Surface Water (A1) X High Water Table (A2)	s; licator is sufficier	nt) Inundation Visible on Aeri Sparsely Vegetated Conc		Secondary India Water-stain Drainage P Oxidized R	cators (2 or more required) led Leaves (B9)
Depth (inches): PDROLOGY Wetland Hydrology Indicator Primary Indicators (any one inc Surface Water (A1) High Water Table (A2) Saturation (A3)	s: licator is sufficier	nt) Inundation Visible on Aeri Sparsely Vegetated Conc Marl Deposits (B15)	ave Surface (B8)	Secondary India Water-stain Drainage P Oxidized R	cators (2 or more required) led Leaves (B9) latterns (B10) hizospheres along Living Roots (C of Reduced Iron (C4)
Depth (inches): PDROLOGY Welland Hydrology Indicator Primary Indicators (any one inc Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	s: licator is sufficier	nt) Inundation Visible on Aeri Sparsely Vegetated Conc Marl Deposits (B15) Hydrogen Sulfide Odor (C	ave Surface (B8)	Secondary India Water-stain Drainage P Oxidized R Presence c Salt Depos	cators (2 or more required) led Leaves (B9) latterns (B10) hizospheres along Living Roots (C of Reduced Iron (C4)
Depth (inches):	s: licator is sufficier	nt) Inundation Visible on Aeri Sparsely Vegetated Conc Marl Deposits (B15) Hydrogen Sulfide Odor (C Dry-Season Water Table	ave Surface (B8) (C2)	Secondary India Water-stain Drainage P Oxidized R Presence c Salt Depos	cators (2 or more required) led Leaves (B9) latterns (B10) hizospheres along Living Roots (C: of Reduced Iron (C4) lits (C5)
Depth (inches):	s: licator is sufficier	nt) Inundation Visible on Aeri Sparsely Vegetated Conc Marl Deposits (B15) Hydrogen Sulfide Odor (C	ave Surface (B8) (C2)	Secondary Indic Water-stain Drainage P Oxidized R Presence of Salt Depos Stunted or Geomorph Shallow Ac	cators (2 or more required) led Leaves (B9) latterns (B10) hizospheres along Living Roots (Ci of Reduced Iron (C4) lits (C5) Stressed Plants (D1) lic Position (D2) pultard (D3)
Depth (inches):	s: licator is sufficier	nt) Inundation Visible on Aeri Sparsely Vegetated Conc Marl Deposits (B15) Hydrogen Sulfide Odor (C Dry-Season Water Table	ave Surface (B8) (C2)	Secondary India Water-stain Drainage P Oxidized R Presence of Salt Depose Stunted or Geomorph Shallow Ad	cators (2 or more required) led Leaves (B9) latterns (B10) hizospheres along Living Roots (C: of Reduced Iron (C4) lits (C5) Stressed Plants (D1) lic Position (D2) lultard (D3) Iraphic Relief (D4)
Depth (inches):	s: licator is sufficier	nt) Inundation Visible on Aeri Sparsely Vegetated Conc Marl Deposits (B15) Hydrogen Sulfide Odor (C Dry-Season Water Table	ave Surface (B8) (C2)	Secondary India Water-stain Drainage P Oxidized R Presence of Salt Depose Stunted or Geomorph Shallow Ad	cators (2 or more required) led Leaves (B9) latterns (B10) hizospheres along Living Roots (Ci of Reduced Iron (C4) lits (C5) Stressed Plants (D1) lic Position (D2) pultard (D3)
Depth (inches):	s: licator is sufficier	nt) Inundation Visible on Aeri Sparsely Vegetated Conc Marl Deposits (B15) Hydrogen Sulfide Odor (C Dry-Season Water Table	ave Surface (B8) (C2)	Secondary India Water-stain Drainage P Oxidized R Presence of Salt Depose Stunted or Geomorph Shallow Ad	cators (2 or more required) led Leaves (B9) latterns (B10) hizospheres along Living Roots (C: of Reduced Iron (C4) lits (C5) Stressed Plants (D1) lic Position (D2) lultard (D3) Iraphic Relief (D4)
Depth (inches):	s; licator is sufficier	It) Inundation Visible on Aeri Sparsely Vegetated Conc Marl Deposits (B15) Hydrogen Sulfide Odor (O Dry-Season Water Table Other (Explain in Remark	ave Surface (88) (1) (C2) (S)	Secondary India Water-stain Drainage P Oxidized R Presence of Salt Depose Stunted or Geomorph Shallow Ad	cators (2 or more required) led Leaves (B9) latterns (B10) hizospheres along Living Roots (C: of Reduced Iron (C4) lits (C5) Stressed Plants (D1) lic Position (D2) lultard (D3) Iraphic Relief (D4)
Depth (inches):	s: licator is sufficier Yes X No	Inundation Visible on Aeri Sparsely Vegetated Conc Mari Deposits (B15) Hydrogen Sulfide Odor (C Dry-Season Water Table Other (Explain in Remark	21) (C2) s)	Secondary India Water-stain Drainage P Oxidized R Presence of Salt Depos Stunted or Geomorph Shallow Ac Microtopog FAC-Neutr	cators (2 or more required) led Leaves (B9) latterns (B10) hizospheres along Living Roots (Ci of Reduced Iron (C4) lits (C5) Stressed Plants (D1) lic Position (D2) luttard (D3) liraphic Relief (D4) at Test (D5)
Depth (inches):	s: licator is sufficier Yes No Yes No Yes No	nt) Inundation Visible on Aeri Sparsely Vegetated Conc Marl Deposits (B15) Hydrogen Sulfide Odor (C Dry-Season Water Table Other (Explain in Remark Depth (inches): Depth (inches): Depth (inches):	(C2) s)	Secondary Indic Water-stain Drainage P Oxidized R Presence of Salt Depos Stunted or Geomorph Shallow Ac Microtopog FAC-Neutr	cators (2 or more required) led Leaves (B9) latterns (B10) hizospheres along Living Roots (C: of Reduced Iron (C4) lits (C5) Stressed Plants (D1) lic Position (D2) lultard (D3) Iraphic Relief (D4)
Depth (inches):	s: licator is sufficier Yes No Yes No Yes No	nt) Inundation Visible on Aeri Sparsely Vegetated Conc Marl Deposits (B15) Hydrogen Sulfide Odor (C Dry-Season Water Table Other (Explain in Remark Depth (inches): Depth (inches): Depth (inches):	(C2) s)	Secondary Indic Water-stain Drainage P Oxidized R Presence of Salt Depos Stunted or Geomorph Shallow Ac Microtopog FAC-Neutr	cators (2 or more required) led Leaves (B9) latterns (B10) hizospheres along Living Roots (Ci of Reduced Iron (C4) lits (C5) Stressed Plants (D1) lic Position (D2) luttard (D3) liraphic Relief (D4) at Test (D5)
Depth (inches):	s: licator is sufficier Yes No Yes No Yes No	nt) Inundation Visible on Aeri Sparsely Vegetated Conc Marl Deposits (B15) Hydrogen Sulfide Odor (C Dry-Season Water Table Other (Explain in Remark Depth (inches): Depth (inches): Depth (inches):	(C2) s)	Secondary Indic Water-stain Drainage P Oxidized R Presence of Salt Depos Stunted or Geomorph Shallow Ac Microtopog FAC-Neutr	cators (2 or more required) led Leaves (B9) latterns (B10) hizospheres along Living Roots (Ci of Reduced Iron (C4) lits (C5) Stressed Plants (D1) lic Position (D2) luttard (D3) liraphic Relief (D4) at Test (D5)

	_
Project/Site: Grant Geek Corndor Borough/City. Mon	Se Pass Sampling Date: 7-21-13
Applicant/Owner: Kenau Hydro	Sampling Point: Anglepsint
Investigator(s): C. Schudel J. Blank Landform (hillside, terr	race, hummocks, etc.); his hount between DP
Local relief (concave, convex, none): 60() UEX Slope (%): 6	stream channels
Subregion: Lat: 60, 457146 Loi	ng:149, 362 846 Datum;
Soil Map Unit Name:	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X_ No _	(If no, explain in Remarks.) upland wos
Are Vegetation, Soil, or Hydrology significantly disturbed? No Are	
Are Vegetation, Soil, or Hydrology naturally problematic? No (If no	eeded, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sampling point locat	
Hydrophytic Vegetation Present?	
I stille Sampled	
vveiland mydrology Present? Yes No	nd? YesNo
Remarks: photos: 3:225 - 3:228 This is a pt. to hel	, , , , , , , , , , , , , , , , , , , ,
+ topo low aread in a complex vip	
VEGETATION – Use scientific names of plants. List all species in the plot.	•
Absolute Dominant Indicator Tree Stratum Absolute Dominant Indicator Cover Species? Status	Dominance Test worksheet:
1. Rotula papy Fifera 1520 Y FACU	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2.	
3.	Total Number of Dominant Species Across All Strata: (B)
4	Percent of Dominant Species 22
Total Cover: 20	That Are OBL, FACW, or FAC: 33 (A/B)
50% of total cover: 10 20% of total cover: 4	Prevalence Index worksheet:
1. Picea stauca 5 FACU	Total % Cover of: Multiply by:
2. Vibran edile 5 FACU	OBL species 0 x1 = 0
3. Rosa acicularis \$ 10 Y FACU.	FACW species O x2 = O
4. Rubus Ideneus \$10 y wee	FAC species 15 x3 = 45
5	FACU species 90 $x4 = 360$ UPL species 0 $x5 = 0$
8 6	1000 100
Total Cover: <u>30</u>	()
50% of total cover: 15 20% of total cover: 6	Prevalence Index = B/A = 3.80
1. Heradeum maximum 20 Y FACU	Hydrophytic Vegetation Indicators:
2. Chamerion angustifolia 5 FACU	_ Dominance Test is >50% yes for topo hor
3. Cornus canadensis 3 FACU	Prevalence Index is ≤3.0 No for topol
4. Equisition arvense 7 Y FAC	Morphological Adaptations¹ (Provide supporting label data in Remarks or on a separate sheet)
5. Geranium erianthum 3 FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
6. Chymnocarpium divoptens 3 FACU	1
7. Dryophris expansa 3 FACU	Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
& Agrostis gigantea Cali canadensis 7 Y FAC 9. Streptops amplexifallus 3 FACU	<u> </u>
10. Aconitum delphinii folium FAC	* No for topo highs, but
Total Cover:	yes for topo lows
50% of total cover: 27,6 20% of total cover: 11	
Plot size (radius, or length x width) 15' rad, % Bare Ground O	Hydrophytic Vegetation
% Cover of Wetland Bryophytes Total Cover of Bryophytes 10 (Where applicable)	Present? Yes No No
	minate, other species are sim. to
1000	tos (10W): 3229
· '	٠. ٠
US Army Corps of Engineers Pro	105 (Myh): 3225-28 Alaska Version 2.0
11	

SOIL		Sampling Point: DP23
Profile Description: (Describe	to the depth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix (inches) Color (moist)	Redox Features Color (moist) % Type 1	
0-14		organics: bark, nots, obligs
		Charletto Sittinguardus
1111		small cobble + gravel
14 1		Smay cook i gravec
	,	
Type: C=Concentration D=Den	letion, RM=Reduced Matrix, CS=Covered or Coated	Sand Grains. ² Location: PL=Pore Lining, M=Matrix.
Hydric Soll Indicators:	Indicators for Problematic Hydric S	Solls ³ :
Histosol or Histel (A1)	∴ Alaska Color Change (TA4)⁴	Alaska Gleyed Without Hue 5Y or Redder
Histic Epipedon (A2)	Alaska Alpine Swales (TA5)	Underlying Layer
Hydrogen Sulfide (A4)	Alaska Redox With 2,5Y Hue	🔀 Other (Explain in Remarks)
Thick Dark Surface (A12)	30-1-41-41-4	In the primary indicator of welland hydrology
Alaska Gleyed (A13)		Ion, one primary indicator of wetland hydrology, ition must be present unless disturbed or problematic.
Alaska Redox (A14) Alaska Gleyed Pores (A15)	Give details of color change in Rema	·
Restrictive Layer (if present):		
Type:		, and the second
Depth (inches):	•	Hydric Soil Present? Yes X No
Soils are problem active flood ple some areas w	gin area between two char / little to no organic above	nnels e gravel, this pit had more (14")
HYDROLOGY		·.
Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (any one indic	ator is sufficient)	Water-stained Leaves (B9)
Surface Water (A1)	Inundation Visible on Aerial Imagery (
High Water Table (A2)	Sparsely Vegetated Concave Surface	
★ 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) X Geomorphic Position (D2)
Drift Deposits (B3)	Other (Explain in Remarks)	Shallow Aquitard (D3)
Algal Mat or Crust (B4)	,	Microtopographic Relief (D4)
Iron Deposits (B5) Surface Soil Cracks (B6)		FAC-Neutral Test (D5)
Field Observations:	<u> </u>	
	/es No Depth (inches):	
Danie	Yes No Depth (inches):	
Saturation Present? Y	res No Depth (inches):	Wetland Hydrology Present? Yes X No
Describe Recorded Data (stream	n gauge, monitoring well, aerial photos, previous insp	pections), if available:
Remarks:		
yu-hydro	present for topo lon	s areas
, , , , , , , , , , , , , , , , , , ,		1.5.1.25.464

·	The second secon
Project/Site: CIVAN+ Creek Collidor B	Borough/City: MODSE PASS Sampling Date: 7.27-13
Applicant/Owner: Venas Hydro	Sampling Point: DP 24
	andform (hillside, terrace, hummocks, etc.): <u>APANAN</u>
	Slope (%): 3
Subregion: Lat: 60, 45	
	NWI classification: PEM/55TC 95
	r? Yes X No (if no, explain in Remarks.) Woland Wo
Are Vegetation, Soil, or Hydrology significantly di	isturbed? No Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil* or Hydrology naturally probl	lematic? (if needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing same	·
Hydrophylic Vegetalion Present? Yes X No	
Hydric Soil Present? Yes X No	Is the Sampled Area
Wetland Hydrology Present? Yes No	within a Wetland? Yes No
Remarks: pt. tuhan at backwater edi	1 to document 150 y 7 med wetrand
upland viparian mosais of	alder / co Hornwood - Sprace.
VEGETATION - Use scientific names of plants. List all sp	
Absolute (Dominant Indicator Dominance Test worksheet:
Tree Stratum % Cover	Species? Status Number of Dominant Species ?
1. None	That Are OBL, FACW, or FAC: (A)
3.	Total Number of Dominant Species Across All Strata: 3 (B)
4.	(b)
Total Cover:	Percent of Dominant Species That Are OBL FACW of FAC: 100
50% of total cover: 20% of t	[[AD]
Sapling/Shrub Stratum 1. Alous Viriolis 20	Total 9/ Cover of Multi-table
1. Alnus Viridis 20 2. Salix commutata 50	FRC ON apprior D
2. Suix Willingular 50	FACW species 0 x1 = 0
4	FAC species 126 x3 = 378
5	FACU species x4=
6.	UPL species O x 5 = O
Total Cover: 70	Соlumл Totals: <u>127</u> (A) <u>382</u> (B)
50% of total cover: 35 20% of to	otal cover: 14 Prevalence index = B/A = 3.01
WB Agrostis grantea Cal canadensis 50	Hydrophytic Vegetation Indicators:
2. Aconiton delphinufolium 1	FAC \(\times \) Dominance Test is >50%
3. Athyrium Felix-femina 5	FAC — Prevalence Index is ≤3.0
4. Aguilegia formosa (columbine)	Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
5	Problematic Hydrophytic Vegetation¹ (Explain)
6	
7	Indicators of hydric soil and wetland hydrology must
8.	be present unless disturbed or problematic.
9	
10	
50% of total cover: 28.5 20% of to	stel covery 11 /4
Plot size (radius, or length x width) 5' Yach. % Bare Gro	Hydrophytic
% Cover of Wetland Bryophytes Total Cover of Bryophy	, Togotation
(Where applicable)	
Remarks: high topo areas: Box Popu.	bals., Alnu. virid., + opio. horr dominate
Estimated 10% wetlands + 90%, unlan	
in mesare	VVW103 [15"111
IS Army Corne of Engineers	

TO THE PERSON OF	depth needed to document the indicator or confin	Sampling Point: DPZ4
·	Redox Features	in the appearance of interesting
Depth <u>Matrix</u> inches) <u>Color (moist) %</u>		Texture Remarks
Hericay Color Timeson		-
No pi	+	
	y Maino whater in	allt - international
Stanal	ng + Flowing white in	olst - in topo Pomiarus
NAME OF THE PARTY		lager comple of small
MORE-COMMUNICATION ADMICOSCOPINS		boulders in creek bad
Type: C=Concentration, D=Depletion,	RM=Reduced Matrix, CS=Covered or Coated Sand C	Grains. ² Location: PL=Pore Lining, M=Matrix.
ydric Soll Indicators:	Indicators for Problematic Hydric Solls*:	
Histosol or Histel (A1)	Alaska Color Change (TA4) ⁴	Alaska Gleyed Without Hue 5Y or Redder
Histic Epipedon (A2)	Alaska Alpine Swales (TA5)	Underlying Layer
Hydrogen Sulfide (A4)	Alaska Redox With 2.5Y Hue	Other (Explain in Remarks)
Thick Dark Surface (A12)	1	the state of the s
Alaska Gleyed (A13)	³ One indicator of hydrophytic vegetation, one	
Alaska Redox (A14)		st be present unless disturbed or problematic.
Alaska Gleyed Pores (A15)	⁴ Give details of color change in Remarks.	
testrictive Layer (if present):		
Type:		V
Depth (inches):		Hydric Soil Present? Yes X No
	•	
	•	
YDROLOGY	·	
Vetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Netland Hydrology Indicators: Primary Indicators (any one indicator is		Water-stained Leaves (B9)
Wetland Hydrology Indicators:	Inundation Visible on Aerial Imagery (B7)	Water-stained Leaves (B9) Drainage Patterns (B10)
Vetland Hydrology Indicators: Primary Indicators (any one indicator is ✓ Surface Water (A1) ✓ High Water Table (A2)	 Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) 	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3)
Vetland Hydrology Indicators: Primary Indicators (any one indicator is X Surface Water (A1)	 Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) 	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4)
Vetland Hydrology Indicators: Primary Indicators (any one indicator is ✓ Surface Water (A1) ✓ High Water Table (A2)	Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1)	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5)
Vetland Hydrology Indicators: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	 Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) 	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1)
Vetland Hydrology Indicators: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1)	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Vetland Hydrology Indicators: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	 Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) 	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3)
Vetland Hydrology Indicators: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	 Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) 	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Wetland Hydrology Indicators: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	 Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) 	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3)
Vetland Hydrology Indicators: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6)	Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks)	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Vetland Hydrology Indicators: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Yes	Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks)	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Wetland Hydrology Indicators: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Yes	Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks)	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Vetland Hydrology Indicators: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Ves Saturation Present? Yes Saturation Present?	Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) X	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Wetland Hydrology Indicators: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Yes Saturation Present? Yes Vincludes capillary fringe)	Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks)	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Yes Saturation Present? Yes (Includes capillary fringe) Describe Recorded Data (stream gauge)	Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) X	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) otland Hydrology Present? Yes X No
Wetland Hydrology Indicators: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Yes Saturation Present? Yes Cincludes capillary fringe) Describe Recorded Data (stream gauge	Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) X	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) otland Hydrology Present? Yes X No
Vetland Hydrology Indicators: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Ves Saturation Present? Yes Includes capillary fringe) Describe Recorded Data (stream gaug	Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) X No Depth (inches): X No Depth (i	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3 Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) potland Hydrology Present? Yes No
Vetland Hydrology Indicators: Irimary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Ves Saturation Present? Ves Includes capillary fringe) Describe Recorded Data (stream gauge) Remarks: Pot 15 on edg Remarks: Pot 2 edg Pot 2 edg Pot 2 edg Pot 2 edg Pot 3 edg Pot 4 edg Po	Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) X No Depth (inches): X No Depth (i	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3 Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) potland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Water Table Present? Yes Includes capillary fringe) Describe Recorded Data (stream gaug	Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) X No Depth (inches): X No Depth (i	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)

Project/Site: Chant Creek Coundar	Boro	uah/Citv: /	Marse Paiss	Sampling Date: 7.7.2.1
Applicant/Owner: Keylal Hyaro				0 " - " 102 5
Investigator(s): C.Schudel J. Blan	k land	Iform /hillstale		_ Sampling Point:S
Local relief (concave, convex, none):	Land	nom (milside	, terrace, nummocks, etc.): _	riparian
Subregion:	Stope	e (%):		eli pression
	: <u>00. 451</u>	640	Long: 149.36216	2 Datum:
Soil Map Unit Name:			NWI classi	fication: PEW/SSIC
Are climatic / hydrologic conditions on the site typical for this	s time of year?	′es <u> </u>	No (If no, explain in	Remarks.) アタル) ム
Are Vegetation, Soil, or Hydrology s	ignificantly distu	rbed? No.,	Are "Normal Circumstances'	¹present? Yes_★ No
Are Vegetation, Soil or Hydrology n	aturally problem	atic? No	(If needed, explain any answ	vers in Remarks.)
SUMMARY OF FINDINGS – Attach site map sh	owing sampl	ing point lo	cations, transects, imp	ortant features, etc.
Hydrophytic Vegetation Present? Yes X No		1.44		
Hydric Soil Present? Yes X No	D	Is the Sam		
Wetland Hydrology Present? Yes X No	1	within a W		es_X No
Remarks: pt represents low his	my avec	NS D. C	um fragues &	2 (/ 2)
Imil ork on N. side of to	Comme	س و ساده	1 and a second	6 Grant Core +
VEGETATION – Use scientific names of plants.	list all as a si	23VT 112Y	<u>les Pladantella</u>	
12321771011 - Ode acientine harries of plants.				
Tree Stratum	Absolute Don % Cover Spe	ninant Indical	ie	
1. None	<u> </u>	JOIGGE GIGGE	Manuel of Dollangut	
2			That Are OBL, FACW	, or FAC: (A)
3.			Total Number of Domi	inant 3
4.			Species Across All Str	rata:(B)
Total Cover:			Percent of Dominant S That Are OBL, FACW,	Species /00 (A/B)
50% of total cover: Sapling/Shrub Stratum	20% of total	cover:	Prevalence Index wo	
	- \		Total % Cover of:	
		1 - tAC	→ """	Multiply by: x 1 = <u>10</u>
2. Salix commutata		L FA		x2=_6
J			l l	x2= <u></u>
4			FACU species 2	
5				x 4 = <u>a</u> x 5 = <u>O</u>
0			Column Totale:	
Total Cover;		_	Coldinii Totals. 73	(A) <u>204</u> (B)
50% of total cover: 5	20% of total of	cover: 2	Prevalence Index	(=B/A= 2.92
1. Sanguisorba canadensis	3	FACI	Hydrophytic Vegetati	on Indicators:
2. Equise turn arrense	<u>\$ 10</u>		— A Dominonaa T4!-	s >50%
3. Carex sitchensis (aguatilis spp.)	10	<u>FAC</u>	Prevalence Index i	
4. Agrosto stoloritera		<u>08L</u>	Morphological Ada	ptations1 (Provide supporting
5. Streptopus amplexifolius	2		— data in Remark	s or on a separate sheet)
		FACI		phytic Vegetation¹ (Explain)
6. <u>Calamagnishs canadinsis</u> 7.	每少0	1 FAC		-
	***		be present unless distu	il and wetland hydrology must
8		— —	- Procent diness dista	Toed of problematic.
44			_ [
10		<u> </u>	_	
Total Cover:	<u> 10 5 </u>	.7		
50% of total cover: 32.5			Hydrophytic	
Plot size (radius, or length x width) 20' rad.	% Bare Ground	W opin	y Vegetation	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
% Cover of Wetland Bryophytes Total Cove (Where applicable)	r of Bryophytes	10		s No
Remarks:		·		
pepolos 129-13/ 132				

)epth	ription: (Describe <u>Matrix</u>		Redox	<u> Features</u>	- T		Taskins	Remarks
nches)	Color (moist)	<u> %</u>	Color (moist)	%	<u>Type'</u>	_Loc [~] _	<u>Texture</u>	Remarks
	8120	<u></u>	- MERCHANIA			B		
	Nob	<u> </u>		7101				
	stan	ding.	Water in	P10T				<u></u>
		U						Martin Commission Comm
			.,,					
	Try and try							
					. 		20 - 10-	n: PL=Pore Lining, M=Matrix.
		pletion, RM	Reduced Malrix, CS Indicators for P	:=Covered	i or Coate ic Hydric	ed Sand Gr Solls³:	rains. Location	1: PE=Pore Lining, Wi-Wattx.
•	Indicators:		Alaska Colo				Alaska Gle	yed Without Hue 5Y or Redder
	or Histel (A1) pipedon (A2)		Alaska Olio				Underlyin	
	en Sulfide (A4)		Alaska Red				Other (Exp	lain in Remarks)
	ark Surface (A12)	-						
	Gleyed (A13)		³ One indicator o	f hydrophy	ylic veget	ation, one	primary indicator of	wetland hydrology,
Alaska l	Redox (A14)						st be present unless	disturbed or problematic.
Alaska	Gleyed Pores (A15)		⁴ Give details of	color chan	ige In Rei	narks.		
	Layer (if present):							
							Undria Sall Dra	cont? Yes X No
	iches):			(Annual Control of the Control of th			Hydric Soll Pre	sent? Yes X No
Depth (in							Hydric Soll Pre	sent? Yes <u>X</u> No
Depth (in Remarks: YDROLO	oches):							
Depth (in Remarks: YDROLC Wetland Hy	oches): OGY vdrology Indicator	5;					Secondary Indica	tors (2 or more required)
Depth (in Remarks: YDROLC Wetland Hy Primary Ind	OGY /drology indicators icators (any one ind	5;	ficient)			(P7)	Secondary Indica Water-staine	tors (2 or more required) d Leaves (B9)
Depth (in Remarks: YDROLO Wetland Hy Primary Ind X Surface	OGY refrology indicators icators (any one indicators (A1)	5;	ficient)	le on Aeri	al Imager	y (B7)	Secondary Indica Water-staine Drainage Pai	tors (2 or more required) d Leaves (B9) terns (B10)
Depth (In Remarks: YDROLO Wetland Hy Primary Ind X Surface High W	OGY /drology Indicators icators (any one indicators (A1) later Table (A2)	5;	ficient) Inundation Visib Sparsely Vegeta	ated Conc	al Imager ave Surfa	y (B7) ace (B8)	Secondary Indica Water-staine Drainage Pai Oxidized Rhi	tors (2 or more required) d Leaves (B9) terns (B10) zospheres along Living Roots (C3
Depth (In Remarks: YDROLO Wetland Hy Primary Ind X Surface High W X Saturat	OGY refrology indicators icators (any one ind a Water (A1) later Table (A2) lon (A3)	5;	ficient) inundation Visib Sparsely Vegeta Marl Deposits (E	ated Conc 315)	ave Surfa	y (B7) ice (B8)	Secondary Indica Water-staine Drainage Pai Oxidized Rhi	tors (2 or more required) d Leaves (B9) terns (B10) zospheres along Living Roots (C3 Reduced fron (C4)
Depth (In Remarks: YDROLO Wetland Hy Primary Ind X Surface High W X Saturat Water I	OGY verology indicators icators (any one indicator (A1) later Table (A2) lon (A3) Marks (B1)	5;	ficient) Inundation Visib Sparsely Vegeta	ated Conc 315) le Odor (C	ave Surfa 31)	y (B7) ice (B8)	Secondary Indica Water-staine Drainage Pal Oxidized Rhi Presence of Salt Deposits Stunted or S	tors (2 or more required) d Leaves (B9) terns (B10) zospheres along Living Roots (C3 Reduced Iron (C4) 5 (C5) tressed Plants (D1)
Primary Ind YDROLC Wetland Hy Primary Ind Y Surface High W Saturat Water I Sedime	OGY Adrology Indicators Cators (any one indicator (A1) Later Table (A2) Lon (A3) Marks (B1) ent Deposits (B2)	5;	ficient) Inundation Visib Sparsely Vegeta Marl Deposits (E	ated Conc 315) le Odor (C ter Table	ave Surfa 31) (C2)	y (B7) ice (B8)	Secondary Indica Water-staine Drainage Pai Oxidized Rhi Presence of Salt Deposits Stunted or S Geomorphic	tors (2 or more required) d Leaves (B9) terns (B10) zospheres along Living Roots (C3 Reduced Iron (C4) b (C5) tressed Plants (D1) Position (D2)
Depth (In Remarks: YDROLC Wetland Hy Primary Ind X Surface High W X Saturat Water I Sedime Drift De	OGY verology indicators icators (any one indicator (A1) later Table (A2) lon (A3) Marks (B1)	5;	ficient) inundation Visib Sparsely Vegeta Marl Deposits (E Hydrogen Sulfid Dry-Season Wa	ated Conc 315) le Odor (C ter Table	ave Surfa 31) (C2)	y (B7) nce (B8)	Secondary Indica Water-staine Drainage Pai Oxidized Rhi Presence of Salt Deposits Stunted or S Geomorphic	tors (2 or more required) d Leaves (B9) terns (B10) zospheres along Living Roots (C3 Reduced Iron (C4) s (C5) tressed Plants (D1) Position (D2) ilard (D3)
Depth (Internation of the property of the prop	OGY Indrology Indicators icators (any one indicators (A1) Idater Table (A2) Idon (A3) Marks (B1) Intrologies (B2) Intrologies (B3) Intrologies (B4) Intrologies (B4) Intrologies (B5)	5;	ficient) inundation Visib Sparsely Vegeta Marl Deposits (E Hydrogen Sulfid Dry-Season Wa	ated Conc 315) le Odor (C ter Table	ave Surfa 31) (C2)	y (B7) ice (B8)	Secondary Indica Water-staine Drainage Pat Oxidized Rhi Presence of Salt Deposits Stunted or S Geomorphic Shallow Aqu Microtopogra	tors (2 or more required) d Leaves (B9) terns (B10) zospheres along Living Roots (C3 Reduced fron (C4) s (C5) tressed Plants (D1) Position (D2) sitard (D3) sphic Relief (D4)
Depth (In Remarks: YDROLO Wetland Hy Primary Ind X Surface High W X Saturat Water I Sedime Drift De Algai M Iron De Surface	OGY rdrology indicators icators (any one indicators (A1) later Table (A2) lon (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) e Soil Cracks (B6)	5;	ficient) inundation Visib Sparsely Vegeta Marl Deposits (E Hydrogen Sulfid Dry-Season Wa	ated Conc 315) le Odor (C ter Table	ave Surfa 31) (C2)	y (B7) ice (B8)	Secondary Indica Water-staine Drainage Pai Oxidized Rhi Presence of Salt Deposits Stunted or S Geomorphic	tors (2 or more required) d Leaves (B9) terns (B10) zospheres along Living Roots (C3 Reduced fron (C4) s (C5) tressed Plants (D1) Position (D2) sitard (D3) sphic Relief (D4)
Primary Ind Wetland Hy Your High W X Saturat Water I Sedime Drift De Algal M Iron De	OGY ordrology indicators icators (any one indicators (any one indicator (A1) later Table (A2) lon (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) e Soil Cracks (B6) ervations:	s: icator is suf	ficient) inundation Visib Sparsely Vegeta Marl Deposits (E Hydrogen Sulfid Dry-Season Wa Other (Explain in	ated Conc 315) le Odor (C ter Table n Remark	ave Surfa	y (B7) nce (B8)	Secondary Indica Water-staine Drainage Pat Oxidized Rhi Presence of Salt Deposits Stunted or S Geomorphic Shallow Aqu Microtopogra	tors (2 or more required) d Leaves (B9) terns (B10) zospheres along Living Roots (C3 Reduced fron (C4) s (C5) tressed Plants (D1) Position (D2) sitard (D3) sphic Relief (D4)
Depth (In Remarks: YDROLC Wetland Hy Y Surface Y High W X Saturat Water I Sedime Drift De Algal M Iron De Surface Water Surface	orches): OGY Indrology Indicators icators (any one indicators (any one indicators (A1) Idater Table (A2) Idon (A3) Marks (B1) Int Deposits (B2) Int or Crust (B4) Int or Crust (B4) Interposits (B5) Interposits (B5) Interposits (B6) Introductions: Interpresent?	s: icator is suf	ficient) Inundation Visib Sparsely Vegeta Marl Deposits (E Hydrogen Sulfid Dry-Season Wa Other (Explain in	ated Conc 315) le Odor (C ter Table n Remark:	ave Surfa (C2) (S)	y (B7) ice (B8)	Secondary Indica Water-staine Drainage Pat Oxidized Rhi Presence of Salt Deposits Stunted or S Geomorphic Shallow Aqu Microtopogra	tors (2 or more required) d Leaves (B9) terns (B10) zospheres along Living Roots (C3 Reduced fron (C4) s (C5) tressed Plants (D1) Position (D2) sitard (D3) sphic Relief (D4)
Depth (In Remarks: YDROLC Wetland Hy Y Surface High W Sedime Drift De Algal M Iron De Surface Water Table	OGY Indrology Indicators icators (any one indicators (any one indicators (A1) Idater Table (A2) Idon (A3) Marks (B1) Intrologists (B2) Intrologists (B3) Intrologists (B4) Intrologists (B5) Intrologists (B6) Invations: Inter Present? Inter Present?	yes X	ficient) Inundation Visib Sparsely Vegeta Marl Deposits (E Hydrogen Sulfid Dry-Season Wa Other (Explain in	ated Conc 315) le Odor (C ter Table n Remark: nches): nches):	ave Surfa (C2) (S)	nce (B8)	Secondary Indica Water-staine Drainage Pai Oxidized Rhi Presence of Salt Deposits Stunted or S Geomorphic Shallow Aqu Microtopogra FAC-Neutral	tors (2 or more required) d Leaves (B9) terns (B10) zospheres along Living Roots (C3 Reduced fron (C4) b (C5) tressed Plants (D1) Position (D2) itard (D3) aphic Relief (D4) Test (D5)
Depth (In Remarks: YDROLO Wetland Hy Primary Ind Y Surface High W X Saturat Water I Sedime Drift De Algal M Iron De Surface Surface Wa Water Table Saturation of	OGY Indrology Indicators icators (any one indicators (any one indicators (A1) Idater Table (A2) Idater Table (A2) Idater Table (B2) Idator Crust (B4) Idator Crust (B4) Idator Crust (B5) Idator Crust (B6) Idato	Yes X Yes X	ficient) inundation Visib Sparsely Vegeta Marl Deposits (E Hydrogen Sulfid Dry-Season Wa Other (Explain in	ated Conc 315) le Odor (Coter Table in Remarks inches); inches); inches);	(C2) (C2) (C2) (C2) (C2) (C2) (C2) (C2)	We	Secondary Indica Water-staine Drainage Pai Oxidized Rhi Presence of Salt Deposits Stunted or S Geomorphic Shallow Aqu Microtopogra FAC-Neutral	tors (2 or more required) d Leaves (B9) terns (B10) zospheres along Living Roots (C3 Reduced fron (C4) s (C5) tressed Plants (D1) Position (D2) sitard (D3) sphic Relief (D4)
Depth (In Remarks: YDROLO Wetland Hy Primary Ind Y Surface High W X Saturat Water I Sedime Drift De Algal M Iron De Surface Surface Wa Water Table Saturation of	OGY Indrology Indicators icators (any one indicators (any one indicators (A1) Idater Table (A2) Idater Table (A2) Idater Table (B2) Idator Crust (B4) Idator Crust (B4) Idator Crust (B5) Idator Crust (B6) Idato	Yes X Yes X	ficient) Inundation Visib Sparsely Vegeta Marl Deposits (E Hydrogen Sulfid Dry-Season Wa Other (Explain in	ated Conc 315) le Odor (Coter Table in Remarks inches); inches); inches);	(C2) (C2) (C2) (C2) (C2) (C2) (C2) (C2)	We	Secondary Indica Water-staine Drainage Pai Oxidized Rhi Presence of Salt Deposits Stunted or S Geomorphic Shallow Aqu Microtopogra FAC-Neutral	tors (2 or more required) d Leaves (B9) terns (B10) zospheres along Living Roots (C3 Reduced fron (C4) b (C5) tressed Plants (D1) Position (D2) itard (D3) aphic Relief (D4) Test (D5)
Depth (In Remarks: YDROLO Wetland Hy Primary Ind Y Surface High W X Saturat Water I Sedime Drift De Algal M Iron De Surface Surface Wa Water Table Saturation I (includes ca Describe R	OGY Indrology Indicators icators (any one indicators (any one indicators (A1) Idater Table (A2) Idater Table (A2) Idater Table (B2) Idator Crust (B4) Idator Crust (B4) Idator Crust (B5) Idator Crust (B6) Idato	Yes X Yes X	ficient) inundation Visib Sparsely Vegeta Marl Deposits (E Hydrogen Sulfid Dry-Season Wa Other (Explain in	ated Conc 315) le Odor (Coter Table in Remarks inches); inches); inches);	(C2) (C2) (C2) (C2) (C2) (C2) (C2) (C2)	We	Secondary Indica Water-staine Drainage Pai Oxidized Rhi Presence of Salt Deposits Stunted or S Geomorphic Shallow Aqu Microtopogra FAC-Neutral	tors (2 or more required) d Leaves (B9) terns (B10) zospheres along Living Roots (C3 Reduced fron (C4) b (C5) tressed Plants (D1) Position (D2) itard (D3) aphic Relief (D4) Test (D5)
Depth (In Remarks: YDROLO Wetland Hy Primary Ind Y Surface High W X Saturat Water I Sedime Drift De Algal M Iron De Surface Surface Wa Water Table Saturation of	OGY Indrology Indicators icators (any one indicators (any one indicators (A1) Idater Table (A2) Idater Table (A2) Idater Table (B2) Idator Crust (B4) Idator Crust (B4) Idator Crust (B5) Idator Crust (B6) Idato	Yes X Yes X	ficient) inundation Visib Sparsely Vegeta Marl Deposits (E Hydrogen Sulfid Dry-Season Wa Other (Explain in	ated Conc 315) le Odor (Coter Table in Remarks inches); inches); inches);	(C2) (C2) (C2) (C2) (C2) (C2) (C2) (C2)	We	Secondary Indica Water-staine Drainage Pai Oxidized Rhi Presence of Salt Deposits Stunted or S Geomorphic Shallow Aqu Microtopogra FAC-Neutral	tors (2 or more required) d Leaves (B9) terns (B10) zospheres along Living Roots (Ci Reduced fron (C4) s (C5) tressed Plants (D1) Position (D2) itard (D3) aphic Relief (D4) Test (D5)

Project/Site: Grant Creek Corridor	Bor	ough/City	· Mna	SP. Pass	: 0 1' - 0	7-22-13
Applicant/Owner. Kenou Hydro	50,	ough only				
	K 125	odform (bil	llaida ias		_ Sampling Point;	DF 60
Local relief (concave, convex, none): YON 0	Cia.	oo (647) Iaiouu (iii	iside, ten دی	race, hummocks, etc.):	18.44	
				. 14164		
Subregion: L Soil Map Unit Name;						
				NWI classifi	cation: U(land	火
Are climatic / hydrologic conditions on the site typical for t	his time of year?	YesX	No _	(if no, explain in F	Remarks.)	
Are Vegetation, Soil, or Hydrology	_significantly dist	urbed? N	lo Are'	"Normal Circumstances"	oresent?Yes 💢	No
Are Vegetation, Soil, or Hydrology	_ naturally probler	matic? /	J∂ (If ne	eeded, explain any answe	rs in Remarks.)	
SUMMARY OF FINDINGS - Attach site map	showing samp	oling poi	nt locati	ions, tr <mark>a</mark> nsects, impo	ortant features,	etc.
Hydrophytic Vegetation Present? Yes	No X	1				
Hydric Soil Present? Yes			Sampled		,	V
Wetland Hydrology Present? Yes	No _X_	within	a Wetlar	nd? Yes	No	<u>^</u>
Remarks: Representative of	as Homes	/	16.			
upland in the	SOFTONI	vaos	127	nce photos	134 - 138	•
VEGETATION – Use scientific names of plant	s list all sno	cies in th	ho nlot		<u>-</u> -	
	Absolute Do			Dominance Test work	choot:	
Tree Stratum	% Cover S	pecles?	Status	Number of Dominant Si		
1. Populus balsamifera	31	}	FACU	That Are OBL, FACW, of		(A)
2. Betila papyrifera	20	7 F	FACU	Total Number of Domin		۷ ۷
3.	_·			Species Across All Stra	ta: $\overline{}$	(B)
4						(5)
Total Cove				Percent of Dominant Sp That Are OBL, FACW, of	or FAC: 14	(A/B)
50% of total cover: 25 Sapling/Shrub Stratum	20% of tota	al cover:	10	Prevalence Index work		
1. Vibirnum edule	20	V E	ACU	. Total % Cover of:	Multiply	bv:
2. Posa acicularis	30		ACU	OBL species O	x1=_0	
3. Picea Glavea	\$05 _		ACU	FACW species 3	x2=_6	
4. Alnus Varidis	45		FAC	FAC species 20	x3=_60	
5	- - 4		1/10	FACU species <u>· [경]</u>	x4= <u>5</u> 24	4
6	<u></u>			UPL species 0	x5= <u>_0</u>	
Total Cove	or: 60			Column Totals: 154	(A) <u>590</u>	(B)
50% of total cover: 37		l cover:	12	Prevalence Index	252	
Herb Stratum				Hydrophytic Vegetation		
1. Chamerion angustifulion	_ <u>`</u>	<u> </u>	ACU	Dominance Test is:		
2. Crymnocarpium dryopteris	10 -		ACU	Prevalence Index is		•
3. Egyisifum grvense	15		AC!	Morphological Adap		
4. Cornus canadensis			FACU	data in Remarks	or on a separate sh	rpporung reet)
5. Callium trifitions dum	3		AUN	Problematic Hydropi	hytic Vegetation¹ (E	explain)
6. Streptopus amplexitolium		F	ACU			•
7		<u> </u>		¹ Indicators of hydric soil be present unless disturt	and wetland hydrol	logy must
B			<u> </u>	no present unless distuit	ed of problematic.	
10,	 			•		
						İ
Total Cover						
50% of total cover: <u>22</u> Plot size (radius, or length x width) <u>20 ^l Youl.</u>	20% of total	cover:	1.8	Hydrophytic [*]		
				Vegetation	V	r ,
6 Cover of Wetland Bryophytes Total Co (Where applicable)	ver of Bryophytes	s <u>10</u>	<u> </u>	Present? Yes	No	<u>`</u>
Remarks:	**					
	.:*	j.				
pholos: 133-138						

DIL			Sampling Point: DPD
	to the dept	h needed to document the Indicator or	confirm the absence of indicators.)
epth <u>Matrix</u> nches) <u>Color (moist)</u>		Redox Features Color (moist) % Type ^t	Loc ² Texture Remarks
) - [0]			, , ,
			very dry
	-		, ,
CONTRACTOR LAND COMP.			
		·	
me: C=Concentration D=De	nletion, RM	Reduced Matrix, CS=Covered or Coated	Sand Grains. ² Location: PL=Pore Lining, M=Matrix.
ydric Soil Indicators:	<u> </u>	Indicators for Problematic Hydric S	OIIS":
Histosol or Histel (A1)		Alaska Color Change (TA4) ⁴	Alaska Gleyed Without Hue 5Y or Redder
Histic Epipedon (A2)		Alaska Alpine Swales (TA5)	Underlying Layer
Hydrogen Sulfide (A4)		Alaska Redox With 2.5Y Hue	Other (Explain in Remarks)
Thick Dark Surface (A12)			
_ Alaska Gleyed (A13)		³ One indicator of hydrophytic vegetati	ion, one primary indicator of welland hydrology,
Alaska Redox (A14)	•		tion must be present unless disturbed or problematic.
_ Alaska Gleyed Pores (A15		Give details of color change in Rema	irks.
estrictive Layer (if present):			
Type: cobble / be	drock		No. X
Type: <u>CODD(L / DC</u> Depth (inches): <u> O^L</u> temarks:	drock.		Hydric Soli Present? Yes NoX
Depth (inches):	<u>arock</u>		Hydric Soii Present? Yes NoX
Depth (inches):	<u>ancy</u>		
Depth (inches): 10 ^t demarks: YDROLOGY Vetland Hydrology Indicator	s:		Secondary Indicators (2 or more required)
Depth (inches): 10 ^t temarks:	s:		Secondary Indicators (2 or more required) Water-stained Leaves (B9)
Depth (inches): 10 ^t demarks: YDROLOGY Vetland Hydrology Indicator	s:	Inundation Visible on Aerial Imagery	Secondary Indicators (2 or more required) Water-stained Leaves (B9) (B7) Drainage Patterns (B10)
Depth (inches):	s:	Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface	Secondary Indicators (2 or more required) Water-stained Leaves (B9) (B7) Drainage Patterns (B10) (B8) Oxidized Rhizospheres along Living Roots (
Depth (inches):	s:	 Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) 	Secondary Indicators (2 or more required) Water-stained Leaves (B9) (B7) Drainage Patterns (B10) (B8) Oxidized Rhizospheres along Living Roots (
Primary Indicators (any one indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	s:	 Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Mari Deposits (B15) Hydrogen Sulfide Odor (C1) 	Secondary Indicators (2 or more required) Water-stained Leaves (B9) (B7) Drainage Patterns (B10) (B8) Oxidized Rhizospheres along Living Roots (Presence of Reduced Iron (C4) Salt Deposits (C5)
Primary Indicators (any one indicator Water Marks (B1) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	s:	 Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) 	Secondary Indicators (2 or more required) Water-stained Leaves (B9) (B7) Drainage Patterns (B10) (B8) Oxidized Rhizospheres along Living Roots (Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1)
Depth (inches):	s:	 Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Mari Deposits (B15) Hydrogen Sulfide Odor (C1) 	Secondary Indicators (2 or more required) Water-stained Leaves (B9) (B7) Drainage Patterns (B10) (B8) Oxidized Rhizospheres along Living Roots (Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Permarks: YDROLOGY Vetland Hydrology Indicator Primary Indicators (any one Indicator (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	s:	 Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) 	Secondary Indicators (2 or more required) Water-stained Leaves (B9) (B7)
Permarks: YDROLOGY Vetland Hydrology Indicator Primary Indicators (any one Ind. Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	s:	 Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) 	Secondary Indicators (2 or more required) Water-stained Leaves (B9) (B7) Drainage Patterns (B10) (B8) Oxidized Rhizospheres along Living Roots (Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Permarks: YDROLOGY Vetland Hydrology Indicator Primary Indicators (any one Indicators (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6)	s:	 Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) 	Secondary Indicators (2 or more required) Water-stained Leaves (B9) (B7)
Depth (inches):	s: ficator is suf	 Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) 	Secondary Indicators (2 or more required) Water-stained Leaves (B9) (B7) Drainage Patterns (B10) (B8) Oxidized Rhizospheres along Living Roots (Presence of Reduced Iron (C4) Sait Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Principles (Principles):	s: ficator is suf	Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches):	Secondary Indicators (2 or more required) Water-stained Leaves (B9) (B7) Drainage Patterns (B10) (B8) Oxidized Rhizospheres along Living Roots (Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Per Company (Inches):	s: dicator is suf	Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)* Other (Explain in Remarks) No Depth (inches):	Secondary Indicators (2 or more required) Water-stained Leaves (B9) (B7) Drainage Patterns (B10) (B8) Oxidized Rhizospheres along Living Roots (Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Depth (inches):	s: ficator is suf	Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)* Other (Explain in Remarks) No	Secondary Indicators (2 or more required) Water-stained Leaves (B9) (B7)
Depth (inches):	s: ficator is suf	Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)* Other (Explain in Remarks) No Depth (inches):	Secondary Indicators (2 or more required) Water-stained Leaves (B9) (B7)
Depth (inches):	s: ficator is suf	Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)* Other (Explain in Remarks) No	Secondary Indicators (2 or more required) Water-stained Leaves (B9) (B7)
Popular Present? Nater Table Present? Saturation Present?	s: ficator is suf	Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)* Other (Explain in Remarks) No	Secondary Indicators (2 or more required) Water-stained Leaves (B9) (B7)

- 1				III - Alaska Region		
Project/Site: Grant Greek Co Lak	<u>ಆ</u> B	orough/(City:M	ouse Pass	Sampling Date:	7-23-
Applicant/Owner: <u>Kenas Hydro</u>		•				
Investigator(s): C. Schudel J. Blank	L	andform	(hillside, ten	race hummocks etc.):	Take edas	<u> </u>
Local relief (concave, convex, none):	s	lope (%)	2			
Subregion: L					J Dolumi	
Soil Map Unit Name:				NWI classifi		
Are climatic / hydrologic conditions on the site typical for t	his time of year	·2 Vac	× No.	//s == ================================	cation: PG	MIE
Are Vegetation, Soil, or Hydrology	elapiticantly di	inturbadi	140 _ 140 _	(ii no, explain in i	Remarks.)	
Are Vegetation, Soil, or Hydrology	, significantly u	stuibed	A. Ur	Normal Circumstances	present/ Yes _/_	No
					<u>-</u> "	
SUMMARY OF FINDINGS - Attach site map s	showing san	npling p	ooint locat	ions, transects, impo	ortant features,	etc.
Hudrophytia Vogotatiaa Brassatta X						
Hydrophytic Vegetation Present? Hydric Soil Present? Yes Yes	No	ls t	he Sampled	1 Area		
	No	wit	hin a Wetla	nd? Yes	s_ <u>X</u> No	
Remarks: Herbaccous wetland	· (vin	g-	on la	leven		
		<u> </u>				
VEGETATION – Use scientific names of plants	s. List all sp	ecles i	n the plot.			
Tree Stratum	Absolute 1			Dominance Test work	(sheet:	 -
4 AboAl	% Cover		-	Number of Dominant S		
				That Are OBL, FACW,	or FAC: 6	(A)
2				Total Number of Domir		
3			-	Species Across All Stra	ata:	(B)
Total Cove				Percent of Dominant S		
50% of total cover:	200/ 066	otal cove	ar:	That Are OBL, FACW,	or FAC:	(A/B)
Sapling/Shrub Stratum 1. Alnus viridis 2. Salix bardayi	20 /0 01 (Otal COVE	۶۱. <u> </u>	Prevalence Index wor	ksheet:	
1. Alnus viridis	5	7	. FAC	Total % Cover of:	Multiply	
2. Salix bardayi	2	7_	FAC	OBL species <u>50</u>		
3.				FACW species 15		
4			-		x 3 = <u>] </u>	
5	<u> </u>	- 1002	·	FACU species		
6		71.0			x5= <u>0</u>	
Total Cove	· · — — — —			Column Totals: 131	(A) <u>Lo</u>	<u>†</u> (B)
50% of total cover:3.	5 20% of to	tal cove	r: <u></u>	Prevalence Index	$= B/A = _2 /$	9
1. Fausetm flunatice	30	V	001	Hydrophytic Vegetation	on Indicators:	
2. Equisitm arvinse	- 75 -		OBL_	X Dominance Test is	>50%	
3. Carex aguantus	20 -	-₹-	FAC	Prevalence Index is	s ≤3,0	
4. Deschamosia raesoitusa	- 30 -	\	<u>OBL</u> EAC	Morphological Ada	ptations [†] (Provide s	upporting
5. Sanguisorba Canadinsis	<u> </u>				s or on a separate s	,
6. Aguilegia formusa	- #		FACU	Problematic Hydror	ohytic Vegetation¹ (I	Explain)
7. Chamenon angustifolia		•	FACU	¹ Indicators of hydric soi	il and wolland hude	
8.			1400	be present unless distu	rbed or problematic	logy musi
9.						
10.		.,,,,,,		•		
Total Cove	r: 124	10.000				
50% of total cover: 62		fal cover	. 24.8			
Plot size (radius, or length x width) $\frac{\mathcal{W}' \times \mathcal{Z}'}{\mathcal{Z}'}$	20% of to		<u> </u>	Hydrophytic		
% Cover of Wetland Bryophytes Total Co			50	Vegetation Present? Yes	x X No_	
(Where applicable)	ed of privopity				· <u> </u>	
Remarks:						
,						ļ
photos: 235-236						

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. *Lo Hydric Soil Indicators: Indicators for Problematic Hydric Soils*: Histosol or Histel (A1)	Remarks + OSh b(0
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Indicators for Problematic Hydric Soils³: Histosol or Histel (A1) Histosol or Histel (A1) Histosol or Histel (A2) Hydrogen Sulfide (A4) Alaska Alpine Swales (TA5) Hydrogen Sulfide (A4) Alaska Redox With 2.5Y Hue Other Thick Dark Surface (A12) Alaska Gleyed (A13) Alaska Redox (A14) Alaska Gleyed (A13) Alaska Redox (A14) Alaska Gleyed (Pores (A15) Restrictive Layer (if present): Type: Depth (Inches): Remarks: Primary Indicators (any one indicator is sufficient) YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indicator is sufficient) Y Surface Water (A1) Hydric Soi Restrictive Concave Surface (B8) Saturation (A3) Marl Deposits (B15) Presence	4 001/06
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. *Lo Hydric Soil Indicators: Indicators for Problematic Hydric Soils*: Histosol or Histel (A1)	
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. *Lodydric Soil Indicators: Indicators for Problematic Hydric Soils*: Histosol or Histel (A1) Alaska Color Change (TA4)* Alaska Histosol or Histel (A1) Alaska Redox Change (TA4)* Alaska Histosol or Histel (A2) Alaska Alpine Swales (TA5) Undepensulfide (A4) Alaska Redox With 2.5Y Hue Other Thick Dark Surface (A12) Alaska Gleyed (A13) One Indicator of hydrophytic vegetation, one primary indication and an appropriate landscape position must be present undependent of the present of the p	
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. *Lo lydric Soil Indicators: Indicators for Problematic Hydric Soils*: Histosol or Histel (A1)	
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. *Loydric Soil Indicators: Indicators for Problematic Hydric Soils*: Histosol or Histel (A1)	
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. *Loydric Soil Indicators: Indicators for Problematic Hydric Soils*: Histosol or Histel (A1)	
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. *Lo lydric Soil Indicators: Indicators for Problematic Hydric Soils*: Histosol or Histel (A1)	
Indicators for Problematic Hydric Soils*: Histosol or Histel (A1)	A CANADA
ydric Soil Indicators: Histosol or Histel (A1)	
Indicators for Problematic Hydric Soils*: Histosol or Histel (A1)	
Indicators for Problematic Hydric Soils*: Histosol or Histel (A1)	
Indicators for Problematic Hydric Soils*: Histosol or Histel (A1)	
Indicators for Problematic Hydric Soils*: Histosol or Histel (A1)	
Histosol or Histel (A1)	cation: PL=Pore Lining, M=Matrix.
Histic Epipedon (A2) Alaska Alpine Swales (TA5) Und Hydrogen Sulfide (A4) Alaska Redox With 2.5Y Hue	an internal transfer of the control
Hydrogen Sulfide (A4) Alaska Redox With 2.5Y Hue	Gleyed Without Hue 5Y or Redder
Thick Dark Surface (A12) Alaska Gleyed (A13) Alaska Redox (A14) Alaska Gleyed Pores (A15) Restrictive Layer (if present): Type: Depth (inches): Remarks: PIDE A LABOVE (ALE LEVEL Primary Indicators (any one indicator is sufficient) YOROLOGY Wetland Hydrology Indicators: Surface Water (A1) High Water Table (A2) Saturation (A3) Solid and an appropriate landscape position must be present under appropriate landscape position must be present under appropriate landscape position must be present under appropriate landscape position must be present under appropriate landscape position must be present under appropriate landscape position must be present under appropriate landscape position must be present under appropriate landscape position m	erlying Layer (Explain in Remarks)
Alaska Gleyed (A13) Alaska Redox (A14) Alaska Redox (A14) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A16) Alaska Gleyed Pores (A1	(Explain in Nemarks)
Alaska Redox (A14) and an appropriate landscape position must be present u Alaska Gleyed Pores (A15) *Give details of color change in Remarks. Restrictive Layer (if present): Type: Depth (inches): Depth (inches): Depth	or of wetland hydrology.
Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Restrictive Layer (if present): Type: Depth (inches): Primary Indicators (any one indicator is sufficient) Surface Water (A1) High Water Table (A2) Saturation (A3) Alaska Gleyed Pores (A15) Algive details of color change in Remarks. Hydric Soi Secondary II Water Service (A12) Inundation Visible on Aerial Imagery (B7) Present	
Restrictive Layer (if present): Type: Depth (inches): Remarks: Plot ~ above ake evel YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indicator is sufficient) Surface Water (A1) High Water Table (A2) Sparsely Vegetated Concave Surface (B8) Saturation (A3) Hydric Soil Hyd	.•
Type:	
Primary Indicators (any one indicator is sufficient) Surface Water (A1) Hydric Soil Primary Indicators (any one indicator is sufficient) Water-s Surface Water (A1) High Water Table (A2) Saturation (A3) Hydric Soil Becondary II Secondary II Water (B8) Secondary II Water-s Oxidized Presence	
Primary Indicators (A1) High Water Table (A2) Saturation (A3) PIOF ~ Above AKE EWEL Surface Water (A1) Surface Water (A1) Marl Deposits (B15) Presence Concave	Present? Yes No No
Wetland Hydrology Indicators: Primary Indicators (any one indicator is sufficient) Surface Water (A1) High Water Table (A2) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Secondary In Water-s Water-s Drainag Oxidized Oxidized Presence	
Primary Indicators (any one indicator is sufficient) Surface Water (A1) High Water Table (A2) Saturation (A3) Water-s Water-s Drainag Oxidized Oxidized Aarl Deposits (B15) Water-s	
Surface Water (A1) Inundation Visible on Aerial Imagery (B7) Drainag High Water Table (A2) Sparsely Vegetated Concave Surface (B8) Oxidized Saturation (A3) Marl Deposits (B15) Presence	dicators (2 or more required)
High Water Table (A2) Saturation (A3) Sparsely Vegetated Concave Surface (BB) Oxidized Marl Deposits (B15) Present	ained Leaves (B9)
High Water Table (A2) Saturation (A3) Sparsely Vegetated Concave Surface (BB) Oxidized Marl Deposits (B15) Present	Patterns (B10)
	Rhizospheres along Living Roots (C
Marks (R1) Hydrogen Sulfide Odor (C1) Sait Dei	e of Reduced Iron (C4)
	osits (C5)
	or Stressed Plants (D1)
_ 5/1/2 - 1/2	ohic Position (D2)
	Aquitard (D3) ographic Relief (D4)
	utral Test (D5)
Surface Soil Cracks (B6)	addi rest (Bo)
Surface Water Present? Yes X No Depth (inches): Vater Table Present? Yes No Depth (inches): Output	
Saturation Present? Yes No Depth (inches): Wetland Hydrolo	
(includes capillary fringe)	ıv Present? Yes $ imes$ No
	y Present? Yes 🔀 No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	ıy Present? Yes <u>X</u> No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	y Present? Yes <u>X</u> No

Project/Site: Grant Lake	A 1 A 1 D	7.72
Applicant/Owner: <u>Veneu Hydro</u>	Borough/City: 100036-10	uss Sampling Date: 7:13-
Investigatories C. School T. Blank		Sampling Point: DPZ8
Investigator(s): C. Schudel J. Blank	Landform (hillside, terrace, humn	nocks, etc.): ~10 ft above
Local relief (concave, convex, none): Note: Subregion:		lake edge
Subregion: Lat: Let		
Soil Map Unit Name:		NWI classification: Uipland
Are climatic / hydrologic conditions on the site typical for this time	ıf year? Yes <u>X</u> No <u> </u>	no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology signific	ntly disturbed? 🏳 ບ Are "Normal Ci	rcumstances" present? Yes No
Are Vegetation, Soil, or Hydrology natural	problematic? N 🤟 (If needed, expl	ain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing	sampling point locations, tran	sects, important features, etc.
Hydrophytic Vegetation Present? Yes No		
Hydric Soil Present? Yes No	is the Sampled Area	
Wetland Hydrology Present? Yes No>	within a Wetland?	YesNo
Remarks: El evated alder provinced	1	
too his whore luke to have my	communitates 7	37-239
VEGETATION - Use scientific names of plants. List	all species in the plot	
Ahs		To the late of the
<u>free Stratum</u> _% C	vor Specion? Clatus	nce Test worksheet:
1. None	That Are	of Dominant Species OBL, FACW, or FAC: 2 (A)
	Total Nuc	mber of Dominant
3	Species /	Across All Strata: 3 (B)
4		of Dominant Species
Total Cover:	— That Are	OBL, FACW, or FAC: 60 (A/B)
50% of total cover: 2: Sapling/Shrub Stratum	% of total cover: Prevalen	ce Index worksheet:
1. Ahus. VIV. 7	Total	% Cover of: Multiply by:
2. Ribes Idenes (vasabury) &	FACU OBL spec	ies <u>O</u> x1= <u>o</u>
3.	FACW sp	
4		ies <u>100</u> x3= <u>300</u>
5		ecies <u>55</u> x4= <u>220</u>
6,	UPL spec	
Total Cover:	/	otals: <u>/55</u> (A) <u>570</u> (B)
50% of total cover: 37,5 20	of total cover: 15 Prev	valence Index = B/A = 3.35
1. Cha. angustifolia 4.	I Under to	tic Vegetation Indicators:
5 VI 4 4 5 1	TAPOUL X Dami	nance Test is >50%
3. Dest cools	5.4.C.A.H	lence Index is ≤3.0
4. Equ. arvense 10	Morph	nological Adaptations ¹ (Provide supporting
36 Agros. Stolon. Calcunadensis 76	da	ta in Remarks or on a separate sheet)
6.	- FAC Proble	ematic Hydrophytic Vegetation ¹ (Explain)
7.	Indicators	s of hydric soil and wetland hydrology must
8.	be present	t unless disturbed or problematic.
9		
10		•
Total Cover:		
50% of total cover: 40 20%	of total cover: 16	·
	Ground Hydrophy	
% Cover of Wetland Bryophytes Total Cover of B (Where applicable)	- Vegetation	Yes <u>X</u> No
Remarks:		
photos 237-239	•	

		•	th needed to document the Indicator o Redox Features			
epth nches)	Matrix Color (moist)	%	Color (moist) % Type ¹	Loc²	Texture	Remarks
···	115.					
	No	PIT				
	al	<u>(' cul</u> v	<u>ble</u>			
						······································
ype: C=Co	ncentration, D=De	pletion, RM	=Reduced Matrix, CS=Covered or Coate	d Sand Gr	rains. ² Local	ion: PL=Pore Lining, M=Matrix.
ydric Soil i	ndicators:		Indicators for Problematic Hydric	Solls":		Named Military Hug EV or Daddar
	or Histel (A1)		Alaska Color Change (TA4) ⁴			Sleyed Without Hue 5Y or Redder ying Layer
	oipedon (A2)		Alaska Alpine Swales (TA5) Alaska Redox With 2.5Y Hue			xplain in Remarks)
	n Sulfide (A4) ark Surface (A12)		— Maska (Vediox Asili) 2.51 Gide			
	Gleyed (A13)		³ One indicator of hydrophytic vegeta	ation, one	primary indicator	of wetland hydrology,
	Redox (A14)		and an appropriate landscape po-	sition mus	t be present unle	ss disturbed or problematic,
	Gleyed Pores (A15)		Give details of color change in Ren	narks.		
estrictive L	Layer (if present):					
					· ·	
Type:			<u> </u>		1	No X
• -	ches):				Hydric Soil F	resent? Yes No
Depth (ind emarks:	ches):					
Depth (incomercial contents) OROLO Vetland Hydrox	ches): IGY drology indicator	s:			Secondary Ind	cators (2 or more required)
Depth (incomercial depth (incomercial depth dept	ches): GY drology Indicator cators (any one inc	s:	fficient)		Secondary Ind	icators (2 or more required) ned Leaves (B9)
Depth (incomercial contents) OROLO Vetland Hydrimary Indicates	oGY drology Indicator cators (any one inc	s:	fficient) Inundation Visible on Aerial Imagen		Secondary Ind Water-stal Drainage I	icators (2 or more required) ned Leaves (B9) Patterns (B10)
Depth (incomercial depth (incomercial depth dept	drology Indicator cators (any one inc Water (A1) ater Table (A2)	s:	fficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surfa		Secondary Ind Water-stai Drainage I Oxidized F	icators (2 or more required) ned Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (
Depth (incomercial files) /DROLO /etland Hydrimary India Surface High Wa Saturation	drology indicator cators (any one inc Water (A1) ater Table (A2) ion (A3)	s:	fficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surfa Marl Deposits (B15)		Secondary Ind Water-stai Drainage I Oxidized F	icators (2 or more required) ned Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (of Reduced Iron (C4)
Depth (incomercial files) /DROLO /etland Hydrimary India Surface High Wa Saturatio Water M	drology indicator cators (any one incomplete (A1) ater Table (A2) fon (A3) Marks (B1)	s:	fficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surfa		Secondary Ind Water-stai Drainage I Oxidized F Presence Salt Depo Stunted o	icators (2 or more required) ned Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (of Reduced Iron (C4) sits (C5) Patressed Plants (D1)
Depth (independent of the content of	drology indicator cators (any one inc Water (A1) ater Table (A2) ion (A3)	s:	fficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surfa Marl Deposits (B15) Hydrogen Sulfide Odor (C1)		Secondary Ind Water-stal Drainage I Oxidized F Presence Salt Depo Stunted or Geomorph	icators (2 or more required) ned Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (of Reduced Iron (C4) sits (C5) r Stressed Plants (D1) nic Position (D2)
/DROLO /PROLO /etland Hydrimary India Surface High Wa Saturati Water Maler Ma	drology Indicator cators (any one incomplete (A1) ater Table (A2) from (A3) Marks (B1) nt Deposits (B2)	s:	fficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surfa Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)		Secondary Ind Water-stai Drainage I Oxidized F Presence Salt Depo Stunted or Geomorpi Shallow A	icators (2 or more required) ned Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (of Reduced Iron (C4) sits (C5) Stressed Plants (D1) nic Position (D2) quitard (D3)
Depth (independent of the content of	drology Indicator cators (any one inc Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	s:	fficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surfa Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)		Secondary Ind Water-stal Drainage I Oxidized F Presence Salt Depo Stunted or Geomorph Shallow A Microtopo	icators (2 or more required) ned Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (of Reduced Iron (C4) sits (C5) r Stressed Plants (D1) note Position (D2) quitard (D3) graphic Relief (D4)
Depth (incomercial contents) /DROLO /etland Hydrimary India Saturatia Water Mare Water Mare Mare Mare Mare Mare Mare Mare Ma	drology indicator cators (any one incomplete (A1) ater Table (A2) fon (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) a Soil Cracks (B6)	s:	fficient) Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surfa Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)		Secondary Ind Water-stal Drainage I Oxidized F Presence Salt Depo Stunted or Geomorph Shallow A Microtopo	icators (2 or more required) ned Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (of Reduced Iron (C4) sits (C5) Stressed Plants (D1) nic Position (D2) quitard (D3)
/DROLO /PROLO /etland Hydrimary India Surface High Wa Saturati Water M Sedimen Drift De Algal Mi Iron De Surface Surface Surface	drology indicator cators (any one incomplete (A2) der (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) e Soil Cracks (B6) rvations:	s: icator is su	fficient) inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surfa Mari Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks)	ce (B8)	Secondary Ind Water-stal Drainage I Oxidized F Presence Salt Depo Stunted or Geomorph Shallow A Microtopo	icators (2 or more required) ned Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (of Reduced Iron (C4) sits (C5) r Stressed Plants (D1) note Position (D2) quitard (D3) graphic Relief (D4)
/DROLO //OROLO	ches):	s: icator is su	fficient) inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surfary Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) NoX Depth (inches):	ce (B8)	Secondary Ind Water-stal Drainage I Oxidized F Presence Salt Depo Stunted or Geomorph Shallow A Microtopo	icators (2 or more required) ned Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (of Reduced Iron (C4) sits (C5) r Stressed Plants (D1) note Position (D2) quitard (D3) graphic Relief (D4)
Pepth (incontended in the contended in t	ches):	s; icator is su	fficient) inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surfary Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches):	ce (B8)	Secondary Ind Water-stal Drainage I Oxidized F Presence Salt Depo Stunted or Geomorph Shallow A Microtopo FAC-Neut	icators (2 or more required) ned Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (of Reduced Iron (C4) sits (C5) r Stressed Plants (D1) note Position (D2) quitard (D3) graphic Relief (D4)
Pepth (incomercial control con	ches): drology indicator cators (any one inc water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) e Soil Cracks (B6) rvations: ter Present? e Present?	s: icator is su Yes Yes	fficient) inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surfar Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	ce (B8)	Secondary Ind Water-stai Drainage I Oxidized F Presence Salt Depo Stunted or Geomorph Shallow A Microtopo FAC-Neut	icators (2 or more required) ned Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (of Reduced Iron (C4) sits (C5) * Stressed Plants (D1) nic Position (D2) quitard (D3) graphic Relief (D4) ral Test (D5)
Primary India Surface High Water M Sedimer Drift Der Algal Mary Iron Der Surface Water Table Saturation Fron Ference Control of the Control o	ches): drology Indicator cators (any one inc water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) e Soil Cracks (B6) rvations: ter Present? e Present? present? present? present? present? present? present? present? present? present?	Yes Yes	fficient) inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surfa Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches): No Depth (inches): No Depth (inches): No Depth (inches):	ce (B8) We spections	Secondary Ind Water-stai Drainage I Oxidized F Presence Salt Depo Stunted or Geomorph Shallow A Microtopo FAC-Neut	icators (2 or more required) ned Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (of Reduced Iron (C4) sits (C5) r Stressed Plants (D1) nic Position (D2) quitard (D3) graphic Relief (D4) ral Test (D5)
Depth (incomercial contents) /DROLO /etland Hydrimary India Surface High Water Magel Mage	ches): drology Indicator cators (any one inc water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) e Soil Cracks (B6) rvations: ter Present? e Present? present? present? present? present? present? present? present? present? present?	Yes Yes	fficient) inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surfar Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	ce (B8) We spections	Secondary Ind Water-stai Drainage I Oxidized F Presence Salt Depo Stunted or Geomorph Shallow A Microtopo FAC-Neut	icators (2 or more required) ned Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (of Reduced Iron (C4) sits (C5) r Stressed Plants (D1) nic Position (D2) quitard (D3) graphic Relief (D4) ral Test (D5)

WEILAND DETERMINATION DATA FOR	Ⅵ – Alaska Region
Project/Site: Grant Lake Borough/City: M.	0050 Pass Sampling Date: 7-24-1
Applicant/Owner: Yenau Hydro	Sampling Point: UP29
Investigator(s): C.Schudel J. Blank Landform (hillside, ter	vace hummacks etc.): All Pdal
Local relief (concave, convex, none): Nove Slope (%): 2	naco, nanimocko, etc./.
Subregion: Lat: 40, 4895% Loi	ng: -140 26 2 (242) Datum:
	NWI classification: PEM (551E
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _	
	"Normal Circumstances" present? Yes 🔀 No
	eeded, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sampling point locat	•
Hydrophytic Vegetation Present? Yes X No Is the Sample	·
Hydric Soil Present? Yes X No	~
Wetland Hydrology Present? Yes No within a Wetla	nd? Yes No
Remarks: Wetland fringe community on lub	eshores Photos 258-259
VEGETATION – Use scientific names of plants. List all species in the plot.	
Absolute Dominant Indicator	Dominance Test worksheet:
Tree Stratum % Cover Species? Status	Number of Dominant Species
1. Nove	That Are OBL, FACW, or FAC: (A)
2	Total Number of Dominant
3	Species Across All Strata: (B)
Total Cover:	Percent of Dominant Species That Are OBL, FACW, or FAC: 83% (A/B)
50% of total cover: 20% of total cover:	That Are OBL, FACW, or FAC: 000 (A/B) Prevalence Index worksheet:
Sapling/Shrub Stratum 1. Alone Alnus VIVI dis 30 Y FAC	Total % Cover of: Multiply by:
	OBL species 15 x1= 15
2	FACW species 12 x 2 = 24
4 Herb Strange	FAC species <u>67</u> x3 = <u>201</u>
5. Agrostis scabra 5 FAC	FACU species 12 x 4 = 49
6, Agnostis Stolonifera 5 FAC	UPL species <u>\$</u> x5 = <u>2\$</u>
Social magnestis Canadensis	Соlumn Totals: (A) (B)
50% of total cover: 20% of total cover:	Prevalence index = $B/A = 2.82$
Herb Stratum 1. Utrica diòcia (nuttu) 2 : FACU	Hydrophytic Vegetation Indicators:
	X Dominance Test is >50%
2. Equiserum arvense 15 Y FAC	_X Prevalence Index is ≤3.0
4. Sangusorba canadinsis 10 Y. FACW	Morphological Adaptations¹ (Provide supporting
5. Mimolus guttatus (monluy 8) 10 y OBL	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain)
6. Canex agratis 5 OBL	- Problematic Hydrophytic Vegetation (Explain)
7. Angelica genoflexa 2 FACW	indicators of hydric soil and wetland hydrology must
8. Arencus Giolcus (goatsbeard) 5' UPL	be present unless disturbed or problematic.
9. Tellina grandiflora (fringerp) 10. Y. FACU	
10-Acto Aconitum deiphinifolium 2' FAC	
Total Cover: 81	,
50% of total cover: 40.5 20% of total cover: 16:7	Hydrophytic
Plot size (radius, or length x width) 10' × 10' % Bare Ground 5 % Cover of Wetland Bryophytes — Total Cover of Bryophytes 0	Vegetation Present? Yes X
(Where applicable)	Lieseiirt 162 VO VO
Remarks: 6 VET hangs day At most vigidis yout fretacted es	
photos! 258-259	

Profile Description: /Describe to the		Sampling Point: <u>DP</u> と
TOME DESCRIPTION (DESCRIPTION OF HIS	depth needed to document the Indicator or conf	irm the absence of indicators.)
Depth Matrix Inches) Color (moist) %	Redox Features Color (moist) % Type ¹ Loc ²	
No pit		
lake edg	e w/ standing water	
	RM=Reduced Matrix, CS=Covered or Coated Sand	
lydric Soil Indicators:	Indicators for Problematic Hydric Solls ³ :	
Histosol or Histel (A1)	Alaska Color Change (TA4) ⁴	Alaska Gleyed Without Hue 5Y or Redder
Histic Epipedon (A2)	Alaska Alpine Swales (TA5)	Underlying Layer
Hydrogen Sulfide (A4)	Alaska Redox With 2.5Y Hue	Other (Explain in Remarks)
Thick Dark Surface (A12)	30	. Controlled a Residue Books and Controlled a
Alaska Gleyed (A13)	³ One indicator of hydrophytic vegetation, or	ne primary indicator of wetland flydrology, flust be present unless disturbed or problematic.
Alaska Redox (A14)	and an appropriate landscape position in ⁴Give details of color change in Remarks.	lust be present unless disturbed of problematic.
_ Alaska Gleyed Pores (A15)	Give details of color change in Remarks.	
lestrictive Layer (if present):		·
Type:		
Depth (inches):		Hydric Soil Present? Yes X No
driffwood	large cobble + grovel debus & alder detre	4.5
	dents towardet	(103
YDROLOGY	dents total beeth	
	dents voices det()	Secondary Indicators (2 or more required)
Vetland Hydrology Indicators:		
Vetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Vetland Hydrology Indicators: Primary Indicators (any one Indicator is	sufficient)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10)
Vetland Hydrology Indicators: Primary Indicators (any one Indicator is X Surface Water (A1)	sufficient) Inundation Visible on Aerial Imagery (B7)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10)
Netland Hydrology Indicators: Primary Indicators (any one indicator is X Surface Water (A1) X High Water Table (A2)	sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Mart Deposits (B15) Hydrogen Sulfide Odor (C1)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5)
Vetland Hydrology Indicators: Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Mart Deposits (B15)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1)
Vetland Hydrology Indicators: Primary Indicators (any one Indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Mart Deposits (B15) Hydrogen Sulfide Odor (C1)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Vetland Hydrology Indicators: Primary Indicators (any one Indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3)
Vetland Hydrology Indicators: Primary Indicators (any one Indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Wetland Hydrology Indicators: Primary Indicators (any one indicator is X Surface Water (A1) X High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6)	sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3)
Vetland Hydrology Indicators: Primary Indicators (any one Indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6)	sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Mart Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Petiand Hydrology Indicators: Primary Indicators (any one Indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Yes	sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Mart Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Wetland Hydrology Indicators: Primary Indicators (any one Indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Yes	sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (any one Indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Yes Saturation Present? Yes	sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Wetland Hydrology Indicators: Primary Indicators (any one Indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Yes Saturation Present? Yes Includes capillary fringe)	sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks)	Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Yes Saturation Present? Yes Includes capillary fringe) Describe Recorded Data (stream gauge	sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Mart Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches): W No Depth (inches): W	Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Metland Hydrology Indicators: Primary Indicators (any one Indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Aigal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Yes Additional Present (Passer) Saturation Present? Yes Includes capillary fringe) Describe Recorded Data (stream gauge	sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Mart Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches): W No Depth (inches): W	Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (any one Indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Yes Saturation Present? Yes Includes capillary fringe) Describe Recorded Data (stream gauge	sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Mart Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches): W No Depth (inches): W	Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (any one Indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Yes Saturation Present? Yes Includes capillary fringe)	sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Mart Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches): W No Depth (inches): W	Secondary Indicators (2 or more required) Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)

Butterior Avant Lake	2. 24.1
Project/Site: Grant Lake Borough/City: Ma	
Applicant/Owner: Kenal Hydro	Sampling Point: DP 30
Investigator(s): C. Schude J. Blank Landform (hillside, te	errace, hummocks, etc.): <u>Albris terrace</u>
Local relief (concave, convex, none): Slope (%):	_
Subregion: Lat: LO, 489488 Lo	
Soil Map Unit Name: Colluval Soil diposit	NWI classification: UPIAnd
Are climatic / hydrologic conditions on the site typical for this time of year? Yes	(If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbed? No Are	e "Normal Circumstances" present? Yes X' No
Are Vegetation, Soil, or Hydrology naturally problematic? N . (If I	needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing sampling point local	
Hydrophytic Vegetation Present? Yes NoX	
Hydric Soil Present? Yes No Y	
Wetland Hydrology Present? Yes No X within a Wetland	and? YesNo
Remarks: Pt tules adjucent to DP2a wetlande	Il io land
De balen in marches on A sub sur the last	20- 265 260- 265
pt tulem in moister parting this wetland, adjuscen	at to a small derivage
VEGETATION – Use scientific names of plants. List all species in the plot	
Absolute Dominant Indicator Tree Stratum % Cover Species Status	
1. DICEA GLAUCA Species? Status	Notificer of Dominant Species
2. Balsante Populus balsamilera 30 Y FAW	
3.	Total Number of Dominant
4.	Species Across All Strata: (B)
Total Cover: 식5	Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)
50% of total cover: 22.5 20% of total cover: 9	Prevalence Index worksheet:
	Total % Cover of: Multiply by:
	OPI appelled O
	FACW species O x 2 = 0
4	FAC species 48 x3 = 234
5.	FACU species 98 x 4 = 392
6	UPL species <u>0</u> x 5 = <u>0</u>
Total Cover: 식당 .	Column Totals: 176 (A) 626 (B)
50% of total cover: 22,5 20% of total cover: 9	Prevalence Index = B/A = 3.56
Herb Stratum	
1. Oplopanax normalus 20 Y FACU	Hydrophytic Vegetation Indicators: Dominance Test is >50%
2. Aconitum allphinifolium 3 FAC	Prevalence Index is ≤3.0
3. Egishmarvense 40 1 FAE	Morphological Adaptations¹ (Provide supporting
4. Athyrum Palix-Pemina 10 FAC	data in Remarks or on a separate sheet)
36 Agrostis Stolenitera 10 FAC	Problematic Hydrophytic Vegetation (Explain)
6. Aymnocan dryoptens 3 FACU	
7. talamagnish's ounadousis 10 FAC	¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
8	so present anicos distarbed of problematic.
9	
10.	
Total Cover: 80	ļ <u>†</u>
50% of total cover: 43 20% of total cover: 17,1 Plot size (radius, or length x width) 20 Yad % Bare Ground 5	Hydrophytic
	Vegetation
% Cover of Wetland Bryophytes Total Cover of Bryophytes (Where applicable)	Present? Yes No X
Remarks:	<u></u>
. Photos: 260-265	

SOIL							Sampling Point: 13 50
Profile Desc	ription: (Describe to	the depth	needed to docu	ment the ir	dicator	or confirm	n the absence of indicators.)
Depth (inches)	MatrixColor (moist)	%	Redo Color (moist)	ox Features	Туре	_Loc²_	Texture Remarks
0-602			V	_ x			organics
2-10	10402/1						silt loam
11-15	1042211	10%	gravel	90%			911+ Jam + grand
15+		·					gravels
·,			,				
						•	
	en.						<u> </u>
Trans. CarCa	oncentration, D=Deple	tion DM-E	Padurad Matrix C	S=Covered	or Coale	d Sand Gr	rains. ² Location: PL=Pore Lining, M=Matrix.
Hydric Soil I		ation, ravi-r	Indicators for	Problemat	ic Hydric	Soils ³ :	tails. Coddon, y 2 ; old Brilling, W. Massa
1 *	or Histel (A1)		Alaska Col				Alaska Gleyed Without Hue 5Y or Redder
l —			Alaska Alp	_			Underlying Layer
	oipedon (A2)		Alaska Re				Other (Explain in Remarks)
	in Sulfide (A4) ark Surface (A12)		Alaska Ne	dox yviiii 2,	511100		
<u>, —</u>	Gleyed (A13)		³ One indicator	of hydronhy	tic veget	ation one	primary indicator of wetland hydrology,
· —	Redox (A14)						st be present unless disturbed or problematic.
. —	Sleyed Pores (A15)		⁴Give details of				
. —	Layer (if present):						
	None forms	L					,
1							Hydric Soil Present? Yes No 🚣
Depth (inc	ches):						Hydric Soft Flesenti Fes 110 /-
Remarks:							
							•
1							
	•						

HYDROLO	GY						
1	drology indicators:						Secondary Indicators (2 or more required)
Primary India	cators (any one indica	ator is suffic	ient)				Water-stained Leaves (B9)
Surface	Water (A1)	_	inundation Visi				Drainage Patterns (B10)
, High Wa	ater Table (A2)	_	_ Sparsely Veget	tated Conca	ive Surfa	ce (B8)	Oxidized Rhizospheres along Living Roots (C3)
* Saturation	on (A3)	_	_ Marl Deposits ((B15)			Presence of Reduced Iron (C4)
Water M	larks (B1)	_	_ Hydrogen Sulfi	de Odor (C	1)		Salt Deposits (C5)
Sedime	nt Deposits (B2)	_	_ Dry-Season Wa				Stunted or Stressed Plants (D1)
Drift Dep	posits (B3)	_	_ Other (Explain	in Remarks	i)	•	Geomorphic Position (D2)
	at or Crust (B4)						Shallow Aquitard (D3)
Iron Dep			· · · ·	•			Microtopographic Relief (D4)
	Soil Cracks (B6)						FAC-Neutral Test (D5)
Field Obser				·			
Surface Wat		es N	lo <u> </u>	nches):		_ ′	
Water Table	Present? Ye	 es N	lo 🔀 Depth (i	nches):			
Saturation P			lo Depth (i		1511	Wet	tland Hydrology Present? Yes No X
(includes car	oillary fringe)				12		
Describe Re	corded Data (stream	gauge, moi	nitoring well, aeria	i photos, pr	evious in	spections)	, If available:
Pemarka			14	11	.1		at all a los fore ant
Remarks:	* saturation	aeeper	man 17	, SW	ull o	iraina	ge ~4' away from plot.
	wetter in	this !	plot than	n suri	wali	ng up	plands
1	-					υ,	

. WETLAND DETI	ERMINATI	ON DAT	A FORM	I – Alaska Region
Project/Site: Crant Exect Lalie	В	orough/City	y: <u>Ma</u>	08 Pass Sampling Date: 7-24-1
Applicant/Owner: <u>Unau Hydro</u>			TAX-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	Sampling Point: DP31
Investigator(s): C. Schudel J. Blan		andform (h	illside, terre	ace, hummocks, etc.): ake edge
Local relief (concave, convex, none):	s	lope (%): _	<u>D</u>	historic welle on the
Subregion: Lat	: 40.47	1632	Long	g: <u>-149.334732</u> Datum:
Soil Map Unit Name:			1	NW classification: PSSEMIE
Are climatic / hydrologic conditions on the site typical for this	s time of year	7 Yes	<u>≺_</u> N₀	(If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrologys	significantly di	isturbed? (りり Are "l	Normal Circumstances" present? YesX No
Are Vegetation, Soil, or Hydrology r	naturally prob	lematic?	No (If ne	eded, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map sh	nowing san	npling po	int location	ons, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X N	lo	le th	e Sampled	Aron
Hydric Soil Present? Yes X	o	1	n a Wetlan	. /
Wetland Hydrology Present? Yes X N	o	With	ii a vvetiali	ur tes No
Remarks: Salix/ carex agrosts 1	neta	~4 co	Wisto	ric photos 280-284
VEGETATION – Use scientific names of plants.	liet all er	naciae in	the plot	
PEGETATION — Ode delettine flames of plants.	Absolute			Dominance Test worksheet:
Tree Stratum	% Cover			Number of Danisant Cassins /
1. None	. ——— -			That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant Species Across All Strata: 7 (B)
4.				,,,
Total Cover	:			Percent of Dominant Species That Are OBL, FACW, or FAC: 06 (A/B)
50% of total cover: Sapling/Shrub Stratum	20% of	total cover:		Prevalence Index worksheet:
1. Alnus Mudis	5		FAC	Total % Cover of: Multiply by:
2. Sallx carcland	- <u>- 10</u> -	٧ .	FAC.	OBL species <u>25</u> x1 = <u>25</u>
3. Bella planditisa	. 10	-	FAC	FACW species <u>5</u> x 2 = <u>10</u>
4. Betila Opapyrifera	3		FACU	FAC species x3 =
5. Prea glavia	10		FACU	FACU species 15 x4 = 100
6			·	UPL species 0 x5 = 0 Column Totals: U.S. (A) 30 S (B)
Total Cover	<u>. 40</u> .		,	Column Totals: 115 (A) 30 ≤ (B)
50% of total cover: 20	20% of t	otal cover:	8	Prevalence Index = B/A = 2.65
Herb Stratum	(TALL	Hydrophytic Vegetation Indicators:
1. Savavistrba cancelinsis 2. Egysetm arvense	· - 3	·	FACU	→ Dominance Test is >50%
3. Comarum palustre	. <u>12 </u>		03 L	∠ Prevalence index is ≤3.0
4. Potentilla patistre Disignora		7	FAC	Morphological Adaptations ¹ (Provide supporting
5. Agrostis Stoloniferdis Calinaden	- کا ج	٠,	FAC.	data in Remarks or on a separate sheet)
6. Carex aguahlis	15	-\	OBL	Problematic Hydrophytic Vegetation ¹ (Explain)
7.	- -			t Indicators of hydric soil and welland hydrology must
8.				be present unless disturbed or problematic.
9.				
10				
Total Cover	:_75			
50% of total cover: 37.	≤ 20% of to	otal cover:_	15_	Hydrophytic
Plot size (radius, or length x width) 40' ×5'	_ % Bare Gr	ound	O opin	Vegetation
% Cover of Wetland Bryophytes Total Cov (Where applicable)	ver of Bryoph	ytes <u>\</u>)	Present? Yes X No
Remarks:			<u> </u>	
10 mm 1 cm 2 cm				
photo: 280-284				

SOIL					Sampling Point	DP31
Profile Description: (Describe to the d	epth needed to document the indic	ator or confirm	n the absence of	ndicators.)	
Depth	Matrix	Redox Features				
(inches) Color	(moist) %	Color (moist) % Ty	/pe ¹ Loc ²	<u>Texture</u>	Remarks	
					004000000.104	
	Nopit					
		ig water in pla				
	Stangur	ug water in pis	<u> </u>		-	
						WATER 11
A STATE OF THE STA		ETT. STATESTAN PROGRAMME TERRESONAL FOR			W	-
					4	
General					01-000	
Type: C=Concentratio	n D=Depletion R	M=Reduced Matrix, CS=Covered or	Coated Sand Gr	rains ² l ocatio	on: PL=Pore Lining, N	1=Matriy
Hydric Soil Indicators		Indicators for Problematic H		anis. Locatio	MI. I E I OIC Elling, N	II IVIGUIAL
Histosol or Histel (A		Alaska Color Change (TA	•	Alaska Gl	eyed Without Hue 5Y	or Redder
Histic Epipedon (A		Alaska Alpine Swales (TA			ng Layer	
Hydrogen Sulfide (Alaska Redox With 2.5Y H			plain in Remarks)	
Thick Dark Surface	(A12)					
Alaska Gleyed (A1	3)	³ One indicator of hydrophytic v		•		
Alaska Redox (A14		and an appropriate landscap	-	t be present unles	s disturbed or problem	natic.
Alaska Gleyed Por		¹ Give details of color change in	n Remarks.			
Restrictive Layer (if p	resent):					
Туре:	4					
Depth (inches):				Hydric Soil Pre	esent? Yes 🔀	No
HYDROLOGY						
Wetland Hydrology In	dicators:			Secondary Indica	itors (2 or more requir	ed)
Primary Indicators (any		ufficient)		Water-staine	d Leaves (B9)	
Surface Water (A1))	Inundation Visible on Aerial Im-	agery (B7)	Orainage Pa		
High Water Table (Sparsely Vegetated Concave S			zospheres along Livir	ig Roots (C3)
Saturation (A3)		Marl Deposits (B15)		Presence of	Reduced Iron (C4)	
Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Salt Deposit	s (C5)	
Sediment Deposits	(B2)	Dry-Season Water Table (C2)			tressed Plants (D1)	
Drift Deposits (B3)		Other (Explain In Remarks)			Position (D2)	
Algai Mat or Crust	(B4)	And the second second		Shallow Aqu	44.4	
Iron Deposits (B5)	- (DO)				aphic Relief (D4)	
Surface Soil Crack	s (B6)			FAC-Neutral	Test (D5)	
Field Observations:	. v v				*	
Surface Water Present	4,	No Depth (inches); O				
Water Table Present?	Yes X	No Depth (inches):	18/24	i and Hudralass D	resent? Yes X	Mo
Saturation Present? (includes capillary fringer		_ No Depth (inches):	vveti	апо нуогоюду Р	resent/ res //	NO
Describe Recorded Dat	a (stream gauge,	monitoring well, aerial photos, previou	us inspections)/	if available:		
Daniel					-	
Remarks:					•	
			•			
						•

Project/Site: <u>Grant</u> Lake		A see O e	
Applicant/Owner: Kenal Hydro	Borough/City:/V	LOOSEPASS	_ Sampling Date: 7-14-13
	***************************************		_ Sampling Point: <u>DP 32</u>
Investigator(s): C. Schudel J. Blank	Landform (hillside, te		
Local relief (concave, convex, none):			lalu edge 110'
Subregion: Lat:	177 <i>310</i> Lo	ong: <u>~149, 334 804</u>	Datum:
Soil Map Unit Name:	with	NWI classifi	cation: upland
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes <u>X</u> No	(if no, explain in F	Remarks.)
Are Vegetation, Soil, or Hydrology significantly	/ disturbed? N∿ Are	"Normal Circumstances"	present? Yes X No
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? No (If r	needed, explain any answe	ers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sa			
Hydrophytic Vegetation Present? Yes X No			
Hydric Soil Present? Yes 葉 No ×	Is the Sample		
Wetland Hydrology Present? Yes No X	within a Wetiz	ınd? Yes	1 No <u>X</u>
Remarks: Whitesprune: / Hombock &.		4	
till a to be to be as love to be	emp, mg.	photos 7	185 - 293
Washinet may lorral petura	n. westmand @	DP31+tuks	
VEGETATION - Use scientific names of plants. List all		•	uplunds
Absolute Tree Stratum % Cover	Dominant Indicator Species? Status	Dominance Test work	
1. Tsuga mertensiana 30	FAC	Number of Dominant S	
2. Picea glaven 5	FACU	That Are OBL, FACW,	(A)
3	17100	Total Number of Domin	. /
4		Species Across All Stra	ita: (B)
Total Cover: <u> </u>		Percent of Dominant Sp That Are OBL, FACW,	laa
50% of total cover: 17.5 20% of	of total cover:	Prevalence Index wor	
Sapling/Shrub Stratum	y the	Total % Cover of:	
1. Empetrum nigrum 75 2. Ledum de cumbers 20	Y FAC		x1= 0
3. Vaccinium Viganosum 5	FAC	!	x2= 0
4. Betila glandinsa 10	- FAC	FAC species 150	
5. Tsuga mertensiana 10	FAC FAC	FACU species 5	x4= 70
6. Arctostaphylus uva-ursi 2	UPL	UPL species 2	x5= 10
Total Cover: 122		Column Totals: 157	(A) 450 (B)
	f total cover: 24.4]	-
Herb Stratum	total cover.	Lance Control of the	= B/A = 3,06
1. None		Hydrophytic Vegetation Dominance Test is	
2		Prevalence Index is	ı
		i e	stations (Provide supporting
		data in Remarks	or on a separate sheet)
5			hytic Vegetation ¹ (Explain)
6		1	
7		Indicators of hydric soil be present unless distur	and wetland hydrology must
8		be present diffess distat	ned of problematic.
9	- n	,	j
10.			•
Total Cover:			
50% of total cover: 20% of	total cover:	Hydrophytic	
Plot size (radius, or length x width) 70' radius % Bare G	Ground 0	Vegetation	
% Cover of Wetland Bryophytes Total Cover of Bryop (Where applicable)	hytes <u>5 i)</u>	Present? Yes	_X_ No
Remarks:			
•			į
			1

DIL 1						Sampling	Point:	21 02
	be to the dept	n needed to document the indicator o	r confirm the	absence	of Indica	ators.)		
Depth <u>Matri</u>	·	Redox Features					narks	
inches) Color (moist)		Color (moist) % Type ¹		exture	1.00			
0-4				/ 055	1100	0199	MCS	
	2.5/2 /00				am	· · · · · · · · · · · · · · · · · · ·	1.070mm A.1	
2-17 7.5 /P	113 100			<u> </u>	0 <u>am</u>			
	·							
-4000 <u>1000 - 400000</u>						~		
	 , •				•		· · · · · · · · · · · · · · · · · · ·	
								100
							in a	
						0.00		
	Depletion, RM=	Reduced Matrix, CS=Covered or Coated	d Sand Grains.	. ² Lc	cation: F	L=Pore L	ining, M=N	Matrix.
lydric Soil Indicators:		Indicators for Problematic Hydric Alaska Color Change (TA4) ⁴		Alask	a Gleved	Without H	lue 5Y or	Redder
Histosol or Histel (A1) Histic Epipedon (A2)		Alaska Color Change (TA4) Alaska Alpine Swates (TA5)	-		erlying L			. toddo:
Histic Epipedon (A2) Hydrogen Sulfide (A4)		Alaska Redox With 2.5Y Hue	_		-	in Remarl	<s)< td=""><td></td></s)<>	
Thick Dark Surface (A12))							
Alaska Gleyed (A13)		³ One indicator of hydrophytic vegeta	tion, one prima	ary indica	itor of wel	land hydr	ology,	
Alaska Redox (A14)		and an appropriate landscape pos		present u	inless dist	urbed or I	problemati	IC.
Alaska Gleyed Pores (A1		Give details of color change in Rem	narks.					
Restrictive Layer (if presen	t): /							
- 110.00 -	****		1					
Type: <u>Nove for</u> Depth (inches): Remarks:	MO		Н	ydric So	il Presen	t? Yes	6	10 <u>X</u>
Depth (inches):	<u>mar</u>		Н	ydric So	il Presen	t? Yes	}	10 <u>X</u>
Depth (inches):Remarks:	mai		н	ydric So	il Presen	t? Yes		ło <u>X</u>
Depth (inches):Remarks:					Additional Control of the Control of	t? Yes		-
Depth (inches):Remarks:	ors:	cient)		condary	ndicators stained Le	(2 or mor	e required	-
Depth (inches): Remarks: YDROLOGY Wetland Hydrology Indicate	ors:	Inundation Visible on Aerial Imagery	Sec. (B7)	condary Water-s	indicators stained Le	(2 or mor aves (B9) s (B10)	e required	n
Depth (inches): Remarks: YDROLOGY Wetland Hydrology Indicator Primary Indicators (any one i Surface Water (A1) High Water Table (A2)	ors:	Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surfac	Sec. (B7)	condary Water-s Drainaç Oxidize	indicators stained Le ge Pattern d Rhizosj	(2 or mor eaves (B9) s (B10) oheres alo	e required	n
Depth (inches): Primary Indicators (any one i Surface Water (A1) High Water Table (A2) Saturation (A3)	ors:	 Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surfac Marl Deposits (B15) 	Ser (B7) te (B8)	condary Water-s Drainaç Oxidize Presen	indicators stained Le ge Pattern d Rhizosj ce of Red	(2 or mor eaves (B9) is (B10) oheres alo uced Iron	e required	n
Depth (inches): YDROLOGY Wetland Hydrology Indicate Primary Indicators (any one i Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	ors:	 Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surfac Marl Deposits (B15) Hydrogen Sulfide Odor (C1) 	Ser (B7) te (B8)	condary Water-s Drainaç Oxidize Presen Salt De	indicators stained Le je Pattern d Rhizosj ce of Red posits (C!	(2 or mor eaves (B9) is (B10) oheres alo uced Iron 5)	e required ong Living (C4)	n
Depth (inches): Remarks: YDROLOGY Wetland Hydrology Indicate Primary Indicators (any one i Surface Water (A1). High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	ors:	 Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) 	Ser (B7) te (B8)	condary Water-s Drainag Oxidize Presen Salt De	indicators stained Le ge Pattern d Rhizosi ce of Red posits (C!	(2 or mor eaves (B9) is (B10) oheres alo uced Iron	e required ong Living (C4)	n
Depth (inches): Remarks: YDROLOGY Vetland Hydrology Indicator Indicators (any one i Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	ors:	 Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surfac Marl Deposits (B15) Hydrogen Sulfide Odor (C1) 	Ser (B7) te (B8)	condary Water-s Drainag Oxidize Presen Salt De Stuntec Geomo	indicators stained Le ge Pattern d Rhizosi ce of Red posits (C!	(2 or more aves (B9) as (B10) otheres alouced fron 5) sed Plants (Iton (D2)	e required ong Living (C4)	n
Print Deposits (B2) Algal Mat or Crust (B4) Depth (inches): Print Deposits (B2) Algal Mat or Crust (B4)	ors:	 Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) 	See (B7)	condary Water-s Drainag Oxidize Presen Salt De Stunted Geomo Shallov	indicators stained Le ge Pattern d Rhizosp ce of Red posits (C! I or Stress rphic Pos v Aquitard pographic	(2 or more aves (B9) as (B10) otheres alouced from 5) ased Plants fillon (D2) (D3) as Relief (D3)	e required ong Living (C4) s (D1)	n
Print Deposits (B2) Algal Mat or Crust (B4) Depth (inches): Print Deposits (B2) Algal Mat or Crust (B4)	ors: ndicator is suffi	 Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) 	See (B7)	condary Water-s Drainag Oxidize Presen Salt De Stunted Geomo Shallov	indicators stained Le ge Pattern d Rhizosp ce of Red posits (C! posits (C! or Stress rphic Pos	(2 or more aves (B9) as (B10) otheres alouced from 5) ased Plants fillon (D2) (D3) as Relief (D3)	e required ong Living (C4) s (D1)	n
Print Deposits (B2) Depth (inches): YDROLOGY Vetland Hydrology Indicate Primary Indicators (any one i Surface Water (A1). High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6)	ors: ndicator is suffi	Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks)	Ser (B7)	condary Water-s Drainag Oxidize Presen Salt De Stunted Geomo Shallov	indicators stained Le ge Pattern d Rhizosp ce of Red posits (C! I or Stress rphic Pos v Aquitard pographic	(2 or more aves (B9) as (B10) otheres alouced from 5) ased Plants fillon (D2) (D3) as Relief (D3)	e required ong Living (C4) s (D1)	n
Prince Water Present? Depth (inches): Primary Indicators (any one inches) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present?	ors: ndicator is suffi	Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks)	Sea (B7)	condary Water-s Drainag Oxidize Presen Salt De Stunted Geomo Shallov	indicators stained Le ge Pattern d Rhizosp ce of Red posits (C! I or Stress rphic Pos v Aquitard pographic	(2 or more aves (B9) as (B10) otheres alouced from 5) ased Plants fillon (D2) (D3) as Relief (D3)	e required ong Living (C4) s (D1)	n
Depth (inches): Remarks: YDROLOGY Wetland Hydrology Indicate Primary Indicators (any one i Surface Water (A1). High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present?	ors: ndicator is suffi	Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches):	See (B7)	condary Water-s Drainag Oxidize Presen Salt De Stuntec Geomo Shallov Microto	indicators stained Le ge Pattern d Rhizosp ce of Red posits (Cl or Stress rphic Pos v Aquitard pographic	(2 or more aves (B9) as (B10) otheres alouced from 5) sed Plants (Iton (D2) (D3) or Relief (D5)	e required ong Living (C4) s (D1)	l) Roots (C
Depth (inches): Remarks: YDROLOGY Wetland Hydrology Indicate Primary Indicators (any one i Surface Water (A1). High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Surface Soillary fringe)	ors: ndicator is suffi	Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No	Sec (B7)	condary Water-s Drainag Oxidize Presen Salt De Stunted Geomo Shallov Microto FAC-N	indicators stained Le ge Pattern d Rhizosp ce of Red posits (Cl or Stress rphic Pos v Aquitard pographic	(2 or more aves (B9) as (B10) otheres alouced from 5) ased Plants fillon (D2) (D3) as Relief (D3)	e required ong Living (C4) s (D1)	l) Roots (C
Depth (inches): Remarks: YDROLOGY Wetland Hydrology Indicate Primary Indicators (any one i Surface Water (A1). High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Surface Saturation Present?	ors: ndicator is suffi	Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No Depth (inches):	Sec (B7)	condary Water-s Drainag Oxidize Presen Salt De Stunted Geomo Shallov Microto FAC-N	indicators stained Le ge Pattern d Rhizosp ce of Red posits (Cl or Stress rphic Pos v Aquitard pographic	(2 or more aves (B9) as (B10) otheres alouced from 5) sed Plants (Iton (D2) (D3) or Relief (D5)	e required ong Living (C4) s (D1)	l) Roots (C
Depth (inches): Remarks: YDROLOGY Wetland Hydrology Indicate Primary Indicators (any one i Surface Water (A1). High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Surface Saturation Present?	ors: ndicator is suffi	Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No	Sec (B7)	condary Water-s Drainag Oxidize Presen Salt De Stunted Geomo Shallov Microto FAC-N	indicators stained Le ge Pattern d Rhizosp ce of Red posits (Cl or Stress rphic Pos v Aquitard pographic	(2 or more aves (B9) as (B10) otheres alouced from 5) sed Plants (Iton (D2) (D3) or Relief (D5)	e required ong Living (C4) s (D1)	l) Roots (C
Property (inches): Property Vetland Hydrology Indicate Primary Indicators (any one in Surface Water (A1). High Water Table (A2). Saturation (A3). Water Marks (B1). Sediment Deposits (B2). Drift Deposits (B3). Algal Mat or Crust (B4). Iron Deposits (B5). Surface Soil Cracks (B6). Field Observations: Surface Water Present? Water Table Present? Water Table Present? (Includes capillary fringe). Describe Recorded Data (streen)	ors: ndicator is suffi	Inundation Visible on Aerial Imagery Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) No	Sec (B7)	condary Water-s Drainag Oxidize Presen Salt De Stunted Geomo Shallov Microto FAC-N	indicators stained Le ge Pattern d Rhizosp ce of Red posits (Cl or Stress rphic Pos v Aquitard pographic	(2 or more aves (B9) as (B10) otheres alouced from 5) sed Plants (Iton (D2) (D3) or Relief (D5)	e required ong Living (C4) s (D1)	l) Roots (C

But was Grant I de	
Project/Site: <u>(jyant Lake</u>	Borough/City: Mouse Pass Sampling Date: 774
Applicant/Owner: Kanau Hydro	Sampling Point: DV 33
Investigator(s): C. Schudel J. Blank	Landform (hillside, terrace, hummocks, etc.): he edge
Local relief (concave, convex, none):	
Subregion: Lat: <u>\(\lambda \text{O} \text{L} \)</u>	85515 Long: -149.300783 Datum:
Soil Map Unit Name:	NWI classification: PEMIN
Are climatic / hydrologic conditions on the site typical for this time of	rear? Yes X No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significant	y disturbed? 🏴 Are "Normal Circumstances" present? Yes 🗶 No
Are Vegetation, Soil, or Hydrology naturally p	
SUMMARY OF FINDINGS - Attach site map showing s	ampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X No Yes No No No No No No No No No No No No No	is the Sampled Area
Wetland Hydrology Present?	within a Wetland? Yes X No
Remarks: Chrex dorninated metands	W/Stunding photos 304-308
[[4, 0	
VEGETATION - Use scientific names of plants. List al	•
Absolut	Dominant Indicator Species? Status Number of Persistent Species
1. Nove	Number of Dominant Species 2
2	That Ale Obl., FACVY, of FAC. (A)
3,	Total Number of Dominant 2
4,	Species Across All Strata: (B)
Total Cover:	Percent of Dominant Species That Are OBL, FACW, or FAC: (a/b)
50% of total cover: 20% Sapling/Shrub Stratum	of total cover: Prevalence Index worksheet:
1. Retila carrifera 5	Y FACU Total % Cover of: Mulliply by:
2. Salix pilchya 5	V FALW OBL species 92 x1= 92
3. Isuca mertinsiana 1	FAC FACW species $12 \times 2 = 24$
4. PICER GARAGE	FACV FAC species 16 x3 = 48
4. Picka granca	FACU species (a y 4 = 2.4
6.	UPL species <u>0</u> x 5 = <u>0</u>
Total Cover: 12-	Column Totals: 126 (A) 188 (B)
50% of total cover: 6 20%	of total cover: 2.4 Prevalence Index = B/A = 149
Herb Stratum	Hydrophytic Vegetation Indicators:
1. 18 Agristis Stolonifera lul. Cunaderoid O	X Dominance Tool in SERRY
2. Carex utriculata 70	Y Drovolonge Index to <2.0
3. <u>Comply um palistre</u> 20 4. <u>Fa. vise</u> tum arvence 5	
	data in Remarks or on a separate sheet)
5. <u>Jananish (ba Canadunsis</u> 5 6. <u>Carell canis</u> (ons 2	Problematic Hydrophytic Vegetation ¹ (Explain)
7. Carey Iohacea 2	FACW
	1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
9	
10	
Total Cover: 114	
50% of total cover: 57 20% of	ftotal cover: 7.2.8
Plot size (radius, or length x width) 20 Yad. % Bare	Hydrophytic I
% Cover of Wetland Bryophytes Total Cover of Bryo (Where applicable)	
Remarks:	
•	·

Sampling Point: DP33 SOIL Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features Redox Features

Color (moist) % Type¹ Loc² Texture Remarks (inches) standing water in plot ¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Malrix. Indicators for Problematic Hydric Soils3: Hydric Soil Indicators: _ Alaska Gleyed Without Hue 5Y or Redder _ Alaska Color Change (TA4)4 Histosol or Histel (A1) __ Alaska Alpine Swales (TA5) Underlying Layer ___ Histic Epipedon (A2) ___ Hydrogen Sulfide (A4) Other (Explain in Remarks) ___ Alaska Redox With 2.5Y Hue ___ Thick Dark Surface (A12) ³One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, __ Alaska Gleyed (A13) and an appropriate landscape position must be present unless disturbed or problematic. ___ Alaska Redox (A14) ⁴Give details of color change in Remarks. Alaska Gleyed Pores (A15) Restrictive Layer (if present): Type: _ Hydric Soil Present? Yes X No ____ Depth (inches): __ Remarks: **HYDROLOGY** Secondary Indicators (2 or more required) Wetland Hydrology Indicators: ___ Water-stained Leaves (B9) Primary Indicators (any one indicator is sufficient) ___ Drainage Patterns (B10) ___ Inundation Visible on Aerial Imagery (B7) X Surface Water (A1) Sparsely Vegetated Concave Surface (B8) Oxidized Rhizospheres along Living Roots (C3) Y High Water Table (A2) X Saturation (A3) ___ Presence of Reduced Iron (C4) __ Marl Deposits (B15) ___ Water Marks (B1) ___ Hydrogen Sulfide Odor (C1) Salt Deposits (C5) Stunted or Stressed Plants (D1) ___ Sediment Deposits (B2) ___ Dry-Season Water Table (C2) Geomorphic Position (D2) ___ Drift Deposits (B3) Other (Explain in Remarks) Shallow Aquitard (D3) __ Algal Mat or Crust (B4) Microtopographic Relief (D4) Iron Deposits (B5) FAC-Neutral Test (D5) _ Surface Soil Cracks (B6) Field Observations: Yes No Depth (inches): _ Surface Water Present? 🔀 No ____ Depth (inches): __ Water Table Present? Wetland Hydrology Present? Yes X No X No Depth (inches): _ Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:

Found a dead duckling in this wetland

A				W - Alaska Region
Project/Site: Carant latte	Borou	.gh/City:	Moos	se Pass Sampling Date: 7-24-
Applicant/Owner: Keheu Hydro		TT COME		Sampling Point: 5P34
Investigator(s): C.Schudel J. Blank	Landf	form (hil	lside, terr	race, hummocks, etc.): top. Of be-(rock t
Local relief (concave, convex, none):	Slope	e (%):	$\underline{\upsilon}$	
Subregion: Lat: Let:	2.485	733	Lor	ng: -149, 306361 Datum;
Soil Map Unit Name:				NWI classification: UP (41) of
Are climatic / hydrologic conditions on the site typical for this time of	of year? Y	'es}	<u> </u>	(if no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significa	ntly distur	bed? N	اه Are "	"Normal Circumstances" present? Yes X No
Are Vegetation, Soil, or Hydrology naturally	y problema	atic? N	o (If ne	eeded, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing	g sampli⊧	ng poir	nt locati	ions, transects, important features, etc
Hydrophytic Vegetation Present? YesXNo				
Hydric Soil Present? Yes No		Is the	Sampled	l Area
Wetland Hydrology Present? Yes No 🔀		withIn	a Wetlar	nd? Yes No X
Remarks: white sprust Hemloch		. 1	72	
white sprowy from work	·upi	unc	- 10rc	*GPS 11 ph. 309-314
VEGETATION – Use scientific names of plants. List a	all speci	es in th	ne plot.	
Absol	lute Dom	inant In	dicator	Dominance Test worksheet:
Tree Stratum % Co	over Spe	cies?	Status_	Market Co. 1 and 1
1. Pla marca 40	<u> </u>	- -	FACU	That Are OBL, FACW, or FAC: 3 (A)
3				Total Number of Dominant
4.				Species Across Ali Strata: (B)
Total Cover: 40				Percent of Dominant Species
50% of total cover; 20 20		cover:	ห	That Are OBL, FACW, or FAC: _/00 (A/B)
Sabling/Shrub Stratum				Prevalence Index worksheet:
1. Prea alavia 40		<u>L_ £</u>	ACU	Total % Cover of; Multiply by: OBL species O x 1 = O
2. TSICA MENTINSIANA 10		<u>_</u>	AC	OBL species <u>0</u> x1 = <u>0</u> FACW species <u>5</u> x2 = 10
3. Me Rzesia ferrogenea Z	2	£	ACU	FAC species 20 x3 = 40
5	— ——			FACU species $\frac{93}{4}$ $\times 4 = \frac{312}{312}$
6				UPL species O x 5 = O
Total Cover: 53	<u> </u>			Column Totals: 118 (A) 442 (B)
50% of total cover: 24.5 20%		over: (0.13	Prevalence Index = B/A = 3.75
Herb Stratum				
1. Cornus careadinsis 5	— - - 		Acu	Hydrophytic Vegetation Indicators: \(\sum \) Dominance Test is >50%
2. Rubus pharmamons 5			100	Prevalence Index is ≤3.0
3. Fausetim sylvation 5 4. Education arvense 5	$-\frac{1}{\sqrt{1}}$		FAU	Morphological Adaptations¹ (Provide supporting
5. Mumocarpum drypters 3	— <u>-</u>		AC	data in Remarks or on a separate sheet)
6. Dringtons delata expansa			100	Problematic Hydrophytic Vegetation ¹ (Explain)
7. Lycopodium claintum			4CU	1 Indicators of hydric with and made in the second
8		<u>r /</u>	100	Indicators of hydric soil and welland hydrology must be present unless disturbed or problematic.
9.			—	
10				
Total Cover: 25				
	 of total co	over: S		
	re Ground			Hydrophytic
% Cover of Wetland Bryophytes Total Cover of Bry (Where applicable)				Vegetation Present? Yes No
Remarks:				
				

SOIL	•						Sampling Point: PP 37
	ription: (Describe	to the d	epth needed t	o document	the indicator	or confir	m the absence of indicators.)
Depth	Matrix			. Redox Fea	tures		
(inches)	Color (maist)	%	Color (m	oist) º	<u> Type'</u>	Loc ²	Texture Remarks
10-2							Tive org.
2-4	104R 212	-	100%			- u -	<u>sit</u>
8-16	2,54 2.		100%		•		aravelly silt
_0 19			10 <u>01-</u>				$=\frac{1}{J}$
		•				-	
<u> </u>							
Type: C=C	oncentration, D=De	oletion, F	M=Reduced M	latrix, CS=Co	vered or Coal	ed Sand	Grains. ² Location: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators:		Indicat	ors for Probl	ematic Hydri	c Solls³:	
Histosol	or Histel (A1)			ska Color Ch		•	Alaska Gleyed Without Hue 5Y or Redder
Histic E _l	pipedon (A2)			ska Alpine S			Underlying Layer
	en Sulfide (A4)		Ala	ska Redox W	/ith 2.5Y Hue		Other (Explain in Remarks)
	ark Surface (A12)	,	³One in	dicator of hyd	Ironhytic veae	tation, on	e primary indicator of wetland hydrology,
-	Gleyed (A13) Redox (A14)		and :	an appropriat	e landscape p	osition m	ust be present unless disturbed or problematic.
	Gleyed Pores (A15)				change in Re		
Restrictive	Layer (if present):	**					
Туре:	nove for	<u> </u>		•			√
Depth (in	• '						Hydric Soil Present? Yes No X
HYDROLC	OGY		**			·	
	drology indicators	;					Secondary Indicators (2 or more required)
	icators (any one ind		sufficient)				Water-stained Leaves (B9)
Surface	e Water (A1)				n Aerial Image		Drainage Patterns (B10)
	ater Table (A2)				Concave Surf	ace (B8)	 Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4)
Saturat				eposits (B15) en Sulfide Od	for (C1)		Salt Deposits (C5)
	Marks (B1) ent Deposits (B2)			ason Water T			Stunted or Stressed Plants (D1)
Sedime				Explain in Re			Geomorphic Position (D2)
Algal M	lat or Crust (B4)			- •	•		Shallow Aquitard (D3)
	posits (B5)						Microtopographic Relief (D4)
	e Soil Cracks (B6)						FAC-Neutral Test (D5)
Field Obse	rvations:		./				
Surface Wa	iter Present?	Yes	_ No ———————————————————————————————————	Depth (inche	s):	—	
Water Table			_ № 				/etland Hydrology Present? Yes No
Saturation I	anillant fringe)		_ No <u>\</u>			- 1	<u> </u>
Describe R	ecorded Data (strea	m gauge	, monitoring w	ell, aerial pho	tos, previous	inspection	ns), if available:
							S ,
Remarks:							
							\

WEILAND DEI	EKRIIIAYI	ION DA	IA FUR	w – Alaska Region
Project/site: Civant Lake	F	Borough/C	ity: <u>Maa</u>	6e Pass Sampling Date: 7-25-
Applicant/Owner: <u>Keneu Hydro</u>				Sampling Point: DP 35
Investigator(s): <u>C. Schudel</u> J. Blank		Landform ((hiliside, terr	race, hummocks, etc.): Take edge
Local relief (concave, convex, none):CONCAVE_	8	Slope (%):	^	- pemile
Subregion: La	t <u>120, 4</u>	60930	<u></u> Lor	ng: -149, 337339 Detum:
Soil Map Unit Name:				NWI classification: PEATT PSSE
Are climatic / hydrologic conditions on the site typical for th	is time of yea	ar? Yes_	<u> X</u> No_	
Are Vegetation, Soil, or Hydrology :	significantly o	disturbed?	No Are	"Normal Circumstances" present? Yes X No
re Vegetation, Soil, or Hydrology	naturally prob	blematic?	NO (If no	eeded, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map sl	howing sar	mpling p	oint locat	ions, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X	io			
Hydric Soil Present? Yes N	lo		he Sampled hin a Wetlar	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Wetland Hydrology Present? Yes X	10	With	nin a wetiai	res No No
Remarks: Outlet of luke		•	P	hotos 321-323
/EGETATION – Use scientific names of plants	. List all s	pecies ir	n the plot.	·
Tree Stratum	Absolute <u>% Cover</u>		Indicator	Dominance Test worksheet:
1. Nove	70 COVE	Opecies:	Otatus	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2.			· ——	· · ·
3				Total Number of Dominant Species Across All Strata: (B)
4		LO.		
Total Cove	r:			Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
50% of total cover:	20% of	total cove	er:	Prevalence Index worksheet:
Sapling/Shrub Stratum 1. Dasiphora (Viticosa	10	У	FAC	Total % Cover of: Multiply by:
2. Picea slavca	- -10		FACU	OBL species 97 x1 = 97
3. Alnus Viridis	<u>. h</u>	7	FAC	FACW species _ 7 x2 = _ 14
1. Vaccinium uliganosum	3		FAC	FAC species 23 x3 = 69
5. Betla glandulosa	5.		FALU	FACU species x 4 = 28
s. Andromeda polifolia			FALW	UPL species D x5 = D
Total Cover	<u> 35 </u>			Column Totals: 134 (A) 209 (B)
50% of total cover: 17.5	20% of t	total cover	<u>: </u>	Prevalence Index = B/A = 1.55
1. Friophorm Chamissons	40	٧.	086	Hydrophytic Vegetation Indicators:
Carex agraphis	· - 10 ·	4	OBL	_X Dominance Test is >50%
. Equiselym fluviable	5	 -	OBL	× Prevalence Index is ≤3.0
Carex echinata Xt	- 5 -		OBL	Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
s. Sanguisorba canadensis			FACW	Problematic Hydrophytic Vegetation¹ (Explain)
Carex leptalea 🔞	5		03L	Troblematic Hydrophytic Vegetation (Explain)
Drosera mandialla	2		BL	¹ Indicators of hydric soil and wetland hydrology must
s. Swertia perennis			FACW	be present unless disturbed or problematic.
)	,			
0	·			
Total Cover			10.0	1
50% of total cover: 49.5				Hydrophytic
Plot size (radius, or length x width) 3° × 20° 6 Cover of Wetland Bryophytes Total Co (Where applicable)	_ % Bare Gr ver of Bryoph		<u>opentl</u> ú D	Vegetation Present? Yes X No
	at for	flis	100lus	iona lde Shoubs
often shorter than	herboce	ons;	portio	you ble shows rus of polygon are sisdomi,

Profile Description: (Descri	1 4 _ 41 4 _ 44		indiactor const	en the character	Sampling Point: _	<u> </u>
				rm the absence of	indicators.)	
Depth <u>Matri</u> Inches) Color (moist)		Redox Featur Color (moist) %	es Type ¹ Loc ²	_ Texture	Remarks	
nches) Color (moist)		Cotol (Holst) 78		<u> </u>	Kemarks	- Committee
	pit ste	inding water	r in plat			
	· 				·	
					ON THE RESIDENCE OF THE PARTY O	
		1000 Pt 10 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			VICEARAKEEHYYY Y	
					- William	
vne: C=Concentration, D=I	Depletion, RM=1	Reduced Matrix, CS=Cover	ed or Coated Sand	Grains. ² Locat	on: PL=Pore Lining, M=	Matrix.
dric Soll Indicators:		Indicators for Problem	atic Hydric Soils³:		*************************************	
Histosol or Histel (A1)		Alaska Color Chang	•		eyed Without Hue 5Y or	r Redder
Histic Epipedon (A2)	•	Alaska Alpine Swal			ing Layer	
Hydrogen Sulfide (A4)		Alaska Redox With		Other (Ex	plain in Remarks)	
Thick Dark Surface (A12))	•				
_ Alaska Gleyed (A13)		³ One indicator of hydrop	hytic vegetation, or	ne primary indicator	of wetland hydrology,	
_ Alaska Redox (A14)					s disturbed or problema	itic.
_ Alaska Gleyed Pores (A1	5)	fGive details of color ch		•		
estrictive Layer (if present					ALMIN	
Type:						
Depth (inches):			•	Hudric Soil D	esent? Yes 🗶	No
emarks:						
'DROLOGY						
	ors:			Secondary Indic	alors (2 or more require	<u>d)</u>
Vetland Hydrology Indicato		cient)		Secondary Indic		<u>d)</u>
Vetland Hydrology Indicator		elent) Inundation Visible on Ae	rial Imagery (B7)	Water-stain		<u>d)</u>
Vetland Hydrology Indicator rimary Indicators (any one in Surface Water (A1)				Water-stain Drainage P	ed Leaves (B9)	
Vetland Hydrology Indicator rimary Indicators (any one in X Surface Water (A1) X High Water Table (A2)		Inundation Visible on Ae		Water-stain Drainage P Oxldized R	ed Leaves (B9) atterns (B10)	
Vetland Hydrology Indicatorimary Indicators (any one in		Inundation Visible on Ae Sparsely Vegetated Con	cave Surface (B8)	Water-stain Drainage P Oxldized R	ed Leaves (B9) atterns (B10) aizospheres along Living f Reduced Iron (C4)	
Vetland Hydrology Indicator rimary Indicators (any one in		Inundation Visible on Ae Sparsely Vegetated Cor Marl Deposits (B15) Hydrogen Sulfide Odor (cave Surface (B8)	Water-stain Drainage P Oxidized Ri Presence o Salt Deposi	ed Leaves (B9) atterns (B10) aizospheres along Living f Reduced Iron (C4)	
Vetland Hydrology Indicator rimary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)		Inundation Visible on Ae Sparsely Vegetated Con Marl Deposits (B15) Hydrogen Sulfide Odor (Dry-Season Water Table	(C1) e (C2)	Water-stain Drainage P Oxidized Ri Presence o Salt Deposi	ed Leaves (B9) atterns (B10) nizospheres along Living f Reduced Iron (C4) Is (C5)	
Vetland Hydrology Indicator rimary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)		Inundation Visible on Ae Sparsely Vegetated Cor Marl Deposits (B15) Hydrogen Sulfide Odor ((C1) e (C2)	Water-stain Drainage P Oxidized Ri Presence o Salt Deposi Stunted or Geomorphi	ed Leaves (B9) atterns (B10) aizospheres along Living f Reduced Iron (C4) is (C5) Stressed Plants (D1) c Position (D2)	
Vetland Hydrology Indicator rimary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)		Inundation Visible on Ae Sparsely Vegetated Con Marl Deposits (B15) Hydrogen Sulfide Odor (Dry-Season Water Table	(C1) e (C2)	Water-stain Drainage P Oxidized Ri Presence o Salt Deposi Stunted or Geomorphi Shallow Aq	ed Leaves (B9) atterns (B10) aizospheres along Living f Reduced Iron (C4) as (C5) Stressed Plants (D1) b Position (D2) uitard (D3)	
Vetland Hydrology Indicator rimary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	ndicator is suffic 	Inundation Visible on Ae Sparsely Vegetated Con Marl Deposits (B15) Hydrogen Sulfide Odor (Dry-Season Water Table	(C1) e (C2)	Water-stain Drainage P Oxidized Ri Presence o Salt Deposi Stunted or Geomorphi Shallow Aq Microtopog	ed Leaves (B9) atterns (B10) aizospheres along Living f Reduced Iron (C4) as (C5) Stressed Plants (D1) a Position (D2) aitard (D3) aphic Relief (D4)	
Vetland Hydrology Indicator Inimary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6)	ndicator is suffic 	Inundation Visible on Ae Sparsely Vegetated Con Marl Deposits (B15) Hydrogen Sulfide Odor (Dry-Season Water Table	(C1) e (C2)	Water-stain Drainage P Oxidized Ri Presence o Salt Deposi Stunted or Geomorphi Shallow Aq	ed Leaves (B9) atterns (B10) aizospheres along Living f Reduced Iron (C4) as (C5) Stressed Plants (D1) a Position (D2) aitard (D3) aphic Relief (D4)	
Vetland Hydrology Indicator Infinary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6)	ndicator is suffic	Inundation Visible on Ae Sparsely Vegetated Cor Marl Deposits (B15) Hydrogen Sulfide Odor (Dry-Season Water Table Other (Explain in Reman	(C1) (C2) (ks)	Water-stain Drainage P Oxidized Ri Presence o Salt Deposi Stunted or Geomorphi Shallow Aq Microtopog	ed Leaves (B9) atterns (B10) aizospheres along Living f Reduced Iron (C4) as (C5) Stressed Plants (D1) a Position (D2) aitard (D3) aphic Relief (D4)	
Vetland Hydrology Indicator rimary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Ietd Observations:	Yes X N	Inundation Visible on Ae Sparsely Vegetated Cor Marl Deposits (B15) Hydrogen Sulfide Odor (Dry-Season Water Table Other (Explain in Remar	(C1) (C2) (ks)	Water-stain Drainage P Oxidized Ri Presence o Salt Deposi Stunted or Geomorphi Shallow Aq Microtopog	ed Leaves (B9) atterns (B10) aizospheres along Living f Reduced Iron (C4) as (C5) Stressed Plants (D1) a Position (D2) aitard (D3) aphic Relief (D4)	
Vetland Hydrology Indicator Primary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Vater Table Present?	Yes X	Inundation Visible on Ae Sparsely Vegetated Cor Marl Deposits (B15) Hydrogen Sulfide Odor (Dry-Season Water Table Other (Explain in Reman	(C1) e (C2) ks)	Water-stain Drainage P Oxidized Ri Presence o Salt Deposi Stunted or Geomorphi Shallow Aq Microtopog FAC-Neutra	ed Leaves (B9) atterns (B10) aizospheres along Living f Reduced Iron (C4) as (C5) Stressed Plants (D1) be Position (D2) aitard (D3) caphic Relief (D4)	3 Roots (C
Vetland Hydrology Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Vater Table Present? Saturation Present?	Yes X N	Inundation Visible on Ae Sparsely Vegetated Cor Marl Deposits (B15) Hydrogen Sulfide Odor (Dry-Season Water Table Other (Explain in Remar Depth (inches): Depth (inches):	(C1) a (C2) ks)	Water-stain Drainage P Oxidized Ri Presence o Salt Deposi Stunted or Geomorphi Shallow Aq Microtopog FAC-Neutra	ed Leaves (B9) atterns (B10) aizospheres along Living f Reduced Iron (C4) as (C5) Stressed Plants (D1) a Position (D2) aitard (D3) aphic Relief (D4) al Test (D5)	g Roots (C
Vetland Hydrology Indicator Primary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Vater Table Present? Saturation Present?	Yes X N	Inundation Visible on Ae Sparsely Vegetated Cor Marl Deposits (B15) Hydrogen Sulfide Odor (Dry-Season Water Table Other (Explain in Remar Depth (inches): Depth (inches):	(C1) a (C2) ks)	Water-stain Drainage P Oxidized Ri Presence o Salt Deposi Stunted or Geomorphi Shallow Aq Microtopog FAC-Neutra	ed Leaves (B9) atterns (B10) aizospheres along Living f Reduced Iron (C4) as (C5) Stressed Plants (D1) a Position (D2) aitard (D3) aphic Relief (D4) al Test (D5)	3 Roots (C
Vetland Hydrology Indicator Primary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Vater Table Present? Saturation Present? includes capillary fringe) Describe Recorded Data (street	Yes X N	Inundation Visible on Ae Sparsely Vegetated Cor Marl Deposits (B15) Hydrogen Sulfide Odor (Dry-Season Water Table Other (Explain in Remar Depth (inches): Depth (inches):	(C1) a (C2) ks)	Water-stain Drainage P Oxidized Ri Presence o Salt Deposi Stunted or Geomorphi Shallow Aq Microtopog FAC-Neutra	ed Leaves (B9) atterns (B10) aizospheres along Living f Reduced Iron (C4) as (C5) Stressed Plants (D1) a Position (D2) aitard (D3) aphic Relief (D4) al Test (D5)	3 Roots (C
Vetland Hydrology Indicator Primary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Vater Table Present? Saturation Present? includes capillary fringe) Describe Recorded Data (street	Yes X N	Inundation Visible on Ae Sparsely Vegetated Cor Marl Deposits (B15) Hydrogen Sulfide Odor (Dry-Season Water Table Other (Explain in Remar Depth (inches): Depth (inches):	(C1) a (C2) ks)	Water-stain Drainage P Oxidized Ri Presence o Salt Deposi Stunted or Geomorphi Shallow Aq Microtopog FAC-Neutra	ed Leaves (B9) atterns (B10) aizospheres along Living f Reduced Iron (C4) as (C5) Stressed Plants (D1) a Position (D2) aitard (D3) aphic Relief (D4) al Test (D5)	3 Roots (C
Vetland Hydrology Indicator Primary Indicators (any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Vater Table Present? Saturation Present? Saturation Present? Describe Recorded Data (street	Yes X N	Inundation Visible on Ae Sparsely Vegetated Cor Marl Deposits (B15) Hydrogen Sulfide Odor (Dry-Season Water Table Other (Explain in Remar Depth (inches): Depth (inches):	(C1) a (C2) ks)	Water-stain Drainage P Oxidized Ri Presence o Salt Deposi Stunted or Geomorphi Shallow Aq Microtopog FAC-Neutra	ed Leaves (B9) atterns (B10) aizospheres along Living f Reduced Iron (C4) as (C5) Stressed Plants (D1) a Position (D2) aitard (D3) aphic Relief (D4) al Test (D5)	3 Roots (C
Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	Yes X N	Inundation Visible on Ae Sparsely Vegetated Cor Marl Deposits (B15) Hydrogen Sulfide Odor (Dry-Season Water Table Other (Explain in Remar Depth (inches): Depth (inches):	(C1) a (C2) ks)	Water-stain Drainage P Oxidized Ri Presence o Salt Deposi Stunted or Geomorphi Shallow Aq Microtopog FAC-Neutra	ed Leaves (B9) atterns (B10) aizospheres along Living f Reduced Iron (C4) as (C5) Stressed Plants (D1) a Position (D2) aitard (D3) aphic Relief (D4) al Test (D5)	3 Roots (C

Project/Site: Grant Lake	Borough/City: Morse Pass Sampling Date	7-25-1
Applicant/Owner: Keney Hydro	Sampling Date	DD 210 1
Investigator(s): C.Schwdul J. Blank.	Sampling Poir	nt: <u>DP 36 4</u>
		edic
Subregion:	1096 (%); <u>7</u>	o .
Soil Map Unit Name: DP38: 40.	Long: 149, 3374 Datum;	
		nel
Are climatic / hydrologic conditions on the site typical for this time of year	// Yes No (If no, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology significantly of the station, so it, isturbed? No Are "Normal Circumstances" present? Yes _	<u>≺</u> No	
Are Vegetation, Soil, or Hydrology naturally pro-	•	· ·
SUMMARY OF FINDINGS - Attach site map showing sa	npling point locations, transects, important feature	s, etc.
Hydrophytic Vegetation Present? Yes X No		
Hydric Soil Present? Yes No _X	is the Sampled Area	
Wetland Hydrology Present? Yes No	within a Wetland? Yes No	_
Remarks: The Community documented	protos 367-369 DP38	
Photos 224 B is that same day	at DP36 photos 342 - 345 DF	106
VEGETATION - Use scientific names of plants List - Use	aning w bros. 1413 datasheet 13	<u>repretent</u>
VEGETATION – Use scientific names of plants. List all s		weations
Tree Stratum Absolute % Cover	Dominant Indicator Dominance Test worksheet: Species? Status Number of Paris and Paris a	
1. Tsuga mertinsiana 15	Number of Dominant Species That Are OBL, FACW, or FAC: 3	/45
2. Picoa glavca 5	V FACUL	(A)
3	Total Number of Dominant Species Across All Strata:	(5)
4	opedies Acioss Ali Strata.	(B)
Total Cover: 20	Percent of Dominant Species. That Are OBL, FACW, or FAC: 15	(A/B)
50% of total cover: 10 20% of Sapling/Shrub Stratum	total cover: Prevalence Index worksheet:	(///
1. Torga mertinsiana 30	Total % Course of Mark	oly by:
2. Picea glavica 10	OBL species 0 x1 = 0	*****
3. Todim diembers 10	FAC FACW species 1) x2 = 0	
4. Vaccinium visanosm 15	FAC FAC species 100 x3 = 30	00
5. Emperum nlgnm :30	Y FAC FACU species 18 x4= 7	2
6. Arctostaphylos uvan usi 5	νρυ UPL species .5 x 5 = 2	
Geocaton Motion 3 FATORIA Cover: 103	Column Totals: 173 (A) 3	97 (B)
50% of total cover: 51.5 20% of t	otal cover: 20.0 Prevalence Index = B/A = 3.1	73
Herb Stratum	Hydrophytic Vegetation Indicators:	
1. None		İ
2	Decuation 1.1 to a	
3.	Morphological Adaptations 1 (Provide	eunnerting
4	data in Remarks or on a senarate	sheet)
5		(Explain)
6		
7	1 Indicators of hydric soil and wetland hyd be present unless disturbed or problema	Irology must
8		
9		1
10		
	tet e ive v	
50% of total cover: 20% of total cover: % Bare Gr	Hydrophytic	1
% Cover of Wetland Bryophytes Total Cover of Bryoph (Where applicable)	Ound S Vegetation	
Remarks:		

SOIL				Sampling Point: 01 30
Profile Description: (Describe t	o the depti	needed to document the indicator o	r confirm	the absence of indicators.)
Depth Matrix		Redox Features Color (moist) % Type ¹	Loc ²	Texture Remarks
(inches) Color (moist)		Cotor (moist) % Type	LUC	
0-6				Moss + roots organics
6-7 2,54 3/2	<u> 50% </u>	7.54R 2.513 50% C	M	<u>silt</u>
1				silt/am
	 -			The state of the s
Type: C=Concentration D=Deni	etion RM=	Reduced Matrix, CS=Covered or Coate	d Sand G	rains. ² Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:	Ottotil 1 mai-1	Indicators for Problematic Hydric	Soils³:	
Histosol or Histel (A1)		Alaska Color Change (TA4) ⁴		Alaska Gleyed Without Hue 5Y or Redder
Histic Epipedon (A2)		Alaska Alpine Swales (TA5)		Underlying Layer
Hydrogen Sulfide (A4)		Alaska Redox With 2,5Y Hue		Other (Explain in Remarks)
Thick Dark Surface (A12)		3		adapan indicator of mattend budgeton.
Alaska Gleyed (A13)		*One indicator of hydrophytic vegeta	ition, one	primary indicator of wetland hydrology, at be present unless disturbed or problematic.
Alaska Redox (A14)		4Give details of color change in Ren		the present diffess disturbed of problematio.
Alaska Gleyed Pores (A15) Restrictive Layer (If present):		Glad details of color change in Fren		
Type: NOV DUM	1			
Depth (inches):	4			Hydric Soil Present? Yes No
Remarks:				
Kemano.				
·				
HYDROLOGY	<u></u>			
Wetland Hydrology Indicators:				Secondary Indicators (2 or more required)
Primary Indicators (any one indic		sient)		Water-stained Leaves (B9)
Surface Water (A1)	<u> </u>	Inundation Visible on Aerial Imagery	(B7)	Drainage Patterns (B10)
High Water Table (A2)	_	Sparsely Vegetated Concave Surface		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)
Drift Deposits (B3)	_	_ Other (Explain in Remarks)		Geomorphic Position (D2)
Algal Mat or Crust (B4)				Shallow Aquitard (D3)
Iron Deposits (B5)				Microtopographic Relief (D4) FAC-Neutral Test (D5)
Surface Soil Cracks (B6)	•			FAC-Neutal Test (D3)
Field Observations:	/	Ja V Dooth (inches)	- 1	
1		No X Depth (inches): No X Depth (inches):		
11211		No Depth (inches):		tland Hydrology Present? Yes No X
(includes capillary fringe)	<u> </u>		_	
Describe Recorded Data (stream	gauge, mo	nitoring well, aerial photos, previous in:	spections)), if available:
			•	
Remarks:				
,				

Project/Site: <u>Carant lake</u>	Borou	gh/City:M	ouse Pass	Sampling Date:	
Applicant/Owner: Keneu Hydro				Sampling Point:	DP37
Investigator(s): C'Schudel' J. Blank			rrace, hummocks, etc.):	swale	
Local relief (concave, convex, none):	Slope	(%):	·		
Subregion: Lat: Lo	0, 4595				
Soil Map Unit Name:			NWI classific	ation: PFO4	B/PEMIL
Are climatic / hydrologic conditions on the site typical for this time	e of year? Y	es <u>X</u> No	(If no, explain in R	emarks.)	1,
Are Vegetation, Soil, or Hydrology signific	cantly disturi	oed? 🕪 Are	e "Normal Circumstances" p	resent? YesX	, No
Are Vegetation, Soil, or Hydrology natura	ally problema		needed, explain any answe	,	-
SUMMARY OF FINDINGS – Attach site map showing	ng samplir				etc.
Hydrophytic Vegetation Present? Yes X No					
Hydric Soil Present? Yes X No		Is the Sample		V	
Wetland Hydrology Present? Yes X No	i	within a Wetla	and? Yes	_X No_	
Remarks: marginal Forested weture Same weaton as HDR's 201	10 j2+1	<u>*10 </u>		367 - 360	<i>'</i>
VEGETATION - Use scientific names of plants. Lis	t all specie	es in the plot	t.	,	
		inant Indicator		sheet:	
		cies? Status	. I tanuibet of Doubligut 2	pecies ,,	
1. Tsuga mertensiana ==	15	FAL	That Are OBL, FACW, o	or FAC: _	(A)
3			Total Number of Domini		
3			Species Across All Stra	la: <u>7</u>	(B)
Total Cover:			Percent of Dominant Sp That Are OBL, FACW, o	ecies or FAC: 100	(A/B)
50% of total cover: <u>37.5</u> 3 Sapling/Shrub Stratum	20% of total	cover: <u>\S</u>	Prevalence Index work	(sheet:	
1. Tsuga mertensiana	b 4	FAC	Total % Cover of.	Multiply	<u>/ by:</u>
. //	3 05 - 1	FAC	OBL species 0	x1= <u>0</u>	·
3.	- —			x2= <u>leO</u>	<u>, </u>
4			FAC species <u>95</u>	x3= <u>Z</u> Y	<u>'S</u>
5			FACU species 23		
6			UPL species <u>O</u>	x5= <u>0</u>	
Total Cover:	<u></u>		Column Totals: 148	(A) <u>43</u>	<u>.7 </u>
50% of total cover: 7.5 2	0% of total c	over: 3	Prevalence Index	- B/A - 7.9	
Herb Stratum			Hydrophytic Vegetatio		
1. Pubus chamaemous 3	<u> </u>	FACW	Dominance Test is:		
2. Streptopus amplexitolium 3		_ FACU	✓ Prevalence Index is		
3. Optopoinax horridus 4. Jacon Vaccinium - Harris E	<u> </u>	<u> FACU</u>	Morphological Adap		supporting :
A	<u> </u>	FAU	data in Remarks	or on a separate s	sheet)
5. Cornus canadinsis 10		_ FACU	Problematic Hydrop	hytic Vegetation ¹ ((Explain)
6. Lycopodium clavatum 5	<u> </u>	<u>FACU</u>	1		:
7			¹ Indicators of hydric soil be present unless disturi	and wetland hydro	ology must
8			bo present unless distan	bed of problematic	<u> </u>
9					
10					
Total Cover: 55		11 1			
	0% of total o		Hydrophytic		
	Bare Ground		Vegetation	~	
% Cover of Wetland Bryophytes Total Cover of (Where applicable)	Bryophytes .	70	Present? Yes	_X_ No	
Remarks:					

SOIL							Sampling Point:	DP37
Profile Description: (Describe	to the dept	h needed to docu	ment the i	ndicator	or confir	m the absence		
Depth Matrix	to the dop.		x Features				,	
(inches) Color (moist)	%	Color (moist)	<u> %</u>	_Type ¹ _	Loc²	Texture	Remarks	
0-3						mass -	ive organics	
	50%	10422/1	50°h		. M		.17	
9-16 104R-2/1	100						Silt & noots	*****
1010 1011 -11	<u> 100</u>			·		(DOLLATE)	0//1 1/01/3	
		Anne	_ 	<u> </u>				
	·	i.	<u> </u>	,				
	· — ·							
¹ Type: C=Concentration, D=Dep	ietion. RM≍	Reduced Matrix. C	S=Covered	or Coate	ed Sand C	Grains. ² Loc	cation: PL=Pore Lining, M	=Matrix.
Hydric Soil Indicators:	(Ollong Fair	Indicators for	Problemat	ic Hydric	Soils ³ :			
Histosol or Histel (A1)		Alaska Col	or Change	(TA4) ⁴		Alaska	Gleyed Without Hue 5Y o	r Redder
Histic Epipedon (A2)		Alaska Alp	ine Swates	(TA5)		Unde	erlying Layer	
Hydrogen Sulfide (A4)		Alaska Red	dox With 2.	5Y Hue		Other	(Explain in Remarks)	
Thick Dark Surface (A12)		·						
Alaska Gleyed (A13)							or of welland hydrology,	- 44 -
Alaska Redox (A14)						st be present ur	less disturbed or problem	atic.
Alaska Gleyed Pores (A15)		⁴Give details of	color cuan	ige in Rei	narks.			
Restrictive Layer (if present):	1							
Type: Nove fou Depth (inches):	Λ <i>ο</i> Υ					Undrig Soil	Present? Yes X	No
we are being								ч
HYDROLOGY					· · · · · · · · · · · · · · · · · · ·			
Wetland Hydrology Indicators:					<u></u>	Secondary In	dicators (2 or more require	<u>∍d)</u>
Primary Indicators (any one indic		cient)				Water-st	ained Leaves (B9)	
Surface Water (A1)		Inundation Visit	ole on Aeria	al imager	y (B7)	Drainage	Patterns (B10)	
High Water Table (A2)	_	Sparsely Veget					Rhizospheres along Livin	g Roots (C3)
Saturation (A3)	_	Marl Deposits (B15)			Presence	e of Reduced Iron (C4)	
Water Marks (B1)	_	Hydrogen Sulfic					osits (C5)	
Sediment Deposits (B2)		Dry-Season Wa				 .	or Stressed Plants (D1)	
Drift Deposits (B3)	-	Other (Explain i	in Remarks	s)			ohic Position (D2)	
Algal Mat or Crust (B4)							Aquitard (D3)	
Iron Deposits (B5)							ographic Relief (D4) utral Test (D5)	
Surface Soil Cracks (B6)						PAC-Nei		
Field Observations:	/	No X Depth (i	nahaa):					
1		No X Depth (i					N	
		No X Depth (i			1	i tland Hydrolog	ıy Present? Yes _X	No
(includes capillary fringe)		•					,, . 10001111 100 _/.	
Describe Recorded Data (stream	gauge, mo	nitoring well, aerial	photos, pr	evious in	spections), if available:		
Remarks:		1	(1	, Alexander	£ '1		2.10	
HDR doc	winter	fid Satur	arro	cond	レッナング	na In	4.010	

WEILAND DETE		און אם זונ	CI OICH	- Alaska Region		
Project/Site: Grant Greek Condox	Boi	rough/City:	Max	je Pars	_ Sampling Date: _	7-25-1
Applicant/Owner: Kenal Hydro				- CANTELLY AND THE ANGLE TO A STREET THE ANGLE AND A STREET THE ANGLE AND A STREET THE ANGLE AND A STREET THE ANGLE AND A STREET THE ANGLE AND A STREET THE ANGLE AND A STREET THE ANGLE AND A STREET THE ANGLE AND A STREET THE ANGLE ANGLE AND A STREET THE ANGLE ANGLE AND A STREET THE ANGL ANGLE	_ Sampling Point: _	DP39
Investigator(s): C. Schudul J. Blan	<u>∤</u> La₁	ndform (hills	side, terra	ce, hummocks, etc.):	<u>stream chou</u>	Mel
10.300			4			
Subregion: Lat:	100,45	7607	Long	j: <u> 149, 3373 37</u>	Datum:	
Subregion: Lat: Lat: Lat:	460	9495		NWI classific	cation: <u>PS S ti</u>	EM E
Are climatic / hydrologic conditions on the site typical for this	time of year?	Yes 	No	(If no, explain in F	₹emarks,)	
Are Vegetation, Soil, or Hydrology sig	gnificantiy dis	turbed? M	ا ^ی Are "۱	Normal Circumstances"	present? Yes 💢	No
Are Vegetation, Soil, or Hydrology na	iturally proble	ematic? N	ં (If nee	eded, explain any answe	ers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map sho	owing sam	pling poin	nt locatio	ons, transects, impo	ortant features,	etc.
Hydrophytic Vegetation Present? Yes X No		1-4-6	D	A		
		- 4	Sampled , a Wetland	Area 43 Vot	No	
Remarks: pt taken along a runn	ing tr	ibuta	ng (12	35B) Photosi	37分~37	7
VÈGETATION – Use scientific names of plants.	List all spe	ecies in th	ne plot.			,J
T	Absolute D			Dominance Test work	ksheet;	
l . N a .	% Cover S		1	Number of Dominant S	ipecies	/43
1. None 2.				That Are OBL, FACW,	OFFAC: V	(A)
3.	W/#=1,/,			Total Number of Domir Species Across All Stra		(B)
4.				• •		(5)
Total Cover:				Percent of Dominant S That Are OBL, FACW,		(A/B)
50% of total cover:	20% of to	olal cover:_		Prevalence Index wor		(,,,,,
<u>Sapling/Shrub Stratum</u> 1. Sadix DU/chra	26	V 1		Total % Cover of.		by:
2. Alnus Avidis	-30 -		FAC	OBL species 15	x1= <u>iS</u>	
3. Salix bardayi	-20 -		FAC	FACW species <u>35</u>	x2= <u>'70</u>	i
4. Pipa glavia	<u> </u>		ACU	FAC species <u>88</u>	x3 = <u>26</u>	'_
5.			1.00		, x 4 = <u>_ ધ</u> ા	. ,
6.				UPL species 0	x5= <u>(</u>	- 1
Total Cover:	76		- 1	Column Totals: 나스	(A) <u>39</u>	<u>S</u> (B)
50% of total cover: <u>28</u>	_ 20% of to	tal cover:	5.2	Prevalence index	(=B/A =	<u>+</u>
Herb Stratum 1. Sangusorba Canaelinsis	15	٧	20-20-6	Hydrophytic Vegetation		_
2. Favisetin fluriable	_iO 跑15_		BL	X Dominance Test is		
3. Atherium Glix-femina	3 10 10 -		AU	X Prevalence Index i	is ≤3.0	
4. Eguse hom anonse	30 -		AU	Morphological Ada	uptations¹ (Provide s s or on a separate s	supporting
5. Admstis mertensu	10		Acu	Problematic Hydro	· ·	· 1
6.				Troblematic tryare	phytic vegetation (CAPIBILITY
7				¹ Indicators of hydric so		
8				be present unless distu	irbed or problematio).
9						
10						
Total Cover:						
50% of total cover: <u>36, 5</u>	_ 20% of tot	tal cover: <u> l</u> i 2016.	<u>4.6 </u>	Hydrophytic		
Plot size (radius, or length x width) 20 Void	% Bare Gro	ound <u>2016</u>	Hu	Vegetation Present? Ye	es <u>X</u> No	
% Cover of Wetland Bryophytes Total Cove (Where applicable)	ər ot Bryophy	res <u>IV</u>		Liesailt 16	2 \ \ NO	
Remarks:	•			,		

SOIL			Sampling Point: DP3
Profile Description: (Describe to the	depth needed to document the indicator or	confirm the absence of	Indicators.)
Depth Matrix	Redox Features		
(inches) Cofor (moist) %	Color (moist) % Type ¹	Loc ² Texture	Remarks
1			
No pit			
~, \			
- Howing	water in plat		-
			100-100-100-1
	•	•	
			,
	•		
			-
Type: C=Concentration, D=Depletion, I	RM=Reduced Matrix, CS=Covered or Coated	Sand Grains. 21.ocal	ion: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:	Indicators for Problematic Hydric S		on te toto ening, or many.
Histosol or Histel (A1)	Alaska Color Change (TA4) ⁴	Alaska G	leyed Without Hue 5Y or Redder
Histic Epipedon (A2)	Alaska Alpine Swales (TA5)	Underl	ving Layer
Hydrogen Sulfide (A4)	Alaska Redox With 2.5Y Hue	Other (E:	kplain in Remarks)
Thick Dark Surface (A12)			
Alaska Gleyed (A13)	³ One indicator of hydrophytic vegetation	-	
Alaska Redox (A14)	and an appropriate landscape positi		ss disturbed or problematic.
Alaska Gleyed Pores (A15)	⁴Give details of color change in Rema	rks.	
Restrictive Layer (if present):			
Type:		16	
Depth (inches):		Hyaric Soil P	resent? Yes X No
Remarks:			
HYDROLOGY			
		Cdtdia	
Wetland Hydrology Indicators:			ators (2 or more required)
Primary Indicators (any one indicator is s		• •	ed Leaves (B9)
High Water Table (A2)	 Inundation Visible on Aerial Imagery (E Sparsely Vegetated Concave Surface 		atterns (B10) nizospheres along Living Roots (C:
Saturation (A3)	Mari Deposits (B15)	· · · · · · · · · · · · · · · · · · ·	f Reduced Iron (C4)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Salt Deposi	· ·
Sediment Deposits (B2)	Dry-Season Water Table (C2)		Stressed Plants (D1)
Drift Deposits (B3)	Other (Explain in Remarks)		Position (D2)
Algal Mat or Crust (B4)		Shallow Aq	
Iron Deposits (B5)			aphic Relief (D4)
Surface Soil Cracks (B6)		FAC-Neutra	
Field Observations:	- Commence of the Commence of		
Surface Water Present? Yes X	No Depth (inches):0		
	No Depth (inches):O		
Saturation Present? Yes	No Depth (inches): U	Wetland Hydrology F	Present? Yes X No
(includes capillary fringe)			
Describe Recorded Data (stream gauge,	monitoring well, aerial photos, previous inspe	ctions), it available:	
			`
Remarks:			•
,	·		

				- Alaska Region		·
Project/Site: Givant Lake	8	Borough	h/City: <u>M005</u> 6	e pass	_ Sampling Date: _	4.53.16
Applicant/Owner: Kenal Hydro		·			_ Sampling Point:	
Investigator(s): Cischudel J. Blank	L	andfor	m (hillside, terra	ice, hummocks, etc.): _	MUSICLE	
Local relief (concave, convex, none):		Slope (%): <u> 3 </u>			•
Subregion: Lat:	60.40	044	2 Long	g: <u>~ 149, 535 323</u>	Datum:	
Soil Map Unit Name:	,			NWI classif	cation: UP a	nd
Are climatic / hydrologic conditions on the site typical for this	time of yea	ır? Ye	s <u> </u>	(If no, explain in I	Remarks.)	
Are Vegetation, Soil, or Hydrology si	gnificantly o	disturbe	ed? No Are "l	Normal Circumstances"	present? Yes	<u></u> No
Are Vegetation, Soil, or Hydrology na	aturally prot	blemati	ic? No (If ne	eded, explain any answ	ers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map she	owing sai	mplin	g point locati	ons, transects, imp	ortant features,	etc.
Hydrophytic Vegetation Present? Yes X No			is the Sampled	Area		
Hudrin Spit Brasent? Yes No	· ×	- 1	within a Wetlan		sNo	X
Wetland Hydrology Present? Yes No	<u> </u>					
Remarks: (pnotos	378-379	
VEGETATION – Use scientific names of plants.						
To a Citation			nant Indicator ies? Status	Dominance Test wor		
Tree Stratum 1. Tsuga mertensiana	40	Y	FAC	Number of Dominant : That Are OBL, FACW		(A)
2.		, 		İ		
3,				Total Number of Dom Species Across All Ste		(B)
4				Percent of Dominant	Snaciae	
Total Cover:			- 4	That Are OBL, FACW		(A/B)
50% of total cover: 20	20% o	f total o	cover: 8	Prevalence Index wo	orksheet:	
1. Vaccinium wisanosm	10	У	FAC	Total % Cover of:		ly by:
2. Monzesia ferraner	70	Ÿ	FACU	OBL species		
3. Picia granca	2		- FACU	FACW species5_		
4.				FAC species <u>63</u> FACU species <u>62</u>		
5,				UPL species 0		
6	110			Column Totals: 131		
Total Cover			~ I		•	
50% of total cover: 21 Herb Stratum	20% of	f total c	over: X,4	Prevalence Inde		<u> </u>
1. Egyis hom sylvaticum	10	Υ	FAC	Hydrophytic Vegeta		
2. Des Rus Chamae mons	5		FACW	_X Dominance Test Prevalence Index		
3. Gymnocarpim dy opteris	20		<u>racu</u>	I —	as ≥3.0 Iaptations¹ (Provide	supporting
4. Cornus canadinsis			<u>FACU</u>	data in Remar	ks or on a separate	sheet)
5. Ribes triste (curant)	_3_		_ FAC	Problematic Hydr	ophytic Vegetation	¹ (Explain)
6. Lycopodim davatim	_\$	• • • • • • • • • • • • • • • • • • • •	<u>FACU</u>	1 Indicators of hydric s	all and waitand by	dralagy must
7				be present unless dis		
8,					•	
9					•	
10Total Cover	48					
50% of total cover: 24		f total c	over: 9.6			
Plot size (radius, or length x width) 10' yad.	% Bare (Hydrophytic Vegetation		
1 tot one (radial) or torigative where	ver of Bryo				′es_X No_	
Remarks:	Lawr					

Profile Description: (Describe		Sampling Point: Dr
E	to the depth needed to document the Indicator or con	firm the absence of indicators.)
Depth Matrix (inches) Color (moist)	Redox Features Color (moist) % Type¹ Loc	Texture Remarks
50101 (1110.01)	70 1790 100	Texture (Xerrialis
No pit	FAULT TO THE PARTY	
100 111		
100 muc	he downfall & too many b	arge roots to dig soil pit
	·	V
	letion, RM=Reduced Matrix, CS=Covered or Coated Sand	d Grains. ² Location: PL=Pore Lining, M=Matrix.
lydric Soll Indicators:	Indicators for Problematic Hydric Soils	3:
Histosol or Histel (A1)	Alaska Color Change (TA4) ⁴	Alaska Gleyed Without Hue 5Y or Redder
Histic Epipedon (A2)	Alaska Alpine Swales (TA5)	Underlying Layer
Hydrogen Sulfide (A4) Thick Dark Surface (A12)	Alaska Redox With 2.5Y Hue	Other (Explain in Remarks)
Alaska Gleyed (A13)	³ One indicator of hydrophytic vegetation, o	one primary indicator of wetland hydrology
Alaska Redox (A14)		must be present unless disturbed or problematic.
Alaska Gleyed Pores (A15)	⁴ Give details of color change in Remarks.	
Restrictive Layer (if present):		
Type:	v v - Atmittedatus	
Depth (Inches):	,	Hydric Soil Present? Yes NoX
soil con	sample locations palitions	issuming non roganz
YDROLOGY		
YDROLOGY Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one Indica	ator is sufficient)	Water-stained Leaves (B9)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indicators) Surface Water (A1)	ator is sufficient) Inundation Visible on Aerial Imagery (B7)	Water-stained Leaves (B9) Drainage Patterns (B10)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one Indicators (any o	ator is sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8)	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one Indicators (any one Indicators (A1) Surface Water (A1) High Water Table (A2) Saturation (A3)	ator is sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15)	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one Indicators (any o	ator is sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1)	 Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one Indicators Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	ator is sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15)	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indicators (any one indicators) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	ator is sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)	 Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1)
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (any one Indicators (any one Indicators) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	ator is sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one Indicators (any one Indicators (any one Indicators) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6)	ator is sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)	 Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3)
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (any one Indicators (any one Indicators) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) lield Observations:	ator is sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks)	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (any one Indicators (any one Indicators) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Surface Water Present?	ator is sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) es NoX Depth (inches):	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indicators) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Surface Water Present? Vater Table Present?	ator is sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) es NoX Depth (inches): es NoX Depth (inches):	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indicators) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Very Saturation Present? Yes Saturation Present? Yes Saturation Present? Yes Saturation Present?	ator is sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) es NoX Depth (inches): es NoX Depth (inches): es NoX Depth (inches):	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) //etland Hydrology Present? Yes No ★
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (any one indicators) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Yestincludes capillary fringe)	ator is sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) es NoX Depth (inches): es NoX Depth (inches):	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) //etland Hydrology Present? Yes No X
Wetland Hydrology Indicators: Primary Indicators (any one Indicators (any one Indicators (any one Indicators) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Yet Saturation Present? Saturation Present? Yet includes capillary fringe) Describe Recorded Data (stream in the same includes the same incl	ator is sufficient) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Other (Explain in Remarks) es NoX Depth (inches): es NoX Depth (inches): es NoX Depth (inches):	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) //etland Hydrology Present? Yes No X
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policant/cower. Kenau Hydro policant/cower. Kenau Hydro policant/cower. Kenau Hydro Creanus J. Seanus Landform (hilasia, terraco, hummooks, etc.): Creanus J. Seanus J.	WELLWIND DET	LIMINATION	DATA CION	a Ocar	705	13
Landform (Rillbide, terrace, hummorcks, etc.): College (Arc. Coart eteller (concave, convex, none): VIRINU Slope (Ril): Zeros South Vibergion: Lat: Let., 4(LOS7) Long: 14(1, 32, 178) Datum: Let. Viv., 4(LOS7) Long: 14(1, 32, 178) Datum: Let. Viv., 4(LOS7) Long: 14(1, 32, 178) Datum: Let. Viv., 4(LOS7) Long: 14(1, 32, 178) Datum: Let. Viv., 4(LOS7) Long: 14(1, 32, 178) Long: Viv. 4(Los 4) Long:	Project/Site: Chrant Lake	Borou	igh/City: [VQ 605	C 1900	Sampling Date: 7°25"	12
Slope (%) Z Z Z Z Z Z Z Z Z	Applicant/Owner: <u>Kenau Hydro</u>	W-2015	1	- Marine		
Datum: Lat: Lot. 440570 Long: 1491.332.178 Datum: Now classification: Upland Now classification: Upland Now desired hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.) Soll or Hydrology algnificantly disturbed? No Are Normal Circumstances' present? Yes X No netwo Vegetation Soll or Hydrology algnificantly disturbed? No Are Normal Circumstances' present? Yes X No networthy problematic? No (if no, explain in Remarks.) SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vagetation Present? Yes X No X within a Wetland? Yes No X (A) Total Wetland or OD command Species That Are OBL, FAOW, or FAC. SO (A) Bear of Court of Yes Y FAC Yes No X (A) Total Nower of Dominant Species So X 3 165 Not Yes No X (B) Prevalence Index worksheet: Total Yes No X (B) Prevalence Index worksheet: Total Yes No X (B) Prevalence Index worksheet: Total Yes No X (B) Prevalence Index Sold Sold Sold Sold Sold Sold Sold Sold					(South)	
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we climatic I hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.) we Vegetation Soil or Hydrology significantly disturbed? No we re Normal Clicumstances' present? Yes X No we Vegetation Soil or Hydrology naturally problemate? No (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc. Hydric Soil Present? Yes X No X within a Wetland? Yes No X within a Wetland? Yes No X within a Wetland Hydrology Present? Yes No X within a Wetland? Yes No X within a Wetland? Yes No X within a Wetland Hydrology Present? Yes No X within a Wetland? Yes No X within a Wetland? Yes No X within a Wetland? Yes No X within a Wetland? Yes No X within a Wetland? Yes No X within a Wetland? Yes No X within a Wetland? Yes No X within a Wetland? Yes No X within a Wetland Hydrology Present? Yes No X within a Wetland? Yes X No X within a Wetland? Yes X No X within a Wetland? Yes X No X within a Wetland? Yes X No X within a Wetland? Yes X No X within a Wetland? Yes X No X within a Wetland? Yes X No X within a Wetland? Yes X No X within a Wetland? Yes X No X within a Wetland? Yes X No X within a Wetland? Yes X No X within a Wetland? Yes X No X within a Wetland Hydrologic A wetland hydrology must be present unless disturbed or problematic. Yes X No X within a Wetland Byophytic Yes X No X No X within a Wetland Byophytic Yes X No X No X within a We	Subregion; La	t: <u>leb. 460</u>	<u>590</u> Lon	g: <u>~ 199.332178</u>	Datum:	
ve Vegetation	Soil Map Unit Name:			NWI classific	ation: OF 10400	
Solid Or Hydrology Naturally problematic? No (If needed, explain any enswers in Remarks.)	Are climatic / hydrologic conditions on the site typical for th	is time of year?	/es <u>X</u> No _	(If no, explain in R	lemarks.)	
SumMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No X within a Wetland? Wetland Hydrology Present? Yes No X within a Wetland? Wetland Hydrology Present? Yes No X within a Wetland? Wetland Hydrology Present? Yes No X within a Wetland? Yes No X within a Wetland? Wetland Hydrology Present? Yes No X within a Wetland? Wetland Hydrology Present? Yes No X within a Wetland? Wetland Hydrology Present? Yes No X within a Wetland? Wetland Hydrology Present? Yes No X within a Wetland Received And Indicators and Indicato	Are Vegetation, Soil, or Hydrology	significantly distu	rbed? IV Are "	Normal Circumstances"	oresent? YesXNo	War all fam.
Hydrophytic Vegetation Present? Yes No X within a Wetland? Yes X No Yes X N						
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VEGETATION - Use scientific names of plants. List all species in the plot. Absolute Dominant Indicator Security Status Dominant Indicator Security Status Dominant Indicator Security Status Dominant Indicator Number of Dominant Species Status Total Cover Security Security Status Dominant Species Security Status Dominant Species Security	Wetland Hydrology Present?	Λο <u>×</u>	within a Wetlar	nd? Yes	No	
VEGETATION - Use scientific names of plants. List all species in the plot.	Remarks:	NULT,	1 ,		·	
Absolute Dominant Indicator % Cover Species? Status 1. Nove Species? Status 1. Nove Species? Status 1. Nove Species? Status 1. Nove Species Species? Status 1. Nove Species Species? Status 1. Nove Species Across All Status 1. Nove Species Across All Status 1. Nove Species Across All Status 1. Nove Species Across All Status 1. Nove Species Across All Status 1. Nove Species Across All Status 1. Nove Species Across All Status 1. Nove Species Across All Status 1. Nove Species Across All Status 1. Nove Species S	V					
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1. None 2. 3. Total Cover: Sapling/Shrub Stratum 1. PLAUS IDEA STRAIN STRAIN Species Across All Strata: Sapling/Shrub Stratum 1. PLAUS IDEA STRAIN STRAIN Species Across All Strata: Species Across All Strata: Species Across All Strata: Species Across All Strata: S	Tree Stratum			1		
2. Sabling/Shrub Stratum 1. Land Stratum 1. Land Stratum 1. Land Stratum 1. Land Stratum 1. Land Stratum 1. Land Stratum 1. Land Stratum 1. Land Stratum 1. Land Stratum 1. Land Stratum 1. Land Stratum 1. Land Stratum 1. Land Stratum 1. Land Stratum 1. Land Stratum 1. Land Stratum 1. Land Stratum 1. Land Stratum 1. Chair Merion Cingus hall make the stratum 1. Chair Merion Cingus hall make the stratum 1. Chair Merion Cingus hall make the stratum 1. Chair Merion Cingus hall make the stratum 1. Chair Merion Cingus hall make the stratum 1. Chair Merion Cingus hall make the stratum 1. Chair Merion Cingus hall make the stratum 1. Chair Merion Cingus hall make the stratum 1. Chair Merion Cingus hall make the stratum 1. Chair Merion Cingus hall make the stratum 1. Chair Merion Cingus hall make the stratum 1. Chair Merion Cingus hall make the stratum 1. Chair Merion Cingus hall make the stratum 1. Chair Merion Cingus hall make the stratum 1. Chair Merion Cingus hall make the stratum 1. Chair Merion Cingus hall make the stratum 1. Chair Merion Cingus hall make the stratum 1. Chair Merion Cingus hall make the stratum 2. Achillea bar Mille full make the stratum 3. Cherrant make the stratum 4. Sarrant make the stratum 5. Fauric tum and make the stratum 6. Fauric tum and make the stratum 6. Fauric tum and make the stratum 7. Actor whom and make the stratum 7. Actor whom and make the stratum 8. Equility the stratum and make th)
3. Species Across All Strata:				Total Number of Domis	ant ,	1
Total Cover: Sapling/Shrub Stratum 1. Living in date of the stratum 1. L	1					,
Total Cover: Sapling/Shrub Stratum 1. Plans dal us 2. Salty barclas Section Secti	4			Percent of Dominant S	pecies	
Saphing/Shrub Stratum Total & Cover of: Multiply by: 1. Luns dale us S FACU 2. Saliy barcian S FACU 3. Losa acicularis S FACU 4.		·				'B)
1. Puris idae us 2. Salix barcianis 3. Posa accidaris 3. Posa accidaris 4. Facularis 5. Facularis 6. Facularis 6. Facularis 7. Colar cover: 13 50% of total cover: 6.5 20% of total cover: 2.6 Facularis 10. Facularis 11. Chamerion angustific and business 10 2. Achilla bus mileblish 3. Facularis solo 3. Ceranism enanths 10 3. Facularism enanths 10 4. Sangaiswae carreduris 10 5. Facularism enanths 10 5. Facularism enanths 10 5. Facularism enanths 10 5. Facularism enanths 10 5. Facularism enanths 10 5. Facularism enanths 10 5. Facularism enanths 10 6. Hardism arvents 10 6. Hardism arvents 10 7. Accompanism enanths 10 8. Facularism enanths 10 9. Facularism enanths 10 1. Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. 1. Hydrophytic Vegetation Present? Yes X No No No Present? 1. Hydrophytic Vegetation Present? 1. Hydrophytic Vegetation Present? 1. Hydrophytic Vegetation Present? 1. Hydrophytic Vegetation Present? 1. Hydrophytic Vegetation Present? 1. Hydrophytic Vegetation Present? 1. Hydrophytic Vegetation Present? 1. Hydrophytic Vegetation Present? 1. Hydrophytic Vegetation Present? 1. Hydrophytic Vegetation Present? 1. Facularism enanths 10 1. Indicators of hydrophytic Vegetation Present? 1. Hy		20% of tot		1		
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3. Fosa accolaris 4.			Y FAC			Ì
FACU species 46 x4 = 184 194 195 195 195 195 195 195 195 195 195 195		3	Y FACU	FAC species 55	×2= 165	
Total Cover: 13 Total Cover: 6.5 20% of total cover: 2.6 Herb Stratum 1. Che merion angushistion 2. Achilla by millifilm 3 FAW 3. Geranim evianthim BIS 1 FAW 4. Saranishba caredinsis 10 FAW 5. Fawletim are now 10 FAW 6. Heraclum more manifolium 5 FAW 7. Acontin and millifilm 5 FAW 8. Callin and millifilm 5 FAW 8. Callin and millifilm 5 FAW 9. Aguilagia Grmsa 30 FAW 10. Calamagnistis aradensis 30 FAW 10. Calamagnistis Aradensis 30 FAW 10. Calam	4					
Total Cover: 13 50% of total cover: 6.5 20% of total cover: 2.6 Herb Stratum 1. Cha merion cing y & how 3 Faw 3.37 Hydrophytic Vegetation Indicators: 2. A chilla by millablum 3 Faw 3.0 3. Geranish enanthom 815 1 Faw 4 Morphological Adaptations! (Provide supporting data in Remarks or on a separate sheet) 5. Egylstom arvense 15 Faw 4 Morphological Adaptations! (Provide supporting data in Remarks or on a separate sheet) 6. Hera dum non ximum 5 Faw 5 Faw 5 Morphological Adaptations! (Provide supporting data in Remarks or on a separate sheet) 7. Acontom duminifolium 5 Faw 5 Faw 1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. 8. Clathum from 2 Faw 1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. 1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. 1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. 1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. 1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. 1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. 1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. 1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. 2 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. 2 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. 2 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.	5					
Solid total cover: 6.5 20% of total cover: 2.6 Prevalence Index = B/A = 3.87						B)
Herb Stratum 1. Chamerion cing v 3 h filliam 2. Achilla for millifulum 3. Geranum enanthum 4. Saventstra careal asis 5. Equictum arens in 5 6. Heraclum arens 7. Aco virum diffinition 8. Callum fricum 9. Aquilegia formed 50% of total cover: 10 S Total Cover of Welland Bryophytes Total Cover of Bryophytes			1 cover 2:6	Blana lada	3.37	
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2. A Chilla Bit Milland S. And	1. Chameron angustifulion					
3. Geranim enanthm 4. Sanguistion cared asis 10 FAW 5. Equision arvense 15 FAW 6. Heraclum monthm 10 FAW 7. Acontom difficum 5 FAW 8. Cared formse 2 FAW 9. Aquiegia formse 2 FAW 10. Calamagnists aradensis 30 FAC 10. Calamagnists aradensis 30 FA						ł
5. Favischem arvense 15 FAC 6. Heradum maximum 10 FAC 7. Aconton difficum 5 FAC 8. Callum frifilm 5 FAC 9. Aquilegia formula 2 FAC 10. Calamagnstis canadensis 30 FAC 10. Calamagnstis canadensis 30 FAC 10. Cover of Welland Bryophytes 7 Total Cover: 52.5 20% of total cover: 21 Where applicable) Formula 8 Bare Ground 0 Present? Remarks:	1 - 1711	 _		Morphological Ad	aptations1 (Provide supporting	
5. Faut Cover of Wetland Bryophytes Total Cover of Bryophytes Problematic Hydrophytic Vegetation (Explain) From the problematic Hydrophytic Vegetation (Explain) From From Problematic Hydrophytic Vegetation (Explain) Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. From From Manual Structure (Explain) Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. From From From From From From From From						
7. Aco Niture definition 5 FAC 8. Claure frides 2 FACU 9. Aquilegia frieds 30 FAC 10. Calamagnsts aradensis 30 FAC Total Cover: 10 5 Plot size (radlus, or length x width) 20 rad 8 Bare Ground 0 Wegetation (Where applicable) Remarks: 1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. 1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. 1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. 1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. 1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. 10 S		$-\frac{10}{10}$		Problematic Hydro	ophytic Vegetation' (Explain)	
8. Cratium trificum 2 TACW. 9. Aquilegia formusa		- 15		1 Indicators of hydric s	oil and wetland hydrology mus	st
9. Aquilegia formusa #5 FACU 10. Calamagnistis Canadensis 30 FAC Total Cover: 105 50% of total cover: 52.5 20% of total cover: 21 Plot size (radius, or length x width) 20 rad						
Total Cover: 105 Total Cover: 105 50% of total cover: 21 Plot size (radlus, or length x width) 20 rad	1-11	\$5				
Total Cover: 105 50% of total cover: 52.5 20% of total cover: 21 Plot size (radius, or length x width) 20 rack			4 FAC			
Plot size (radius, or length x width) 20 rack	Total Cov					1
Plot size (radius, or length x width)		. S 20% of tota	al cover:21	Hydrophytic		1
(Where applicable) Remarks:	1,000,000			Vegetation	V	
Remarks:		Cover of Bryophyl	es <u>20 </u>	Present? Y	es _ ^ No	
$[h_1, h_2, h_3] = [h_1, h_2] = [h_1, h_2] = [h_2, h_3] = [h_1, h_2] = [h_2, h_3] = [h_1, h_2] = [h_2, h_3] = [h_1, h_2] = [h_2, h_3] = [h_1, h_2] = [h_2, h_3] $	Remarks:			6 F	albert of these	۱
A Existing conditions = upland, but potential for narrow band of this community to meet wetland conditions w/ problematic ovils during to	I community to meet we	tland con	$\lambda ditions M$	1 proplement	- ouils during	; +1
()					50000 De 1215	,
US Army Corps of Engineers is ~3 ft (vertical) above current Hoo live, Wave Alaska Version 2.0 Live is ~2 vertical ft. above the live in Duy pit to 20" bys - moist but not wel.	US Army Corps of Engineers 13~3 ft (vert	iche) and	by line , i	ent 150 live Duy pit to 20" 1	., Wave bys - moist but not w	sel.

SOIL		Sampling Point: DP4
Profile Description: (Describe to the dept	h needed to document the indicator or confir	
Depth Matrix	Redox Features	als asserted of materially
(inches) Color (moist) %	Color (moist) % Type ¹ Loc ²	Texture Remarks
0-50-1		organics mass & nots
新1-6		<u>organics</u>
6-20		fine lakeshore gravels
· · · · · · · · · · · · · · · · · · ·		
Type: C=Concentration, D=Depletion, RM= Hydric Soil Indicators:	Reduced Matrix, CS=Covered or Coated Sand C Indicators for Problematic Hydric Soils ³ :	Brains. ² Location: PL=Pore Lining, M=Matrix.
•		·
Histosol or Histel (A1)	Alaska Color Change (TA4) ⁴	Alaska Gleyed Without Hue 5Y or Redder
Histic Epipedon (A2)	Alaska Alpine Swales (TA5)	Underlying Layer
Hydrogen Suifide (A4)	Alaska Redox With 2.5Y Hue	Other (Explain in Remarks)
Thick Dark Surface (A12) Alaska Gleyed (A13)	³ One indicator of hydrophytic vegetation, one	nelman indicator of mottand business.
Alaska Redox (A14)		st be present unless disturbed or problematic.
Alaska Gleyed Pores (A15)	Give details of color change in Remarks.	st be present unless disturbed of problematic.
Restrictive Layer (if present):		
Type: None formal		<u> </u>
Depth (inches):	,	Hydric Soil Present? Yes No
Remarks:		
	•	
,		: •
HYDROLOGY		
HYDROLOGY Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Wetland Hydrology Indicators: Primary Indicators (any one Indicator is suffic	lent)	Secondary Indicators (2 or more required) Water-stained Leaves (B9)
Wetland Hydrology Indicators: Primary Indicators (any one Indicator is suffic	ient) _ Inundation Visible on Aerial Imagery (B7)	Water-stained Leaves (B9)
Wetland Hydrology Indicators:		Water-stained Leaves (B9) Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (any one Indicator is suffic Surface Water (A1)	Inundation Visible on Aerial Imagery (B7)	Water-stained Leaves (B9)
Wetland Hydrology Indicators: Primary Indicators (any one Indicator is suffic 基 Surface Water (A1) 基 High Water Table (A2)	Inundation Visible on Aerial Imagery (B7) _ Sparsely Vegetaled Concave Surface (B8)	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Denovity (C5)
Wetland Hydrology Indicators: Primary Indicators (any one Indicator is suffic 基 Surface Water (A1) 手 High Water Table (A2) 基 Saturation (A3)	Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15)	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4)
Wetland Hydrology Indicators: Primary Indicators (any one indicator is suffic 基 Surface Water (A1) 季 High Water Table (A2) 基 Saturation (A3) Water Marks (B1)	Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1)	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5)
Wetland Hydrology Indicators: Primary Indicators (any one Indicator is suffic 基 Surface Water (A1) 基 High Water Table (A2) 基 Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)	Water-stained Leaves (B9) Drainage Patterns (B10) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2)
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Kenia Hydro, LLC - Grant Lake Project

WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization

Adapted from Regulartory Guidance Letter 09-01

Wetland ID: DP 01

Date: 7-16-13

Wetland Type: PEMI/SSIC

Investigators: J. Blank + C. Schudel

A.	Flood Flow Alteration	Likely or not likely to Provide
	(Storage and Desynchronization)	(Y or N)
	1 Wetland occurs in the upper portion of its watershed. 2 Wetland is relatively flat area and is capable of retaining higher volumes of water during storm events, than under normal rainfall events. 3 Wetland is a closed (depressional) system. 4 If flowthrough, wetland has constructed outlet with signs of fluctuating water levels, algal mats, and/or lodged debris. 5 Wetland has dense woody vegetation. 6 Wetland receives floodwater from an adjacent water course. 7 Floodwater come as sheet flow rather than channel flow.	1 Y 2 Y 3 N 4 XN 5 N 6 Y 7 N 5-7 (Y) - High Function 1-4 (Y) - Moderate Function None - Low or No Function
В.	Sediment Removal	Likely or not likely to Provide (Y or N)
	1 Sources of excess sediment (from tillage, mining or construction) are present upgradient of the wetland. (月をかん せんし) 2 Slow-moving water and/or a deepwater habitat are present in the wetland. 3 Dense herbaceous vegetation is present. 4 Inerspersion of vegegetation and water is high in wetland. 5 Ponding of water is high in wetland. 6 Sediment deposits are present in wetland.	1
c.	Nutrient and Toxicant Removal	Likely or not likely to Provide (Y or N)
	 Sources of excess nutrients (fertilizers) and toxicants (pesticides and heavy metals) are present upgradient of the wetland. Wetland is inundated or has indicators that flooding is a seasonal event during the growing season. Wetland provides long duration for water detention. Wetland has at least 30% aerial cover of live dense herbaceous vegetation. Fine grained mineral or organic materials are present for the wetland. 	1 N 2 N 3 N 4 Y. 5 S-5 (Y) - High Function 1-2 (Y) - Moderate Function None - Low or No Function

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Example Ranking: If ranking the capacity for a wetland to perform a given wetland function into high, moderate, low or none categories, use the following example as guidance. For Flood Flow Alteration, answering yes to five to seven attributes would rate the wetland as high functioning; answering yes to one to four attributes would rate the wetland as moderate; and not answering yes to any attributes would rate the wetland as low, or if evaluator is certain the wetland does not perform this function, it can be rated as none.

Date: <u>7-14-13</u>

Wetland ID: DP01

D.	Erosion Control and Shoreline Stabilization	Likely or not likely to Provide
	(if associated with a watercourse or shoreline)	(Y or N)
	1 Wetland has dense, energy absorbing vegetation bordering the water	i N
	course and no evidence of erosion.	2 7
	2 A herbaceous layer is part of this dense vegetation.	$\frac{2}{3} \frac{N}{N}$
	3 Trees and shrubs able to withstand erosive flood events are also part	
	•	2.3 (V) High Eurotian
	of this dense vegetation.	2-3 (Y) - High Function
		1 (Y) - Moderate Function
-		None Cowor No Function V
E.	Production of Organic Matter and its Export	Likely or not likely to Provide
		(Y or N)
	1 Wetland has at least 30% aerial cover of dense herbaceous	1 <u>Y</u>
	vegetation,	2
	2 Woody plants in wetland are mostly deciduous.	3 <u>N</u>
	3 High degree of plant community structure, vegetation density, and	4 <u>N</u>
	species richness present.	5
	4 Interspersion of vegetation and water is high in wetland.	6** <u> </u>
	5 Wetland is inundated or has indicators that flooding is a seasonal	
	event during the growing season.	4-6 (Y) - High Function ✓
	6 Wetland has outlet from which organic matter is flushed.**	1-3 (Y) - Moderate Function
	**If #6 is No, then wetland automatically rated as low or No function	None - Low or No Function
F.	General Wildlife Habitat Sultability	Likely or not likely to Provide
•	wonoral minano mapital outlability	(Y or N)
	1 Watland is not fragmented by development	` ' '
	Wetland is not fragmented by development. Unland surround wetland is undeveloped.	$\frac{1}{2} \frac{1}{\sqrt{1-x^2}}$
	Upland surround wetland is undeveloped. Watland has connectivity with other habitat types.	2 7
	Wetland has connectivity with other habitat types. Divisority of plant species in high.	$\frac{3}{4}$
Ī	4 Divserity of plant species is high,	4 N V
1	5 Wetland has more than one Cowardin Class (e.g. PFO, PSS, PEM)	5
	6 Has high degree of Corwardin Class interspersion	6 <u>N</u>
	7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present.	7 — /
		6.7 (V) 10% Finance /
		5-7 (Y) - High Function 1-4 (X) - Moderate Function
		1-4 (Y) - Moderate Function
		None - Low or No Function
G.	General Fish Habitat	Likely or not likely to Provide
	(Must be associated with a fish-bearing stream or lake)	(YorN) AIA
		1
Ì	1 Wetland has perennial or intermittent surface-water connection to a	<u> </u>
	fish-bearing water body.	2
	2 Wetland has sufficient size and depth of open water so as not to	3
	freeze completely during winter.	4
	3 Observation of fish.	5
	4 Herbaceous and/or woody vegetation is present in wetland and/or	6
	buffer to provide cover, shade, and/or detrital matter.	
	5 Spawning areas are present (aquatic vegetation and/or gravel beds).	4-6 (Y) - High Function
	6 Juvenile rearing areas.	1-3 (Y) - Moderate Function
	-	None - Low or No Function
Н.	Native Plant Richness	Likely or not likely to Provide
- 11		(Y or N)
,	1 Dominant and codominant plants are native.	1 1
i	2 Wetland contains two or more Cowardin Classes.	$\frac{1}{2}$ $\frac{\gamma}{}$
	3 Wetland has three or more strata of vegetation.	$\begin{bmatrix} \frac{2}{3} & \frac{4}{N} \end{bmatrix}$
	Wetland has mature trees.	4 N
	T 17 Guanu nas maiuje 1100s.	3-4 (Y) - High Function
		1-2 (Y) - Moderate Function
L		None - Low or No Function

Date: 7-16-13

Wetland ID: DP01

ï.	Educational or Scientific Value	Likely or not likely to Provide
	Site has documented scientific or educational use. Wetland is in public ownership Accessible trails available.	1 N 2 Y 3 N
		2-3 (Y) - High Function 1 (Y) - Moderate Function ✓ None - Low or No Function
J.	Uniqueness and Heritage	Likely or not likely to Provide (Y or N)
	1 Wetland contains documented occurrences of a state or federally listed threatened or endanged species.** 2 Wetland contains documented critical habitat, high quality ecosystems, or priority species respectively designated by the	1** 2** N 3 +* N
	USFWS.** 3 Wetland has biological, geological, or other features that are determined to be rare. 4 Wetland type is a highly valuable wetland type of the State.** **If #1,#2, or #4 is Yes, then wetland is automatically rated as high	3-4 (Y) - High Function 1-2 (Y) - Moderate Function None (Low)or No Fanction
K.	Groundwater Interchange	Likely or not likely to Provide
	Presence of seeps or springs Microreleif of wetland surface Surficial geologic deposits under wetland are permeable	(Y or N) 1
	(e.g. alluvium)	2-3 (Y) - High Function 1 (Y) - Moderate Function ✓ None - Low or No Function

WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization Adapted from Regulartory Guidance Letter 09-01

DP02 Wetland ID:

Date:

7-16-13

Wetland Type:

PSSIE

Investigators: J. Blank C. Schudel

A.	Flood Flow Alteration	Likely or not likely to Provide
	(Storage and Desynchronization)	(Y or N)
	1 Wetland occurs in the upper portion of its watershed.	1 <u>y</u>
	2 Wetland is relatively flat area and is capable of retaining higher	2 4
1	volumes of water during storm events, than under normal rainfall	3 \[\lambda \]
l	events.	$\frac{1}{4} \overline{AN}$
	3 Wetland is a closed (depressional) system.	5
	4 If flowthrough, wetland has constructed outlet with signs of fluctuating	6 4
	water levels, algal mats, and/or lodged debris.	7 N
	5 Wetland has dense woody vegetation.	
	6 Wetland receives floodwater from an adjacent water course.	5-7 (Y) - High Function
l	7 Floodwater come as sheet flow rather than channel flow.	1-4 (Y) - Moderate Function
	7 Floodwater come as sheet now rather than chambernow.	None - Control No Function
Ŀ		Likely or not likely to Provide
В.	Sediment Removal	(Y or N)
	P. A. W. and P. M. and Anti-land and Anti-land area.	1 4
1	1 Sources of excess sediment (from tillage, mining or construction) are	2 704
	present upgradient of the wetland. (glacial HII)	$\frac{2}{3}$ $\frac{3}{N}$
ļ	2 Slow-moving water and/or a deepwater habitat are present in the	3 <u>N</u>
	wetland.	
	3 Dense herbaceous vegetation is present.	5 <u>N</u>
1	4 Inerspersion of vegegetation and water is high in wetland.	
1	5 Ponding of water is high in wetland.	1,000 18 1 5 385 1
	6 Sediment deposits are present in wetland.	4-6 (Y) - High Function
1		1-3 (Y) - Moderate Function
		None - Low or No Function
C.	Nutrient and Toxicant Removal	Likely or not likely to Provide
1		(Y or N)
İ	1 Sources of excess nutrients (fertilizers) and toxicants (pesticides and	1 <u>N</u>
ı	heavy metals) are present upgradient of the wetland.	2
	2 Wetland is inundated or has indicators that flooding is a seasonal	3 <u>N</u>
	event during the growing season.	4 <u>N</u>
	3 Wetland provides long duration for water detention.	5
1	4 Wetland has at least 30% aerial cover of live dense herbaceous	
1	vegetation.	3-5 (Y) - High Function
I	5 Fine grained mineral or organic materials are present for the wetland.	1-2 (Y) - Moderate Function ✓
	2) III A Armino ministra at 1-3 min the second at 1 min the secon	None - Low or No Function
ı		Itolio Zon di Itoliano

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Example Ranking: If ranking the capacity for a wetland to perform a given wetland function into high, moderate, low or none categories, use the following example as guidance. For Flood Flow Alteration, answering yes to five to seven attributes would rate the wetland as high functioning; answering yes to one to four attributes would rate the wetland as moderate; and not answering yes to any attributes would rate the wetland as low, or if evaluator is certain the wetland does not perform this function, it can be rated as none.

Date: 7-16-13

Wetland ID: <u>NP02</u>

D.	Erosion Control and Shoreline Stabilization	
1	(if associated with a watercourse or shoreline)	Likely or not likely to Provide
	(ii associated with a watercourse or shoreline)	(Y or N)
	1 Wetland has dones anarous phosphing years to the true	
ľ	1 Wetland has dense, energy absorbing vegetation bordering the water course and no evidence of erosion.	1 1
	2 A herbaceous layer is part of this dense vegetation.	2 N
1	3 Trees and shrubs able to withstand erosive flood events are also part	3 <u>A44</u>
1	of this dense vegetation.	2-3 (Y) - High Function V
1	,	1 (Y) - Moderate Function
Ē.	Draduation (O. 11)	None - Low or No Function //
[F.	Production of Organic Matter and its Export	Likely or not likely to Provide
	A Markette at a special transfer of the second	(Y or N)
1	1 Wetland has at least 30% aerial cover of dense herbaceous	1 <u>N</u>
l	Vegetation.	2 1
1	2 Woody plants in wetland are mostly deciduous.	.3 N
	3 High degree of plant community structure, vegetation density, and	4
	species richness present.	5
•	4 Interspersion of vegetation and water is high in wetland.	6**
	5 Wetland is inundated or has indicators that flooding is a seasonal	,
	event during the growing season.	4-6 (Y) - High Function 🗸
l '	6 Wetland has outlet from which organic matter is flushed.**	1-3 (Y) - Moderate Function
	**If #6 is No, then wetland automatically rated as low or No function	None - Low or No Function
F.	General Wildlife Habitat Suitability	Likely or not likely to Provide
		(Y or N)
	1 Wetland is not fragmented by development.	1 'Y
1 4	2 Upland surround wetland is undeveloped.	2 -
	Wetland has connectivity with other habitat types.	3 - 4
\ 4	Divserity of plant species is high.	4
	Wetland has more than one Cowardin Class (e.g. PFO, PSS, PEM)	5 N
•	3 Has high degree of Corwardin Class interspersion	6 N
7	7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present.	7
		
		5-7 (Y) - High Function
		1-4 (Y) - Moderate Function ✓
		None - Low or No Function
G.	General Fish Habitat	Likely or not likely to Provide
	(Must be associated with a fish-bearing stream or lake)	(V or N)
		NA I
1	Wetland has perennial or intermittent surface-water connection to a	1
	fish-bearing water body.	2
2	Wetland has sufficient size and depth of open water so as not to	3
	freeze completely during winter.	4
	Observation of fish.	5
4	Herbaceous and/or woody vegetation is present in wetland and/or	6
•	buffer to provide cover, shade, and/or detrital matter.	
5	Spawning areas are present (aquatic vegetation and/or gravel beds).	4-6 (Y) - High Function
6	1	1-3 (Y) - Moderate Function
		None - Low or No Function
H.	Native Plant Richness	Likely or not likely to Provide
		(Y or N)
1	Dominant and codominant plants are native.	1 1
2	Wetland contains two or more Cowardin Classes.	
	Wetland has three or more strata of vegetation.	$\frac{2}{3} \frac{N}{N}$
	Wetland has mature trees.	4 - 17
		3-4 (Y) - High Function
		1-2 (Y) - Moderate Function ✓
	li de la companya de la companya de la companya de la companya de la companya de la companya de la companya de	None - Low or No Function
		TOTAL LOW OF IND PURISHORS

Date: 7-16-13

Wetland ID:	DPOZ
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i.	Educational or Scientific Value	Likely or not likely to Provide
		(Y or N)
ľ	1 Site has documented scientific or educational use.	1 <u>N</u>
	2 Wetland is in public ownership	2 7
1	3 Accessible trails available.	3 <u>N</u>
l		2-3 (Y) - High Function
		1 (Y) - Moderate Function ✓
		None - Low or No Function
J.	Uniqueness and Heritage	Likely or not likely to Provide
		(Y or N)
	1 Wetland contains documented occurrences of a state or federally	1**
	listed threatened or endanged species.**	2** <u>N</u>
l	2 Weltand contains documented critical habitat, high quality	3 _ N
	ecosystems, or priority species respectively designated by the	4**
	USFWS.**	
	3 Wetland has biological, geological, or other features that are	
	determined to be rare.	3-4 (Y) - High Function
	4 Wetland type is a highly valuable wetland type of the State.**	1-2 (Y) - Moderate Function
	**If #1,#2, or #4 is Yes, then wetland is automatically rated as high	None - Low o No Ninction
K.	Groundwater Interchange	Likely or not likely to Provide
1		(Y or N)
1	1 Presence of seeps or springs	1
1	2 Microreleif of wetland surface	2 <u>N</u>
1	3 Surficial geologic deposits under wetland are permeable	3
1	(e.g. alluvium)	0.000 18 1.5
		2-3 (Y) - High Function
1		1 (Y) - Moderate Function ✓
		None - Low or No Function

WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization Adapted from Regulartory Guidance Letter 09-01

Wetland ID:	DP03	PSSI/BMIE
	201	Age 1

Date: 7-16-13

Wetland Type: PEMTISSIE Investigators: J. Blank & C. Schude (

_			
A.	•	Flood Flow Alteration	Likely or not likely to Provide
		(Storage and Desynchronization)	(Y or N)
	1	Wetland occurs in the upper portion of its watershed.	1 4
1	2	Wetland is relatively flat area and is capable of retaining higher	2 4
ł		volumes of water during storm events, than under normal rainfall	3 /
l		events.	4 40N
	3	Wetland is a closed (depressional) system.	5 N
		If flowthrough, wetland has constructed outlet with signs of fluctuating	6 7
		water levels, algal mats, and/or lodged debris.	7 · N
ı	5	Wetland has dense woody vegetation.	
		Wetland receives floodwater from an adjacent water course.	5-7 (Y) - High Function
		Floodwater come as sheet flow rather than channel flow.	1-4 (Y) - Moderate Function √
	-	Channels win wetland	None - Low or No Function
В.		Sediment Removal	Likely or not likely to Provide
			(Y or N)
	1	Sources of excess sediment (from tillage, mining or construction) are	1 1
	•	present upgradient of the wetland. (glacial till)	2 -
	2	Slow-moving water and/or a deepwater habitat are present in the	3 7
		weiland.	4 //
	3	Dense herbaceous vegetation is present.	5 N
		Inerspersion of vegegetation and water is high in wetland.	6 184
		Ponding of water is high in wetland.	
		Sediment deposits are present in wetland.	4-6 (Y) - High Function ✓
			1-3 (Y) - Moderate Function
			None - Low or No Function
C.		Nutrient and Toxicant Removal	Likely or not likely to Provide
ı			(Y or N)
	1	Sources of excess nutrients (fertilizers) and toxicants (pesticides and	1 N
		heavy metals) are present upgradient of the wetland.	2
		Wetland is inundated or has indicators that flooding is a seasonal	3 🗸
		event during the growing season.	4
	3	Welland provides long duration for water detention.	5
		Wetland has at least 30% aerial cover of live dense herbaceous	
	-	vegetation.	3-5 (Y) - High Function ✓
1		Fine grained mineral or organic materials are present for the wetland.	1-2 (Y) - Moderate Function
		J	None - Low or No Function

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Example Ranking: If ranking the capacity for a wetland to perform a given wetland function into high, moderate, low or none categories, use the following example as guidance. For Flood Flow Alteration, answering yes to five to seven attributes would rate the wetland as high functioning; answering yes to one to four attributes would rate the wetland as moderate; and not answering yes to any attributes would rate the wetland as low, or if evaluator is certain the wetland does not perform this function, it can be rated as none.

Date: 7-16-13

Wetland ID: <u>88 83</u>

D. Erosion Control and Shoreline Stabilization (if associated with a watercourse or shoreline) 1 Wetland has dense, energy absorbing vegetation bordering the water course and no evidence of erosion. 2 A herbaceous layer is part of this dense vegetation. 3 Trees and shrubs able to withstand erosive flood events are also part of this dense vegetation. 2-3 (Y) - High Function 1 (Y) - Moderate Funct None - Low or No Function 1 (Y) - Town or No Funct	
1 Wetland has dense, energy absorbing vegetation bordering the water course and no evidence of erosion. 2 A herbaceous layer is part of this dense vegetation. 3 Trees and shrubs able to withstand erosive flood events are also part of this dense vegetation. 2-3 (Y) - High Function 1 (Y) - Moderate Funct None - Low or No Function	•
course and no evidence of erosion. 2 A herbaceous layer is part of this dense vegetation. 3 Trees and shrubs able to withstand erosive flood events are also part of this dense vegetation. 2-3 (Y) - High Function 1 (Y) - Moderate Funct None - Low or No Function	
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2 A herbaceous layer is part of this dense vegetation. 3 Trees and shrubs able to withstand erosive flood events are also part of this dense vegetation. 2-3 (Y) - High Function 1 (Y) - Moderate Funct None - Low or No Func	
3 Trees and shrubs able to withstand erosive flood events are also part of this dense vegetation. 2-3 (Y) - High Function 1 (Y) - Moderate Funct None - Low or No Func	
of this dense vegetation. 2-3 (Y) - High Function 1 (Y) - Moderate Funct None - Low or No Func	_
1 (Y) - Moderate Funct None - Low or No Func	√
None - Low or No Fund	
IC. Production of Organic Matter and its export I dikely or not exerv	
·	
(Y or N)	I
1 Wetland has at least 30% aerial cover of dense herbaceous	_
vegetation. 2	
2 Woody plants in wetland are mostly deciduous.	
3 High degree of plant community structure, vegetation density, and	_
species richness present. 5	_
4 Interspersion of vegetation and water is high in wetland. 6**	
5 Wetland is inundated or has indicators that flooding is a seasonal	,
even't during the growing season. 4-6 (Y) - High Function	
6 Wetland has outlet from which organic matter is flushed.** 1-3 (Y) - Moderate Fun	
**If #6 is No, then wetland automatically rated as low or No function None - Low or No Func	
F. General Wildlife Habitat Sultability Likely or not likely	
(Y or N)	
1 Wetland is not fragmented by development.	
2 Upland surround wetland is undeveloped. 2	
3 Wetland has connectivity with other habitat types.	
4 Divserity of plant species is high.	
5 Wetland has more than one Cowardin Class (e.g. PFO, PSS, PEM) 5	
6 Has high degree of Corwardin Class interspersion 6	
7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present.	
7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present.	
7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present. 7 5-7 (Y) - High Function	
7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present. 5-7 (Y) - High Function 1-4 (Y) - Moderate Func	ction
7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present. 5-7 (Y) - High Function 1-4 (Y) - Moderate Function None - Low or No Func	ction tion
7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present. 5-7 (Y) - High Function 1-4 (Y) - Moderate Function None - Low or No Func G. General Fish Habitat Likely or not likely	ction tion to Provide
7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present. 5-7 (Y) - High Function 1-4 (Y) - Moderate Function None - Low or No Func	ction tion to Provide
7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present. 5-7 (Y) - High Function 1-4 (Y) - Moderate Function None - Low or No Function None - Low or No Function Likely or not likely (Must be associated with a lish-bearing stream or lake) (Y or N)	ction tion to Provide
7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present. 7 5-7 (Y) - High Function 1-4 (Y) - Moderate Function None - Low or No Funct	ction tion to Provide
7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present. 7 5-7 (Y) - High Function 1-4 (Y) - Moderate Function None - Low or No Function None - Low or No Function None - Low or No Function (Y or N) 1 Wetland has perennial or intermittent surface-water connection to a fish-bearing water body.	ction tion to Provide
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7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present. 5-7 (Y) - High Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - High Function 1-4 (Y) - High Function 1-5 (Y) - High Function 1-3 (Y) - Moderate Function 1-3 (Y) - Moderate Function 1-3 (Y) - Moderate Function 1-3 (Y) - Moderate Function 1-3 (Y) - Moderate Function 1-3 (Y) - Moderate Function 1-3 (Y) - Moderate Function 1-3 (Y) - Moderate Function 1-3 (Y) - Moderate Function 1-3 (Y) - Moderate Function 1-3 (Y) - Moderate Function 1-3 (Y) - Moderate Function 1-3 (Y) - Moderate Function 1-3 (Y) - Moderate Function 1-3 (Y) - Moderate Function 1-3 (Y) - Moderate Function 1-3 (Y) - Moderate Function 1-3 (Y) - Moderate Function 1-3 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-	ction to Provide NA
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7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present. 5-7 (Y) - High Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - High Function 1-4 (Y) - High Function 1-4 (Y) - High Function 1-3 (Y) - Moderate Function 1-	ction to Provide NA
7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present. 7 5-7 (Y) - High Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-3 (Y) - Modera	ction to Provide NA
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7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present. 7 5-7 (Y) - High Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-3 (Y) - Modera	ction to Provide NA
7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present. 7 Signature of wildlife use (e.g. tracks, scat, gnawed stumps) present. 7 Signature of the function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-5 (Y) - High Function 1-3 (Y) - Moderate Function 1	ction to Provide NA
7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present. 7 Signature of wildlife use (e.g. tracks, scat, gnawed stumps) present. 7 Signature of this production of 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-3 (Y) - Moderate	ction to Provide NA
7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present. 7 5-7 (Y) - High Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-5 (Y) - Moderate Function 1-5 (Y) - Moderate Function 1-5 (Y) - Moderate Function 1-5 (Y) - Moderate Function 1-5 (Y) - Moderate Function 1-6 (Y) - High Function 1-6 (Y) - Moderate Function 1-7 (Y) - Moderate F	ction to Provide NA
7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present. 7 Signature 5-7 (Y) - High Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-4 (Y) - Moderate Function 1-5 (Y) - High Function 1-5 (Y) - High Function 1-5 (Y) - High Function 1-6 (Y) - High Function 1-7 (Y) - Moderate Function	ction to Provide NA ction ction to Provide

Date: 7-14-13

Ī.	Educational or Scientific Value	Likely or not likely to Sandal
Ι"	Eddodional of Ocionino Valde	Likely or not likely to Provide
ŀ	A Obstantant A to the state of	(Y or N)
	Site has documented scientific or educational use.	1 <u>N</u>
1	2 Wetland is in public ownership	. 2 y
	3 Accessible trails available.	3 N
		 _
	•	2-3 (Y) - High Function
1		1 (Y) - Moderate Function √
		None - Low or No Function
J.	Uniqueness and Heritage	Likely or not likely to Provide
Į		(Y or N)
1	1 Wetland contains documented occurrences of a state or federally	1** N
	listed threatened or endanged species.**	2** N
ŀ	2 Weltand contains documented critical habitat, high quality	3 - N
1	ecosystems, or priority species respectively designated by the	4**
	USFWS.**	<u>N</u>
ı	3 Wetland has biological, geological, or other features that are	
l	determined to be rare.	3-4 (Y) - High Function
	4 Wetland type is a highly valuable wetland type of the State.**	1-2 (Y) - Moderate Function
	**If #1,#2, or #4 is Yes, then wetland is automatically rated as high	None Low or No Paraction
ĸ.	Groundwater Interchange	
l'``	aroundrater interchange	Likely or not likely to Provide
	1 Drogongo et angua ay ayutu ay	(Y or N)
l	1 Presence of seeps or springs	1 <u>N</u>
l	2 Microreleif of wetland surface	2 <u>N</u>
	 Surficial geologic deposits under wetland are permeable (e.g. alluvium) 	3
		2-3 (Y) - High Function
l		1 (Y) - Moderate Function ✓
	•	None - Low or No Function
		LAOUE - FOM OF MO LOUGHOU

WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization Adapted from Regulartory Guidance Letter 09-01

Wetland	ID:	D.P	04
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Date: 7-16-13

Wetland Type: PSSIEMIB

Investigators: C. Schudel J. Blank

A.	Flood Flow Alteration	Likely or not likely to Provide
l	(Storage and Desynchronization)	(Y or N)
l	4 Walkand and a large and a second a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second	
]	1 Wetland occurs in the upper portion of its watershed.	1
l	2 Wetland is relatively flat area and is capable of retaining higher	2
	volumes of water during storm events, than under normal rainfall	3
	events.	4 <u>XN</u>
ı	3 Wetland is a closed (depressional) system.	5
	4 If flowthrough, wetland has constructed outlet with signs of fluctuating	6
	water levels, algal mats, and/or lodged debris. 5 Wetland has dense woody vegetation.	7
	6 Wetland has dense woody vegetation. 6 Wetland receives floodwater from an adjacent water course.	
	7 Floodwater come as sheet flow rather than channel flow,	5-7 (Y) - High Function
	Channels thru wetlands	1-4 (Y) - Moderate Function *
В.	Sediment Removal	None - Low or No Function
.	Oddinicit Hemoval	Likely or not likely to Provide
	1 Sources of excess sediment (from tillage, mining or construction) are	(Y or N)
	present upgradient of the wetland. (Granal tru)	1 <u>4</u> <u>N</u>
	2 Slow-moving water and/or a deepwater habitat are present in the	1 /3 1 1 1 1 1 1 1 1 1 1
	wetland.	4
	3 Dense herbaceous vegetation is present.	5 N
	4 Inerspersion of vegegetation and water is high in wetland.	6 -1
	5 Ponding of water is high in wetland.	
	6 Sediment deposits are present in wetland.	4-6 (Y) - High Function
		1-3 (Y) - Moderate Function 🗸
		None - Low or No Function
C.	Nutrient and Toxicant Removal	Likely or not likely to Provide
	1 Pourses of evenes nutrients (forther way) and that the state of	(Y or N)
	1 Sources of excess nutrients (fertilizers) and toxicants (pesticides and heavy metals) are present upgradient of the wetland.	<u> </u>
	Wetland is inundated or has indicators that flooding is a seasonal	2 4
	event during the growing season.	3
	3 Wetland provides long duration for water detention.	4, -1
•	Wetland has at least 30% aerial cover of live dense herbaceous	5
	vegetation.	3-5 (Y) - High Function ✔
	5 Fine grained mineral or organic materials are present for the wetland.	1-2 (Y) - Moderate Function
	5 To an analogue are present for the wettally,	None - Low or No Function
_		AOUG - FOM OUTO LAUGHOR

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Example Ranking: If ranking the capacity for a wetland to perform a given wetland function into high, moderate, low or none categories, use the following example as guidance. For Flood Flow Alteration, answering yes to five to seven attributes would rate the wetland as high functioning; answering yes to one to four attributes would rate the wetland as moderate; and not answering yes to any attributes would rate the wetland as low, or if evaluator is certain the wetland does not perform this function, it can be rated as none.

Date: 7-14-13

	101	Likely or not likely to Provide
D.	Erosion Control and Shoreline Stabilization	(Y or N)
	(if associated with a watercourse or shoreline)	(1 0) 14)
	and the state of t	, , , ,
	1 Wetland has dense, energy absorbing vegetation bordering the water	$\begin{vmatrix} 1 \\ 2 \end{vmatrix}$
	course and no evidence of erosion.	3
	2 A herbaceous layer is part of this dense vegetation.	3
	3 Trees and shrubs able to withstand erosive flood events are also part	0.000 Useh Eunstian
	of this dense vegetation.	2-3 (Y) - High Function V
		1 (Y) - Moderate Function None - Low or No Function
E.	Production of Organic Matter and its Export	Likely or not likely to Provide
		(Y or N)
	1 Wetland has at least 30% aerial cover of dense herbaceous	1 . 1
	vegetation.	2 1
	2 Woody plants in wetland are mostly deciduous.	3 1
1	3 High degree of plant community structure, vegetation density, and	4 <u>N</u>
	species richness present.	5 1
	4 Interspersion of vegetation and water is high in wetland.	6**
	5 Wetland is inundated or has indicators that flooding is a seasonal	
	event during the growing season.	4-6 (Y) - Hìgh Function ✓
	6 Wetland has outlet from which organic matter is flushed.**	1-3 (Y) - Moderate Function
	**If #6 is No, then wetland automatically rated as low or No function	None - Low or No Function
F.	General Wildlife Habitat Sultability	Likely or not likely to Provide
		(Y or N)
	1 Wetland is not fragmented by development.	1 <u>\\</u>
	2 Upland surround wetland is undeveloped.	2
	3 Wetland has connectivity with other habitat types.	3 <u>~~~</u>
1	4 Divserity of plant species is high.	4
	5 Wetland has more than one Cowardin Class (e.g. PFO, PSS, PEM)	5 <u>N. V.</u>
	6 Has high degree of Corwardin Class interspersion	6 <u>N. V.</u>
	7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present.	7 <u>N</u>
		5-7 (Y) - High Function ✓
l		1-4 (Y) - Moderate Function
1		None - Low or No Function
G.	General Fish Habitat	Likely or not likely to Provide
	(Must be associated with a fish-bearing stream or lake)	(Y or N) NA
	•	, ,
	1 Wetland has perennial or intermittent surface-water connection to a	1
	fish-bearing water body.	2
1	2 Wetland has sufficient size and depth of open water so as not to	3
1	freeze completely during winter.	4
	3 Observation of fish.	5
1	4 Herbaceous and/or woody vegetation is present in wetland and/or	6
	buffer to provide cover, shade, and/or detrital matter.	
1	5 Spawning areas are present (aquatic vegetation and/or gravel beds).	4-6 (Y) - High Function
	6 Juvenile rearing areas.	1-3 (Y) - Moderate Function
		None - Low or No Function
Н.	Native Plant Richness	Likely or not likely to Provide
Γ"		(Y or N)
1	1 Dominant and codominant plants are native.	1
	2 Wetland contains two or more Cowardin Classes.	2
	3 Wetland has three or more strata of vegetation.	3 N
	4 Wetland has mature trees.	4 · N
	1 thermine time training and a	3-4 (Y) - High Function
1	•	1-2 (Y) - Moderate Function
1	•	None - Low or No Function
<u> </u>		

Date: 1-16-13

Wetland ID: DP 04

П	Educational or Scientific Value	
ľ	Educational of Scientific value	Likely or not likely to Provide
	4.0%	(Y or N)
1	Site has documented scientific or educational use.	1 N
ı	2 Wetland is in public ownership	2 7
	3 Accessible trails available.	3
	•	- 1 - 1 .
	·	2-3 (Y) - High Function
		1 (Y) - Moderate Function
L	And the second s	None - Low or No Function
J.	Uniqueness and Heritage	Likely or not likely to Provide
		(Y or N)
1	Wetland contains documented occurrences of a state or federally	1** N
1	listed threatened or endanged species.**	2** N
1	2 Weltand contains documented critical habitat, high quality	3 N
1	ecosystems, or priority species respectively designated by the	4**
	USFWS.**	T - N
	3 Wetland has biological, geological, or other features that are	
	determined to be rare,	3-4 (Y) - High Function
ı	4 Wetland type is a highly valuable wetland type of the State.**	
ı	**If #1,#2, or #4 is Yes, then wetland is automatically rated as high	1-2 (Y) - Moderate Function
k.	Groundwater Interchange	None Low or No Function
l'``	diodinaratei intercitatige	Likely or not likely to Provide
	1 Drosones of seems as an in-	(Y or N)
l	Presence of seeps or springs	1 <u>N</u>
ı	2 Microreleif of wetland surface	2 <u>N</u>
	Surficial geologic deposits under wetland are permeable (e.g. alluyium)	3
l		2-3 (Y) - High Function
İ		1 (Y) - Moderate Function
		None - Low or No Function

i.

WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization Adapted from Regulartory Guidance Letter 09-01

Wetland ID: DP 06

Date:

7-17-13

Wetland Type: PSSIEMIC

Investigators: C. Schudel J. Blank

JA.	Flood Flow Alteration	Likely or not likely to Provide
1	(Storage and Desynchronization)	(Y or N)
ı		
1	1 Wetland occurs in the upper portion of its watershed.	1 7.
İ	2 Wetland is relatively flat area and is capable of retaining higher	2
	volumes of water during storm events, than under normal rainfall	3 N
İ	events.	4
	3 Wetland is a closed (depressional) system.	5 4
ı	4 If flowthrough, wetland has constructed outlet with signs of fluctuating	6 -
1	water levels, algal mats, and/or lodged debris.	7
	5 Wetland has dense woody vegetation.	
l	6 Wetland receives floodwater from an adjacent water course.	5-7 (Y) - High Function
1	7 Floodwater come as sheet flow rather than channel flow.	1-4 (Y) - Moderate Function ✓
L		None - Low or No Function
В.	Sediment Removal	Likely or not likely to Provide
l		(Y or N)
	1 Sources of excess sediment (from tillage, mining or construction) are	1 1
l	present upgradient of the wetland. (alacial Lill)	2 -1
l	2 Slow-moving water and/or a deepwater habitat are present in the	3 - 1
	wetland,	4 4
l	3 Dense herbaceous vegetation is present.	5 ~
	4 Inerspersion of vegegetation and water is high in wetland.	6 -7-
	5 Ponding of water is high in wetland.	
	6 Sediment deposits are present in wetland.	4-6 (Y) - High Function
		1-3 (Y) - Moderate Function
		None - Low or No Function
C,	Nutrient and Toxicant Removal	Likely or not likely to Provide
		(Y or N)
	1 Sources of excess nutrients (fertilizers) and toxicants (pesticides and	1 1
	heavy metals) are present upgradient of the wetland.	2 -1
	2 Wetland is inundated or has indicators that flooding is a seasonal	3 -
	event during the growing season.	4 - 1
	3 Wetland provides long duration for water detention.	5 - 1
	4 Wetland has at least 30% aerial cover of live dense herbaceous	
	vegetation.	3-5 (Y) - High Function ✓
	5 Fine grained mineral or organic materials are present for the wetland.	
	5 - Same materials are procent for the welland,	1-2 (Y) - Moderate Function None - Low or No Function
		INOTIG - LOW OF IND FUNCTION

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Example Ranking: If ranking the capacity for a welland to perform a given welland function into high, moderate, low or none categories, use the following example as guidance. For Flood Flow Alteration, answering yes to five to seven attributes would rate the wetland as high functioning; answering yes to one to four attributes would rate the wetland as moderate; and not answering yes to any attributes would rate the wetland as low, or if evaluator is certain the wetland does not perform this function, it can be rated as none.

Date: 1-17-13

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D.		nd Shoreline Stabilization	Likely or not likely to Provide
	(if associated with a	watercourse or shoreline)	(Y or N)
	Wetland has dense	, energy absorbing vegetation bordering the water	1
	course and no evide	ence of erosion.	2
	A herbaceous laver	is part of this dense vegetation.	3 <u> </u>
	R Trees and shrubs a	ble to withstand erosive flood events are also part	
	of this dense vegeta	-	2-3 (Y) - High Function
	of this defise reget		1 (Y) - Moderate Function
			None - Low or No Function
	Description of Ora	anic Matter and its Export	Likely or not likely to Provide
E.	Production of Org	ante matter and its export	(Y or N)
		-1 000/ depend harbonous	1 1 7
		st 30% aerial cover of dense herbaceous	2 - / .
	vegetation.	at the first because	3 N
l	2 Woody plants in we	etland are mostly deciduous.	
		nt community structure, vegetation density, and	4
	species richness pr	resent.	5
	4 Interspersion of veg	getation and water is high in wetland.	6** <u>'</u>
		ed or has indicators that flooding is a seasonal	
	event during the gro	owing season.	4-6 (Y) - High Function ✓
	6 Wetland has outlet	from which organic matter is flushed.**	1-3 (Y) - Moderate Function
	**If #6 is No, then v	vetland automatically rated as low or No function	None - Low or No Function
F.	General Wildlife H	abitat Suitability	Likely or not likely to Provide
Ι΄.		•	(Y or N)
l	1 Wetland is not fram	mented by development.	1 1 4
	? Uniond surround w	etland is undeveloped.	2 -
1	2 Walland has conne	ectivity with other habitat types.	3 7 /
	4 Divserity of plant sp	pecies is high	4 7
	4 Divselly of plant of	than one Cowardin Class (e.g. PFO, PSS, PEM)	5 × 4
l	o Weiland has more	f Corwardin Class interspersion	6 M Y
1	6 Has nigh degree or	use (e.g. tracks, scat, gnawed stumps) present.	7 - 7
1	/ EAldeuce of Alignite	dise (e.g. tracks, scat, grawed stamps) present	· — · — ·
			5-7 (Y) - High Function
ı		·	1-4 (Y) - Moderate Function
l			None - Low or No Function
			Likely or not likely to Provide
G.	General Fish Habi		
	(Must be associate	ed with a fish-bearing stream or lake)	(Y or N) NA.
		nnial or intermittent surface-water connection to a	
	fish-bearing water		2
1		ient size and depth of open water so as not to	3
	freeze completely	during winter.	4 —
	3 Observation of fish		5
	4 Herbaceous and/or	r woody vegetation is present in wetland and/or	6
	buffer to provide co	over, shade, and/or detrital matter.	
	5 Spawning areas ar	re present (aquatic vegetation and/or gravel beds).	4-6 (Y) - High Function
1	6 Juvenile rearing ar		1-3 (Y) - Moderate Function
	5		None - Low or No Function
H.	Native Plant Rich	ness	Likely or not likely to Provide
Ι"	.1011701101111011		(Y or N)
	1 Dominant and code	ominant plants are native.	1 1
	2 Motional contains	two or more Cowardin Classes.	2 44 1
		or more strata of vegetation.	3 N
			4 N
1	4 Wetland has matu	16 ((662)	3-4 (Y) - High Function
1			1-2 (Y) - Moderate Function
1			None - Low or No Function
i			Profite - CON OF HOT GROUNDS

Date: <u>7-17-13</u>

T.	Educational or Scientific Value	Likely or not likely to Provide
	•	(Y or N)
	1 Site has documented scientific or educational use.	1 1
ı	2 Wetland is in public ownership	$\frac{1}{2}$
1	3 Accessible trails available.	3 - 1
1		<u> </u>
		2-3 (Y) - High Function
		1 (Y) - Moderate Function
L		None - Low or No Function
J.	Uniqueness and Heritage	Likely or not likely to Provide
ı	AND IN COLUMN TO THE COLUMN TH	(Y, or N)
	1 Wetland contains documented occurrences of a state or federally	1**
1	listed threatened or endanged species.**	3 N (MSPS)
ı	2 Weltand contains documented critical habitat, high quality	$\frac{3}{N}$ (uses)
1	ecosystems, or priority species respectively designated by the	4** N
ı	USFWS.**, USPS, or Andubon	
	3 Wetland has biological, geological, or other features that are	
	determined to be rare.	3-4 (Y) - High Function
	4 Wetland type is a highly valuable wetland type of the State.**	1-2 (Y) - Moderate Function
	**If #1,#2, or #4 is Yes, then wetland is automatically rated as high	None - Cow or No Function
K.	Groundwater Interchange	Likely or not likely to Provide
ı		(Y or N)
l	1 Presence of seeps or springs	1 10 /
	2 Microreleif of wetland surface	2 N
	 Surficial geologic deposits under wetland are permeable (e.g. alluvium) 	3
		2-3 (Y) - High Function
I		1 (Y) - Moderate Function
L		None - Low or No Function

WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization Adapted from Regulartory Guidance Letter 09-01

Wetland ID: DPU8

Date: 7-17-13

Wetland Type: PSSI / PEM1B

Investigators: JBIMK C Schudel

A.	Flood Flow Alteration (Storage and Desynchronization)	Likely or not likely to Provide
	(Clorage and Desynchronization)	(Y or N)
	1 Wetland occurs in the upper portion of its watershed.	1 <u>U.</u>
	Wetland is relatively flat area and is capable of retaining higher volumes of water during storm events, than under normal rainfall	2
	events.	3
	3 Wetland is a closed (depressional) system.	5 U portion
	4 If flowthrough, wetland has constructed outlet with signs of fluctuating	6
	water levels, algal mats, and/or lodged debns.	7
	5 Wetland has dense woody vegetation.6 Wetland receives floodwater from an adjacent water course.	6.7.00 Library 1500 /
	7 Floodwater come as sheet flow rather than channel flow.	5-7 (Y) - High Function ✓ 1-4 (Y) - Moderate Function
		None - Low or No Function
В.	Sediment Removal .	Likely or not likely to Provide
	4.0	(Y or N)
	1 Sources of excess sediment (from tillage, mining or construction) are present upgradient of the wetland. (alaualtil)	1 -4
	2 Slow-moving water and/or a deepwater habitat are present in the	2 3
	wetland.	4 - 2
	3 Dense herbaceous vegetation is present.	5
	4 Inerspersion of vegegetation and water is high in wetland.	6 + 1
	5 Ponding of water is high in wetland. 6 Sediment deposits are present in wetland.	(0.40 19 1 5 9
	o dediment deposits are present in wettand.	4-6 (Y) - High Function 1-3 (Y) - Moderate Function
		None - Low or No Function
C.	Nutrient and Toxicant Removal	Likely or not likely to Provide
		(Y or N)
	1 Sources of excess nutrients (fertilizers) and toxicants (pesticides and	1 _ N_
	heavy metals) are present upgradient of the wetland. 2 Wetland is inundated or has indicators that flooding is a seasonal	2 Day partions
•	event during the growing season.	4
3	3 Wetland provides long duration for water detention.	5 - 24
4	4 Wetland has at least 30% aerial cover of live dense herbaceous	
,	vegetation.	3-5 (Y) - High Function
ţ	5 Fine grained mineral or organic materials are present for the wetland.	1-2 (Y) - Moderate Function
		None - Low or No Function

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Example Ranking: If ranking the capacity for a wetland to perform a given wetland function into high, moderate, low or none categories, use the following example as guidance. For Flood Flow Alteration, answering yes to five to seven attributes would rate the wetland as high functioning; answering yes to one to four attributes would rate the wetland as moderate; and not answering yes to any attributes would rate the wetland as low, or if evaluator is certain the wetland does not perform this function, it can be rated as none.

Date: <u>7-17-13</u>

Б	Erosion Control and Shoreline Stabilization	Likely or not likely to Provide	
D.	(if associated with a watercourse or shoreline)	(Y or N)	
	נוו מססטטומוכט אוווו מ אימנסוטטטוסט טו פווטוטווויטן	(, , , , , , , , , , , , , , , , , , ,	
	1 Wetland has dense, energy absorbing vegetation bordering the water	1 Y	
	course and no evidence of erosion.	2	
	2 A herbaceous layer is part of this dense vegetation.	3 - 3	
	3 Trees and shrubs able to withstand erosive flood events are also part		
	of this dense vegetation.	2-3 (Y) - High Function 🗸	
	of this doffse vegetation.	1 (Y) - Moderate Function	
·		None - Low or No Function	
E,	Production of Organic Matter and its Export	Likely or not likely to Provide	
1,	Flodification of Organic matter and the Export	(Y or N)	
	1 Wetland has at least 30% aerial cover of dense herbaceous	1 4	
	vegetation.	2	
	Woody plants in wetland are mostly deciduous.		
	3 High degree of plant community structure, vegetation density, and	3 pertions 4 N pertions	
ĺ	species richness present.	5 Lipertoins	
	4 Interspersion of vegetation and water is high in wetland.	6**	
	5 Wetland is inundated or has indicators that flooding is a seasonal	<u> </u>	
ĺ	event during the growing season.	4-6 (Y) - High Function ✓	
	6 Wetland has outlet from which organic matter is flushed.**	1-3 (Y) - Moderate Function	
	**If #6 is No, then wetland automatically rated as low or No function	None - Low or No Function	
F.	General Wildlife Habitat Suitability	Likely or not likely to Provide	
F.	General Wilding Habitat Sunabinty	(Y or N)	
. • 1	1 Wetland is not fragmented by development.	1 Y true	
	2 Upland surround wetland is undeveloped.	2	
	3 Wetland has connectivity with other habitat types.	3 - 1	
	4 Divserity of plant species is high.	4 1	
	5 Wetland has more than one Cowardin Class (e.g. PFO, PSS, PEM)	5	
	6 Has high degree of Corwardin Class interspersion	6 U	
	7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present.	7 y nest, tracks	
	/ Lylderica of Wilding ase Jose, macros, south griding diamps, prosonic	<u> </u>	
	·	5-7 (Y) - High Function √	
		1-4 (Y) - Moderate Function	
		None - Low or No Function	
G.	General Fish Habitat	Likely or not likely to Provide	
G.	(Must be associated with a fish-bearing stream or lake)	(Y or N) (1 A)	
١.	(MIDS) DE associated with a non-bearing direath of lattoy	(NPX	
	1 Wetland has perennial or intermittent surface-water connection to a	1 1 4	. `
	fish-bearing water body.	2 1	4
	2 Wetland has sufficient size and depth of open water so as not to	3 x (2 stickle back	
	freeze completely during winter.	4 _ latespore	5 OT
	3 Observation of fish.	5 Mak	_
	4 Herbaceous and/or woody vegetation is present in wetland and/or	6 UKK	
	buffer to provide cover, shade, and/or detrital matter.		
	5 Spawning areas are present (aquatic vegetation and/or gravel beds).	4-6 (Y) - High Function	
	6 Juvenile rearing areas.	1-3 (Y) - Moderate Function	
•	o ouvering rearing areas.	None - Low or No Function	
. 	Native Plant Richness	Likely or not likely to Provide	
H.	Native Plant nicilless	(Y or N)	
	4 Deminent and and aminent stanta are notice	1 \/	
	1 Dominant and codominant plants are native.	2 V	
1	2 Wetland contains two or more Cowardin Classes.	$\frac{2}{3} \frac{y}{N}$	
	3 Wetland has three or more strata of vegetation.	4 10	
l	4 Wetland has mature trees.	3-4 (Y) - High Function	
		1-2 (Y) - Moderate Function	
		None - Low or No Function	
		IAOUG - FOM OLIAO I MICHOIL	

Date: <u>7-17-13</u>

l.	Educational or Scientific Value	Likely or not likely to Provide
1		(Y or N)
	1 Site has documented scientific or educational use.	1 6)
1	2 Wetland is in public ownership	2 - 100
	3 Accessible trails available.	3 - 1
	o	
		2-3 (Y) - High Function
ı		1 (Y) - Moderate Function
		None - Low or No Function
J.	Uniqueness and Heritage	Likely or not likely to Provide
	A Malland and the decoupled and the second second	(Y or N)
ı	1 Wetland contains documented occurrences of a state or federally	1** <u>N</u>
1	listed threatened or endanged species.**	2" N
ł	2 Weltand contains documented critical habitat, high quality	3
	ecosystems, or priority species respectively designated by the USFWS.**	4** N
	3 Wetland has biological, geological, or other features that are	
	determined to be rare.	3-4 (Y) - High Function
l	4 Wetland type is a highly valuable wetland type of the State.**	1-2 (Y) - Moderate Function
	**If #1,#2, or #4 is Yes, then wetland is automatically rated as high	None Towor No Function
K.	Groundwater Interchange	Likely or not likely to Provide
l		(Y or N)
l	1 Presence of seeps or springs	1 70 %
l	2 Microreleif of wetland surface	2 📈 0
	3 Surficial geologic deposits under wetland are permeable	3 \(\frac{1}{\lambda}\)
	(e.g. alluvium)	
		2-3 (Y) - High Function
		1 (Y) - Moderate Function ✓
		None - Low or No Function

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Tuproal alder willtady. To take shore

WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization
Adapted from Regulartory Guidance Letter 09-01

PSS 1B

Wetland ID: DPC

Date: 17-13

Wetland Type: PSS1 B

Investigators: J Blank + G Schudel

A.		Likely or not likely to Provide
	(Storage and Desynchronization)	(Y or N)
	 1 Wetland occurs in the upper portion of its watershed. 2 Wetland is relatively flat area and is capable of retaining higher volumes of water during storm events, than under normal rainfall events. 	
1		4. X N
1	3 Wetland is a closed (depressional) system.	5
ı	4 If flowthrough, wetland has constructed outlet with signs of fluctual	
ļ	water levels, algal mats, and/or lodged debris.	7 <u>N</u>
1	5 Wetland has dense woody vegetation.	
l	6 Wetland receives floodwater from an adjacent water course.	5-7 (Y) - High Function
1	7 Floodwater come as sheet flow rather than channel flow.	1-4 (Y) - Moderate Function✓
<u>_</u>		None - Low or No Function
B.	Sediment Removal	Likely or not likely to Provide
1		(Y or N)
ĺ	1 Sources of excess sediment (from tillage, mining or construction)	are 1 V
l	present upgradient of the wetland. (glacial till)	2
	2 Slow-moving water and/or a deepwater habitat are present in the	
	wetland.	4 <u>N</u>
	3 Dense herbaceous vegetation is present,	5 N
l	4 Inerspersion of vegegetation and water is high in wetland.	6 4
l	5 Ponding of water is high in wetland.	
ı	6 Sediment deposits are present in wetland.	4-6 (Y) - High Function
		1-3 (Y) - Moderate Function √
		None - Low or No Function
C.	Nutrient and Toxicant Removal	Likely or not likely to Provide
	4.0	(Y or N)
	1 Sources of excess nutrients (fertilizers) and toxicants (pesticides	
	heavy metals) are present upgradient of the wetland.	2
	2 Wetland is inundated or has indicators that flooding is a seasonal	
	event during the growing season.	4
	3 Wetland provides long duration for water detention.	5
	4 Wetland has at least 30% aerial cover of live dense herbaceous	
	vegetation,	3-5 (Y) - High Function
	5 Fine grained mineral or organic materials are present for the wetla	*** ***********************************
		None - Low or No Function

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Example Ranking: If ranking the capacity for a wetland to perform a given wetland function into high, moderate, low or none categories, use the following example as guidance. For Flood Flow Alteration, answering yes to five to seven attributes would rate the wetland as high functioning; answering yes to one to four attributes would rate the wetland as moderate; and not answering yes to any attributes would rate the wetland as low, or if evaluator is certain the wetland does not perform this function, it can be rated as none.

Date: 7-17-13

			Likely on not likely to Drovido
D.		Erosion Control and Shoreline Stabilization	Likely or not likely to Provide
		(if associated with a watercourse or shoreline)	(Y or N)
		Wetland has dense, energy absorbing vegetation bordering the water	1
		course and no evidence of erosion.	3 - 7
	2	A herbaceous layer is part of this dense vegetation.	3
		Trees and shrubs able to withstand erosive flood events are also part	S S AA . High Fountier .
		of this dense vegetation.	2-3 (Y) - High Function
			1 (Y) - Moderate Function None - Low or No Function
Ε.		Production of Organic Matter and its Export	Likely or not likely to Provide
			(Y or N)
		Wetland has at least 30% aerial cover of dense herbaceous	1 <u>N</u>
		vegetation.	2 4
	2	Woody plants in wetland are mostly deciduous.	3
		High degree of plant community structure, vegetation density, and	4 N
ĺ		species richness present.	5 <u>Y</u> .
		Interspersion of vegetation and water is high in wetland.	
	5	Wetland is inundated or has indicators that flooding is a seasonal	4 C (V) Uigh Function
	_	event during the growing season.	4-6 (Y) - High Function 1-3 (Y) - Moderate Function
	6	Wetland has outlet from which organic matter is flushed.**	None - Low or No Function
		**If #6 is No, then wetland automatically rated as low or No function	
F.		General Wildlife Habitat Suitability	Likely or not likely to Provide
			(Y or N)
	1	Wetland is not fragmented by development.	1 1
l		Upland surround wetland is undeveloped.	2 - 1
		Wetland has connectivity with other habitat types.	3
	4	Divserity of plant species is high.	4 <u>N</u> 5
	5	Wetland has more than one Cowardin Class (e.g. PFO, PSS, PEM)	6 7
	6	Has high degree of Corwardin Class interspersion	7 - 1
	1	Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present.	
			5-7 (Y) - High Function
			1-4 (Y) - Moderate Function \checkmark
			None - Low or No Function
G.	_	General Fish Habitat	Likely or not likely to Provide
G.		(Must be associated with a lish-bearing stream or lake)	1
		(Widst be associated with a lish-bearing stream of take)	(York) NA
	4	Wetland has perennial or intermittent surface-water connection to a	1 1/
		fish-bearing water body.	2
	2	Wetland has sufficient size and depth of open water so as not to	3 3
	_	freeze completely during winter.	4 😾
	3	Observation of fish.	5
		Herbaceous and/or woody vegetation is present in wetland and/or	6
	7	buffer to provide cover, shade, and/or detrital matter.	
	5	Spawning areas are present (aquatic vegetation and/or gravel beds).	4-6 (Y) - High Function
		Juvenile rearing areas.	1-3 (Y) - Moderate Function
	•		None - Low or No Function
H.		Native Plant Richness	Likely or not likely to Provide
Ι"			(Y or N)
1	1	Dominant and codominant plants are native.	1 \\\
1		Wetland contains two or more Cowardin Classes.	2 <u>N</u>
1		Wetland has three or more strata of vegetation.	3 <u>N</u>
1		Wetland has mature trees.	4 <u>N</u>
1		·	3-4 (Y) - High Function
			1-2 (Y) - Moderate Function 🗸
			None - Low or No Function
	_		The state of the s

Date: <u>1-17-13</u>

Ī.	Educational or Scientific Value	
Ι"	Eddoaronal of Scientific Value	Likely or not likely to Provide
	4 Otto beauty and the second	(Y or N)
1	1 Site has documented scientific or educational use.	1 N
	2 Wetland is in public ownership	2 4
ı	3 Accessible trails available.	3 1
		2-3 (Y) - High Function
		1 (Y) - Moderate Function
	•	None - Low or No Function
J.	Uniqueness and Heritage	Likely or not likely to Provide
	Melloud could be decided by	(Y or N)
1	1 Wetland contains documented occurrences of a state or federally	1** N
	listed threatened or endanged species.**	2**
	2 Weltand contains documented critical habitat, high quality	3 <u>N</u>
	ecosystems, or priority species respectively designated by the	4"
	USFWS,**	
	3 Wetland has biological, geological, or other features that are	
ı	determined to be rare.	3-4 (Y) - High Function
	4 Wetland type is a highly valuable wetland type of the State.**	1-2 (Y) - Moderate Function
l	**If #1,#2, or #4 is Yes, then wetland is automatically rated as high	None - Cow or No Function
К.	Groundwater Interchange	
1	an annual interestings	Likely or not likely to Provide
	1 Presence of seeps or springs	(Y or N)
	2 Microreleif of wetland surface	1 <u>N</u>
1		2 <u>N</u>
	 Surficial geologic deposits under wetland are permeable (e.g. alluvium) 	3
		2-3 (Y) - High Function
		1 (Y) - Moderate Function
l		None - Low or No Function
		priority control no randitor

WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization Adapted from Regulartory Guidance Letter 09-01

Wet	land	ID:
7 T G t	iai iu	ıu.

DPID

Date: 7-17-13

Wetland Type: PEMIF

Investigators: C. Schudul J. Blank

		J. Glavith
A,	Flood Flow Alteration	Likely or not likely to Provide
	(Storage and Desynchronization)	(Y or N)
	1 Wetland occurs in the upper portion of its watershed.	\ \ \ \ \ \ \
l	Wetland is relatively flat area and is capable of retaining higher	$\begin{bmatrix} 1 \\ 2 \end{bmatrix} = \frac{y}{y}$
l	volumes of water during storm events, than under normal rainfall	$\frac{2}{3}$ $\frac{1}{N}$
	events.	
l	3 Wetland is a closed (depressional) system.	$\frac{4}{5} \frac{N}{N}$
	4 If flowthrough, wetland has constructed outlet with signs of fluctuating	6 - 14
]	water levels, algal mats, and/or lodged debris.	7 - 4
l	5 Wetland has dense woody vegetation.	<u> </u>
	6 Wetland receives floodwater from an adjacent water course.	5-7 (Y) - High Function
	7 Floodwater come as sheet flow rather than channel flow.	1-4 (Y) - Moderate Function√
		None - Low or No Function
В.	Sediment Removal	Likely or not likely to Provide
		(Y or N)
	1 Sources of excess sediment (from tillage, mining or construction) are	1 '4'.
	present upgradient of the wetland. (glacial till)	2 7
	2 Slow-moving water and/or a deepwater habitat are present in the	3 - 4 1
	wetland.	4 7.
	3 Dense herbaceous vegetation is present.	5
	4 Inerspersion of vegegetation and water is high in wetland.	6
	5 Ponding of water is high in wetland.	
	6 Sediment deposits are present in wetland,	4-6 (Y) - High Function ✓
		1-3 (Y) - Moderate Function
		None - Low or No Function
c.	Nutrient and Toxicant Removal	Likely or not likely to Provide
	1 Sources of expose putrients (feetilizers) and touisents (seetilizers)	(Y or N)
	1 Sources of excess nutrients (fertilizers) and toxicants (pesticides and heavy metals) are present upgradient of the wetland.	
	Wetland is inundated or has indicators that flooding is a seasonal	2
	event during the growing season.	3 <u>+N</u>
	Wetland provides long duration for water detention.	4
	4 Wetland has at least 30% aerial cover of live dense herbaceous	5
	Vegetation.	3-5 (Y) - High Function
	5 Fine grained mineral or organic materials are present for the wetland.	1-2 (Y) - Moderate Function
	g or organio materiale are present for the wettally,	None - Low or No Function
		וייטווס - בטיזי טו זייט רעווענוטוו

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Example Ranking: If ranking the capacity for a wetland to perform a given wetland function into high, moderate, low or none categories, use the following example as guidance. For Flood Flow Alteration, answering yes to five to seven attributes would rate the wetland as high functioning; answering yes to one to four attributes would rate the wetland as moderate; and not answering yes to any attributes would rate the wetland as low, or if evaluator is certain the wetland does not perform this function, it can be rated as none.

Date: 7-17-13

		Likely or not likely to Provide
D.	Erosion Control and Shoreline Stabilization	
	(If associated with a watercourse or shoreline)	(Y or N)
		1 (M) V
1	Wetland has dense, energy absorbing vegetation bordering the water	1 N & Maintone
	course and no evidence of erosion.	2 NA Ypartions are
	A herbaceous layer is part of this dense vegetation.	3 <u>N</u>
3	Trees and shrubs able to withstand erosive flood events are also part	
	of this dense vegetation.	2-3 (Y) - High Function
í	Becameine more of a stabilizing Gaber by t Still	1 (Y) - Moderate Function
,	Becoming more of a stabilizion feature, but still	None (Low or No Function V
Ψ.	Production of Organic Matter and its Export	Likely or not likely to Provide
	•	(Y or N)
1	Wetland has at least 30% aerial cover of dense herbaceous	1 3/4
•	vegetation.	2 N
2	Woody plants in wetland are mostly deciduous.	3 N
	High degree of plant community structure, vegetation density, and	4 7
V	species richness present.	5 -4
1	Interspersion of vegetation and water is high in welland.	6**
	Wetland is inundated or has indicators that flooding is a seasonal	
5	event during the growing season.	4-6 (Y) - High Function
^	Wetland has outlet from which organic matter is flushed.**	1-3 (Y) - Moderate Function
О	**If #6 is No, then wetland automatically rated as low or No function	None - Low or No Function
		Likely or not likely to Provide
F.	General Wildlife Habitat Sultability	
	the state of the s	(Y or N)
	Wetland is not fragmented by development.	
	Upland surround wetland is undeveloped,	2 - 1
	Wetland has connectivity with other habitat types.	3
	Divserity of plant species is high.	4 Ny Elexated to "high
	Wetland has more than one Cowardin Class (e.g. PFO, PSS, PEM)	5 N Wighted
	Has high degree of Corwardin Class interspersion	6 N SIC VIN HOUSE
/	Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present.	/ water from
		5-7 (Y) - High Function of hydrital
		1-4 (Y) - Moderate Function
		None - Low or No Function
G.	General Fish Habitat	Likely or not likely to Provide
	(Must be associated with a fish-bearing stream or lake)	(Y or N) $\lambda (A)$
1	Wetland has perennial or intermittent surface-water connection to a	
	fish-bearing water body.	2 /4
2	Wetland has sufficient size and depth of open water so as not to	3 X-1 small scusping read 4 X-adjacent wetland
	freeze completely during winter.	4 X-adjacent wetland
3	Observation of fish.	5 with
4	Herbaceous and/or woody vegetation is present in wetland and/or	6 nulu
	buffer to provide cover, shade, and/or detrital matter.	
5	Spawning areas are present (aquatic vegetation and/or gravel beds).	4-6 (Y) - High Function
6	Juvenile rearing areas.	1-3 (Y) - Moderate Function
		None - Low or No Function
H.	Native Plant Richness	Likely or not likely to Provide
		(Y or N)
1	Dominant and codominant plants are native.	1 1 1
	Wetland contains two or more Cowardin Classes.	2 ~
	Wetland has three or more strata of vegetation.	3 N
	Wetland has mature trees.	4 1
Ι ΄	· · · · · · · · · · · · · · · · · · ·	3-4 (Y) - High Function
		1-2 (Y) - Moderate Function
		None - Low or No Function

Date: 7-17-13

1.	Educational or Scientific Value	Likely or not likely to Provide
		(Y or N)
1	1 Site has documented scientific or educational use.	1 ()
	2 Wetland is in public ownership	2 1
1	3 Accessible trails available.	3 1
	•	<u></u>
ı		2-3 (Y) - High Function
		1 (Y) - Moderate Function
		None - Low or No Function
J.	Uniqueness and Heritage	Likely or not likely to Provide
		(Y or N)
	1 Wetland contains documented occurrences of a state or federally	1** N
1	listed threatened or endanged species.**	2**
	2 Weltand contains documented critical habitat, high quality	3 //
	ecosystems, or priority species respectively designated by the	4** N
1	USFWS.**	
1	3 Wetland has biological, geological, or other features that are	
	determined to be rare.	3-4 (Y) - High Function
l	4 Wetland type is a highly valuable wetland type of the State.**	1-2 (Y) - Moderate Function
	**If #1,#2, or #4 is Yes, then wetland is automatically rated as high	None - Low or No Function
K.	Groundwater Interchange	Likely or not likely to Provide
		(Y or N)
	1 Presence of seeps or springs	1 N
ļ	2 Microreleif of wetland surface	2 N
	3 Surficial geologic deposits under wetland are permeable	3
l	(e.g. alluvium)	
	•	2-3 (Y) - High Function
l		1 (Y) - Moderate Function ✓
		None - Low or No Function

Wetland ID:

Kenia Hydro, LLC - Grant Lake Project

WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization Adapted from Regulartory Guidance Letter 09-01

Date:

7-18-13

None - Low or No Function

Wetland Type: PSSI/EM 1E Investigators: C.C	Schudel J. Blank
A. Flood Flow Alteration (Storage and Desynchronization)	Likely or not likely to Provide (Y or N)
1 Wetland occurs in the upper portion of its watershed. 2 Wetland is relatively flat area and is capable of retaining higher volumes of water during storm events, than under normal rainfall events.	1
3 Wetland is a closed (depressional) system. 4 If flowthrough, wetland has constructed outlet with signs of fluctuating water levels, algal mats, and/or lodged debris. 5 Wetland has dense woody vegetation.	5 6 7
6 Wetland receives floodwater from an adjacent water course. 7 Floodwater come as sheet flow rather than channel flow.	5-7 (Y) - High Function 1-4 (Y) - Moderate Function ✔ None - Low or No Function
B. Sediment Removal	Likely or not likely to Provide
 Sources of excess sediment (from tillage, mining or construction) are present upgradient of the wetland. Slow-moving water and/or a deepwater habitat are present in the wetland. 	(Y or N) 1
 3 Dense herbaceous vegetation is present, 4 Inerspersion of vegegetation and water is high in wetland, 5 Ponding of water is high in wetland, 	5 6
6 Sediment deposits are present in wetland.	4-6 (Y) - High Function 1-3 (Y) - Moderate Function None - Low or No Function
C. Nutrient and Toxicant Removal	Likely or not likely to Provide
 Sources of excess nutrients (fertilizers) and toxicants (pesticides and heavy metals) are present upgradient of the wetland. Wetland is inundated or has indicators that flooding is a seasonal event during the growing season. Wetland provides long duration for water detention. Wetland has at least 30% aerial cover of live dense herbaceous 	(Y or N) 1
vegetation. 5 Fine grained mineral or organic materials are present for the wetland.	3-5 (Y) - High Function √ 1-2 (Y) - Moderate Function

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Example Ranking: If ranking the capacity for a wetland to perform a given wetland function into high, moderate, low or none categories, use the following example as guidance. For Flood Flow Alteration, answering yes to five to seven attributes would rate the wetland as high functioning; answering yes to one to four attributes would rate the wetland as moderate; and not answering yes to any attributes would rate the wetland as low, or if evaluator is certain the wetland does not perform this function, it can be rated as none.

Date: 7-18-13

Wetland ID: DP12

	The second secon	
	n Control and Shoreline Stabilization	Likely or not likely to Provide
(if asso	ciated with a watercourse or shoreline)	(Y or N)
1 Wetlan	d has dense, energy absorbing vegetation bordering the water	1 1 1
	and no evidence of erosion.	2 1
	aceous layer is part of this dense vegetation.	3
	and shrubs able to withstand erosive flood events are also part	-
	dense vegetation.	2-3 (Y) - High Function
Oi tillo t	adise regulation.	1 (Y) - Moderate Function
		None - Low or No Function
E Dundan	Man of Owner Metter and its Cymert	Likely or not likely to Provide
E. Produc	tion of Organic Matter and its Export	(Y or N)
	the state of the second data and the second	
	d has at least 30% aerial cover of dense herbaceous	1 2 4
vegetat		2 李八八
	plants in wetland are mostly deciduous.	3
	egree of plant community structure, vegetation density, and	4
	richness present.	5
	ersion of vegetation and water is high in wetland.	6**
	d is inundated or has indicators that flooding is a seasonal	,
	uring the growing season.	4-6 (Y) - High Function √
6 Wetlan	d has outlet from which organic matter is flushed.**	1-3 (Y) - Moderate Function
**If #6 i	s No, then wetland automatically rated as low or No function	None - Low or No Function
	il Wildlife Habitat Sultability	Likely or not likely to Provide
	•	(Y or N)
1 Wetian	d is not fragmented by development.	1 &
	surround wetland is undeveloped.	2 7
	d has connectivity with other habitat types.	3 7
	y of plant species is high.	4 × N
	d has more than one Cowardin Class (e.g. PFO, PSS, PEM)	5 7
	thas more trian one cowardin olass (e.g. 110, 100, 120, 120, 120), the degree of Corwardin Class interspersion	6
	ce of wildlife use (e.g. tracks, scat, gnawed stumps) present.	7
/ Evideii	ce of wholie use (e.g. tracks, seat, ghaved stumps) present.	
		5-7 (Y) - High Function
		1-4 (Y) - Moderate Function
		None - Low or No Function
	al Fish Habitat	Likely or not likely to Provide
(Must t	ne associated with a fish-bearing stream or lake)	(Y or N) NA
		1 1
	d has perennial or intermittent surface-water connection to a	
	aring water body.	2 1
	d has sufficient size and depth of open water so as not to	3 1/1
	completely during winter.	4
	ation of fish.	5
	eous and/or woody vegetation is present in wetland and/or	6 <u>pl</u>
	o provide cover, shade, and/or detrital matter.	
5 Spawn	ing areas are present (aquatic vegetation and/or gravel beds).	4-6 (Y) - High Function
6 Juvenil	e rearing areas.	1-3 (Y) - Moderate Function
	-	None - Low or No Function
H. Native	Plant Richness	Likely or not likely to Provide
1	•	(Y or N)
1 Domina	ant and codominant plants are native.	1 4
	d contains two or more Cowardin Classes.	2
	d has three or more strata of vegetation.	3 1
	d has mature trees.	4
-7 YY G ((d))	a rigo marato noto.	3-4 (Y) - High Function
1	•	1-2 (Y) - Moderate Function
1		None - Low or No Function
<u></u>		Trans - Fow or No Latinital

No clinect habitat in wetland

Date: 7-(8-13

1	Educational or Scientific Value	
 ''	Educational of Scientific value	Likely or not likely to Provide
		(Y or N)
1 1	Site has documented scientific or educational use.	1 N
2	Wetland is in public ownership	2 4
1 3	Accessible trails available.	3
l		<u> </u>
	•	2-3 (Y) - High Function
l	•	1 (Y) - Moderate Function
l	s ,	None - Low or No Function
J.	Uniqueness and Heritage	Likely or not likely to Provide
1	· ·	· · · · · · · · · · · · · · · · · · ·
l ,	Wetland contains documented occurrences of a state or federally	(Y or N) 1** ル
1 '		
١.	listed threatened or endanged species.**	2** <u>N</u>
2	Weltand contains documented critical habitat, high quality	3 1
	ecosystems, or priority species respectively designated by the	4** N
1	ŲSFWS.**	 ,
3	Wetland has biological, geological, or other features that are	
1	determined to be rare.	3-4 (Y) - High Function
4	Wetland type is a highly valuable wetland type of the State.**	1-2 (Y) - Moderate Function
l	**If #1,#2, or #4 is Yes, then wetland is automatically rated as high	None -(Low)or No Function
К.	Groundwater Interchange	Likely or not likely to Provide
		(Y or N)
1 1	Presence of seeps or springs	1
	Microreleif of wetland surface	2 - 1
	Surficial geologic deposits under wetland are permeable	3 — 4
۱	(e.g. alluvium)	3 . 1 -
		2-3 (Y) - High Function √
l		1 (Y) - Moderate Function
		None - Low or No Function



WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization Adapted from Regulartory Guidance Letter 09-01

Wetland ID:

Date:

7-19-13

Wetland Type: PEM 1 / SSIE

Investigators: C. Schudel J. Biank

	· · · · · · · · · · · · · · · · · · ·	•	J. Blerich
A.	. Flood Flow Alteration		Likely or not likely to Provide
	(Storage and Desynchronization)	·	(Y or N)
	1 Wetland occurs in the upper portion of	its watershed.	1 N
	2 Wetland is relatively flat area and is ca	pable of retaining higher	2 7
	volumes of water during storm events,	than under normal rainfall	3 N
	events.		4 7
	3 Wetland is a closed (depressional) sys	tem.	5 7
	4 If flowthrough, wetland has constructed		6 44
ı	water levels, algal mats, and/or lodged		7 N
	5 Wetland has dense woody vegetation.		
İ	6 Wetland receives floodwater from an a	djacent water course.	5-7 (Y) - High Function
ı	7 Floodwater come as sheet flow rather t	han channel flow.	1-4 (Y) - Moderate Function ✓
L			None - Low or No Function
В.	Sediment Removal		Likely or not likely to Provide
Ī			(Y or N)
	1 Sources of excess sediment (from tillag	je, mining or construction) are	1 N
	present upgradient of the wetland.		2
	2 Slow-moving water and/or a deepwater	habitat are present in the	3
ŀ	wetland.		4
1	3 Dense herbaceous vegetation is preser		5
	4 Inerspersion of vegegetation and water	is high in wetland.	6 <u>N</u>
	5 Ponding of water is high in wetland.		
Ī	6 Sediment deposits are present in wetla	nd.	4-6 (Y) - High Function V
			1-3 (Y) - Moderate Function
L			None - Low or No Function
C.	Nutrient and Toxicant Removal		Likely or not likely to Provide
	1 Sources of excess nutrients (fertilizers)	and toxicants (nosticides and	(Y or N)
	heavy metals) are present upgradient o		$\begin{bmatrix} 1 & N \\ 2 & Y \end{bmatrix}$
	2 Wetland is inundated or has indicators		3 1
	event during the growing season.	that hooding is a seasonal	4 — 1
	3 Wetland provides long duration for water	er detention	5 - 1
	4 Wetland has at least 30% aerial cover of	of live dense herbaceous	·
	vegetation.	A III GOIISO HEIDACEGUS	3-5 (Y) - High Function√
l	5 Fine grained mineral or organic materia	Is are present for the wetland	1-2 (Y) - Moderate Function
	g. milesteral of organio matoria	to all proportion and noticing,	None - Low or No Function
		· · · · · · · · · · · · · · · · · · ·	HONG LOW OF NOT UNDUOL

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Example Ranking: If ranking the capacity for a wetland to perform a given wetland function into high, moderate, low or none categories, use the following example as guidance. For Flood Flow Alteration, answering yes to five to seven attributes would rate the wetland as high functioning; answering yes to one to four attributes would rate the wetland as moderate; and not answering yes to any attributes would rate the wetland as low, or if evaluator is certain the wetland does not perform this function, it can be rated as none.

Date: 7-19-13

Б		Exercise Control and Charatina Stabilization	Likely or not likely to Provide
D.		Erosion Control and Shoreline Stabilization	(Y or N)
ļ		(if associated with a watercourse or shoreline)	(101N)
		Matter the entered present cheering vegetation bardering the water	I , U -100'
	1	Wetland has dense, energy absorbing vegetation bordering the water	1 1 V
	_	course and no evidence of erosion.	3 - 1
ı	2	A herbaceous layer is part of this dense vegetation.	٠ ٩
	3	Trees and shrubs able to withstand erosive flood events are also part	0.0 (V) High Eupotian /
		of this dense vegetation.	2-3 (Y) - High Function
ı			1 (Y) - Moderate Function None - Low or No Function
E,		Production of Organic Matter and its Export	Likely or not likely to Provide
1			(Y or N)
	1	Wetland has at least 30% aerial cover of dense herbaceous	1 4
	_	vegetation.	2
		Woody plants in wetland are mostly deciduous.	3
	3	High degree of plant community structure, vegetation density, and	4
		species richness present.	5
1		Interspersion of vegetation and water is high in wetland.	6**
1	5	Wetland is inundated or has indicators that flooding is a seasonal	A C AA Lligh Eungliss >
	_	event during the growing season.	4-6 (Y) - High Function ✓
	6	Wetland has outlet from which organic matter is flushed.**	1-3 (Y) - Moderate Function
_		**If #6 is No, then wetland automatically rated as low or No function	None - Low or No Function
F.		General Wildlife Habitat Suitability	Likely or not likely to Provide
			(Y or N)
		Wetland is not fragmented by development.	1
		Upland surround wetland is undeveloped.	2
		Wetland has connectivity with other habitat types.	3
		Divsenty of plant species is high.	4
		Wetland has more than one Cowardin Class (e.g. PFO, PSS, PEM)	5
		Has high degree of Corwardin Class interspersion	6
	7	Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present.	
			5.7.00 Ulah Funation
ŀ			5-7 (Y) - High Function √ 1-4 (Y) - Moderate Function
ļ			None - Low or No Function
١			Likely or not likely to Provide
G.		General Fish Habitat	
		(Must be associated with a fish-bearing stream or lake)	(Y or N)
		the state of the s	
	1	Wetland has perennial or intermittent surface-water connection to a	1
	_	fish-bearing water body.	3
l	2	Wetland has sufficient size and depth of open water so as not to	4
l	^	freeze completely during winter.	5
		Observation of fish.	6
	4	Herbaceous and/or woody vegetation is present in wetland and/or	0
ı	_	buffer to provide cover, shade, and/or detrital matter.	4.6 (V) High Eurotian
		Spawning areas are present (aquatic vegetation and/or gravel beds).	4-6 (Y) - High Function 1-3 (Y) - Moderate Function
	6	Juvenile rearing areas.	None - Low or No Function
<u></u>		N. C. D. C.	<u> </u>
H.		Native Plant Richness	Likely or not likely to Provide
		Double of and and advantage of the	(Y or N)
		Dominant and codominant plants are native.	1 7
		Wetland contains two or more Cowardin Classes.	2 1
		Wetland has three or more strata of vegetation.	3
	4	Welland has mature trees.	4 N
1			3-4 (Y) - High Function
			1-2 (Y) - Moderate Function √ None - Low or No Function
<u></u>			DAOUG - FOM OF NO ERRICHOLL

Date: 7-19-13

П.	Educational or Scientific Value	Likely on put tiledet De 11
l .		Likely or not likely to Provide
	f Cita has desumented extentities and action to	(Y or N)
	Site has documented scientific or educational use.	1 <u>N</u>
	2 Wetland is in public ownership	2
3	B Accessible trails available.	3 N
ĺ		2-3 (Y) - High Function
Į.		1 (Y) - Moderate Function ✓
		None - Low or No Function
J.	Uniqueness and Heritage	Likely or not likely to Provide
	(Washerstein Lande	(Y or N)
	Wetland contains documented occurrences of a state or federally	1**
	listed threatened or endanged species.**	2** N.
] 2	Weltand contains documented critical habitat, high quality	3 \lambda
	ecosystems, or priority species respectively designated by the	4**
	USFWS.**	
3	Wetland has biological, geological, or other features that are	
	determined to be rare.	3-4 (Y) - High Function
4	Wetland type is a highly valuable wetland type of the State.**	1-2 (Y) - Moderate Function
	**If #1,#2, or #4 is Yes, then wetland is automatically rated as high	None - Cowor No Function
K.	Groundwater Interchange	Likely or not likely to Provide
	v	(Y or N)
1	Presence of seeps or springs	(1 01 14)
	Microreleif of wetland surface	$\frac{1}{2} \frac{N}{3}$
	Surficial geologic deposits under wetland are permeable	3 - 1
J	(e.g. alluvium)	3 — —
	Torg. und fiding	0000 1815 4
		2-3 (Y) - High Function √
		1 (Y) - Moderate Function
		None - Low or No Function

...

WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization Adapted from Regulartory Guidance Letter 09-01

Wetland ID:	DP17
	PSS3/PEMIB

Date: 7-20-13

Wetland Type: POTHESTEBIS Investigators: C. Schudel J. Blank

<u> </u>	Floral Flora Attacks	I the same at the transfer of the
A.	Flood Flow Alteration	Likely or not likely to Provide
	(Storage and Desynchronization)	(Y or N)
	1 Wetland occurs in the upper portion of its watershed.	1 N
	2 Wetland is relatively flat area and is capable of retaining higher	2 -1
	volumes of water during storm events, than under normal rainfall	3 y'
	events.	4 1
	3 Wetland is a closed (depressional) system.	5 N
	4 If flowthrough, wetland has constructed outlet with signs of fluctuating	6 N
	water levels, algal mats, and/or lodged debris.	7
	5 Wetland has dense woody vegetation.	
	6 Wetland receives floodwater from an adjacent water course.	5-7 (Y) - High Function
	7 Floodwater come as sheet flow rather than channel flow.	1-4 (Y) - Moderate Function
		None - Low or No Function
В.	Sediment Removal	Likely or not likely to Provide
		(Y or N)
	1 Sources of excess sediment (from tillage, mining or construction) are	1 1
	present upgradient of the wetland.	2 <u>N</u>
	2 Slow-moving water and/or a deepwater habitat are present in the	3
l	wetland.	4 N
	3 Dense herbaceous vegetation is present.	5 N
	4 Inerspersion of vegegetation and water is high in wetland.	6 <u>N</u>
	5 Ponding of water is high in wetland.	
	6 Sediment deposits are present in wetland.	4-6 (Y) - High Function
		1-3 (Y) - Moderate Function√
		None - Low or No Function
C.	Nutrient and Toxicant Removal	Likely or not likely to Provide
		(Y or N)
	1 Sources of excess nutrients (fertilizers) and toxicants (pesticides and	1 _ N
	heavy metals) are present upgradient of the wetland.	2 1
	2 Wetland is inundated or has indicators that flooding is a seasonal	3 7
	event during the growing season.	4
	3 Wetland provides long duration for water detention.	5
	4 Wetland has at least 30% aerial cover of live dense herbaceous	
	vegetation.	3-5 (Y) - High Function 🗸
	5 Fine grained mineral or organic materials are present for the wetland.	1-2 (Y) - Moderate Function
		None - Low or No Function

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Date: <u>7-20-13</u>

Wetland ID: <u>DP / 7</u>

D.	-	Erosion Control and Shoreline Stabilization	Likely or not likely to Provide
ال.			1 '
1		(if associated with a watercourse or shoreline)	(Y or N) NA
			,
	1	Wetland has dense, energy absorbing vegetation bordering the water	
1		course and no evidence of erosion.	2
1		A herbaceous layer is part of this dense vegetation.	3
	3	Trees and shrubs able to withstand erosive flood events are also part	
		of this dense vegetation.	2-3 (Y) - High Function
1			1 (Y) - Moderate Function
			None - Low or No Function
E.		Production of Organic Matter and its Export	Likely or not likely to Provide
 		1 roughloss of organic matter and no export	(Y or N)
	4	Wetland has at least 30% aerial cover of dense herbaceous	1 4
			2 -
	_	vegetation.	· · · · · · · · · · · · · · · · · · ·
1		Woody plants in wetland are mostly deciduous.	3
	3	High degree of plant community structure, vegetation density, and	4 <u>~~</u>
		species richness present.	5 <u>N</u>
		Interspersion of vegetation and water is high in wetland.	6**
	5	Wetland is inundated or has indicators that flooding is a seasonal	, ,
		event during the growing season.	4-6 (Y) - High Function √
	6	Wetland has outlet from which organic matter is flushed.**.	1-3 (Y) - Moderate Function
		**If #6 is No, then wetland automatically rated as low or No function	None - Low or No Function
F.	-	General Wildlife Habitat Suitability	Likely or not likely to Provide
Ι΄.		Motiotal Wilding Habitat Californity	(Y or N)
ı	-4	Matland is not from outsid by dayslanmont	l ' , , '
1		Wetland is not fragmented by development.	1 1
		Upland surround wetland is undeveloped.	2
1		Wetland has connectivity with other habitat types.	3 1
1		Divserity of plant species is high.	4
		Wetland has more than one Cowardin Class (e.g. PFO, PSS, PEM)	5
		Has high degree of Corwardin Class interspersion	6
1	7	Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present.	7
1			1
1			5-7 (Y) - High Function √
1			1-4 (Y) - Moderate Function
1			None - Low or No Function
G.		General Fish Habitat	Likely or not likely to Provide
-		(Must be associated with a fish-bearing stream or lake)	(V or N)
1		(mast be associated mind han bearing broadin or lane)	NA I
ı	4	Wetland has perennial or intermittent surface-water connection to a	4
ı	1	·	1
ı	_	fish-bearing water body.	2
ı	2	Wetland has sufficient size and depth of open water so as not to	3
		freeze completely during winter.	4
ı		Observation of fish.	5
	4	Herbaceous and/or woody vegetation is present in wetland and/or	6
ı		buffer to provide cover, shade, and/or detrital matter.	
1	5	Spawning areas are present (aquatic vegetation and/or grave) beds).	4-6 (Y) - High Function
1		Juvenile rearing areas.	1-3 (Y) - Moderate Function
1	_		None - Low or No Function
Н,		Native Plant Richness	Likely or not likely to Provide
l''		Tanto I will Invillodo	(Y or N)
	۰	Deminent and addominent plants are walker	
1		Dominant and codominant plants are native.	
1		Wetland contains two or more Cowardin Classes.	2
		Wetland has three or more strata of vegetation.	3 _ N
1	4	Wetland has mature trees.	4 N (nearby Y)
			3-4 (Y) - High Function
			1-2 (Y) - Moderate Function ✓
1			None - Low or No Function
	_		

Date: 7.20-13

	Educational or Scientific Value	
"	Educational of Scientific Value	Likely or not likely to Provide
ı	4.60	(Y or N)
	1 Site has documented scientific or educational use.	1 N
	2 Welland is in public ownership	2 4
	3 Accessible trails available.	3 5
	•	
l	•	2-3 (Y) - High Function
		1 (Y) - Moderate Function
		None - Low or No Function
J.	Uniqueness and Heritage	
		Likely or not likely to Provide
İ	1 Wetland contains documented occurrences of a state or federally	1** (Y or N)
	listed threatened or endanged species.**	
	2 Wolfond contains decreased artifact Latitude Living	2** / <u>//</u>
i '	2 Weltand contains documented critical habitat, high quality	3
	ecosystems, or priority species respectively designated by the	4** <u>N</u>
1	USFWS.**	
l '	3 Wetland has biological, geological, or other features that are	
	determined to be rare.	3-4 (Y) - High Function
۱ ۱	4 Wetland type is a highly valuable wetland type of the State.**	1-2 (Y) - Moderate Function
	**If #1,#2, or #4 is Yes, then wetland is automatically rated as high	None (Low or No Function
K.	Groundwater Interchange	Likely or not likely to Provide
		(Y or N)
	1 Presence of seeps or springs	1 1 1
	2 Microreleif of wetland surface	2
(3 Surficial geologic deposits under wetland are permeable	3 - 1
	(e.g. alluvium)	······································
		2-3 (Y) - High Function
		1 (Y) - Moderate Function
		None - Low or No Function

Wetland ID: DP19

Kenia Hydro, LLC - Grant Lake Project

WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization
Adapted from Regulartory Guidance Letter 09-01

Date: 7-20-13

	10111 221546	chudel J. Blank
A.	Flood Flow Alteration (Storage and Desynchronization)	Likely or not likely to Provide (Y or N)
	1 Wetland occurs in the upper portion of its watershed.	1 <u>N</u>
	Wetland is relatively flat area and is capable of retaining higher volumes of water during storm events, than under normal rainfall	3 3
	events.	4 74 9
	Wetland is a closed (depressional) system. If flowthrough, wetland has constructed outlet with signs of fluctuating.	5 N
	water levels, algal mats, and/or lodged debris.	6 N
	5 Wetland has dense woody vegetation.	/ <u>-r</u>
	6 Wetland receives floodwater from an adjacent water course.	5-7 (Y) - High Function
	7 Floodwater come as sheet flow rather than channel flow.	1-4 (Y) - Moderate Function √
<u> </u>		None - Low or No Function
В.	Sediment Removal	Likely or not likely to Provide
	1 Sources of excess sediment (from tillage, mining or construction) are	(Y or N)
	present upgradient of the wetland.	$\frac{1}{2}$ $\frac{\mathcal{V}}{\mathcal{N}}$
	2 Slow-moving water and/or a deepwater habitat are present in the	3 7
	wetland.	4 - 1
	3 Dense herbaceous vegetation is present.	5 6
	4 Inerspersion of vegegetation and water is high in wetland.	6 <u>N</u>
	5 Ponding of water is high in wetland.	
	6 Sediment deposits are present in wetland.	4-6 (Y) - High Function
		1-3 (Y) - Moderate Function √
C.	Nutrient and Toxicant Removal	None - Low or No Function
<u> </u>	Hattieff and Toxicall Helitoyal	Likely or not likely to Provide (Y or N)
	1 Sources of excess nutrients (fertilizers) and toxicants (pesticides and	(1 OF IN)
	heavy metals) are present upgradient of the welland.	2 7
	2 Wetland is inundated or has indicators that flooding is a seasonal	3
	event during the growing season.	4
	3 Wetland provides long duration for water detention.	5
	4 Wetland has at least 30% aerial cover of live dense herbaceous	1
	Vegetation.	3-5 (Y) - High Function J
	5 Fine grained mineral or organic materials are present for the wetland.	1-2 (Y) - Moderate Function

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Date: 7.20-13

Wetland ID: 12/19

D.		Erosion Control and Shoreline Stabilization	Likely or not likely to Provide
<u> </u>		(if associated with a watercourse or shoreline)	(Y or N)
			, A
1	1	Wetland has dense, energy absorbing vegetation bordering the water	1
		course and no evidence of erosion.	2
	2	A herbaceous layer is part of this dense vegetation.	3
1	3	Trees and shrubs able to withstand erosive flood events are also part	0.0.00 High Eupotion
1		of this dense vegetation.	2-3 (Y) - High Function 1 (Y) - Moderate Function
		•	None - Low or No Function
F		Durch setting of Organic Matter and its Evnert	Likely or not likely to Provide
E.		Production of Organic Matter and its Export	(Y or N)
1	1	Wetland has at least 30% aerial cover of dense herbaceous	1 V
	•	vegetation.	2
1	2	Woody plants in wetland are mostly deciduous.	3 1
	3	High degree of plant community structure, vegetation density, and	4 <u>N</u>
		species richness present.	5 <u> </u>
ı	4	Interspersion of vegetation and water is high in wetland.	6**
	5	Wetland is inundated or has indicators that flooding is a seasonal	
		event during the growing season.	4-6 (Y) - High Function ✓
	6	Wetland has outlet from which organic matter is flushed.**	1-3 (Y) - Moderate Function
$ldsymbol{ldsymbol{ldsymbol{ldsymbol{eta}}}$	-	**If #6 is No, then wetland automatically rated as low or No function	None - Low or No Function
F.		General Wildlife Habitat Suitability	Likely or not likely to Provide
			(Y or N)
		Wetland is not fragmented by development.	$\begin{bmatrix} 1 & \frac{1}{\sqrt{1}} \\ 2 & \frac{1}{\sqrt{1}} \end{bmatrix}$
		Upland surround wetland is undeveloped. Wetland has connectivity with other habitat types.	3 -1
1		Divserity of plant species is high.	4 4
	4	Wetland has more than one Cowardin Class (e.g. PFO, PSS, PEM)	5 7
	6	Has high degree of Corwardin Class interspersion	6
	7	Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present.	7
	·		
			5-7 (Y) - High Function √
1		,	1-4 (Y) - Moderate Function
			None - Low or No Function
G.		General Fish Habitat	Likely or not likely to Provide
		(Must be associated with a fish-bearing stream or lake)	(Y or N) NA
		Note that the second of the state without anything where connection to o	1
	1	Wetland has perennial or intermittent surface-water connection to a	2
	-	fish-bearing water body. Wetland has sufficient size and depth of open water so as not to	3
	_	freeze completely during winter.	4
1	.9	Observation of fish.	5
		Herbaceous and/or woody vegetation is present in wetland and/or	6
	- 1	buffer to provide cover, shade, and/or detrital matter.	· · · · · · · · · · · · · · · · · · ·
	E	Spawning areas are present (aquatic vegetation and/or gravel beds).	4-6 (Y) - High Function
		Juvenile rearing areas.	1-3 (Y) - Moderate Function
		-	None - Low or No Function
Н.		Native Plant Richness	Likely or not likely to Provide
			(Y or N)
	1	Dominant and codominant plants are native.	1 7 .
		Wetland contains two or more Cowardin Classes.	2 - 7
		Wetland has three or more strata of vegetation.	3 <u>N</u>
	4	Wetland has mature trees.	3-4 (Y) - High Function
1			1-2 (Y) - Moderate Function
1			None - Low or No Function
L			Trong Con of the Landion

Date:

o:	Wetland ID: DP19

l.	Educational or Scientific Value	Likely or not likely to Provide
		(Y or N)
	1 Site has documented scientific or educational use.	1 <u>N</u>
	2 Wetland is in public ownership	2
	3 Accessible trails available.	3
1		
l		2-3 (Y) - High Function
l		1 (Y) - Moderate Function ✓
		None - Low or No Function
J.	Uniqueness and Heritage	Likely or not likely to Provide
	24.5	(Y or N)
	Wetland contains documented occurrences of a state or federally	1** <u>N</u>
	listed threatened or endanged species.**	2** .
	2 Weltand contains documented critical habitat, high quality	3 <u>'N, </u>
	ecosystems, or priority species respectively designated by the	4** <u>N</u>
	USFWS.**	
	3 Wetland has biological, geological, or other features that are	
	determined to be rare.	3-4 (Y) - High Function
	4 Wetland type is a highly valuable wetland type of the State.**	1-2 (Y) - Moderate Function
	**If #1,#2, or #4 is Yes, then wetland is automatically rated as high	None (Low) or No Function
K.	Groundwater Interchange	Likely or not likely to Provide
		(Y or N)
	1 Presence of seeps or springs	1 _ 2 _ /
1	2 Microreleif of wetland surface	2
l	3 Surficial geologic deposits under wetland are permeable	3
	(e.g. alluvium)	<u> </u>
		2-3 (Y) - High Function √
.1 S		1 (Y) - Moderate Function
		None - Low or No Function

WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization Adapted from Regulartory Guidance Letter 09-01

welland in:	DI 00		
			_

Date: 7-20-13

Wetland Type: PSS PPMIB Investigators: C. Schudel J. Blank

A	Flood Flow Ai	feration	
		Desynchronization)	Likely or not likely to Provide
1	(Storage and E	obsyrion on zationy	(Y or N)
	1 Wetland occur	s in the upper portion of its watershed.	1
1	2 Wetland is rela	atively flat area and is capable of retaining higher	1 N
1	volumes of wat	ter during storm events, than under normal rainfall	2 1 1 1 1 1 1 1 1 1 1
	events.	and a matrial rapidal	
	3 Wetland is a cl	osed (depressional) system.	4
	4 If flowthrough.	wetland has constructed outlet with signs of fluctuating	5 ~~
	water levels, al	gal mats, and/or lodged debris.	6 7
1	5 Wetland has de	ense woody vegetation.	/ _/
	6 Wetland receiv	es floodwater from an adjacent water course.	5-7 (Y) - High Function
ĺ	7 Floodwater con	ne as sheet flow rather than channel flow.	1-4 (Y) - Moderate Function
		The state of the s	None - Low or No Function
В.	Sediment Rem	noval	
1			Likely or not likely to Provide
1	1 Sources of exce	ess sediment (from tillage, mining or construction) are	(Y or N)
1	present upgrad	ient of the wetland.	$\begin{bmatrix} 1 & -N \\ 2 & N \end{bmatrix}$
		ater and/or a deepwater habitat are present in the	$\frac{2}{3} \frac{N}{4}$
1	welland,	The state of the s	4 - 1
	3 Dense herbace	ous vegetation is present.	
ł	4 Inerspersion of	vegegetation and water is high in wetland.	· _ ———
	5 Ponding of water	er is high in wetland.	,6 <u>N</u>
l		sits are present in wetland.	4-6 (Y) - High Function
ı	•		1-3 (Y) - Moderate Function ✓
<u> </u>			None - Low or No Function
C.	Nutrient and To	oxicant Removal	Likely or not likely to Provide
		•	(Y or N)
ı	1 Sources of exce	ess nutrients (fertilizers) and toxicants (pesticides and	1 6/
	heavy metals) a	re present upgradient of the wetland.	2 - 10 -
	2 Wetland is inund	dated or has indicators that flooding is a seasonal	3 - 1
	event during the	growing season.	4 - 1
	3 Wetland provide	es long duration for water detention.	5 -4
•	4 Wetland has at I	least 30% aerial cover of live dense herbaceous	
	vegetation.	· • •	3-5 (Y) - High Function
	5 Fine grained mir	neral or organic materials are present for the wetland.	1-2 (Y) - Moderate Function
		,	None - Low or No Function
			THE EST OF ITO I GIOGOTI

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Date: 7-28-13

D.	Erosion Control and Shoreline Stabilization	Likely or not likely to Provide
	(if associated with a watercourse or shoreline)	(Y or N) NA
		1
	1 Wetland has dense, energy absorbing vegetation bordering the water	1
	course and no evidence of erosion.	2
	2 A herbaceous layer is part of this dense vegetation.	3
	3 Trees and shrubs able to withstand erosive flood events are also part	0.0 (V) Ligh Eupstion
	of this dense vegetation.	2-3 (Y) - High Function
		1 (Y) - Moderate Function None - Low or No Function
	Donat Commis Matter and the Compart	Likely or not likely to Provide
E.	Production of Organic Matter and its Export	(Y or N)
	1 Wetland has at least 30% aerial cover of dense herbaceous	1 (1011)
	yegetation.	2
	2 Woody plants in wetland are mostly deciduous.	3 <u>N</u>
	3 High degree of plant community structure, vegetation density, and	4
	species richness present.	5 <u>N</u>
	4 Interspersion of vegetation and water is high in wetland.	6**
	5 Wetland is inundated or has indicators that flooding is a seasonal	
	event during the growing season.	4-6 (Y) - High Function
	6 Wetland has outlet from which organic matter is flushed.**	1-3 (Y) - Moderate Function
	**If #6 is No, then wetland automatically rated as low or No function	None - Low or No Function
F.	General Wildlife Habitat Suitability	Likely or not likely to Provide (Y or N)
	and the state of t	(Y OF N)
	1 Wetland is not fragmented by development.	2 1
	2 Upland surround wetland is undeveloped.3 Wetland has connectivity with other habitat types.	3 - 1
	4 Divserity of plant species is high.	4 //
	5 Wetland has more than one Cowardin Class (e.g. PFO, PSS, PEM)	5
1	6 Has high degree of Corwardin Class interspersion	6
	7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present.	7
		[
		5-7 (Y) - High Function
1		1-4 (Y) - Moderate Function None - Low or No Function
		Likely or not likely to Provide
G.		(Y or N) A IA
1	(Must be associated with a fish-bearing stream or lake)	(1014) 104
	1 Wetland has perennial or intermittent surface-water connection to a	1
	fish-bearing water body.	2
	Wetland has sufficient size and depth of open water so as not to	3
1	freeze completely during winter.	4
	3 Observation of fish.	5
	4 Herbaceous and/or woody vegetation is present in wetland and/or	6
	buffer to provide cover, shade, and/or detrital matter.	1000 151 5
	5 Spawning areas are present (aquatic vegetation and/or gravel beds).	4-6 (Y) - High Function
	6 Juvenile rearing areas.	1-3 (Y) - Moderate Function None - Low or No Function
L		Likely or not likely to Provide
Н.	Native Plant Richness	(Y or N)
1	A David and and and aminont plants are notified	1 (1014)
l	Dominant and codominant plants are native. Wetland contains two or more Cowardin Classes.	2
	Wetland contains two or more Cowardin Classes. Wetland has three or more strata of vegetation.	3 7
I	4 Wetland has mature trees.	4 N
	4 Monana nao maias noon	3-4 (Y) - High Function
		1-2 (Y) - Moderate Function
		None - Low or No Function

Date: 7-20-13

Tī.	Educational or Scientific Value	
1"	Educational of Colentine Value	Likely or not likely to Provide
	1 Cito has do suprembed a description of the state of the	(Y or N)
	1 Site has documented scientific or educational use.	1 _ N
ı	2 Wetland is in public ownership	2 7
	3 Accessible trails available.	3 N
		2-3 (Y) - High Function
1		1 (Y) - Moderate Function
_		None - Low or No Function
J.	Uniqueness and Heritage	Likely or not likely to Provide
	4 Wotland contains decreased to	(Y,or N)
	1 Wetland contains documented occurrences of a state or federally	1" N
	listed threatened or endanged species.**	2**
] .	2 Weltand contains documented critical habitat, high quality	3
l	ecosystems, or priority species respectively designated by the USFWS.**	4** N
Į	3 Wetland has biological, geological, or other features that are	
1	determined to be rare.	2.4 (V) Ulab Function
	4 Wetland type is a highly valuable wetland type of the State.**	3-4 (Y) - High Function
İ	**If #1,#2, or #4 is Yes, then wetland is automatically rated as high	1-2 (Y) - Moderate Function
K.		
ľ``	Groundwater interchange	Likely or not likely to Provide
	1 Dragana of access on the	(Y or N)
ı	1 Presence of seeps or springs	1 <u>N</u>
	2 Microreleif of wetland surface	2 4N
l	3 Surficial geologic deposits under wetland are permeable	3 7
ĺ	(e.g. alluvium)	
		2-3 (Y) - High Function
		1 (Y) - Moderate Function
L.		None - Low or No Function
		1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -

WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization Adapted from Regulartory Guidance Letter 09-01

welland ID;	1166	
Wetland Type:	PEMI	P5515

Date: 7-20-13

Investigators: C. Schudel J. Blank

_		
A.		Likely or not likely to Provide
ŀ	(Storage and Desynchronization)	(Y or N)
	•	
	1 Wetland occurs in the upper portion of its watershed.	1 N
1	2 Wetland is relatively flat area and is capable of retaining higher	2
	volumes of water during storm events, than under normal rainfall	3 × U
1	events.	4 M U
1	3 Wetland is a closed (depressional) system.	5 - 4
1	4 If flowthrough, wetland has constructed outlet with signs of fluctuating	6 7
	water levels, algal mats, and/or lodged debris.	7
1	5 Wetland has dense woody vegetation.	
1	6 Wetland receives floodwater from an adjacent water course.	5-7 (Y) - High Function
	7 Floodwater come as sheet flow rather than channel flow.	1-4 (Y) - Moderate Function
L		None - Low or No Function
В.	Sediment Removal	Likely or not likely to Provide
İ		(Y or N)
	1 Sources of excess sediment (from tillage, mining or construction) are	1 N
	present upgradient of the wetland.	2 - 1
1	2 Slow-moving water and/or a deepwater habitat are present in the	3 - 10 -
1	wetland.	4 - 1
1	3 Dense herbaceous vegetation is present.	5 - 1
	4 Inerspersion of vegegetation and water is high in wetland.	6 N
	5 Ponding of water is high in wetland.	
	6 Sediment deposits are present in wetland,	4-6 (Y) - High Function
1		1-3 (Y) - Moderate Function
		None - Low or No Function
C.	Nutrient and Toxicant Removal	Likely or not likely to Provide
l		(Y or N)
	1 Sources of excess nutrients (fertilizers) and toxicants (pesticides and	1 (1 (1)
ŀ	heavy metals) are present upgradient of the wetland.	2 -14
ı	2 Wetland is inundated or has indicators that flooding is a seasonal	3 - 1
	event during the growing season.	4 - 1
	3 Wetland provides long duration for water detention.	5 7
	4 Wetland has at least 30% aerial cover of live dense herbaceous	<u> </u>
	vegetation,	3-5 (Y) - High Function √
	5 Fine grained mineral or organic materials are present for the wetland.	1-2 (Y) - Moderate Function
	- Committee and processing the Household	None - Low or No Function
		1. 1010 LOW OF IND LATICATION

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Date: 7-20-13

D.	Erosion Control and Shoreline Stabilization	Likely or not likely to Provide
	(if associated with a watercourse or shoreline)	(Y or N) NA
ĺ		INV.
Ī	1 Wetland has dense, energy absorbing vegetation bordering the water	1
	course and no evidence of erosion.	2
I	2 A herbaceous layer is part of this dense vegetation.	3
1	3 Trees and shrubs able to withstand erosive flood events are also part	
1	of this dense vegetation.	2-3 (Y) - High Function
l	•	1 (Y) - Moderate Function
ł		None - Low or No Function
Ē.	Production of Organic Matter and its Export	Likely or not likely to Provide
l	, reasonable of erguine matter and the boport	(Y or N)
٠.	1 Wetland has at least 30% aerial cover of dense herbaceous	1 1
1	vegetation.	2
1	vegetation. 2 Woody plants in wetland are mostly deciduous.	3 3 4 4 4
1	Woody plants in weitand are mostly decided. High degree of plant community structure, vegetation density, and	4
l	species richness present.	5 N
1	species richness present. 4 Interspersion of vegetation and water is high in wetland.	6**
1	5 Wetland is inundated or has indicators that flooding is a seasonal	
1	event during the growing season.	4-6 (Y) - High Function √
[event during the growing season. 6 Wetland has outlet from which organic matter is flushed.**	1-3 (Y) - Moderate Function
1	**If #6 is No, then wetland automatically rated as low or No function	None - Low or No Function
F.	General Wildlife Habitat Suitability	Likely or not likely to Provide
۱۲.	аспота: тлише парнасоцианицу	(Y or N)
1	1 Wetland is not fragmented by development	1 4
	Wetland is not fragmented by development. Upland surround wetland is undeveloped.	2 - 1
	2 Upland surround wetland is undeveloped.3 Wetland has connectivity with other habitat types.	$\frac{2}{3} \frac{\gamma}{4}$
		4 -7
	4 Divserity of plant species is high. 5 Wetland has more than one Cowardin Class (e.g. PFO, PSS, PEM)	5 - 7
	6 Has high degree of Corwardin Class interspersion	6 - 1
	6 Has high degree of Corwardin Class Interspersion 7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present.	7 - 1
1	י באוטטווטט טו אווטוווט טטט לפיטי וומטיחט, סטמני אוומאפט פנטוווףט) אופטפווני	·
1		5-7 (Y) - High Function √
1		1-4 (Y) - Moderate Function
1		None - Low or No Function
_	General Fish Habitat	Likely or not likely to Provide
G.	General Fish Habitat (Must be associated with a fish-bearing stream or lake)	(Y or N) AA
	(миот не авронатей мин а пън-реаниу впеат от таке)	, or in that
	1 Wetland has perennial or intermittent surface-water connection to a	1
1		2
1	fish-bearing water body. 2 Wetland has sufficient size and depth of open water so as not to	3
	2 Wetland has sufficient size and depth of open water so as not to freeze completely during winter.	. 4
		5
1	Observation of fish. Herbaceous and/or woody vegetation is present in wetland and/or	6
1	4 Herbaceous and/or woody vegetation is present in wetland and/or buffer to provide cover, shade, and/or detrital matter.	
	buffer to provide cover, shade, and/or detrital matter. 5 Spawning areas are present (aquatic vegetation and/or gravel beds).	4-6 (Y) - High Function
1		1-3 (Y) - Moderate Function
	6 Juvenile rearing areas.	None - Low or No Function
ļ.	Native Plant Dichness	Likely or not likely to Provide
H.	Native Plant Richness	(Y or N)
•	1 Deminant and addeminant plants are notice	1 (Y OF N)
1	Dominant and codominant plants are native. Wetland contains two or more Cowerdin Classes.	2 1
	2 Wetland contains two or more Cowardin Classes.	3 - 4 - 4 - 4 -
	3 Wetland has three or more strata of vegetation.	4 - N N
	4 Wetland has mature trees.	3-4 (Y) - High Function
		1-2 (Y) - Moderate Function
		None - Low or No Function
ı		MONG - FOM OLINO LINUTION

Date: 7-20-13

Ī.	Educational or Scientific Value	Likely or not likely to Drevide
	- washing of colonial value	Likely or not likely to Provide
1	1 Site has documented scientific or educational use.	(Y or N)
	Wetland is in public ownership	
ı	3 Accessible trails available,	2
	S Accessible Italis available,	3 N
		2-3 (Y) - High Function
		1 (Y) - Moderate Function
		None - Low or No Function
J.	Uniqueness and Heritage	Likely or not likely to Provide
	. Mr. H. A. L. L. A. L. L. A. L. L. L. L. L. L. L. L. L. L. L. L. L.	(Y or N)
1	Wetland contains documented occurrences of a state or federally	1** N
1	listed threatened or endanged species.**	2" JON VATH, TOW 3 N (USFS)
	Welland contains documented critical habitat, high quality	3 N (Neck)
1	ecosystems, or priority species respectively designated by the	4**
1	USFWS.**	
	3 Wetland has biological, geological, or other features that are	
]	determined to be rare.	3-4 (Y) - High Function
	4 Wetland type is a highly valuable wetland type of the State.**	1-2 (Y) - Moderate Function
	**If #1,#2, or #4 is Yes, then wetland is automatically rated as high	None - Cow or No Function
ĸ.	Groundwater Interchange	
l'''	and and that on any o	Likely or not likely to Provide
ĺ	1 Presence of seeps or springs	(Y or N)
	2 Microreleit of wetland surface	1 <u>V</u>
		2
	Surficial geologic deposits under wetland are permeable (e.g. alluvium)	3
		2-3 (Y) - High Function ✓
		1 (Y) - Moderate Function
		None - Low or No Function
_		THE POST OF THE PARTIES.

WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization Adapted from Regulartory Guidance Letter 09-01

Wetland ID: DP23

Date:

7-21-13

Wetland Type: PEM 15510 (topo Lows) Investigators: C. Schudel J. Blank

_	(10, 0000)	(1301) 0000(). ()101/01
A.		Likely or not likely to Provide
	(Storage and Desynchronization)	(Y or N)
	1 Wetland occurs in the upper portion of its watershed.	1 N
	2 Wetland is relatively flat area and is capable of retaining higher	2 47 Y
	volumes of water during storm events, than under normal rainfall events.	3 N
1	3 Wetland is a closed (depressional) system.	
	If flowthrough, wetland has constructed outlet with signs of fluctuating	5
1	water levels, algal mats, and/or lodged debris.	6 7
	5 Wetland has dense woody vegetation.	\ \ \ _\ \ _\
	6 Wetland receives floodwater from an adjacent water course.	6.7.00 Libet Francisco
1	7 Floodwater come as sheet flow rather than channel flow.	5-7 (Y) - High Function
1	The same to the contest flow failer than chaines flow.	1-4 (Y) - Moderate Function √ None - Low or No Function
В.	Sediment Removal	
 	·	Likely or not likely to Provide
]	1 Sources of excess sediment (from tillage, mining or construction) are	(Y or N)
l	present upgradient of the wetland. (From Grant Cr.)	
	2 Slow-moving water and/or a deepwater habitat are present in the	2
ı	wetland,	3
l	3 Dense herbaceous vegetation is present.	4
1	4 Inerspersion of vegegetation and water is high in wetland.	5 \\ 6 \\ N
	5 Ponding of water is high in wetland.	0 <u>N</u>
	6 Sediment deposits are present in wetland.	1 C DO 18-4 5
	in the state of th	4-6 (Y) - High Function √ 1-3 (Y) - Moderate Function
		None - Low or No Function
c.	Nutrient and Toxicant Removal	
		Likely or not likely to Provide
	1 Sources of excess nutrients (fertilizers) and toxicants (pesticides and	(Y or N)
ļ	heavy metals) are present upgradient of the wetland.	
	Wetland is inundated or has indicators that flooding is a seasonal	2 - 1
	event during the growing season.	3 4
Ì	3 Wetland provides long duration for water detention.	5 4
	4 Wetland has at least 30% aerial cover of live dense herbaceous) <u>- </u>
	vegetation.	3-5 (Y) - High Function
	5 Fine grained mineral or organic materials are present for the wetland	1 1 1 1
	The Melialla	1 . ,
		None - Low or No Function

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Date: <u>7-21-13</u>

	.,		I Halicar and Block to Drawley
D.		Erosion Control and Shoreline Stabilization	Likely or not likely to Provide
		(if associated with a watercourse or shoreline)	(Y or N)
ŀ			- 1
	1	Wetland has dense, energy absorbing vegetation bordering the water	1
		course and no evidence of erosion.	2
l	2	A herbaceous layer is part of this dense vegetation.	3
	3	Trees and shrubs able to withstand erosive flood events are also part	, ,
		of this dense vegetation.	2-3 (Y) - High Function √
			1 (Y) - Moderate Function
			None - Low or No Function
E.		Production of Organic Matter and its Export	Likely or not likely to Provide
<u> </u>		1 Toddottott of Organio maxor and to Empore	(Y or N)
	4	Wetland has at least 30% aerial cover of dense herbaceous	1 1
	'	•	2 - 7
	^	vegetation. Woody plants in wetland are mostly deciduous.	3 - 7
	2	High degree of plant community structure, vegetation density, and	4 - 1
	3		5
		species richness present.	6**
		Interspersion of vegetation and water is high in wetland.	
l	5	Wetland is inundated or has indicators that flooding is a seasonal	4-6 (Y) - High Function √
l	_	event during the growing season.	1-3 (Y) - Moderate Function
1	6	Wetland has outlet from which organic matter is flushed.**	None - Low or No Function
		**If #6 is No, then wetland automatically rated as low or No function	· · · · · · · · · · · · · · · · · · ·
F.		General Wildlife Habitat Suitability	Likely or not likely to Provide
			(Y or N)
	1	Wetland is not fragmented by development.	
		Upland surround wetland is undeveloped.	2
		Wetland has connectivity with other habitat types.	3
1	4	Divserity of plant species is high.	4
l	5	Wetland has more than one Cowardin Class (e.g. PFO, PSS, PEM)	5
ĺ	6	Has high degree of Corwardin Class interspersion	6
	7	Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present.	7 <u>N</u>
ı			.1
1			5-7 (Y) - High Function V
			1-4 (Y) - Moderate Function
			None - Low or No Function
G.		General Fish Habitat	Likely or not likely to Provide
		(Must be associated with a fish-bearing stream or lake)	(YorN)
ı			
1	1	Wetland has perennial or intermittent surface-water connection to a	1)
	•	fish-bearing water body.	2 N
	2	Wetland has sufficient size and depth of open water so as not to	3 7
	_	freeze completely during winter.	4 \(\frac{1}{\sqrt{1}}\)
	3	Observation of fish.	5 7
		Herbaceous and/or woody vegetation is present in wetland and/or	6 4
	7	buffer to provide cover, shade, and/or detrital matter.	
	5	Spawning areas are present (aquatic vegetation and/or gravel beds).	4-6 (Y) - High Function 🗸
1		Juvenile rearing areas.	1-3 (Y) - Moderate Function
	U	Juverine realing areas.	None - Low or No Function
		Native Plant Richness	Likely or not likely to Provide
Н.		HARIYO CIAHI AICHHOSS	(Y or N)
	۰	Deminent and addening triante are native	1 1
	1	Dominant and codominant plants are native. Wetland contains two or more Cowardin Classes.	2 - 1
			3
		Wetland has three or more strata of vegetation.	4 -1
	4	Wetland has mature trees.	3-4 (Y) - High Function \(
1			1-2 (Y) - Moderate Function
			None - Low or No Function
1			HAORIG - FOM OF HO ERRORI

Date: 7-21-13

	Educational or Scientific Value	
ľ	Educational of Scientific Value	Likely or not likely to Provide
1		(Y or N)
1	 Site has documented scientific or educational use. 	1 N
ı	2 Wetland is in public ownership	2 <u>y</u>
1	3 Accessible trails available.	3 //
		2-3 (Y) - High Function
1		1 (Y) - Moderate Function
L		None - Low or No Function
J.	Uniqueness and Heritage	Likely or not likely to Provide
	# NATIONAL CONTRACTOR CONTRACTOR AND THE PROPERTY OF THE PROPE	(Y pr N)
l	1 Wetland contains documented occurrences of a state or federally	1** <u> </u>
ı	listed threatened or endanged species.**	2** \ \
1	2 Weltand contains documented critical habitat, high quality	3
l	ecosystems, or priority species respectively designated by the	4**
	USFWS,**	
	3 Wetland has biological, geological, or other features that are	
ĺ	determined to be rare.	3-4 (Y) - High Function
l	4 Wetland type is a highly valuable wetland type of the State.**	1-2 (Y) - Moderate Function
l	**If #1,#2, or #4 is Yes, then wetland is automatically rated as high	None - (Low or No Function
К.	Groundwater Interchange	
 '``	Groundwater interchange	Likely or not likely to Provide
	1 Presence of seeps or springs	(Y or N)
ĺ	2 Microreleif of wetland surface	1 <u>N</u>
		2
	3 Surficial geologic deposits under wetland are permeable	3
	(e.g. alluvium)	` ,
		2-3 (Y) - High Function 🗸
		1 (Y) - Moderate Function
		None - Low or No Function

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DP 24

Kenia Hydro, LLC - Grant Lake Project

WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization Adapted from Regulartory Guidance Letter 09-01

Wetland ID: DP 24 Date: 7-22-	13
Wetland Type: 255/ PEMIC tapo www.investigators: C.	Schudel J. Blank
A. Flood Flow Alteration	Likely or not likely to Provide
(Storage and Desynchronization)	(Y or N)
 Wetland occurs in the upper portion of its watershed. Wetland is relatively flat area and is capable of retaining higher volumes of water during storm events, than under normal rainfall events. Wetland is a closed (depressional) system. If flowthrough, wetland has constructed outlet with signs of fluctuating water levels, algal mats, and/or lodged debris. Wetland has dense woody vegetation. Wetland receives floodwater from an adjacent water course. Floodwater come as sheet flow rather than channel flow. 	1 N 2 N 3 N 4 S 5 6 7 N 5-7 (Y) - High Function 1-4 (Y) - Moderate Function
	None - Low or No Function
1 Sources of excess sediment (from tillage, mining or construction) are present upgradient of the wetland. 2 Slow-moving water and/or a deepwater habitat are present in the wetland. 3 Dense herbaceous vegetation is present. 4 Inerspersion of vegegetation and water is high in wetland. 5 Ponding of water is high in wetland. 6 Sediment deposits are present in wetland.	Likely or not likely to Provide (Y or N) 1 2 3 4 5 6 4-6 (Y) - High Function 1-3 (Y) - Moderate Function None - Low or No Function
 Nutrient and Toxicant Hemoval Sources of excess nutrients (fertilizers) and toxicants (pesticides and heavy metals) are present upgradient of the wetland. Wetland is inundated or has indicators that flooding is a seasonal event during the growing season. Wetland provides long duration for water detention. Wetland has at least 30% aerial cover of live dense herbaceous vegetation. Fine grained mineral or organic materials are present for the wetland. 	Likely or not likely to Provide (Y or N) 1 2 3 4 5 3-5 (Y) - High Function 1-2 (Y) - Moderate Function None - Low or No Function

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Date: <u>7-22-1</u>3

D.	Erosion Control and Shoreline Stabilization	Likely or not likely to Provide
Γ.	(if associated with a watercourse or shoreline)	(Y or N)
	(II associated With a Waterboarde of Shoroline)	(1.5.1.4)
	1 Wetland has dense, energy absorbing vegetation bordering the water	1 1
ļ	course and no evidence of erosion.	2
	2 A herbaceous layer is part of this dense vegetation.	3 - 1
1	3 Trees and shrubs able to withstand erosive flood events are also part	
1	of this dense vegetation.	2-3 (Y) - High Function
1	of this delise vegetation.	1 (Y) - Moderate Function
1		None - Low or No Function
	The state of the s	The state of the s
E.	Production of Organic Matter and its Export	Likely or not likely to Provide
	and the second second second second	(Y or N)
	1 Wetland has at least 30% aerial cover of dense herbaceous	
ı	vegetation.	2 - 1
1	2 Woody plants in wetland are mostly deciduous.	3 <u>++ 4</u>
1	3 High degree of plant community structure, vegetation density, and	4 — 4 —
	species richness present.	5
1	4 Interspersion of vegetation and water is high in wetland.	0 - 7 -
1	5 Wetland is inundated or has indicators that flooding is a seasonal	4 0 00 115-5 15
	event during the growing season.	4-6 (Y) - High Function V
1	6 Wetland has outlet from which organic matter is flushed.**	1-3 (Y) - Moderate Function
	**If #6 is No, then wetland automatically rated as low or No function	None - Low or No Function
F.	General Wildlife Habitat Sultability	Likely or not likely to Provide
		(Y or N)
ı	Wetland is not fragmented by development.	1 <u>y</u>
	Upland surround wetland is undeveloped.	2
	3 Wetland has connectivity with other habitat types.	3
	4 Divserity of plant species is high.	4
	5 Wetland has more than one Cowardin Class (e.g. PFO, PSS, PEM	
	6 Has high degree of Corwardin Class interspersion	· 6 <u>NU</u>
	7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present.	7
		/
		5-7 (Y) - High Function √
		1-4 (Y) - Moderate Function
<u> </u>		None - Low or No Function
G.	General Fish Habitat	Likely or not likely to Provide
	(Must be associated with a fish-bearing stream or lake)	(YorN) - ++A
	1 Wetland has perennial or intermittent surface-water connection to a	1
	fish-bearing water body.	2
	2 Wetland has sufficient size and depth of open water so as not to	3
	freeze completely during winter.	4
	3 Observation of fish.	5
	4 Herbaceous and/or woody vegetation is present in wetland and/or	6
	buffer to provide cover, shade, and/or detritat matter.	
	5 Spawning areas are present (aquatic vegetation and/or gravel beds).	
	6 Juvenite rearing areas.	1-3 (Y) - Moderate Function
		None - Low or No Function
H.	Native Plant Richness	Likely or not likely to Provide
		(Y or N)
	1 Dominant and codominant plants are native.	1
	2 Wetland contains two or more Cowardin Classes.	2
	3 Wetland has three or more strata of vegetation.	3 N
	4 Wetland has mature trees.	4
1		3-4 (Y) - High Function ▼
		1-2 (Y) - Moderate Function
	•	None - Low or No Function

Date: <u>DP 24</u>

Wetland ID: 1-22-13

	Educational or Scientific Value	
١,	Educational of Scientific value	Likely or not likely to Provide
1	4.09	(Y or N)
	Site has documented scientific or educational use.	1 N
	2 Wetland is in public ownership	2
	3 Accessible trails available.	3 N
		2-3 (Y) - High Function
		1 (Y) - Moderate Function
		None - Low or No Function
J.	Uniqueness and Heritage	Likely or not likely to Provide
		(Y or N)
l	1 Wetland contains documented occurrences of a state or federally	1** \\ \]
	listed threatened or endanged species.**	2**
	2 Weltand contains documented critical habitat, high quality	3 7
	ecosystems, or priority species respectively designated by the	4**
	USFWS.**	<u> </u>
	3 Wetland has biological, geological, or other features that are	·, :
	determined to be rare.	3-4 (Y) - High Function
l	4 Wetland type is a highly valuable wetland type of the State.**	1-2 (Y) - Moderate Function
	**If #1,#2, or #4 is Yes, then wetland is automatically rated as high	None - (Low or No Function
Κ,	Groundwater Interchange	
Į	3.	Likely or not likely to Provide
	1 Presence of seeps or springs	(Y or N)
	2 Microreleif of wetland surface	1 <u>N</u>
	3 Surficial geologic deposits under wetland are permeable	2 14
	(e.g. alluvium)	3 — 4
		2-3 (Y) - High Function
		1 (Y) - Moderate Function
		None - Low or No Function
		INDIA - FOM OF IND EMICTION

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WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization Adapted from Regulartory Guidance Letter 09-01

Wetland ID:	DPZS
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Date: 7-22-13

Wetland Type: PEN /5516 PEMIC Investigators: C. Schvolel J. Blank

(Storage and Desynchronization) 1 Wetland occurs in the upper portion of its watershed. 2 Wetland is relatively flat area and is capable of retaining higher volumes of water during storm events, than under normal rainfall events. 3 Wetland is a closed (depressional) system. 4 If flowthrough, wetland has constructed outlet with signs of fluctuating water levels, algal mats, and/or lodged debris. 5 Wetland has dense woody vegetation. 6 Wetland receives floodwater from an adjacent water course. 7 Floodwater come as sheet flow rather than channel flow. 8 Sediment Removal 1 Sources of excess sediment (from tillage, mining or construction) are present upgradient of the wetland. 2 Slow-moving water and/or a deepwater habitat are present in the wetland. 3 Dense herbaceous vegetation is present. 4 Inerspersion of vegegetation and water is high in wetland. 6 Sediment deposits are present in wetland. 6 Sediment deposits are present in wetland. 1 Sources of excess nutrients (fertitizers) and toxicants (pesticides and heavy metals) are present upgradient of the wetland. 2 Wetland is inundated or has indicators that flooding is a seasonal event during the growing season. 3 Wetland provides long duration for water detention. 4 Wetland has at least 30% aerial cover of live dense herbaceous vegetation. 5 Fine grained mineral or organic materials are present for the wetland. 5 Fine grained mineral or organic materials are present for the wetland. 5 Fine grained mineral or organic materials are present for the wetland. 5 Fine grained mineral or organic materials are present for the wetland. 5 Fine grained mineral or organic materials are present for the wetland. 5 Fine grained mineral or organic materials are present for the wetland. 5 Fine grained mineral or organic materials are present for the wetland. 5 Fine grained mineral or organic materials are present for the wetland. 5 Fine grained mineral or organic materials are present for the wetland. 5 Fine grained mineral occurs for the vertical outcomes for the taining higher		Proceedings of the second		,
1 Wetland occurs in the upper portion of its watershed. 2 Wetland is relatively flat area and is capable of retaining higher volumes of water during storm events, than under normal rainfall ovents. 3 Wetland is a closed (depressional) system. 4 If flowthrough, wetland has constructed outlet with signs of fluctuating water levels, algal mats, and/or lodged debris. 5 Wetland has dense woody vegetation. 6 Wetland receives floodwater from an adjacent water course. 7 Floodwater come as sheet flow rather than channel flow. 8. Sediment Removal 1 Sources of excess sediment (from tillage, mining or construction) are present upgradient of the wetland. 2 Slow-moving water and/or a deepwater habitat are present in the wetland. 3 Dense herbaceous vegetation is present. 4 Inerspersion of vegegetation and water is high in wetland. 5 Ponding of water is high in wetland. 6 Sediment deposits are present in wetland. 7 None - Low or No Function 1-4 (Y) - High Function √ 1-3 (Y) - Moderate Function None - Low or No Function 1-3 (Y) - Moderate Function None - Low or No Function 1-3 (Y) - Moderate Function None - Low or No Function 1-3 (Y) - Moderate Function None - Low or No Function 1-3 (Y) - Moderate Function None - Low or No Function 1-3 (Y) - Moderate Function None - Low or No Function 1-3 (Y) - Moderate Function None - Low or No Function 1-5 (Y) - High Function √ 1-3 (Y) - Moderate Function √ 1-3 (Y) - Moderate Function √ 1-3 (Y) - Moderate Function √ 1-3 (Y) - Moderate Function √ 1-3 (Y) - Moderate Function √ 1-4 (Y) - Moderate Function √ 1-5 (Y) - High Function √ 1-6 (Y) - Night Function √ 1-7 (Y) - Night Function √ 1-7 (Y) - Night Function √ 1-7 (Y) - Night Function √ 1-7 (Y) - Night Function √ 1-7 (Y) - Night Function √ 1-7 (Y) - Night Function √ 1-7 (Y) - Moderate Function √ 1-7 (Y) - Moderate Function √ 1-7 (Y) - Moderate Function √ 1-7 (Y) - Moderate Function √ 1-7 (Y) - Moderate Function √ 1-7 (Y) - Moderate Function √ 1-7 (Y) - Moderate Function √ 1-7 (Y) - Moderate Function √ 1-7 (Y) - Moderate Function √ 1-7 (Y) -	A.			Likely or not likely to Provide
2 Wetland is relatively flat area and is capable of retaining higher volumes of water during storm events, than under normal rainfall events. 3 Wetland is a closed (depressional) system. 4 If flowthrough, wetland has constructed outlet with signs of fluctuating water levels, algal mats, and/or lodged debris. 5 Wetland has dense woody vegetation. 6 Wetland receives floodwater from an adjacent water course. 7 Floodwater come as sheet flow rather than channel flow. 5-7 (Y) - High Function 1-4 (Y) - Moderate Function None - Low or No Function None - Low or No Function Likely or not likely to Provide (Y or N) 1 None - Low or No Function 2 Slow-moving water and/or a deepwater habitat are present in the wetland. 3 Dense herbaceous vegetation is present. 4 Inerspersion of vegegetation and water is high in wetland. 5 Ponding of water is high in wetland. 6 Sediment deposits are present in wetland. 1 Sources of excess nutrients (fertilizers) and toxicants (pesticides and heavy metals) are present upgradient of the wetland. 2 Wetland is inundated or has indicators that flooding is a seasonal event during the growing season. 3 Wetland provides long duration for water detention. 4 Wetland has at least 30% aerial cover of live dense herbaceous vegetation. 5 Fine grained mineral or organic materials are present for the wetland.	ı	(Storage and Desynchronization)		(Y or N)
2 Wetland is relatively flat area and is capable of retaining higher volumes of water during storm events, than under normal rainfall events. 3 Wetland is a closed (depressional) system. 4 If flowthrough, wetland has constructed outlet with signs of fluctuating water levels, algal mats, and/or lodged debris. 5 Wetland has dense woody vegetation. 6 Wetland receives floodwater from an adjacent water course. 7 Floodwater come as sheet flow rather than channel flow. 5-7 (Y) - High Function 1-4 (Y) - Moderate Function None - Low or No Function None - Low or No Function Likely or not likely to Provide (Y or N) 1 None - Low or No Function 2 Slow-moving water and/or a deepwater habitat are present in the wetland. 3 Dense herbaceous vegetation is present. 4 Inerspersion of vegegetation and water is high in wetland. 5 Ponding of water is high in wetland. 6 Sediment deposits are present in wetland. 1 Sources of excess nutrients (fertilizers) and toxicants (pesticides and heavy metals) are present upgradient of the wetland. 2 Wetland is inundated or has indicators that flooding is a seasonal event during the growing season. 3 Wetland provides long duration for water detention. 4 Wetland has at least 30% aerial cover of live dense herbaceous vegetation. 5 Fine grained mineral or organic materials are present for the wetland.	1	4 Maland to the		
volumes of water during storm events, than under normal rainfall events. 3 Wetland is a closed (depressional) system. 4 If flowthrough, wetland has constructed outlet with signs of fluctuating water levels, algal mats, and/or lodged debris. 5 Wetland has dense woody vegetation. 6 Wetland receives floodwater from an adjacent water course. 7 Floodwater come as sheet flow rather than channel flow. 5-7 (Y) - High Function 1-4 (Y) - Moderate Function None - Low or No Function Likely or not likely to Provide (Y or N) 1 Sources of excess sediment (from tillage, mining or construction) are present upgradient of the wetland. 2 Slow-moving water and/or a deepwater habitat are present in the wetland. 3 Dense herbaceous vegetation and water is high in wetland. 5 Ponding of water is high in wetland. 6 Sediment deposits are present in wetland. 6 Sediment doposits are present in wetland. 7 Nutrient and Toxicant Removal 1 Sources of excess nutrients (fertilizers) and toxicants (pesticides and heavy metals) are present upgradient of the wetland. 2 Wetland is inundated or has indicators that flooding is a seasonal event during the growing season. 3 Wetland provides long duration for water detention. 4 Wetland has at least 30% aerial cover of live dense herbaceous yegetation. 5 Fine grained mineral or organic materials are present for the wetland. 1-2 (Y) - Moderate Function		o Walland occurs in the upper portion	on of its watershed.	1
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1401C - FOM OLIVO L'UNCTION				None - Low or No Function

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Date: 7-27-13

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D.	Erosion Control and Shoreline Stabilization	Likely or not likely to Provide
	(if associated with a watercourse or shoreline)	(Y or N)
		L M
	1 Wetland has dense, energy absorbing vegetation bordering the water	1 0
	course and no evidence of erosion.	2 <u>U</u>
	2 A herbaceous layer is part of this dense vegetation.	3 <u>V</u>
	3 Trees and shrubs able to withstand erosive flood events are also part	
	of this dense vegetation.	2-3 (Y) - High Function ✓
	·	1 (Y) - Moderate Function
		None - Low or No Function
E.	Production of Organic Matter and its Export	Likely or not likely to Provide
ĺ	•	(Y or N)
	1 Wetland has at least 30% aerial cover of dense herbaceous	1
	vegetation.	2
Ì	2 Woody plants in wetland are mostly deciduous.	3
	3 High degree of plant community structure, vegetation density, and	4 4
	species richness present.	5
	4 Interspersion of vegetation and water is high in wetland.	6**
	5 Wetland is inundated or has indicators that flooding is a seasonal	
1	event during the growing season.	4-6 (Y) - High Function ✓
	6 Wetland has outlet from which organic matter is flushed.**	1-3 (Y) - Moderate Function
	**If #6 is No, then wetland automatically rated as low or No function	None - Low or No Function
F.	General Wildlife Habitat Sultability	Likely or not likely to Provide
۲.	General Wilding Habitat Guitability	(Y or N)
	1 Wetland is not fragmented by development.	1 1
	Upland surround wetland is undeveloped.	2 1
	3 Wetland has connectivity with other habitat types.	3
	4 Divserity of plant species is high.	4 N
	5 Wetland has more than one Cowardin Class (e.g. PFO, PSS, PEM)	5
	6 Has high degree of Corwardin Class interspersion	6 4
	7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present.	7 -
	/ Evidence of Mildric 650 (c.g. tracks, coart grantes transpay pro-	-
		5-7 (Y) - High Function ✓
İ		1-4 (Y) - Moderate Function
l		None - Low or No Function
G.	General Fish Habitat	Likely or not likely to Provide
u.	(Must be associated with a fish-bearing stream or lake)	(Y or N)
	(Must be associated with a listi-bearing stream of taxo)	(1.51.4)
	1 Wetland has perennial or intermittent surface-water connection to a	1 44
	fish-bearing water body.	2 N
	2 Wetland has sufficient size and depth of open water so as not to	3 A N
	freeze completely during winter.	4 7 14
	3 Observation of fish.	5 # 154
	4 Herbaceous and/or woody vegetation is present in wetland and/or	6 A A N
	buffer to provide cover, shade, and/or detrital matter.	
	5 Spawning areas are present (aquatic vegetation and/or gravel beds).	4-6 (Y) - High Function ✓
		1-3 (Y) - Moderate Function
	6 Juvenile rearing areas.	None - Low or No Function
<u> </u>	M. V Black Bishman	Likely or not likely to Provide
Н.	Native Plant Richness	(Y or N)
	a partition and and a limit plants are writing	1 1
	Dominant and codominant plants are native. Western to an trip are many Covered in Classes.	2
1	2 Wetland contains two or more Cowardin Classes.	3 - 1
I	3 Wetland has three or more strata of vegetation.	· 4 - 17 -
	4 Wetland has mature trees.	3-4 (Y) - High Function
		1-2 (Y) - Moderate Function
1		None - Low or No Function
1		MACHO COM OLITO LIGITATI

Date: 1.27-18

ī.	Educational or Scientific Value	
Ι"	Educational of Scientific Value	Likely or not likely to Provide
ł	1 Site has documented scientific or educational use.	(Y or N)
		1
1	2 Wetland is in public ownership	2
	3 Accessible trails available.	3 <u>N</u>
		2-3 (Y) - High Function
		1 (Y) - Moderate Function V
L.		None - Low or No Function
J.	Uniqueness and Heritage	Likely or not likely to Provide
	Motions contains decreased	(Y or N)
	1 Wetland contains documented occurrences of a state or federally	1** <u>N</u>
	listed threatened or endanged species.**	2** N
ı	2 Weltand contains documented critical habitat, high quality	3 N
	ecosystems, or priority species respectively designated by the USFWS.**	4** N
l	3 Wetland has biological, geological, or other features that are	·
	determined to be rare.	2.4 (V) High Eunstion
	4 Wetland type is a highly valuable wetland type of the State.**	3-4 (Y) - High Function
ĺ	**If #1,#2, or #4 is Yes, then wetland is automatically rated as high	1-2 (Y) - Moderate Function
ĸ.		None - Low or No Function
٦.	Groundwater Interchange	Likely or not likely to Provide
	4.5	(Y or N)
•	1 Presence of seeps or springs	1 <u>N</u>
	2 Microreleif of wetland surface	2 N .
	Surficial geologic deposits under wetland are permeable (e.g. alluvium)	3 7
		2-3 (Y) - High Function
		1 (Y) - Moderate Function
		None - Low or No Function
		1. 10.10 LOT OF 110 Full officer

WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization Adapted from Regulartory Guidance Letter 09-01

Wetland II	ว:
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Date:

7-23-13

Wetland Type: PEWIS

Investigators: C. Schudel J. Blank

_		COCH DOS C SI SI SI
A.		Likely or not likely to Provide
	(Storage and Desynchronization)	(Y or N)
	1 Wetland occurs in the upper portion of its watershed.	1 44.
	2 Wetland is relatively flat area and is capable of retaining higher	2 7
	volumes of water during storm events, than under normal rainfall	3 7
	events.	4 N
	3 Wetland is a closed (depressional) system.	5 N
	4 If flowthrough, wetland has constructed outlet with signs of fluctuating	$g = \frac{7}{7}$
	water levels, algal mats, and/or lodged debris.	7 -
	5 Wetland has dense woody vegetation.	
	6 Wetland receives floodwater from an adjacent water course.	5-7 (Y) - High Function
	7 Floodwater come as sheet flow rather than channel flow.	1-4 (Y) - Moderate Function
		None - Low or No Function
В.	Sediment Removal	Likely or not likely to Provide
		(Y or N)
l	1 Sources of excess sediment (from tillage, mining or construction) are	1 4
	present upgradient of the wetland.	2 6 7
	2 Slow-moving water and/or a deepwater habitat are present in the	3
	wetland.	4 <u>** N</u>
	3 Dense herbaceous vegetation is present.	5 <u>v</u>
ŀ	4 Inerspersion of vegegetation and water is high in wetland.	6
ı	5 Ponding of water is high in wetland.	,
	6 Sediment deposits are present in wetland.	4-6 (Y) - High Function ✓
		1-3 (Y) - Moderate Function
C.	Nutrient and Toxicant Removal	None - Low or No Function
Ŭ.	Nutrient and Toxicant Hemoval	Likely or not likely to Provide
	1 Sources of excess nutrients (fertilizers) and toxicants (pesticides and	(Y or N)
	heavy metals) are present upgradient of the wetland.	$\frac{1}{2}$ $\frac{N}{V}$
	2 Wetland is inundated or has indicators that flooding is a seasonal	$\frac{1}{3}$ $\frac{1}{}$
	event during the growing season.	4
	3 Wetland provides long duration for water detention.	5 -1
Į	4 Wetland has at least 30% aerial cover of live dense herbaceous	
Ī	vegetation.	3-5 (Y) - High Function √
	5 Fine grained mineral or organic materials are present for the wetland.	1-2 (Y) - Moderate Function
	•	None - Low or No Function
		1

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Date: 7-23-13

	Mark Control and Charaling Stabilization	Likely or not likely to Provide
).	Erosion Control and Shoreline Stabilization	(Y or N)
	(if associated with a watercourse or shoreline)	(1 5.14)
	1 Wetland has dense, energy absorbing vegetation bordering the water	1 4
	course and no evidence of erosion.	2 7
	2 A herbaceous layer is part of this dense vegetation.	3 7
	2 A neroaceous layer is part of this derise vegetation. 3 Trees and shrubs able to withstand erosive flood events are also part	
•		2-3 (Y) - High Function
	of this dense vegetation.	1 (Y) - Moderate Function
		None - Low or No Function
		Likely or not likely to Provide
	Production of Organic Matter and its Export	
		(Y or N)
	1 Wetland has at least 30% aerial cover of dense herbaceous	
	vegetation.	2 -1'
	2 Woody plants in wetland are mostly deciduous.	3 <u>N</u>
	3 High degree of plant community structure, vegetation density, and	4 <u>N</u>
	species richness present.	5 1
	4 Interspersion of vegetation and water is high in wetland.	6**
	5 Wetland is inundated or has indicators that flooding is a seasonal	· / /
	event during the growing season.	4-6 (Y) - High Function
	6 Wetland has outlet from which organic matter is flushed.**	1-3 (Y) - Moderate Function
	**If #6 is No, then wetland automatically rated as low or No function	None - Low or No Function
F.	General Wildlife Habitat Suitability	Likely or not likely to Provide
•	,	(Y or N)
	1 Wetland is not fragmented by development.	1
	2 Upland surround wetland is undeveloped.	2
	3 Wetland has connectivity with other habitat types.	3
	4 Divserity of plant species is high.	4
	5 Wetland has more than one Cowardin Class (e.g. PFO, PSS, PEM)	5 NEN
	6 Has high degree of Corwardin Class interspersion	6 1
	7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present.	7
	/ Exidence of Anglise day (e.g. magnet and all and a semiles) by	5-7 (Y) - High Function X + water 1-4 (Y) - Moderate Function habitat
		5-7 (Y) - High Function
		1-4 (Y) - Moderate Function
		None - Low or No Function
		Likely or not likely to Provide
G.	General Fish Habitat	(YorN) NA
	(Must be associated with a fish-bearing stream or lake)	I WATER
	the state of the s	1 3/
	1 Wetland has perennial or intermittent surface-water connection to a) 1 - N
	fish-bearing water body.	3 - **
	2 Wetland has sufficient size and depth of open water so as not to	4 - 1
	freeze completely during winter.	
	3 Observation of fish.	5
	4 Herbaceous and/or woody vegetation is present in wetland and/or	6>
	buffer to provide cover, shade, and/or detrital matter.	, , , , , , , , , , , , , , , , , , ,
	5 Spawning areas are present (aquatic vegetation and/or gravel beds).	4-6 (Y) - High Function
	6 Juvenile rearing areas.	1-3 (Y) - Moderate Function
		None - Low or No Function
H.	Native Plant Richness	Likely or not likely to Provide
• • • •	14001	(Y or N)
l	1 Dominant and codominant plants are native.	1 1
	Wetland contains two or more Cowardin Classes.	2 1
		3 - 1
	3 Wetland has three or more strata of vegetation.	4 - 1
	4 Wetland has mature trees.	3-4 (Y) - High Function
		1-2 (Y) - Moderate Function
		None - Low or No Function
		MANIE - FOW OF LACT MINION

1	Educational or Scientific Value	1 Maria and Maria 19
Ι"	Educational of Ocientino Value	Likely or not likely to Provide
1	A Object of the second of the	(Y or N)
1	1 Site has documented scientific or educational use.	1 N
1	2 Wetland is in public ownership	2 -
1	3 Accessible trails available.	3 - //
	•	
		2-3 (Y) - High Function
1		1 (Y) - Moderate Function ✓
		None - Low or No Function
J.	Uniqueness and Heritage	Likely or not likely to Provide
	•	(Y or N)
1	1 Wetland contains documented occurrences of a state or federally	, 1** N
	listed threatened or endanged species.**	
ı		2**
1	2 Weltand contains documented critical habitat, high quality	3 <u>///,</u>
l	ecosystems, or priority species respectively designated by the	4** 7V
	USFWS.**	
	3 Wetland has biological, geological, or other features that are	
l	determined to be rare.	3-4 (Y) - High Function
l	4 Wetland type is a highly valuable wetland type of the State.**	1-2 (Y) - Moderate Function
l	**If #1,#2, or #4 is Yes, then wetland is automatically rated as hig	
K.		
\`\.	Groundwater Interchange	Likely or not likely to Provide
ı		(Y or N)
l	1 Presence of seeps or springs	1 N
	2 Microreleif of wetland surface	2 1
	3 Surficial geologic deposits under wetland are permeable	3 - 1
	(e.g. alluvium)	
		2-3 (Y) - High Function /
		1 (Y) - Moderate Function
l		1
<u> </u>		None - Low or No Function

Wetland ID:

Kenia Hydro, LLC - Grant Lake Project

WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization Adapted from Regulartory Guidance Letter 09-01

W	etland II	D: DP 29 =	Date: 7-24-	13	
	etland T	70-10	Investigators: (,,5		r. Blank
A.	Floo	d Flow Alteration		Likely or n	ot likely to Provide
1	(Stor	rage and Desynchronization)			(Y or N)
1					
	1 Wetl	and occurs in the upper portion of its watersl	ned,	1	N
1		and is relatively flat area and is capable of re		2 -	1
1	volur	nes of water during storm events, than unde	r normal rainfall	3 -	<u> </u>
	even			4	.)
1.	3 Wetla	and is a closed (depressional) system.		5 -	
1		wthrough, wetland has constructed outlet with	n signs of fluctuating	6 -	
1		r levels, algal mats, and/or lodged debris.		7 -	\
	5 Wetla	and has dense woody vegetation.		<u> </u>	
		and receives floodwater from an adjacent wa	iter course.	5-7 (Y) - High I	Function
1	7 Floor	dwater come as sheet flow rather than chann	el flow,		rate Function ✓
				None - Low or	
В.	Sedl	ment Removal		Likely or ne	ot likely to Provide
				,	(Y or N)
	1 Source	ces of excess sediment (from tillage, mining	or construction) are	1 1	Y N
	prese	ent upgradient of the wetland.	,	2 -	1
1	2 Slow-	-moving water and/or a deepwater habitat ar	e present in the	3 -	-1
l	wetla		•	4 -	
!	3 Dens	e herbaceous vegetation is present.		5	7
l	4 Iners	persion of vegegetation and water is high in	wetland.	6 -	
l		ing of water is high in wetland.			
]	6 Sedir	ment deposits are present in wetland.		4-6 (Y) - High F	-unction ,
ĺ				1-3 (Y) - Moder	
				None - Low or	
C.	Nutri	ent and Toxicant Removal .			t likely to Provide
					(Y or N)
	1 Source	ces of excess nutrients (fertilizers) and toxica	nts (pesticides and	1	N.
	heavy	/ metals) are present upgradient of the wetla	nd.	2 -	' '
	2 Wetla	and is inundated or has indicators that floodir	ng is a seasonal] 3 -	7
-		during the growing season.		4	V
		and provides long duration for water detention		5	MY.
	4 Wetla	and has at least 30% aerial cover of live dens	e herbaceous	-	
	veget	ation.		3-5 (Y) - High F	unction 🗸

NOTE: Base wetland function assessment on existing conditions, not future conditions.

5 Fine grained mineral or organic materials are present for the wetland.

Example Ranking: If ranking the capacity for a wetland to perform a given wetland function into high, moderate, low or none categories, use the following example as guidance. For Flood Flow Alteration, answering yes to five to seven attributes would rate the wetland as high functioning; answering yes to one to four attributes would rate the wetland as moderate; and not answering yes to any attributes would rate the wetland as low, or if evaluator is certain the wetland does not perform this function, it can be rated as none.

1-2 (Y) - Moderate Function None - Low or No Function

Date: 7-24-13

Wetland ID: 1) 29

_		The state of the s	Likely or not likely to Provide
D.		Erosion Control and Shoreline Stabilization	
l		(if associated with a watercourse or shoreline)	(Y or N)
1			, ,
	1	Wetland has dense, energy absorbing vegetation bordering the water	1 _ 极 / _
		course and no evidence of erosion.	2
	2	A herbaceous layer is part of this dense vegetation.	3 444
	3	Trees and shrubs able to withstand erosive flood events are also part	
1		of this dense vegetation.	2-3 (Y) - High Function √
1		of the delicative germanic	1 (Y) - Moderate Function
Į.			None - Low or No Function
F		Production of Organic Matter and its Export	Likely or not likely to Provide
E.		Production of Organic matter and its Export	(Y or N)
		and the second s	1
	1	Wetland has at least 30% aerial cover of dense herbaceous	1
		vegetation.	2
l		Woody plants in wetland are mostly deciduous.	3 1
	3	High degree of plant community structure, vegetation density, and	4 _ 1 _ 1
ı		species richness present.	5 _ \
ı	4	Interspersion of vegetation and water is high in wetland.	6** <u> </u>
1	5	Wetland is inundated or has indicators that flooding is a seasonal	,
		event during the growing season.	4-6 (Y) - High Function √
l	6	Welland has outlet from which organic matter is flushed.**	1-3 (Y) - Moderate Function
		**If #6 is No, then wetland automatically rated as low or No function	None - Low or No Function
F.	•	General Wildlife Habitat Suitability	Likely or not likely to Provide
ļ' .		delicial findine flashat culturiny	(Y or N)
	4	Wetland is not fragmented by development.	1 . 1
1	1	Upland surround wetland is undeveloped.	2 4
		Wetland has connectivity with other habitat types.	3 4
			4 -1
	4	Divserity of plant species is high.	5
	5	Wetland has more than one Cowardin Class (e.g. PFO, PSS, PEM)	6 - 1
1	6	Has high degree of Corwardin Class interspersion	7 - 1
1	7	' Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present.	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
ı			= 100 Hi = 100
			5-7 (Y) - High Function ✓
		•	1-4 (Y) - Moderate Function
_			None - Low or No Function
G.		General Fish Habitat	Likely or not likely to Provide
1		(Must be associated with a fish-bearing stream or lake)	(YorN) 次∫A
1			
1	1	Wetland has perennial or intermittent surface-water connection to a	1 1
1		fish-bearing water body.	2
	2	Wetland has sufficient size and depth of open water so as not to	3 7
	•	freeze completely during winter.	4
I	,	B Observation of fish.	5
		Herbaceous and/or woody vegetation is present in wetland and/or	6 3
	_	buffer to provide cover, shade, and/or detrital matter.	
1	,	5 Spawning areas are present (aquatic vegetation and/or gravel beds).	4-6 (Y) - High Function
			1-3 (Y) - Moderate Function
1	€	3 Juvenile rearing areas.	None - Low or No Function
<u>_</u>			Likely or not likely to Provide
Н.		Native Plant Richness	1
			(Y or N)
	1	Dominant and codominant plants are native.	1 7
		Wetland contains two or more Cowardin Classes.	2
	(3 Wetland has three or more strata of vegetation.	3 <u>N</u>
i	4	Wetland has mature trees.	4 <u>N</u>
1			3-4 (Y) - High Function
1			1-2 (Y) - Moderate Function √
1			None - Low or No Function
1			<u> </u>

Date: <u>7-24-1</u>3

	Educational or Scientific Value	
1.	Educational of Scientific Value	Likely or not likely to Provide
		(Y or N)
	Site has documented scientific or educational use.	1 N
2	2 Wetland is in public ownership	2 7
] 3	B Accessible trails available.	3 N
1		·
		2-3 (Y) - High Function
•	•	1 (Y) - Moderate Function
1		None - Low or No Function
J.	Uniqueness and Heritage	
J°.	Ouddeness and Delitage	Likely or not likely to Provide
Ι,	Motional contiduo documente de comunicación de la la la la la la la la la la la la la	(Y or N)
'	Wetland contains documented occurrences of a state or federally	1** _ <i>N</i>
	listed threatened or endanged species.**	2**
2	! Weltand contains documented critical habitat, high quality	3 7/.
	ecosystems, or priority species respectively designated by the	4** //
İ	USFWS.**	
3	Wetland has biological, geological, or other features that are	
1	determined to be rare.	3-4 (Y) - High Function
4	Wetland type is a highly valuable wetland type of the State.**	1-2 (Y) - Moderate Function
	**If #1,#2, or #4 is Yes, then wetland is automatically rated as high	None - Low or No Function
К.	Groundwater Interchange	
' ''	aroundwater interchange	Likely-or not likely to Provide
. 4	Dropones of goons or environ	(Y or N)
	Presence of seeps or springs	1 <u>N</u>
	Microreleif of wetland surface	2 <u>N</u>
3	Surficial geologic deposits under wetland are permeable (e.g. alluvium)	3
	(org. underdiri)	
		2-3 (Y) - High Function
		1 (Y) - Moderate Function √
		None - Low or No Function

WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization Adapted from Regulartory Guidance Letter 09-01

Mattend	ın.
Wetland	ID:

DP 31

Date: 7-24-13

Wetland Type:

PSS/EMIE

Investigators: C.Schudel J. Blank

A.	Flood Flow Alteration	
1"	(Storage and Desynchronization)	Likely or not likely to Provide
	(Otolago and Desynctrionization)	(Y or N)
1	1 Wetland occurs in the upper portion of its watershed.	
	Wetland is relatively flat area and is capable of retaining higher	$\frac{1}{2}$ $\frac{N}{\sqrt{N}}$
	volumes of water during storm events, than under normal rainfall	$\frac{2}{3} \frac{y}{\sqrt{1-y}}$
	events.	4 - N
ı	3 Welland is a closed (depressional) system.	5
	4 If flowthrough, wetland has constructed outlet with signs of fluctuating	6
ı	water levels, algal mats, and/or lodged debris.	6 7
ı	5 Wetland has dense woody vegetation.	
	6 Wetland receives floodwater from an adjacent water course.	5-7 (Y) - High Function
ı	7 Floodwater come as sheet flow rather than channel flow.	1-4 (Y) - Moderate Function
L		None - Low or No Function
В.	Sediment Removal	Likely or not likely to Provide
		(Y or N)
	1 Sources of excess sediment (from tillage, mining or construction) are	1 N
	present upgradient of the wetland.	2 - 7
	2 Slow-moving water and/or a deepwater habitat are present in the	3 4
	wetland.	4 🔻
	3 Dense herbaceous vegetation is present.	5 ,
	4 Inerspersion of vegegetation and water is high in wetland.	6
	5 Ponding of water is high in wetland.	
	6 Sediment deposits are present in wetland.	4-6 (Y) - High Function ✓
		1-3 (Y) - Moderate Function
H	Al-Al-Al-Al-Al-Al-Al-Al-Al-Al-Al-Al-Al-A	None - Low or No Function
C.	Nutrient and Toxicant Removal	Likely or not likely to Provide
	1 Courses of evenes published //ortificants and touteness / to the	(Y or N)
	1 Sources of excess nutrients (fertilizers) and toxicants (pesticides and heavy metals) are present upgradient of the wetland.	1 <u>N</u>
	Welland is inundated or has indicators that flooding is a seasonal	2
	event during the growing season.	3
	Wetland provides long duration for water detention.	4 - 1
	4 Wetland has at least 30% aerial cover of live dense herbaceous	5
	vegetation.	2.5 (V) Lligh Eupation
	5 Fine grained mineral or organic materials are present for the wetland.	3-5 (Y) - High Function
	3 or missian or organic materials are present for the wettand.	1-2 (Y) - Moderate Function None - Low or No Function
		PROTE - LOW OF IND FUNCTION

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Example Ranking: If ranking the capacity for a wetland to perform a given wetland function into high, moderate, low or none categories, use the following example as guidance. For Flood Flow Alteration, answering yes to five to seven attributes would rate the wetland as high functioning; answering yes to one to four attributes would rate the wetland as moderate; and not answering yes to any attributes would rate the wetland as low, or if evaluator is certain the wetland does not perform this function, it can be rated as none.

D. Eroslon Control and Shoreline Stabilization (if associated with a watercourse or shoreline) 1 Wetland has dense, energy absorbing vegetation bordering the water course and no evidence of erosion. 2 A herbaceous layer is part of this dense vegetation. 3 Trees and shrubs able to withstand erosive flood events are also part of this dense vegetation. 2-3 (Y) - High Funct 1 (Y) - Moderate Function None - Low or No Function of Organic Matter and its Export E. Production of Organic Matter and its Export Likely or not like (Y or 1 Wetland has at least 30% aerial cover of dense herbaceous vegetation. 2 Woody plants in wetland are mostly deciduous. 3 High degree of plant community structure, vegetation density, and species richness present. 4 Interspersion of vegetation and water is high in wetland. 5 Wetland is inundated or has Indicators that flooding is a seasonal event during the growing season. 6 Wetland has outlet from which organic matter is flushed.** **If #6 is No, then wetland automatically rated as low or No function F. General Wildlife Habitat Sultability Likely or not like (Y or 1 tikely or not like (Y or 1 tikely 1 tikely 1 tikely 1 tikely 1 tikely 1 tikely 1 tikely 1 tikely 1 tikely 1 tikely 1 tikely 1 tikely 1 tikely 1 t	ion √ nction unction ely to Provide r N)
1 Wetland has dense, energy absorbing vegetation bordering the water course and no evidence of erosion. 2 A herbaceous tayer is part of this dense vegetation. 3 Trees and shrubs able to withstand erosive flood events are also part of this dense vegetation. 1 (Y) - Moderate Furth None - Low or No Filler County Production of Organic Matter and its Export E. Production of Organic Matter and its Export 1 Wetland has at least 30% aerial cover of dense herbaceous vegetation. 2 Woody plants in wetland are mostly deciduous. 3 High degree of plant community structure, vegetation density, and species richness present. 4 Interspersion of vegetation and water is high in wetland. 5 Wetland is inundated or has indicators that flooding is a seasonal event during the growing season. 6 Wetland has outlet from which organic matter is flushed.** **If #6 is No, then wetland automatically rated as low or No function **Interspersion of Vegetation and Water is flushed.** **If #6 is No, then wetland automatically rated as low or No function Likely or not like 1 - 2-3 (Y) - High Funct (Y or and like in the vegetation of the vegetation density, and species richness present. 5 - 7 - 1 - 2 - 3 (Y) - High Funct 1 - 3 (Y) - Moderate Function in the vegetation density, and species richness present. 4-6 (Y) - High Funct 1 - 3 (Y) - Moderate Function in the vegetation density, and species richness present. 4-6 (Y) - High Funct 1 - 3 (Y) - Moderate Function in the vegetation density, and species richness present. 4-6 (Y) - High Funct 1 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 -	ion √ nction unction ely to Provide r N)
course and no evidence of erosion. 2 A herbaceous layer is part of this dense vegetation. 3 Trees and shrubs able to withstand erosive flood events are also part of this dense vegetation. 2-3 (Y) - High Funct 1 (Y) - Moderate Function None - Low or No Function of Organic Matter and its Export E. Production of Organic Matter and its Export 1 Wetland has at least 30% aerial cover of dense herbaceous vegetation. 2 Woody plants in wetland are mostly deciduous. 3 High degree of plant community structure, vegetation density, and species richness present. 4 Interspersion of vegetation and water is high in wetland. 5 Wetland is inundated or has indicators that flooding is a seasonal event during the growing season. 6 Wetland has outlet from which organic matter is flushed.** **If #6 is No, then wetland automatically rated as low or No function 5 Likely or not like 1-3 (Y) - High Funct 1-3 (Y) - Moderate Function None - Low or No Function 5 Likely or not like Likely or not like	nction unction ely to Provide r N)
course and no evidence of erosion. 2 A herbaceous layer is part of this dense vegetation. 3 Trees and shrubs able to withstand erosive flood events are also part of this dense vegetation. 2-3 (Y) - High Funct 1 (Y) - Moderate Function None - Low or No Function of Organic Matter and its Export E. Production of Organic Matter and its Export 1 Wetland has at least 30% aerial cover of dense herbaceous vegetation. 2 Woody plants in wetland are mostly deciduous. 3 High degree of plant community structure, vegetation density, and species richness present. 4 Interspersion of vegetation and water is high in wetland. 5 Wetland is inundated or has indicators that flooding is a seasonal event during the growing season. 6 Wetland has outlet from which organic matter is flushed.** **If #6 is No, then wetland automatically rated as low or No function 5 Likely or not like 1-3 (Y) - High Funct 1-3 (Y) - Moderate Function None - Low or No Function 5 Likely or not like Likely or not like	nction unction ely to Provide r N)
2 A herbaceous layer is part of this dense vegetation. 3 Trees and shrubs able to withstand erosive flood events are also part of this dense vegetation. 2-3 (Y) - High Funct 1 (Y) - Moderate Function of Organic Matter and its Export E. Production of Organic Matter and its Export 1 Wetland has at least 30% aerial cover of dense herbaceous vegetation. 2 Woody plants in wetland are mostly deciduous. 3 High degree of plant community structure, vegetation density, and species richness present. 4 Interspersion of vegetation and water is high in wetland. 5 Wetland is inundated or has indicators that flooding is a seasonal event during the growing season. 6 Wetland has outlet from which organic matter is flushed.** **If #6 is No, then wetland automatically rated as low or No function F. General Wildlife Habitat Sultability Likely or not like 1 Ory - High Funct 1 Ory - High Funct 1 Ory - Moderate Funct 1 (Y) - High Funct 1 Ory - High Funct 2 Ory - High Funct 2 Ory - High Funct 3 Ory - High Funct 4 Ory - High Funct 5 Ory - High Funct 5 Ory - High Funct 1 Ory - High Funct 2 Ory - High Funct 3 Ory - High Funct 4 Ory - High Funct 5 Ory - High Funct 1 Ory - High Funct 2 Ory - High Funct 3 Ory - High Funct 4 Ory - High Funct 5 Ory - High Funct 6 Ory - High Funct 1 Ory - High Funct 1 Ory - High Funct 1 Ory - High Funct 1 Ory - High Funct 1 Ory - High Funct 1 Ory - High Funct 1 Ory - High Funct 1 Ory - High Funct 2 Ory - High Funct 3 Ory - High Funct 4 Ory - High Funct 5 Ory - High Funct 6 Ory - High Funct 1 Ory - High Funct 1 Ory - High Funct 1 Ory - High Funct 1 Ory - High	nction unction ely to Provide r N)
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F. General Wildlife Habitat Suitability Likely or not lik	
l (You	
1 V :-	r N)
1 Wetland is not fragmented by development.	
2 Upland surround wetland is undeveloped.	
3 Wetland has connectivity with other habitat types.	
4 Divserity of plant species is high.	<u>и</u>
5 Wetland has more than one Cowardin Class (e.g. PFO, PSS, PEM) 5	
6 Has high degree of Corwardin Class interspersion 6	
7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present.	
5-7 (Y) - High Funct	tion J
1-4 (Y) - Moderate i	Function
None - Low or No F	unction
G. General Fish Habitat Likely or not like	ely to Provide
	rN) NA
(mass 20 december 11 m) and 12 miles	, 1, 1,
1 Wetland has perennial or intermittent surface-water connection to a	
fish-bearing water body.	
2 Wetland has sufficient size and depth of open water so as not to	F
freeze completely during winter.	<u>, </u>
3 Observation of fish.	<u> </u>
4 Herbaceous and/or woody vegetation is present in wetland and/or	<u> </u>
buffer to provide cover, shade, and/or detrital matter.	·
5 Spawning areas are present (aguatic vegetation and/or gravel beds). 4-6 (Y) - High Func	tion
6 Juvenile rearing areas. 1-3 (Y) - Moderate in None - Low or No F	
H. Native Plant Richness Likely or not lik	•
(Yo	1 IN) /
1 Dominant and codominant plants are native.	, ———
2 Wetland contains two or more Cowardin Classes.	
3 Wetland has three or more strata of vegetation.	
4 Wetland has mature trees.	
3-4 (Y) - High Func	
1-2 (Y) - Moderate	Function J
None - Low or No F	

Date: <u>7-74-13</u>

Ī.	Educational or Scientific Value	
ľ	Educational of Scientific value	Likely or not likely to Provide
	1 Cita has desumented scientific and the state	(Y or N)
	1 Site has documented scientific or educational use.	1 <u>N</u>
	2 Wetland is in public ownership	2
`	3 Accessible trails available.	3 *1
		2-3 (Y) - High Function V
		1 (Y) - Moderate Function ✓
<u></u>		None - Low or No Function
J.	Uniqueness and Heritage	Likely or not likely to Provide
1	Wetland contains documented occurrences of a state or federally listed threatened or endanged species.**	1** (Y or N)
1 2	Weltand contains documented critical habitat, high quality	
	ecosystems, or priority species respectively designated by the USFWS.**	3 4**
 3	B Wetland has biological, geological, or other features that are	,
	determined to be rare.	3-4 (Y) - High Function
4	Wetland type is a highly valuable wetland type of the State.**	1-2 (Y) - Moderate Function
	**If #1,#2, or #4 is Yes, then wetland is automatically rated as high	None (Low or No Function
к. 🗀	Groundwater Interchange	Likely or not likely to Provide
١.		(Y or N)
	Presence of seeps or springs	1 N
	Microreleif of welland surface	2 ~/
3	Surficial geologic deposits under wetland are permeable (e.g. alluvium)	3 7
		2-3 (Y) - High Function √
		1 (Y) - Moderate Function
		None - Low or No Function

WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization Adapted from Regulartory Guidance Letter 09-01

Wetland ID:

Date:

部 3-24-13

Wetland Type: PEMIH

Investigators: C. Schudel J. Blank

Tă-		
A.	Flood Flow Alteration	Likely or not likely to Provide
	(Storage and Desynchronization)	(Y or N)
1		
ı	1 Wetland occurs in the upper portion of its watershed.	1 N
l	2 Wetland is relatively flat area and is capable of retaining higher	2
1	volumes of water during storm events, than under normal rainfall	3
	events.	4 N
	3 Wetland is a closed (depressional) system.	5 N
	4 If flowthrough, wetland has constructed outlet with signs of fluctuating	6 7
ļ	water levels, algal mats, and/or lodged debris.	7 48 4
1	5 Wetland has dense woody vegetation.	
	6 Wetland receives floodwater from an adjacent water course.	5-7 (Y) - High Function
l	7 Floodwater come as sheet flow rather than channel flow.	1-4 (Y) - Moderate Function
L		None - Low or No Function
В.	Sediment Removal	Likely or not likely to Provide
İ		(Y or N)
	1 Sources of excess sediment (from tillage, mining or construction) are	1 (1011)
l	present upgradient of the wetland.	2 - 17
1	2 Slow-moving water and/or a deepwater habitat are present in the	3
1	wetland,	4
	3 Dense herbaceous vegetation is present.	5
1	4 Inerspersion of vegegetation and water is high in wetland.	6 - 1
	5 Ponding of water is high in wetland.	
	6 Sediment deposits are present in wetland.	4-6 (Y) - High Function √
İ	, , , , , , , , , , , , , , , , , , ,	1-3 (Y) - Moderate Function
		None - Low or No Function
C.	Nutrient and Toxicant Removal	Likely or not likely to Provide
	· · · · · · · · · · · · · · · · · · ·	-
	1 Sources of excess nutrients (fertilizers) and toxicants (pesticides and	(Y or N)
	heavy metals) are present upgradient of the wetland.	2 - 1
	2 Wetland is inundated or has indicators that flooding is a seasonal	3 -
	event during the growing season.	4 — 1
	3 Wetland provides long duration for water detention.	5 -
	4 Wetland has at least 30% aerial cover of live dense herbaceous	° — 1
	vegetation,	2 E (V) 18-6 E
	5 Fine grained mineral or organic materials are present for the wetland.	3-5 (Y) - High Function /
	• 1 mo granted mineral of organic materials are present for the wetland,	1-2 (Y) - Moderate Function
	·	None - Low or No Function

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Example Ranking: If ranking the capacity for a wetland to perform a given wetland function into high, moderate, low or none categories, use the following example as guidance. For Flood Flow Alteration, answering yes to five to seven attributes would rate the wetland as high functioning; answering yes to one to four attributes would rate the wetland as moderate; and not answering yes to any attributes would rate the wetland as low, or if evaluator is certain the wetland does not perform this function, it can be rated as none.

Wetland ID: <u>D</u>33

Decision Control and shriching stabilization (if associated with a watercourse or shoreline)	r=-	The Country Level Character Challengting	Likely or not likely to Provide
Welland has dense, energy absorbing vegetation bordering the water course and no evidence of erosion.	D.	Erosion Control and Shoreline Stabilization	1
course and no evidence of erosion. 2 A horbaceous layer is part of this dense vegetation. 3 Trees and shrubs able to withstand crosive flood events are also part of this dense vegetation. 1 Weland has at least 30% aerial cover of dense herbaceous vegetation. 2 Woody plants in welland are mostly deciduous. 3 High degree of plant community structure, vegetation density, and species richness present. 4 Interspersion of vegetation and water is high in welland. 5 Weltand is inundated or has indicators that flooding is a seasonal event during the growing season. 6 Weltand has outlet from which organic matter is flushed.** 11 Weltand is not fragmented by development. 2 Upland surround welfand is undeveloped. 3 Weltand has connectively with other habital types. 4 Olivserity of plant species is high. 5 Weltand has more than one Cowardin Class (e.g. PFO, PSS, PEM) 6 Has high degree of Corwardin Class interspersion of Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present. 4 Clacel duckling find flushed in the surface-water connection to a fish-bearing stream or lake) 1 Weltand has perennial or intermittent surface-water connection to a fish-bearing witer body. 2 Wettand has sufficient size and depth of open water so as not to freeze completely during whiter. 3 Observation of fish. 4 Herbaceous and/or woody vegetation is present in wetland and/or buffet to provide over, shade, and/or detrital matter. 5 Spawning areas are present (aquatic vegetation and/or gravel beds). 1 Dominant and codominant plants are native. 2 Wetland has mature frees. 4 Wetland has mature frees.	1	(if associated with a watercourse or snoreline)	(1 01 14)
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G. General Fish Habitat (Must be associated with a fish-bearing stream or lake) 1 Wetland has perennial or intermittent surface-water connection to a fish-bearing water body. 2 Wetland has sufficient size and depth of open water so as not to freeze completely during winter. 3 Observation of fish. 4 Herbaceous and/or woody vegetation is present in wetland and/or buffer to provide cover, shade, and/or detrital matter. 5 Spawning areas are present (aquatic vegetation and/or gravel beds). 6 Juvenile rearing areas. 4-6 (Y) - High Function 1-3 (Y) - Moderate Function None - Low or No Function 1 Native Plant Richness 1 Dominant and codominant plants are native. 2 Wetland contains two or more Cowardin Classes. 3 Wetland has three or more strata of vegetation. 4 Wetland has mature trees. 3 Likely or not likely to Provide (Y or N) 4 N 3-4 (Y) - High Function 1-2 (Y) - Moderate Function 1-2 (Y) - Moderate Function	1		1-4 (Y) - Moderate Function √
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(Must be associated with a fish-bearing stream or lake) 1 Wetland has perennial or intermittent surface-water connection to a fish-bearing water body. 2 Wetland has sufficient size and depth of open water so as not to freeze completely during winter. 3 Observation of fish. 4 Herbaceous and/or woody vegetation is present in wetland and/or buffer to provide cover, shade, and/or detrital matter. 5 Spawning areas are present (aquatic vegetation and/or gravel beds). 6 Juvenile rearing areas. 4-6 (Y) - High Function 1-3 (Y) - Moderate Function None - Low or No Function None - Low or No Function Likely or not likely to Provide (Y or N) 1 Dominant and codominant plants are native. 2 Wetland contains two or more Cowardin Classes. 3 Wetland has three or more strata of vegetation. 4 Wetland has mature trees.	G	General Fish Habitat	Likely or not likely to Provide
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2 Wetland has sufficient size and depth of open water so as not to freeze completely during winter. 3 Observation of fish. 4 Herbaceous and/or woody vegetation is present in wetland and/or buffer to provide cover, shade, and/or detrital matter. 5 Spawning areas are present (aquatic vegetation and/or gravel beds). 6 Juvenile rearing areas. 4-6 (Y) - High Function 1-3 (Y) - Moderate Function None - Low or No Function H. Native Plant Richness Likely or not likely to Provide (Y or N) 1 Dominant and codominant plants are native. 2 Wetland contains two or more Cowardin Classes. 3 Wetland has three or more strata of vegetation. 4 Wetland has mature trees. 3-4 (Y) - High Function 1-2 (Y) - Moderate Function 1-2 (Y) - Moderate Function	1		2
freeze completely during winter. 3 Observation of fish. 4 Herbaceous and/or woody vegetation is present in wetland and/or buffer to provide cover, shade, and/or detrital matter. 5 Spawning areas are present (aquatic vegetation and/or gravel beds). 6 Juvenile rearing areas. H. Native Plant Richness 1 Dominant and codominant plants are native. 2 Wetland contains two or more Cowardin Classes. 3 Wetland has three or more strata of vegetation. 4 Wetland has mature trees. 4 G(Y) - High Function 1 -3 (Y) - Moderate Function None - Low or No Function (Y or N) 1 Dominant and codominant plants are native. 2 Wetland contains two or more Cowardin Classes. 3 Wetland has mature trees.			
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4 Herbaceous and/or woody vegetation is present in wetland and/or buffer to provide cover, shade, and/or detrital matter. 5 Spawning areas are present (aquatic vegetation and/or gravel beds). 6 Juvenile rearing areas. 6 4-6 (Y) - High Function 1-3 (Y) - Moderate Function None - Low or No Function Likely or not likely to Provide (Y or N) 1 Dominant and codominant plants are native. 2 Wetland contains two or more Cowardin Classes. 3 Wetland has three or more strata of vegetation. 4 Wetland has mature trees. 3-4 (Y) - High Function 1-2 (Y) - Moderate Function			
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6 Juvenile rearing areas. 1-3 (Y) - Moderate Function None - Low or No Function H. Native Plant Richness 1 Dominant and codominant plants are native. 2 Wetland contains two or more Cowardin Classes. 3 Wetland has three or more strata of vegetation. 4 Wetland has mature trees. 1-3 (Y) - Moderate Function (Y or N) 1	1	ouner to provide cover, shade, and/or definite matter.	4-6 (V) - High Function
None - Low or No Function H. Native Plant Richness Likely or not likely to Provide (Y or N) 1 Dominant and codominant plants are native. 2 Wetland contains two or more Cowardin Classes. 3 Wetland has three or more strata of vegetation. 4 Wetland has mature trees. 3-4 (Y) - High Function 1-2 (Y) - Moderate Function			
H. Native Plant Richness Likely or not likely to Provide (Y or N) 1 Dominant and codominant plants are native. 2 Wetland contains two or more Cowardin Classes. 3 Wetland has three or more strata of vegetation. 4 Wetland has mature trees. 3-4 (Y) - High Function 1-2 (Y) - Moderate Function		6 Juvenile rearing areas.	
1 Dominant and codominant plants are native. 2 Wetland contains two or more Cowardin Classes. 3 Wetland has three or more strata of vegetation. 4 Wetland has mature trees. (Y or N) 1	<u> </u>		
1 Dominant and codominant plants are native. 2 Wetland contains two or more Cowardin Classes. 3 Wetland has three or more strata of vegetation. 4 Wetland has mature trees. 1	н.	Native Plant Richness	_
2 Wetland contains two or more Cowardin Classes. 3 Wetland has three or more strata of vegetation. 4 Wetland has mature trees. 2 N 3 N 4 N 3-4 (Y) - High Function 1-2 (Y) - Moderate Function	1		1
3 Wetland has three or more strata of vegetation. 4 Wetland has mature trees. 3 Vegetation. 4 Vegetation. 3 Vegetation. 4 Vegetation. 4 Vegetation. 3-4 (Y) - High Function 1-2 (Y) - Moderate Function	ı		
4 Wetland has mature trees. 4 Wetland has mature trees. 3-4 (Y) - High Function 1-2 (Y) - Moderate Function	1		
3-4 (Y) - High Function 1-2 (Y) - Moderate Function			
1-2 (Y) - Moderate Function √	I	4 Wetland has mature trees.	
	1	•	
None - Low or No Function	1		
			None - Low or No Function

Wetland ID: <u>DP33</u>

ī	Educational or Scientific Value	
ľ	Eddoktional of Scientific Value	Likely or not likely to Provide
	4 Otto base 1 and	(Y or N)
	1 Site has documented scientific or educational use.	1 N
ı	2 Wetland is in public ownership	2 7
	3 Accessible trails available.	3 N
ı		2-3 (Y) - High Function
ı		1 (Y) - Moderate Function
L		None - Low or No Function
J.	Uniqueness and Heritage	Likely or not likely to Provide
ı	. 141 - 1	(Y or N)
ı	1 Wetland contains documented occurrences of a state or federally	1** N
	listed threatened or endanged species.**	2** 🖷
1	2 Weltand contains documented critical habitat, high quality	3 - 1
	ecosystems, or priority species respectively designated by the	4**
ĺ	USFWS.**	
ļ	3 Wetland has biological, geological, or other features that are	
l	determined to be rare.	3-4 (Y) - High Function
l	4 Wetland type is a highly valuable wetland type of the State.**	1-2 (Y) - Moderate Function
	**If #1,#2, or #4 is Yes, then wetland is automatically rated as high	None (Low)or No Function
K,		
ļ · · ·	an entrance interesting	Likely or not likely to Provide
	1 Presence of seeps or springs	(Y or N)
	2 Microreleif of wetland surface	1 <u>N</u>
		2
İ	3 Surficial geologic deposits under wetland are permeable	3 4
l	(e.g. alluvium)	
		2-3 (Y) - High Function V
l		1 (Y) - Moderate Function
L		None - Low or No Function

DP 35

Wetland ID:

Kenia Hydro, LLC - Grant Lake Project

WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization Adapted from Regulartory Guidance Letter 09-01

Wetland ID: UP 55 Late: 7-15	5-13
Wetland Type: PEMILSSIE A. Flood Flow Alteration	5-13 CSchudel J. Blank
	Likely or not likely to Provide
(Storage and Desynchronization)	(Y or N)
 Wetland occurs in the upper portion of its watershed. Wetland is relatively flat area and is capable of retaining higher volumes of water during storm events, than under normal rainfall events. Wetland is a closed (depressional) system. If flowthrough, wetland has constructed outlet with signs of fluctuating water levels, algal mats, and/or lodged debris. Wetland has dense woody vegetation. Wetland receives floodwater from an adjacent water course. Floodwater come as sheet flow rather than channel flow. 	1 N 2 N 3 N 4 N 5 N 6 N 7 Y 5-7 (Y) - High Function 1-4 (Y) - Moderate Function
	None - Low or No Function
 Sediment Removal Sources of excess sediment (from tillage, mining or construction) are present upgradient of the wetland. Slow-moving water and/or a deepwater habitat are present in the wetland. Dense herbaceous vegetation is present. Inerspersion of vegegetation and water is high in wetland. Ponding of water is high in wetland. Sediment deposits are present in wetland. 	Likely or not likely to Provide (Y or N) 1 2 3 4 5 6 4-6 (Y) - High Function 1-3 (Y) - Moderate Function None - Low or No Function
 Nutrient and Toxicant Removal Sources of excess nutrients (fertilizers) and toxicants (pesticides and heavy metals) are present upgradient of the wetland. Wetland is inundated or has indicators that flooding is a seasonal event during the growing season. Wetland provides long duration for water detention. Wetland has at least 30% aerial cover of live dense herbaceous vegetation. Fine grained mineral or organic materials are present for the wetland. 	Likely or not likely to Provide (Y or N) 1

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Example Ranking: If ranking the capacity for a wetland to perform a given wetland function into high, moderate, low or none categories, use the following example as guidance. For Flood Flow Alteration, answering yes to five to seven attributes would rate the wetland as high functioning; answering yes to one to four attributes would rate the wetland as moderate; and not answering yes to any attributes would rate the wetland as low, or if evaluator is certain the wetland does not perform this function, it can be rated as none.

_		Likely or not likely to Provide
D.		1
	(if associated with a watercourse or shoreline)	(Y or N)
		, , , , , , , , , , , , , , , , , , ,
	1 Wetland has dense, energy absorbing vegetation bordering the	water 1 <u>Y</u>
	course and no evidence of erosion.	2
	2 A herbaceous layer is part of this dense vegetation.	3
	3 Trees and shrubs able to withstand erosive flood events are also	nart — ———
		2-3 (Y) - High Function
	of this dense vegetation.	1 (Y) - Moderate Function
		None - Low or No Function
E.	Production of Organic Matter and its Export	Likely or not likely to Provide
ľ	•	(Y or N)
	1 Wetland has at least 30% aerial cover of dense herbaceous	1 1
		2
	vegetation.	3 - 4 -
	2 Woody plants in wetland are mostly deciduous.	
	3 High degree of plant community structure, vegetation density, at	
	species richness present.	5
1	4 Interspersion of vegetation and water is high in wetland.	6**
1	5 Wetland is inundated or has indicators that flooding is a season	al , i
ļ.	event during the growing season.	4-6 (Y) - High Function ✓
ļ	6 Wetland has outlet from which organic matter is flushed.**	1-3 (Y) - Moderate Function
l	**If #6 is No, then wetland automatically rated as low or No func	
_		Likely or not likely to Provide
F.	General Wildlife Habitat Sultability	(Y or N)
		1
	1 Wetland is not fragmented by development.	
	Upland surround wetland is undeveloped,	2
	3 Wetland has connectivity with other habitat types.	3
ı	4 Divserity of plant species is high.	4 _ `\frac{1}{2}_{}
	5 Wetland has more than one Cowardin Class (e.g. PFO, PSS, P	EM) 5 ' <u>-</u> -
	6 Has high degree of Corwardin Class interspersion	6 N
	7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) pres	ent. 7
	1 EAGCHGO of August and folds a rough agent a series a series as series	
ľ		5-7 (Y) - High Function
		1-4 (Y) - Moderate Function
1		None - Low or No Function
G.		Likely or not likely to Provide
	(Must be associated with a fish-bearing stream or lake)	(Y or N) NA
	1 Wetland has perennial or intermittent surface-water connection	to a 1
	fish-bearing water body.	2 N
	2 Wetland has sufficient size and depth of open water so as not to	
1	freeze completely during winter.	4 🗡
1		5
I	3 Observation of fish.	
1	4 Herbaceous and/or woody vegetation is present in wetland and	
1	buffer to provide cover, shade, and/or detrital matter.	1,000 154 5000
	5 Spawning areas are present (aquatic vegetation and/or gravel t	peds). 4-6 (Y) - High Function
	6 Juvenile rearing areas.	1-3 (Y) - Moderate Function
	- 	None - Low or No Function
H.	Native Plant Richness	Likely or not likely to Provide
Ι"	.	(Y or N)
	1 Dominant and codominant plants are native.	1 1
	2 Wetland contains two or more Cowardin Classes.	2 <u>N-V</u>
1		3 N
1	3 Wetland has three or more strata of vegetation.	4 - N
1	4 Wetland has mature trees.	3-4 (Y) - High Function
ı		1-2 (Y) - Moderate Function√
		None - Low or No Function

Date: <u>4-15-13</u>

Wetland ID: <u>DP35</u>

1.	Educational or Scientific Value	Likely or not likely to Provide
		(Y or N)
	1 Site has documented scientific or educational use.	1 1
	2 Wetland is in public ownership	2 7/
1	3 Accessible trails available.	3
1		- 1 -
		2-3 (Y) - High Function
	er erwar 2	1 (Y) - Moderate Function
		None - Low or No Function
J.	Uniqueness and Heritage	Likely or not likely to Provide
		(Y or,N)
	1 Wetland contains documented occurrences of a state or federally	1** N.
	listed threatened or endanged species.**	2**
	2 Weltand contains documented critical habitat, high quality	3 7
-	ecosystems, or priority species respectively designated by the	4** \text{\tint{\text{\text{\tint{\text{\tin{\tin
ĺ	USFWS.**	
	3 Wetland has biological, geological, or other features that are	
	determined to be rare.	3-4 (Y) - High Function
	4 Wetland type is a highly valuable wetland type of the State.**	1-2 (Y) - Moderate Function
	**If #1,#2, or #4 is Yes, then wetland is automatically rated as high	None - (Low or No Function
K.	Groundwater Interchange	Likely or not likely to Provide
		(Y or N)
1	1 Presence of seeps or springs	1 N
	2 Microreleif of wetland surface	2 N
	3 Surficial geologic deposits under wetland are permeable	3 4
	(e.g. alluvium)	
		2-3 (Y) - High Function √
1		1 (Y) - Moderate Function
		None - Low or No Function

WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization Adapted from Regulartory Guidance Letter 09-01

Wetland ID:	Dr37	

Date: 7-25-13

Wetland Type: PFO4B/PEMIB Investigators: (). Schudel J. Blank

A	Flood Flow Alteration	
	(Storage and Desynchronization)	Likely or not likely to Provide
	(-10.4ge and Bodynomonization)	(Y or N)
	1 Wetland occurs in the upper portion of its watershed.	ا معنی ا
	Wetland is relatively flat area and is capable of retaining higher	$\frac{1}{2} \frac{AN}{N}$
	volumes of water during storm events, than under normal rainfall	2 N
1	events.	3
1	3 Wetland is a closed (depressional) system.	4 <u>N</u>
1	4 If flowthrough, wetland has constructed outlet with signs of fluctuating	5 <u>/</u>
	water levels, algal mats, and/or lodged debris,	7 N
	5 Wetland has dense woody vegetation.	' <u> </u>
•	6 Welland receives floodwater from an adjacent water course.	5-7 (Y) - High Function
1	7 Floodwater come as sheet flow rather than channel flow.	1-4 (Y) - Moderate Function √
		None - Low or No Function
В.	Sediment Removal	Likely or not likely to Provide
1		(Y or N)
1	1 Sources of excess sediment (from tillage, mining or construction) are	
1	present upgradient of the wetland.	2 - N
	2 Slow-moving water and/or a deepwater habitat are present in the	3 - 1
	wetland,	4 1
l	3 Dense herbaceous vegetation is present.	5 1
ı	4 Inerspersion of vegegetation and water is high in wetland.	6 //
ı	5 Ponding of water is high in wetland.	
]	6 Sediment deposits are present in wetland.	4-6 (Y) - High Function
i		1-3 (Y) - Moderate Function
ㄴ		None - Low or No Function
C.	Nutrient and Toxicant Removal	Likely or not likely to Provide
		(Y or N)
	1 Sources of excess nutrients (fertilizers) and toxicants (pesticides and	1 N
ľ	heavy metals) are present upgradient of the wetland.	2 \
	2 Wetland is inundated or has indicators that flooding is a seasonal	3 N
	event during the growing season.	4
	3 Wetland provides long duration for water detention.	5 7
	4 Wetland has at least 30% aerial cover of live dense herbaceous	
	vegetation.	3-5 (Y) - High Function
	5 Fine grained mineral or organic materials are present for the wetland.	1-2 (Y) - Moderate Function
		None - Low or No Function

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Example Ranking: If ranking the capacity for a wetland to perform a given wetland function into high, moderate, low or none categories, use the following example as guidance. For Flood Flow Alteration, answering yes to five to seven attributes would rate the wetland as high functioning; answering yes to one to four attributes would rate the wetland as moderate; and not answering yes to any attributes would rate the wetland as low, or if evaluator is certain the wetland does not perform this function, it can be rated as none.

Wetland ID: <u>DP 37</u>

		Likely or not likely to Provide
D.	Erosion Control and Shoreline Stabilization	
	(if associated with a watercourse or shoreline)	(Y or N) NA
		' ' '
	1 Wetland has dense, energy absorbing vegetation bordering the water	1
	course and no evidence of erosion.	2
	2 A herbaceous layer is part of this dense vegetation.	3
	3 Trees and shrubs able to withstand erosive flood events are also part	
	of this dense vegetation.	2-3 (Y) - High Function
	01 4110 401100 10901111111	1 (Y) - Moderate Function
		None - Low or No Function
E.	Production of Organic Matter and its Export	Likely or not likely to Provide
С,	Production of Organic matter and the Expert	(Y or N)
	1 Wetland has at least 30% aerial cover of dense herbaceous	1 4
		2
	vegetation.	3 NM
	2 Woody plants in wetland are mostly deciduous.	4 N
	3 High degree of plant community structure, vegetation density, and	
	species richness present.	5 6** 1 1 1 1 1 1 1 1 1 1
	4 Interspersion of vegetation and water is high in wetland.	
	5 Wetland is inundated or has indicators that flooding is a seasonal	LOAD History
	event during the growing season.	4-6 (Y) - High Function
	6 Wetland has outlet from which organic matter is flushed.**	1-3 (Y) - Moderate Function ✓
	**If #6 is No, then wetland automatically rated as low or No function	None - Low or No Function
F.	General Wildlife Habitat Suitability	Likely or not likely to Provide
, ,	,	(Y or N)
	1 Wetland is not fragmented by development.	1 <u>Y</u>
	2 Upland surround wetland is undeveloped.	2 4
i	3 Wetland has connectivity with other habitat types.	3 7 7
	4 Divserity of plant species is high.	4 N
	5 Wetland has more than one Cowardin Class (e.g. PFO, PSS, PEM)	5 NY
1	6 Has high degree of Corwardin Class interspersion	6 N
	7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present.	7
1	/ EAldeuce of Mildlife rise (e.g. tracks, seat, durance etembo) brooming	-/ ;
1		5-7 (Y) - High Function√
Į.		1-4 (Y) - Moderate Function
		None - Low or No Function
<u>L</u>		Likely or not likely to Provide
G.	General Fish Habitat	(Y or N)
	(Must be associated with a fish-bearing stream or lake)	I NA
1		1
l	1 Wetland has perennial or intermittent surface-water connection to a	1
	fish-bearing water body.	2
1	2 Wetland has sufficient size and depth of open water so as not to	3
1	freeze completely during winter.	4
	3 Observation of fish.	5
ĺ	4 Herbaceous and/or woody vegetation is present in wetland and/or	6
1	buffer to provide cover, shade, and/or detrital matter.	1
	5 Spawning areas are present (aquatic vegetation and/or gravel beds).	4-6 (Y) - High Function
1	6 Juvenile rearing areas.	1-3 (Y) - Moderate Function
		None - Low or No Function
H.	Native Plant Richness	Likely or not likely to Provide
1"	IMMAA - (MILL - MARINE	(Y or N)
1	1 Dominant and codominant plants are native.	1 1
	Wetland contains two or more Cowardin Classes.	2 -144
	3 Wetland has three or more strata of vegetation.	3 N
		4 - 7
	4 Wetland has mature trees.	3-4 (Y) - High Function √
		1-2 (Y) - Moderate Function
ı		None - Low or No Function
1		TAGILO CON C. 110 Fanation

-	Educational or Scientific Value	Likely or not likely to Provide
	Site has documented scientific or educational use. Wetland is in public ownership Accessible trails available.	(Y or N) 1 N 2 N 3 N
		2-3 (Y) - High Function 1 (Y) - Moderate Function None - Low or No Function
J.	Uniqueness and Heritage	Likely or not likely to Provide
:	1 Wetland contains documented occurrences of a state or federally listed threatened or endanged species.** 2 Weltand contains documented critical habitat, high quality ecosystems, or priority species respectively designated by the USFWS.** 3 Wetland has biological, geological, or other features that are determined to be rare.	1** (Y or N) 2** // 3 // 4** // 3-4 (Y) - High Function
<u> </u>	4 Wetland type is a highly valuable wetland type of the State.** **If #1,#2, or #4 is Yes, then wetland is automatically rated as high	1-2 (Y) - Moderate Function None - Cow or No Function
2	Groundwater Interchange Presence of seeps or springs Microreleif of wetland surface Surficial geologic deposits under wetland are permeable (e.g. alluvium)	Likely or not likely to Provide (Y or N) 1 2 3 2-3 (Y) - High Function 1 (Y) - Moderate Function
		None - Low or No Function

WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization
Adapted from Regulartory Guidance Letter 09-01

Wetland ID: DP 39

Date: 7-25-13

Wetland Type: PSSI/EM 1ビ

Investigators: C. Schidel J. Blant

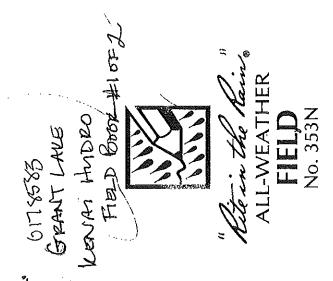
-		
Α.		Likely or not likely to Provide
	(Storage and Desynchronization)	(Y or N)
	1 Wetland occurs in the upper portion of its watershed.	1 N
	2 Wetland is relatively flat area and is capable of retaining higher	2 -17
	volumes of water during storm events, than under normal rainfall	3 1
	events.	4 71
	3 Wetland is a closed (depressional) system.	5 🗸
ŀ	4 If flowthrough, wetland has constructed outlet with signs of fluctual	
	water levels, algal mats, and/or lodged debris.	7 1
l	5 Wetland has dense woody vegetation.	
	6 Wetland receives floodwater from an adjacent water course.	5-7 (Y) - High Function
	7 Floodwater come as sheet flow rather than channel flow.	1-4 (Y) - Moderate Function
		None - Low or No Function
В.	Sediment Removal	Likely or not likely to Provide
		(Y or N)
l	1 Sources of excess sediment (from tillage, mining or construction) a	are 1 N
	present upgradient of the wetland.	2 N
	2 Slow-moving water and/or a deepwater habitat are present in the	3 7.
ĺ	wetland.	4 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
	3 Dense herbaceous vegetation is present.	5 % ' \/
	4 Inerspersion of vegegetation and water is high in wetland.	6 7
	5 Ponding of water is high in wetland,	
	6 Sediment deposits are present in wetland.	4-6 (Y) - High Function ✓
		1-3 (Y) - Moderate Function
		None - Low or No Function
C.	Nutrient and Toxicant Removal	Likely or not likely to Provide
	1. Courses of average putrients (fastilizars) and toyleants (posticides a	(Y or N)
	1 Sources of excess nutrients (fertilizers) and toxicants (pesticides a heavy metals) are present upgradient of the wetland.	
	· · · · · · · · · · · · · · · · · · ·	$\frac{2}{2}$
	2 Wetland is inundated or has indicators that flooding is a seasonal event during the growing season.	3
		4
	3 Wetland provides long duration for water detention.	5
	4 Wetland has at least 30% aerial cover of live dense herbaceous vegetation.	3-5 (Y) - High Function √
	5 Fine grained mineral or organic materials are present for the wetta	
	o i me gramed mineral of organic materials are present for the wetta	None - Low or No Function
<u> </u>		INDIA - FOM OF NO LAUGION

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Example Ranking: If ranking the capacity for a wetland to perform a given wetland function into high, moderate, low or none categories, use the following example as guidance. For Flood Flow Alteration, answering yes to five to seven attributes would rate the wetland as high functioning; answering yes to one to four attributes would rate the wetland as moderate; and not answering yes to any attributes would rate the wetland as low, or if evaluator is certain the wetland does not perform this function, it can be rated as none.

Wetland has dense, energy absorbing vegetation bordering the water course and no evidence of erosion.	D.		Erosion Control and Shoreline Stabilization	I Weeks are at Weeks to Dreside
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Educational or Scientific Value Site has documented scientific or educational use. Wetland is in public ownership Accessible trails available.	Likely or not likely to Provide (Y or N) 1 2 3 N 2-3 (Y) - High Function 1 (Y) - Moderate Function
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J. Uniqueness and Heritage	Likely or not likely to Provide
1 Wetland contains documented occurrences of a state or federally listed threatened or endanged species.** 2 Weltand contains documented critical habitat, high quality ecosystems, or priority species respectively designated by the USFWS.**	1" (YorN) 2" UNV ATH TOWA 3 N (USFS)
3 Wetland has biological, geological, or other features that are determined to be rare.	0.4.00 18-5 5 8
4 Wetland type is a highly valuable wetland type of the State.**	3-4 (Y) - High Function
**If #1,#2, or #4 is Yes, then wetland is automatically rated as high	1-2 (Y) - Moderate Function None (Loylor No Function
K. Groundwater Interchange	Likely or not likely to Provide
1 Presence of seeps or springs 2 Microreleif of wetland surface 3 Surficial geologic deposits under wetland are permeable (e.g. alluvium)	(Y or N) 1
	1 (Y) - Moderate Function None - Low or No Function

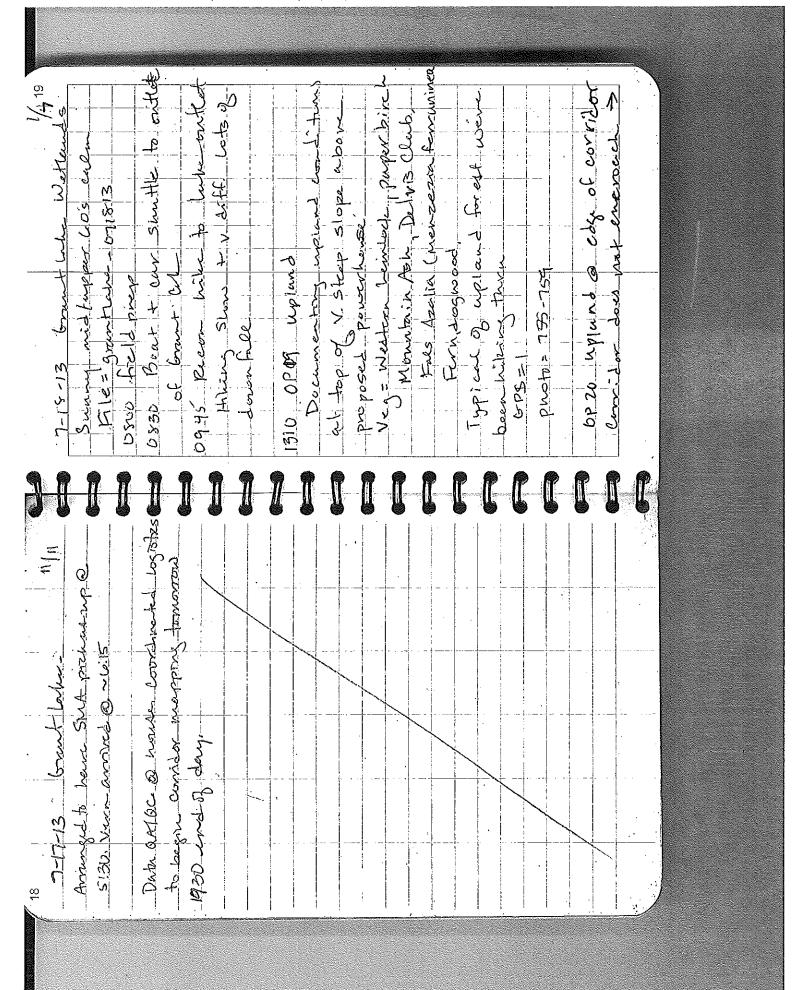


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Photo A.2a-1. Representative photo of an herbaceous dominated depressional wetland. Photo taken at DP14 (PEM/PSS1E) on 7/19/13.



Photo A.2a-2. Representative photo of an herbaceous dominated lacustrine fringe wetland. Photo taken at OP86 on 7.24.13.



Photo A.2a-3. Representative photo of an herbaceous floodplain forest & scrub dominated riverine wetland on Grant Creek. Photo taken at OP51 on 7.22.13.



Photo A.2a-4. Representative photo of an herbaceous floodplain forest & scrub dominated riverine wetland in the complex wetland/upland mosaic associated with the Grant Creek side channels. Photo taken at DP23 on 7.21.13.



Photo A.2a-5. Representative photo of scrub-shrub dominated depressional wetland. Photo taken at DP17 on 7.20.13.



Photo A.2a-6. Representative photo of scrub-shrub dominated lacustrine wetland. Photo taken at DP04 on 7.16.13.



Photo A.2a-7. Representative photo of scrub-shrub dominated riverine wetland. Photo taken at DP39 on 7.25.13.



Photo A.2a-8. Representative photo of a scrub-shrub floodplain forest & scrub dominated riverine wetland. Photo taken at DP02 on 7.16.13



Photo A.2a-9. Representative photo of a scrub-shrub floodplain forest & scrub dominated riverine wetland in the complex wetland/upland mosaic associated with the Grant Creek side channels. Photo taken at DP24 on 7.22.13.



Photo A.2a-10. Representative photo of a forest dominated slope wetland. Photo taken at DP37 on 7.25.13.



Photo A.2a-11. Representative photo of an open water lacustrine waterbody. Aerial photo of Grant Lake looking west towards narrows, taken on 7.16.13.



Photo A.2a-12. Representative photo of an active riverine waterbody. Photo of Grant Creek at OP45 taken on 7.21.13.



Photo A.2a-13. Representative photo of non-vegetated and intermittent/ephemeral (dry) channel areas associated with Inlet Creek on west end of Grant Lake. Photo taken on 7.17.13.



Photo A.2a-14. Representative photo of an intermittent/ephemeral (inactive) riverine waterbody. Photo taken at OP32 on 7.19.13.

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Appendix 3: Wildlife

Appendix 3a: Breeding Landbird and Shorebird Data

Appendix 3b: Northern Goshawk Data

Appendix 3c: Wildlife Related Materials

Appendix 3a. Breeding Landbird and Shorebird Data

June 15-16, 2013 Breeding Bird Surveys

June 15-16, 2013 Breeding Bird Point Vegetation Data

May 21-22, 2013 Breeding Bird Surveys

Photos A.3a-1 through A.3a-14: Breeding Bird Point Vegetation Pictures

SURVEY DETAILS (Circle appropriate values)	DAILY WEATHER AND ROUTE Land unit: GRANT LAKE JUNE Block number: Block name:
Length of count (min): Spacing between pts (m): 3 5 8 10 other 500	Date 06/513 Date 06/6/3
Observers rotated among pts: yes no	(mm-dd-yy) (mm-dd-yy)
Double-observer method used: yes (no)	Start End Start End
Species counted in restricted radius (m):	Time 0458 0831 Time 0458 0818
Species excluded from point counts:	Temp 40°F 50°F °F/C Temp 47°F 50°F °F/C
	Wind Ø Ø Wind Ø Ø #9#6#
OBSERVER INFORMATION	Sky 0 0 #1#10#12 Sky 0 0 #3.#12
Name: AMAL & ASM/	Daily route: #3,#12
Affiliation: First name Middle initial Last name	21 22 23 24 25 Show path between 21 22 23 24 25
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	done by this observer if
City: FAIRBANKS State: AK Zip: 9970/	observers 2 3 4 5 were rotated.
Tel: 907-458-8273 email: AMAL. ASMI@ ERM. COM	Date Date
	(mm-dd-yy) (mm-dd-yy)
SURVEY EXPERIENCE (# years): Bird surveys Distance estimation 8+ Birding in Alaska 15+	Start End Start End
Bird surveys Distance estimation 87 Birding in Alaska 157	Time
CONTACT INFORMATION	Temp OF/C Temp OF/C
(If different)	Wind Wind
Name: First name Middle initial Last name	
Affiliation:	Sky Sky
Address:	Daily route: Daily route:
	16 17 18 19 20 16 17 18 19 20
	11 12 13 14 15 11 12 13 14 15
City: State: Zip:	

1 2 3 4 5

email:

Tel:_

ALM	12		LC	CA	ATI	ON	DA	ATA	4			S typ S da					D	and unit: GP ates: 5 \$	16 Ju	NE 2	01	Block number:Block name:
10			L	.atitu	ıde	(N)	4	Lor			ongitude (Wor E)			Location		Altim GPS	Moved FROM orig pt		Photo		Notes about point and survey markers (give	
Waypt #	Pt	d	d	d	d d	d d	d	d	d	d	d	d	d	d d	error (m)	Elev (m)	Мар	Distance (m)	Bearing	#	Dir	reason if point moved or inaccessible)
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	3					1		à		1				7	±							
	4			1	11	C	1	/	/						±							
4516	5	1		7	100		/	1							±							
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HT LAKE	7	6	0	4	5=	7-1	6	1	4	9	3	5	2	10	: GL#	7+20	1	20 M	SE	7		DUE TO INUNDATION OF ORIGI
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a having and	23							-	1						<u>+</u>							
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	25							9	117													

START: 40°F SKY-0

ALMS MAP OF BIRDS DETECTED DURING SURVEY

Block #: GENT LIKE
Point #: GL# 1 Time start: D459

Direction 150

Species between this and previous point: Club Now Now 15 HETT

Non-landbird species present but not counted:

Mammals: MOUSE DVOYINGS

Notes: PAT#7 WAS INVINDATED WITH CLEEK-GOT AS

USGS Alaska Science Center May 2004 HOM COOCKS, TRYEN, CREEK VERY LOWD - HARD TO HERE MUTTANG.

Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
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7				. /					
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Block #: SPAN LIKE Point #: GL# 8 Observer: 10 10 10 10	Date: 15 JUNE 2013 Time start: 0520
3-100 Hells)	Direction 130 ° MAG 5-80 0CWA 150
	100
	50
Non-landbird species present b	rious point: Held's OCWA's WIVA; GHCH
Mammals: 0 - Notes: Well Son Vell	M LOUD.

Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
HETH	3	1	5	100					
OCWA	5	.1	5	80					
UWWI				y					
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-					-				
			- 3	23					
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TRY				-					
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143-1				2					
4.0	15			317					
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T.B.			1						
171114		18							
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Block #: GPANT LAKE	Date: 15 JUNE 2013
Point #: 614 00 00 00 00 00 00 00 00 00 00 00 00 00	Time start:
Dir	ection 3 (M)
	10° Mrs 3 (S) 37150
	150 OCK)
at at	1 10 (5) 3-101
27	100 3 AP
JEWIST SUTH	SCWAY (S)
7.00	100 50 5-84
1 10 000	50 PIS
3501 0616	7 60
000	
	i \ \ \ \ \ \
	2-20
	Awie Pinne
	(5)
	10001101-0141101111
Species between this and previous p	point GCSP; HERY; TOVA; OCCUM; VA
Non-landbird species present but not	t counted:
Mammals:	The Parks
Notes:	

Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
OCWA	3	1	0	20					
WIWA	8	1	5	190					
1151	5	1	Fic	80					
towa	3	1	5	100					
ROKI	3	1	5	>150					-
VATH	3	1	5	7190					7
OCWA	3	1	5	40					
SWHH	5	1	5	7150					
YENA	3	1	5	7190	h.				
OCWA	3	1	5	83		4			
FISI	8	2	Fic	40					
MSI	10	1	FIC	SID		4			/
				/					1
+	, I		-					1 41	
				1 3			-		
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J. 1			-				-		
31.4				7-1					
F. +		4	4	(SA)					
		-			* * * *		1		

Block #: GPANT LAKE Point #: GL# II	Date: 15 June 2013 Time start: 4632
Observer: APA; RUB	900
3 7 Directi	MAG VANIX 1PWA (G)
Species between this and previous point.	t. NIWA; HOTH; VATA); 8
Non-landbird species present but not co	unted: //
Notes:	

	#	Beh	Dist	Species	Time	#	Beh	Dist
3	1	5	80					
3	1		St					
3	1		50					
3	1	5	100					
3	1.	5	>150					
3	1	5	100					
5	1	5	80					
8	1	5	90					
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gC.			A. A.		-			
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						100		
	33335	3 3 3 5	3 S 3 C 3 S 3 S 3 S 5 S	3 5 50 3 6 50 3 5 100 3 5 >150 3 5 80	3 1 5 50 3 1 5 50 3 1 5 100 3 1 5 7150 3 1 5 100 5 1 5 80 8 1 5 90	3 1 5 50 3 1 5 100 3 1 5 100 3 1 5 100 5 1 5 80 8 1 5 90	3 1 5 50 3 1 5 100 3 1 5 100 5 1 5 80 8 1 5 90	3 1 5 50 3 1 5 100 3 1 5 100 5 1 5 80 8 1 5 90

Block #: SPANT LAKE Point #: GU 12 Observer: PRA - RIF	Date: 15 July 2013 Time start: \$\\\ \partial \text{15} \\ \\ \partial \text{15} \\ \\ \partial \text{15} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\
3.00 3.00 3.00 3.00 3.00 3.00 3.00 3.00	Direction 200 9 150 150 100 100 100 100 100 10
Species between this and previo	us point: RCKI & VATH'S HEAT 300WA
Non-landbird species present but	t not counted:
Mammals: MOVED DROPINGS	SEED SOMELEN
Notes:	

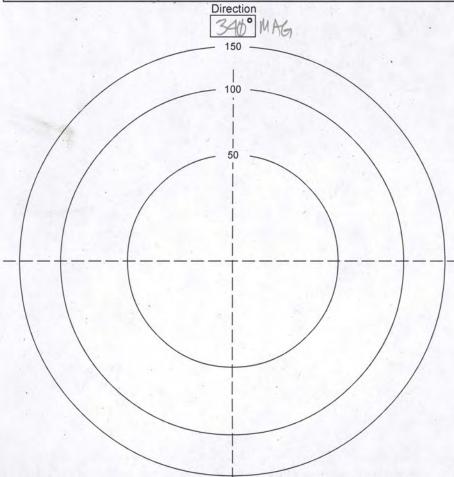
Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
WIWA	3	1	5	100					
VAMH	3	1	5	80					
VAPIL	3	1	5	100					-
VATA	8	1	5	>190		1			-
COLO	3)	F,C	50					
VATIA	3	1	5	719D					
WATH	8	1	5	80					
RCKI	3	1	5	125					
VATH	3	1	5	56					
1				1					2
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Block #: GRANT LAKE Point #: GL# 13 Observer: ARA; RJB	Date: 15 JUNE 2013 Time start: 4726
3/40/5) 30/1/5	ection NAG 37150
371 STONES	1 (S) 3 7100
3-80 VP.MS	10 7 WW.
	871 FOOT
S-WA	5-100 WWW.
	WANT HONE OUT BOARD
Species between this and previous p Non-landbird species present but not Mammals:	counted:
Notes: BONDR LOUGE (ACT)	VE) IOM FROM PAT.

Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
WWA	5	1	5	100					
HTPAV	5	1	S	60					
FOSP	8	1	5	>190			- 12		
YWAR	10	1	5	>150					
WIWA	3	1	5	>190					
FOSP.	3	1	5	7190				2	
OCWA	3	(5	>150					
HETH	3	1	5	7180					1
TOWA	3		5	7150					
AWW	3	1	5	>1SP					
YRWA	.3	1	5	80					
		ì		/					-
						1.			
	7								
			4		-			1,	-
1				- 12					
				- 1					
V	13								
x **									
· r					3				

END 50°F; W-0 #7

ALMS MAP OF BIRDS DETECTED DURING SURVEY



Species between this and previous point: Heat; RBME; VANT;

Non-landbird species present but not counted:

Mammals:

Notes: CR VERY LOYD! COULD NOT HEAR ANTHORY!

USGS Alaska Science Center May 2004

BIRDS-HEARD IDM AWAY FROM PM - PCRISHENTS WIWA

Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
	0		4						
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TEMP STAPT: 47 8 -05 W-0

ALMS MAP OF BIRDS DETECTED DURING SURVEY

Block #: GRANT LAKE	Date: 16 UNE 2013
Point #: GL#9	Time start: MS8
Observer: ARA: ROR	PICO

	230 MAG
	150
	3-70 3-70 B-127 3-797 B-127 3-77 B-127 3-77 B-127 3-77 B-127 3-77 B-127 3-77 B-127 3-77 B-
	15100 B-100 3700 15100 B-100 3700
	(5)
	50
	3-60 3-60 3-60 3-60 3-60 3-60 3-60 3-60
	S CBCH
_	
	3 30 3 100 3 100 3 100 3 100 3 100 3 100 3 100 S
	5.60 3.100 (S) 3.100
	5.60 (S) (S) (S)
	1 RWK
	TOWA
	Species between this and previous point: NOWA: HEAT'S BOCH; MMRO
	Species between this and previous point: NOWA SHEAT SWAN OWA WINN
	Species perween this and previous point: VVWI SAR RESEARCH SAR RESEARCH

Non-landbird species present but not counted:

1 MOUSE TROPPINGS.

Notes:

Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
HENH	3	1	5	7190	1				
RCKI	8	1	S	100	[]				
TOWA	3	1	S	100	,	Columbia			
RCKI	3	1	5	7150		- 136	-		
WIWA	3	1	5	>150	D				
OCWA	3	1	5	80		9-1			
VATH	3	1	5	30					1.0
HETA	3	1	5.	60		- 10			Ł.
CWA	3	1	5	80		= /			
SWH	3	1	5	90		100			
WIWA	3	(5	60					
HETH	3	1	5	100					
VRWA	8		5	60					
WIWA	3	1	5	30					
TOWA	5	1	5	60					
CBCH	10	1	2	90				3	
		"							
4 15								1	
30.16					RE THE				
-	1	وبولو			/diceels				
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Block #: GRANT LAKE	CH: GRANT LAKE			
Point #: Glabb	4	Time start: _	B520	
Observer: WA LONG			4024	

Direction
Direction 10 ° MAG
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MM(C) 44 150 37104
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3-50 WINA 3-40 (5) (5)
130ml (5)
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40
3.40 ROP 10-803-90
3 9 (S) ROP 10-80 3 - 90
3 4 10 (S) (EN) 10-80 3
3-40 (5) 3-90 (5) (5) (5) (5) (5) (5) (5) (5) (5) (5)
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Back .
Bowles .
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No. of the contract of the con
Musq
WINK WINK

Species between this and previous point: RIK 5 TOMS DEWAS HETE'S	-
Non-landbird species present but not counted:	

Mammals:			
Notes:			

USGS Alaska Science Center May 2004

Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
TOWA	3)	5	>15\$		7.4			
RCKI	8	1	5	>15%		4			
HETH	3	1	5	80	*			1.1	
PISI	5	1	FIC	90					
AMD)	3	1	C	100					
RCKI	8	1	5	>191					
HETH.	3	1	5	50					
SWITH	3	1	5	40					
WWA	3	1	5	750					
RCKI	8		5	40				1	
OCWA	8	1	0	40					
CBCH:	10	1	C	80					
REDP	3	1	F.C	400				0.1	
WINA	3	1		90				an and	
YRWA	3		5	90					
WIWA	3	1	5	80			3		
TOWA.	8	1	S	90	4				
OCWA	3		5	50					
				1					
									1
								1	
3									
-								15.00	
-					1-	1			
					-				
- 9,00							15.		

Block #: GRANT LAKE Point #: GL#5 Observer: KR: RB	Date: 16 MNB 2013 Time start: 0552
Direc	tion

40° MAG
150
100 YEWA
3-50
JANK OBJECT VINK
3 HATT STRUCK VANTE
1 Control of the cont
5-90
10. 10 m. 15. 80

Species between this and previous point: Hell's TOWA'S SAUL'S DOWA'S WEWA'S Non-landbird species present but not counted:

Mammals:

Notes:____

Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
YRWA	3	1	5	60					
DUWA	3	1	5	100		1		-	
AMRO	3	1	5	60					
Rekl.	3	1	5	>150					
DUNA	3		5	600					
VANH	3	1	5	48					
VANT.	3		C	40					
WWCR	5	1	FIC	20					
YHOH.	5)	5	>150					
VADA	3	1	C	10					
SWITH	5	1	5	80					
HERA	5		5	90	7				
Scori	3)	5	50		14			
VRWA	10)	5	88					
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				192					

Point #: Date: Date: Date: Dime start: Dime start: Display

Direction 150

Species between this and previous point: HTTL'S FIGR'S

Non-landbird species present but not counted:

Mammals:

Notes: CR LOW.

Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
OCWA	3	1	5	80					
OCWA	3	1	5	30	PA!				
PIGE	3	1	5	40					
SWITH	5	1	5	80	K.				
DWA		1	5	40					9
HOTH	3	1	5	150					
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2					-1				
									-
	*			13					

Point #: GLANT LAKE
Point #: GLANT LAKE
Observer: RALL RIB

Direction

Species between this and previous point: DOWA 5 HOTH

Non-landbird species present but not counted:

Mammals: MOSE HAIR S

USGS Alaska Science Center May 2004

Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
Hent	3	1	V	10					
DOWA	3	1	. C	20					
SWIT	3	1	5	80		-			
Anuko	10	1	C	Est.					
NIMA	14			4					
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ALAAC ...

MAP OF BIRDS DE	TECTED DURING SURVEY
Block #: GRANT LAKE Point #: GLAN Observer: AR PAR	Date: 4 JUNE 2013 Time start: 43
Direct Do	ion NAG
100	3-50 3-74 R
50	(5)
How	3

Species between this and previous point: HADU'S HERY'S OCHA Non-landbird species present but not counted:

Mammals:_

HIGH- POCKS GROW LAST TIME COMPLETLY

USGS Alaska Science Center May 2004

Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
DOWA	3	1	S	50)					
PCKI	3	1		170					
YRWA	10	1.	SV	Ard					
11/1/11	14			19					
				1					
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Block #: GRANT LAYE
Point #: GL# Date: 16 JUNE 2013
Time start: 1808

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	750			0 —		
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	/ 1	will of	OCWA AP	5.30 3	2-70	
		3 64 S		N.C.	(S) HON	
			T		OR JE AG	, - -
				YENK 3KM	CO CO	p / /
				3-69		
	//					
					/ /	

Species between this and previous point: \\ \text{Non-landbird species present but not counted: \\ \text{Decht's Boch's} \\ \text{Non-landbird species present but not counted: \\ \text{Decht's Boch'

Mammals:

Notes: CHE NOSE (LOTS!)

Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
SWIH	3	-	C	40					
OCWA	8	1	C	40					35
COUR	3	1	5	30					
PISI	5	1	Fic	30					
HETH	3	1	0	60					
PCK1.	3	1	5	60					
HETH	3	(C	Top		7.			
VATH	3		5	40		6			
ANRO	3	1	C	50					
OCWA	3	1	0	50					
YRWA	3		5	60		+			
GWGU	10	1	C	>50					
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8/15/2014
(Unofficial)
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FERC
20140815-5155

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BIRD AND MAMMAL SUMMARY CHECKLIST

ARWA

Arctic Warbler Golden-crowned Kinglet

Land unit: GRANT LAKE	Dates: 16-17 JUE 2013
Block number:	Observers: ARA 1 RAB
Block name:	Total effort:hrskm

Y Downy or recently fledged young
F Adult with fecal sac or food for young

-				Block name		Total effort:	hrs
RTLO	Red-throated Loon	PAJA	Parasitic Jaeger	# RCKI	Ruby-crowned Kinglet		Shrew (sp.)
PALO	Pacific Loon	LTJA	Long-tailed Jaeger	BLUE	Bluethroat		Bat (sp.)
X COLO	Common Loon	BOGU	Bonaparte's Gull	NOWH	Northern Wheatear		Arctic fox
HOGR	Horned Grebe	MEGU	Mew Gull	TOSO	Townsend's Solitaire		Coyote
RNGR	Red-necked Grebe	HERG	Herring Gull	GCTH	Gray-cheeked Thrush		Wolf
PECO	Pelagic Cormorant	✓ GWGU	Glaucous-winged Gull	T SWTH	Swainson's Thrush		Red fox
TUSW	Tundra Swan	GLGU	Glaucous Gull	MF HETH	Hermit Thrush		Lynx
TRUS	Trumpeter Swan	BLKI	Black-legged Kittiwake	AMRO	American Robin	_	River otter
		ARTE	Arctic Tern	HVATH	Varied Thrush	-	Wolverine
_CAGO	Canada Goose	-ARTE		YWAG	Yellow Wagtail	-	Marten
_GWTE	Green-winged Teal	ALTE	Aleutian Tern				Fisher
_ MALL	Mallard	COMU	Common Murre	WHWA	White Wagtail	-	
NOPI	Northern Pintail	PIGU	Pigeon Guillemot	AMPI	American Pipit	-	Ermine
NSHO	Northern Shoveler	MAMU	Marbled Murrelet	BOWA	Bohemian Waxwing	-	Least weasel
_AMWI	American Wigeon	TUPU	Tufted Puffin	CEDW	Cedar Waxwing	-	Mink
GRSC	Greater Scaup	HOPU	Horned Puffin	NSHR	Northern Shrike		Black bear
LESC	Lesser Scaup	RODO	Rock Dove	WAVI	Warbling Vireo		Brown bear
HARD	Harlequin Duck	GHOW	Great Horned Owl	REVI	Red-eyed Vireo		∠ Moose
LTDU	Long-tailed Duck	NHOW	Northern Hawk Owl	OCWA	Orange-crowned Warbler		Mule deer
BLSC	Black Scoter	BDOW	Barred Owl	TH YWAR	Yellow Warbler	-	Caribou
		GGOW		MYWA	Myrtle Warbler		Bison
SUSC	Surf Scoter	SEOW	Short-eared Owl	AUWA	Audubon's Warbler	-	Mountain goat
WWSC	White-winged Scoter			YRWA		-	Muskox
_COGO	Common Goldeneye	BLSW	Black Swift	TRVVA	Yellow-rumped Warbler	-	
BAGO	Barrow's Goldeneye	VASW	Vaux's Swift	TOWA	Townsend's Warbler	-	Dall's sheep
BUFF	Bufflehead	RUHU	Rufous Hummingbird	BLPW	Blackpoll Warbler	-	Alaska marmot
COME	Common Merganser	BEKI	Belted Kingfisher	AMRE	American Redstart		Hoary marmot
RBME	Red-breasted Merganser	RBSA	Red-breasted Sapsucker	MOWA .	Northern Waterthrush		Woodchuck
OSPR	Osprey	DOWO	Downy Woodpecker	MGWA	MacGillivray's Warbler		Arctic ground squirrel
BAEA	Bald Eagle	HAWO	Hairy Woodpecker	COYE	Common Yellowthroat		Red squirrel
NOHA	Northern Harrier	TTWO	Three-toed Woodpecker	WIWA .	Wilson's Warbler		Northern flying squirrel
SSHA	Sharp-shinned Hawk	BBWO	Black-backed Woodpecker	ATSP	American Tree Sparrow	3	✓ Beaver
NOGO	Northern Goshawk	NOFL	Northern Flicker	CHSP	Chipping Sparrow	1	Jumping mouse (sp.)
NUGU		YSFL		SAVS	Savannah Sparrow		Red-backed vole (sp.)
_SWHA	Swainson's Hawk	Y SFL	Yellow-shafted Flicker	FOSP		-	Collared lemming
_RTHA	Red-tailed Hawk	RSFL	Red-shafted Flicker	FUSP	Fox Sparrow	-	
_RLHA	Rough-legged Hawk	OSFL	Olive-sided Flycatcher	SOSP	Song Sparrow	-	Brown lemming
_GOEA	Golden Eagle	WEWP	Western Wood-Pewee	LISP	Lincoln's Sparrow	-	Microtus vole (sp.)
AMKE	American Kestrel	ALFL HAFL	Alder Flycatcher	# GCSP	Golden-crowned Sparrow		Muskrat
MERL	Merlin	HAFL	Hammond's Flycatcher	WCSP	White-crowned Sparrow		Northern bog lemming
GYRF	Gyrfalcon	PSFL	Pacific-slope Flycatcher	H SCJU	Slate-colored Junco		Deer mouse (sp.)
SPGR	Spruce Grouse	SAPH	Say's Phoebe	ORJU	Oregon Junco		Porcupine
BLUG	Blue Grouse	HOLA	Horned Lark	DEJU	Dark-eyed Junco		Collared pika
_ WIPT	Willow Ptarmigan	TRES	Tree Swallow	LALO	Lapland Longspur		Snowshoe hare
ROPT	Rock Ptarmigan	VGSW	Violet-green Swallow	SNBU	Snow Bunting		Tundra hare
SACR		NRWS	N. Rough-winged Swallow	# RUBL	Rusty Blackbird		
	Sandhill Crane	NANG	Bank Swallow	GCRF	Gray-crowned Rosy-Finch		Trees or a construction of
BBPL	Black-bellied Plover	BANS		GCRF			MAMMAL EVIDENCE
_AMGP	American Golden-Plover	CLSW	Cliff Swallow	PIGR	Pine Grosbeak		
_PAGP	Pacific Golden-Plover	BARS	Barn Swallow	RECR	Red Crossbill		Visual observation
SEPL	Semipalmated Plover	GRAJ	Gray Jay	# WWCR	White-winged Crossbill		Trooks
BLOY	Black Oystercatcher	STJA	Steller's Jay Black-billed Magpie	L_CORE	Common Redpoil		Tracks
GRYE	Greater Yellowlegs	BBMA	Black-billed Magpie	HORE	Hoary Redpoll		Sign
LEYE	Lesser Yellowlegs	AMCR	American Crow	II PISI	Pine Siskin		
SOSA	Solitary Sandpiper	NOCR	Northwestern Crow	17			Dam
SPSA		CORA	Common Raven				
UPSA	Spotted Sandpiper	BCCH	Black-capped Chickadee				
UPSA	Upland Sandpiper	H BOCH	Parcal Chickadas			2 2 2 2	
_WHIM	Whimbrel	BUCH	Boreal Chickadee	BREEDING	BIRD EVIDENCE	B Build	ing or excavating nest
_SESA	Semipalmated Sandpiper	₩ CBCH	Chestnut-backed Chickadee	X Detect	ed, no evidence of breeding		n call
_WESA	Western Sandpiper	RBNU	Red-breasted Nuthatch				
LESA	Least Sandpiper	BRCR	Brown Creeper	H Observ	red in possible nesting habita	t D Distr	action display, injury-feignin
_ROSA	Rock Sandpiper	WIWR	Winter Wren		served in suitable habitat		observed
DUNL	Dunlin	H-AMDI	American Dipper				
MANN	Wilcon's Snine	A PIMA	Arctic Warhler	S Singing	i male	Y Dow	ny or recently fledaed young

S

Singing male

Courtship display

Wilson's Snipe Red-necked Phalarope

RNPH

WISN

PHOTOS	Topo map quad: EXOTIC PLANTS
Digital Interfaced with GPS? Slide film Yes Print film No	Mark each EXOTIC PLANT SPECIES detected anywhere within the grid of points. Did not look for exotics Bird Vetch (Vicia cracca)
OBSERVER INFORMATION Name:	Canada Thistle (Cirsium arvense) White Sweetclover (Melilotus albus) Other: Other:
Address: 748 GAFFNEY POAD, SUITE 102	MISCELLANEOUS FIELD NOTES
City: FAIRISANKS State: AF Zip: 99 7001 Tel: 9007 - 458 - 8223 email: AMAL ASMIQ ERM. COM Additional observers: ROBERT J. RECKMEN	Point Notes AL WENT WELL EXCEPT PAIT #7- WE HAD TO MOVE IT REPAUSE CLEEK HAD INUNDATED PAIT. 15 JUNE: OPDER FOR DAY: GU#13; #14; GU GU#11; GU#10; GL#8; GL#6; GU#9;
CONTACT INFORMATION (If different)	
Name:	16 JUNE: OD DER FOR DAY: GL#1; GL#2; GL GC#4; GC#5
Address:	
City: State: Zip:	

email:

Tel:

HABITAT DESCRIPTION

Land unit: GEANT LAKE Block #:_ 1215 GRANTLK,

Date:	15	JUNE	2013
Observe	ers: _	ARA :	LSB

CLASSIFICATION
1. Water body with no floating or emergent vegetation. NWI: Kessel: Viereck:NA
2. Water body with > 2% vegetation cover. NWI: Kessel: Viereck:
3. Vegetated wetland without open water body. NWI: Kessel: Viereck:
 □ 4. Non-wetland with < 2% vegetation. □ Solid bedrock □ Bare soil □ Persistent snow or ice □ Rocks, stones, gravel □ Sand NWI: NA Kessel: Viereck: NA
5. Non-wetland with > 2% vegetation cover. NWI: NA Kessel: Viereck:

TREE	DBH		DBH	l (in)	DBH (cm)		
size class	Code	C	Coniferous	Deciduous	Coniferous	Deciduous	
Seedling	1		< 1.0	< 1.0	< 2.5	< 2.5	
Sapling	2		1.0-4.9	1.0-4.9	2.5-13	2.5-13	
Poletimber	3		5-8.9	5-10.9	14-23	14-28	
Small Sawtimber	4		9-19.9	11-19.9	23-49	28-49	
Large Sawtimber	5	ź	20-39.9	20-39.9	50-101	50-101	
Giant Sawtimber	6		> 40	> 40	> 102	> 102	

COVER CLASS CODES for	Code	% cover	Code	% cover	
LARGEST TREES, SHRUBS,	0	None	4	6–25 %	
NON-WOODY	1	<< 1 %	5	26-50 %	
PLANTS, &	2	< 1 %	6	51-75 %	
GROUND COVER	3	1-5 %	7	76-100 %	

	VEGETATION	
SINGLE-STEMMED TRE	ES > 3 m g	6 OF ALTERS
% TREE canopy cover: _	% coniferous: 5	Largest trees
	Avg. ht. (m)	DBH Cove
	% cover 3-5 5-9 9-21 > 2	
1. ALNCRI		2 4
2. PCGCA		4 3
3.		
4		
SINGLE-STEMMED SAF	LINGS, SEEDLINGS, OR DW	/ARF TREES < 3 m
	% cover Avg. ht.(m)	Avg. DBH class
1. ALNCR	1% 10	_/
2. PCGLA	1%	
1.	Class Species (list for each late	yer)
NON-WOODY PLANTS Cover Graminoids	class Species (list by dominar	
Herbs	E BSKING PENATO! VIO	BT;
Ferns	P DAK BBEM)	
Horsetails	3	
GROUND COVER	- 10:	
Mosses/hepatics	<u> </u>	
Lichens	FROG PELT	
Litter	LANES/SICKS	
	7	
Bare ground	7)	+

<u>ALMS</u>	HABITAT POINT DATA
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	_		
and unit: GRANT LAKE	5	Block #:	
Date: 15 MAR	2013	Point #:	6/4/3
Observers: APA	IRAB		0.5

TOPOGRAPHY	COARSE WOODY DEBRIS (Within 50-m radius circle)
Elevation (m) Aspect Slope TOPOGRAPHIC POSITION Summit Highslope Basin	No. coniferous snags: 1 2 3-4 5-6 7-9 10-12 >12 No. deciduous snags: 1 2 3-4 5-6 7-9 10-12 >12 % cover downed logs: -<
☐ Ridge ☐ Midslope ☐ Valley ☐ Lowslope ☐ Plain	HABITAT QUESTIONNAIRE (Answer all questions for each point.)
LOCAL FEATURES Cliff/rock face Step in slope Alluvia/moraine Cut-bank Floodplain Dunes Other	1. Is there a water body at least partly inside the 50-m radius circle? A. If YES, indicate the water type, shore type, and shore vegetation. Water type: Bedrock, boulders, large stones
PHOTO Roll/frame or Digital ID # Facing North: Facing South: Facing West:	☐ Estuarine ☐ Organic material, mud, sand, gravel, cobbles ☐ River/Stream ☐ < 30% vegetated ☐ > 30% vegetated
Type None % of Severity circle code None % of Severity circle code Yrs since disturbance <2 > 2 # if known	B. Is the water body at least 10 m wide? If YES, this is wetland habitat. If part of water body is vegetated and part unvegetated, there may be > 1 habitat. Use NWI Key to determine
Insect damage Disease Beaver ponds Beaver cuttings Other animal activity Fire Flooding Wind Landslide/avalanche Logging Roads Other human disturbances Other	wetland classes and fill out HABITAT DESCRIPTION form for each one. 2. Apart from water bodies described above, is saturation with water the dominant factor in determining soil development and plant community for any other habitat > 10 m wide occurring at least partly in the circle? This includes areas at least annually saturated with or covered by water, areas dotted with small ponds, and areas with obligate wetland plants or numerous facultative wetland species (see NWI wetland indicator lists). If YES, this is a separate wetland habitat. Use NWI Key to determine wetland class and fill out HABITAT DESCRIPTION form.
Other human disturbances	Is there a large patch of unvegetated ground, not associated with a water body, that is at least partly inside the 50-m circle? This can include rock, bare ground, or snow or ice with no protruding vegetation, but the patch
DISTURBANCE SEVERITY CODES	must be at least 400 m² in size (11-m radius).
MINOR: Little evidence of disturbance, damage limited to small part of circle, or widespread but slight. Minor driver for succession. SEVERE: Damage obvious and widespread in circle, including	If YES, this is a separate habitat; fill out HABITAT DESCRIPTION form. 4. For any other parts of the 50-m radius circle, fill out one HABITAT DESCRIPTION form for each discrete non-wetland habitat type. DO NOT separate out components of common habitat mosaics (see instructions).
killing or removing much of the vegetation or underlying substrate. Damage resulting in widespread secondary succession.	For any of these habitats, is the soil very well drained, unable to hold moisture long after precipitation, and dry most of the year?

ALMS HABITAT DESCRIPTION

Land unit: GRANT LAKE Block #:

Date: 17 JUNE 2013 Observers: APA; RJB

Point #: 6 # 3
Habitat # 2 of 2
% of circle: 40%

CLASSIFICATION
1. Water body with no floating or emergent vegetation. NWI: Kessel: Viereck: _NA
2. Water body with > 2% vegetation cover. NWI: Kessel: Viereck:
3. Vegetated wetland without open water body. NWI: Kessel: Viereck:
 □ 4. Non-wetland with < 2% vegetation. □ Solid bedrock □ Bare soil □ Persistent snow or ice □ Rocks, stones, gravel □ Sand NWI: NA Kessel: Viereck: NA
5. Non-wetland with > 2% vegetation cover. NWI: NA Kessel: Viereck:

TREE	DBH	DBH	H (in)	DBH (cm)		
size class	Code	Coniferous	Deciduous	Coniferous	Deciduous	
Seedling	1	< 1.0	< 1.0	< 2.5	< 2.5	
Sapling	2	1.0-4.9	1.0-4.9	2.5-13	2.5-13	
Poletimber	3	5-8.9	5-10.9	14-23	14-28	
Small Sawtimber	4	9-19.9	11-19.9	23-49	28-49	
Large Sawtimber	5	20-39.9	20-39.9	50-101	50-101	
Giant Sawtimber	6	> 40	> 40	> 102	> 102	

COVER CLASS CODES for	Code	% cover	Code	% cover
LARGEST TREES, SHRUBS,	0	None	4	6–25 %
NON-WOODY	1	<< 1 %	5	26-50 %
PLANTS, &	2	< 1 %	6	51-75 %
GROUND COVER	3	1-5 %	7	76-100 %

	VE	GETAT	ION			
SINGLE-STEMME % TREE canopy co		% conifero			Larges	t trees
1. PICGLA 2. ALNCRI 3			Avg. ht. (m) 5-9 9-21 >	21 .	DBH	
SINGLE-STEMME Species (list for each 1	layer) %					
SHRUBS (Multiple- Layer Avg. ht.(m) 1.			ist for each I	ayer)		
NON-WOODY PLANTS Graminoids Herbs Ferns Horsetails	Cover class	GRASS	list by domina		<i>-</i>	
GROUND COVER Mosses/hepatics Lichens Litter Bare ground	0 -	LEAVE	5	<i>P</i>		

11	
>P66	
AM.	

ALMS HABITAT POINT DATA	Date: ARA; RAB Point #: GL#13
TOPOGRAPHY	COARSE WOODY DEBRIS (Within 50-m radius circle)
Elevation (m) Aspect O Slope O TOPOGRAPHIC POSITION Summit Highslope Basin	No. coniferous snags: 1 2 3-4 5-6 7-9 10-12 >12 No. deciduous snags: 1 2 3-4 5-6 7-9 10-12 >12 % cover downed logs: 0 1 1 1-5 6-25 26-50 51-75 76-100%
Ridge Midslope Valley Lowslope Plain	HABITAT QUESTIONNAIRE (Answer all questions for each point.)
LOCAL FEATURES Cliff/rock face Step in slope Alluvia/morajne Cut-bank Floodplain Dunes Other GRANT LAKE WINTER IN LET TO.	1. Is there a water body at least partly inside the 50-m radius circle? A. If YES, indicate the water type, shore type, and shore vegetation. Water type: Shore type and vegetation: Bedrock, boulders, large stones
PHOTO Roll/frame or Digital ID # Facing North: Facing South: Facing West:	☐ Estuarine ☐ Organic material, mud, sand, gravel, cobbles ☐ River/Stream ☐ < 30% vegetated ☐ Lake/Pond ☐ > 30% vegetated
Type circle code Yrs since disturbance Code code code code code code code code c	B. Is the water body at least 10 m wide? If YES, this is wetland habitat. If part of water body is vegetated and part unvegetated, there may be > 1 habitat. Use NWI Key to determine wetland classes and fill out HABITAT DESCRIPTION form for each one.
Insect damage Disease Beaver ponds Beaver cuttings Other animal activity Fire Flooding Wind Landslide/avalanche Logging Roads Other human disturbances Other	2. Apart from water bodies described above, is saturation with water the dominant factor in determining soil development and plant community for any other habitat > 10 m wide occurring at least partly in the circle? This includes areas at least annually saturated with or covered by water, areas dotted with small ponds, and areas with obligate wetland plants or numerous facultative wetland species (see NWI wetland indicator lists). If YES, this is a separate wetland habitat. Use NWI Key to determine wetland class and fill out HABITAT DESCRIPTION form.
Other human disturbances Other DISTURBANCE SEVERITY CODES	3. Is there a large patch of unvegetated ground, not associated with a water body, that is at least partly inside the 50-m circle? This can include rock, bare ground, or snow or ice with no protruding vegetation, but the patch must be at least 400 m² in size (11-m radius).
MINOR: Little evidence of disturbance, damage limited to small part of circle, or widespread but slight. Minor driver for succession. SEVERE: Damage obvious and widespread in circle, including	If YES, this is a separate habitat; fill out HABITAT DESCRIPTION form. 4. For any other parts of the 50-m radius circle, fill out one HABITAT DESCRIPTION form for each discrete non-wetland habitat type. DO NOT separate out components of common habitat mosaics (see instructions).
killing or removing much of the vegetation or underlying substrate. Damage resulting in widespread secondary succession.	For any of these habitats, is the soil very well drained, unable to hold moisture long after precipitation, and dry most of the year?

M



HABITAT DESCRIPTION

Land unit: GRANT LAKE
Block #:

Date: 15 MNE 2013 Observers: APA PUB Point #: GUHA
Habitat #____ of ___
% of circle: _______

CLASSIFICATION
1. Water body with no floating or emergent vegetation. NWI: Kessel: Viereck: _NA
2. Water body with > 2% vegetation cover. NWI: Kessel: Viereck:
3. Vegetated wetland without open water body. NWI: Kessel: Viereck:
4. Non-wetland with < 2% vegetation. Solid bedrock Bare soil Persistent snow or ice Rocks, stones, gravel Sand NWI: NA Kessel: Viereck: NA 5. Non-wetland with > 2% vegetation cover. NWI: NA Kessel: Viereck: Viereck: Viereck: Viereck: NA

TREE	DBH	DBH (in)		DBH (cm)	
size class	Code	Coniferous	Deciduous	Coniferous	Deciduous
Seedling	1	< 1.0	< 1.0	< 2.5	< 2.5
Sapling	2	1.0-4.9	1.0-4.9	2.5-13	2.5-13
Poletimber	3	5-8.9	5-10.9	14-23	14-28
Small Sawtimber	4	9-19.9	11-19.9	23-49	28-49
Large Sawtimber	5.	20-39.9	20-39.9	50-101	50-101
Giant Sawtimber	6	> 40	> 40	> 102	> 102

COVER CLASS CODES for	Code	% cover	Code	% cover	
LARGEST TREES, SHRUBS,	0	None	4	6–25 %	
NON-WOODY	1	<< 1 %	5	26-50 %	
PLANTS, &	2	< 1 %	6	51-75 %	
GROUND COVER	3	1-5 %	7	76-100 %	

	VEGETATION
	Avg. ht. (m)
Species (list for each layer 1. TSMMBR 2. P(GUA SHRUBS (Multiple-stem	PLINGS, SEEDLINGS, OR DWARF TREES < 3 m '' cover Avg. ht.(m) Avg. DBH class 20
NON-WOODY PLANTS Cove Graminoids Herbs Ferns Horsetails GROUND COVER Mosses/hepatics Lichens Litter Bare ground Ephemeral snow	Species (list by dominance) A LEWES LEWES

ALMS HABITAT POINT DATA	Date: Block #: Point #: GL#14	
TOPOGRAPHY	COARSE WOODY DEBRIS (Within 50-m radius circle)	
Elevation (m) Aspect Slope Slope TOPOGRAPHIC POSITION Summit Highslope Basin	No. coniferous snags: 1 2 3-4 5-6 7-9 10-12 > No. deciduous snags: 1 2 3-4 5-6 7-9 10-12 > % cover downed logs: <	
☐ Ridge ☐ Midslope ☐ Valley ☐ Lowslope ☐ Plain	HABITAT QUESTIONNAIRE (Answer all questions for each point.)	
LOCAL FEATURES Cliff/rock face Step in slope Alluvia/moraine Cut-bank Floodplain Dunes Other		ES NO
PHOTO Roll/frame or Digital ID # Facing North: Facing South: Facing West: Facing West:	Estuarine Organic material, mud, sand, gravel, cobbles River/Stream <a>30% vegetated A lake/Pond <a>>30% vegetated	
Type circle code Yrs since disturbance <pre></pre>	B. Is the water body at least 10 m wide? If YES, this is wetland habitat. If part of water body is vegetated and part unvegetated, there may be > 1 habitat. Use NWI Key to determine wetland classes and fill out HABITAT DESCRIPTION form for each one.	Ø o
Insect damage	Apart from water bodies described above, is saturation with water the dominant factor in determining soil development and plant community for any other habitat > 10 m wide occurring at least partly in the circle? This includes areas at least annually saturated with or covered by water, areas dotted with small ponds, and areas with obligate wetland plants or numerous facultative wetland species (see NWI wetland indicator lists). If YES, this is a separate wetland habitat. Use NWI Key to determine wetland class and fill out HABITAT DESCRIPTION form.	
Other human disturbances	3. Is there a large patch of unvegetated ground, not associated with a water body, that is at least partly inside the 50-m circle? This can include rock, bare ground, or snow or ice with no protruding vegetation, but the patch must be at least 400 m ² in size (11-m radius).	
1 MINOR: Little evidence of disturbance, damage limited to small part of circle, or widespread but slight. Minor driver for succession. 2 SEVERE: Damage obvious and widespread in circle, including killing or removing much of the vegetation or underlying substrate.	If YES, this is a separate habitat; fill out HABITAT DESCRIPTION form. 4. For any other parts of the 50-m radius circle, fill out one HABITAT DESCRIPTION form for each discrete non-wetland habitat type. DO NOT separate out components of common habitat mosaics (see instructions).	/ \
Damage resulting in widespread secondary succession.	For any of these habitats, is the soil very well drained, unable to hold moisture long after precipitation, and dry most of the year?	M o

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A		V	1

HABITAT DESCRIPTION

Land unit: GRANT LAKE
Block #:

Date: 15 June 2013 Observers: APA RSB

Point #: 4 of habitat # 1 of h

CLASSIFICATION	
1. Water body with no floating or emergent vegetation. NWI: Kessel: Viereck: _NA	
2. Water body with > 2% vegetation cover. NWI: Kessel: Viereck:	
3. Vegetated wetland without open water body. NWI: Kessel: Viereck:	
□ 4. Non-wetland with < 2% *vegetation. □ Solid bedrock □ Bare soil □ Persistent snow or ice □ Rocks, stones, gravel □ Sand NW/: NA Kossel: Viercek: NA	
NWI: NA Kessel: Viereck: NA 5. Non-wetland with > 2% vegetation cover. NWI: NA Kessel: Viereck: Vier	

	DBH	DBH (in)		DBH (cm)	
	Code	Coniferous	Deciduous	Coniferous	Deciduous
Seedling	1	< 1.0	< 1.0	< 2.5	< 2.5
Sapling	2	1.0-4.9	1.0-4.9	2.5-13	2.5-13
Poletimber	3	5-8.9	5-10.9	14-23	14-28
Small Sawtimber	4	9-19.9	11-19.9	23-49	28-49
Large Sawtimber	5	20-39.9	20-39.9	50-101	50-101
Giant Sawtimber	6	> 40	> 40	> 102	> 102

COVER CLASS CODES for	Code	% cover	Code	% cover
LARGEST TREES, SHRUBS,	0	None	4	6-25 %
NON-WOODY	1	<< 1 %	5	26-50 %
PLANTS, &	2	< 1 %	6	51-75 %
GROUND COVER	3	1-5 %	7	76-100 %

	V	EGETAT	ON	
SINGLE-STEMN % TREE canopy TREE LAYER SP 1. TSUMP 2. PLGIA 3. AUNCL 4.	cover: 87	% conifero	us: <u>99</u> avg. ht. (m) 5-9 9-21 > 2	Largest trees DBH Cover class class 4 4 2 4
Species (list for each of the second of the	ich layer) %	cover Ave	g. ht.(m)	NA
NON-WOODY PLANTS Graminoids Herbs Ferns Horsetails	Cover class	Species (li	st by dominar	
GROUND COVE Mosses/hepatics Lichens Litter Bare ground Ephemeral snow	7 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	MOSS Floris LEANES	POLT TENCKS	

	1	٨	4	1
	4	7	0	7
_		-	7	

ALMS	HABITAT POINT

Land unit: GPANT LIVE
Date: 15 June 2013 Block #: Point #: 6/#/

ALMS HABITAT POINT DATA	Date: 15 \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
TOPOGRAPHY	COARSE WOODY DEBRIS (Within 50-m radius circle)
Elevation (m) Aspect ₩₩° Slope ½ 7° TOPOGRAPHIC POSITION ☐ Summit ☐ Highslope ☐ Basin	No. coniferous snags:
☐ Ridge ☐ Midslope ☐ Valley ☐ Lowslope ☐ Plain	HABITAT QUESTIONNAIRE (Answer all questions for each point.)
LOCAL FEATURES Cliff/rock face Step in slope Alluvia/moraine Cut-bank Floodplain Dunes Other PHOTO Paul/frame or Facing North: Facing South:	1. Is there a water body at least partly inside the 50-m radius circle? A. If YES, indicate the water type, shore type, and shore vegetation. Water type: Shore type and vegetation: Marine Bedrock, boulders, large stones Corganic material, mud, sand, gravel, cobbles
Roll/frame or Digital ID # Facing East: Facing West:	☐ River/Stream ☐ < 30% vegetated ☐ Lake/Pond ☐ > 30% vegetated
Type None % of Severity circle code % of Severity circle code <2 > 2 # if known	B. Is the water body at least 10 m wide? If YES, this is wetland habitat. If part of water body is vegetated and part unvegetated, there may be > 1 habitat. Use NWI Key to determine
Insect damage	wetland classes and fill out HABITAT DESCRIPTION form for each one. 2. Apart from water bodies described above, is saturation with water the dominant factor in determining soil development and plant community for any other habitat > 10 m wide occurring at least partly in the circle? This includes areas at least annually saturated with or covered by water, areas dotted with small ponds, and areas with obligate wetland plants or numerous facultative wetland species (see NWI wetland indicator lists). If YES, this is a separate wetland habitat. Use NWI Key to determine wetland class and fill out HABITAT DESCRIPTION form. 3. Is there a large patch of unvegetated ground, not associated with a water
Other human disturbances	body, that is at least partly inside the 50-m circle? This can include rock, bare ground, or snow or ice with no protruding vegetation, but the patch must be at least 400 m² in size (11-m radius).
MINOR: Little evidence of disturbance, damage limited to small part of circle, or widespread but slight. Minor driver for succession. SEVERE: Damage obvious and widespread in circle, including killing or removing much of the vegetation or underlying substrate. Damage resulting in widespread secondary succession.	If YES, this is a separate habitat; fill out HABITAT DESCRIPTION form. 4. For any other parts of the 50-m radius circle, fill out one HABITAT. DESCRIPTION form for each discrete non-wetland habitat type. DO NOT separate out components of common habitat mosaics (see instructions). For any of these habitats, is the soil very well drained, unable to hold moisture long after precipitation, and dry most of the year?

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75	
1	



HABITAT DESCRIPTION

Land unit: GRANT LAKE
Block #:

Date: SUMP 2013
Observers: APA PJB

Point #: 66#1/ Habitat # of / % of circle: 100

CLASSIFICATION 1. Water body with no floating or emergent vegetation. NWI: Kessel: Viereck: _NA 2. Water body with > 2% vegetation cover. NWI: Kessel: Viereck: 3. Vegetated wetland without open water body. NWI: Kessel: Viereck: 4. Non-wetland with < 2% vegetation. Solid bedrock Bare soil Persistent snow or ice Rocks, stones, gravel Sand NWI: _NA Kessel: Viereck: _NA 5. Non-wetland with > 2% vegetation cover.
☐ Solid bedrock ☐ Bare soil ☐ Persistent snow or ice ☐ Rocks, stones, gravel ☐ Sand

TREE	DBH	DBH	DBH (in)		(cm)
size class Co		Coniferous	Deciduous	Coniferous	Deciduous
Seedling	1	< 1.0	< 1.0	< 2.5	< 2.5
Sapling	2	1.0-4.9	1.0-4.9	2.5-13	2.5-13
Poletimber	3	5-8.9	5-10.9	14-23	14-28
Small Sawtimber	4	9-19.9	11-19.9	23-49	28-49
Large Sawtimber	5	20-39.9	20-39.9	50-101	50-101
Giant Sawtimber	6	> 40	> 40	> 102	> 102

COVER CLASS CODES for	Code	% cover	Code	% cover	
LARGEST TREES, SHRUBS,	0	None	4	6–25 %	
NON-WOODY	1	<< 1 %	5	26-50 %	
PLANTS, &	2	< 1 %	6	51-75 %	
GROUND COVER	3	1-5 %	7	76–100 %	

	VEGETATION
	SINGLE-STEMMED TREES > 3 m % TREE canopy cover: 92 % coniferous: 99 Largest trees
	Avg. ht. (m) DBH Cover
	SINGLE-STEMMED SAPLINGS, SEEDLINGS, OR DWARF TREES < 3 m Species (list for each layer) % cover Avg. ht.(m) Avg. DBH class 1. TSUMBL 10 10 10 10 10 10 10 10 10 10 10 10 10
S	SHRUBS (Multiple-stemmed, woody plants) Layer Avg. ht.(m) Cover class Species (list for each layer) 1.
	NON-WOODY PLANTS Cover class Species (list by dominance) Graminoids Herbs Ferns Horsetails
	GROUND COVER Mosses/hepatics Lichens Litter Bare ground Ephemeral snow

<u>ALMS</u>	HABITAT POINT
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Land unit: GRANTLAKE	Block #:
Date: 15 JUNE 2013	Point #: 6/# //
Observers: AVAL RIK	

ALMS HABITAT POINT DATA	Date: 500 Point #: 61# 11 Observers: 088			
TOPOGRAPHY	COARSE WOODY DEBRIS (Within 50-m radius circle)			
Elevation (m) Aspect Slope 2 ° TOPOGRAPHIC POSITION Summit Highslope Basin	No. coniferous snags:			
Ridge Midslope Valley Lowslope Plain	HABITAT QUESTIONNAIRE (Answer all questions for each point.)			
LOCAL FEATURES Cliff/rock face Floodplain Other Dunes	1. Is there a water body at least partly inside the 50-m radius circle? A. If YES, indicate the water type, shore type, and shore vegetation. Water type: Shore type and vegetation: Bedrock, boulders, large stones			
PHOTO Roll/frame or Digital ID # Facing North: Facing South: Facing West: Facing West:	☐ Estuarine ☐ Organic material, mud, sand, gravel, cobbles☐ River/Stream ☐ < 30% vegetated☐ Lake/Pond ☐ > 30% vegetated☐ > 3			
Type circle code	B. Is the water body at least 10 m wide? If YES, this is wetland habitat. If part of water body is vegetated and part unvegetated, there may be > 1 habitat. Use NWI Key to determine wetland classes and fill out HABITAT DESCRIPTION form for each one. 2. Apart from water bodies described above, is saturation with water the dominant factor in determining soil development and plant community for any other habitat > 10 m wide occurring at least partly in the circle? This includes areas at least annually saturated with or covered by water, areas dotted with small ponds, and areas with obligate wetland plants or numerous facultative wetland species (see NWI wetland indicator lists). If YES, this is a separate wetland habitat. Use NWI Key to determine wetland class and fill out HABITAT DESCRIPTION form. 3. Is there a large patch of unvegetated ground, not associated with a water body, that is at least partly inside the 50-m circle? This can include rock,			
DISTURBANCE SEVERITY CODES 1 MINOR: Little evidence of disturbance, damage limited to small part of circle, or widespread but slight. Minor driver for succession. 2 SEVERE: Damage obvious and widespread in circle, including killing or removing much of the vegetation or underlying substrate.	For any other parts of the 50-m radius circle, fill out one HABITAT DESCRIPTION form for each discrete non-wetland habitat type. DO NOT separate out components of common habitat mosaics (see instructions). For any of these habitats, is the soil very well drained, unable to hold			
Damage resulting in widespread secondary succession.	moisture long after precipitation, and dry most of the year?			

#5

ALMS HABITAT DESCRIPTION

Land unit: GRANT LAKE Block #: Date: 15 JUNE 2013 Observers: APA R 18

Point #: GI# IP
Habitat # ____ of
% of circle: _____

CLASSIFICATION	
1. Water body with no floating or emergent vegetation. NWI: Kessel: Viereck: _NA	
2. Water body with > 2% vegetation cover. NWI: Kessel: Viereck:	*
3. Vegetated wetland without open water body. NWI: Kessel: Viereck:	
☐ 4. Non-wetland with < 2% vegetation. ☐ Solid bedrock ☐ Bare soil ☐ Persistent snow or ice ☐ Rocks, stones, gravel ☐ Sand NWI: NA Kessel: Viereck: NA	
5. Non-wetland with > 2% vegetation cover. NWI: NA Kessel: Viereck:	

TREE	DBH	DBH (in)		DBH (cm)	
size class	Code	Coniferous	Deciduous	Coniferous	Deciduous
Seedling	1	< 1.0	< 1.0	< 2.5	< 2.5
Sapling	2	1.0-4.9	1.0-4.9	2.5-13	2.5-13
Poletimber	3	5-8.9	5-10.9	14-23	14-28
Small Sawtimber	4	9-19.9	11-19.9	23-49	28-49
Large Sawtimber	5	20-39.9	20-39.9	50-101	50-101
Giant Sawtimber	6	> 40	> 40	> 102	> 102

COVER CLASS CODES for	Code	% cover	Code	% cover	
LARGEST TREES, SHRUBS,	0	None	4	6–25 %	
NON-WOODY	1	<< 1 %	5	26-50 %	
PLANTS, &	2	< 1 %	6	51-75 %	
GROUND COVER	3	1-5 %	7	76–100 %	

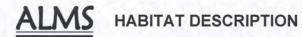
VEGETATION
SINGLE-STEMMED TREES > 3 m % TREE canopy cover: 92
SINGLE-STEMMED SAPLINGS, SEEDLINGS, OR DWARF TREES < 3 m Species (list for each layer) % cover Avg. ht.(m) Avg. DBH class 1. SUMBR 20
NON-WOODY PLANTS Graminoids Herbs Ferns Horsetails Cover class Species (list by dominance)
GROUND COVER Mosses/hepatics Lichens Litter Bare ground Enhomeral spour

AI	A	AC
AI	.IV	cr
	-00 V	10

HABITAT POINT DATA

Land unit: GRANT LAKE	Block #:
Date: 15.0MB 2013	Point#: CI# ITA
Observers: ARA RBS	90.19

	Observers: Res
TOPOGRAPHY	COARSE WOODY DEBRIS (Within 50-m radius circle)
TOPOGRAPHIC POSITION Summit Aspect Wo Slope 5 0 Slope 5 0 Basin	No. coniferous snags:
Ridge Midslope Valley Lowslope Plain	HABITAT QUESTIONNAIRE (Answer all questions for each point.)
LOCAL FEATURES Cliff/rock face Floodplain Other	1. Is there a water body at least partly inside the 50-m radius circle? A. If YES, indicate the water type, shore type, and shore vegetation. Water type: Shore type and vegetation: Bedrock, boulders, large stones
PHOTO Roll/frame or Digital ID # Facing North: Facing South: Facing West:	☐ Estuarine ☐ Organic material, mud, sand, gravel, cobbles ☐ River/Stream ☐ < 30% vegetated ☐ Lake/Pond ☐ > 30% vegetated
Type Severity circle code Severity code Code Severity Circle code Code Code Code Code Code Code Code C	B. Is the water body at least 10 m wide? If YES, this is wetland habitat. If part of water body is vegetated and part unvegetated, there may be > 1 habitat. Use NWI Key to determine wetland classes and fill out HABITAT DESCRIPTION form for each one.
Disease Beaver ponds Beaver cuttings Other animal activity Fire Flooding Wind Landslide/avalanche Logging Roads	2. Apart from water bodies described above, is saturation with water the dominant factor in determining soil development and plant community for any other habitat > 10 m wide occurring at least partly in the circle? This includes areas at least annually saturated with or covered by water, areas dotted with small ponds, and areas with obligate wetland plants or numerous facultative wetland species (see NWI wetland indicator lists). If YES, this is a separate wetland habitat. Use NWI Key to determine wetland class and fill out HABITAT DESCRIPTION form.
Other human disturbances	3. Is there a large patch of unvegetated ground, not associated with a water body, that is at least partly inside the 50-m circle? This can include rock, bare ground, or snow or ice with no protruding vegetation, but the patch must be at least 400 m² in size (11-m radius).
MINOR: Little evidence of disturbance, damage limited to small part of circle, or widespread but slight. Minor driver for succession. SEVERE: Damage obvious and widespread in circle, including killing or removing much of the vegetation or underlying substrate.	If YES, this is a separate habitat; fill out HABITAT DESCRIPTION form. 4. For any other parts of the 50-m radius circle, fill out one HABITAT DESCRIPTION form for each discrete non-wetland habitat type. DO NOT separate out components of common habitat mosaics (see instructions).
Damage resulting in widespread secondary succession.	For any of these habitats, is the soil very well drained, unable to hold moisture long after precipitation, and dry most of the year?



Land unit:	PANT	LAKE	
Block #:	-	<	

Date: SUNE 2013
Observers: + PLA'S RJB

Point #: GL#8
Habitat #____ of ____
% of circle: ____559/2

		CLASSIFICATION	
		floating or emergent vegeta	
		% vegetation cover. : Viereck:	
		vithout open water body. : Viereck:	
Solid be	drock tones, gra	2% vegetation. Bare soil Pervel Sand Viereck: NA	
		2% vegetation cover. : Viereck:	
TREE	DBH	DBH (in)	DBH (cm)
size class	Code	Coniterous Deciduous	Coniferous Deciduous

TREE	DBH	DBH	DBH (in)		(cm)
size class Cod		Coniferous	Deciduous	Coniferous	Deciduous
Seedling	1	< 1.0	< 1.0	< 2.5	< 2.5
Sapling	2	1.0-4.9	1.0-4.9	2.5-13	2.5-13
Poletimber	3	5-8.9	5-10.9	14-23	14-28
Small Sawtimber	4	9-19.9	11-19.9	23-49	28-49
Large Sawtimber	5	20-39.9	20-39.9	50-101	50-101
Giant Sawtimber	6	> 40	> 40	> 102	> 102

COVER CLASS CODES for	Code	% cover	Code	% cover
LARGEST TREES, SHRUBS,	0	None	4	6–25 %
NON-WOODY	1	<< 1 %	5	26-50 %
PLANTS, &	2	< 1 %	6	51-75 %
GROUND COVER	3	1-5 %	7	76-100 %

	VEGETATION
SINGLE-STEMME % TREE canopy c TREE LAYER spe 1.	ver: 90 % coniferous: 90 Largest tree
1. TSUMPR 2. PLANTS SHRUBS (Multiple	SAPLINGS, SEEDLINGS, OR DWARF TREES < 3 layer) % cover Avg. ht.(m) Avg. DBH class O
NON-WOODY PLANTS Graminoids Herbs Ferns Horsetails GROUND COVER Mosses/hepatics Lichens	Cover class Species (list by dominance) GRASS EPIANG: STRAMP OAK E KOOD FREN MOSS CLA POR

	TOPOGRAI	PHY		
Elevation (m)	Aspect N	No	Slope 4	10°
TOPOGRAPHIC POSIT	ON			
Summit	Highslope		☐ Bas	in
Ridge	Midslope		☐ Valley	
	☐ Lowslop	ре	☐ Plai	n
LOCAL FEATURES				
☐ Cliff/rock face	Step in s	slope	☐ Alluvia/moraine	
☐ Cut-bank	Floodpla	ain	☐ Dune	s
Other	,	/		/
PHOTO Roll/frame or Pirite I D # Facing No Facing Ea			acing South:	1/
I Facing No	st:None	F	acing West:	<u> </u>
Roll/frame or Digital ID # Facing Ea	None % of Se		The state of the s	V
Roll/frame or Digital ID # Facing Earling No Facing Earling Facing Earling No Facing N	None % of Se	Feverity	Yrs since of	listurbance
Roll/frame or Digital ID # Facing Early Facing Early Facing Early Facing Early Facing Early Facing Early Facing Facing No Facing No Facing No Facing No Facing No Facing No Facing No Facing No Facing No Facing No Facing No Facing No Facing No Facing No Facing No Facing No Facing No Facing No Facing No Facing Early No	None % of Se	Feverity	Yrs since of	listurbance
Roll/frame or Digital ID # Facing Roll Faci	None % of Se	Feverity	Yrs since c	listurbance
Roll/frame or Digital ID # Facing Roll Pacing Facing Roll Facing Rol	None % of Se	Feverity	Yrs since o	listurbance
Roll/frame or Digital ID # Facing Roll/frame or Fac	None % of Se	Feverity	Yrs since o	listurbance
Roll/frame or Digital ID # Facing Roll/frame or Fac	None % of Se	Feverity	Yrs since o	listurbance
Roll/frame or Digital ID # Facing No Facing Early Facing	None % of Se	Feverity	Yrs since o	listurbance
Roll/frame or Digital ID # Facing Roll/frame or Fac	None % of Se	Feverity	Yrs since o	listurbance
Roll/frame or Digital ID # Facing Roll/frame or Digital ID # Facing Earling Roll/frame or Fac	None % of Secircle	Feverity	Yrs since c	listurbance

ALMS HABITAT POINT DATA	Date: Solve 2003 Block #: Point #: 61#8
TOPOGRAPHY	COARSE WOODY DEBRIS (Within 50-m radius circle)
Elevation (m) Aspect NO Slope O Slope	No. coniferous snags:
☐ Lowslope ☐ Plain	(Answer all questions for each point.)
LOCAL FEATURES Cliff/rock face Floodplain Other	1. Is there a water body at least partly inside the 50-m radius circle? A. If YES, indicate the water type, shore type, and shore vegetation. Water type: Shore type and vegetation: Marine Bedrock, boulders, large stones
PHOTO Roll/frame or Digital ID # Facing North: Facing South: Facing West:	☐ Estuarine ☐ Organic material, mud, sand, gravel, cobbles☐ River/Stream ☐ < 30% vegetated☐ Lake/Pond☐ > 30% vegetated☐
Type Severity circle code Seve	B. Is the water body at least 10 m wide? If YES, this is wetland habitat. If part of water body is vegetated and part unvegetated, there may be > 1 habitat. Use NWI Key to determine wetland classes and fill out HABITAT DESCRIPTION form for each one.
Insect damage	2. Apart from water bodies described above, is saturation with water the dominant factor in determining soil development and plant community for any other habitat > 10 m wide occurring at least partly in the circle? This includes areas at least annually saturated with or covered by water, areas dotted with small ponds, and areas with obligate wetland plants or numerous facultative wetland species (see NWI wetland indicator lists). If YES, this is a separate wetland habitat. Use NWI Key to determine wetland class and fill out HABITAT DESCRIPTION form.
Other human disturbances	3. Is there a large patch of unvegetated ground, not associated with a water body, that is at least partly inside the 50-m circle? This can include rock, bare ground, or snow or ice with no protruding vegetation, but the patch must be at least 400 m² in size (11-m radius).
MINOR: Little evidence of disturbance, damage limited to small part of circle, or widespread but slight. Minor driver for succession. SEVERE: Damage obvious and widespread in circle, including	If YES, this is a separate habitat; fill out HABITAT DESCRIPTION form. 4. For any other parts of the 50-m radius circle, fill out one HABITAT DESCRIPTION form for each discrete non-wetland habitat type. DO NOT separate out components of common habitat mosaics (see instructions).
killing or removing much of the vegetation or underlying substrate. Damage resulting in widespread secondary succession.	For any of these habitats, is the soil very well drained, unable to hold moisture long after precipitation, and dry most of the year?



ALMS HABITAT DESCRIPTION

Land unit: SPANT	LAKE
Block #:	/

Date:	150	ME	2013
Observe	ers:_	ARA	PR

Point #: GU#8
Habitat #_2_ of _2
% of circle: _45

CLASSIFICATION
1. Water body with no floating or emergent vegetation. NWI: Kessel: Viereck: _NA
2. Water body with > 2% vegetation cover. NWI: Kessel: Viereck:
3. Vegetated wetland without open water body. NWI: Kessel: Viereck:
 4. Non-wetland with < 2% vegetation. Solid bedrock ☐ Bare soil ☐ Persistent snow or ice Rocks, stones, gravel ☐ Sand NWI: NA Kessel: Viereck: NA
5. Non-wetland with > 2% vegetation cover. NWI: NA Kessel: Viereck:

TREE	DBH	DBH (in)		DBH (cm)	
size class	Code	Coniferous	Deciduous	Coniferous	Deciduous
Seedling	1	< 1.0	< 1.0	< 2.5	< 2.5
Sapling	2	1.0-4.9	1.0-4.9	2.5-13	2.5-13
Poletimber	3	5-8.9	5-10.9	14-23	14-28
Small Sawtimber	4	9-19.9	11-19.9	23-49	28-49
Large Sawtimber	5	20-39.9	20-39.9	50-101	50-101
Giant Sawtimber	6	> 40	> 40	> 102	> 102

COVER CLASS CODES for	Code	% cover	Code	% cover	
LARGEST TREES, SHRUBS,	0	None	4	6-25 %	
NON-WOODY	1	<< 1 %	5	26-50 %	
PLANTS, &	2	< 1 %	6	51-75 %	
GROUND COVER	3	1-5 %	7	76-100 %	

	VEGETATION	
SINGLE-STEMMED % TREE canopy co	ver: 65 % coniferous: 30	Largest trees
TREE LAYER spect 1. PCMRR 2. REPAR 3. 4.		DBH Cover class
	O SAPLINGS, SEEDLINGS, OR DWAF layer) % cover Avg. ht.(m) A	RF TREES < 3 m avg. DBH class
SHRUBS (Multiple-Layer Avg. ht.(m) 1.	stemmed, woody plants) Cover class Species (list for each layer) MENTER RIRTRI RUBARC VACULI	
NON-WOODY PLANTS Graminoids Herbs Ferns Horsetails	Cover class Species (list by dominance)
GROUND COVER Mosses/hepatics Lichens Litter Bare ground	7 MOSS 0 LEAVES STICKS	

ALMS HABITAT POINT DATA	Date: SPAN LACE Block #: Point #: 61#8				
TOPOGRAPHY ,	COARSE WOODY DEBRIS (Within 50-m radius circle)				
Elevation (m) Aspect Slope Slope TOPOGRAPHIC POSITION Summit Highslope Basin	No. coniferous snags: 1 2 3-4 5-6 7-9 10-12 >12 No. deciduous snags: 1 2 3-4 5-6 7-9 10-12 >12 % cover downed logs: 0 1 1-5 6-25 26-50 51-75 76-100%				
Ridge Midslope Valley Lowslope Plain	HABITAT QUESTIONNAIRE (Answer all questions for each point.)				
LOCAL FEATURES Cliff/rock face Step in slope Alluvia/moraine Cut-bank Floodplain Dunes Other PHOTO Roll/frame or Digital ID # Facing North: Facing South: Facing West:	1. Is there a water body at least partly inside the 50-m radius circle? A. If YES, indicate the water type, shore type, and shore vegetation. Water type: Shore type and vegetation: Marine Bedrock, boulders, large stones Estuarine Organic material, mud, sand, gravel, cobbles River/Stream Solve vegetated Lake/Pond Solve vegetated				
Type Circle Code Yrs since disturbance Very Circle Code Yrs since disturbance Yrs since disturbance < 2 > 2 # if known	B. Is the water body at least 10 m wide? If YES, this is wetland habitat. If part of water body is vegetated and part unvegetated, there may be > 1 habitat. Use NWI Key to determine				
Insect damage Disease Beaver ponds Beaver cuttings Other animal activity Fire Flooding Wind Landslide/avalanche Logging Roads Other human disturbances Other	wetland classes and fill out HABITAT DESCRIPTION form for each one. 2. Apart from water bodies described above, is saturation with water the dominant factor in determining soil development and plant community for any other habitat > 10 m wide occurring at least partly in the circle? This includes areas at least annually saturated with or covered by water, areas dotted with small ponds, and areas with obligate wetland plants or numerous facultative wetland species (see NWI wetland indicator lists). If YES, this is a separate wetland habitat. Use NWI Key to determine wetland class and fill out HABITAT DESCRIPTION form.				
Other human disturbances	3. Is there a large patch of unvegetated ground, not associated with a water body, that is at least partly inside the 50-m circle? This can include rock, bare ground, or snow or ice with no protruding vegetation, but the patch must be at least 400 m² in size (11-m radius).				
MINOR: Little evidence of disturbance, damage limited to small part of circle, or widespread but slight. Minor driver for succession. SEVERE: Damage obvious and widespread in circle, including killing or removing much of the vegetation or underlying substrate. Damage resulting in widespread secondary succession.	1 KVES 41: 1				

ALMS

HABITAT DESCRIPTION

Land unit: GRANT LAKE
Block #:

Date: 15 JUNE 2015 Observers: APA; LIB Point #: 6 4 2
Habitat # of % of circle: 60

CLASSIFICATION
1. Water body with no floating or emergent vegetation. NWI: Kessel: Viereck: _NA
2. Water body with > 2% vegetation cover. NWI: Kessel: Viereck:
3. Vegetated wetland without open water body. NWI: Kessel: Viereck:
 □ 4. Non-wetland with < 2% vegetation. □ Solid bedrock □ Bare soil □ Persistent snow or ice □ Rocks, stones, gravel □ Sand NWI: NA Kessel: Viereck: NA
5. Non-wetland with > 2% vegetation cover. NWI: NA Kessel: Viereck:

TREE	DBH	DBH (in)		DBH (cm)	
size class	Code Coniferous Deciduous		Coniferous	Deciduous	
Seedling	1	< 1.0	< 1.0	< 2.5	< 2.5
Sapling	2	1.0-4.9	1.0-4.9	2.5-13	2.5-13
Poletimber	3	5-8.9	5-10.9	14-23	14-28
Small Sawtimber	4	9-19.9	11-19.9	23-49	28-49
Large Sawtimber	5	20-39.9	20-39.9	50-101	50-101
Giant Sawtimber	6	> 40	> 40	> 102	> 102

COVER CLASS CODES for	Code	% cover	Code	% cover
LARGEST TREES, SHRUBS,	0	None	4	6–25 %
NON-WOODY	1	<< 1 %	5	26-50 %
PLANTS, &	2	< 1 %	6	51-75 %
GROUND COVER	3	1-5 %	7	76-100 %

VEGETATION
SINGLE-STEMMED TREES > 3 m % TREE canopy cover: \(\sqrt{\text{\text{\$0\$}}} \) % coniferous: \(\sqrt{\text{\text{\$0\$}}} \) \(\sqrt{\text{\$0\$}} \) \(\sqrt{\text{\$1\$}} \) \(\sqrt{\text{\$1\$}} \) \(\sqrt{\text{\$2\$}} \) \(\sqrt{\text{\$1\$}} \) \(\sqrt{\text{\$1\$}} \) \(\sqrt{\text{\$2\$}} \) \
3
1. OLA 2. OLA 3. OLA 4. OLA VACULI NON-WOODY PLANTS Graminoids Herbs Species (list by dominance) GRASS Species (list by dominance)
Ferns Horsetails GROUND COVER Mosses/hepatics Lichens Litter Bare ground Ephemeral snow

ALMS HABITAT POINT DATA	Date: SPANT LAVE Block #: Bloc				
TOPOGRAPHY	COARSE WOODY DEBRIS (Within 50-m radius circle)				
Elevation (m) Aspect O Slope O Slope TOPOGRAPHIC POSITION Summit Highslope Basin	No. coniferous snags: 1 2 3-4 5-6 7-9 10-12 >12 No. deciduous snags: 1 2 3-4 5-6 7-9 10-12 >12 % cover downed logs: <<1 1 1-5 6-25 26-50 51-75 76-10				
Ridge Midslope Valley Lowslope Plain	HABITAT QUESTIONNAIRE (Answer all questions for each point.)				
LOCAL FEATURES Cliff/rock face Step in slope Alluvia/moraine Cut-bank Floodplain Dunes Other PHOTO Roll/frame or Digital ID # Facing North: Facing South: Facing West:	1. Is there a water body at least partly inside the 50-m radius circle? A. If YES, indicate the water type, shore type, and shore vegetation. Water type: Shore type and vegetation: Marine Bedrock, boulders, large stones Estuarine Organic material, mud, sand, gravel, cobbles River/Stream 				
Type Circle Code Yrs since disturbance	B. Is the water body at least 10 m wide? If YES, this is wetland habitat. If part of water body is vegetated and part unvegetated, there may be > 1 habitat. Use NWI Key to determine wetland classes and fill out HABITAT DESCRIPTION form for each one.				
Insect damage	2. Apart from water bodies described above, is saturation with water the dominant factor in determining soil development and plant community for any other habitat > 10 m wide occurring at least partly in the circle? This includes areas at least annually saturated with or covered by water, areas dotted with small ponds, and areas with obligate wetland plants or numerous facultative wetland species (see NWI wetland indicator lists). If YES, this is a separate wetland habitat. Use NWI Key to determine wetland class and fill out HABITAT DESCRIPTION form.				
Other human disturbances	3. Is there a large patch of unvegetated ground, not associated with a water body, that is at least partly inside the 50-m circle? This can include rock, bare ground, or snow or ice with no protruding vegetation, but the patch must be at least 400 m² in size (11-m radius).				
MINOR: Little evidence of disturbance, damage limited to small part of circle, or widespread but slight. Minor driver for succession. SEVERE: Damage obvious and widespread in circle, including killing or removing much of the vegetation or underlying substrate. Damage resulting in widespread secondary succession.	If VEC this is a separate helitate fill and HADITAT DESCRIPTION forms				



ALMS HABITAT DESCRIPTION

Land unit: GRANT Block #:

Date: S June
Observers: As A

Point #: 600 Point

CLASSIFICATION	
1. Water body with no floating or emergent vegetation. NWI: Kessel: Viereck: _NA	
2. Water body with > 2% vegetation cover. NWI: Kessel: Viereck:	
3. Vegetated wetland without open water body. NWI: Kessel: Viereck:	
4. Non-wetland with < 2% vegetation. Solid bedrock Bare soil Persistent snow or ice Rocks, stones, gravel Sand NWI: NA Kessel: Viereck: NA 5. Non-wetland with > 2% vegetation cover. NWI: NA Kessel: Viereck: Viereck: Land	

TREE	DBH	DBH (in)		DBH (cm)	
size class	Code	Coniferous	Deciduous	Coniferous	Deciduous
Seedling	1	< 1.0	< 1.0	< 2.5	< 2.5
Sapling	2	1.0-4.9	1.0-4.9	2.5-13	2.5-13
Poletimber	3	5-8.9	5-10.9	14-23	14-28
Small Sawtimber	4	9-19.9	11-19.9	23-49	28-49
Large Sawtimber	5	20-39.9	20-39.9	50-101	50-101
Giant Sawtimber	6	> 40	> 40	> 102	> 102

COVER CLASS CODES for	Code	% cover	Code	% cover	
LARGEST TREES, SHRUBS,	0	None	4	6-25 %	
NON-WOODY	1	<< 1 %	5	26-50 %	
PLANTS, &	. 2	< 1 %	6	51-75 %	
GROUND COVER	3	1-5 %	7	76-100 %	

	VEGETATION
-	SINGLE-STEMMED TREES > 3 m % TREE canopy cover: 95 % coniferous: 30 Largest trees
	Avg. ht. (m) DBH Cover Class Class
	SINGLE-STEMMED SAPLINGS, SEEDLINGS, OR DWARF TREES < 3 m Species (list for each layer) % cover Avg. ht.(m) Avg. DBH class 1. PCMAR 2. 3 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	SHRUBS (Multiple-stemmed, woody plants) Layer Avg. ht.(m) Cover class Species (list for each layer) 1. Species (list for each layer) MENTER EMPNIG: 3. DI A VACVIT RUBCHA
	NON-WOODY PLANTS Cover class Species (list by dominance) Graminoids Herbs Ferns Horsetails
	GROUND COVER Mosses/hepatics Lichens Litter Bare ground Ephemeral snow

ALMS HABITAT POINT DATA	Date: 5 ME 2013 Block #: Point #: GL#6 Observers: Point #: GL#6
TOPOGRAPHY	COARSE WOODY DEBRIS (Within 50-m radius circle)
Elevation (m) Aspect Slope 35 ° TOPOGRAPHIC POSITION Summit Highslope Basin	No. coniferous snags: ■ 1 □ 2 □ 3-4 □ 5-6 □ 7-9 □ 10-12 □ >12 No. deciduous snags: □ 1 ■ 2 □ 3-4 □ 5-6 □ 7-9 □ 10-12 □ >12 % cover downed logs: ■ < 1 □ < 1 □ 1-5 □ 6-25 □ 26-50 □ 51-75 □ 76-100%
Ridge Midslope Valley Lowslope Plain	HABITAT QUESTIONNAIRE (Answer all questions for each point.)
LOCAL FEATURES Cliff/rock face Step in slope Alluvia/moraine Cut-bank Floodplain Dunes Other PHOTO Roll/frame or Digital ID # Facing East: Facing West:	1. Is there a water body at least partly inside the 50-m radius circle? A. If YES, indicate the water type, shore type, and shore vegetation. Water type: Shore type and vegetation: Marine Bedrock, boulders, large stones Stuarine Organic material, mud, sand, gravel, cobbles River/Stream Solve vegetated Lake/Pond Solve vegetated
Type Severity Circle Code Seve	B. Is the water body at least 10 m wide? If YES, this is wetland habitat. If part of water body is vegetated and part unvegetated, there may be > 1 habitat. Use NWI Key to determine wetland classes and fill out HABITAT DESCRIPTION form for each one.
Insect damage	2. Apart from water bodies described above, is saturation with water the dominant factor in determining soil development and plant community for any other habitat > 10 m wide occurring at least partly in the circle? This includes areas at least annually saturated with or covered by water, areas dotted with small ponds, and areas with obligate wetland plants or numerous facultative wetland species (see NWI wetland indicator lists). If YES, this is a separate wetland habitat. Use NWI Key to determine wetland class and fill out HABITAT DESCRIPTION form.
Other human disturbances	3. Is there a large patch of unvegetated ground, not associated with a water body, that is at least partly inside the 50-m circle? This can include rock, bare ground, or snow or ice with no protruding vegetation, but the patch must be at least 400 m² in size (11-m radius).
MINOR: Little evidence of disturbance, damage limited to small par of circle, or widespread but slight. Minor driver for succession. SEVERE: Damage obvious and widespread in circle, including killing or removing much of the vegetation or underlying substrate. Damage resulting in widespread secondary succession.	If YES, this is a separate habitat; fill out HABITAT DESCRIPTION form. 4. For any other parts of the 50-m radius circle, fill out one HABITAT DESCRIPTION form for each discrete non-wetland habitat type. DO NOT separate out components of common habitat mosaics (see instructions). For any of these habitats, is the soil very well drained, unable to hold moisture long after precipitation, and dry most of the year?

ALMS HABITAT DESCRIPTION

Land unit: SPANT LAKES
Block #:

Date: \5	JUNE	2013
Observers:	48A:	RUB

Point #: 6 % of circle: IDD

CLASSIFICATION
1. Water body with no floating or emergent vegetation. NWI: Kessel: Viereck: _NA
2. Water body with > 2% vegetation cover. NWI: Kessel: Viereck:
3. Vegetated wetland without open water body. NWI: Kessel: Viereck:
☐ 4. Non-wetland with < 2% vegetation. ☐ Solid bedrock ☐ Bare soil ☐ Persistent snow or ice ☐ Rocks, stones, gravel ☐ Sand
NWI: NA Kessel: Viereck: NA 5. Non-wetland with > 2% vegetation cover. NWI: NA Kessel: Viereck: Vier

TREE	DBH	DBH (in)		DBH (cm)	
size class	Code	Coniferous	Deciduous	Coniferous	Deciduous
Seedling	1	< 1.0	< 1.0	< 2.5	< 2.5
Sapling	2	1.0-4.9	1.0-4.9	2.5-13	2.5-13
Poletimber	3	5-8.9	5-10.9	14-23	14-28
Small Sawtimber	4	9-19.9	11-19.9	23-49	28-49
Large Sawtimber	5	20-39.9	20-39.9	50-101	50-101
Giant Sawtimber	6	> 40	> 40	> 102	> 102

COVER CLASS CODES for	Code	% cover	Code	% cover
LARGEST TREES, SHRUBS,	0	None	4	6-25 %
NON-WOODY	1	<< 1 %	5	26-50 %
PLANTS, &	2	< 1 %	6	51-75 %
GROUND COVER	3	1-5 %	7	76-100 %

	VI	EGETAT	ION			
SINGLE-STEMME % TREE canopy c	1	% conifero			Larges	st trees
TREE LAYER spe 1. BETPAP 2. PAGA 3. 4.			Avg. ht. (m) 5-9 9-21 >	21	DBH class	Cover class
SINGLE-STEMME Species (list for each 1. Ruguh 2.						
SHRUBS (Multiple Layer Avg. ht.(m) 1.				ayer)	41	
NON-WOODY PLANTS Graminoids Herbs Ferns Horsetails	Cover class	GRASS	list by domin	OLA	RN)	
GROUND COVER Mosses/hepatics Lichens Litter Bare ground	700	MOS	S / STIC	KS.		

ALMS HABITAT POINT DATA	Land unit: SPANT LIKE Date: SPANT LIKE Point #: 6L#9				
TOPOGRAPHY	COARSE WOODY DEBRIS (Within 50-m radius circle)				
Elevation (m) Aspect NW Slope 5 ° TOPOGRAPHIC POSITION Summit Highslope Basin	No. coniferous snags: □ 1 □ 2 □ 3-4 □ 5-6 □ 7-9 □ 10-12 □ >12 No. deciduous snags: □ 1 □ 2 □ 3-4 □ 5-6 □ 7-9 □ 10-12 □ >12 % cover downed logs: □ << 1 □ << 1 □ 1-5 □ 6-25 □ 26-50 □ 51-75 □ 76-100%				
Ridge Midslope Valley Lowslope Plain	HABITAT QUESTIONNAIRE (Answer all questions for each point.)				
LOCAL FEATURES Cliff/rock face Step in slope Alluvia/moraine Dunes Other Facing North: Facing South: Facing West: Facing West:	1. Is there a water body at least partly inside the 50-m radius circle? A. If YES, indicate the water type, shore type, and shore vegetation. Water type: Shore type and vegetation: Marine Bedrock, boulders, large stones Estuarine Organic material, mud, sand, gravel, cobbles River/Stream < 30% vegetated				
DISTURBANCE None % of Severity circle code <2 >2 # if known Insect damage	B. Is the water body at least 10 m wide? If YES, this is wetland habitat. If part of water body is vegetated and part unvegetated, there may be > 1 habitat. Use NWI Key to determine				
Insect damage Disease Beaver ponds Beaver cuttings Other animal activity Fire Flooding Wind Landslide/avalanche Logging Roads Other human disturbances	wetland classes and fill out HABITAT DESCRIPTION form for each one. 2. Apart from water bodies described above, is saturation with water the dominant factor in determining soil development and plant community for any other habitat > 10 m wide occurring at least partly in the circle? This includes areas at least annually saturated with or covered by water, areas dotted with small ponds, and areas with obligate wetland plants or numerous facultative wetland species (see NWI wetland indicator lists). If YES, this is a separate wetland habitat. Use NWI Key to determine wetland class and fill out HABITAT DESCRIPTION form. 3. Is there a large patch of unvegetated ground, not associated with a water				
Other DISTURBANCE SEVERITY CODES	body, that is at least partly inside the 50-m circle? This can include rock, bare ground, or snow or ice with no protruding vegetation, but the patch must be at least 400 m² in size (11-m radius).				
MINOR: Little evidence of disturbance, damage limited to small part of circle, or widespread but slight. Minor driver for succession. SEVERE: Damage obvious and widespread in circle, including killing or removing much of the vegetation or underlying substrate. Damage resulting in widespread secondary succession.	If YES, this is a separate habitat; fill out HABITAT DESCRIPTION form. 4. For any other parts of the 50-m radius circle, fill out one HABITAT DESCRIPTION form for each discrete non-wetland habitat type. DO NOT separate out components of common habitat mosaics (see instructions). For any of these habitats, is the soil very well drained, unable to hold moisture long after precipitation, and dry most of the year?				

ALMS HABITAT DESCRIPTION

Land unit: GRANT
Block #:

Date: 6 M

Point #: 6/#7
Habitat # of 8
% of circle: 100

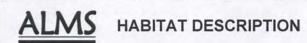
CLASSIFICATION
1. Water body with no floating or emergent vegetation. NWI: Kessel: Viereck:NA GRANT OREEK.
2. Water body with > 2% vegetation cover. NWI: Kessel: Viereck:
3. Vegetated wetland without open water body. NWI: Kessel: Viereck:
 □ 4. Non-wetland with < 2% vegetation. □ Solid bedrock □ Bare soil □ Persistent snow or ice □ Rocks, stones, gravel □ Sand NWI: NA Kessel: Viereck: NA
5. Non-wetland with > 2% vegetation cover. NWI: NA Kessel: Viereck:

TREE	DBH	DBH (in)		DBH (cm)	
size class	Code	Coniferous	Deciduous	Coniferous	Deciduous
Seedling	1	< 1.0	< 1.0	< 2.5	< 2.5
Sapling	2	1.0-4.9	1.0-4.9	2.5-13	2.5-13
Poletimber	3	5-8.9	5-10.9	14-23	14-28
Small Sawtimber	4	9-19.9	11-19.9	23-49	28-49
Large Sawtimber	5	20-39.9	20-39.9	50-101	50-101
Giant Sawtimber	6	> 40	> 40	> 102	> 102

COVER CLASS CODES for	Code	% cover	Code	% cover	
LARGEST TREES, SHRUBS,	0	None	4	6–25 %	
NON-WOODY	1	<< 1 %	5	26-50 %	
PLANTS, &	2	< 1 %	6	51-75 %	
GROUND COVER	3	1-5 %	7	76-100 %	

		7
	VEGETATION	
SINGLE-STEMMED % TREE canopy cov	er: <u>65</u> % coniferous: <u>20</u>	Largest trees
TREE LAYER specie 1. BETHY 2. PCGUA 3. POPBAL 4.	Avg. ht. (m) 3-5 5-9 9-21 > 2 20	DBH Cover
SINGLE-STEMMED Species (list for each la 1. Perport 2. Pigus	SAPLINGS, SEEDLINGS, OR DW ayer) % cover Avg. ht.(m)	ARF TREES < 3 m Avg. DBH class
SHRUBS (Multiple-s Layer Avg. ht.(m) Control 1.	temmed, woody plants) cover class Species (list for each lay VIBEDU RUBTRI OPLIDR ROSACE	ver)
NON-WOODY PLANTS Graminoids Herbs Ferns Horsetails	Species (list by dominant GLAS) A HOLAN DOM THE CONTROL OF THE CO	NG'STRAMP, F
GROUND COVER Mosses/hepatics Lichens Litter Bare ground Enhemeral snow	A MOSS LEAVES STICKS	S.

ALMS HABITAT POINT DATA	Date: Block #: Point #: GL# 7 Observers: Point #: GL# 7
TOPOGRAPHY	COARSE WOODY DEBRIS (Within 50-m radius circle)
Elevation (m) Aspect O Slope O TOPOGRAPHIC POSITION Summit Highslope Basin	No. coniferous snags: □ 1 □ 2 □ 3-4 □ 5-6 □ 7-9 □ 10-12 □ *12 No. deciduous snags: □ 1 □ 2 □ 3-4 □ 5-6 □ 7-9 □ 10-12 □ >12 % cover downed logs: □ << 1 □ << 1 □ 1-5 □ 6-25 □ 26-50 □ 51-75 □ 76-100%
☐ Ridge ☐ Midslope ☐ Valley ☐ Lowslope ☐ Plain	HABITAT QUESTIONNAIRE (Answer all questions for each point.)
LOCAL FEATURES Cliff/rock face Step in slope Alluvia/moraine Cut-bank Floodplain Dunes Other PHOTO Roll/frame or Facing North: Facing South:	1. Is there a water body at least partly inside the 50-m radius circle? A. If YES, indicate the water type, shore type, and shore vegetation. Water type: Shore type and vegetation: Marine Bedrock, boulders, large stones Estuarine Organic material, mud, sand, gravel, cobbles
Digital ID # Facing East: Facing West: DISTURBANCE None % of Severity circle code	River/Stream
Insect damage Disease Beaver ponds Beaver cuttings Other animal activity Fire Flooding Wind Landslide/avalanche Logging	part unvegetated, there may be > 1 habitat. Use NWI Key to determine wetland classes and fill out HABITAT DESCRIPTION form for each one. 2. Apart from water bodies described above, is saturation with water the dominant factor in determining soil development and plant community for any other habitat > 10 m wide occurring at least partly in the circle? This includes areas at least annually saturated with or covered by water, areas dotted with small ponds, and areas with obligate wetland plants or numerous facultative wetland species (see NWI wetland indicator lists). If YES, this is a separate wetland habitat. Use NWI Key to determine wetland class and fill out HABITAT DESCRIPTION form.
Roads Other human disturbances Other DISTURBANCE SEVERITY CODES	3. Is there a large patch of unvegetated ground, not associated with a water body, that is at least partly inside the 50-m circle? This can include rock, bare ground, or snow or ice with no protruding vegetation, but the patch must be at least 400 m² in size (11-m radius).
MINOR: Little evidence of disturbance, damage limited to small part of circle, or widespread but slight. Minor driver for succession. SEVERE: Damage obvious and widespread in circle, including killing or removing much of the vegetation or underlying substrate. Damage resulting in widespread secondary succession.	If YES, this is a separate habitat; fill out HABITAT DESCRIPTION form. 4. For any other parts of the 50-m radius circle, fill out one HABITAT DESCRIPTION form for each discrete non-wetland habitat type. DO NOT separate out components of common habitat mosaics (see instructions). For any of these habitats, is the soil very well drained, unable to hold moisture long after precipitation, and dry most of the year?



Land unit:	GRANT LAKE
Block #:	

Date: 16 SUME 2013
Observers: APA: RJB

Point #: ______ of ____ Habitat # _____ of ____ % of circle: ______

CLASSIFICATION
1. Water body with no floating or emergent vegetation. NWI: Kessel: Viereck: _NA
2. Water body with > 2% vegetation cover. NWI: Kessel: Viereck:
3. Vegetated wetland without open water body. NWI: Kessel: Viereck:
□ 4. Non-wetland with < 2% vegetation. □ Solid bedrock □ Bare soil □ Persistent snow or ice □ Rocks, stones, gravel □ Sand
NWI: NA Kessel: Viereck: NA 5. Non-wetland with > 2% vegetation cover. NWI: NA Kessel: Viereck: Vier

TREE DBH size class Code		DBH	H (in)	DBH (cm)	
		Coniferous	Deciduous	Coniferous	Deciduous
Seedling	1	< 1.0	< 1.0	< 2.5	< 2.5
Sapling	2	1.0-4.9	1.0-4.9	2.5-13	2.5-13
Poletimber	3	5-8.9	5-10.9	14-23	14-28
Small Sawtimber	4	9-19.9	11-19.9	23-49	28-49
Large Sawtimber	5	20-39.9	20-39.9	50-101	50-101
Giant Sawtimber	6	> 40	> 40	> 102	> 102

COVER CLASS CODES for	Code	% cover		Code	% cover	
LARGEST TREES, SHRUBS,	0	None		4	6-25 %	
NON-WOODY	1	<< 1 %		5	26-50 %	
PLANTS, &	2	< 1 %	-	6	51-75 %	
GROUND COVER	3	1–5 %		7	76–100 %	

VEGETATION
% TREE canopy cover: 45 % coniferous: 46 Avg. ht. (m) Largest trees DBH Cover
TREE LAYER species % cover 3-5 5-9 9-21 > 21 class class 1. BOTPAP
SINGLE-STEMMED SAPLINGS, SEEDLINGS, OR DWARF TREES < 3 m Species (list for each layer) % cover Avg. ht.(m) Avg. DBH class 1
 SHRUBS (Multiple-stemmed, woody plants) Layer Avg. ht.(m) Cover class Species (list for each layer) 1.
NON-WOODY PLANTS Cover class Graminoids Herbs Ferns Horsetails A SPISP Species (list by dominance) A SPISP Species (list by dominance) A SPISP Species (list by dominance) A SPISP Species (list by dominance) A SPISP Species (list by dominance) A SPISP Species (list by dominance) A SPISP Species (list by dominance) A SPISP Species (list by dominance) A SPISP Species (list by dominance)
GROUND COVER Mosses/hepatics Lichens Litter Bare ground Ephemeral snow

ALMS HAB	ITAT POINT DA	ATA	Date: APA RIB	
	TOPOGRAPHY		COARSE WOODY DEBI	
Elevation (m) TOPOGRAPHIC POSIT Summit	Aspect° ION Highslope	Slope O Slope Basin	No. coniferous snags: ☐ 1 ☐ 2 ☐ 3- No. deciduous snags: ☐ 1 ☐ 2 ☐ 3- % cover downed logs: ☐ << 1 ☐ < 1 ☐ 1-	
Ridge	☐ Midslope ☐ Lowslope	☐ Valley ☐ Plain	HABITAT QU (Answer all quest	
PHOTO Roll/frame or		Alluvia/moraine Dunes acing South:	1. Is there a water body at least partly insi A. If YES, indicate the water type, show the water type. Water type: Marine Bedrock, both the water type and the water type and the water type. Shore type and the water type, show the water type, show the water type, show the water type, show the water type, show the water type.	
DISTURBANCE None % of Severity circle code None % of Severity circle code None % of Severity circle code None % of Severity circle code None % of Severity circle code None % of Severity circle code None % of Severity circle code None % of Severity circle code % of Sever			B. Is the water body at least 10 m wide If YES, this is wetland habitat. If pa part unvegetated, there may be > 1	
			wetland classes and fill out HABITA 2. Apart from water bodies described abodominant factor in determining soil devany other habitat > 10 m wide occurring includes areas at least annually satura dotted with small ponds, and areas with numerous facultative wetland species.	
Landslide/avalanche Logging Roads Other human disturbances Other	1/A 2		If YES, this is a separate wetland habit wetland class and fill out HABITAT DE 3. Is there a large patch of unvegetated gr body, that is at least partly inside the 5	
	BANCE SEVERITY		bare ground, or snow or ice with no promust be at least 400 m ² in size (11-m r	
		MINOR: Little evidence of disturbance, damage limited to small part of circle, or widespread but slight. Minor driver for succession.		

Block #:_ Point #: RIS (Within 50-m radius circle) 7-9 5-6 □ 10-12 □ >12 7-9 □ 10-12 □ >12 5-6 № 6-25 26-50 ☐ 51-75 ☐ 76-100% **ESTIONNAIRE** ons for each point.) YES NO. de the 50-m radius circle? e type, and shore vegetation. vegetation: oulders, large stones terial, mud, sand, gravel, cobbles etated etated rt of water body is vegetated and habitat. Use NWI Key to determine T DESCRIPTION form for each one. ve, is saturation with water the elopment and plant community for at least partly in the circle? This ed with or covered by water, areas obligate wetland plants or see NWI wetland indicator lists). at. Use NWI Key to determine SCRIPTION form. ound, not associated with a water 0-m circle? This can include rock, truding vegetation, but the patch adius). HABITAT DESCRIPTION form. circle, fill out one HABITAT DESCRIPTION form for each discrete non-wetland habitat type. DO NOT separate out components of common habitat mosaics (see instructions). For any of these habitats, is the soil very well drained, unable to hold X moisture long after precipitation, and dry most of the year?

2 SEVERE: Damage obvious and widespread in circle, including

Damage resulting in widespread secondary succession.

killing or removing much of the vegetation or underlying substrate.

ALMS HABITAT DESCRIPTION

Land unit: GRANT LAKE
Block #:

Date: 6 July 2013 Observers: ARA RAB

CLASSIFICATION	
1. Water body with no floating or emergent vegetation. NWI: Kessel: Viereck: _NA	
2. Water body with > 2% vegetation cover. NWI: Kessel: Viereck:	
3. Vegetated wetland without open water body. NWI: Kessel: Viereck:	
 □ 4. Non-wetland with < 2% vegetation. □ Solid bedrock □ Bare soil □ Persistent snow or ice □ Rocks, stones, gravel □ Sand 	
NWI: NA Kessel: Viereck: NA 5. Non-wetland with > 2% vegetation cover. NWI: NA Kessel: Viereck: Viereck:	

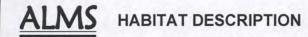
DBH	DBH	l (in)	DBH (cm)	
Code	Coniferous	Deciduous	Coniferous	Deciduous
1	< 1.0	< 1.0	< 2.5	< 2.5
2	1.0-4.9	1.0-4.9	2.5-13	2.5-13
3	5-8.9	5-10.9	14-23	14-28
4	9-19.9	11-19.9	23-49	28-49
5	20-39.9	20-39.9	50-101	50-101
6	> 40	> 40	> 102	> 102
	1 2 3 4 5	Code Coniferous 1 < 1.0 2 1.0–4.9 3 5–8.9 4 9–19.9 5 20–39.9	Code Coniferous Deciduous 1 < 1.0	Code Coniferous Deciduous Coniferous 1 < 1.0

COVER CLASS CODES for	Code	% cover	Code	% cover	
LARGEST TREES, SHRUBS,	0	None	4	6-25 %	- 7
NON-WOODY	1	<< 1 %	5	26-50 %	
PLANTS, &	2	< 1 %	6	51-75 %	
GROUND COVER	3	1–5 %	7	76–100 %	

	VEGETATION	
	SINGLE-STEMMED TREES > 3 m % TREE canopy cover: 90 % coniferous: 85 Avg. ht. (m) TREE LAYER species % cover 3-5 5-9 9-21 > 21 class class 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
	SINGLE-STEMMED SAPLINGS, SEEDLINGS, OR DWARF TREES < 3 m Species (list for each layer) % cover Avg. ht.(m) Avg. DBH class 1. PICGLA 2. BETTAP 2. SHRUBS (Multiple-stemmed, woody plants) Layer Avg. ht.(m) Cover class Species (list for each layer) 1. Sheep Species (list for each layer) 2. Sheep Species (list for each layer) 3. Sheep Species (list for each layer)	
	NON-WOODY PLANTS Cover class Graminoids Herbs Ferns Horsetails GROUND COVER Mosses/hepatics A LINBOR Species (list by dominance) GROUND COVER Mosses/hepatics	
-	Mosses/hepatics Lichens Litter Bare ground Ephemeral snow	

A		a c
Δ		
	1 V	12

ALMS HABITAT POINT DATA	Date: Point #: Point #:
TOPOGRAPHY ,	COARSE WOODY DEBRIS (Within 50-m radius circle)
Elevation (m) Aspect Solope O Slope O	No. coniferous snags: 1 2 3-4 5-6 7-9 10-12 >12 No. deciduous snags: 1 2 3-4 5-6 7-9 10-12 >12 % cover downed logs: 0 1 1-5 6-25 26-50 51-75 76-100%
Ridge Midslope Valley Lowslope Plain	HABITAT QUESTIONNAIRE (Answer all questions for each point.)
LOCAL FEATURES Cliff/rock face Step in slope Alluvia/moraine Cut-bank Floodplain Dunes Other PIVBL VAUDI-GRAM CLEEK	1. Is there a water body at least partly inside the 50-m radius circle? A. If YES, indicate the water type, shore type, and shore vegetation. Water type: Shore type and vegetation: Bedrock, boulders, large stones
PHOTO Roll/frame or Digital ID # Facing North: Facing South: Facing West:	☐ Estuarine ☐ Organic material, mud, sand, gravel, cobbles River/Stream ☐ < 30% vegetated ☐ Lake/Pond ☐ > 30% vegetated
Type Severity circle code Seve	B. Is the water body at least 10 m wide? If YES, this is wetland habitat. If part of water body is vegetated and part unvegetated, there may be > 1 habitat. Use NWI Key to determine wetland classes and fill out HABITAT DESCRIPTION form for each one.
Disease Beaver ponds Beaver cuttings Other animal activity Fire Flooding Wind Landslide/avalanche Logging Roads Other human disturbances Other	2. Apart from water bodies described above, is saturation with water the dominant factor in determining soil development and plant community for any other habitat > 10 m wide occurring at least partly in the circle? This includes areas at least annually saturated with or covered by water, areas dotted with small ponds, and areas with obligate wetland plants or numerous facultative wetland species (see NWI wetland indicator lists). If YES, this is a separate wetland habitat. Use NWI Key to determine wetland class and fill out HABITAT DESCRIPTION form.
Other human disturbances	3. Is there a large patch of unvegetated ground, not associated with a water body, that is at least partly inside the 50-m circle? This can include rock, bare ground, or snow or ice with no protruding vegetation, but the patch must be at least 400 m² in size (11-m radius).
MINOR: Little evidence of disturbance, damage limited to small part of circle, or widespread but slight. Minor driver for succession. SEVERE: Damage obvious and widespread in circle, including	If YES, this is a separate habitat; fill out HABITAT DESCRIPTION form. 4. For any other parts of the 50-m radius circle, fill out one HABITAT DESCRIPTION form for each discrete non-wetland habitat type. DO NOT separate out components of common habitat mosaics (see instructions).
killing or removing much of the vegetation or underlying substrate. Damage resulting in widespread secondary succession.	For any of these habitats, is the soil very well drained, unable to hold moisture long after precipitation, and dry most of the year?



Land unit: GRANT LAKE
Block #:

Date: 16 July 2013 Observers: APAS PUB

CLASSIFICATION
1. Water body with no floating or emergent vegetation. NWI: Kessel: Viereck: _NA
2. Water body with > 2% vegetation cover. NWI: Kessel: Viereck:
3. Vegetated wetland without open water body. NWI: Kessel: Viereck:
□ 4. Non-wetland with < 2% vegetation. □ Solid bedrock □ Bare soil □ Persistent snow or ice □ Rocks, stones, gravel □ Sand NWI: _NA
5. Non-wetland with > 2% vegetation cover. NWI: _NA

TREE	DBH	DBH	H (in)	DBH (cm)	
size class	Code	Coniferous	Deciduous	Coniferous	Deciduous
Seedling	1	< 1.0	< 1.0	< 2.5	< 2.5
Sapling	2	1.0-4.9	1.0-4.9	2.5-13	2.5-13
Poletimber	3	5-8.9	5-10.9	14-23	14-28
Small Sawtimber	4	9-19.9	11-19.9	23-49	28-49
Large Sawtimber	5	20-39.9	20-39.9	50-101	50-101
Giant Sawtimber	6	> 40	> 40	> 102	> 102

COVER CLASS CODES for	Code	% cover	Code	% cover
LARGEST TREES, SHRUBS,	0	None	4	6-25 %
NON-WOODY	1	<< 1 %	5	26-50 %
PLANTS, &	2	< 1 %	6	51-75 %
GROUND COVER	3	1–5 %	7	76–100 %

			VEGET	TATION		\	
% TR	LE-STEMMI EE canopy of LAYER spe	cover: <u>85</u>		Avg. ht.	(m)	Larges DBH class	Cover class
Specie 1 2 SHRU	JBS (Multiple Avg. ht.(m)	h layer)	% cover	Avg. ht.(n	n) Av		
NON- PLAN Grami Herbs Ferns Horsel GROU Mosse Lichen Litter	noids tails JND COVER es/hepatics	Cover clas	SS Spec	VIDOD	dominance)	ERERI	GAMP

	į.	
4	4	12
7	7	1

ALMS HABITAT POINT DATA	Date: 16 18 2013 Point #: 643
TOPOGRAPHY	COARSE WOODY DEBRIS (Within 50-m radius circle)
Aspect O Slope	No. coniferous snags: □ 1 □ 2 □ 3-4 □ 5-6 □ 7-9 □ 10-12 □ >12 No. deciduous snags: □ 1 □ 2 □ 3-4 □ 5-6 □ 7-9 □ 10-12 □ >12 % cover downed logs: □ << 1
☐ Ridge ☐ Midslope ☐ Valley ☐ Lowslope ☐ Plain	HABITAT QUESTIONNAIRE (Answer all questions for each point.)
LOCAL FEATURES Cliff/rock face Step in slope Alluvia/moraine Dunes Other Facing North: Facing South:	1. Is there a water body at least partly inside the 50-m radius circle? A. If YES, indicate the water type, shore type, and shore vegetation. Water type: Shore type and vegetation: Marine Bedrock, boulders, large stones Stuarine Organic material, mud, sand, gravel, cobbles River/Stream Solve vegetated
Digital ID # Facing East: Facing West:	Lake/Pond
Type circle code	B. Is the water body at least 10 m wide? If YES, this is wetland habitat. If part of water body is vegetated and part unvegetated, there may be > 1 habitat. Use NWI Key to determine wetland classes and fill out HABITAT DESCRIPTION form for each one. 2. Apart from water bodies described above, is saturation with water the dominant factor in determining soil development and plant community for any other habitat > 10 m wide occurring at least partly in the circle? This includes areas at least annually saturated with or covered by water, areas dotted with small ponds, and areas with obligate wetland plants or numerous facultative wetland species (see NWI wetland indicator lists). If YES, this is a separate wetland habitat. Use NWI Key to determine wetland class and fill out HABITAT DESCRIPTION form. 3. Is there a large patch of unvegetated ground, not associated with a water body, that is at least partly inside the 50-m circle? This can include rock, bare ground, or snow or ice with no protruding vegetation, but the patch
DISTURBANCE SEVERITY CODES 1 MINOR: Little evidence of disturbance, damage limited to small part of circle, or widespread but slight. Minor driver for succession. 2 SEVERE: Damage obvious and widespread in circle, including	must be at least 400 m² in size (11-m radius). If YES, this is a separate habitat; fill out HABITAT DESCRIPTION form. 4. For any other parts of the 50-m radius circle, fill out one HABITAT DESCRIPTION form for each discrete non-wetland habitat type. DO NOT separate out components of common habitat mosaics (see instructions).
killing or removing much of the vegetation or underlying substrate. Damage resulting in widespread secondary succession.	For any of these habitats, is the soil very well drained, unable to hold moisture long after precipitation, and dry most of the year?

ALMS HABITAT DESCRIPTION

Land unit: GRANT LAKE
Block #:

Date: 16 VIB 2013
Observers: 44 ESE

CLASSIFICATION
1. Water body with no floating or emergent vegetation. NWI: Kessel: Viereck: _NA_
2. Water body with > 2% vegetation cover. NWI: Kessel: Viereck:
3. Vegetated wetland without open water body. NWI: Kessel: Viereck:
□ 4. Non-wetland with < 2% vegetation. □ Solid bedrock □ Bare soil □ Persistent snow or ice □ Rocks, stones, gravel □ Sand NWI: NA Kessel: □ Viereck: NA
5. Non-wetland with > 2% vegetation cover. NWI: NA Kessel: Viereck:

TREE	DBH	DBH	l (in)	DBH (cm)	
size class	Code	Coniferous	Deciduous	Coniferous	Deciduous
Seedling	1	< 1.0	< 1.0	< 2.5	< 2.5
Sapling	2	1.0-4.9	1.0-4.9	2.5-13	2.5-13
Poletimber	3	5-8.9	5-10.9	14-23	14-28
Small Sawtimber	4	9-19.9	11-19.9	23-49	28-49
Large Sawtimber	5	20-39.9	20-39.9	50-101	50-101
Giant Sawtimber	6	> 40	> 40	> 102	> 102

COVER CLASS CODES for	Code	% cover	Code	% cover
LARGEST TREES, SHRUBS,	0	None	4	6–25 %
NON-WOODY	1	<< 1 %	5	26-50 %
PLANTS, &	2	< 1 %	6	51-75 %
GROUND COVER	3	1-5 %	7	76-100 %

	,
	VEGETATION
SINGLE-STEMM % TREE canopy TREE LAYER Sp 1. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.	Avg. ht. (m) DBH Cov
Species (list for each of the second of the	ED SAPLINGS, SEEDLINGS, OR DWARF TREES < 3 th layer) % cover Avg. ht.(m) Avg. DBH class 2 2 2 2 2 2 2 e-stemmed, woody plants) Cover class Species (list for each layer) 5 MPX-FIRE 4 LEDGE 4 PIGIRI 5 PUHOR
NON-WOODY PLANTS Graminoids Herbs Ferns Horsetails GROUND COVE Mosses/hepatics Lichens Litter	Cover class Species (list by dominance) GLASS TRIARC OFK & WIDOD A MD6S TRIARC

ALMS HABITAT POINT DATA	Date: ALL RUB Discrete: ALL RUB	
TOPOGRAPHY	COARSE WOODY DEBRIS (Within 50-m radius circle)	
Elevation (m) Aspect NAV Slope 5 ° TOPOGRAPHIC POSITION Summit Highslope Basin Ridge Midslope Valley	No. coniferous snags:	2
☐ Ridge ☐ Midslope ☐ Valley ☐ Lowslope ☐ Plain	HABITAT QUESTIONNAIRE (Answer all questions for each point.)	
LOCAL FEATURES Cliff/rock face Step in slope Alluvia/moraine Cut-bank Floodplain Dunes Other VALUE GLANCE PHOTO	1. Is there a water body at least partly inside the 50-m radius circle? A. If YES, indicate the water type, shore type, and shore vegetation. Water type: Shore type and vegetation: Bedrock, boulders, large stones	SNO
Roll/frame or Digital ID # Facing South: Facing South: Facing West:	☐ Estuarine ☐ Organic material, mud, sand, gravel, cobbles ☐ River/Stream ☐ < 30% vegetated ☐ Lake/Pond ☐ > 30% vegetated	
DISTURBANCE None % of Severity circle code Yrs since disturbance < 2 > 2 # if known	B. Is the water body at least 10 m wide? If YES, this is wetland habitat. If part of water body is vegetated and	A
Insect damage Disease Beaver ponds Beaver cuttings Other animal activity Fire Flooding Wind Landslide/avalanche Logging Roads Other human disturbances Other Disease	part unvegetated, there may be > 1 habitat. Use NWI Key to determine wetland classes and fill out HABITAT DESCRIPTION form for each one. 2. Apart from water bodies described above, is saturation with water the dominant factor in determining soil development and plant community for any other habitat > 10 m wide occurring at least partly in the circle? This includes areas at least annually saturated with or covered by water, areas dotted with small ponds, and areas with obligate wetland plants or numerous facultative wetland species (see NWI wetland indicator lists). If YES, this is a separate wetland habitat. Use NWI Key to determine wetland class and fill out HABITAT DESCRIPTION form.	
Other human disturbances	3. Is there a large patch of unvegetated ground, not associated with a water body, that is at least partly inside the 50-m circle? This can include rock, bare ground, or snow or ice with no protruding vegetation, but the patch	
1 MINOR: Little evidence of disturbance, damage limited to small part of circle, or widespread but slight. Minor driver for succession. 2 SEVERE: Damage obvious and widespread in circle, including killing or removing much of the vegetation or underlying substrate.	If YES, this is a separate habitat; fill out HABITAT DESCRIPTION form. 4. For any other parts of the 50-m radius circle, fill out one HABITAT DESCRIPTION form for each discrete non-wetland habitat type. DO NOT separate out components of common habitat mosaics (see instructions). For any of these habitats, is the soil very well drained, unable to hold	
Damage resulting in widespread secondary succession.	moisture long after precipitation, and dry most of the year?	

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HABITAT DESCRIPTION

Land unit: GRANT LAKE
Block #:

Date: by LINE 2013
Observers: April 2019

Point #: 4 of 2 % of circle: 4

CLASSIFICATION
1. Water body with no floating or emergent vegetation. NWI: Kessel: Viereck: _NA
2. Water body with > 2% vegetation cover. NWI: Kessel: Viereck:
3. Vegetated wetland without open water body. NWI: Kessel: Viereck:
☐ 4. Non-wetland with < 2% vegetation. ☐ Solid bedrock ☐ Bare soil ☐ Persistent snow or ice ☐ Rocks, stones, gravel ☐ Sand
NWI: NA Kessel: Viereck: NA 5. Non-wetland with > 2% vegetation cover. NWI: NA Kessel: Viereck: Vier

TREE	DBH	DBH	H (in)	DBH (cm)		
size class	Code	Coniferous	Deciduous	Coniferous	Deciduous	
Seedling	1	< 1.0	< 1.0	< 2.5	< 2.5	
Sapling	2	1.0-4.9	1.0-4.9	2.5-13	2.5-13	
Poletimber	3	5-8.9	5-10.9	14-23	14-28	
Small Sawtimber	4	9-19.9	11-19.9	23-49	28-49	
Large Sawtimber	5	20-39.9	20-39.9	50-101	50-101	
Giant Sawtimber	6	> 40	> 40	> 102	> 102	

COVER CLASS CODES for	Code	% cover	Code	% cover
LARGEST TREES, SHRUBS,	0	None	4	6-25 %
NON-WOODY	1	<< 1 %	5	26-50 %
PLANTS, &	2	< 1 %	6	51-75 %
GROUND COVER	3	1-5 %	7	76-100 %

_	
	VEGETATION
	SINGLE-STEMMED TREES > 3 m % TREE canopy cover: 85 % coniferous: D Avg. ht. (m) TREE LAYER species % cover 3-5 5-9 9-21 > 21 class class 1.
- 6	SINGLE-STEMMED SAPLINGS, SEEDLINGS, OR DWARF TREES < 3 m Species (list for each layer) % cover Avg. ht.(m) Avg. DBH class 1
	PLANTS Cover class Species (list by dominance) Graminoids Herbs Ferns Horsetails GROUND COVER Mosses/hepatics Litter Bare ground Ephemeral snow

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- 4	H.		
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ALMS HABITAT POINT DATA

LOUIS COMP LAVE	Displate.	
Date: Volum 7013 Observers: All Substitute 1	Block #: Point #: G(#S	
COARSE WOODY DEBRIS (V	Vithin 50-m radius circle)	
coniferous spage: \$\Pi\$ 1 \$\Pi\$ 2 \$\Rightarrow{13.4}{3.4} \$\Pi\$	15.6 \square 7.9 \square 10.12 \square >12	

		TOPOG	RAPHY				
Elevation (m)	MAR	Aspect	no .	SI	оре 🎚	3 .	
TOPOGRAPH	HIC POS	TION					
Summit			hslope		Bas	sin	
Ridge			Islope	=	☐ Valley		
10041 5547	LIDEO	Lowslope		_	Plain		
LOCAL FEAT		Ma		_	1		
☐ Cliff/rock fa	ce	☐ Floo	in slope] Alluv] Dune	via/moraine	
Other		☐ F100	иріант	_	Dune	28	
						/	
РНОТО	Facing N	lorth:	/_ F	acing	South:	/	
Roll/frame or Digital ID #	Facing E	ast:	F	acing \		/	
DISTURBAN	CE	Non % of	e Severity	Yrs	since o	disturbance	
Туре		circle	code	< 2	> 2	# if known	
Insect damage	0.						
Disease — Beaver ponds —				H	H	-	
Beaver cuttings							
Other animal a	ctivity		-				
Fire Flooding				H	H		
Wind							
Landslide/aval	anche						
Logging		_	_	H	H		
Roads Other human of	lieturhano			H	H		
Other ———	aistarbario		=				
	DISTU	RBANCE S	SEVERITY	COD	ES		
1 MINOR: Littl of circle, or v							
			widespre				

COARGE WOOD! DEDITIO (Wallin CO-In radius Circle)
lo. coniferous snags:
HABITAT QUESTIONNAIRE (Answer all questions for each point.)
A. If YES, indicate the water type, shore type, and shore vegetation. Water type: Shore type and vegetation: Marine Bedrock, boulders, large stones Estuarine Organic material, mud, sand, gravel, cobbles River/Stream Som vegetated Lake/Pond Som vegetated
B. Is the water body at least 10 m wide? If YES, this is wetland habitat. If part of water body is vegetated and part unvegetated, there may be > 1 habitat. Use NWI Key to determine wetland classes and fill out HABITAT DESCRIPTION form for each one.
2. Apart from water bodies described above, is saturation with water the dominant factor in determining soil development and plant community for any other habitat > 10 m wide occurring at least partly in the circle? This includes areas at least annually saturated with or covered by water, areas dotted with small ponds, and areas with obligate wetland plants or numerous facultative wetland species (see NWI wetland indicator lists). If YES, this is a separate wetland habitat. Use NWI Key to determine
wetland class and fill out HABITAT DESCRIPTION form. 3. Is there a large patch of unvegetated ground, not associated with a water body, that is at least partly inside the 50-m circle? This can include rock

bare ground, or snow or ice with no protruding vegetation, but the patch

If YES, this is a separate habitat; fill out HABITAT DESCRIPTION form.

For any of these habitats, is the soil very well drained, unable to hold

DESCRIPTION form for each discrete non-wetland habitat type. DO NOT separate out components of common habitat mosaics (see instructions).

4. For any other parts of the 50-m radius circle, fill out one HABITAT

must be at least 400 m² in size (11-m radius).

2 SEVERE: Damage obvious and widespread in circle, including killing or removing much of the vegetation or underlying substrate. Damage resulting in widespread secondary succession.

Damage resulting in widespread secondary succession.

USGS Alaska Science Center May 2004

moisture long after precipitation, and dry most of the year?

ALMS HABIT

HABITAT DESCRIPTION

Land unit: GRANT LAVE
Block #:

Observers: PS

Point #: 61#5
Habitat # 2 of 1
% of circle: 36

CLASSIFICATION	
1. Water body with no floating or emergent vegetation. NWI: Kessel: Viereck: _NA	
2. Water body with > 2% vegetation cover. NWI: Kessel: Viereck:	
3. Vegetated wetland without open water body. NWI: Kessel: Viereck:	
4. Non-wetland with < 2% vegetation. Solid bedrock Bare soil Persistent snow or ice Rocks, stones, gravel Sand	
NWI: NA Kessel: Viereck: NA 5. Non-wetland with > 2% vegetation cover. NWI: NA Kessel: Viereck: Viereck:	

TREE	DBH	DBH (in)		DBH (cm)	
size class	Code	Coniferous	Deciduous	Coniferous	Deciduous
Seedling	1	< 1.0	< 1.0	< 2.5	< 2.5
Sapling	2	1.0-4.9	1.0-4.9	2.5-13	2.5-13
Poletimber	3	5-8.9	5-10.9	14-23	+ 14-28
Small Sawtimber	4	9-19.9	11-19.9	23-49	28-49
Large Sawtimber	5	20-39.9	20-39.9	50-101	50-101
Giant Sawtimber	6	> 40	> 40	> 102	> 102

COVER CLASS CODES for	Code	% cover	Code	% cover	
LARGEST TREES, SHRUBS,	0	None	4	6-25 %	
NON-WOODY	1	<< 1 %	5	26-50 %	
PLANTS, &	2	< 1 %	6	51-75 %	
GROUND COVER	3	1-5 %	7	76-100 %	

	VEGETATION
	SINGLE-STEMMED TREES > 3 m % TREE canopy cover: % coniferous:
is	SINGLE-STEMMED SAPLINGS, SEEDLINGS, OR DWARF TREES < 3 m Species (list for each layer) % cover Avg. ht.(m) Avg. DBH class 1. PICALA 2. SHRUBS (Multiple-stemmed, woody plants) Layer Avg. ht.(m) Cover class Species (list for each layer) 1. DB AUSTA 2. DB AUSTA 3. DB AUSTA 4. DB AUS
	NON-WOODY PLANTS Graminoids Herbs Ferns Horsetails GROUND COVER Mosses/hepatics Lichens Litter Bare ground Enhemeral snow

\$5

ALMS HABITAT POINT DATA	Land unit: Block #: Date: Point #:	
TOPOGRAPHY	COARSE WOODY DEBRIS (Within 50-m radius circle)	
Elevation (m) Aspect Slope Slope TOPOGRAPHIC POSITION Summit Highslope Basin	No. deciduous snags: 2 2 3-4 5-6 7-9 10-12]>12]>12]76-100%
☐ Ridge ☐ Midslope ☐ Valley ☐ Lowslope ☐ Plain	HABITAT QUESTIONNAIRE (Answer all questions for each point.)	
LOCAL FEATURES Cliff/rock face Step in slope Alluvia/moraine Cut-bank Floodplain Dunes Other	1. Is there a water body at least partly inside the 50-m radius circle? A. If YES, indicate the water type, shore type, and shore vegetation. Water type: Shore type and vegetation:	YES NO
PHOTO Roll/frame or Digital ID # Facing North: Facing South: Facing West:	☐ Estuarine ☐ Organic material, mud, sand, gravel, cobbles☐ River/Stream☐ < 30% vegetated☐ Lake/Pond☐ > 30% vegetated☐ > 30% vegetated☐ > 30% vegetated☐ > 30% vegetated☐ > 30% vegetated☐ > 30% vegetated☐ > 30% vegetated	
Type None Yrs since disturbance Yrs since disturbance	B. Is the water body at least 10 m wide? If YES, this is wetland habitat. If part of water body is vegetated and part unvegetated, there may be > 1 habitat. Use NWI Key to determine wetland classes and fill out HABITAT DESCRIPTION form for each one	口风
Disease Beaver ponds Beaver cuttings Other animal activity Fire Flooding Wind Landslide/avalanche Logging Disease Dis	2. Apart from water bodies described above, is saturation with water the dominant factor in determining soil development and plant community for any other habitat > 10 m wide occurring at least partly in the circle? This includes areas at least annually saturated with or covered by water, areas dotted with small ponds, and areas with obligate wetland plants or numerous facultative wetland species (see NWI wetland indicator lists). If YES, this is a separate wetland habitat. Use NWI Key to determine wetland class and fill out HABITAT DESCRIPTION form.	X D
Roads Other human disturbances Other DISTURBANCE SEVERITY CODES	3. Is there a large patch of unvegetated ground, not associated with a water body, that is at least partly inside the 50-m circle? This can include rock, bare ground, or snow or ice with no protruding vegetation, but the patch must be at least 400 m² in size (11-m radius).	
MINOR: Little evidence of disturbance, damage limited to small part of circle, or widespread but slight. Minor driver for succession. SEVERE: Damage obvious and widespread in circle, including killing or removing much of the vegetation or underlying substrate. Damage resulting in widespread secondary succession.	If YES, this is a separate habitat; fill out HABITAT DESCRIPTION form. 4. For any other parts of the 50-m radius circle, fill out one HABITAT DESCRIPTION form for each discrete non-wetland habitat type. DO NOT separate out components of common habitat mosaics (see instructions). For any of these habitats, is the soil very well drained, unable to hold moisture long after precipitation, and dry most of the year?	

SURVEY DETAILS (Circle appropriate values)	DAILY WEATHER AND ROUTE Land unit: GRANT LANG Block number: Block name:
Length of count (min): Spacing between pts (m): Observers rotated among pts: Double-observer method used: Species counted in restricted radius (m): Species excluded from point counts: OBSERVER INFORMATION Name: First name Affiliation: First name Address: Address: P.O. BOX 85207 City: FARBANIS State: AK Zip: 99708	Date 05213
Tel:email:amal,ajmi @erm.com SURVEY EXPERIENCE (# years): Bird surveys X Distance estimation 8+ Birding in Alaska_15+	Date Date
CONTACT INFORMATION (If different) Name: First name Middle initial Last name	Time Temp OF/C Temp Wind Wind
Affiliation:Address:	Sky Daily route: 21 22 23 24 25 21 22 23 24 16 17 18 19 20 16 17 18 19 11 12 13 14 15 11 12 13 14
City: State: Zip:	6 7 8 9 10 6 7 8 9

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			L	atit	ude	e (N	1)		1		Lo	ngit						Locatio		Altim GPS	Moved FRO	M orig pt	Pho	to	Notes about point and survey markers (give
Waypt #	Pt	d	d	d	d	d	d	o	i	d	d	d	d	d	d	d	d		Elev (n	Map	Distance (m)	Bearing	#	Dir	reason if point moved or inaccessible)
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	2	6	Ø.	4	5	7	1	9)		4	9	3	6	3	13	36	· /							:
	3	6	0	4	5	7	1	11	7	1	4	9	3	6	2	t	5 1	· 0							
T	4	6	0	4	5	5	4	9)	1	4	9	3	5	9	4	5	: D							
	5	6	Ó	4	5	4	3	6	0	1	4	9	3	5	5	14	. 9	± 0							
	6	6	0	4	5	5	1	6	3	1	4	9	3	5	1	2	28	± 0							
	7	6	Ò	4	5	7	13	1	2	1	4	9	3	5	2	4	3	1 1 1							
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		6	7	4	5	2	6	6	2		4	9	3	4	d	1	- 7	.0			- 3	1			
	12	1	7	4	6	0	12	9	1		4	9	3	3	6	4	9	1.1							
	13	1	B	4	10	Ø	9	1		1	4	9	2	3	5	1	1	.5							
	14		D	4	6	1	2	1		1	1	9	2	3	100	10	100	. 1			0.0				
	15	-	4	-	W	1	-	1	,	1	1	/	1	1	111	1	1	1							
	16			K			t	+	1	1				T		1	+	±	1						
	17		1			H	N	+	+	57		M		W		t	+	±							
	18						-	+	1							1	-	±		-					T.
	19								1						-	1.	+	±			-				
	20							-	1						+	+	+	±							
	21						-	+	+				-	-	+	+	+	±.		1					
		\Box					+	+	+					-	1	+	+	±		-					
	22					1	-	+	+						-	+	+	±	0 10			-		-	
	23				1	-	+	+	+				-	-	+		-	±		-				+	
-	24	H	-	_		-			+					-	+	+	+	±						-	
	25								1									±							

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Block #: GRANT LAKE Point #: GRANT LAKE Observer: ALA: RUB	Date: 21 MMY 2013 Time start: 0531 60°4573:-149°3524
	Direction WADB3
	- 100
	50
	VANK(S)
	1 2 2 4 A D
Species between this and previo	
Non-landbird species present bu Mammals: Notes: Right on Clay	VBLY LOVO I

Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
VANH	3	1	5	20		-			
RUL	8	1	5	40					
		^		,					
2									
8									
			-						
•						-			
	-83								
	÷			-					
				-77			-		
h						-			
1	3					-		×	
					-	22-1			4
					3				
	- 0			-			100		

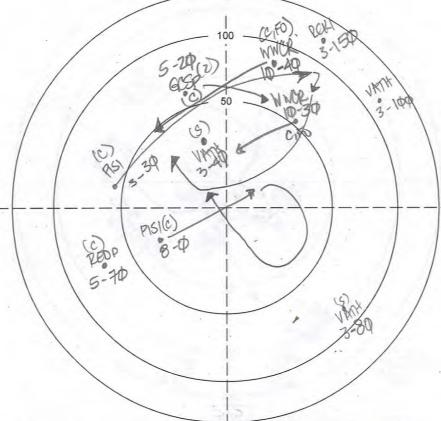
LIST OF BIRDS DETECTED DURING SURVEY

Species	Time	#	Beh	, Dist ,	Species	Time	#	Beh	Dist
VATH	3	1.	5.	.50	*			-	
VANA	5	1	5	80					
VATH	8	1	5	30					
RIKI	5	1	5	30					
PIGR	8	2	V	20					
1.0				7					
									4
101	437								
					-				
		-							

USGS Alaska Science Center May 2004



Block #: GRANTIANS # 10	Date: 21 MAY 2013 Time start: 0643
Observer: APA; RSB	60:457: -149:345
Direction 240°	
130	1400 (Ot 10



Species between this and previous point: Non-landbird species present but not counted:

Mammals: MONE DROPINGS EVERY WHERE

Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
VATH	3	1	5	40					
VATH	3	1	5	80					
VAMH	3	1	5	100					
ROKI	3		S	150					
GISP	5	2	C	20					
P151	3	1	CFD	30					
RADP	5	1	C.	70		U.		-	
PISI	8	1	CIFO	0					
MCR	10	1	Cifo	40					
WWCR	10	3	450	30					
				1					
			-			-			
			1 - 2						
MAI	9								
11500					- ·				
		-			,				9
		. /							
3									
- 0			17						
441				-3 *		1			
				24					
	2- 1			- 3	-				

Block #: GRANT LAKE Point #: GRANT LAKE Observer: ARA 3 RJB Directi	Date: 21 Mty 2013 Time start: 0714 60°. 458: -149.341
Species between this and previous point	15.0 3.150 3.7150 3.7150 3.7150 3.7150 3.7150 3.7150 3.7150 3.7150 3.7150 3.7150 3.7150
Species between this and previous poil	
Non-landbird species present but not co	ounted:
Mammals: MOVE DROWN GS	& PRINTS IN SNOW
	· · · · · · · · · · · · · · · · · · ·
Notes: UP ON RINGE ABOVE CO	BOX, MOSS W. HOMIDCK,

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Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
P151	5	4	GFO	0					
P151	8	3		Ø					
PAWR	3	1	5	80					
VANA	3	1	S	>150					
VATH	3	1	S	190					
RCKI	3	1	S	90					
VATH	3	1	S	30					
PISI	3	2	CFO	0					
PISI	5	1	C,FO	30		1 - 8			
VATH	8	1	S	20					
VATH	5	1	S	80					
	10		(24)						
			150						
			7 15						
							1		
17	= ;								
		4							
			1						
				PC					

ALMS MAP OF BIRDS DETECTED DURING SURVEY Date: 21 MAY Block #: GRANT LAKE Point #: GRANT LAKE Time start: Observer: ARA RJB Direction NAD83 3-50 Species between this and previous point: V+++ Non-landbird species present but not counted: Mammals:

LIST OF BIRDS DETECTED DURING SURVEY

Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
VATH	5	1	5	150					
VATH	5	1	5	7150					
PISI		1	FILL						
VAMA	5	1	5	50			¥		
P161	5	10	C,FD	20					
RCKI	3	1	5	30					
REDP	3	5	C,FO	40					
REDP	5	2	FIVIC	20					
REDP	5	1	FL	10					
PISI	5	2	F,C	0					
PISI.	8	3	FIC	30			Ш		
-									
=									
	=			**					
-									
	3								
							J.		
- *									
			100				1		

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VATH 5-30

Date: 21 MAY 2013 Block #: GRANT LAKE Point #: GRANT LAYE #13 0818 Time start: Observer: Direction Species between this and previous point: Non-landbird species present but not counted: MODE DROPPINGS EVERYWHERE

MAP OF BIRDS DETECTED DURING SURVEY

Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
RBME	10	2	V	100					
BAGO	3	2	V	100					
RCKI.	3	1	5	>150					
VATH	3	1	5	100					
FOSP	3	1	5	7150					
P19	8	2	V,C	10					
CBCH	5	1	V	10					
PISI	3	1	FIG	0					
REPP	5	1	V	30					
PISI	5	3	FIC	30					
PCK)	3	1	S	90					
	-								
-	-								

Point #: CLANT LAVE TA	Date: 21 MM2013 Time start: 0850 60.461 5 -149.338
	Direction 150
	50
Species between this and previ	
Non-landbird species present be	ut not counted:
Mammals:	

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Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
BAGO	10	2	V	150					
REME	10	2	V	150					
RCKI	3	1	5	20					
po rx.									
			-		-				
			-						
		-							
									L
	1								
				7					
				a.					

Direction MEGY OC) 3-715 UATH (S) 3-150 1015 3-100 SCOUL) RCKI (S) 100 10-30 NAME OF VANH (S.) PIS 8-7150

Species between this and previous point: ROW; NISN; PIGE; VAM; CBCH; Non-landbird species present but not counted: BRCR; HETH; PISI; SCJU;

Mammals: MODE DEORNINGS.

Notes: PMT WAS DIFFICULT TO FIND - SATELLITE PROBLEMS -

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Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
MEGIL	3	1	C	7150					
MATA	3	1	5	190		-		-	
YRWA	8	1	5	7150					
VAON	8	1	5	>150					
CBCH	3	i	C	5\$					
RCKI	3	1	5	40					
RCKI	10	1	5	30					
Scru	3	1	5	60					
UATH	3	1	C	50					
YRWA	3	1	5	100					
PISI	8	1	F.C	40					
-			10	1.7					
									9
								1	
	-								
		>	2						

Block #: GRANT LAKE # 6 Observer: MA: RJ6	Date: 22 MAY 2013 Time start: 0554 60° 4552: - 149 , 3513
Direct 45 150 100 100 100 100 100 100 1	MAG (0) 8 - 7 150 (0) 8 - 7 150 (0) 8 - 7 150 (0) 8 - 7 150 (0) 8 - 7 150 (0) 8 - 7 150 (0) 8 - 7 150 (0) 8 - 7 150
3	3-30 2151
Species between this and previous point Non-landbird species present but not command the species present but not command the species present but not command the species present but not command the species present but not command the species present but not command the species present but not compare the species prese	ounted:

LIST OF BIRDS DETECTED DURING SURVEY

Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
VATH	5	1	5	7190					
CBCM	5	1	C	80					
RCKI	3	1	5	90		į į			
VANTA	5	1	5	100		-			
VATH	3	1	5	80					
SCAU	3	1	5	80					
PISI	8	1	C	7150					_
MISH	8	1	C	100					
GRYB	3	1	CFI	40					
VATU	8		C	69					
WISH	8	1	Fide	30					
PISI	3	1	Fic	10					
RCKI	3		5	80					
CBCH	ID	1	C	40					
-									
		-			-				
7/100		-		2					
		7							
						10016			
							É		
								1	

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Block #: GRANT LAYE #5 Point #: GRANT LAYE #5 Observer: ARA; RJB	Date: 22 MAY 2013 Time start: 0624 60°, 45 43 ; -149.3555
Dire 4	ection NADOS 100 3-100 SCON NADOS 100 3-10
Species between this and previous p Non-landbird species present but not Mammals: MOSS DEOPING: Notes: MOSS SHOWERS	counted:

Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
RCKI	3	1	5	150	-				
SQU	5	1	5	7150					
WISN	8	1	C	80					
VANH	3	1	5	DO					
VATH	3	1	5	80					
WATH	3	1	5	70					
AWAY	3	1	5	50			8_		
981	8	1	FC	90					
WWCR	10	1	FIL	SP	-				
RCKI	8	1	C	20					
RCK1	3	1	5	90					
WISN	3	1	F,D	\$					
VATH	3	1	5	60					
SACR	8	5	0	750					
RCKI	3	1	5	90				-	
1		1	9	1					
		1							
		T							
0.1									
	. 6			1 V 1					
							Î	200	

POK! 3-69

Species between this and previous point: 5762 (2)'s PCLL's VAPP's

Non-landbird species present but not counted:

Mammals: MOUSE DROPPING EVERYWHERE

Notes: SMAN DRAW - CREEK 1000 D.

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VATH 5-30

Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
RCKI	3	l	5	80					
VANH	3	1	5	50					
SON	3	1	5	30					
RCKI	3	1	5	60					
RCKI	3	1	5	80					
VATH	8	1	C	50					
PIS)	8	1	FC	40					
部分	8	1	1	150					
PCK)	10	1	5	80					
			100	-1					
			1						
				0.					
-									
		1							
	10			F = 8			91		-



Block #: GRANT LAKE #3 Observer: PA RJB	Date: 22 MAY 2013 Time start: 0723 60.45725 - 149.362
Directio 315	MAG MAD83
100	VATIA
50	5-04
WE CO WANTED WANTED	(c) MA1 8-30
exter	
5-64	
Species between this and previous poin	t: BHEA'S HETH'S MERL'S
Non-landbird species present but not co Mammals: MOSS DROPP NGS DR	PLY WHERE,

Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
VATH	5	1	5	60					
VANH	3	1	0	20					
HON	8	1	V	20					
RCKI	5	1	5	60					
AMDI	8	1	C	30					
Mells,	-	1	C	70					
		i i		11					
						1			
		7							
			T. h						
1	11								
		-							
- 111									
								1	
,									V.



Block #: Date: _ Point #: ARMY Time start: Observer: ARA: Direction 30 150 Species between this and previous point: SPGR 3 CHGO'S MORG, S, FOSP Non-landbird species present but not counted: Notes: NAFROWS LOUD - CAN'T HEAR MUCH.

LIST OF BIRDS DETECTED DURING SURVEY

Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
MERL	10	1	CF	50					
AMDI	8	1	CIF	60					
AMDI	8	1	V	60					
VATH	3	1	5	50	-				
HETH	3	1	V	40					
VATH	3	1	5	20					64
RCK1.	3	1	5	40					
	14.9								
		1							
	1								-
				9					
				5-17					
=									
						mote)		N.	

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VATH 5-30

Block #: GRANT LAKE Point #: GRANT LAKE #1 Observer: ARA; RJB	Date: 22 MAY 2013 Time start: 0822 60° 4538: -149° 3644
AMD:	ection MAG 50 MAG 60 MAG
(S)	100 CCK 1 3-20
Species between this and previous policy in the second species present but not mammals: Notes: Who is a second species present but not be sec	counted:

LIST OF BIRDS DETECTED DURING SURVEY

Species	Time	#	Beh	Dist	Species	Time	#	Beh	Dist
LATH.	3	1	5	150					
WATH	3	1	5	70					
VATH	3	1	5	100				0[
RCKI	3	-1	5	40					
AMRO	3	1	5	80					
VATH	3	1	5	60					
VRWA	5	1	5	70					
P151	ID	2	FC	60				- 1	
SCIL	10	2	C	20					
Anlo	8	1	FCV	Ø					
AMRO	8	1	C	0					
RCKI	3	(5	20					
1 AMA	10	1	C	60					
				,					
		1							
			M						
						101		(2001)	
			-						

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BIRD AND MAMMAL SUMMARY CHECKLIST

Land unit: GRANT LAKE UM 2013	Dates: 21 MA	1-22 MAY	2013
Block number:	Observers:	ARA, RUB	
Block name:	Total effort:	hrs	km

-				Block name:	Total et	ffort:hrskm
RTLO PALO COLO	Red-throated Loon Pacific Loon Common Loon	PAJA LTJA BOGU MEGU	Parasitic Jaeger Long-tailed Jaeger Bonaparte's Gull Mew Gull	S RCKI Ruby-crowned Bluethroat NOWH Northern Whea	atear	Shrew (sp.)
HOGR RNGR PECO TUSW	Horned Grebe Red-necked Grebe Pelagic Cormorant Tundra Swan	HERG GWGU GLGU	Herring Gull Glaucous-winged Gull Glaucous Gull	GCTH Gray-cheeked SWTH Swainson's Th HETH Hermit Thrush	Thrush	Wolf Red fox Lynx
TRUS CAGO GWTE MALL	Trumpeter Swan Canada Goose Green-winged Teal Mallard	BLKI ARTE ALTE COMU	Black-legged Kittiwake Arctic Tern Aleutian Tern Common Murre	AMRO American Rob S VATH Varied Thrush YWAG Yellow Wagtai WHWA White Wagtai	il	River otter Wolverine Marten Fisher
NOPI NSHO AMWI GRSC	Northern Pintail Northern Shoveler American Wigeon Greater Scaup	PIGU MAMU TUPU HOPU	Pigeon Guillemot Marbled Murrelet Tufted Puffin Horned Puffin	AMPI American PipitBOWA Bohemian Wa:CEDW Cedar WaxwinNSHR Northern Shrik	t xwing ng	Ermine Least weasel Mink Black bear
LESC HARD LTDU	Lesser Scaup Harlequin Duck Long-tailed Duck	RODO GHOW NHOW	Rock Dove Great Horned Owl Northern Hawk Owl	WAVI Warbling Vired REVI Red-eyed Vire Orange-crown	o eo ed Warbler	Brown bear Moose Mule deer
BLSC SUSC WWSC COGO	Black Scoter Surf Scoter White-winged Scoter Common Goldeneye	BDOW GGOW SEOW BLSW	Barred Owl Great Gray Owl Short-eared Owl Black Swift	YWAR Yellow Warble Myrtle Warbler AUWA Audubon's Warbler AUWA Yellow-rumped	r arbler d Warbler	Caribou Bison Mountain goat Muskox
BAGO BUFF COME X RBME	Barrow's Goldeneye Bufflehead Common Merganser Red-breasted Merganser	VASW RUHU BEKI RBSA	Vaux's Swift Rufous Hummingbird Belted Kingfisher Red-breasted Sapsucker	S TOWA Townsend's W BLPW Blackpoll Wart AMRE American Red NOWA Northern Wate	bler Istart	Dall's sheep Alaska marmot Hoary marmot Woodchuck
OSPR BAEA NOHA SSHA	Osprey Bald Eagle Northern Harrier Sharp-shinned Hawk	DOWO HAWO TTWO BBWO	Downy Woodpecker Hairy Woodpecker Three-toed Woodpecker Black-backed Woodpecker	MGWA MacGillivray's COYE Common Yello WIWA Wilson's Warb ATSP American Tree	owthroat bler	Arctic ground squirrel Red squirrel Northern flying squirrel Beaver
NOGO SWHA RTHA	Northern Goshawk Swainson's Hawk Red-tailed Hawk	NOFL YSFL RSFL OSFL	Northern Flicker Yellow-shafted Flicker Red-shafted Flicker	CHSP Chipping Spar SAVS Savannah Spa SEOSP Fox Sparrow	rrow	Jumping mouse (sp.) Red-backed vole (sp.) Collared lemming
— RLHA — GOEA — AMKE — MERL	Rough-legged Hawk Golden Eagle American Kestrel Merlin	WEWP ALFL HAFL	Olive-sided Flycatcher Western Wood-Pewee Alder Flycatcher Hammond's Flycatcher	S GCSP Golden-crowned WCSP White-crowned	rrow ed Sparrow d Sparrow	Brown lemming Microtus vole (sp.) Muskrat Northern bog lemming
GYRF SPGR BLUG WIPT	Gyrfalcon Spruce Grouse Blue Grouse Willow Ptarmigan	PSFL SAPH HOLA TRES	Pacific-slope Flycatcher Say's Phoebe Horned Lark Tree Swallow	SCJU Slate-colored ORJU Oregon Junco DEJU Dark-eyed Jun LALO Lapland Longs	nco	Deer mouse (sp.) Porcupine Collared pika Snowshoe hare
ROPT SACR BBPL	Rock Ptarmigan Sandhill Crane Black-bellied Plover	VGSW NRWS BANS CLSW	Violet-green Swallow N. Rough-winged Swallow Bank Swallow Cliff Swallow	SNBU Snow Bunting RUBL Rusty Blackbir GCRF Gray-crowned V PIGR Pine Grosbeal	rd I Rosy-Finch	Tundra hare MAMMAL EVIDENCE
AMGP PAGP SEPL BLOY GRYE	American Golden-Plover Pacific Golden-Plover Semipalmated Plover Black Oystecher	BARS GRAJ STJA BBMA	Barn Swallow Gray Jay Steller's Jay Black-billed Magpie	RECR Red Crossbill WWCR White-winged CORE Common Red HORE Hoary Redpoll	Crossbill poll 7 0000 C.F.V/H	Visual observation Tracks
LEYE SOSA SPSA	Greater Yellowlegs Lesser Yellowlegs Solitary Sandpiper Spotted Sandpiper	AMCR NOCR CORA	American Crow Northwestern Crow Common Raven	PISI Pine Siskin		Sign Dam
UPSA WHIM SESA WESA	Upland Sandpiper Whimbrel Semipalmated Sandpiper Western Sandpiper	BOCH BOCH CBCH RBNU	Black-capped Chickadee Boreal Chickadee Chestnut-backed Chickadee Red-breasted Nuthatch	BREEDING BIRD EVIDE X Detected, no evidence	ce of breeding A	Building or excavating nest Alarm call
LESA ROSA DUNL WISN	Least Sandpiper Rock Sandpiper Dunlin Wilson's Snipe	W BRCR S WIWR N AMDI ARWA	Brown Creeper Winter Wren American Dipper Arctic Warbler	P Pair observed in possible P Pair observed in suita S Singing male	able habitat N	Distraction display, injury-feigning Nest observed Downy or recently fledged young
RNPH	Red-necked Phalarope	GCKI	Golden-crowned Kinglet	C Courtship display		Adult with fecal sac or food for youn

Breeding Bird Point Vegetation Pictures



Photo A.3a-1. Point 1 Facing East.



PhotoA.3a-2. Point 2 Facing East.



Photo A.3a-3. Point 3 Facing East.



PhotoA.3a-4. Point 4 Facing East.



Photo A.3a-5. Point 5 Facing East.



PhotoA.3a-6. Point 6 Facing East.



Photo A.3a-7. Point 7 Facing East.



PhotoA.3a-8. Point 8 Facing East.



Photo A.3a-9. Point 9 Facing East.



PhotoA.3a-10. Point 10 Facing East.



Photo A.3a-11. Point 11 Facing East.



PhotoA.3a-12. Point 12 Facing East.

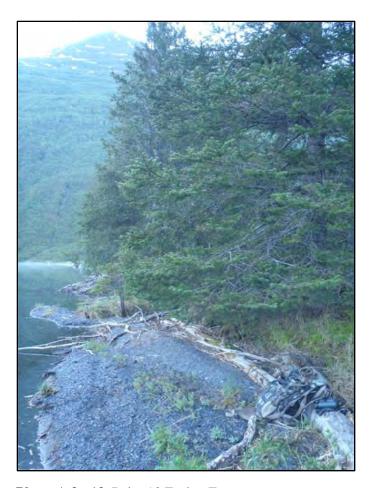


Photo A.3a-13. Point 13 Facing East.



PhotoA.3a-14. Point 14 Facing East.

Appendix 3b. Northern Goshawk Data

July 8-9, 2013 Northern Goshawk Surveys

July 16-17, 2013 Northern Goshawk Surveys

	CONDITIONS (i.e., temp. cloud cover	% Cloud C	over: (DO	%; 80%	Air Temperat	ure (F°): 🚜	6075°	57°F	Wind (Beaufort):	1:0	
Station Number:	Coordinates: DATA SHEET ON FILE,	Start Time:	Stop Time:	Time of Response:	Time Elapsed Since First Broadcast:	Estimated Bearing to Response:	Estimated Distance to Response:	Description of Detection: Silent visual detection - SGOS; Vocal detection - VGOS; Vocal and visual detection - BGOS; Inactive goshawk stick nest- OSN; Goshawk nest with young -ANY; Nest with young fledged - ANF	Age of Birds Detected: Adult (A); Juvenile (J); Nestling (N); Age Unknown (U)	Notes: (include Photo #'s if taken; Detection of possible goshawk prey remains; Other species detected in between survey stations; General habitat description):	Comments (e.g., observer confidence in species classification, distance and bearing, etc.):
646	1ST NOGO MAL 2M NOGO FROGING	1359	404	ф		.6				VERY QUIET ON TWEETY BIEDS HOT! MIDDAY.	
GH5	IST NOGO FLEDGING	1416	A21	Φ						3	
GH [#] 9	LET NOGO WAIL 2MD NOGO FLEDGING	1430	1435	P						3	
GH#4	2MD NOGO WAIL	1540	1505	P	1					\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	

Station Number:	Coordinates: DIASNECT ON KLE	Start Time:	Stop Time:	Time of Response:	Time Elapsed Since First Broadcast:	d Estimated Bearing to Response:	Distance to Response:	Vocal and visual detection - BGOS;	Age of Birds Detected: Adult (A); Juvenile (J); Nestling (N); Age Unknown (U)	Notes: (include Photo #'s if taken; Detection of possible goshawk prey remains; Other species detected in between survey stations; General habitat description):	Comments (e.g., observer confidence in species classification, distance and bearing, etc.):
GHS	LST NOGO WAIL ZND NOGO FLEDGING	1516	1522	1					~	HETH'S SCOU;	
GH+2	251 NOGO FLEWGING	1538	184	\$						CBCH; HETH	
GHI	1ST NOGO WAIL 2ND NOGO FREDGING	1629	1634	P		END E	DE DA			TRES; APORTS HOW	
9_Jum 9#8	1ST NOGO FLEDGINGS 2ND NOGO WAIL	0654	P65E	P						VATH SHERT; PISI; WWCR; AMED; MAGU	
G#7	1ST NOGO WAIL 2ND NOGO FLEDGING	0733	D737	ф						PAWR; VATH; HETH;	

Station Number:	Coordinates:	Start Time:	Stop Time:	Time of Response:	Time Elapsed Since First Broadcast:	Estimated Bearing to Response:	Estimated Distance to Response:	Description of Detection: Silent visual detection - SGOS; Vocal detection - VGOS; Vocal and visual detection - BGOS; Inactive goshawk stick nest- OSN; Goshawk nest with young -ANY; Nest with young fledged - ANF	Age of Birds Detected: Adult (A); Juvenile (J); Nestling (N); Age Unknown (U)	prey remains; Other species detected in between survey stations; General habitat	Comments (e.g., observer confidence in species classification, distance and bearing, etc.):
GHID	IST NOGO FLEDGUNG	ФВФ3	Q8\$7	Ф						HETH; PAWL;	
GHIII	1ST NOGO WAIL 2ND NOGO FLENGLING	\$822 1	Φ826	ф				\$84 p		Hent's VAnt's	m
8/15/2014 4:14:07	1ST HOGO FLEDGLING ZND HOGO WAIL	φ848	ф85	20						YRWA'S HOTA'S VATH	
(Inofficial)	15 NOGO WAIL. 2ND NOGO FLEDGLING	4949	0913	φ						PIGE; HOTH; TOSP; RCKI; WIWA; WWCR; VATH; YWARE;	m
40815-5155 FERC PDF	1ST NOGO FURDGUNG 2ND NOGO WAIL	¢915	d929	Ф						YWAL; HOTH; FOSP; SWIH; GRAJ; VATH; SPSA;	√ .

	' (Unoff
J) (icial)
	8/15/2014
	4:1

Station Number:	Coordinates:	Start Time:	Stop Time:	Time of Response:	Bearing to	Estimated Distance to Response:	Inactive gochawk stick nost. OSM.	Age of Birds Detected: Adult (A); Juvenile (J); Nestling (N); Age Unknown (U)	description):	Comments (e.g., observer confidence in species classification, distance and bearing, etc.):
GH [#] 5	2ND NOGO FLEDGUNG	0941	0945	0					AMOIS SUDAS VATAS	

9 JULY INCIDENTALS: VATH; HETTH; SWITH; PISI; REOP; AMRO; WWCR; MEGU; PAWR; AMDI; YRWA; WIW
YWAR; FOOP; PIGR; RCKI; GRAT; SPSA;

NOTE:

- * THERE IS A LOT MORE BEAR SIGN IN THE FORM OF SCAT PILES (3).
- * BARA NEST @ MAN CAMP; CHICKS) APPEAR HATCHED OUT AS DETERMINED FROM ADMIT FEEDING & BEHAVIOR.
- WERL A ARE DEFENDING "NEST" AREA FROM BAEA. HARCHED YOUNG NOT VERIFIED, BUT NEST IS CONEWHORES ON IS. BELOW "NARROWS" ACROSS FROM PRIVATE PROPERTY.
- * VEG. WAS VERY DEVELOPED & DIFFICULT TO TRAVERS TOOK 1/3 LONGER TO RUN 9 JULY POINTS.

Station Number:	Coordinates:	Start Time:	Stop Time:	Time of Response:	Time Elapsed Since First Broadcast:	d Estimated Bearing to Response:	Distance to	Vocal and visual detection - BGOS;	Adult (A);	Notes: (include Photo #'s if taken; Detection of possible goshawk prey remains; Other species detected in between survey stations; General habitat description):	Comments (e.g., observer confidence in species classification, distance and bearing, etc.):
GHT9	HOGO - WHIL CHU + WOGO - DOTTOTION	1228	124)(1240)	2MIN	20°	2¢M	BGOS VISUAL FURUER BURING WAIL CAU, THEN VOCAUTED!	Abuut P	ROWE - POCK TO BBS PT#GLE	
GH\$	NOGO-WAIL CALL 2ND ROUND NOGO-BEEGING CALL		13/02	0						ocwa; wiwa; towa +ent;	
GH%	HOGO-BEGGING CALL ZNO ROUND NOGO-WAIL CALL	1319	1323	\$						YEWA; OCWA; RCKI	
GH#8	17 JUNE 2013 5-05 W-OT; 50°F 18 ROUND - WANLCHU 2MD ROUND - BEGING CALL		0504	A						HETH'S NIWAS TOWA'S AMRO'S LISPS VATHS. NOWA'S YRWAS	
GH*7	1ST ROUND - BEGGIN CALL 2MD ROUND - WAILCALL	0631	P53L	#						HETH'S ECKLISTOWA'S SCOLO'S AMRO'S VATTH	

Station Number:	Coordinates:	Time:	Stop Time:	Time of Response:	Time Elapsed Since First Broadcast:	Estimated Bearing to Response:	Estimated Distance to Response:	Description of Detection: Silent visual detection - SGOS; Vocal detection - VGOS; Vocal and visual detection - BGOS; Inactive goshawk stick nest- OSN; Goshawk nest with young -ANY; Nest with young fledged - ANF	Age of Birds Detected: Adult (A); Juvenile (J); Nestling (N); Age Unknown (U)	Notes: (include Photo #'s if taken; Detection of possible goshawk prey remains; Other species detected in between survey stations; General habitat description):	Comments (e.g., observer confidence in species classification, distance and bearing, etc.):
61°40	15 POUND - WHILL CALL 2ND POUND STERNICAL	PGP	4607	0					,	VANH'S OWN'S HEIM'S	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
SHTI	IST ZAMO BECHNEICHL ZMD ROUND WAIL	0625	Q63D	ф						PAWE! 5 DOWA; HETH YRWA	
GH#12	19 ROUND - WARN CHILL 2ND ROUND BEGGING CHL	0654	DE9	Φ						VATH'S ECLUM'S HETH	
GH#13	2ND ROUND - WAIL CALL	0720	Ф726	φ						HETH'S YEWAS WIWA'S FOSP'S YWKR'S RCKI, OCWA'S COLO'S	
GHA.	2ND ROUND -BEGGING CALL	\$74¢	D746	φ						COLOS GIOLDENEVEQ VRWAS DOWAS YWAR! VANTS SOJUS OCWAS HEAT.	

Station Number:	Coordinates:	Start Time:	Stop Time:	Time of Response:	Time Elapsed Since First Broadcast:	Estimated Bearing to Response:	Estimated Distance to Response:	Description of Detection: Silent visual detection - SGOS; Vocal detection - VGOS; Vocal and visual detection - BGOS; Inactive goshawk stick nest- OSN; Goshawk nest with young -ANY; Nest with young fledged - ANF	Age of Birds Detected: Adult (A); Juvenile (J); Nestling (N); Age Unknown (U)	Detection of possible goshawk prey remains; Other species detected in between survey	Comments (e.g., observer confidence in species classification, distance and bearing, etc.):
GHIS	STROUND - BEGGING CALL 2ND ROUND - WAIL CALL S-D-W-D-T-58°	P313	0824	Ф						GOLDENOVE 28+12 COWAS HOTH	

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Appendix 3c. Wildlife Related Materials

Table A.3c-1. Plant Species and Codes

Wildlife Fieldnotes

Table A.3c-1. Plant species and codes.

Tree Codes	Common Name	Scientific Name
PICGLA	White Spruce	Picea glauca
PICLUT	Lutz Spruce	Picea x lutzii
PICMAR	Black Spruce	Picea mariana
PICSIT	Sitka Spruce	Picea sitchensis
TSUMER	Mountain Hemlock	Tsuga mertensiana
POPBAL	Cottonwood	Populus balsamifera
BETPAP	Birch	Betula paperifera
Shrub Codes	Common Name	Scientific Name
ALNSPP	Alder Species	Alnus sp.
ALNVIR	Sitka Alder	Alnus viridis ssp. Sinuata
ANDPOL	Dwarf Bog-rosemary	Andromeda polifolia
BETGLA	Dwarf Birch	Betula glandulifera
BETNAN	Bog Birch	Betula nana
CORCAN	Dwarf Dogwood	Cornus canadensis
EMPNIG	Mossberry	Empetrum nigrum
LEDDEC	Narrow-leaf Labrador Tea	Ledum decumbens
LEDGRO	Labrador Tea	Ledum groenlandicum
LEDSPP	Labrador Tea Species	Ledum sp.
LINBOR	Twinflower	Linnaea borealis
MENFER	False Azalea	Menziesia ferruginea
OPLHOR	Devil's Club	Oplopanax horridus
RIBTRI	Wild Red Current	Ribes triste
ROSACI	Prickly Rose	Rosa acicularis
RUBARC	Nagoonberry	Rubus arcticus
RUBCHA	Cloudberry	Rubus chamaemorus
RUBPED	Five-leaved Bramble	Rubus pedatus
SALALA	Felt-leaf Willow	Salix alaxensis
SALSPP	Willow Species	Salix sp.
SALSTI	Sitka Willow	Salix stichensis
SHECAN	Soapberry	Shepherdia canadensis
SPIBEA	Steven's Spirea	Spiraea beauverdiana
VACALA	Alaska Huckleberry	Vaccinium alaskensis
VACOVA	Tall (early) Blueberry	Vaccinium ovalifolium
VACVIT	Lingonberry	Vaccinium vitis-idaea
VIBEDU	High-bush Cranberry	Viburnum edule

Herbaceous Codes	Common Name	Scientific Name				
ANERIC	Yellow Anemone	Anemone richardsonii				
CALCAN	Bluejoint	Calamagrostis canadensis				
CHAANG	Fireweed	Chamerion angustifolium				
CHALAT	River Beauty	Chamerion latifolium				
COMPAL	Marsh Cinquefoil	Comarum palustre				
DRYOCT	Eight-petaled Dryas	Dryas octopetala				
EQUARV	Common Horsetail	Equisetum arvense				
EQUSPP	Horsetail Species	Equisetum sp.				
GALTRI	Small Bedstraw	Galium trifidum				
GEOLIV	Bastard Toad-flax	Geocaulon lividum				
GERERI	Northern Geranium	Geranium erianthum				
HERLAN	Cow Parsnip	Heracleum lanatum				
LUPSPP	Lupine Species	Lupinus sp.				
PYRASA	Pink Wintergreen	Pyrola asarifolia				
STRAMP	Clasping Twistedstalk	Streptopus amplexifolius				
TRIARC	Northern Starflower	Trientalis arctica				
VIOLAN	Alaska Violet	Viola langsdorfii				
VIOSPP	Violet Species	Viola sp.				
Fern Codes	Common Name	Scientific Name				
DRYEXP	Wood Fern	Dryopteris expansa				
GYMDRY	Oak Fern	Gymnocarpium dryopteris				
Lichen Codes	Common Name	Scientific Name				
CLASPP	Reindeer Lichen Species	Cladina sp.				
PELBRI	Freckle Pelt	Peltigera britannica				
Moss Codes	Common Name	Scientific Name				
HYLSPL	Step Moss	Hylocomium splendens				
PLESCH	Red-stemmed Feathermoss	Pleurozium schreberi				

Field Notes for July 8-9 Northern Goshawk Surveys:

The second Northern Goshawk survey was completed July 9, 2013. A total of 15 points were surveyed using the methods described in the study plan.

Logistics: Mark Miller helped with shuttling Amal and Bobby across the river. Amal and Bobby were based a short distance out of the man-camp.

Monday: Travel, set up camp, and surveyed goshawk points: 1, 2, 3, 4, 9, 5 and 6.

Tuesday: surveyed goshawk points: 7, 8, 10, 11, 12, 13, 14 and 15. Traveled back to Anchorage / Fairbanks.

Field data: The forms have been uploaded into SharePoint along with notes.

Bald Eagle Nest: Eagles are currently feeding hatched young as assessed from their behaviour.

Merlins: The pair are currently still in the area and actively defending a "nest" territory as assessed from their behaviour.

The survey was completed. The vegetation was not difficult on Monday, but was very difficult on Tuesday further in towards the lake. It took 1/3 longer to do the last 8 points. The Devil's club and False Azalea impede travel, the fern are so developed you can't see the ground for sure footing, and the humidity is up making rocks and branches very slick. The survey was more challenging, but doable especially because we broke it down into "2" days rather than one long one.

Incidental list: Varied Thrush; Ruby-crowned Kinglet; Yellow-rumped Warbler; American Dipper; Bald Eagle; Chestnut-backed Chickadee; Merlin; Mew Gull; Swainson's Thrush; Hermit Thrush; Slate-colored Junco; Orange-crowned Warbler; Spotted Sandpiper; Tree Swallow; Gray Jay; Yellow Warbler; Wilson's Warbler; Arctic Tern; Pine Siskin; Redpoll; Pine Grosbeak; White-winged Crossbill; Fox Sparrow; Pacific Wren.

There was more, fresher bear sign in the form of scat (3).

Field Notes for May 21-22 Breeding Bird Surveys:

The first field survey of Breeding birds went well. I flew down to Anchorage on Monday 20 May, Bobby Beckmen picked me up and we set out for Moose Pass. I contacted John Stevenson along the way to let him know we were coming and we all converged at the house in Moose Pass. John took us out across the Narrows in the boat and we made camp on the south side of the creek. We decided to find a few points and get an idea of the habitat and terrain. Tuesday morning we surveyed points: 7, 8, 10, 11, 12, 13, 14. Wednesday we surveyed points: 9, 6, 5, 4, 3, 2, 1. The crossing in the canoe was uneventful and easy. We completed surveys for all 14 points. The weather was very agreeable. The forms will be uploaded into SharePoint by the end of the day, along with notes, the few picture we took and incidental information. We took coordinates for the Bald Eagle nest at the camp sight. They are currently incubating eggs from their behaviour. Bobby and I were curious about a pair of Merlin in the immediate area, so we found them and took coordinates of a suspected nest sight, however, I do not believe they are incubating yet (based on their behaviour).

NAD83

60.45676; 149.36002 Bald Eagle Nest (Incubating) 60.45599; 149.36365 Suspected Merlin Nest site.

We decided **NOT** to take the Vegetation information this time around as most of the plants were senesced and very difficult to ID. We will accomplish that in June when the vegetation is in a better state (leaves and flowers).

I will be honest and say that we had it easy this time around. I feel we will have more complications once the vegetation grows up, it will make traveling slower, more difficult and more painful. I got slapped with a Devils club (not bad, but certainly could do without), and foresee a lot more of that in June and July. I am hoping this will not affect my assessment of travel time and survey time. We will try to keep up the pace.

I have included some pictures for your view. Grant lake is still very much iced over. However, the snow has pretty much receded from the whole survey area, with only small pockets here and there. The birds were singing, but there was a marked lack of certain species, especially the insectivores. I suspect that they will be arriving soon and our June surveys will pick them up.

Our incidental list: Varied Thrush; Ruby-crowned Kinglet; Yellow-rumped Warbler; American Dipper; Bald Eagle; Chestnut-backed Chickadee; Black-capped Chickadee; Boreal Chickadee; Merlin; Mew Gull; Brown Creeper; Hermit Thrush; Loon Species (either Pacific or Common, was very bad lighting and couldn't tell); Slate-colored Junco; Orange-crowned Warbler; Belted Kingfisher; Greater Yellowlegs; Golden-crowned Sparrow; Spruce Grouse; Harlequin Ducks. There was Moose sign everywhere. The crews reported seeing a moose the day before we arrived. There was NO bear sign.

Field Notes for June 14-17 Breeding Bird & Northern Goshawk Surveys:

The second and final songbird survey was completed June 16, 2013. A total of 14 points were surveyed using the methods described in the study plan.

Logistics: John Stevenson helped with shuttling Amal and Bobby across the river. Amal and Bobby were based a short distance out of the man-camp.

Friday: Travel, obtained waders and rope from Seward, shuttle across the river, set up camp, tested safety of weir, visual inspection of water levels

Saturday: surveyed breeding bird points: 7, 8, 10, 11, 12, 13, and 14. Vegetation survey of points: 7, 8, 10, 11, 12, 13, 14, 9 and 6.

Sunday: surveyed breeding bird points: 9, 6, 5, 4, 3, 2, 1. Vegetation survey of points: 5, 4, 3, 2, and 1. Surveyed goshawk points: 1, 2, 3, 4, 9, 5 and 6.

Monday: surveyed goshawk points: 7, 8, 10, 11, 12, 13, 14 and 15.

Field data: The forms have been uploaded into SharePoint along with notes, the few picture we took and incidental information.

Bald Eagle Nest: Eagles are currently incubating eggs as assessed from their behaviour.

Merlins: The pair are currently still in the area and suspected to be incubating eggs.

All surveys were completed. The Breeding Bird surveys are now finished. The last 2013 Goshawk survey is scheduled for July 8-10. I have included some pictures, for your view. Grant Lake is now ice free, and the snow only remains in the highest elevations. All expected birds were singing, and we documented a Red-breasted Merganser hen with 10 downy chicks (roughly 1-7 days old).

Incidental list: Varied Thrush; Ruby-crowned Kinglet; Yellow-rumped Warbler; American Dipper; Bald Eagle; Chestnut-backed Chickadee; Boreal Chickadee; Merlin; Glaucous-winged Gull; Brown Creeper; Hermit Thrush; Common Loon; Slate-colored Junco; Orange-crowned Warbler; Belted Kingfisher; Spotted Sandpiper; Golden-crowned Sparrow; Harlequin Ducks; Violet-green Swallow; Common Raven; Wilson's Snipe; Alder Flycatcher; Osprey; Pacific Wren.

A cow moose and calf came through our camp one night, but left without incident. There was moose sign everywhere along our survey routes. There was bear sign in the form of scat.