	DOCKET NO. CP17000	Doc No: USAKE-PT-SRREG-00-
	RESOURCE REPORT NO. 2	000006-000
Alaska LNG	APPENDIX G	April 14, 2017
PROJECT	Part 18 of 19	REVISION: 0
	Public	

Part 18 of 19 of Appendix G of Resource Report No. 2

AQUATIC SITE ASSESSMENT DATA FORM

*VEGETATION VARIABLES P= Plot, M= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Forested-Evergreen-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed
Percent Cover (P): Tree (>5 dbh, >6m tall) Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Dwarf shrub (<0.5m)
Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) Very High Density (80-100%)
Interspersion of Cover & Open Water (P): 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg. Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches_ Continuous Cover
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)
HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Histosol: Sapric Histosol:
Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Histosol: Sa
HYDROLOGIC VARIABLES No legal / December 1 December 1
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent I
Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Created
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Created Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.) Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Glacial Till/Not Permeable
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Created Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.) Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%) Perennial Spring
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated

Crew Chief QA/QC check:

GPS Technician QA/QC check:

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

	New	7 - 1
Feature ID: WIO6AY039	Field Target: Cold for # 2 Date	1.11.16
readure ib.		·
	the state of the s	tion of data torm

For all items not checked, please provide detailed explanation in the notes section of data form.

1. Site Description

- Site description, site parameters and summary of findings are complete?
- A detailed site sketch is included in logbook?

2. Vegetation

- At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
- Vegetation names are entered legibly for all strata present?
- Cover calculations are complete and correct?
- All dominant species have been determined and recorded per strata?
- Indicator status is correct for each species?
- Dominance Test and Prevalence Index have been completed?

3. Soil

- Soil profile is complete?
- Appropriate hydric soil indicators are marked?

4. Hydrology

- Appropriate hydrology indicators are marked?
- Surface water, water table, and saturation depths are recorded if present?

5. Functions and Values

Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?

6. Field Logbook

- Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
- Each logbook page is initialed and dated?

7. Maps

- Wetland boundaries have been corrected if necessary?
- Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

Wetland Scientist (print)

X

Signature / Date

X Jessie Brownlee

Field Crew Chief (print)

Signature / Date

Who

Ter William grown

against tree arressors

for the material

-

WETLAND DETERMINATION DATA FORM New FT Coldfoot / 40 SITE DESCRIPTION Map #: 3 Map Date: 7.15.16 Field Target: Other (explain) X Survey Type: Centerline_ Access Road (explain)_ Feature Id: WIO.6 AYO40 Project Name: Alaska LNG Date: 7/8/17 Team No.: ₩106 Investigators: Jessie Brownlas Region: Alaska Milepost: 282 Datum: WGS84 Latitude: 66.7734095 Longitude: 150.65.7762 Picture No. 9 WIO6 AY 040 - 001 to - 004 Logbook No.: Logbook Page No.: SITE PARAMETERS Landform (hillslope, terrace, hummocks, etc.): River terrace / Bluff Subregion: Mo un tam Local relief (concave, convex, none): Plat to Clinkthe conve Slope (%): Evidence of Wildlife Use: NowE Pre-mapped Alaska LNG/NWI classification: Are climatic/hydrologic conditions on the site typical for this time of year? Are "Normal Circumstances" present: (If no, explain in Notes.) No (if no explain in Notes) (If yes, explain in Notes) Significantly Disturbed? Are Vegetation _, Soil_ or Hydrology (If yes, explain in Notes.) Naturally Problematic? Are Vegetation____, Soil_ or Hydrology SUMMARY OF FINDINGS Is the Sampled Area within a Wetland? Hydrophytic Vegetation Present? Yes_ Wetland Type: Hydric Soil Present? PSSI/EMIB Wetland Hydrology Present? Alaska Vegetation Classification (Viereck): 11 C 2. 111 A Z Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey Previously burned Pic mar woodland, NOW shrub & Emergent regen with Rho Tom & Car Big Dominating. Many Burned standing snago around Area locarders a vast wetland and is situated between it an dry Bluff over a river. This area is wet with water ~ 18' away from center of plot Gust wit side of 26' plot size) and transitions slowly to being dry right & Bluff

river down here

Page 1 of 4

W106 A4040

VEGETATION (use scientific names of plants)		
Tree Stratum (Plot sizes: (00)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status
1. Picen mariana Snags (dead)-	+ 10*		
1. Picen mariana Snags (dead) = 2. Betvel Nevalaskana	T		FACU.
3.			
4.			
Total Cover	10		
50% of total cover		% of total cov	er:_ <u>(</u>
Sapling/Shrub Stratum (2 ()	Absolute % Cover	Dominant Species?	Indicator Status
		(Y/N)	
1. Rhododendrum tomen to sum	45	У.	FAC
2. Behila plana	5		FAC
3. Vaccinium diginosum	S		FAC
4. Behla wendaskang 3-5'	6		FACU
5. Vaccinium vitis- Idaea	8		FAC
6. spiraea stevenii	3		FACU
7. Picea mariana	T		FACIL
8. Picea alusca	T		FACU
9.			
Total Cover	72		
50% of total cover	: <u>36</u> 20	% of total cov	er: 14.4
		PER SERVICE	Maria Parament
VEGETATION (use scientific names of plants			

Herb Stratum(26)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: y Dominance Test is > 50% N Prevalence Index is ≤ 3.0
1. Chamerton Angust folium	T		FACU	Morphological Adaptations¹ (Provide supporting data in
2. Carex bireclawii	10	Y	FAC	Notes) .
3. mass 50	T			Problematic Hydrophytic Vegetation¹ (Explain)
4. Rubus changemorus	5	Y	FACW	¹ Indicators of hydric soil and wetland hydrology must be present unless
5. Eriophorum vaginatum	2		FALW	disturbed or problematic.
6.				
7.				% Bare Ground Chard NOSS ~ 7
8.				% Cover of Wetland Bryophytes
9.				
10.				% Cover of Water Some or edge
Total Cove)% of total cov	er: 3,4	Hydrophytic Vegetation Present (Y/N):
				¥ .

			7.18.14					
SOIL			DateF	eature II		WAY 12 22		Soil Pit Required (Y/N)
SOIL PROFILE	E DESCRIPTION: (I	Describe	to the depth needed	d to doc	ument the in	dicator or co	onfirm the absence	e of indicators.)
Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Notes
Oe 0-2								Dry organics charcoal
A Te 2-4	104R2/2	(00)					Loam	Authorizated & seeping
Ba 4-10	B.544/1	85	7.54R 3/4	10	con	MRC	Siltloom	Saturated & seeping
O			7.54R4/4	5	con	m RC		. 0
Bw 10-24	2544/,	88	10/R 4/4	10	com	M		Dry throughout
			54R 3/2	9	CON	M	Pockets of San	diar noterial
			1-0	1				
		etion, RM	I=Reduced Matrix, C	CS=Cove	ered or Coat	ted Sand Gr		PL=Pore Lining, M=Matrix.
HYDRIC SOIL	INDICATORS	4.50.4	No. of the last of	STATE OF THE PARTY	G STATE		THE RESERVE TO STREET	FOR PROBLEMATIC HYDRIC SOILS
Histosol or His	tel (A1)		Alaska Gleyed				in a second	hange (TA4) ⁴
Histic Epipedo	n (A2)/		Alaska Redox					Swales (TA5)/t/
Black Histic (A	3)		Alaska Gleyed	d Pores	(A15) <u>W</u>		the state of the s	with 2.5Y Hue
Hydrogen Sulfi	ide (A4)/			1			Alaska Gleyed	without 5Y Hue or Redder Underlying
Thick Dark Sur	face (A12) _ //				5		Other (Explain	in Notes) \/
		tation, o	ne primary indicator	of wetla	and hydrolog	y, and an a		pe position must be present unless
disturbed or pr	oblematic.		NET			May .		
	f color change in No rer (if present): Typ		N	Depth (i	nches):			* *
Trestrictive Edy	or (in processity): 13p			- F /				
Hydric Soil Pr	resent (Y/N):	Y						The second second
Notes: Positi	Ve XX Hiro	reper	Bo				MESS.	
7.4	196	0	3					
HYDROLOGY	PRIMARY INDICA	TORS (a	iny one indicator is s	sufficien	t) SI	ECONDARY	(INDICATORS (2	or more required)
Surface Water	(A1) N See Note	Sui	face Soil Cracks (B	6) <u>W</u>		/ater-stained eaves (B9) _		Stunted or Stressed Plants (D1)
High Water Ta	ble (A2)		Inundation Visible on Aerial Imagery (B7)			rainage Patt	terns (B10)	Geomorphic Position (D2) _/V
Saturation (A3)		arsely Vegetated ncave Surface (B8)	W		xidized Rhiz ving Roots (cospheres along (C3)/	Shallow Aquitard (D3)
Water Marks (I	B1) _ 🎜	Ma	rl Deposits (B15)	W		resence of Fon (C4)	Reduced	Microtopographic Relief (D4)
Sediment Dep	osits (B2)		drogen Sulfide or (C1)		S	alt Deposits	(C5)	FAC-Neutral Test (D5)
Drift Deposits	(B3)/	Dry	r-Season eter Table (C2)^	/	N	otes:		The state of the s
Algal Mat or Crust (B4) Other (Explain in Notes):								
Iron Deposits ((B5)/							
	(1) 1/25 YE 上海(1)	440	ALL AND DESIGNATION	LEWY	The life was the party	11 2 %	路自己,对于957	
Surface Water	Present (Y/N): on (Edge	Depth (in):					🗸
Water Table P	resent (Y/N):	0	Depth (in):		Wet	land Hydro	logy Present (Y/N	V):
Saturation Pre (includes capil			Depth (in): 4		EC:			
Notes:	e From 6-1	2"	Water 11	iston	t side	B pla	of by 3"	but not in Plot

AQUATIC SITE ASSESSMENT DATA FORM

VEGETATION VARIABLES P= Plot, N	Λ= Matrix
Forested-Evergreen-Needle-leaved Scrub Shrub-Evergreen-Broad-leaved Persistent Aquatic Bed	ackingForested-Deciduous-Needle-leavedScrub Shrub-Deciduous-Broad-leavedScrub Shrub-Deciduous-Broad-leavedScrub Shrub-Evergreen-Needle-leavedEmergent-Non-persistentEmergent-
	Sapling (<5 dbh, <6m tall)
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even X
Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)	(0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattere	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant	species) Medium (5-25 species) _
Presence of Islands (M): Absent (none)	Cone or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches_	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site
Dead Woody Material (P): Low Abundance Abundant (>50% of surface)	(0-25% of surface) Moderately Abundant (25-50% of surface)
High (small groupings, diverse and interspers	
HGM Class (P): Slope	Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES	
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy	Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES	
Inlet/Outlet Class (P): No Inlet/Outlet 人	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermitten Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed,	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Seniperm. Flooded, Saturated Semiperm. Flooded
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Outlet Perennial Outlet Perennial Outlet Perennial Outlet Perennial Inlet/No Outlet Perennial In
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermitten Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed,	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inl
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inl
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Common C	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/N
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No C Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflood Water pH (P): No surface water	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No C Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflood Water pH (P): No surface water	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Noter Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water A Countricial Geologic Deposit Under Wetland Glacial Till/Not Permeable	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Noter Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water A Countricial Geologic Deposit Under Wetland Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Se	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No C Return Interval >5 yrs Degree of Outlet Restriction (P): No Outfloo Water pH (P): No surface water	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial nlet/Perennial Number of Perennial nlet/Perennial Number of Perennial
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No C Return Interval >5 yrs Degree of Outlet Restriction (P): No Outfloo Water pH (P): No surface water	t Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Microrelief of Wetland Surface (P): No Outflow Water ph (P): No surface water Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No See LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated Only Connected Above Connected	t Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Microrelief of Wetland Surface (P): No Outlook Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflook Water pH (P): No surface water A Constraint Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No See LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated Only Connected Above Connected Wetland Land Use: High Intensity (i.e., Watershed Land Use: 0-5% Rural	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial

J. Browner

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

	News	
Feature ID: 6/106A1040	Field Target: Cold foot 4/	Date: 7.18.19
eature ib. Willey 10 10		tion of data form

For all items not checked, please provide detailed explanation in the notes section of data form.

1. Site Description

- 図 Site description, site parameters and summary of findings are complete?
- A detailed site sketch is included in logbook?

2. Vegetation

- At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
- Vegetation names are entered legibly for all strata present?
- ☑ Cover calculations are complete and correct?
- All dominant species have been determined and recorded per strata?
- Indicator status is correct for each species?
- ☑ Dominance Test and Prevalence Index have been completed?

3. Soil

- ⊠ Soil profile is complete?
- Appropriate hydric soil indicators are marked?

4. Hydrology

- Appropriate hydrology indicators are marked?
- Surface water, water table, and saturation depths are recorded if present?

5. Functions and Values

☑ Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?

6. Field Logbook

- Motes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
- ☑ Each logbook page is initialed and dated?

7. Maps

- Wetland boundaries have been corrected if necessary?
- Maps are initialed and dated?

8. Photos

Field Crew Chief (print)

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X	^	
Wetland Scientist (print)	Signature / Date	
X Jessie Brownlee	X 2m 7.18:19	

Signature / Date

		Type and an	No false con	A New	FT Coldton	of 4
SITE DESCRIPTION		Trabat red		SIGNATURE CONTR	Man 4	Han Date Zukulla
Survey Type: Centerline Acce	ess Road (explain)	Other (expl	ain)X	Field Target:		<u>∯</u> Map Date: <u>7⋅)5⋅1</u>
Date: 7.18.16	Project Name: Alask	a LNG		Feat	ture Id: WOLOA	
Investigators: Jessie Brow	nee		T		Team No	D.: W106
State: Alaska	Region: Alaska		Milepost:	291		
Latitude: 66,659		Longitude	150.6	۲-	Datum:	WGS84
Logbook No.: 2	Logbook Page No.:	37	Picture No.	P-WIOWAPO	41-001 the	· v _004
SITE PARAMETERS	New Walter	中的研究自身	建筑	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	A PROPERTY OF	THE PROPERTY OF THE PARTY OF TH
Subregion: Ray Mountains			Landform (h	illslope, terrace, hu	mmocks, etc.):	and swale
Slope (%): 0-3				concave, convex, n		
Pre-mapped Alaska LNG/NWI classific	ation: NA . Not MAODS	ED	Evidence of	Wildlife Use: unkn	own seath a	soll ? Bear ?
Are climatic/hydrologic conditions on the Yes(No(if no ex	ne site typical for this time		Are "N	Normal Circumstand		V-
Are Vegetation, Soil, or H	ydrology Significant	tly Disturbed	? No	(If yes, explain in	n Notes)	
Are Vegetation, Soil, or H	ydrology Naturally F	Problematic?	No	(If yes, explain i	n Notes.)	
SUMMARY OF FINDINGS		1,75,5946	西国国政治	新加州市区 (1)		
Hydrophytic Vegetation Present? Yes	χ' No	Is	the Sampled	Area within a Wet	land? Yes_	/No
Hydric Soil Present? Yes_	X No	w	etland Type:	PSS4/13		
Wetland Hydrology Present? Yes	/ No	— А	laska Vegetati	on Classification (V	iereck): I(A 2	1102
Notes and Site Sketch: Please include corridor. Pic Mar open forest w., Communities, Thick me Soll is 11" of organies to break through. Soll is Wetland to the East boundary about 50' he	majority of the sale of the sa					
River	PP928	争分多	A 43	4年	TAPS ROL	. د.

W106A4041

	% Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC:
Picea Mariano	10	Υ	FACW	% Dominant Species that are OBL, FACW, or FAC: 100
3.				
L - I - I				Prevalence Index worksheet:
Total Cove				Total % Cover of: Multiply by:
50% of total cov	er: <u>5</u> 20	% of total cov	/er:	OBL species:X 1 =
Sapling/Shrub Stratum (24)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 40
Vaccinium VIHS -idaea	20	У	FAC	UPL species X 5 =
Vaccinium uliginosum	14		FAC	Column Totals: (03 (A) 270 (B)
Rhadodendam taxatosim	15	Y	FAC	PI = B/A = 2.62
Betolo wana	2		FAC	*
spiraca struenii	1		FACU	
Picea martana	20	У	FACW	the state of the state of the
· Salix pulchra	2		FACUS	
· Solix bebbiana	T		FAC	
Total Cove	er: 7 4	-		

Herb Stratum (2(e)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Y Dominance Test is > 50%
1. Equisation sylvation 2. Petasites Grigidus 3. Oliveration	(3		FAC	Morphological Adaptations¹ (Provide supporting data in Notes)
4. Carex hige lowii 5. Rubus chamaemorus	2.	Y	FAC FAC	Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
6. Eriophorm vaginatum 7. 8.	4-/	4	BACW	% Bare Ground% Cover of Wetland Bryophytes
9.		7		
Total Cove 50% of total cove	1	% of total cov	er: <u>3,8</u>	Hydrophytic Vegetation Present (Y/N): Notes: (If observed, list morphological adaptations below):

		7	71816							
SOIL	Ton Bridge	1488		ature I	D		Talketta salaka	Soil Pit Required (Y/N)		
SOIL PROFILE	E DESCRIPTION: (De	escribe	to the depth needed	to doc	ument the	e indicator or	confirm the absence	of indicators.)		
Denth	Matrix		Redox Features							
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc²	Texture	Notes		
0: 0-5						-		Dry frathermoss		
De 5.11	109R3/1	100					4			
	IDYRALI	40						Probats of mick motorial		
A /1-15	10 YR 2/1	100								
ADOF 15-18	10-1R 2/2	95	104R 5/3	5	Con	m		Ice lenses 9 charcoal		
R., 18-26	104R 2/2	9.5	10412 4/4	5	COA	M		Saturation		
1- 0.0	D-D-1-1		A-D-dusted Makely Ci	C=C=1	arad ar C	antad Cand C	Projection:	PL -Poro Lining M-Matrix		
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix. HYDRIC SOIL INDICATORS INDICATORS FOR PROBLEMATIC HYDRIC SOILS ³										
Histosol or Hist		me in	Alaska Gleyed		- 1/					
Histic Epipedor	,	-	Alaska Redox ((0.45)	/	Alaska Alpine S	district.		
Black Histic (A:		•	Alaska Gleyed	Pores	(A15)/	V		without 5Y Hue or Redder Underlying		
Hydrogen Sulfi	de (A4)	ches			Tar .		Layer_ ^	Y STATE OF THE STA		
Thick Dark Sur							Other (Explain i			
disturbed or pro	of hydrophytic vegeta oblematic. f color change in Note		one primary indicator of	of wetla	and hydro	logy, and an	appropriate landsca	pe position must be present unless		
	er (if present): Type:		prat Frost D	epth (inches):	15		All all		
Hudria Sail Dr	esent (Y/N): Yes						× 15	+		
						1 3		II to		
Notes: Neg 0	XX throughou	1	terial in Oe				4.			
Palce	to of Mark	. Ma:	terial in Oc	hor	NOSI	(A10)	-			
HADBOLOGA	PRIMARY INDICAT	ORS (any one indicator is so	officien	it)	SECONDAR	Y INDICATORS (2	or more required)		
21	1	-	ir p	-	/	Water-staine	THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER.	Stunted or Stressed		
Surface Water	(A1)//		rface Soil Cracks (B6	1	-	Leaves (B9)		Plants (D1)		
High Water Ta	ble (A2)	(B	7)	ation Visible on Aerial Imagery			itterns (B10) _ /\/	Geomorphic Position (D2)		
Saturation (A3)) <u>~~</u>	Sp Co	arsely Vegetated incave Surface (B8) _	Vegetated Surface (B8)			izospheres along (C3)/_	Shallow Aquitard (D3) X 15		
Water Marks (I	31) _ /		arl Deposits (B15)/	1	_	Presence of Iron (C4)	Reduced	Microtopographic Relief (D4)		
Sediment Depo	osits (B2)	Hy	drogen Sulfide			Salt Deposit	s (C5)/_	FAC-Neutral Test (D5)		
Drift Deposits ((B3) N	Dr	y-Season V	1-		Notes:				
Algal Mat or Ci	.1		ater Table (C2) <u>/</u> her (Explain in Notes)							
Iron Deposits (-	TIET (Explain in Notes)					4		
Iron Deposits (B3)		- SAN ELL WATER STATE		Harantina Italia	#11 - W 12 - C 1	Spirit Ship South St.	The state of the s		
Surface Water	Present (V/N):	/ Property	Depth (in):	relic.	111		of desired a sound	A STATE OF THE STA		
Water Table P	100	Y		18	W	etland Hydr	ology Present (Y/N	(): <u> </u>		
Saturation Pre	sent (Y/N):		Depth (in): 13 4 /8		E	C:		7.8		
(includes capill Notes:							, ,	1 + believe 4 in Oal		
fill to this	2 18" below s kevel if gi	the vens	3" Seasonal now	Fre , c	St I	tisasa	ten table.	t I believe it would		

AQUATIC SITE ASSESSMENT DATA FORM

Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Forested-Evergreen-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved X Emergent-Non-persistent Emergent-Non-persistent Persistent Aquatic Bed
Percent Cover (P): Tree (>5 dbh, >6m tall) IO Sapling (<5 dbh, <6m tall)
Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) 80%) Very High Density (80-100%) A
Interspersion of Cover & Open Water (P): 100% Cover or Open Water — <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover >75% Scattered or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)
Vegetative Interspersion (P): Low (large patches, concentric rings) χ . Moderate (broken irregular rings) High (small groupings, diverse and interspersed)
HGM Class (P): Slope Flat_/_ Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES
Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty X Mineral: Clayey
HYDROLOGIC VARIABLES
MONOTON TO WAR THE MAN AND THE SAME THE
Inlet/Outlet Class (P): No Inlet/Outlet
Outlet Intermittent Inlet/Intermittent Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/In
Inter/Outlet Class (P): No Inlet/Outlet X No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Outlet Perennial Inlet/Intermittent Inlet/Intermitt
Intermittent Intermittent Intermittent Outlet No Intermittent Outlet Intermittent I
Intervoluter Class (P): No Inlet/Outlet X No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet
Intervoluter Class (P): No Intervoluter X No Interviter Dutlet No Interviter Intermittent Outlet Intermittent Interviter Intermittent Interviter Intermittent Interviter Intermittent Interviter Intermittent Interviter Int
Intervolutiet Class (P): No Infet/Outlet No Infet/Intermittent Outlet No Infet/Intermittent Outlet Intermittent Infet/Intermittent Infet/Intermittent Infet/Intermittent Outlet Perennial Infet/Intermittent Infet/Intermittent Outlet Perennial Infet/Intermittent
Intervoluter Class (P): No Intervoluter X No Interviter Dutlet No Interviter Intermittent Outlet Intermittent Interviter Intermittent Interviter Intermittent Interviter Intermittent Interviter Intermittent Interviter Int
Intervoluter Class (P): No Intervoluter X No Int
Inter/Outlet Class (P): No Inter/Outlet
Intervoluter Class (P): No Inlet/Outlet
InterOutlet Class (P): No InterOutlet X No InterOutlet No InterOutlet Intermittent Dutlet Intermittent InterOutlet Interm
InterOutlet Class (P): No InterOutlet X No InterOutlet No InterOutlet Intermittent Dutlet Intermittent Dutlet Intermittent Dutlet Intermittent Dutlet Intermittent Dutlet Intermittent Dutlet Perennial InterOutlet Intermittent Dutlet Perennial InterOutlet Intermittent Dutlet Perennial InterOutlet Perennial InterOutlet Intermittent Dutlet Perennial InterOutlet InterOutlet Perennial InterOutlet InterO

Fromlee

Crew Chief QA/QC check:

GPS Technician QA/QC check;

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site. New Date: 7.18.16 Field Target: Cold Foot 4 Feature ID: 6106/3 404/ For all items not checked, please provide detailed explanation in the notes section of data form. 1. Site Description Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook? 2. Vegetation 図 At least 80% of onsite vegetation has been keyed to species, or collected for later identification? Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct? All dominant species have been determined and recorded per strata? Indicator status is correct for each species? 3. Soil ☑ Soil profile is complete? Appropriate hydric soil indicators are marked? 4. Hydrology Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present? 5. Functions and Values Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland? 6. Field Logbook Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? ■ Each logbook page is initialed and dated? 7. Maps Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

R	Ρł	เม	fn	9
Ο.		14	w	J

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- ☑ Two photos were taken for each Observation Point (vegetation/site overview)?

X	X
Wetland Scientist (print)	Signature / Date
X Jussie Brownlee	X 0 . 7.18.16
=: 11 o = 01: 6(: 1)	

New FT Yokon I A

Date: 7,18,10 Investigators: Jessie Box	Access Road (explain) Project Name: Alas	_ Other (expla	ain) K	Field Tar		Map #: Map Date: 7 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Investigators: Jessie Bre	Project Name: Alas	ka LNG				
Investigators: Jessie Bre		- 4			Feature Id	WIOGAY042
1.00	ountee	15	14.	-1		Team No.: WID6
State: Alaska	Region: Aļaska		Milepost:	324.5	,	,
Latitude: 66.2461556		Longitude	-150.0	27785	75	Datum: WGS84
Logbook No.: * 2	Logbook Page No.:	37	Picture No.:	9-W106	44042-0	01-004
SITE PARAMETERS		(4)		AND A		
Subregion: Ray Mounta	inc		Landform (hil	llslope, terra	ce, hummock	is, etc.): Hillside
Slope (%): 5-8			Local relief (d	concave, co	ovex, none):	concave
Pre-mapped Alaska LNG/NWI cla	assification: NA Wo+ ma	oped	Evidence of V	Wildlife Use:	Bear 5	cat · · ·
Are climatic/hydrologic conditions Yes	s on the sité typical for this tim no explain in Notes)	e of year?	Are "N Yes_		mstances" pro	esent: xplain in Notes.)
Are Vegetation, Soil	or Hydrology Signification	ntly Disturbed?	No_X	(If yes, ex	plain in Note:	5)
Are Vegetation, Soil,	, or Hydrology Naturally	Problematic?	No_X	(If yes, ex	plain in Note	s.)
SUMMARY OF FINDINGS	动图的设施 主义的制	West Comment	MERCH T		No. Physical	
Hydrophytic Vegetation Present?	YesXNo	Is	the Sampled	Area within	a Wetland?	Yes X No No
Hydric Soil Present?	Yes No	w	etland Type:	PSSIB		
Wetland Hydrology Present?	YesXNo	AI	laska Vegetatio	n Classifica	tion (Viereck)	: 11BZ
corridor. Open alcles & willed one un regetates. It Site is Episaturat Mineral soil was wetland of silt of	legetation is she legetation is she led w/water pour initially dry. I deposited plumes to	owing pring in the large hrough ou	reference from 3": n wetland	ial grand das area.	who sed the or whole spring e	erline, Photo Locations, and Survey iment deposits that higher drier ground ganics + mineral soil, is a seep/spring xpresses with
	ì				-	Turi I

		24.1		
VEGETATION (use scientific names of plant	s)			
Tree Stratum (Plot sizes: 100)	Absolute % Cover	"Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: (A)
1. Picea marlana	\$	0.44	FACU	Total Number of Dominant Species Across All Strata: (B)
				% Dominant Species that are OBL, FACW, or FAC:(A/B)
3. layer				
4.	L S.			Prevalence Index worksheet:
Total Cover	r:			Total % Cover of: Multiply by:
50% of total cover	r:20	% of total cov	/er:	OBL species:X 1 =
Sapling/Shrub Stratum (2.6)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 18 X 2 = 36 FAC species 64 X 3 = 192 FACU species 15 X 4 = 58
1. Salix pulchra	10		FACIN	UPL speciesX 5 =
1. Salix pulchra 2. Alnus frutizosa	35	Y	FAC	Column Totals: 95 (A) 280 (B)
3. spirara steveni,	12	У	FACU	PI = B/A = 2.94
4. vaccinium uliquasum	2	Τ.	FAC	Salix bebbiana 5
5. Phododendrum groonlandicum	6		FAC	
6. Vaccinium Mts-idara	2		FAC	
7. Behila clandulasa	3		FAC	
7. Behila slandillasa 8. Empetrum Nigrum 9. Picza Mariana	4		FAC	
9. Picea mariana	3		FACU	
Total Cover				
50% of total cover	r: <u>43</u> 5 20	% of total cov	er: 17.2	
VEGETATION (use scientific names of plants	s)		TO THE PARTY.	SUPPLIED TO SUPPLIED REPORTED TO
Herb Stratum (26)	Absolute	Dominant Species?	Indicator	Hydrophytic Vegetation Indicators:

Herb Stratum (26)	Absolute % Cover	Dominant Species? (Y/N)	Indicator • Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50%
1. Equisolum Sylvaticem	7	Y	FAC	Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in
2. Chamarion angustifulium	T		FALL	Notes)
3. pyro/a 50	T		-	Problematic Hydrophytic Vegetation! (Explain)
4. Rubus Chamoemorus	1 town		FACL	¹ Indicators of hydric soil and wetland hydrology must be present unless
5. spinnulum annotinum	1	* P'=	FACU	disturbed or problematic.
6. Carrx sys	T		_	
7.			ac.	25_ % Bare Ground
8.			-	/ % Cover of Wetland Bryophytes
9.	(9)			Total Cover of Bryophytes
10.				Cover of Water
Total Cover)% of total cov	er: \.3	Hydrophytic Vegetation Present (Y/N):

			7-18-16							
SUI.	A SECTION AND A SECTION ASSESSMENT		DateFe	ature I	CO. Co			Soil Pit Required (Y/N)		
SOIL PROFILE	DESCRIPTION: (Describe	to the depth needed	to doc	ument the i	ndicator or co	nfirm the absence	of indicators.)		
Depth	Matrix		Redox Features			-		100		
(inches)	Color (moist)	%	Color (moist)	- %	Type ¹	Loc ²	Texture	Notes		
De 0-1.5						(4)		Survivated organics		
Oa 1,5-3	-		-11				mucky-greasy	Saturated organics		
A 3-45	104R 3/1	95	754R 3/4	5	(61	PL	very annelly si	4 loom		
BW1 45-9	164R 3/2	87	754R3/4	10	Cen -	M	were growelly s	It loan		
			2.544/	3	Dep	M	0			
BWZ 9-20	2.54 3/2	92	7.5 YR 3/4	8	C61	M RC	Silt loam			
						110 10	21 4:	Disposal ining McMotrix		
¹Type: C=Con	centration, D=Deple	tion, RN	M=Reduced Matrix, C	S=Cov	ered or Coa	ated Sand Gra		PL=Pore Lining, M=Matrix.		
HYDRIC SOIL	BUT THE STATE OF T		/与 / 体制性经验	CANTON !	维教见 公		SERVICE AND PROPERTY OF STREET	FOR PROBLEMATIC HYDRIC SOILS ³		
Histosol·or His	tel (A1)		Alaska Gleyed		-			hange (TA4) ⁴ _N		
Histic Epipedo	n (A2)		Alaska Redox	(A14) _	N			Swales (TA5) _ U		
Black Histic (A	3)	4	Alaska Gleyed	Pores	(A15)			with 2.5Y Hue N		
Hydrogen Sulfi	de (A4)	-13	Mig/s	4	1		Alaska Gleyed	without 5Y Hue or Redder Underlying		
Thick Dark Sur	7						Other (Explain i	in Notes) Yes		
³ One indicator	of hydrophytic vege	tation, o	one primary indicator	of wetla	and hydrolo	gy, and an ap	propriate landsca	pe position must be present unless		
disturbed or pr	oblematic. f color change in No	tes.								
	er (if present): Type		00	Depth (inches):	_	_			
Notes: Posit	resent (Y/N):	oug i	3w/. Soil 60 e	pis	atvrate	nd W/se	ep coming	in from organiesa		
				_	and the second second second			or more required)		
	(A1)	T	any one indicator is surface Soil Cracks (Bo		1	Nater-stained _eaves (B9) _	The second second	Stunted or Stressed Plants (D1)		
High Water Ta	ble (A2) N'(See Na	(e) Ini	undation Visible on A	erial Im		Drainage Patte	erns (B10)/	Geomorphic Position (D2)		
Saturation (A3	.,/	Sp	parsely Vegetated oncave Surface (B8)	N		Oxidized Rhize	ospheres along	Shallow Aquitard (D3)/		
Water Marks (arl Deposits (B15)	7		Presence of R		Microtopographic Relief (D4)		
Sediment Dep		Hy	/drogen Sulfide/			Salt Deposits	(C5) //	FAC-Neutral Test (D5)		
Drift Deposits		Di	dor (C1)y-Season dater Table (C2)	1		Notes:				
Algal Mat or Crust (B4) Other (Explain in Notes):								* "		
Iron Deposits	(B5)									
HANNEY Y	(12,50)	IN COLUMN			377	MASS IN MASS				
Surface Water	Present (Y/N):	/	Depth (in): - outs.	de of				<i>Y</i>		
Water Table P	resent (Y/N):	<u>(</u>	Depth (in): Sec	r no-/	C We	etland Hydrol	ogy Present (Y/N	N):		
Saturation Pre (includes capil		-	Depth (in);		EC	:_150		.22		
Notes:	watertable B,	/C 50	il is Epi sat u	J/Wa	ter po	urlag in fi	on 3110 0	Oa/A		

AQUATIC SITE ASSESSMENT DATA FORM

VEGETATION VARIABLES P= ('10', W= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Forested-Deciduous-Broad-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed
Percent Cover (P): Tree (>5 dbh, >6m tall) Sapling (<5 dbh, <6m tall)
Number of Wetland Types (M):/_ Evennesstof Wetland Type Distribution (M): Even Highly Uneven Moderately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) 80%) ✓ Very High Density (80-100%) —
Interspersion of Cover & Open Water (P): 100% Cover-or Open Water / <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg. Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover X
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)
Vegetative Interspersion (P): Low (large patches, concentric rings) X Moderate (broken irregular rings) High (small groupings, diverse and interspersed)
HGM Class (P): Slope X Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES
Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty X Mineral: Clayey
HYDROLOGIC VARIABLES
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated X Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded
Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland SubstrateX Fluvaquent Soils Sediment
Created Created Created Construction (1). No Evidence Observed on Welland Substrate Fluvaquent Soils Sediment
Created
Created Microrelief of Wetland Surface (P): AbsentPoorly Developed (6in.)Well Developed (6-18in.)/Pronounced (>18in.)/ Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 vrs Return Interval 2-5 vrs
Created Microrelief of Wetland Surface (P): AbsentPoorly Developed (6in.)Well Developed (6-18in.)XPronounced (>18in.) Frequency of Overbank Flooding (P): No Overbank FloodingXReturn Interval 1-2 yrsReturn Interval 2-5 yrs Return Interval >5 yrs Degree of Outlet Restriction (P): No OutflowXRestricted OutflowUnrestricted Outflow Water pH (P): No surface waterCircumneutral (5.5-7.4)X_Alkaline (>7.4)Acid (<5.5)XPH Reading5.2.3
Created Microrelief of Wetland Surface (P): AbsentPoorly Developed (6in.)Well Developed (6-18in.)Pronounced (>18in.) Frequency of Overbank Flooding (P): No Overbank FloodingReturn Interval 1-2 yrsReturn Interval 2-5 yrs Return Interval >5 yrs Degree of Outlet Restriction (P): No OutflowRestricted OutflowUnrestricted Outflow
Created Microrelief of Wetland Surface (P): AbsentPoorly Developed (6in.)Well Developed (6-18in.)XPronounced (>18in.) Frequency of Overbank Flooding (P): No Overbank FloodingXReturn Interval 1-2 yrsReturn Interval 2-5 yrs Return Interval >5 yrs Degree of Outlet Restriction (P): No OutflowXRestricted OutflowUnrestricted Outflow Water pH (P): No surface waterCircumneutral (5.5-7.4)Alkaline (>7.4)Acid (<5.5)XpH ReadingSurficial Geologic Deposit Under Wetland (P): High Permeability Stratified DepositsLow Permeability Stratified Deposits
Created Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.) Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) PH Reading 5.22
Microrelief of Wetland Surface (P): AbsentPoorly Developed (6in.)Well Developed (6-18in.)Pronounced (>18in.) Frequency of Overbank Flooding (P): No Overbank FloodingXReturn Interval 1-2 yrsReturn Interval 2-5 yrs Return Interval >5 yrs Degree of Outlet Restriction (P): No OutflowXRestricted OutflowUnrestricted Outflow Water pH (P): No surface water Circumneutral (5.5-7.4)Alkaline (>7.4) Acid (<5.5)
Created Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.) Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) PH Reading 5.22
Microrelief of Wetland Surface (P): AbsentPoorly Developed (6in.)Well Developed (6-18in.)Pronounced (>18in.) Frequency of Overbank Flooding (P): No Overbank Flooding
Microrelief of Wetland Surface (P): AbsentPoorly Developed (6in.)Well Developed (6-18in.)XPronounced (>18in.) Frequency of Overbank Flooding (P): No Overbank FloodingXReturn Interval 1-2 yrsReturn Interval 2-5 yrs Return Interval >5 yrs Degree of Outlet Restriction (P): No OutflowXRestricted OutflowUnrestricted Outflow Water pH (P): No surface waterCircumneutral (5.5-7.4)Alkaline (>7.4)Acid (<5.5)XpH Reading

Crew Chief QA/QC check:

Wetland Determination Form QA/QC Checklist This form to be completed before leaving the field site.

		This form to be completed before leaving the field site.
		New 21811
Feat	ture	ID: WIOLA 1042 Field Target: Yukon # Date: 7.18.16
For	all i	tems not checked, please provide detailed explanation in the notes section of data form.
	1.	Site Description
		Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
	2.	Vegetation
		 At least 80% of onsite vegetation has been keyed to species, or collected for later identification? ✓ Vegetation names are entered legibly for all strata present? ✓ Cover calculations are complete and correct? ✓ All dominant species have been determined and recorded per strata? ✓ Indicator status is correct for each species? ✓ Dominance Test and Prevalence Index have been completed?
	3.	Soil
	-	☑ Soil profile is complete? ☑ Appropriate hydric soil indicators are marked?
	4.	Hydrology
		 ⚠ Appropriate hydrology indicators are marked? ☒ Surface water, water table, and saturation depths are recorded if present?
	5.	Functions and Values
		Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
	6.	Field Logbook
		Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
	7.	Maps
		Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X	X	
Wetland Scientist (print)	Signature / Date	

X Jessie Brountee X Jun 7:18:16

Field Crew Chief (print)

Signature / Date

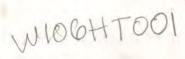
SIYE DESCRIPTION		HALL SEED AND		Tille.	4 64	A de la contraction de la cont
Survey Type: Centerline _ Acces	ss Road (explain)	Other (expla	ain)	Field Targ	et: 98	Map #: <u>05</u> Map Date: <u>597</u>
Date: 5-3-16	Project Name: Alaska	LNG			Feature Id:	W106HT001
Investigators: Jessie B	rounce, I	cale	y Nol	per	-	Team No.: WVO6
State: Alaska	Region: Alaska		Milepost:	658.4	2	
Latitude: 62° 24' 6.6	5" N	Longitude	1500 15	5 48	.87 W	Datum: WGS84
Logbook No.:	Logbook Page No.:	29	Picture No.:	f-WI	OGHTE	101-001 4hru -004
SITE PARAMETERS	14 C 15 C	Market Land	Serve Market	TO THE REAL PROPERTY.	7,775.00	STATE OF CHEST OF STATE OF SECURE
Subregion: Cook Inlet Low	tand Basin					s, etc.): 8 hight Swale
Slope (%): 0-3			Local relief (co	oncave, con	vex, none): A	+ slightly concave & slightly conse
Pre-mapped Alaska LNG/NWI classifica	tion: PSS 1/FOIB	102,110	Evidence of W	/ildlife Use:	Mooses	trappings.
Are climatic/hydrologic conditions on the Yes No (if no expl		of year?	Are "No Yes_		nstances" pre (If no, exp	sent: blain in Notes.)
Are Vegetation, Soil, or Hyd	drology Significantly	Disturbed?	No_X	_(If yes, exp	lain in Notes	
Are Vegetation, Soil, or Hyd	rology Naturally Pr	oblematic?	No_X	(If yes, exp	olain in Notes	.)
SUMMARY OF FINDINGS		機能		Ant I	NOTE OF	是一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个
Hydrophytic Vegetation Present? Yes_	No	_ ls	the Sampled A	rea within a	a Wetland?	Yes No
Hydric Soil Present? Yes_	<u></u> №	_ We	etland Type:	PFOI/S	551B	
Wetland Hydrology Present? Yes_	No	- Ala	aska Vegetation	Classification	on (Viereck):	102,1132
Notes and Site Sketch: Please include Decorridor. Apen Mixed forest of tops of the community domain Dug 2 additional cips in particular table in this slight is between to uplands runnity between to uplands runnity between to uplands runnity between to uplands runnity wetlands to west	Between & Pice. lated by ferns lot w/ positive XI otopography drives	9 Cal	eq with	thick 1	patches N	set Set Solder
			CHT			Parks HGW
7 ¹²	W	++E	1010			

W 106HT001

VEGETATION (use scientific names of plan	ts)			
	and the second	D	I tadit-	Naminana Tart workshoot
Tree Stratum (Plot sizes:)	% Cover	Dominant Species? (Y/N)	Indicator Status	No. of Dominant Species that are OBL, FACW, or FAC: (A) Total Number of Dominant Species Across All Strata: (B)
1. Betula Nevalaskana	35	Y	FAC	% Dominant Species that are OBL, FACW, or FAC: (A/B)
2. Picea Colauca	8		FACU	
3.	its			The state of the s
4.		4		Prevalence Index worksheet:
Total Cove	r: 43		7:	Total % Cover of: Multiply by:
50% of total cover	er: 11.5 20	% of total cov	rer: 8,6	OBL species: X1 =X
Sapling/Shrub Stratum ((()	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species:
1. vaccinium ovalificium	2		FAC	UPL species X 5 =
2. Ribes triste	1		FAC	Column Totals: 157 (A) 480 (B)
3. Alnus tenuifolia	20 %	Y	FAC	PI = B/A = 3.06
4. Rosa acioubiris	T		FACU	Alnus is prevelent bot mostly outside on that size 35 40% in general area
5.				and Plot size 35 40% in general area
6.				
7.				
8.				
9.				
Total Cove	II F	% of total cov	rer: 4.6	
VEGETATION (use scientific names of plant	ts)			
Herb Stratum (261)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0
1. Equisation Sylvaticum	15		FAC	Morphological Adaptations¹ (Provide supporting data in
2. Streptopus amplexitalium	T		FACU	Notes)
3. Calamagiostis canadensis	35	Y	FAC	Problematic Hydrophytic Vegetation ¹ (Explain)
4. Dryopterous expanses	40	Y	FAC	¹ Indicators of hydric soil and wetland hydrology must be present unless
5. Trientalis Europaea	1		FACO	disturbed or problematic.
6.				
7.				% Bare Ground
8.	12		1	% Cover of Wetland Bryophytes
9.				30 Total Cover of Bryophytes
10.			*	% Cover of Water
Total Cove	r. 91			Hydrophytic Vegetation Present (Y/N): Notes: (If observed, list morphological adaptations below):
50% of total cove		% of total cov	rer: 18,7	Notes. (II observed, list morphological adaptations below):

SOIL								
SOIL PROFIL		Describe	to the depth needed	d to doci	ument the	indicator or	confirm the absence	ce of indicators.)
Depth	Matrix	100	Redox Features	100	- 1	1 . 2	Turking	Natas
nches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc²	Texture	Notes
e 0-3.5			-					Domp
Oa 3,5-8	Black						()	mal Abory organics Damp
8-9	104R 2/2	100			-	-	Mucky loam	
ul 9-17	- 1-1	100	200 51	150	18300	**	Sitloam	
WZ 17-24	104R 9/4	85	7.54R 3/0 2.54 7/2	10	con	m	VF Sandy loa	41
1 1 1 1 1 1	VP TO THE REAL PROPERTY.		d,07 1/2	- 5	Dep	111		
Type: C=Con	centration D=Deple	etion RN	I /I=Reduced Matrix, C	S=Cove	ered or Co	ated Sand 0	Grains. ² Location	: PL=Pore Lining, M=Matrix.
	INDICATORS		Section 1995					FOR PROBLEMATIC HYDRIC SOILS
5000	tel (A1)	O CHON DEPOS	Alaska Gleyed	(A13)	N	A SECULIAR DESCRIPTION OF THE PERSON OF THE	Alaska Color (Change (TA4) ⁴
istic Epipedo		++	Alaska Redox		N			Swales (TA5)//
The state of the s	3) _ +/ /	- derived	Alaska Gleyed		(A15)	1		with 2.5Y Hue _ /
1		7	7 Hadita Gloyee	1 0100	(71.0)			without 5Y Hue or Redder Underlying
Autota co	ide (A4)	1	-				Layer_ N	- Name 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1
hick Dark Su		totion o	no primary indicator	of wotlo	and hudrole	ay and an		ape position must be present unless
sturbed or pr	oblematic.	etation, o	ne primary indicator	or wetta	ina nyarolo	gy, and an	appropriate lanusc	ape position must be present unless
	f color change in No							
estrictive Lay	er (if present): Type	e: <u>N</u>		Jepth (II	nches):			
ydric Soil Protes: Muck	resent (Y/N):	lerial	in the 3.5-8	legat 1 Ze	the XI	X et	his specific its in 26' Not saturate	Plot size positive react of Plot size and but definitly very Moist:
	A.S.				4000000			
	A.S.		in the 3.5-8 omg at true		t) = 5	SECONDAR	RY INDICATORS (2	2 or more required)
YDROLOGY	PRIMARY INDICA	TORS (a		ufficient	(t) S		RY INDICATORS (2	
YDROLOGY urface Water	PRIMARY INDICA (A1)	TORS (a	rface Soil Cracks (Bundation Visible on A	ufficient	() S	SECONDAR Vater-staine Leaves (B9)	RY INDICATORS (2	2 or more required) Stunted or Stressed
YDROLOGY turface Water ligh Water Ta	PRIMARY INDICA (A1) ble (A2)	Su Inu (B)	rface Soil Cracks (Bundation Visible on A	oufficient (5)	y Lagery C	Vater-staine Leaves (B9) Orainage Pa Oxidized Rh Living Roots	ed / Indicators (2) interns (B10) / Interns (B10) / Interns (C3)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3)
YDROLOGY urface Water ligh Water Ta aturation (A3	PRIMARY INDICA (A1) // ble (A2) //) //	Su Inu (B) Sp Co	rface Soil Cracks (Boundation Visible on A	oufficient (5)	t) \$\frac{1}{2} \text{V} \text{Lagery} \text{C} \text{L} \text{C} \text{L} \text{C} \text{L} \text{C}	Vater-staine eaves (B9) Prainage Pa Dxidized Rh. Living Roots	ed / Indicators (2	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic
Surface Water digh Water Ta saturation (A3	PRIMARY INDICA (A1)	Su Inu (B) Sp Co	rface Soil Cracks (Bundation Visible on A	oufficient (5)	t) S	Vater-staine eaves (B9) Prainage Pa Dxidized Rh. Living Roots	ed vitterns (B10) vizospheres along (C3) Reduced Front	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic
Surface Water digh Water Ta Saturation (A3 Vater Marks (I	PRIMARY INDICA (A1)	Su Inu (B) Sp Co	rface Soil Cracks (Bundation Visible on A 7)arsely Vegetated ncave Surface (B8) ard Deposits (B15) drogen Sulfide	oufficient (5)	t) S	Vater-staine, eaves (B9) Prainage Pa Dxidized Rh. iving Roots Presence of ron (C4)	ed vitterns (B10) vizospheres along (C3) Reduced Front	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Surface Water High Water Ta Saturation (A3 Vater Marks (I) Sediment Dep	PRIMARY INDICA (A1)	Su Inu (B) Sp Co Ma	rface Soil Cracks (Brindation Visible on Ar) arsely Vegetated ncave Surface (B8) rl Deposits (B15) drogen Sulfide or (C1) /-Season	erial Ima	t) S	Vater-staine eaves (B9) Drainage Pa Dxidized Rh Living Roots Presence of ron (C4)	ed vitterns (B10) vizospheres along (C3) Reduced Front	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
urface Water ligh Water Ta aturation (A3 Vater Marks (I dediment Dep orift Deposits	PRIMARY INDICA (A1)	Su Inu (B) Sp Co Ma	rface Soil Cracks (Brindation Visible on A 7) arsely Vegetated ncave Surface (B8) rl Deposits (B15) drogen Sulfide or (C1) y-Season ater Table (C2)	erial Ima	t) S	Vater-staine eaves (B9) Drainage Pa Dxidized Rh Living Roots Presence of ron (C4)	ed vitterns (B10) vizospheres along (C3) Reduced Front	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
surface Water ligh Water Ta saturation (A3 Vater Marks (I sediment Dep orift Deposits (I salgal Mat or C son Deposits (I	PRIMARY INDICA (A1)	Suu Inu (B7 Sp Co Ma Hyy Odd Dry Wa	any one indicator is surface Soil Cracks (Bundation Visible on Argument of Arg	erial Ima	t) S	Vater-staine eaves (B9) Drainage Pa Dxidized Rh Living Roots Presence of ron (C4)	ed vitterns (B10) vizospheres along (C3) Reduced Front	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Gurface Water High Water Ta Saturation (A3 Vater Marks (I) Sediment Dep Orift Deposits Algal Mat or C Tron Deposits (I)	PRIMARY INDICA (A1)	Suu Inu (B7 Sp Co Ma Hyy Odd Dry Wa	rface Soil Cracks (Brindation Visible on A 7) arsely Vegetated ncave Surface (B8) rl Deposits (B15) drogen Sulfide or (C1) y-Season ater Table (C2)	erial Ima	t) S	Vater-staine eaves (B9) Prainage Pa Dividized Rh. Living Roots Presence of Fron (C4) Salt Deposit	ed vitterns (B10) vizospheres along (C3) Reduced Front	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Surface Water ligh Water Ta saturation (A3 Water Marks (I) Sediment Dep Orift Deposits (I) Surface Water Surface Water	PRIMARY INDICA (A1)	Suu Inu (B7 Sp Co Ma Hyy Odd Dry Wa	any one indicator is surface Soil Cracks (Bundation Visible on Argument of Arg	erial Ima	t) S	Vater-staine, eaves (B9) Prainage Pa Dxidized Rh, iving Roots Presence of ron (C4) Salt Deposit Notes:	ed / Indicators (2) ed / Indicators (B10) / Indicators (B10) / Indicators (B10) / Indicators (C3) / Indicators (C5) / I	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)

AQUATIC SITE ASSESSMENT DATA FORM



VEGETATION VARIABLES P= Plot, M= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Forested-Evergreen-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed
Percent Cover (P): Tree (>5 dbh, >6m tall) 45 Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) 30 Short shrub (0.5-2m) Dwarf shrub (<0.5m)
Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) 80%) Very High Density (80-100%) X
Interspersion of Cover & Open Water (P): 100% Cover or Open Water X <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous CoverX
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)
HGM Class (P): Slope X Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES
Soil Factors (P): Soil Lacking Histosol: Fibric Histosol: Histosol: Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outlet _
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, SaturatedX Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded
Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Created
Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)
Frequency of Overbank Flooding (P): No Overbank Flooding X Return Interval 1-2 yrs Return Interval 2-5
Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow
Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) PH Reading 5.4
Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Glacial Till/Not Permeable
Basin Topographic Gradient (№): Low Gradient (<2%)
Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring
Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring LANDSCAPE VARIABLES (M)
Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring
Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below
Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below Only Connected Above Connected Upstream & Downstream X Unknown

Crew Chief QA/QC check:

J Brannels

GPS Technician QA/QC check:

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

eatur	e ID: WIOGHTOO Field Target: 18 Date: 6-3-16
or all	items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification? Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct? All dominant species have been determined and recorded per-strata? Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
3.	Soil
	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	 Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7.	Maps
	☐ Wetland boundaries have been corrected if necessary? ☐ Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

X hales / OPAX Mally Valler 6-6-16
Wetland Scientist (print) Signature / Date

X J. Brownlee

Field Crew Chief (print)

Signature / Date

SITE DESCRIPTION		OR STATE	(4) (4) (4) (4)			Level by an law with the
Survey Type: Centerline 🗶 Acces	ss Road (explain)	Other (expla	ain)	Field Targ	jet: 199	Map #: <u>loy</u> Map Date: <u>5 27</u>
Date: 6-3-16	Project Name: Alaska	a LNG	-11		Feature Id:	W106HT002
Investigators: Tessie Bo	ownles, K	alen	VOLPE	(Team No.: ((0 6
State: Alaska	Region: Alaska		Milepost:	57.6		
Latitude: 62.24 56.42"		Longitude	-150. 15	128.65	U	Datum: WGS84
Logbook No.:	Logbook Page No.:	29	Picture No.:	P-WI	16HTa	07_001 thru 004
SITE PARAMETERS		Will Hall	The second			特別所有器格別和數學別
Subregion: Cook Inlet B	asin		Landform (hills	slope, terrac	ce, hummocks	s, etc.): terrace
Slope (%): 0-3			Local relief (co			
Pre-mapped Alaska LNG/NWI classifica	ition: V: 102,11	(2	Evidence of W			
Are climatic/hydrologic conditions on the Yes No (if no expl	e site typical for this time ain in Notes)	of year?	Are "No Yes	rmal Circum No	nstances" pre (If no, exp	sent: plain in Notes.)
Are Vegetation, Soil, or Hyd		ly Disturbed?	No.X	_(If yes, exp	olain in Notes	
Are Vegetation, Soil, or Hyd	drology Naturally P	roblematic?	No_X	_ (If yes, ex	plain in Notes	.)
SUMMARY OF FINDINGS	1.23 医单元化	1 THE STATE	A Mary 8	10-18-10		
Hydrophytic Vegetation Present? Yes_	No	ls	the Sampled A	rea within	a Wetland?	Yes No
Hydric Soil Present? Yes	No <u>大</u>	_ w	etland Type:	U		
Wetland Hydrology Present? Yes_	No	— Ala	aska Vegetation	Classificati	ion (Viereck):	102,1182
Notes and Site Sketch: Please include Ecorridor. Open to woodland M Vib Edu Shrub unders Tanget moved from ex was also dry	story. Wall	Ret Nea	Length of feature of Pic Gom Pan & 100% All	la w/ A	s from Center Alder, D was a vil Club	rline, Photo Locations, and Survey exils club and exils club and threket which
← W	DIOUHTOOC		E		ver	

WETLAND DETERMINATION DATA FORM W106 HT002

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
ree Stratum (Plot sizes:)	% Cover	Species? (Y/N)	Status	No. of Dominant Species that are OBL, FACW, or FAC:	
Betula Nevalaskana" 65'	25	Y	FAC	Total Number of Dominant Species Across All Strata:	
Picea Colavea "70"	10	Y	FACU		
				And the second s	
				Prevalence Index worksheet:	
Total Cover:	-		-	Total % Cover of: Multiply by:	
50% of total cover:			Indicator	OBL species:X 1 = FACW species:X 2 =	
pling/Shrub Stratum (26)	Absolute % Cover	Dominant Species?	Status	FAC species 82 X3 = 246	
¥		(Y/N)	US WHALL	FACU species 71 X 4 = 284	7
Oplopanax horridus	15	Y	FACU	UPL speciesX 5 =	
Ribes triste	3		FAC	Column Totals: 153 (A) 530 (B)	
viburnum edule	8		FACU	PI = B/A = 3.46	50-
Rubes idaeus	4		FACU	Coet arriving Extraorphos	AC
Rosa acicularis	2		FACU		74
Alaus tenuitolia	10	Y	FAC	Forb sp	
	7		1 1 2 1 1		
M+ Ash Sorbus Scopulina	-	-	FACU		
M+ Ask Sorbus Scopulina			FRCO		
	47.		HCO		
Total Cover:		0% of total cov			
Total Cover:	2) 20	0% of total cov			12
Total Cover: 50% of total cover: GETATION (use scientific names of plants	2) 20		er: 8.4	Hydrophytic Vegetation Indicators:	
Total Cover: 50% of total cover: GETATION (use scientific names of plants	2) 20	Dominant Species?		Hydrophytic Vegetation Indicators: Dominance Test is > 50%	
Total Cover: 50% of total cover: GETATION (use scientific names of plants)	2) 20 Absolute	Dominant	rer: 8 4 Indicator	Dominance Test is > 50% ✓ Prevalence Index is ≤ 3.0	ta in
Total Cover: 50% of total cover: GETATION (use scientific names of plants)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test is > 50%	ta in
Total Cover: 50% of total cover: 50% of total cover: GETATION (use scientific names of plants) b Stratum (Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test is > 50% ✓ Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data)	- ta in
Total Cover: 50% of total cover: 50% of total cover: GETATION (use scientific names of plants) b Stratum (Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present up	
Total Cover: 50% of total cover: 50% of total cover: GETATION (use scientific names of plants) b Stratum (26) Calanegrostis (anadensis Equisatum Sylvaticum feracleum maximum Streptopus amplexiforum	Absolute % Cover	Dominant Species?	Indicator Status FAC FAC FAC FAC	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting dat Notes) Problematic Hydrophytic Vegetation¹ (Explain)	
Total Cover: 50% of total cover: 50% of total cover: GETATION (use scientific names of plants) b Stratum (26) Calanegrostis (anadensis Equisatum Sylvaticum feracleum maximum Streptopus amplexiforum	Absolute % Cover	Dominant Species?	Indicator Status FAC FAC FAC FAC FAC	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present up	
Total Cover: 50% of total cover: 50% of total cover: GETATION (use scientific names of plants) the Stratum (26) Calamagnesh's (anadersis Equisation Sylvaticum feractum maximum Streptopus amplexiforum Gymnocarpium dryopteris	Absolute % Cover	Dominant Species?	Indicator Status FAC FAC FAC FAC FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present undisturbed or problematic. Mean Problematic Soil and Wetland Soil Soil Soil Soil Soil Soil Soil Soil	
Total Cover: 50% of total cover: 50% of total cover: GETATION (use scientific names of plants; b Stratum (26) Calamagnostis (anadersis Equisation Sylvaticum feraction maximum Streptopus amplexiforum Gymnocarpium dryopteris	Absolute % Cover	Dominant Species?	Indicator Status FAC FACU FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present undisturbed or problematic. Bare Ground Cover of Wetland Bryophytes	
Total Cover: 50% of total cover: 50% of total cover: GETATION (use scientific names of plants of Stratum (26) Calamagnish's (anadersis Equisation Sylvaticum ferackum maximum Streptopus amplexiforum Gymnocarpium dryopteris Chamerion angustifikium Galium koreale	2 200 Absolute % Cover 35 7 5 7 7 2 7 25	Dominant Species?	Indicator Status FAC FAC FACU FACU FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present undisturbed or problematic. Morphological Adaptations¹ (Provide supporting data Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present undisturbed or problematic. Morphological Adaptations¹ (Provide supporting data Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present undisturbed or problematic. Total Cover of Wetland Bryophytes	
Total Cover: 50% of total cover: 50% of total cover: GETATION (use scientific names of plants, to Stratum (26) Calamagnish's Canadensis Equisation Sylvaticum Jerachum Maximum Streptopus amplexiforum Coumnocarpium dryopteris Chamerion angustifishium Galium Inreale Dryopteris expansa	2 200 Absolute % Cover 35 7 5 7 7 2 7 25	Dominant Species?	Indicator Status FAC FACU FACU FACU FACU FACU FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present undisturbed or problematic.	
Total Cover: 50% of total cover: 50% of total cover: GETATION (use scientific names of plants, to Stratum (26) Calamagnish's Canadensis Equisation Sylvaticum Jerachum Maximum Streptopus amplexiforum Coumnocarpium dryopteris Chamerion angustifishium Galium Inreale Dryopteris expansa	2 200 Absolute % Cover 35 7 5 7 7 2 7 25	Dominant Species?	Indicator Status FAC FACU FACU FACU FACU FACU FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present undisturbed or problematic. Morphological Adaptations¹ (Provide supporting data Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present undisturbed or problematic. Morphological Adaptations¹ (Provide supporting data Notes) ¹ Indicators of hydric soil and wetland hydrology must be present undisturbed or problematic. Morphological Adaptations¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present undisturbed or problematic. Morphological Adaptations¹ (Provide supporting data Notes) ¹ Indicators of hydric soil and wetland hydrology must be present undisturbed or problematic.	unless
Total Cover: 50% of total cover: 50% of total cover: GETATION (use scientific names of plants, to Stratum (26) Calamagnish's Canadensis Equisation Sylvaticum feraction maximum Streptopus amplexiforum Commocarpium dryopteris Chamerion angustificium Calium toreale Dryopteris expansa Commotalk Veratrum virid Mertensia paniculata	2) 20 Absolute % Cover 35 7 5 7 7 2 7 6	Dominant Species?	Indicator Status FAC FACU FACU FACU FACU FACU FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present undisturbed or problematic.	unless

C. 3.16 Soil Pit Required (Y/N) SOIL Date Feature ID SOIL PROFILE DESCRIPTION: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Matrix Redox Features Depth (inches) Loc2 Color (moist) Color (moist) Type1 Texture Notes loam 2-3 104R 2/2 100 INVR 5/2 100 5.9 35 55 95 5 ¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix. INDICATORS FOR PROBLEMATIC HYDRIC SOILS3 HYDRIC SOIL INDICATORS Histosol or Histel (A1) Alaska Gleyed (A13) Alaska Color Change (TA4)4 Alaska Alpine Swales (TA5) Alaska Redox (A14) Histic Epipedon (A2) Alaska Redox with 2.5Y Hue Black Histic (A3) Alaska Gleyed Pores (A15) Alaska Gleyed without 5Y Hue or Redder Underlying Hydrogen Sulfide (A4) Layer Other (Explain in Notes) Thick Dark Surface (A12) ³One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic. Give details of color change in Notes. Restrictive Layer (if present): Type: Depth (inches): Hydric Soil Present (Y/N): Notes: All horizons wary, discontinuous HYDROLOGY PRIMARY INDICATORS (any one indicator is sufficient) SECONDARY INDICATORS (2 or more required) Stunted or Stressed Water-stained Surface Water (A1) Surface Soil Cracks (B6) Leaves (B9) Plants (D1) Inundation Visible on Aerial Imagery Geomorphic Position (D2) High Water Table (A2) Drainage Patterns (B10) Sparsely Vegetated Oxidized Rhizospheres along Shallow Aquitard (D3) Saturation (A3) Living Roots (C3) _ Concave Surface (B8) Presence of Reduced Microtopographic Marl Deposits (B15) Water Marks (B1) Relief (D4) Iron (C4) Hydrogen Sulfide FAC-Neutral Test (D5) Salt Deposits (C5) Sediment Deposits (B2) Odor (C1) Notes: Dry-Season Drift Deposits (B3) Water Table (C2) Algal Mat or Crust (B4) Other (Explain in Notes): Iron Deposits (B5) Surface Water Present (Y/N): Depth (in): Wetland Hydrology Present (Y/N): Depth (in): Water Table Present (Y/N): Saturation Present (Y/N): EC:_ Depth (in): (includes capillary fringe) Notes

AQUATIC SITE ASSESSMENT DATA FORM

VEGETATION VARIABLES P= Plot, M= Macrix	
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Forested-Evergreen-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Persistent Aquatic Bed	mergent-
Percent Cover (P): Tree (>5 dbh, >6m tall) Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5 Dwarf shrub (<0.5m)	-2m) rged
Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerate	y even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High 80%) Very High Density (80-100%)	Density (60-
Interspersion of Cover & Open Water (P): 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A	% Scattered or
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)	-
Presence of Islands (M): Absent (none) One or Few Several to Many N/A	
Cover Distribution of Dominant Layer (P): No Veg. Solitary, Scattered Stems 1 or More Large Patches; Parts of Stems Small Scattered Patches Continuous Cover Stems 1 or More Large Patches; Parts of Stems S	ite
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)	
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings)	
HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe	
	ALMOS OF THE RESIDENCE OF THE PERSON OF THE
SOIL VARIABLES	William William
Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey	
HYDROLOGIC VARIABLES	Shares day
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial	et/No Perennial
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated	
Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent So	
Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)
Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs	-\
Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow	
Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Re	ading
Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Glacial Till/Not Permeable	
Oldoldi Illinois Silling	
Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%) Perennial Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Springs Perennial Springs Seeps Observed Intermittent Spring Perennial Springs	
Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%) Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Springs Seeps Observed Seeps	
Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%) Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spri LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below	
Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%) Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spri LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below Only Connected Above Connected Upstream & Downstream Unknown Low Intensity (i.e. open space)	ng
Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%) Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Springs LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Only Connected Above Connected Upstream & Downstream Unknown Wetland Land Use: High Intensity (i.e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)	ng
Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%) Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spri LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below Only Connected Above Connected Upstream & Downstream Unknown Low Intensity (i.e. open space)	ng

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Featur	re ID: W106 HT00 Z Field Target: 199 Date: 6-3-2016
	items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	 ☐ Site description, site parameters and summary of findings are complete? ☐ A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
	Vegetation names are entered legibly for all strata present?
	Cover calculations are complete and correct?
	All dominant species have been determined and recorded per strata? Indicator status is correct for each species?
	Dominance Test and Prevalence Index have been completed?
3.	Soil
	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
NA	∨egetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	☐ Notes have been recorded at each site, including general description, sketch, and
	accuracy of pre-mapped wetland boundary as appropriate?
	☐ Each logbook page is initialed and dated?
7.	Maps
	☐ Wetland boundaries have been corrected if necessary?
	☐ Mans are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

X hales Voler X hales Valger 6-6-16
Wetland Scientist (print)
Signature / Date

X & Brownlee

Field Crew Chief (print)

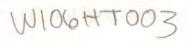
Signature Date

58 127

SITE DESCRIPTION		IN THE	受用以要 。	The Control of the Co	
Survey Type: Centerline ✓ Acces	ss Road (explain)	Other (exp	ain)	Field Target: 201	Map #: <u>[0]</u> Map Date: <u>5.27</u>
Date: 6-4-16	Project Name: Alask	a LNG		Feature Id:	WIOGHTOOS
Investigators: Jessil &	souniee,	Kal	en-Ve	shoon	Team No.: WIOG
State: Alaska	Region: Alaska			,55.4	
Latitude: 62,445	_	Longitude	: -150.	265	Datum: WGS84
Logbook No.:	Logbook Page No.:	30		_	03-001 thru 004
SITE PARAMETERS	的时间的时间		SERVICE OF		明显是这种问题的对于是 的
Subregion: Coak Inlot Rosi	in		Landform (hil	Islope, terrace, hummock	s, etc.): Lowland
Slope (%): 0-3			Local relief (c	concave, convex, none):	Flat
Pre-mapped Alaska LNG/NWI classifica	tion: PSSI/FO4B	163,1162	Evidence of V	Wildlife Use: レのい	E
Are climatic/hydrologic conditions on the Yes No (if no explications)	site typical for this time ain in Notes)	of year?		ormal Circumstances" pre	
Are Vegetation, Soil, or Hyd	Irology Significant	ly Disturbed	? No X	(If yes, explain in Notes	
Are Vegetation, Soil, or Hyd	Irology Naturally F	Problematic?	No7_	_ (If yes, explain in Notes	s.)
SUMMARY OF FINDINGS	Wester 14	产于1000年	NAT BURN	TO THE REAL PROPERTY.	
Hydrophytic Vegetation Present? Yes_	No	Is	the Sampled A	Area within a Wetland?	Yes No
Hydric Soil Present? Yes	No	w	/etland Type:	P551/F04B	
Wetland Hydrology Present? Yes_	X No	_ A	laska Vegetatio	n Classification (Viereck):	102,11BZ
Notes and Site Sketch: Please include Dicorridor. Open Mixed forcest community of sphane water a wa veg. To the unsure if they are	My Pic Man & Marsh five	Ange of one	eo w/ All and fer 2 ponds	L. underston	stone w/ standing

Page 1 of 4

WETLAND DETERMINATION DATA FORM W106HT003



Tree Stratum (Plot sizes: 100) Absolute Species (Y/N) 1. Betula alembstana 15 Y 2. Picea Colarca Mariana 20 Y 3. Picea Colarca Mariana 20 Y 3. Picea Colarca Mariana 20 Y 50% of total cover: 17.5 20% of total 20 Sapling/Shrub Stratum (20) Absolute % Cover (Y/N) 1. Fallo mana 20 Y 3. Almos fensella 10 Y 4. Betula alecalastana 13 Y 5. Salix Fuxeseus 7 6. 7. 8. 9. Total Cover: 31 Solika 10 Y VEGETATION (use scientific names of plants) Herb Stratum (20) Absolute Domina 50% of total cover: 10 Species (Y/N) 1. Apoise fum 64 habitum 35 Y 2. Kulus Chamaemorus 35 Y 3. Druppter is expans 9 10 Y 4. Cornus canadensis 20 Z 5. Cornus canadensis 3 Z 5. Cornus canadensis 3 Z	Status FAC FAC Cover: 1 Indicator	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: (A
2. Picea Colouca 3. Picea Colouca 4. Total Cover: 35 50% of total cover: 1.5 20% of total Sapling/Shrub Stratum (26) Absolute % Cover (Y/N) 1. Patto mana 2. Spiraca Stevenii 3. Almus fenufolia 4. Betula accadastaga 5. Salix Fuscaens 6. 7. 8. 9. Total Cover: 31 50% of total cover: 15.5 20% of total VEGETATION (use scientific names of plants) Herb Stratum (26) Absolute % Cover (Y/N) 1. Facise from Cylina Scientific names of plants) 1. Facise from Cylina Scientific names of plants 2. Rubis chamiae Moris 3. Dyspectis of process 4. Cornus canadeusis 5. Conditional Covers 2. Rubis chamiae Moris 3. Dyspectis of process 4. Cornus canadeusis 5. Conditional Covers 2. Rubis chamiae Moris 3. Dyspectis of process 4. Cornus canadeusis 5. Conditional Covers 2. Rubis chamiae Moris 5. Conditional Covers 4. Cornus canadeusis 5. Conditional Covers 4. Cornus canadeusis 5. Conditional Covers 4. Cornus canadeusis 6. Covers 7. Covers 7. Covers 8. Covers 9. Covers	FAC FAC FAC FAC FAC	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species: /
2. Picea Colouca 3. Picea Colouca 4. Total Cover: 35 50% of total cover: 1.5 20% of total Sapling/Shrub Stratum (26) Absolute % Cover (Y/N) 1. Batta mana 2. Spiraca Stevenii 3. Almus fenufolia 4. Betula accalastasa 5. Salix Fuscaens 6. 7. 8. 9. Total Cover: 31 50% of total cover: 15.5 20% of total VEGETATION (use scientific names of plants) Herb Stratum (26) Absolute % Cover (Y/N) 1. Facisation Cylinaticum 2. Rubis chamaemorus 3. Dyapteris a pausa 4. Cornus canadeusis 5. Total Cover: 35 4. Cornus canadeusis 5. Total Cover: 35 7. Absolute	cover: 1 Indicator Status FAC FACU FAC FAC	Prevalence Index worksheet: Total % Cover of:
Total Cover: 35 50% of total cover: 17.5 20% of total Sapling/Shrub Stratum (26) Absolute Domina % Cover Species (Y/N) 1. Bette name 2. Spirace Steveni! 3. Almus tenufolia 4. Betula recalasting 5. Salix firsteens 5. 7. 8. 9. Total Cover: 31 50% of total cover: 15.5 20% of total VEGETATION (use scientific names of plants) Herb Stratum (26) Absolute Domina % Cover Species (Y/N) 1. Facisting Cylinaticum % Cover (Y/N) 2. Rubis chamaemorus 3. 7. 8. 9. Total Cover: 31 50% of total cover: 31 Cover: 31 Formation of total % Cover (Y/N) 1. Facisting Cylinaticum 3. Dryptici's expanse 4. Cornus canadenses 5. Total Cover: 35 7. 8. 8. 9. 1. Facisting Cylinaticum 3. Species (Y/N) 1. Facisting Cylinaticum 3. Dryptici's expanse 4. Cornus canadenses 5. Total Cover: 32 7. 8. 8. 8. 9. 1. Facisting Cylinaticum 3. Species (Y/N) 1. Facisting Cylinaticum 3. Species (Y/N) 3. Dryptici's expanse 3. Species (Y/N) 4. Cornus canadenses 5. Total Cover: 32 7. 8. 8. 8. 8. 8. 8. 8. 8. 8.	cover: 1 Indicator Status FAC FACU FAC FAC	Total % Cover of: OBL species:
Total Cover: 35 50% of total cover: 7.5 20% of total cover: 8 Cover Species (Y/N) 1. Bette natts 2. Spiraca Stevenii 8 3. Allows tenu folla 10 4. Betwa accadastanca 13 5. Salix Fuscenes 5. Salix Fuscenes 6. Total Cover: 31 50% of total cover: 5.5 20% of total cover: 5.5 20% of total cover: 5.5 20% of total cover: 7.5 20% of total cover: 7	Indicator Status FAC FACU FAC FAC	Total % Cover of: OBL species:
50% of total cover: 75 20% of total species (Y/N) 1. Batto wang 2. Spiraca Stevenii 8 3. Almus tenus blia 10 4. Betula recalastoria 13 5. Salix Fuscescens 7 6. 3. 7. 8. 9. Total Cover: 50% of total cover: 5.5 20% of total	Indicator Status FAC FACU FAC FAC	OBL species:
Absolute % Cover Species (Y/N) 1. Betita nama 2. Spiraca Stevenii 8 3. Almus tenufolia 10 4. Betula negalastama 13 5. Salix Fusciscens 7 6. 3. 7. 3. 8. 9. Total Cover: 31 50% of total cover: 15.5 20% of total cover: 15.5 20% of total cover yellow for the stratum (Dec.) Absolute % Cover Species (Y/N) 1. Faciscina sylvaticum 35 2. Rubis chamaemoris 10 3. Dryopticis expansa 10 4. cornus canadensis 20 5. Total cover 9000 1000 1000 1000 1000 1000 1000 100	Indicator Status FAC FACU FAC FAC	FACW species: /O
% Cover Species (Y/N) 1. Bethe wang 2. Spirace Stevenii 3. Allows tenvilla 4. Betula accalastanca 5. Salix Fuxexens 5. 6. 7. 8. 9. Total Cover: 31 50% of total cover: 5,5 20% of total VEGETATION (use scientific names of plants) Herb Stratum (200) 1. Favisetam Extratemum 35 2. Rubus chamaemorus 3. Dryaptaris expanse 4. cornus canadensis 5. Total Anadensis 5. Total Anadensis 5. Total Anadensis 5. Total Anadensis 6. Cover Species (Y/N)	FAC FAC FAC FAC	FAC species 93 X3 = 279 FACU species 21 X4 = 84 UPL species X5 = - Column Totals: 128 (A) 387 (B) PI = B/A = 3.02
2. Soiraea Stevenii 8 3. Alhus tenufila 10 4. Betula areaalastama 13 5. Salix Fuscescens 7 5. Solix Fuscescens	FACU FAC FAC	UPL species
2. Soiraea Stevenii 8 3. Alnus tenufilia 10 4. Betula nicaalastama 13 5. Salix Friscescens 7 5. Salix Friscescens	FAC FAC	Column Totals: /28 (A) _387 (B) PI = B/A = _3.02
3. Allows tensfolia 4. Betwla necalastana 5. Salix Forescens 6. 7. 8. 9. Total Cover: 3\ 50% of total cover: \(\sqrt{5.5} \) 20% of total VEGETATION (use scientific names of plants) Herb Stratum (\(\sqrt{20} \) \(\sqrt{2} \)	FAC	PI=B/A= 3.02
Total Cover: 31 5. Salix Fuscescens 7. 8. 9. Total Cover: 31 50% of total cover: 5.5 20% of total VEGETATION (use scientific names of plants) Herb Stratum (200) Absolute % Cover Species (Y/N) 1. Facise from 64 landscam 35 2. Rubus chamaemords 3. Despecies chamaemords 3. Despecies canadenses 5. Cornus canadenses		Spinsla annotinum T. FACI
Total Cover:	FACW	
Total Cover: 31 50% of total cover: 5,5 20% of total /EGETATION (use scientific names of plants) Herb Stratum (200) Absolute Domina Species (Y/N) 1. F goise from Gylva Scum 35 2. Rubus chamaemorus 3. Dryaptaris expansa	~	
Total Cover: 3 50% of total cover: 5,5 20% of total /EGETATION (use scientific names of plants) Herb Stratum (D(p) Absolute % Cover Species (Y/N) 1. Fquisetim 64 habitum 35 2. Rubus chamaemorus 3. Drypticis express 4. Cornus canadensis 5. Cornus canadensis		
Total Cover: 31 50% of total cover: 35.5 20% of total /EGETATION (use scientific names of plants) Herb Stratum (200) Absolute		
Total Cover: 3 50% of total cover: 5.5 20% of total VEGETATION (use scientific names of plants) Herb Stratum (26) Absolute % Cover Species (Y/N) 1. Fquise time 64 leading 35 2. Robus chamaemords 3. Departures in passage 10 4. Cornus canadenses 3	***	
50% of total cover: 5.5 20% of total VEGETATION (use scientific names of plants) Herb Stratum (20) Absolute % Cover Species (Y/N) 1. Facise from 64 habicum 35 2. Rubus chamaemords 3. Dougeteris expanses 4. Cornus canadenses 5. Cornus canadenses 5. Cornus canadenses 5. Cornus canadenses 5. Cornus canadenses 6. Species 6. Sp		
1. Fgo: setum 64 haticum 35 2. Rubus chamaemords 3. Dogopheris expansa 10 4. cornus canadenses 2	cover: 6,2	
**Cover Species (Y/N) 1. Fquisetum Gylvaticum 35 2. Robus chamaemords 10 3. Doyopteris expansa 10 4. Cornus canadensis 2		
1. Fgoisetom Gylvasicum 35 2. Rubus chamaemorus 10 3. Dryopteris expansa 10 4. Cornus canadensis 2	110000000000000000000000000000000000000	Dominance Test is > 50%
2. Rubus chamaemorus 10 3. Dryaptaris expansa 10 4. Cornus canadensis 2	FAC	Prevalence Index is ≤ 3.0
Descris expanse 10 Cornus canodensis 2	FHELD	Morphological Adaptations¹ (Provide supporting data in Notes)
COPAUS canadensis	FACU	Problematic Hydrophytic Vegetation¹ (Explain)
5. 6. 11	FACU	¹ Indicators of hydric soil and wetland hydrology must be present unless
Central's europaea	FACU	disturbed or problematic.
6. Streptopus amplexitation T	FACO	
1. Camarum valustre 4	OBL	% Bare Ground
5. Equisatum prateris - T	FAC	% Cover of Wetland Bryophytes
9. Viola SO		Total Cover of Bryophytes
O. Ohic sales		3 % Cover of Water
Total Cover: 62	74c	Hydrophytic Vegetation Present (Y/N):

W106H7003

SOIL	· 表面 网络新维	- 1	DateFe	eature ID	NY.	AND LOS		Soil Pit Required (Y/N)
	E DESCRIPTION: (D	escribe	to the depth needed	d to documen	t the in	dicator or o	confirm the absence	e of indicators.)
Depth	Matrix		Redox Features		-			
(inches)	Color (moist)	%	Color (moist)	% Тур	e ¹	Loc ²	Texture	Notes
0e 0-4								Saturated organics
Oa 4Hot								Saturated agentes
								And wardy debris
	18							
					1			
-5	4					31114		
		1					2	Di Di all'ila Mandria
	The state of the s	tion, RN	M=Reduced Matrix, C	CS=Covered of	or Coa	ted Sand G		PL=Pore Lining, M=Matrix.
HYDRIC SOIL		1000	STAGET WHITE I		No.	A STATE OF STATE	The Real Property of the Party of	FOR PROBLEMATIC HYDRIC SOILS
Histosol or His	stel (A1)		Alaska Gleyed		<u></u>			Change (TA4) ⁴ /
Histic Epipedo			Alaska Redox					Swales (TA5)/
Black Histic (A	(3)	11	Alaska Gleyed	Pores (A15)	7			with 2.5Y Hue
Hydrogen Sulf	ide (A4)/_						Layer	without 5Y Hue or Redder Underlying
Thick Dark Su	rface (A12)						Other (Explain	in Notes)
³ One indicator	of hydrophytic vege	tation, o	ne primary indicator	of wetland hy	ydrolog	y, and an a	appropriate landsca	ape position must be present unless
disturbed or pr	roblematic. of color change in No	tes						
Restrictive Lay	yer (if present): Type	:	-	Depth (inches	s):		-	
1						71-		
Hydric Soil P	resent (Y/N):Y					-		
Notes:						-		
74								
								A TO SEE AND SEE AND SEE AND SEE AND SEE
HYDROLOGY	PRIMARY INDICA	TORS (any one indicator is s	sufficient)	S	ECONDAR	Y INDICATORS (2	2 or more required)
Surface Water	(A1) Y	Su	rface Soil Cracks (B	6) _ N		/ater-staine eaves (B9)		Stunted or Stressed Plants (D1)
		In	undation Visible on Aerial Imagery					
High Water Ta	able (A2)	(B				Drainage Patterns (B10)		Geomorphic Position (D2)
Saturation (A3	B) Y E	Sp	parsely Vegetated			xidized Rhi	izospheres along	Shallow Aquitard (D3)
5000100011 (1.10		Co	Concave Surface (B8)			Living Roots (C3)		Microtopographic
Water Marks ((B1)/	Ma	arl Deposits (B15)			on (C4)	Reduced	Relief (D4) _/_
0. 1	oosits (B2) _ N	Ну	ydrogen Sulfide			alt Deposit	s (C5)	FAC-Neutral Test (D5)
Sealment Dep	oosits (BZ)/V		dor (C1)/			The Head at Test (56)		
Drift Deposits	(B3)		y-Season ater Table (C2)/	(N	otes:		
		-						
Algal Mat or C	rust (B4)	_ Ot	her (Explain in Notes	s):				
Iron Deposits	(B5) N							
	Transport State of the state of	L-PASSY			500	P. Marie Marie	The Market St.	STREET, STATE OF STREET, STREE
Surface Water	r Present (Y/N):		Depth (in): 3					V
					Wet	land Hydr	ology Present (Y/I	N):
Water Table P	resent (Y/N):		Depth (in):					
Saturation Pre	esent (Y/N):		Depth (in):		EC:	68	us	
(includes capi	llary fringe)		Depth (in): 2			- Y U		
Notes:								



VEGETATION VARIABLES	
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed	
Percent Cover (P): Tree (>5 dbh, >6m tall) 35 Sapling (<5 dbh, <6m tall) 35 Tall shrub (2-6m) Short shrub (0.5-2m) Dwarf shrub (<0.5m) Tall herb (≥1m) Short herb (<1m) 40 Moss-Lichen Floating Submerged O	
Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even	
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) 80%) Very High Density (80-100%) X	
Interspersion of Cover & Open Water (P): 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered Peripheral Cover N/A	or
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)	
Presence of Islands (M): Absent (none) One or Few Several to Many N/A	*
Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover	
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)	
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)	N.
HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe	
Soil Variables Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric	
Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey	
HYDROLOGIC VARIABLES	2.80
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Inl	ial
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded	
Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment	
Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)	_
Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 y	
Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow	-
Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits	4
Glacial Till/Not Permeable	
Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%) Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring	
LANDSCAPE VARIABLES (M)	
Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below Only Connected Above Unknown	
Wetland Land Use: High Intensity (i.e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space) X	
Watershed Land Use: 0-5% Rural 5-25% Urbanized 25-50% Urbanized >50% Urbanized >50% Urbanized	_
Size: Small (<10 acres) Medium (10 100 acres) Large (>100 acres)	a d

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

	e ID: NO64T003 Field Target: 201 Date: 6-4-16
For all	items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
	Vegetation names are entered legibly for all strata present?
	Cover calculations are complete and correct? All dominant species have been determined and recorded per strata?
	Indicator status is correct for each species?
	Dominance Test and Prevalence Index have been completed?
3.	Soil
	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	□ Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
	☐ Each logbook page is initialed and dated?
7.	Maps
	 □ Wetland boundaries have been corrected if necessary? □ Maps are initialed and dated?

8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

x halen	Volperx halen Valger 6-6-16
Wetland Scientist (print)	Signature / Date
V	

X Brownlee X Sesse Brownlee 6-4.15
Field Crew Chief (print) Signature / Date

SITE DESCRIPTION	A CONTRACTOR OF THE PARTY OF TH	Place of the	. 0	Water of the				
Survey Type: Centerline X Acces	ss Road (explain)	Other (expl	ain) X Facility	Field Targ	et: <u>200</u>	Map #: <u>(いた</u> Map Date: <u>5・3子</u>		
Date: (0-4-\(0	Project Name: Alask	a LNG	Feature Id: W 106H TOO4					
Investigators: Jessie Brow	onlee, Kaley	Jolper				Team No.: . W\06		
State: Alaska	- 1	Milepost:	956.1					
Latitude: 62° 26' 5.05'	\"N	Longitude	1500 15	18.87	70W	Datum: WGS84		
Logbook No.:	Logbook Page No.:	30	Picture No.:	P-WI	OGHT	004-001 thru 004		
OFF DAD WATERD	The soul before as in		HIS CONTRACTOR	the state of	3 3 10 10 10	SORESETTANCE OF BRIDE		
Subregion:	The Navel Concretely	A TOTAL OF THE PARTY OF THE PAR	Landform (hills	slone terrac	e hummocks	s, etc.): Jwale		
Subregion: Cook Inlet Basin						1		
Slope (%): 0-3	tion: Of all AND	2.	Evidence of W		0	Hightly concave Stat ?		
Pre-mapped Alaska LNG/NWI classification Are climatic/hydrologic conditions on the	1101/	of year?			stances" pre	sent.		
	ain in Notes)		Yes/	No		plain in Notes.)		
Are Vegetation, Soil, or Hyd	Irology Significantl	y Disturbed?	No_X	_(If yes, exp	lain in Notes)		
Are Vegetation, Soil, or Hyd	Irology Naturally P	roblematic?	No	_ (If yes, exp	lain in Notes	5.)		
SUMMARY OF FINDINGS	THE RESERVE	5. 11 · 15 · 1	西 维加州 中心	SA DIA		THE PROPERTY OF THE		
Hydrophytic Vegetation Present? Yes_	X No	Is	the Sampled A	rea within a	Wetland?	YesNo		
Hydric Soil Present? Yes	XNo	_ w	Wetland Type: PFOI/EMIS PEMI!/FOIB					
Wetland Hydrology Present? Yes_	No	— AI	Alaska Vegetation Classification (Viereck): / B 3, /// A 2					
Notes and Site Sketch: Please include Dicorridor. Bet Neo woodland w/ Compal pusent. We Area wetter than me	(al can & E + to west exp	go Sp	understone	y. Sto	ading good	water, sphagnom. 1. Updated on map.		
			→ W		,	JE+		
						Dece 1 of 4		

W106HT004

- Company of the Comp	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot sizes:() () ()	% Cover	Species? (Y/N)	Status	No. of Dominant Species that are OBL, FACW, or FAC: 5
· Betula Neoalaskang	20	Y	FAC	Total Number of Dominant Species Across All Strata:
Picea Mariang	2	Y	FACU	% Dominant Species that are OBL, FACW, or FAC:/(/
	0			
				Prevalence Index worksheet:
Total Cove	78			Total % Cover of: Multiply by:
50% of total cover	er:14 20	0% of total cov	er: 500	OBL species: X1 = X1 =
apling/Shrub Stratum (Z6)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 2 X 2 = 4 FAC species: 3 X 3 = 255 FACU species: 16 X 4 = 64
Spiraea stevenil	5	-Y	FACU	UPL species X 5 =
Vaccinium ovalifolium	5	Ý	FAC	Column Totals: 163 (A) 319 (B)
Menziesia ferruginea	5	Y	FAC	PI = B/A = 3.09
Ribes SP	T		-	Equisation sylvaticum 10 F
Limage boraliz (growing on)	T		FACU	
				+
		-		
Total Cove	//	1	7	
Total Cove	//	0% of total cov	er: <u>3</u>	
Total Cove	r: 7.5 20	0% of total cov	er: 3	
Total Cove 50% of total cove	r: 7.5 20	Dominant Species?	er: 3	Hydrophytic Vegetation Indicators: Dominance Test is > 50%
50% of total coverage of plant serb Stratum (ZG ')	ts) Absolute	Dominant	Indicator	Dominance Test is > 50% Prevalence Index is ≤ 3.0
50% of total coverage of plant of Stratum (ZG') Calamagrastis (anadensis	Absolute % Cover	Dominant Species?	Indicator	Dominance Test is > 50%
EGETATION (use scientific names of planters Stratum (ZG') Calamagrostis (anadensis	Absolute % Cover	Dominant Species?	Indicator	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in
Total Cove 50% of total cove EGETATION (use scientific names of plant erb Stratum (ZG') Calomagrastis (anadensis Equisatum ArJanse Trientelis Europaea	Absolute % Cover	Dominant Species?	Indicator Status FAC FAC	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain)
Total Cove 50% of total cove 50% of total cove EGETATION (use scientific names of plant erb Stratum (_ZG') Calamagrostis (anadensis Equisatum Arsanse Trientalis Europaea Rubus chamaemans	Absolute % Cover	Dominant Species?	Indicator Status FAC FAC FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain)
Total Cove 50% of total cove 50% of total cove end Stratum (ZG') Calamagrostis (anadensis Equisatum Arsense Trientalis Europaea Rubus chamaemons Rubus pedatus	Absolute % Cover	Dominant Species?	Indicator Status FAC FAC FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
EGETATION (use scientific names of planters Stratum (ZG') Calamagrostis (anadensis Equisatum Arsense Trientalis Europaea Rubus chamae manus Rubus pedatus Cornus canadensis Rubus Areticus	Absolute % Cover 5	Dominant Species?	Indicator Status FAC FAC FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
Total Cove 50% of total cove 50% of total cove EGETATION (use scientific names of plant erb Stratum (ZG') Calomagrostis Canadensis Equisatum Arvense Trientalis Furoposea Rubus chamaemonus Rubus pedatus Cornus canadensis	Absolute % Cover 5	Dominant Species?	Indicator Status FAC FAC FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) — Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. — Ø . % Bare Ground — 75 % Cover of Wetland Bryophytes
Total Coverson 50% of	Absolute % Cover 5	Dominant Species?	Indicator Status FAC FAC FACU FACW FACW FACW FACC	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. M. & Bare Ground M. & Bare Ground T. & Cover of Wetland Bryophytes Total Cover of Bryophytes
Total Cove 50% of total cove 50% of total cove EGETATION (use scientific names of plant erb Stratum (ZG') Calamagrostis (anadensis Equisatum Arsense Trientelis Europaea Rubus chamaemanus Rubus pedatus Cornus canadensis Rubus Arcticus (on.	Absolute % Cover 5	Dominant Species?	Indicator Status FAC FAC FACU FACU FACU FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) — Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. — Ø . % Bare Ground — 75 % Cover of Wetland Bryophytes

5.711	A STATE OF THE STA	Dat	e Fea	ature ID		Sept and a	可以中国	Soil Pit Required (Y/N)		
NO. CONTRACTOR STATES OF STREET	E DESCRIPTION: (De	scribe to t	he depth needed	to docu	ment the	indicator or	confirm the absence	e of indicators.)		
Depth	Matrix		edox Features							
(inches)	Color (moist)	% Co	olor (moist)	%	Type ¹	Loc ²	Texture	Notes		
0i 04								Saturated organics		
De 4-7								()		
0a 7-10								()		
								4		
						-				
1		514.5			1. 0.	-1-1010	21	DI - Dans Lining M-Matrix		
STATE OF THE PARTY	centration, D=Depletion	on, RM=R	educed Matrix, C	S=Cove	red or Co	ated Sand G		PL=Pore Lining, M=Matrix. FOR PROBLEMATIC HYDRIC SOILS ³		
HYDRIC SOIL	NACO SERVICE AND ADDRESS OF THE PARTY OF THE	5/1/1597	Alaska Olavad	(4.40)	A CONTRACTOR	THE PARTY	Alaska Color C			
Histosol or Hist			Alaska Gleyed			Ŷ	-			
Histic Epipedor			Alaska Redox (1	Alaska Alpine S			
Black Histic (A:			Alaska Gleyed	Pores (A15)	<u> </u>	Alaska Gleved	without 5Y Hue or Redder Underlying		
Hydrogen Sulfi	de (A4),\/						Layer_ N			
Thick Dark Sur							Other (Explain			
One indicator disturbed or pro		tion, one p	orimary indicator of	of wetlar	nd hydrolo	ogy, and an	appropriate landsca	pe position must be present unless		
	color change in Notes			anth (in	ches):		-			
Restrictive Lay	er (if present): Type:_			eptii (iii	iches)					
Hydric Soil Pr	esent (Y/N):							- 1 - 1 - 14-		
Natas	I soil under 10	1000	rganies	- 0		1=	4 5 1	- /		
Notes: Macra	sor under	DIBOT	under war	ery	No	(CCS)	y vo dozowi	ent		
HYDROLOGY	PRIMARY INDICATO	RS (any	one indicator is su	ifficient))	SECONDAR	Y INDICATORS (2	or more required)		
Surface Water	(A1)	Surface	e Soil Cracks (B6	N		Water-staine Leaves (B9)	Stunted or Stressed Plants (D1)			
High Water Tal	ble (A2) <u>Y</u>	Inunda (B7)	tion Visible on Ae	rial Ima	gery	Drainage Pa	tterns (B10)	Geomorphic Position (D2)		
Saturation (A3)	<u></u>		ely Vegetated ve Surface (B8)	N		Oxidized Rhi Living Roots	izospheres along (C3)	Shallow Aquitard (D3)		
Water Marks (E	31)	Marl D	eposits (B15)	N		Presence of Iron (C4)	Reduced	Microtopographic Relief (D4)		
Sediment Depo	osits (B2)	Hydrog Odor (0	gen Sulfide			Salt Deposits (C5) FAC-Neutral Test (D5)				
Drift Deposits (В3)/	Dry-Se Water	ason Table (C2)^	_		Notes:				
Algal Mat or Crust (B4) Other (Explain in Notes):							11			
Iron Deposits (B5)										
DIN SULTY TO	Wall Property and	A VOLUME	A MARKETS	百姓	WHIS I'M	THE REAL PROPERTY.	MATERIAL SECTION			
Surface Water	Present (Y/N): Y	De	pth (in): /O					Y		
Water Table Pr	resent (Y/N):	De	pth (in):		We	etland Hydro	ology Present (Y/N	l):/		
Saturation Pres (includes capilla		De	pth (in):		EC	: 33	<u> </u>	4.57 pH		
Notes:						アサイン				

AQUATIC SITE ASSESSMENT DATA FORM

VEGETATION VARIABLES P= Plot, N	Λ= Macrix
Forested-Evergreen-Needle-leaved	Scrub Shrub-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent 'Emergent-Non-persistent 'Emergent-Non-persiste
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) Tall herb (≥1	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Short shrub (0.5-2m) Short herb (<1m) 45 Moss-Lichen Floating Submerged
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even
Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)	(0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattere	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant	species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) _	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover
Dead Woody Material (P): Low Abundance Abundant (>50% of surface)	(0-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large High (small groupings, diverse and intersperse	patches, concentric rings) Moderate (broken irregular rings) ed)
HGM Class (P): Slope / Flat_	Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES	
Soil Factors (P): Soil Lacking	Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES	
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Pere
Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S	onally Flooded, Temporarily Flooded, Saturated
Created	ce Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment
	Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)
Frequency of Overbank Flooding (P): No O Return Interval >5 yrs	verbank Flooding X Return Interval 1-2 yrs Return Interval 2-5 yrs Return Interval 2-5 yrs
Degree of Outlet Restriction (P): No Outflow	
The state of the s	ircumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) PH Reading 4.57
Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable	
Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No See	Gradient (<2%) High Gradient (≥2%) eps or Springs Seeps Observed Intermittent Spring Perennial Spring
LANDSCAPE VARIABLES (M)	
Wetland Juxtaposition: Wetland Isolate Only Connected Above Connected	d Wetlands within 400m, Not Connected Only Connected Below d Upstream & Downstream Unknown
Wetland Land Use: High Intensity (i.e.,	ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)
Watershed Land Use: 0-5% Rural	5-25% Urbanized >50% Urbanized >50% Urbanized
Size: Small (<10 acres) Medi	um (10-100 acres)

Crew Chief QA/QC check:

GPS Technician QA/QC check:

LV

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

E0	ature	PID: WWGHT004 Field Target: 200 Date: (1-4-16
		items not checked, please provide detailed explanation in the notes section of data form.
-υ	i ali i	tems not checked, please provide detailed explanation in the notice escale it of data forms
	1.	Site Description
		Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
	2.	Vegetation
		At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
		Vegetation names are entered legibly for all strata present?
		Cover calculations are complete and correct? All dominant species have been determined and recorded per strata?
		Indicator status is correct for each species?
		Dominance Test and Prevalence Index have been completed?
	3.	Soil
		Soil profile is complete?
		Appropriate hydric soil indicators are marked?
	4.	Hydrology
		Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
	5.	Functions and Values
		Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
	6.	Field Logbook
		Notes have been recorded at each site, including general description, sketch, and
		accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
	7.	Maps
		Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

Wetland Scientist (print) Volley Natley Valley G/6/16

Wetland Scientist (print) Signature / Date

X J Brownlee

Field Crew Chief (print)

X from Brownlee 6.4

Signature / Date

SITE DESCRIPTION					
Survey Type: Centerline Acce	ss Road (explain) Other	er (explain)	Field Ta	rget: 202	Map #: <u>//) 2 Map Date: 5, 27</u>
Date: 6-4-16	Project Name: Alaska LN	G		Feature Id	WIOGHTOOS
Investigators: Jessie Brownle	E Koley Valper	9			Team No.: W\06
State: Alaska	Milepo	st: 656.3		-104	
Latitude: 42° 26' 1.73	tude: 42° 26' 1.73" Longit				Datum: WGS84
Logbook No.:	Logbook Page No.: 30	Picture	No.: P-W	100H	1005-001 thru
SITE PARAMETERS	AND THE PARTY OF T		17/0/28/41	CONTRACTOR OF	· A SECTION OF THE
Subregion: Cook Ink+ Basin	124	Landfor	m (hillslope, terr	ace, hummock	s, etc.): Terrace
Slope (%): 0-3	•	Local re	elief (concave, co	nvex, none):	Flat
Pre-mapped Alaska LNG/NWI classifica	ation: U: 162,1162	Evidend	e of Wildlife Use	: NONE	
Are climatic/hydrologic conditions on th Yes No (if no exp	e site typical for this time of ye lain in Notes)		re "Normal Circu es_X No_		esent: plain in Notes.)
Are Vegetation, Soil, or Hy	drology Significantly Dis	turbed? No	(If yes, e	xplain in Notes)
Are Vegetation, Soil, or Hy	drology Naturally Proble	ematic? No	(If yes, e	xplain in Notes	3.)
SUMMARY OF FINDINGS		NEW SELEC			
Hydrophytic Vegetation Present? Yes_	XNo	Is the Sam	oled Area withir	n a Wetland?	Yes No
Hydric Soil Present? Yes	NoX	Wetland Ty	rpe: .Upla	and	
Wetland Hydrology Present? Yes_	No	Alaska Veg	etation Classifica	ation (Viereck):	1C2,11B2
Notes and Site Sketch: Please include corridor. open Mixed Forest and Cal Can 9 & Site is Dry w/ ty Area is very en lines have be lightening a thousand start	To Bet Neo 9 For Forb com. pical Andic implicated to	Minity Bs mate map an to the	not and and extended map	shows of sign of size	of hydrology wetdry - to 12.
				8	

WETLAND DETERMINATION DATA FORM W 106 H T005

100	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot sizes:)	% Cover	Species? (Y/N)	Status	No. of Dominant Species that are OBL, FACW, or FAC:(Total Number of Dominant Species Across All Strata:(
· Betula Negalaskang	20	Y	FAC	% Dominant Species that are OBL, FACW, or FAC: 57 (A
· Picea Glavea	10	Y	FACU	70 Bothmant opedes that are obe, 17704, 51776.
		· ·		
				Prevalence Index worksheet:
Total Cove	r:_30			Total % Cover of: Multiply by:
50% of total cove	r: 15 20	% of total cov	rer:	OBL species:X1 =
apling/Shrub Stratum (750)	Absolute	Dominant	Indicator	FACW species: 4 X 2 = 8
	% Cover	Species? (Y/N)	Status	FAC species 79 X 3 = 237
Sambles & march	4	4	FACW	FACU species 75 X 4 = 300
11	10	U	FAC	UPL species X 5 =
C I TENDETICA	1	1	FILCU	PI = B/A = 3.44
piraea steveni,	Pelan		MCC	
100				Streptopus amplexifohus T FA
			7	
				200
Total Cove	r. 15			
50% of total cove	r: 7.5 20	% of total cov	er:	
EGETATION (use scientific names of plant	ts)			
erb Stratum (26')	Absolute	Dominant	Indicator	Hydrophytic Vegetation Indicators:
erb Stratum (
	% Cover	Species?	Status	Dominance Test is > 50%
veretrum viride	% Cover	Species? (Y/N)		N/
veretrum viride	% Cover 7	100 100 100 100 100 100 100 100 100 100	FAC	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in
veretrum viride Port statks 3 Dryopteris expansa	% Cover 7 2.5	100 100 100 100 100 100 100 100 100 100	FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes)
Veratrum viride Porn Statks Dryopteris expansa Chomerion Angustifation	7 25 n 2	100 100 100 100 100 100 100 100 100 100	FACU FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain)
Veretrum viride Port Statks Dryopteris expansa Chomerion Angustifilium Cabmagrastis Canadensis	% Cover 7 25 7 2 30	100 100 100 100 100 100 100 100 100 100	FACU FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes)
Veretrum viride Port Hatks 5 Dryopteris expansa Chamerion Angustifation Cabmagrastis Canadensis Herasleum Maximum	7 25 n 2	100 100 100 100 100 100 100 100 100 100	FACU FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
Veretrum viride Port statks 3 Dryopteris expansa Chomerion Angustificion Cobmagnostis Canadensis Herasleom Maximum Cornus canadensis	7 25 n 2	100 100 100 100 100 100 100 100 100 100	FAC FACU FAC FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
Veretrum viride Port Statks 3 Dryopteris expansa Chomerion Angustifalium Cobmagnostis Canadensis Herasleom Maximum Cornus canadensis Coymnocarpium dryoplei	7 25 n 2	(Y/N) Y	FAC FACU FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. ———————————————————————————————————
Veretrum viride Corn statks 3 Dryopteris expansa Chomerion Angustificion Cobmagnastis Canadensis Herasleom Maximum Cornus canadensis	7 25 n 2	(Y/N) Y	FAC FACU FACU FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
Jerutrum viride Porn Statks 3 Chamerion Angustifation Colomagrastis Canadensis Herasleom Maximum Cornus canadensis Cymnocarpium dryopolei Equisetum Arvense	7 25 n 2	(Y/N) Y	FAC FACU FACU FACU FACU FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
Veretrum viride Porn Hottes 3 Dryopteris expansa Chomerion Angustifilium Colomagrostis Canadensis Herasleom Maximum Cornus canadensis Cymnocarpium dryopter Equisetum Arvense Trientalis Europea	7 25 2 30 2 1 30 2 1 4 4	(Y/N) Y	FAC FACU FACU FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Bare Ground Cover of Wetland Bryophytes

1,50			6-4.16					A second		
SOIL	整点联系的	Jako.	Date Fe	ature II	D			Soil Pit Required (Y/N)		
SOIL PROFILE	E DESCRIPTION: (De	escribe	to the depth needed	to doc	ument the i	ndicator or	confirm the absence	of indicators.)		
Depth	Matrix		Redox Features							
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Notes		
n: 64								Dry organics		
A/F 4-9	10YR 3/2						siltlaan	horsen seems to be transitioning		
11/2 11	104R 3/2		-					From A to E.		
Rh 59-15			+		1		silt low			
DN - CD	7. SYR 4/4									
BW 15-24	7.54R 5/4	97	7.5YR 3/4	3	Con	m	Silt loan			
DW DET	7,37/6 /1	11	7.071		con	-				
¹Type: C=Con	centration, D=Depleti	on. RN	I=Reduced Matrix, C	S=Cove	ered or Coa	ated Sand C	Grains. ² Location:	PL=Pore Lining, M=Matrix.		
HYDRIC SOIL	A STATE OF THE PARTY OF THE PAR		227	. 20番	Hanks	2014年		OR PROBLEMATIC HYDRIC SOILS3		
Histosol or His			Alaska Gleyed	(A13)	N	3380	Alaska Color Ch			
Histic Epipedor			Alaska Redox (-		Alaska Alpine S			
			Alaska Gleyed			/		vith 2.5Y Hue N		
Black Histic (A	3)		Alaska Gleyed	Poles	(A15)			without 5Y Hue or Redder Underlying		
Hydrogen Sulfi	de (A4)/						Layer_ N			
Thick Dark Sur		_					Other (Explain i			
disturbed or pr								pe position must be present unless		
Notes: All	horizons wavey									
HYDROLOGY	PRIMARY INDICATO	ORS (a	ny one indicator is st	ufficient	t) S	ECONDAR	RY INDICATORS (2)	or more required)		
Surface Water	(A1)/	Sur	face Soil Cracks (B6)_N	/	Vater-staine eaves (B9)		Stunted or Stressed Plants (D1)		
High Water Ta	ble (A2)/	Inu (B7	ndation Visible on Ae	rial Ima	agery [rainage Pa	atterns (B10)	Geomorphic Position (D2)		
Saturation (A3)	<u> </u>		arsely Vegetated ncave Surface (B8) _	3			izospheres along (C3)	Shallow Aquitard (D3)		
Water Marks (E	B1)	Ma	rl Deposits (B15)				Reduced	Microtopographic Relief (D4)		
Sediment Depo	osits (B2)		drogen Sulfide or (C1)				s (C5)/	FAC-Neutral Test (D5)		
Drift Deposits (B3) N		r-Season eter Table (C2)		١	Notes:				
Algal Mat or Crust (B4) Other (Explain in Notes):										
Iron Deposits (B5)/_									
What was a		- 4	计图图图		- 34	Alia sh				
Surface Water	Present (Y/N):		Depth (in):			Alamai I land	alony Propert (VA)	. N		
Water Table P	resent (Y/N):		Depth (in): -		We	tland Hydr	ology Present (Y/N	:		
Saturation Pres (includes capill			Depth (in):		EC	_				
Notes:										

AQUATIC SITE ASSESSMENT DATA FORM

VEGETATION VARIABLES P= Plot, I	M= Matrix
Forested-Evergreen-Needle-leaved	acking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Emergent-Non-persistent Emergent-
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) Tall herb (<1	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Moss-Lichen Floating Submerged Submerged
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)	e (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scatter	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant	species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) _	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site
Dead Woody Material (P): Low Abundance Abundant (>50% of surface)	(0-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (larger High (small groupings, diverse and interspers	
HGM Class (P): Slope Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES	
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy	Histosol: Fibric Histosol: Sapric Histosol: Sapric Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES	
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No It Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial
Inlet/Outlet Class (P): No Inlet/Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial	toutlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perenni
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermitten Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea: Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Eviden	toutlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perenni
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermitten Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence	toutletIntermittent Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/Perennial
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermitten Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence	Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inle
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea: Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Return Interval >5 yrs	Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inle
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermitten Inlet/Intermittent Outlet Perennial Inlet/Intermittent Inlet/Intermit	Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermitten Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Comparison of Perennial Inlet/Intermittent Inl	Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perenn
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent	Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Peren
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet Inl	Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Peren
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermitten Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Intermittently Exposed, Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Return Interval >5 yrs Degree of Outlet Restriction (P): No Outfloo Water pH (P): No surface water Outlet Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No See	Intermittent Inlet/Perennial Outlet
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet Intermittent Inlet/Intermittent Inlet	Intermittent Inlet/Perennial Outlet
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet Intermittent Inlet/Intermittent Inlet	Intermittent Intervilled Intermittent Intervilled Perennial Outlet Perennial Intervilled
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermitte	Intermittent Inlet/Perennial Outlet
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Inlet Inle	Intermittent Intervilled Intermittent Intervilled Perennial Outlet Perennial Intervilled

Wetland Determination Form QA/QC Checklist

	This form to be completed before leaving the field site.
	e ID: WOOHTOOS Field Target: 70Z Date: 6-4-10 items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification? Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct? All dominant species have been determined and recorded per strata? Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
3.	Soil
	☑ Soil profile is complete?☑ Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked?Surface water, water table, and saturation depths are recorded if present?

5. Functions and Values

Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?

6. Field Logbook

- Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
- Each logbook page is initialed and dated?

7. Maps

- Wetland boundaries have been corrected if necessary?
- Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

₩ Two photos were taken for each Observation Point (vegetation/site overview)?

X Kallery VolpherX Maller Valler 6-6-16
Wetland Scientist (print)
Signature / Date

X J Brownlee

Field Crew Chief (print)

X fissie Browne Co

Signature / Date

SITE DESCRIPTION	THE PARTY OF THE PARTY OF		Asia syriant.		
Survey Type: Centerline Acces	ss Road (explain)	Other (expla	in) Field Targ		Map #: 100 Map Date: 5.27.16
Date: (0 - 7 - 16	Project Name: Alaska	a LNG		Feature Id:	WIDGHTOOL
Investigators: Jessie &	ronnier, K	alex	Voleer		Team No.: WV06
State: Alaska	Region: Alaska		Milepost: 647.7		
Latitude: 62°32'45.38	"	Longitude	-150° 14' 48.	66"	Datum: WGS84
Logbook No.:		31	Picture No.: P_W	06 HT	206-001 thoroay
SITE PARAMETERS	小中华州美国	阿斯斯斯	的 以為《為為	E STATES	
Subregion: Cook Inlet Basin	3+1		Landform (hillslope, terra	ce, hummock	s, etc.): lowland
Slope (%): 0-3			Local relief (concave, cor	nvex, none):	Plat
Pre-mapped Alaska LNG/NWI classifica	ation: PFO1/4B		Evidence of Wildlife Use:		
Are climatic/hydrologic conditions on the Yes No (if no exp	e site typical for this time lain in Notes)	of year?	Are "Normal Circur Yes No		sent: plain in Notes.)
Are Vegetation, Soil, or Hy	drology Significant	y Disturbed?	No(If yes, ex	plain in Notes)
Are Vegetation, Soil, or Hy	drology Naturally F	roblematic?	No(If yes, ex	plain in Notes	5.)
SUMMARY OF FINDINGS	10年8月時初年2月2日	Miles and the		()建筑量()	
Hydrophytic Vegetation Present? Yes_	No	Is	the Sampled Area within	a Wetland?	Yes No
Hydric Soil Present? Yes_	<u>Х</u> No	_ w	etland Type: PFOI	4B	
Wetland Hydrology Present? Yes_	XNo	A!	aska Vegetation Classificat	tion (Viereck):	1CZ,11BZ
Notes and Site Sketch: Please include I corridor.					
Tall open mixed forest	with Alder	unders	tory. Diverse for	6 commun	ity. Soils saturated
Tall open mixed forest organics to 20 + " F.	ollowed snow ma	chine tr	all here. After a	day of.	heavy rais area is
very wet.	1	/\			
	A 5				
	75 -		2		
C3 6 03		1	4		
9 9 4		1			
let l	3		1 24		
1	19		93		
	42			100	1111111111
	oe break			hE	MIB
900	8 6 6				
H	the na				
JS10k 4T 806	Sollow W10				

8.

10.



VEGETATION (use scientific names of plant	s)			The state of the s
Tree Stratum (Plot sizes: _/OO _)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC:
1. Betwa Negaloskana	3025	Y	FAC	Total Number of Dominant Species Across All Strata: 6 (A Dominant Species that are OBL, FACW, or FAC: 50 (A
2. Picea Colavea	35	Y	FACU	(do.7
3. Picea mariana	25	Y	FACW	
4.			1,10,10	Prevalence Index worksheet:
Total Cover				Total % Cover of: Multiply by:
50% of total cover	27-520	% of total cov	ver:	OBL species: X1 =
Sapling/Shrub Stratum (26')	Absolute % Cover	Dominant Species? (Y/N)	Indicator: Status	FACW species $\frac{7}{50}$ $=$ $\frac{7}{50}$ $=$ $\frac{7}{50}$ $=$ $\frac{7}{50}$ FACU species $\frac{7}{50}$ $=$ $\frac{7}{50}$ $=$ $\frac{7}{50}$ $=$ $=$ $=$ $=$ $=$ $=$ $=$ $=$ $=$ $=$
1. Betula Nana	T		FAC	UPL species X 5 = O
2. Alnus tenuifolia	25	Y	FAC	Column Totals: 163 (A) 428 (B)
3. Spiraea Stevenii	15	Y	FACU	PI = B/A = 2.42
1. Vaccinium realifolium	2		FAC	vida sp
5. Betila negalastrina	5		FAC -	
s. Picea ataucar	T		FACU	
7.				
3.				\ \
9.	- 4			
Total Cover 50% of total cover	2.90	0/ of total cov	9-4	
	William Committee of the Committee of th	70 OI TOTAL COV		
VEGETATION (use scientific names of plants Herb Stratum (みし')	1900 - 2000	Dom!= ==1	I Indicates	Underwhydia Vandadian India
ieib Gratum (Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50%
1. Cornus canadensis	3		FACU	Prevalence Index is ≤ 3.0
2. Rubus chamaemorus	2		FACW	Morphological Adaptations¹ (Provide supporting data in Notes)
3. Dryopteris empansa	25	Y	FALU	Problematic Hydrophytic Vegetation ¹ (Explain)
4. Trientalis europaes	1.		FACU	Indicators of hydric soil and wetland hydrology must be present unless
- I TENTANS EDI UPACE			1100	districted as architectural

FAC

FACUS

5

3

50% of total cover: 33 20% of total cover: 13,2

Total Cover:

disturbed or problematic.

% Bare Ground

~3 🖄 % Cover of Water

Hydrophytic Vegetation Present (Y/N):

60 % Cover of Wetland Bryophytes

70 Total Cover of Bryophytes

Notes: (If observed, list morphological adaptations below):

			6.716		-1	CONTRACTOR OF THE PARTY	UARLET SEE STEWARD	Call Dis Denvised (VAI)
GOIL		BUN		eature ID		- SIE CIE	CONTRACTOR OF THE PARTY OF THE	Soil Pit Required (Y/N)
SOIL PROFIL	1	Describe	e to the depth needs	ed to docur	ment the	indicator or	confirm the absent	ce of indicators.)
Depth	Matrix		Redox Features			1 2		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Notes
Oe 0-6								Saturated organics
Oa 10-20								Saturated organics
								0
-					ie.			
1-1-								
	n							
And the state of								
¹ Type: C=Cor	ncentration, D=Deple	etion, RI	M=Reduced Matrix,	CS=Cover	red or Co	ated Sand C	La contract of the contract of	n: PL=Pore Lining, M=Matrix.
HYDRIC SOIL	INDICATORS	le Alle	1187年	A STATE OF	1012134	4 O HOVE	INDICATORS	FOR PROBLEMATIC HYDRIC SOILS
Histosol or His	stel (A1)		Alaska Gleye	d (A13) _	N		Alaska Color	Change (TA4) ⁴
Histic Epipedo	1		Alaska Redo	x (A14)	N		Alaska Alpine	Swales (TA5) _ M
Black Histic (A		3 3	Alaska Gleye		A15) N	-	Alaska Redox	with 2.5Y Hue N
					-/		and the second s	d without 5Y Hue or Redder Underlying
Hydrogen Sulf	ide (A4) _/V		*				Layer_ N	
	rface (A12)							n in Notes) —
One indicator disturbed or p	of hydrophytic vege	etation, e	one primary indicato	r of wetlan	nd hydrolo	gy, and an	appropriate landso	cape position must be present unless
⁴ Give details of	of color change in No	otes.						
Restrictive Lay	yer (if present): Typ	e:	N-	Depth (in	ches):	-		
Hydric Soil P	resent (Y/N):				-			
				-				11
Notes: Woo	dy Debris th	rough	out					
1 3 Y		٠.						**
HADBOI OCA	PRIMARY INDICA	TOPS	(any one indicator is	sufficient)	Participal Co	SECONDAE	Y INDICATORS	2 or more required)
HIDROLOGI	PRIMART INDICA	TORS	any one indicator is	Sumoienty	10000	The second second	Control of the last of the las	Stunted or Stressed
Surface Water	r (A1)/	Sı	urface Soil Cracks (E	36) _ /		Water-staine Leaves (B9)		Plants (D1)
		In	undation Visible on	Aerial Ima				Geomorphic Position (D2)
High Water Ta	able (A2) <u>Y</u>		37) N	7576			tterns (B10)	Geomorphic Position (D2)
Saturation (A3	3) Y	SI	parsely Vegetated				izospheres along	Shallow Aquitard (D3)
	-		oncave Surface (B8)			Living Roots		Microtopographic
Water Marks ((B1)	M	arl Deposits (B15) _	~		Presence of Iron (C4)	reduced	Microtopographic Relief (D4)
0 11 :=	11. (50)	H	ydrogen Sulfide				a (CE)	FAC-Neutral Test (D5)
Sediment Dep	oosits (B2) _/		dor (C1)/			Salt Deposit	s (C5) _ ~ _	FAC-Neutral Test (D5)
Drift Deposits	(B3) N	D	ry-Season	1		Notes:		
Jim Doposita	()	W	/ater Table (C2)/					
Algal Mat or C	rust (B4)	_ 0	ther (Explain in Note	es):				
		-						
Iron Deposits	(B2)							
	AND WARRY	Sept.	The Water		1-0-170	No. 10		
Surface Water	r Present (Y/N):	N	Depth (in):			Alamai I Israel	ology Descent M	(AD:
Water Table F	Present (Y/N):	. /	Depth (in): 9		W	euana Hydr	ology Present (Y	/N)/
		7	/					
Saturation Pre		1	Depth (in): 4		EC	:	2 01	5.13
(includes capi		- 1	1	,	-	, ,	10	1 die level
Notes. Water	- seeping sk	wy 1	FX L Man	pect a	م مي المعر	- Table	to Kise	to this level
	U							

AQUATIC SITE ASSESSMENT DATA FORM



VEGETATION VARIÁBLES P= Plot, M= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved X Forested-Evergreen-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Non-persistent Persistent Aquatic Bed
Percent Cover (P): Tree (>5 dbh, >6m tall) 50 Sapling (<5 dbh, <6m tall)
Number of Wetland Types (M): 💹 2 Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even _X_
Vegetation Density/Dominance (P): Sparse (0-20%)Low Density (20-40%)Medium Density (40-60%)High Density (60-80%)80%)
Interspersion of Cover & Open Water (P): 100% Cover or Open Water

Crew Chief QA/QC check: &Brownlee GPS Technician QA/QC check:

Vy

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Feature	PID: WIO6HT DOG Field Target: 203 Date: 6.4.13
For all	items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification? Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct? All dominant species have been determined and recorded per strata?
	Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
3.	Soil
	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7.	Maps
	₩ Wetland boundaries have been corrected if necessary?✓ Maps are initialed and dated?

8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X halen	Volver	X	halen	Volger	6-10-10
Wetland Scientist (print)		Signature	e / Date)	

Field Crew Chief (orint)

Signature / Date

				AND THE RESIDENCE OF THE PARTY
SITE DESCRIPTION		District to	2-0	
Survey Type: Centerline Acce	ss Road (explain) Other (ex	plain)	Field Target: 200	Map #: 912 Map Date: 5.27
Date: 6-7-16	Project Name: Alaska LNG		Feature Id:	WIDEITIGOT
Investigators: Jessie	Browniee ra	es Va	3/ per	Team No.: WIGG
State: Alaska	Region: Alaska	Milepost:	604	
Latitude: 63° 00154.	8442" N Longitu	de: 1490 3	4 38.648"W	Datum: WGS84
Logbook No.:	Logbook Page No.: 32	Picture No.:	P-WIOGHTO	7_001 thru 004
ADDED DAD AMETERS		AIRTH STATIS	(中)(公司((公司())(公司())(公司()	
SITE PARAMETERS		Landform (hi	llslope, terrace, hummock	s, etc.): Terrace/Bench
Subregion: Alos CET Range Slope (%): 0-3			concave, convex, none):	
Slope (%): O - O Pre-mapped Alaska LNG/NWI classific	ation: pss 1/2 m 1 B	Evidence of		Last
Are climatic/hydrologic conditions on th	e site typical for this time of year?	Are "N	lormal Circumstances" pre	esent:
Yes No (if no exp	plain in Notes)	Yes_	(If yes, explain in Notes	plain in Notes.)
Are Vegetation, Soil, or Hy		- 1	(If yes, explain in Notes	77-74-0-2
Are Vegetation, Soil, or Hy	ydrology Naturally Problemat	C? NO_A	(II yes, explain in Notes	
SUMMARY OF FINDINGS	A MANAGEMENT OF THE PROPERTY O	In the Campled	Area within a Wetland?	Yes X No
Hydrophytic Vegetation Present? Yes		is the Sampled	Area Willing a Wolland	
Hydric Soil Present? Yes_	X No	Wetland Type:	PSSI/EMIB	
Wetland Hydrology Present? Yes_	No	Alaska Vegetatio	on Classification (Viereck)	11 CO2, MAZ
Confirmed upland	Directional & North Arrow, Centerly dominated by emp North the pockets of standis status up slope of South was a mosic ages, Hole dug w/ water	g., Rho Tor ng water Soum Slaj	scattered about	the line work.
Z Z	Upland 11C1 WilesenTag 7	PSSIFEMIBS 1162, 111 AZ COMPANIED line -		



		A1-240000	LT STATE OF THE PARTY OF THE PA	
VEGETATION (use scientific names of plant	s) ,			
Tree Stratum (Plot sizes: 100)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: 3 (A) Total Number of Dominant Species Across All Strata: (B)
1.				% Dominant Species that are OBL, FACW, or FAC: 100 (A/B)
2. 4				V Borninant opeded that are OBE, 171044, 01 1710.
3.				对对中国的共享的
4.	1 = 1			Prevalence Index worksheet:
Total Cover				Total % Cover of: Multiply by:
50% of total cover	: 20	% of total cov	er:	OBL species;X1 =
Sapling/Shrub Stratum (24)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 35 X 2 = 7 0 FAC species
1. Betula rang	15		FAC	UPL species
2. Vaccinium uliginosum	8		FAC	Column Totals: 11 9 (A) 3 2 7 (B)
3. Rhadadandrum tomentosum	25	V	FACW	PI = B/A = 2.70
4. Empetrum Marum	40	Y	FAC	
5. Andromeda polifolia	5		FACW	
6. Vaccinium vitis-idaea	85 1		FAC	
7. Picea Moriana	*3		FACW	
8. Vaccinium OXYCOCCUS	T		ORL -	
9.				
Total Cover				4
50% of total cover	:48.5 20	% of total cov	er: 19.4	The state of the s
VEGETATION (use scientific names of plants	5)	RESIDENCE IN	AND AND	
Herb Stratum (Absolute	Dominant	Indicator	Hydrophytic Vegetation Indicators:
	% Cover	Species? (Y/N)	Status	Dominance Test is > 50% Prevalence Index is ≤ 3.0
1. Rebus Chamaemorus	2		FACW	Morphological Adaptations¹ (Provide supporting data in *
2. Carex Rigelowil	20	Y	FAC	Notes)
3. Drosera Potundifolia	T		MBL	Problematic Hydrophytic Vegetation ¹ (Explain)
4.				¹ Indicators of hydric soil and wetland hydrology must be present unless
5,				disturbed or problematic.
6.				THE PROPERTY OF THE PROPERTY O
7.				% Bare Ground
8.				% Cover of Wetland Bryophytes
9.				Total Cover of Bryophytes
10.				8 % Cover of Water
Total Cover	22			Hydrophytic Vegetation Present (Y/N):
50% of total cover		% of total cove	er: <u>4.4</u>	Notes: (If observed, list morphological adaptations below):

SOIL PROFILE DESCRIPTION: (Describe to the depth needed to document the indepth (Inches) Matrix	Loc² Texture Loc² Texture ated Sand Grains. ²Location: For INDICATORS FO	Notes Saturated argumes Saturated argumes PL=Pore Lining, M=Matrix. OR PROBLEMATIC HYDRIC SOILS ange (TA4) ⁴
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coal HYDRIC SOIL INDICATORS Histic Epipedon (A2) Alaska Gleyed (A13) Alaska Gleyed Pores (A15)	ated Sand Grains. ² Location: For INDICATORS FOR Alaska Color Cha	Saturated arganics Saturated arganics PL=Pore Lining, M=Matrix. OR PROBLEMATIC HYDRIC SOILS
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coal HYDRIC SOIL INDICATORS Histosol or Histel (A1) Alaska Gleyed (A13) Histic Epipedon (A2) Alaska Redox (A14) Alaska Gleyed Pores (A15)	ated Sand Grains. ² Location: For INDICATORS FOR Alaska Color Cha	PL=Pore Lining, M=Matrix. OR PROBLEMATIC HYDRIC SOILS
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coal HYDRIC SOIL INDICATORS Histosol or Histel (A1) Alaska Gleyed (A13) Alaska Redox (A14) Alaska Gleyed Pores (A15)	ated Sand Grains. ² Location: For INDICATORS FOR Alaska Color Cha	PL=Pore Lining, M=Matrix. OR PROBLEMATIC HYDRIC SOILS
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or CoartyDRIC SOIL INDICATORS Histosol or Histel (A1) Alaska Gleyed (A13) Histic Epipedon (A2) Alaska Redox (A14) Black Histic (A3) Alaska Gleyed Pores (A15)	INDICATORS FO	OR PROBLEMATIC HYDRIC SOILS
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coally HYDRIC SOIL INDICATORS Histosol or Histel (A1)/ Alaska Gleyed (A13)/ Histic Epipedon (A2)/ Alaska Redox (A14)/ Black Histic (A3)/ Alaska Gleyed Pores (A15)//	INDICATORS FO	OR PROBLEMATIC HYDRIC SOILS
Histosol or Histel (A1) Alaska Gleyed (A13) Alaska Redox (A14) Alaska Gleyed Pores (A15)	INDICATORS FO	OR PROBLEMATIC HYDRIC SOILS
HYDRIC SOIL INDICATORS Histosol or Histel (A1)	INDICATORS FO	OR PROBLEMATIC HYDRIC SOILS
Alaska Gleyed (A13) Alaska Gleyed (A13) Alaska Redox (A14) Alaska Gleyed Pores (A15)	INDICATORS FO	OR PROBLEMATIC HYDRIC SOILS
HYDRIC SOIL INDICATORS distosol or Histel (A1)	INDICATORS FO	OR PROBLEMATIC HYDRIC SOILS
Alaska Gleyed (A13) Histic Epipedon (A2) Alaska Redox (A14) Alaska Gleyed Pores (A15)	Alaska Color Cha	The state of the s
Alaska Redox (A14) Alaska Gleyed Pores (A15)		ange (TA4)
Alaska Gleyed Pores (A15) N	Alaska Alpine Sv	
		ith 2.5Y Hue vithout 5Y Hue or Redder Underlying
Hydrogen Sulfide (A4)/	Layer_ ^	- True of Redder Orderlying
Thick Dark Surface (A12)	Other (Explain in	
One indicator of hydrophytic vegetation, one primary indicator of wetland hydrolog	gy, and an appropriate landscape	e position must be present unless
disturbed or problematic. Give details of color change in Notes.		
Restrictive Layer (if present): Type: NO Depth (inches):		-
Notes:		
HYDROLOGY PRIMARY INDICATORS (any one indicator is sufficient)	SECONDARY INDICATORS (2 o	r more required)
OC M-A (Ad) / Cuefeee Coil Crooke (DE) //	Vater-stained Leaves (B9)/	Stunted or Stressed Plants (D1)/_
High Water Table (A2) Inundation Visible on Aerial Imagery (B7)	Orainage Patterns (B10)	Geomorphic Position (D2)
Sparsely Vegetated O	Oxidized Rhizospheres along Living Roots (C3)	Shallow Aquitard (D3)
	Presence of Reduced ron (C4)	Microtopographic Relief (D4)
Hydrogen Sulfide	Salt Deposits (C5) FAC-Neutral Test	
Sediment Deposits (B2) NOdor (C1)	Notes:	
Sediment Deposits (B2) NOdor (C1)		
Sediment Deposits (B2) NOdor (C1) N		
Odor (C1) Drift Deposits (B3) N Other (Explain in Notes):		
Odor (C1) Dry-Season Water Table (C2) N Algal Mat or Crust (B4) Other (Explain in Notes):	Marian Complete Comp	That is the spirit with
Odor (C1)	tland Hydrology Present (V/M)	
Odor (C1)	etland Hydrology Present (Y/N):	



Forested-Registro-Nyas (P) Vogetation taxins		M= Marrix
Number of Wetland Types (M): Evenness of Wetland Types (M): Highly Uneven	Forested-Evergreen-Needle-leavedScrub Shrub-Evergreen-Broad-leaved	Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved
Vegetation Density/Dominance (P): Spirss (0-20%) Low Density (20-40%), Medium Density (40-60%) High Density (60-60%) X Very Distribution of Dominant Layer (P): No Veg Sollary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover X Very High Central (P): Low Abundance (0-25% of surface) X Moderately Abundant (25-60% of surface) Abundant (26-60% of surface) X Moderately Exposed X M	Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) Tall herb (≥1	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Short herb (<1m) Moss-Lichen Floating Submerged Submerged
Interspersion of Cover & Open Water (P): 100% Cover or Open Water Several to Name Several to Nam	Number of Wetland Types (M): 2	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Perplant Species Diversity (P): Low (< 5 plant species)		
Presence of Islands (M): Absent (none)	Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattered	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral Cover K N/A
Cover Distribution of Dominant Layer (P): No Veg. Solitary, Scattered Stems. 1 or More Large Patches; Parts of Site Open. Small Scattered Patches. Continuous Cover. X. Dead Woody Material (P): Low Abundance (0-25% of surface) Vegetative Interspersion (P): Low (large patches, concentric rings). X. Moderately Abundant (25-50% of surface) Vegetative Interspersion (P): Low (large patches, concentric rings). X. Moderate (broken irregular rings). High (small groupings, diverse and interspersed). HGM Class (P): Slope. Flat. L. Lacustrine Fringe. Depressional Riverine Estaurine Fringe. SOIL VARIABLES SOIL Lacking. Histosol: Fibric. Histosol: Histosol: Sapric. X. Mineral: Gravelly. Mineral: Gravelly. Mineral: Sandy. Mineral: Stilly. Mineral: Gravelly. Mineral: Clayey. HYPROLOGIC VARIABLES Intervitient Intervitient Intervitient Dutlet. Intermittent Outlet. Perennial Intervition United. Perennial Intervitor United Counties (P): No Intervitient Intervitient Intervitient Intervition United. Perennial Intervitor United Counties (P): Drier: Seasonally Flooded, Temporanily Flooded, Saturated X. Vet Perm. Flooded, Intermittently Exposed, Semiperm. Flooded. Weter Perm. Flooded, Intermittently Exposed, Semiperm. Flooded. Evidence of Sedimentation (P): No Evidence Observed. Sediment Observed on Wetland Substrate. Fluvaquent Soils Sediment Created Microrelled of Wetland Surface (P): Absent. Poorly Developed (Gin.) Well Developed (6-18 in.) Pronounced (>18 in.) Pr	Plant Species Diversity (P): Low (< 5 plant	species) Medium (5-25 species)
Open Small Scattered Patches Continuous CoverX	Presence of Islands (M): Absent (none) _	入 One or Few Several to Many N/A
Vegotative Interspersion (P): Low (large patches, concentric rings) _ X Moderate (broken irregular rings) Moderate (broken irregular r	Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover
High (small groupings, diverse and interspersed) HGM Class (P): Slope		(0-25% of surface) Moderately Abundant (25-50% of surface)
SOIL VARIABLES Soil Factors (P): Soil Lacking Histosol: Fibric Histosol: Hemic Histosol: Sapric X Mineral: Gravelly Mineral: Sandy Mineral: Sitty Mineral: Clayey HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Prennial Outlet Intermittent Inlet/Prennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Prennial Outlet Perennial Inlet/Prennial Inlet/Prennial Outlet Perennial Inlet/Prennial Inlet/Prennial Outlet Perennial Inlet/Prennial Inlet/Prennial Inlet/Prennial Inlet/Prennial Outlet Perennial Inlet/Prennial Inlet/Prennial Outlet Perennial Inlet/Prennial Outlet Perennial Inlet/Prennial Inlet/Prennial Outlet Perennial Inlet/Prennial Inlet/Prennial Outlet Perennial Outlet Perennial Inlet/Prennial Outlet Perennial Outlet Perenni		
Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey Mineral: Cl	HGM Class (P): Slope / Flat *	Lacustrine Fringe Depressional Riverine Estaurine Fringe
Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey Mineral: Cl	SOIL VARIABLES	
HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet X No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Perennial Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Intermittent Inlet/Perennial Inlet/Intermittent Inlet/Perennial Inlet/Intermittent Inlet/Perennial Inlet/Intermittent Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Intermittent Inlet/Perennial Inlet/Intermittent Inlet/Perennial Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Intermittent Perennial Inlet/Perennial Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermitent Inlet/No Outlet Inte		Histogral-Fibric Histogral-Hamic Histogral: Santic X
Inter/Outlet Class (P): No Inlet/Outlet	Mineral: Gravelly Mineral: Sandy	Mineral: Silty Mineral: Clayey
Outlet Intermittent Interflintermittent Outlet Intermittent Interflintermittent Outlet Perennial Outlet Pere		
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated	HYDROLOGIC VARIABLES	到1875年8月1日日 · · · · · · · · · · · · · · · · · ·
Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Created Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.) Pronounce	Inlet/Outlet Class (P): No Inlet/Outlet X Outlet Intermittent Inlet/Intermitten	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial
Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.) Pronounced (>18in.)	Inlet/Outlet Class (P): No Inlet/Outlet X Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas	nt Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial I
Degree of Outlet Restriction (P): No Outflow ★ Restricted Outflow Unrestricted Outflow Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) ★ pH Reading ﴿	Inlet/Outlet Class (P): No Inlet/Outlet X Outlet Intermittent Inlet/Intermitten Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider	Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial
Degree of Outlet Restriction (P): No Outflow ★ Restricted Outflow Unrestricted Outflow Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) ★ pH Reading ﴿ . ← Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits ★ Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%) ★ Evidence of Seeps and Springs (P): No Seeps or Springs ★ Seeps Observed Intermittent Spring Perennial Spring LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Above Connected Upstream & Downstream ★ Unknown Wetland Land Use: High Intensity (i.e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space) ★ Watershed Land Use: 0-5% Rural ★ 5-25% Urbanized 25-50% Urbanized >50% Urbanized	Inlet/Outlet Class (P): No Inlet/OutletX Outlet Intermittent Inlet/Intermitten Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Sea: Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created	Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet
Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) ★ pH Reading 4.6 € Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits ★ Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%) ★ Evidence of Seeps and Springs (P): No Seeps or Springs ★ Seeps Observed Intermittent Spring Perennial Spring LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below Only Connected Above Connected Upstream & Downstream ★ Unknown Wetland Land Use: High Intensity (i.e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space) ★ Watershed Land Use: 0-5% Rural ★ 5-25% Urbanized 25-50% Urbanized >50% Urbanized	Inlet/Outlet Class (P): No Inlet/OutletX Outlet Intermittent Inlet/Intermitten Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Sea: Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent	Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet_
Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Glacial Till/Not Permeable High Gradient (≥2%) Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%) Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below Only Connected Above Connected Upstream & Downstream Wetland Land Use: High Intensity (i.e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space) Watershed Land Use: 0-5% Rural South Panized >50% Urbanized	Inlet/Outlet Class (P): No Inlet/Outlet	Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inl
LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below Only Connected Above Connected Upstream & Downstream Unknown Wetland Land Use: High Intensity (i.e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space) Watershed Land Use: 950% Urbanized >50% Urbanized >50% Urbanized	Inlet/Outlet Class (P): No Inlet/OutletX Outlet Intermittent Inlet/Intermitten Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Sea: Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No C Return Interval >5 yrs Degree of Outlet Restriction (P): No Outfloo	Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet
Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below Only Connected Above Connected Upstream & Downstream Unknown Wetland Land Use: High Intensity (i.e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space) Watershed Land Use: 0-5% Rural 5-25% Urbanized 25-50% Urbanized >50% Urbanized	Inlet/Outlet Class (P): No Inlet/Outlet	Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial
Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below Only Connected Above Connected Upstream & Downstream Unknown Wetland Land Use: High Intensity (i.e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space) Watershed Land Use: 0-5% Rural 5-25% Urbanized 25-50% Urbanized >50% Urbanized	Inlet/Outlet Class (P): No Inlet/Outlet	Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet
Wetland Land Use: High Intensity (i.e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space) X Watershed Land Use: 0-5% Rural X 5-25% Urbanized 25-50% Urbanized >50% Urbanized >50% Urbanized	Inlet/Outlet Class (P): No Inlet/Outlet	Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet
Watershed Land Use: 0-5% Rural 5-25% Urbanized 25-50% Urbanized >50% Urbanized >50% Urbanized	Inlet/Outlet Class (P): No Inlet/Outlet	Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial In
	Inlet/Outlet Class (P): No Inlet/Outlet	Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inl
	Inlet/Outlet Class (P): No Inlet/Outlet	Intermittent Inter
Crew Chief QA/QC check: GPS Technician QA/QC check:	Inlet/Outlet Class (P): No Inlet/Outlet	Intermittent Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Per

J Brown be

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Footu	ro ID	W(016 HT 007 Field Target: 209 Date: 6.7.16
		s not checked, please provide detailed explanation in the notes section of data form.
, o, a,	7 11077	e not should, please provide detailed enjournament
1	. Sit	e Description
	ES	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2	. Ve	getation
	Ø	At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
	M	Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct?
	Z	All dominant species have been determined and recorded fer strata? Indicator status is correct for each species?
		Dominance Test and Prevalence Index have been completed?
3	. So	il ,
	K K	Soil profile is complete? Appropriate hydric soil indicators are marked?
4	. Ну	drology
	Ø Ø	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5	. Fu	nctions and Values
	团	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6	. Fie	eld Logbook
	Ø	Notes have been recorded at each site, including general description, sketch, and
	A	accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7	. Ma	aps
		Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

- ☑ Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1) soil pit, 1 soil plug)?
- ☑ Two photos were taken for each Observation Point (vegetation/site overview)?

X halen Volver	X na Our Valper	6-10-16
Wetland Scientist (print)	Signature / Date	

Field Crew Chief (print)

Signature / Date

Project Name: Alaska LNG Region: Alaska Longi Logbook Page No.: 33	Feature Id: WIOGHTOOR Team No.: WIOG Milepost: 603.4 Itude: \49.83 \ Z8.745 \ Datum: WGS84 Picture No.: P_WIOGHTOOR_001 How or Landform (hillslope, terrace, hummocks, etc.): Torrace Beach Local relief (concave, convex, none): undulating Evidence of Wildlife Use: Wowle
Region: Alaska Z78" N Longi Logbook Page No.: 33	Team No.: W106 Milepost: 603.4 Stude: \49.832 \28.7455 Datum: WGS84 Picture No.: \2004 \1006 \1006 \2001 \text{Hrv oc} Landform (hillslope, terrace, hummocks, etc.): Torrace Berch Local relief (concave, convex, none): undicking Evidence of Wildlife Use: Wowl
Region: Alaska Z78 N Longi Logbook Page No.: 33 cation: U he site typical for this time of years	Milepost: 603.4 itude: \49° 33' 28.745' Datum: WGS84 Picture No.: P. W\00HT008_001 Hmv or Landform (hillslope, terrace, hummocks, etc.): Torrace Beach Local relief (concave, convex, none): undilating Evidence of Wildlife Use: Work
Region: Alaska Z78 N Longi Logbook Page No.: 33 cation: U he site typical for this time of years	Datum: WGS84 Picture No.: P_W/06HT008_001 How Co Landform (hillslope, terrace, hummocks, etc.): Torrace Beach Local relief (concave, convex, none): undulating Evidence of Wildlife Use: Work
Logbook Page No.: 33	Landform (hillslope, terrace, hummocks, etc.): Torrace Beach Local relief (concave, convex, none): undilating Evidence of Wildlife Use: NONE
cation: the site typical for this time of year?	Landform (hillslope, terrace, hummocks, etc.): Torrace Bench Local relief (concave, convex, none): undulating Evidence of Wildlife Use: NOWE
cation: the site typical for this time of year?	Local relief (concave, convex, none): undulating Evidence of Wildlife Use: Work
cation: the site typical for this time of year?	Local relief (concave, convex, none): undulating Evidence of Wildlife Use: Work
cation: the site typical for this time of year?	Evidence of Wildlife Use: Work
he site typical for this time of year?	
the state of the s	Are "Normal Circumstances" present: Yes No (If no, explain in Notes.)
ydrology Significantly Distur	bed? NoX(If yes, explain in Notes)
ydrology Naturally Problema	atic? No (If yes, explain in Notes.)
	THE STATE OF THE S
X No	Is the Sampled Area within a Wetland? Yes X No No
X No	Wetland Type: PS51/EMIB.
<u></u> ✓ No	Alaska Vegetation Classification (Viereck): 11 B Z , 111 A Z
out of elevation gain/	rline, Length of feature, Distances from Centerline, Photo Locations, and Surversing From here down slope. C stre & mercase downstype. here.
	plain in Notes) ydrology Significantly Distur ydrology Naturally Problem: X

WETLAND DETERMINATION DATA FORM WYCOTTOOS



	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot sizes: 100)	% Cover	Species?	Status	No. of Dominant Species that are OBL, FACW, or FAC: 3
		(Y/N)		Total Number of Dominant Species Across All Strata:
1				% Dominant Species that are OBL, FACW, or FAC: 7 5_(/
2.			1-	
3.				
4.		-		Prevalence Index worksheet:
Total Cove	er:			Total % Cover of: Multiply by:
50% of total cover	er: 20	% of total cov	ver:	OBL species: X1= X1=
Sapling/Shrub Stratum (24)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: $/4$ $\times 2 = 28$ FAC species $/4$ $\times 3 = /98$ FACU species $/3$ $\times 4 = /24$
1. Spiraca Stevenii	20	Y	FACU	UPL species X 5 =
2. Solin polchro	8		FACW	Column Totals: /// (A) 350 (B)
3. Alaus Frutiosa	15 20	У	FAC	PI = B/A = 3./5
4. Salix fuscescens	. 3		FACW	Rubus chamaemorus T
5. Betila Nana	7		FAC	Rubus Archeus T
6.				1 NOOS HICKEDS
	-			-
7.				
7. 8. 9.				
8.	er:			
9.		0% of total cov	ver: 10, 2	
8. 9. Total Cove 50% of total cove	er: <u>25.5</u> 20	0% of total cov	rer:_/o, 2	
8. 9. Total Cove 50% of total cove VEGETATION (use scientific names of plan	er: <u>25.5</u> 20	0% of total cov	ver: 10.2	Hydrophytic Vegetation Indicators:
8. 9. Total Cove 50% of total cove VEGETATION (use scientific names of plan	er: <u>05.5</u> 20			
8. 9. Total Cove 50% of total cove VEGETATION (use scientific names of plan Herb Stratum (26)	ts) Absolute	Dominant	Indicator	Hydrophytic Vegetation Indicators:
8. 9. Total Cove 50% of total cove VEGETATION (use scientific names of plan Herb Stratum (26)	ts) Absolute	Dominant Species?	Indicator	
8. 9. Total Cove 50% of total cove VEGETATION (use scientific names of plan Herb Stratum (26)	ts) Absolute % Cover	Dominant Species?	Indicator Status	
8. 9. Total Cove 50% of total cove VEGETATION (use scientific names of plan Herb Stratum (26)	ts) Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test is > 50% ✓ Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in
8. 9. Total Cove 50% of total cove VEGETATION (use scientific names of plan Herb Stratum (24) 1. Streptopus amplexifolius 2. Veratrum viride 3. viola palustris 4	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes)
8. 9. Total Cover 50% of total cover 50% of total cover 10% of total	ts) Absolute % Cover	Dominant Species? (Y/N)	Indicator Status FACU FAC FACU FACU	Dominance Test is > 50% ✓ Prevalence Index is ≤ 3.0 — Morphological Adaptations¹ (Provide supporting data in Notes) — Problematic Hydrophytic Vegetation¹ (Explain)
9. Total Cove 50% of total cove VEGETATION (use scientific names of plan Herb Stratum (26) 1. Streptopus amplexifolius 2. Veratrum viride 3. viola palustris 4. Carere higelowii	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status FACU FAC FAC FACU FAC FACU FAC	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
8. 9. Total Cove 50% of total cove VEGETATION (use scientific names of plan Herb Stratum (26) 1. Streptopus amplexifolius 2. Veratrum viride 3. viola palustris 4. Carea higelowii 5. Chamerian angustifolium 6. Dryopteris expansa	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status FACU FAC FAC FACU FAC FACU FAC	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
8. 9. Total Cove 50% of total cove VEGETATION (use scientific names of plan Herb Stratum (24) 1. Streptopus amplexifolius 2. Veratrum viride 3. viola palustris 4. Caree higelowii 5. Chamerion angustifolium 6. Dryopteris expansa	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status FACU FAC FACU FACU FACU FACU FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
8. 9. Total Cove 50% of total cove 50% of total cove VEGETATION (use scientific names of plan Herb Stratum (26) 1. Streptopus amplexibolius 2. Veratrum viride 3. viola palustris 4. Caren bigglowii 5. Chamerion angustifolium 6. Dryopteris expansa 7. Gymnacarpium dryopteris 8. Sangvisacha Canadonsis 9.	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status FACU FAC FACU FACU FACU FACU FACU FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Bare Ground Scover of Wetland Bryophytes Total Cover of Bryophytes
8. 9. Total Covers 50% of total covers 50% of total covers VEGETATION (use scientific names of plan Herb Stratum (26) 1. Streptopus amplexifolius 2. veratrum viride 3. viola palustris 4. Caree higelouis 5. Chamerion angustifolium 6. Dryopteris expansa 7. Gymnacarpium dryopteris 8. Sangvisacha Canadonsis 9. Calanagrostis lappanica	ts) Absolute % Cover 1 20 3 18 5 7	Dominant Species? (Y/N)	Indicator Status FACU FAC FACU FACU FACU FACU FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
8. 9. Total Covers 50% of total covers 50% of total covers VEGETATION (use scientific names of plan Herb Stratum (26) 1. Streptopus amplexibolius 2. Veratrum viride 3. viola palustris 4. Caree bigelowii 5. Chamerian angustibolium 6. Dryopteris expansa 7. Gymnacarpium dryopteris 8. Sangvisacha Canadansis 9.	ts) Absolute % Cover	Dominant Species? (Y/N)	Indicator Status FACU FAC FACU FACU FACU FACU FACU FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Bare Ground Scover of Wetland Bryophytes Total Cover of Bryophytes

WETLAND DETERMINATION DATA FORM W106HT008

SOIL			Date Fe	ature ID	ALL BELLEVI			Soil Pit Required (Y/N)
SOIL PROFIL	LE DESCRIPTION: (DATE OF THE PARTY		nt the i	indicator or	confirm the absence	
	Matrix		Redox Features					
Depth (inches)	Color (moist)	%	Color (moist)	% Ty	/pe ¹	Loc ²	Texture	Notes
0-5								saturated organics
- 5-6							111	0
6-9								saturated organic
9-102	104R3/2	100					Siltloan	0
		4						· · · · · · · · · · · · · · · · · · ·
Tupo: C=Co	ncentration, D=Deple	ation RI	M=Reduced Matrix C	:S=Covered	l or Coa	ated Sand C	Prains ² Location	: PL=Pore Lining, M=Matrix.
CONTRACTOR DESCRIPTION	L INDICATORS	etion, IXI	vi-reduced Matrix, C	00-00vered	10100	ated Garia e		FOR PROBLEMATIC HYDRIC SOILS
	istel (A1)		Alaska Gleyed	I (A13)	N	Commission of the last	A Company of the Comp	Change (TA4) ⁴
	on (A2) Xes		Alaska Redox		1			Swales (TA5)
Black Histic (/	7		Alaska Gleyed		5) ~	· .	Alaska Redox	with 2.5Y Hue/
	Ifide (A4)			·	-			without 5Y Hue or Redder Underlying
							Other (Explain	in Notes)
One indicate	urface (A12)	etation o	nne primary indicator	of wetland	hvdrolo	ov. and an		ape position must be present unless
disturbed or p	problematic.		, ,		.,	37.		
Give details	of color change in No eyer (if present): Typ	otes.	10	Depth (inch	es):	-		
(0001100110 110	.ye. (ii presenty. Typ							
		1						
Hydric Soil F	Present (Y/N):	1						200
	Present (Y/N):	7						· VIII
	Present (Y/N):	7			_			F/1/
	Present (Y/N):	7						¥2.1%
Notes:	Present (Y/N):		any one indicator is s	sufficient)		SECONDAF	RY INDICATORS (2 or more required)
Notes:		TORS (any one indicator is s		V	SECONDAF Vater-staine Leaves (B9)	ed ,	2 or more required) Stunted or Stressed Plants (D1)
Notes: HYDROLOG ³ Surface Wate	Y PRIMARY INDICA er (A1) X Ye.S	TORS (urface Soil Cracks (Boundation Visible on A	6) 1/	- V	Vater-staine eaves (B9)	ed ,	Stunted or Stressed
Notes: HYDROLOG Surface Wate High Water T	Y PRIMARY INDICA	Su Ini (B	unface Soil Cracks (Brundation Visible on A	6) erial Image	- L	Vater-staine Leaves (B9) Orainage Pa Oxidized Rh	ed _/_	Stunted or Stressed Plants (D1)
Notes: HYDROLOG Surface Wate High Water T Saturation (A	PRIMARY INDICA er (A1) X Ye.5 Table (A2) X Ye.3 3) Y	Su International Survey (B	urface Soil Cracks (Brundation Visible on A	erial Image	Ty (Vater-staine Leaves (B9) Orainage Pa Oxidized Rh	atterns (B10)/ izospheres along s (C3)	Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Notes: HYDROLOG Surface Wate High Water T	PRIMARY INDICA er (A1) X Ye S able (A2) X YeO 3) Y (B1)	Su International	urface Soil Cracks (Be undation Visible on A 7)	erial Image	Ty [Nater-staine Leaves (B9) Drainage Pa Dxidized Rh Living Roots Presence of ron (C4)	atterns (B10)/ izospheres along s (C3)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic
Notes: HYDROLOG Surface Water High Water T Saturation (A: Water Marks Sediment De	Y PRIMARY INDICA er (A1)	Su International	urface Soil Cracks (Be undation Visible on A 7)	erial Image	L C L S	Nater-staine Leaves (B9) Drainage Pa Dxidized Rh Living Roots Presence of ron (C4)	izospheres along (C3) Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Notes: HYDROLOGY Surface Water High Water T Saturation (A) Water Marks Sediment Deposits	Y PRIMARY INDICA er (A1)	Su International	urface Soil Cracks (Be undation Visible on A 7)	erial Image	L C L S	Water-staine Leaves (B9) Drainage Pa Dxidized Rh Living Roots Presence of ron (C4) Salt Deposit	izospheres along (C3) Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Notes: HYDROLOGY Surface Water High Water T Saturation (A) Water Marks Sediment Deposits Algal Mat or (A)	Y PRIMARY INDICA er (A1)	Su International	undation Visible on A 7)	erial Image	L C L S	Water-staine Leaves (B9) Drainage Pa Dxidized Rh Living Roots Presence of ron (C4) Salt Deposit	izospheres along (C3) Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Notes: HYDROLOGY Surface Water High Water T Saturation (A) Water Marks Sediment Deposits Algal Mat or (A)	Y PRIMARY INDICA er (A1)	Su International	undation Visible on A 7)	erial Image	L C L S	Water-staine Leaves (B9) Drainage Pa Dxidized Rh Living Roots Presence of ron (C4) Salt Deposit	izospheres along (C3) Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Notes: HYDROLOG Surface Water High Water T Saturation (A: Water Marks Sediment Deposits Algal Mat or (I	Y PRIMARY INDICA er (A1)	Su International	undation Visible on A 7)	erial Image	L C C C C C C C C C C C C C C C C C C C	Water-staine Leaves (B9) Drainage Pa Dxidized Rh Living Roots Presence of ron (C4) Salt Deposit Notes:	atterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Notes: HYDROLOG Surface Water High Water T Saturation (A: Water Marks Sediment Deposits Algal Mat or (Iron Deposits Surface Water	Y PRIMARY INDICA er (A1)	Su International	undation Visible on A 7) parsely Vegetated oncave Surface (B8) arl Deposits (B15) drogen Sulfide dor (C1) y-Season ater Table (C2) ther (Explain in Notes	erial Image	L C C C C C C C C C C C C C C C C C C C	Water-staine Leaves (B9) Drainage Pa Dxidized Rh Living Roots Presence of ron (C4) Salt Deposit Notes:	izospheres along (C3) Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Notes: HYDROLOG Surface Water High Water T Saturation (A: Water Marks Sediment Deposits Algal Mat or (Iron Deposits Surface Water	Y PRIMARY INDICA er (A1) Yes Table (A2) X les Table (A2) X les Table (B1) X les Table (B2) X les Table (B3) X les Table (B4) X les	Su International	undation Visible on A 7) varsely Vegetated oncave Surface (B8) arl Deposits (B15) vdrogen Sulfide dor (C1) vy-Season ater Table (C2) cher (Explain in Notes	erial Image	L C C C C C C C C C C C C C C C C C C C	Water-staine Leaves (B9) Drainage Pa Dxidized Rh Living Roots Presence of ron (C4) Salt Deposit Notes:	atterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Notes: HYDROLOG Surface Water High Water T Saturation (A Water Marks Sediment Deposits Algal Mat or (A Iron Deposits Surface Water Water Table I Saturation Pr	PRIMARY INDICA er (A1) Yes Table (A2) X les Table (A2) X les Table (B4) X les Table (B5) X les Table (B4) X les T	Su International	urface Soil Cracks (Be undation Visible on A 7)	erial Image	We	Water-staine Leaves (B9) Drainage Pa Dxidized Rh Living Roots Presence of ron (C4) Salt Deposit Notes:	atterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)



VECETATION VARIABLES P= Plot, M	= Matrix
Forested-Evergreen-Needle-leaved Scrub Shrub-Evergreen-Broad-leaved Persistent Aquatic Bed	cking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m)/ Tall herb (≥1m	O Sapling (<5 dbh, <6m tall) O Tall shrub (2-6m) 30 Short shrub (0.5-2m) 20 Short shrub (0.5-2m) 20 Submerged 2
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse (80%) X Very High Density (80-100%)	0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattered	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or do Peripheral Cover X N/A
Plant Species Diversity (P): Low (< 5 plant s	pecies) Medium (5-25 species)
Presence of Islands (M): Absent (none)	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover <u>犬</u>
Dead Woody Material (P): Low Abundance (Abundant (>50% of surface)	0-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large High (small groupings, diverse and intersperse	patches, concentric rings)
HGM Class (P): Slope X Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
COIL VARIABLES	
SOIL VARIABLES Soil Factors (P): Soil Lacking	Histosol:Fibric Histosol:Hemic Histosol: Sapric
Mineral: Gravelly Mineral: Sandy_	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Initiation only
HYDROLOGIC VARIABLES	
HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet X	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Perennial
Inlet/Outlet Class (P): No Inlet/Outlet \(\times \) Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seaso	
Inlet/Outlet Class (P): No Inlet/Outlet X Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Sease Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence	
Inlet/Outlet Class (P): No Inlet/Outlet X Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Sease Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial let/Perennial Outlet Perennial Inlet/No Outlet Perennial onally Flooded, Temporarily Flooded, Saturated Semiperm. Flooded
Inlet/Outlet Class (P): No Inlet/OutletX	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial let/Perennial Outlet Perennial Inlet/No Outlet Perennial onally Flooded, Temporarily Flooded, Saturated Semiperm. Flooded Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment
Inlet/Outlet Class (P): No Inlet/Outlet	
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perenn
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outl
Inlet/Outlet Class (P): No Inlet/OutletX	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/
Inlet/Outlet Class (P): No Inlet/Outlet	
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Sprimg Perennial Sprimg Perennial Sprimg Perennial Inlet/No Outlet P

5 Brownlee

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

	1110C1 Tama
	e ID: W 10 G H T008 Field Target: 208 Date: 6-8-16
For all	items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
	Vegetation names are entered legibly for all strata present?
-	Cover calculations are complete and correct?
4	All dominant species have been determined and recorded per strata? Indicator status is correct for each species?
	Dominance Test and Prevalence Index have been completed?
3.	Soil
	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values •
•	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7.	Maps
	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

Wetland Scientist (print)

Signature / Date

Wetland Scientist (print)

X JBrownlee

Signature / Date

SITE DESCRIPTION	
Survey Type: Centerline 📈 Access Road (explain) Other (e	xplain)
Project Name: Alaska LNG	Feature Id: WIOGHTOO 9
nvestigators: Jessie Brownlee, Kalen	Volger Team No.: W106
State: Alaska Region: Alaska	Milepost: (e)
Longitude: 6° 3' 21,9977" V - Longitu	ide: \49° 30' 39.0" W Datum: WGS84
Logbook No.: Logbook Page No.: 33	Picture No.: P_W/OGH TOO9 _00/ thro 004
DITE DADAMETERS	
Subregion: Al L C	Landform (hillslope, terrace, hummocks, etc.): The pression
Subregion: Alaska Range Slope (%): 3_5	Local relief (concave, convex, none):
Orall	Evidence of Wildlife Use: Wigner State of Flycatcher Calls
Pre-mapped Alaska LNG/NWI classification: YDD / EM \ 6 Are climatic/hydrologic conditions on the site typical for this time of year?	Are "Normal Circumstances" present:
Yes No (if no explain in Notes)	Yes No (If no, explain in Notes.)
Are Vegetation, Soil, or Hydrology Significantly Disturbe	
Are Vegetation, Soil, or Hydrology Naturally Problemati	c? No (If yes, explain in Notes.)
SUMMARY OF FINDINGS	报题的目的特殊的概念自己。在1980年至1980年的建筑的首任的社会。 1980年(1980年)
Hydrophytic Vegetation Present? Yes No	Is the Sampled Area within a Wetland? YesNoX
Hydric Soil Present? Yes NoX	Wetland Type:
Netland Hydrology Present? Yes \(\sqrt{\text{V}} \) No \(\frac{\frac{1}{2}}{2} \)	Alaska Vegetation Classification (Viereck): III A Z, II C Z
Site in between 2 trophs. Local Law spot will Muterial Hummock Features found of	th hummocks + depressions. Soil is dry Andic prolifically through out areas in dry
mountain Ridges to valley Bottons. Com	nearing site description advised
The same of the sa	A A
moved LZ +)4H7209-

on Low chroma being paient meterial related and otherwise dry well drained soil to a NO based on Low chroma being paient meterial related and otherwise dry well drained soil, the Arepeat Site visit is advised. Site is marginal but appears to be NON-welland, except for weller signature in upper right which has higher hummocks a depression and Page 1 of 4 thicker Calamagrost's canadensis.

			74.5	WIOGHT 009
VEGETATION (use scientific names of plants	s)			
Tree Stratum (Plot sizes:	Absolute % Cover	Dominant Species? (Y/N)	1ndicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: (A)
1.				Total Number of Dominant Species Across All Strata: (B)
2.				% Dominant Species that are OBL, FACW, or FAC:(A/B
3.	1			THE PART OF THE PROPERTY OF THE PARTY.
4.				Prevalence Index worksheet:
Total Cover				Total % Cover of: Multiply by:
50% of total cover	20	0% of total cov	er:	OBL species:X1 =
Sapling/Shrub Stratum (ZG)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 8
1. Vaccinium uliginosum	35	Y	FAC	UPL species X 5 =
2. Presa Clavea	T		FACU	Column Totals: 130 (A) 427 (B)
3. Salix pulchra	7			PI=R/A= 3.78
4. Ketula negalaskana	. 1.	10.3	FAC	Calamagnishs canadensis 35 V FAC Sunguisorba canadensis T Chamerian angustifolium T
5.				Sanguisorba canad - FACW
6.				Chamerion angostifolium + Freu
7.	- 17			
8.				- 1 - 1
9.			,	
Total Cover:	35			
50% of total cover:	(7.5 20	% of total cov	er:	
VEGETATION (use scientific names of plants			unital de l'Is	
Herb Stratum (761)	Absolute	Dominant	Indicator	Hydrophytic Vegetation Indicators:
	% Cover	Species?	Status	Dominance Test is > 50%

Herb Stratum (7,0)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50%
1. Heracleum maximum	30	7	FACU	Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in
2. Mertensia paniculata	5		FACU	Notes)
3. Germium erianthum	10	77	FACU	Problematic Hydrophytic Vegetation¹ (Explain)
1. Avrola grandiflora	3		FAC	¹ Indicators of hydric soil and wetland hydrology must be present unles
5. Rubus chamaemorus	5		FACIN	disturbed or problematic.
3. Rubus arcticus	4		FAC	
. Comiss (burner) found . No seed hege	10			% Bare Ground
3. Delphinisma glaccom to ID	3		FALW	% Cover of Wetland Bryophytes
. Veratrum viride	T		FAC	
0. pea 50	2			% Cover of Water Hydrophytic Vegetation Present (Y/N):
Total Cover		% of total cov	71.4	Notes: (If observed, list morphological adaptations below):

Hegestimales are made diffelt by the late growing season this for worth. Estimates are made to reflect what site might look like in peak growing season.

Soil Pit Required (Y/N) SOIL Date Feature ID SOIL PROFILE DESCRIPTION: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features Depth (inches) Color (moist) % Color (moist) Type1 Loc² Texture Notes Dry organics 10YR 3/2 5:14 loan COL 8592 7.5 YR 4/4 concentrations in M 2.543/2 Bus 2 12-24 gravelly silt ~15% gravels 100 ²Location: PL=Pore Lining, M=Matrix. ¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. INDICATORS FOR PROBLEMATIC HYDRIC SOILS³ HYDRIC SOIL INDICATORS Histosol or Histel (A1) Alaska Gleyed (A13) Alaska Color Change (TA4)4 Histic Epipedon (A2) Alaska Redox (A14) Alaska Alpine Swales (TA5) Alaska Redox with 2.5Y Hue Alaska Gleyed Pores (A15) Black Histic (A3) Alaska Gleyed without 5Y Hue or Redder Underlying Hydrogen Sulfide (A4) _^ Layer Other (Explain in Notes) Thick Dark Surface (A12) N One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic. ⁴Give details of color change in Notes. Restrictive Layer (if present): Type:_ Depth (inches): Hydric Soil Present (Y/N): HYDROLOGY PRIMARY INDICATORS (any one indicator is sufficient) SECONDARY INDICATORS (2 or more required) Stunted or Stressed Water-stained Surface Soil Cracks (B6) Surface Water (A1) Plants (D1) Leaves (B9) Inundation Visible on Aerial Imagery Drainage Patterns (B10) Geomorphic Position (D2) High Water Table (A2) Sparsely Vegetated Oxidized Rhizospheres along Shallow Aquitard (D3) Saturation (A3) Concave Surface (B8) Living Roots (C3) Presence of Reduced Microtopographic Water Marks (B1) Marl Deposits (B15) Relief (D4) Iron (C4) Hydrogen Sulfide Salt Deposits (C5) FAC-Neutral Test (D5) Sediment Deposits (B2) Odor (C1) Notes: Dry-Season Drift Deposits (B3) Water Table (C2) Algal Mat or Crust (B4) Other (Explain in Notes): Iron Deposits (B5) Surface Water Present (Y/N): Depth (in): Wetland Hydrology Present (Y/N): Water Table Present (Y/N): Depth (in): Saturation Present (Y/N): EC:_ Depth (in): (includes capillary fringe) Notes: 2 weak secondary indicatours.

AQUATIC SITE ASSESSMENT DATA FORM WOOTHTOO



VEGETATION VARIABLES P= Plot, M= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed
Percent Cover (P): Tree (>5 dbh, >6m tall) Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Dwarf shrub (<0.5m)
Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%)
Interspersion of Cover & Open Water (P): 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg. Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)
HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Histosol: Sapric Histosol:
Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey
HANDLOGIC MADIABLES
HYDROLOGIC VARIABLES
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Pe
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded
Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Created
Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)
Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs Return Interval >5 yrs
Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow
Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading
Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Glacial Till/Not Permeable
Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%) Evidence of Seens and Springs (P): No Seens or Springs Soons Observed Intermittent Springs Perceptial Springs Perce
Basin Topographic Gradient (M): Low Gradient (<2%)
Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring
Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below
Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below Only Connected Above Connected Upstream & Downstream Unknown

Crew Chief QA/QC check: JBrowelee

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Feature	e ID: WIOGHTOOM Field Target: 210 Date: 6-9-16
	items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later
	identification? Vegetation names are entered legibly for all strata present?
	Cover calculations are complete and correct? All dominant species have been determined and recorded per strata?
	Indicator status is correct for each species?
	☐ Dominance Test and Prevalence Index have been completed?
3.	Soil
	Soil profile is complete?
	Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked?
	Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7.	Maps
	Wetland boundaries have been corrected if necessary?
	Maps are initialed and dated?

8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X haven	Volper X halen	Volker 6-8-16
Wetland Scientist (print)	Signature / Date	
V		J

* JBrownlee

Field Crew Chief (print)

Signature / Date

Investigators: Jessie Brawner State: Alaska Region: Al Latitude: (3 3 22.59) N	me: Alaska LNG	Volvey Milepost:	Field Target: 21	Map #: <u>95</u> Map Date: <u>5-27-/</u> : W 106 H T 0 \ 0 Team No.: W \ 06
Investigators: Jessie Brawner State: Alaska Region: Al Latitude: (3 3 22.59) N	aska Longitud	de: 149°3	599.9	40 100 11 1010
State: Alaska Region: Al Latitude: (3 3 2 2 59 N	aska Longitud	de: 149°3		Team No.: W\06
Latitude: (3° 3' 22.59" N	Longitud	de: 149°3		
			11000 000	
I a the top of the second of t	age No.: 33		0,55.111M	Datum: WGS84
Logbook No.: Logbook P		Picture No.:	5-MIOGHI	010-001 thm,001
SITE PARAMETERS	ALVARIAN FIRM	MALE STATES	TO SEE SHADOW	
Subregion: Alaska Range		Landform (hil	Islope, terrace, hummock	s, etc.): Swale
Slope (%): 5-%		Local relief (c	concave, convex, none):	concave
Pre-mapped Alaska LNG/NWI classification:		Evidence of V	Wildlife Use: Nove	
Are climatic/hydrologic conditions on the site typical fryes No (if no explain in Notes)	or this time of year?	Are "N	ormal Circumstances" pre	esent: plain in Notes.)
Are Vegetation, Soil, or Hydrology	Significantly Disturbed	d? No_X	(If yes, explain in Notes	3)
Are Vegetation, Soil, or Hydrology	Naturally Problematic	? No_K	(If yes, explain in Note:	s.)
SUMMARY OF FINDINGS			多是新发展	
Hydrophytic Vegetation Present? Yes	No	Is the Sampled	Area within a Wetland?	Yes No
Hydric Soil Present? Yes X N	lo	Wetland Type:	PSSIB	
Wetland Hydrology Present? Yes N	lo	Alaska Vegetatio	n Classification (Viereck)	N.B.1, 1
Corridor, Dry R 190	wet			Jose Most Jose

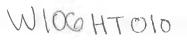
WIOGHTOIO

Free Stratum (Plot sizes: 100)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
	70 00001	(Y/N)	Otatus	No. of Dominant Species that are OBL, FACW, or FAC: 4
Picea Colous a	8	Y	FACW	Total Number of Dominant Species Across All Strata:
	and the			% Dominant Species that are OBL, FACW, or FAC: <u> </u>
				Prevalence Index worksheet:
Total Cov	ver:8			Total % Cover of: Multiply by:
50% of total co	ver:	0% of total cov	/er: <u></u>	OBL species:X 1 =
pling/Shrub Stratum (7.C)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 74 X 2 = 148 FAC species 37 X 3 = 11
Ribes triste	-	(1714)		FACU species
Spiraea Stevenii	7		FACU	UPL species X5 =
Salix pulchra	(05	V	FACW	Column Totals: 137 (A) 363 (B) PI = B/A = 2.165
Alaus Fruticosa	8		FAC	Aster Sp
THAT FUTICOSA			7716	
				Equisation sylvations T. FAS
				Calamagnostis lapponical Y FA
				mertensia pankulata + FAC.
		And the second second second		7716
				Coeraniam arianthym
	ver: 76		1	Corraniam erianthum + FACE
	ver: 76 ver: 38 20	% of total cov	er: <u>\</u> 5,2	Carex bigelowii 5 FAC
	ver: <u>3\$</u> 20	% of total cov	er: <u></u>]5,2	Carine I - a later
50% of total cov	ver: <u>3\$</u> 20	% of total cov	er: \\\ \frac{15}{5}, \frac{7}{2}	Carine I - a later
50% of total cov	ver: 38 20	Dominant Species?	Manual R	Carex bigelowii 5 FAC
50% of total coving the second	nts) Absolute % Cover	Dominant	Indicator Status	Hydrophytic Vegetation Indicators:
50% of total covered to the scientific names of plate b Stratum (26)	rer: 38 20 nts) Absolute	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: Y Dominance Test is > 50%
50% of total coverage of the stratum (26) Streptopus amplexibling verafrum Viride	nts) Absolute % Cover	Dominant Species?	Indicator Status FACU	Hydrophytic Vegetation Indicators: Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes)
50% of total covered to stratum (26)	nts) Absolute % Cover	Dominant Species?	Indicator Status FACU FAC	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain)
Streptopus amplexiblius Veratrum Viride	nts) Absolute % Cover	Dominant Species?	Indicator Status FACU FAC FAC FAC	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
Streptopus amplexiblius Veratrum Viride	rer: 38 20 nts) Absolute % Cover	Dominant Species?	Indicator Status FACU FAC FAC FACU FACU	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain)
Streptopus amplexibilius veratrum Viride Viola Dalustris Gymnocarpium drypteris	rer: 38 20 nts) Absolute % Cover	Dominant Species?	Indicator Status FACU FAC FAC FAC	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
Streptopus amplexiblius veratrum Viride Viola Dalustris Gymnocarpium dryopteris Sanguisorba canadensis trientalis europaea Dryopteris expansa	Absolute % Cover	Dominant Species?	Indicator Status FACU FAC FAC FACU FACU	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
Streptopus amplexiblines Veratrum Viride Viola palustris Gymnocarpium dryopteris Frientalis europaea Dryopteris expunsa Chamerium ansustifolian	Absolute % Cover 4 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Dominant Species?	Indicator Status FACU FAC FAC FACU FACU FACU FACU FACU	Hydrophytic Vegetation Indicators: Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0
Streptopus amplexiblius Veratrum Viride Viola palustris Eymnocarpium dryopteris Sanguisorba canadensis trientelis europaea Dryopteris expansa Chamerion angustifolion	Absolute % Cover 4 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Dominant Species?	Indicator Status FACU FACU FACU FACU FACU FACU FACU	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. % Bare Ground % Cover of Wetland Bryophytes Total Cover of Bryophytes
Streptopus amplexiblines Veratrum Viride Viola palustris Gymnocarpium dryopteris Trientalis europaea Dryopteris expunsa Chamerium ansurifolian	Absolute % Cover 4 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Dominant Species?	Indicator Status FACU FAC FAC FACU FACU FACU FACU FACU	Hydrophytic Vegetation Indicators: Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0

WETLAND DETERMINATION DATA FORM WIOGHTOLO

OIL PROFIL	E DESCRIPTION: (I	Jeschbe	to the depth neede	4 10 4000	arriorit tiro					
epth	Matrix		Redox Features							
iches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Note	es	
0-2							0.1			
2-5	104R 2/2	100					S11+10am			
1 5-7	104/2 3/2	100	2111				grouply fine S	- 1		
127-12		90	7. SYR 4/4	10	COA	-	gravely fin			
312-+	2.54 5/3	90	7,57R 4/4	10	(60		gravely fin	e South	dy loan	
vne: C=Cor	ncentration, D=Deple	etion, Rf	M=Reduced Matrix,	CS=Cove	ered or Co	ated Sand (Grains. ² Location	n: PL=P	ore Lining, M=Matrix.	
and the second second	INDICATORS	12/16	Section of the	14/1	43, 43	是 1	INDICATORS	FOR P	ROBLEMATIC HYDRIC SC)ILS ³
stosol or His	stel (A1)		Alaska Gleye	d (A13) _	N		Alaska Color	Change	(TA4)⁴ /	
stic Epipedo	1		Alaska Redox	x (A14) _	N		Alaska Alpine	Swales	(TA5)/\	
ack Histic (A	1		Alaska Gleye	d Pores ((A15) _N		The state of the s		5Y Hue <u>Xeo</u>	
ydrogen Sul	1	-1						d withou	it 5Y Hue or Redder Underly	/ing
							Other (Explain	n in Note	es)	
nck Dark Su	rface (A12) N	etation (ne primary indicato	r of wetla	nd hydrole	ngv. and an			sition must be present unles	s
estrictive La	of color change in No yer (if present): Typ resent (Y/N):	e:	N-	Depth (in	nches):			,		
estrictive La	yer (if present): Typ	e:	N-	Depth (in			9			poly.
ydric Soil Potes:	yer (if present): Typ	y		*			RY INDICATORS ((2 or mo		
ydric Soil Potes:	resent (Y/N):	TORS (any one indicator is urface Soil Cracks (I	sufficient	0		ed ((2 or mo	re required) Stunted or Stressed Plants (D1)	
ydric Soil Potes: New YDROLOG	resent (Y/N): PRIMARY INDICA (A1)	ATORS (any one indicator is urface Soil Cracks (F undation Visible on	sufficient	0	SECONDAI Water-stain Leaves (B9	ed (,	Stunted or Stressed	7
ydric Soil Potes: YDROLOG urface Water T	resent (Y/N): resent (A1) resent (A2) Year	St. St. Sp. Sp.	any one indicator is urface Soil Cracks (I	sufficient 36) Aerial Ima	t) agery	SECONDAI Water-stain Leaves (B9 Drainage P	ed //)/ atterns (B10)/ nizospheres along	,	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3)	<i>y</i>
ydric Soil Potes: YDROLOGY urface Water igh Water T	resent (Y/N): ga five & K (PRIMARY INDICA r (A1) able (A2) Ye	St. Co. M.	any one indicator is urface Soil Cracks (I undation Visible on a i7)	sufficient 36) Aerial Ima	t) agery	SECONDAI Water-stain Leaves (B9 Drainage P	ed J atterns (B10) nizospheres along s (C3)	,	Stunted or Stressed Plants (D1) Geomorphic Position (D2)	7
ydric Soil Potes: New YDROLOGY urface Water ligh Water Taluration (A: Water Marks	resent (Y/N): resent (Y/N): resent (Y/N): PRIMARY INDICA r (A1) able (A2) Ye (B1) (B1)	St. Inn. (B	any one indicator is urface Soil Cracks (I undation Visible on 27) Sparsely Vegetated oncave Surface (B8 arl Deposits (B15) ydrogen Sulfide dor (C1)	sufficient 36) Aerial Ima	agery	SECONDAI Water-stain Leaves (B9 Drainage Pi Oxidized RI Living Root Presence o Iron (C4) Salt Deposi	ed J atterns (B10) nizospheres along s (C3)	,	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic	
ydric Soil Potes: YDROLOGY urface Water igh Water T aluration (A) Vater Marks	yer (if present): Typ resent (Y/N): ga five & K PRIMARY INDICA r (A1) able (A2) Ye (B1) N posits (B2) N	St. In. (B	any one indicator is urface Soil Cracks (I undation Visible on a i7)	sufficient 36) Aerial Ima	agery	SECONDAI Water-stain Leaves (B9 Drainage P Oxidized RI Living Root Presence o Iron (C4)	atterns (B10) nizospheres along s (C3) f Reduced	,	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)	<u>(</u>
ydric Soil Potes: YDROLOG urface Water ligh Water T aluration (A) Vater Marks ediment Deposits	resent (Y/N): PRIMARY INDICA (A1) able (A2) (B1) cosits (B2) (B3)	St. In. (B	any one indicator is urface Soil Cracks (I undation Visible on (I I Darsely Vegetated oncave Surface (B8 arl Deposits (B15) ydrogen Sulfide dor (C1)	sufficient 36)	agery	SECONDAI Water-stain Leaves (B9 Drainage Pi Oxidized RI Living Root Presence o Iron (C4) Salt Deposi	atterns (B10) nizospheres along s (C3) f Reduced	,	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)	
ydric Soil Potes: YDROLOG urface Water igh Water T aluration (A: /ater Marks ediment De rift Deposits	yer (if present): Typ resent (Y/N): PRIMARY INDICA r (A1) able (A2) (B1) cosits (B2) (B3) Crust (B4) Very	St. In. (B	any one indicator is urface Soil Cracks (I undation Visible on A ionical Soil Cracks (I undation Visible on A ionical Soil Cracks (I ioni	sufficient 36)	agery	SECONDAI Water-stain Leaves (B9 Drainage P Oxidized RI Living Root Presence o Iron (C4) Salt Deposi Notes:	atterns (B10) nizospheres along s (C3) f Reduced	,	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)	
ydric Soil Plotes: YDROLOGY Urface Water Igh Water Traduration (A: Vater Marks Gediment Deposits Igal Mat or (Fron Deposits)	yer (if present): Typ resent (Y/N): PRIMARY INDICA (A1) able (A2) (B1) Cosits (B2) (B3) (B3) (B5) (B5) (B5)	SI Initial Structure of the control	any one indicator is urface Soil Cracks (I undation Visible on 17) parsely Vegetated oncave Surface (B8 arl Deposits (B15) ydrogen Sulfide dor (C1) ry-Season /ater Table (C2) ther (Explain in Note	sufficient 36)	agery	SECONDAI Water-stain Leaves (B9 Drainage Pi Oxidized RI Living Root Presence o Iron (C4) Salt Deposi	atterns (B10) nizospheres along s (C3) f Reduced	,	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)	
ydric Soil Potes: YDROLOGY urface Water ligh Water Traluration (A) Valer Marks ediment Deposits ligal Mat or Coordinates	yer (if present): Typ resent (Y/N): PRIMARY INDICA r (A1) able (A2) (B1) cosits (B2) (B3) Crust (B4) Very	St. In. (B	any one indicator is urface Soil Cracks (I undation Visible on A ionical Soil Cracks (I undation Visible on A ionical Soil Cracks (I ioni	sufficient 36)	agery	SECONDAI Water-stain Leaves (B9 Drainage Parente of the secondary of the s	atterns (B10) nizospheres along s (C3) f Reduced its (C5)	<u>/_</u>	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)	
lydric Soil P lotes: Verification (A) Surface Water Marks Sediment Deposits Algal Mat or 0 ron Deposits Surface Water	yer (if present): Typ resent (Y/N): PRIMARY INDICA (A1) able (A2) (B1) Cosits (B2) (B3) (B3) (B5) (B5) (B5)	SI Initial Structure of the control	any one indicator is urface Soil Cracks (I undation Visible on 17) parsely Vegetated oncave Surface (B8 arl Deposits (B15) ydrogen Sulfide dor (C1) ry-Season /ater Table (C2) ther (Explain in Note	sufficient 36)	agery	SECONDAI Water-stain Leaves (B9 Drainage Parente of the secondary of the s	atterns (B10) nizospheres along s (C3) f Reduced	<u>/_</u>	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)	Ye Ye

AQUATIC SITE ASSESSMENT DATA FORM



Forestea-Evergreen-r		M= Maurix	CONTRACTOR CONTRACTOR DESCRIPTION OF PROPERTY OF THE PERTY OF THE PERT	51	1, 413 100
Scrub Shrub-Evergree Persistent	needle-leaved en-Broad-leaved	Scrub Shrub-Deciduous-Nee	edle-leaved Scrub	Forested-Deciduous-Broad-le Shrub-Deciduous-Broad-leaved ergent-Non-persistent E	
Percent Cover (P): Dwarf shrub (<0.5m)	ree (>5 dbh, >6m tall) Tall herb (>	Sapling (<5 dbh, <6	im tall) Tall shrub	(2-6m) 62 Short shrub (0.5	-2m) O
				Highly UnevenModerate	
Vegetation Density/[(0-20%) Low Densi		m Density (40-60%) High	
Interspersion of Cov Peripheral Cover	er & Open Water (P): >75% Scatter	100% Cover or Open Water ed or Peripheral Cover	N/A <25% Scattered	Peripheral Cover 26-75	% Scattered or
Plant Species Divers	sity (P): Low (< 5 plant	species) Medium (5-25 species) High	ıh (>25)	
		X One or Few			
Cover Distribution o	f Dominant Layer (P):		Scattered Stems 1	or More Large Patches; Parts of Si	te
Dead Woody Materia Abundant (>50% of su		(0-25% of surface)	Moderately Abundant (25-5	0% of surface)	
Vegetative Interspers High (small groupings	sion (P): Low (large , diverse and interspers	e patches, concentric rings) sed)	Moderate (broken i	rregular rings)	
HGM Class (P): Slop	e_XFlat	Lacustrine Fringe	Depressional Riv	verine Estaurine Fringe_	
2011 111 211 21					
	《公司》 100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			THE SHALL SEE THE SHALL SEE	
Soil Factors (P): Mineral: Gravelly	Mineral: Sandy	Histosol:Fibric His Mineral: Silty	tosol:Hemic His Mineral: Clayey	cosol: Sapric	1
HYDROLOGIC VARIA	BLES	ASSESSMENT STATES	A THE PARTY OF THE PARTY OF THE	Marie - Wille Mary Sale	HUN-11-118-2
Outlet Class (P) Outlet Intermittent Outle	nittent Inlet/Intermittent	No Inlet/Intermittent Outlet	No Inlet/Perenni	al Outlet Intermittent Inle	
	Perennial I.	nlet/Perennial Outlet	nlet/Perennial Outlet	Perennial Inlet/No Outlet	/No Perennial
Wetland Water Regin Wet: Perm. Flooded, I	t Perennial I	onally Flooded, Temporarily F		Perennial Inlet/No Outlet	/No Perennia
Wet: Perm. Flooded, In Evidence of Sedimer	ne (P): Drier: Seas ntermittently Exposed,	onally Flooded, Temporarily F Semiperm. Flooded	looded, SaturatedX	Perennial Inlet/No Outlet ubstrate Fluvaquent Soils	Perennia
Wet: Perm. Flooded, In Evidence of Sedimer Created	ne (P): Drier: Seas ntermittently Exposed,	conally Flooded, Temporarily F Semiperm. Flooded ce Observed Sedim	looded, Saturated X	ubstrate Fluvaquent Soil:	Perennia Sediment
Wet: Perm. Flooded, In Evidence of Sedimer Created Microrelief of Wetlan Frequency of Overba	ne (P): Drier: Seas ntermittently Exposed, station (P): No Eviden	sonally Flooded, Temporarily F Semiperm. Flooded ce Observed Sedim Poorly Developed (6ii	looded, Saturated X	ubstrate Fluvaquent Soil:	Perennia Sediment
Wet: Perm. Flooded, In Evidence of Sedimer Created Microrelief of Wetlan Frequency of Overba Return Interval >5 yrs_	ne (P): Drier: Seas ntermittently Exposed, station (P): No Eviden d Surface (P): Absent	ce Observed Poorly Developed (6inverbank Flooding F	ent Observed on Wetland S n.) Well Developed Return Interval 1-2 yrs	ubstrate Fluvaquent Soils d (6-18in.) Pronounced (> Return Interval 2-5 yrs	Perennia Sediment
Wet: Perm. Flooded, In Evidence of Sedimer Created Microrelief of Wetlan Frequency of Overba Return Interval >5 yrs_ Degree of Outlet Res Water pH (P): No surfa	ne (P): Drier: Seas ntermittently Exposed, station (P): No Eviden d Surface (P): Absent nk Flooding (P): No O triction (P): No Outflow ace water C	sonally Flooded, Temporarily F Semiperm. Flooded ce Observed Sedim Poorly Developed (6ii verbank Flooding F Restricted Outflow ircumneutral (5.5-7.4)	ent Observed on Wetland S n.) Well Developed Return Interval 1-2 yrs Unrestricted Ou Alkaline (>7.4)	ubstrate Fluvaquent Soils d (6-18in.) Pronounced (> Return Interval 2-5 yrs	Perennia Sediment
Wet: Perm. Flooded, In Evidence of Sedimer Created Microrelief of Wetlan Frequency of Overba Return Interval >5 yrs_ Degree of Outlet Res Water pH (P): No surfa Surficial Geologic De	ne (P): Drier: Seas ntermittently Exposed, 3 ntation (P): No Eviden d Surface (P): Absent nk Flooding (P): No O triction (P): No Outflow ace water C posit Under Wetland	conally Flooded, Temporarily F Semiperm. Flooded Ce Observed Poorly Developed (6ing) Verbank Flooding Restricted Outflow	ent Observed on Wetland S n.) Well Developed Return Interval 1-2 yrs Unrestricted Ou Alkaline (>7.4)	ubstrate Fluvaquent Soils d (6-18in.) Pronounced (> Return Interval 2-5 yrs	Perennia Sediment 18in.)
Wet: Perm. Flooded, In Evidence of Sedimer Created Microrelief of Wetlan Frequency of Overba Return Interval >5 yrs_ Degree of Outlet Res Water pH (P): No surfa Surficial Geologic De Glacial Till/Not Permea	ne (P): Drier: Seas ntermittently Exposed, station (P): No Eviden d Surface (P): Absent nk Flooding (P): No O triction (P): No Outflow ace water C posit Under Wetland	conally Flooded, Temporarily F Semiperm. Flooded Ce Observed Sedim Poorly Developed (6in verbank Flooding Restricted Outflow ircumneutral (5.5-7.4) (P): High Permeability Stratifie Gradient (<2%) High	ent Observed on Wetland S n.) Well Developed Return Interval 1-2 yrs Unrestricted Ou Alkaline (>7.4) td Deposits Low F h Gradient (≥2%)	ubstrate Fluvaquent Soils d (6-18in.) Pronounced (> Return Interval 2-5 yrs tflow Acid (<5.5) pH Reac	Perennia Sediment 18in.)
Wet: Perm. Flooded, In Evidence of Sedimer Created Microrelief of Wetlan Frequency of Overba Return Interval >5 yrs_ Degree of Outlet Res Water pH (P): No surfa Surficial Geologic De Glacial Till/Not Permea Basin Topographic G Evidence of Seeps ar	perennial in the (P): Drier: Seas ntermittently Exposed, station (P): No Evident d Surface (P): Absent nk Flooding (P): No Outflow ace water C posit Under Wetland able radient (M): Lowed Springs (P): No Seas	conally Flooded, Temporarily F Semiperm. Flooded Ce Observed Sedim Poorly Developed (6in verbank Flooding Restricted Outflow ircumneutral (5.5-7.4) (P): High Permeability Stratifie Gradient (<2%) High	ent Observed on Wetland S n.) Well Developed Return Interval 1-2 yrs Unrestricted Ou Alkaline (>7.4) td Deposits Low F h Gradient (≥2%)	ubstrate Fluvaquent Soils d (6-18in.) Pronounced (> Return Interval 2-5 yrs ttflow Acid (<5.5) pH Reace Permeability Stratified DepositsX	Perennia Sediment 18in.)
Wet: Perm. Flooded, In Evidence of Sedimer Created Microrelief of Wetlan Frequency of Overba Return Interval >5 yrs_ Degree of Outlet Res Water pH (P): No surfa Surficial Geologic De Glacial Till/Not Permea Basin Topographic G	perennial in the (P): Drier: Seas ntermittently Exposed, station (P): No Evident d Surface (P): Absent nk Flooding (P): No Outflow acce water C posit Under Wetland able radient (M): Lowed Springs (P): No Seas BLES (M) n: Wetland Isolate	conally Flooded, Temporarily F Semiperm. Flooded Ce Observed Sedim Poorly Developed (6in Verbank Flooding Restricted Outflow ircumneutral (5.5-7.4) (P): High Permeability Stratifie Gradient (<2%) High Person Springs Seeps	ent Observed on Wetland S n.) Well Developed Return Interval 1-2 yrs Unrestricted Ou Alkaline (>7.4) td Deposits Low F h Gradient (≥2%)	ubstrate Fluvaquent Soils d (6-18in.) Pronounced (> Return Interval 2-5 yrs ttflow Acid (<5.5) pH Reace Permeability Stratified DepositsX	Perennia Sediment 18in.)
Wet: Perm. Flooded, In Evidence of Sedimer Created Microrelief of Wetlan Frequency of Overba Return Interval >5 yrs_ Degree of Outlet Res Water pH (P): No surfa Surficial Geologic De Glacial Till/Not Permea Basin Topographic G Evidence of Seeps ar LANDSCAPE VARIAE Wetland Juxtapositio	perennial in the (P): Drier: Seas ntermittently Exposed, station (P): No Evident d Surface (P): Absent nk Flooding (P): No Outflow acce water C posit Under Wetland able radient (M): Lowed Springs (P): No Seas BLES (M) n: Wetland Isolate	conally Flooded, Temporarily F Semiperm. Flooded ce Observed Sedim Poorly Developed (6in Verbank Flooding F Restricted Outflow ircumneutral (5.5-7.4) (P): High Permeability Stratifie Gradient (<2%) High eps or Springs Seeps dd Wetlands within and Upstream & Downstream	ent Observed on Wetland S n.) Well Developed Return Interval 1-2 yrs / Unrestricted Ou Alkaline (>7.4) th Gradient (≥2%) Low F h Gradient (≥2%) Intermitte 400m, Not Connected	ubstrate Fluvaquent Soils d (6-18in.) Pronounced (> Return Interval 2-5 yrs tiflow Acid (<5.5) pH Reace Permeability Stratified Deposits ent Spring Perennial Spring Only Connected Below	Perennial Sediment 18in.)
Wet: Perm. Flooded, In Evidence of Sedimer Created Microrelief of Wetlan Frequency of Overba Return Interval >5 yrs_ Degree of Outlet Res Water pH (P): No surfa Surficial Geologic De Glacial Till/Not Permea Basin Topographic G Evidence of Seeps ar LANDSCAPE VARIAE Wetland Juxtapositio Only Connected Above	Perennal II ne (P): Drier: Seas ntermittently Exposed, 3 ntation (P): No Eviden d Surface (P): Absent nk Flooding (P): No O triction (P): No Outflow ace water C posit Under Wetland able radient (M): Low nd Springs (P): No Sea BLES (M) n: Wetland Isolate Connected High Intensity (i.e., a	conally Flooded, Temporarily F Semiperm. Flooded ce Observed Sedim Poorly Developed (6in Verbank Flooding F Restricted Outflow ircumneutral (5.5-7.4) (P): High Permeability Stratifie Gradient (<2%) High eps or Springs Seeps dd Wetlands within and Upstream & Downstream	ent Observed on Wetland S ent Observed on Wetland S n.) Well Developed Return Interval 1-2 yrs Unrestricted Ou Alkaline (>7.4) d Deposits Low F h Gradient (≥2%) X Observed Intermitted 100m, Not Connected Unknown nsity (i.e., forestry)	ubstrate Fluvaquent Soils d (6-18in.) Pronounced (> Return Interval 2-5 yrs tiflow Acid (<5.5) pH Reactor Permeability Stratified Deposits ent Spring Perennial Spring Only Connected Below Low Intensity (i.e. open space)	Perennia Sediment 18in.)
Wet: Perm. Flooded, In Evidence of Sedimer Created Microrelief of Wetlan Frequency of Overba Return Interval >5 yrs_ Degree of Outlet Res Water pH (P): No surfa Surficial Geologic De Glacial Till/Not Permea Basin Topographic G Evidence of Seeps ar LANDSCAPE VARIAE Wetland Juxtapositio Only Connected Above Wetland Land Use:	perennial in the (P): Drier: Seas intermittently Exposed, station (P): No Evident d Surface (P): Absent ink Flooding (P): No Outflow in the control of the c	conally Flooded, Temporarily F Semiperm. Flooded ce Observed Sedim Poorly Developed (6in verbank Flooding F Restricted Outflow ircumneutral (5.5-7.4) (P): High Permeability Stratifie Gradient (<2%) High eps or Springs Seeps d Wetlands within (d Upstream & Downstream ag.) Moderate Inter 5-25% Urbanized	ent Observed on Wetland S ent Observed on Wetland S n.) Well Developed Return Interval 1-2 yrs Unrestricted Ou Alkaline (>7.4) d Deposits Low F h Gradient (≥2%) X Observed Intermitted 100m, Not Connected Unknown nsity (i.e., forestry)	ubstrate Fluvaquent Soils d (6-18in.) Pronounced (> Return Interval 2-5 yrs ttflow Acid (<5.5) pH Reactor Permeability Stratified Deposits ent Spring Perennial Spring Only Connected Below Low Intensity (i.e. open space)	Perennia Sediment 18in.)

J Bronnell

GPS Technician QA/QC check:√\

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Fea	ature	e ID: WWW HTO O Field Target: 211 Date: 6-8-16
		items not checked, please provide detailed explanation in the notes section of data form.
	1.	Site Description
		Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
	2.	Vegetation
		At least 80% of onsite vegetation has been keyed to species, or collected for later identification? Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct?
		All dominant species have been determined and recorded per strata?
		☐ Indicator status is correct for each species? ☐ Dominance Test and Prevalence Index have been completed?
	3	Soil
	•	
		Soil profile is complete? Appropriate hydric soil indicators are marked?
	4.	Hydrology
		Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
	5.	Functions and Values
		Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
	6.	Field Logbook
		Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
	7.	Maps
		Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

X haley Vol	per x palu	Volker 6-10-10
Wetland Scientist (print)	Signature / Date	

Signature / Date

SITE DESCRIPTION		, 当。 有人等人		E SIL	生物和产品。
Survey Type: Centerline Acce	ss Road (explain) X Other	(explain)	Field Target:_		Map #: <u>87</u> Map Date: <u>5-27</u>
Nate: (0.9.16	Project Name: Alaska LNG		Fe	eature Id:	WIDEHTOIL
Investigators: Jessie Br	ownier, keller	~ Volve			Team No.: W/D6
State: Alaska	Region: Alaska	Milepost:	592.9		
Latitude: 630 81 37,917	75" N Long	itude: 149° Z	5 9.092	1"W	Datum: WGS84
Logbook No.:	Logbook Page No.: 37	Picture No.:	: P-11100	HTO	11-001 thru 004
SITE PARAMETERS	· · · · · · · · · · · · · · · · · · ·	資金の高い		A STATE OF THE STA	经过去了。
Subregion: Alaoka Range		Landform (hi	illslope, terrace, h	nummocks	s, etc.): Terrace
Slope (%): 3-5		Local relief (concave, convex,	, none):	Flat
Pre-mapped Alaska LNG/NWI classifica	ation: PSS113	Evidence of	Wildlife Use: N	lone	
Are climatic/hydrologic conditions on the Yes X No (if no exp	e site typical for this time of year' lain in Notes)	? Are "N Yes_	Normal Circumstar	nces" pres (If no, exp	sent: plain in Notes.)
Are Vegetation, Soil, or Hy			(If yes, explain	-	
Are Vegetation, Soil, or Hy	drology Naturally Problem	atic? NoX	(If yes, explain	n in Notes	.)
SUMMARY OF FINDINGS	Salar Danielle II. of	THE PROPERTY.	Be Brille B	CONTRACTOR OF THE PARTY OF THE	1000人在产品的最高的
Hydrophytic Vegetation Present? Yes_	No	Is the Sampled	Area within a We	etland?	Yes No
Hydric Soil Present? Yes_	No	Wetland Type:	U		
_	No		on Classification (14410 1101/11/ Ha
Notes and Site Sketch: Please include I corridor. Mapped veg signature is understory - Walked in No signo of Hydrology	Directional & North Arrow, Centers a closed willow from Surth west	writine, Length of feat w Shrub of courses of Change a	community mapped o	pom Center	diverse forb, gases
					4
-7					
		-			A .

WIOOHTON

VEGETATION (use scientific names of plan	ts)			which is being the property
Polygon Size Tree Stratum (Plot sizes:	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC
· Picea Chuco	10	Y	FACU	Total Number of Dominant Species Across All Strata: % Dominant Species that are OBL, FACW, or FAC: 🕜
	-			
l.				Prevalence Index worksheet:
Total Cove		3	2	Total % Cover of: Multiply by:
50% of total cove	1	% of total cov	1-	OBL species:X1 =
apling/Shrub Stratum (26')	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: $70 \times 2 = 120$ FAC species: $32 \times 3 = 96$ FACU species: $22 \times 4 = 88$
Salin polchra	70	Y	FACW	UPL species X5 = O
viburnum edule	/		FALL	Column Totals: 124 (A) 304 (B
Picea glavea	Tu		FACU	DI-DIA- 7115
Ribes triste	5		FAC	Pic Cola 1. based on mappe of polygon
		j.		Pic Gla 1. based on mapped polygon surrounding open forestwhich has a r
				higher non %
				0
Total Cove		% of total cov	er:\5,Z	T.
VEGETATION (use scientific names of plant		E. 200 300		AND THE SHARE SHOWING THE SHARE
Jarh Stratum (7()	Absolute	Dominant	Indicator	Linda abusia Vanatatia Indiastra

Herb Stratum (Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0
1. Calamagrastis canadensis	20	Y	FAC	Morphological Adaptations ¹ (Provide supporting data in
3. Equise kin sylvation	5	¥	FAC	Notes) Problematic Hydrophytic Vegetation¹ (Explain)
4. Chamerion ingustifolium 5. M	4		FACIS	Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
6. Rubus Acctieus	2		FACU	
7. Cornus Canadensis	T		FACU	% Bare Ground
Ruhus pedatus	T		FAC	Cover of Wetland Bryophytes Total Cover of Bryophytes
O. Gymnocarpium dryopteris	2		FACU	% Cover of Water Hydrophytic Vegetation Present (Y/N):
Total Cover	10	% of total cov	er: 7.6	Notes: (If observed, list morphological adaptations below):

WIOGHTOII ..

WETLAND DETERMINATION DATA FORM

STATE OF THE PARTY	State State of State	Charles and the Control of the Contr	Date Fe		A CONTRACTOR	THE RESIDENCE	Paris Contractor	
SOIL PROFIL	the state of the s		to the depth needed	Contract Con		indicator or		e of indicators.)
Depth Matrix Redox Features							U	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Notes
Di 0-1								Dry organics
1 /-2	104133/2	100					Silt loam	0
Bu 2-15	400	58	7.5 YR 3/4	38	con	M	fine sandy lo	an
	2544/1	2	7.54R 46	2	con	M	- L	
C 15-24		100					very cobble	Sand
Type: C=Con	centration, D=Deple	etion, RN	/I=Reduced Matrix, C	S=Cove	ered or Co	ated Sand (PL=Pore Lining, M=Matrix.
HYDRIC SOIL	INDICATORS		当自由的是	15 W	Section 5		The street of the Party of the Party	FOR PROBLEMATIC HYDRIC SOILS
listosol or His	tel (A1)/		Alaska Gleyed	(A13) _	N			hange (TA4) ⁴
Histic Epipedon (A2) Alaska Redox (A					~		Alaska Alpine	Swales (TA5)
Black Histic (A	.3)	-	Alaska Gleyed	Pores ((A15)/		Alaska Redox	100
Hydrogen Sulf	ide (A4)//		100				Alaska Gleyed	without 5Y Hue or Redder Underlying
	rface (A12)	-					Other (Explain	in Notes)
		tation, o	ne primary indicator	of wetla	nd hydrolo	gy, and an		pe position must be present unless
disturbed or pr	oblematic.				•			
	f color change in No yer (if present): Type		N	epth (ir	nches):			
	resent (Y/N):			4				
Notes: High	concentration rizon resulting	s in	Bw Horizon 1 seasonal wat	likely	due t	to textur	al different	ce between it and ing Bul before disining
Notes: High of the Char lower hor	concentration rizon resulting		Bw Horizon 1 seasonal water	No. of Concession,			al different of saturations (2	Approximate the second
Notes: High of the Char lower hos HYDROLOGY	concentration rizon resulting rizon PRIMARY INDICA	TORS (a	any one indicator is s rface Soil Cracks (B6	ufficient)		RY INDICATORS (2	Approximate the second
Notes: High of the Charles hor	concentration rizon resulting rizon PRIMARY INDICA (A1)	TORS (a	any one indicator is s rface Soil Cracks (Bo indation Visible on A	ufficient	1	SECONDAR Water-stain Leaves (B9)	RY INDICATORS (2	Stunted or Stressed Plants (D1)
Notes: High of the Charles had have hor	concentration rized resulting remark indica (A1) /	Su Inu	rface Soil Cracks (B6	ufficient) erial Ima	agery	SECONDAR Water-stain Leaves (B9) Drainage Pa	ed U atterns (B10) V	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3)
Notes: High the Charles hor	concentration rizon resulting PRIMARY INDICA (A1) uble (A2)	Su Inu (B) Sp Co	rface Soil Cracks (Be indation Visible on Ad	ufficient) erial Ima	agery	Water-staine Leaves (B9) Drainage Pa Oxidized Rh	ed	Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Notes: High the Charles had have had	Concentration rizon resulting PRIMARY INDICA (A1) / L Ible (A2) / L B1) / L	Su Inu (B) Sp Co Ma	rface Soil Cracks (B6 indation Visible on Ac 7) Arsely Vegetated ncave Surface (B8)	ufficient) erial Ima	agery	Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit	ed	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3)
Notes: High the Charles had have had	Concentration rizon resulting PRIMARY INDICA (A1)	Su Inu (B) Sp Co Ma	rface Soil Cracks (B6 indation Visible on Ac 7) arsely Vegetated incave Surface (B8) arl Deposits (B15) drogen Sulfide,	ufficient) erial Ima	agery	Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of	atterns (B10)/ nizospheres along s (C3)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Notes: High of the Char lower hor	Concentration rized resulting PRIMARY INDICA (A1) uble (A2) B1) Osits (B2)	Su Inu (B) Sp Co Ma	any one indicator is surface Soil Cracks (B6 indation Visible on Act) arsely Vegetated incave Surface (B8) ard Deposits (B15) drogen Sulfide or (C1) y-Season	trifficient i)	agery	Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit	atterns (B10)/ nizospheres along s (C3)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Notes: High of the Charles had	Concentration rized resulting PRIMARY INDICA (A1) sible (A2) (B1) (B3) rust (B4)	Su Inu (B) Sp Co Ma	rface Soil Cracks (B6 andation Visible on Ac arsely Vegetated ncave Surface (B8) and Deposits (B15) drogen Sulfide for (C1) season ater Table (C2)	trifficient i)	agery	Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit	atterns (B10)/ nizospheres along s (C3)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Notes: High the Charles had he Charles had he had h	Concentration rizon resulting PRIMARY INDICA (A1)	Su Inu (B) Sp Co Ma	any one indicator is surface Soil Cracks (B6 indation Visible on Act of the Indation Visible on Act of the Indation Visible on Act of the Indicate Surface (B8) and Deposits (B15) drogen Sulfide for (C1) drogen Sulfide for	trifficient i)	agery	Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit	atterns (B10)/ nizospheres along s (C3)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Notes: High the Charles had he Charles had he charles had he had	Concentration rizon resulting PRIMARY INDICA (A1)	Su Inu (B) Sp Co Ma	rface Soil Cracks (B6 andation Visible on Ac arsely Vegetated ncave Surface (B8) and Deposits (B15) drogen Sulfide for (C1) season ater Table (C2)	trifficient i)	agery	Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit Notes:	atterns (B10)/ nizospheres along s (C3)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Notes: High the Charles had he Charles had he had h	Concentration rizon resulting PRIMARY INDICA (A1)	Su Inu (B) Sp Co Ma	any one indicator is surface Soil Cracks (B6 indation Visible on Act of the Indation Visible on Act of the Indicator Surface (B8) and Deposits (B15) drogen Sulfide for (C1) season atter Table (C2) for (Explain in Notes Depth (in):	trifficient i)	agery	Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit Notes:	atterns (B10) izospheres along (C3) f Reduced ats (C5)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Notes: High Har Char HydroLogy Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits (Surface Water Water Table P Saturation Pre	Concentration rizon resulting PRIMARY INDICA (A1)	Su Inu (B) Sp Co Ma	any one indicator is surface Soil Cracks (B6 indation Visible on Act of the Indicator Visible on Act of the Indicator Surface (B8) and Deposits (B15) and Deposits (B15) are (C1) are (C1) are (Explain in Notes Depth (in):	trifficient i)	agery	Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit Notes:	atterns (B10) izospheres along (C3) f Reduced ats (C5)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)

AQUATIC SITE ASSESSMENT DATA FORM

VEGETATION VARIABLES PE PIUL	w= matrix
Forested-Evergreen-Needle-leaved	acking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Emergent-Non-persistent Emergent-
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) Tall herb (≥1	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Short herb (<1m) Moss-Lichen Floating Submerged
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)	(0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattere	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant	species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none)	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover
Dead Woody Material (P): Low Abundance Abundant (>50% of surface)	(0-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large High (small groupings, diverse and interspers	patches, concentric rings) Moderate (broken irregular rings)ed)
HGM Class (P): Slope Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES	
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy_	Histosol: Fibric Histosol: Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES	
Inlet/Outlet Class (P): No Inlet/Outlet	No_Inlet/Intermittent OutletNo Inlet/Perennial OutletIntermittent Inlet/No t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No et Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Eviden	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No et Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial
Inlet/Outlet Class (P): No Inlet/OutletOutlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_ Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence Created	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial inlet/Perennial Outlet sonally Flooded, Temporarily Flooded, Saturated Semiperm. Flooded
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Eviden Created Microrelief of Wetland Surface (P): Absent	No Inlet/Intermittent OutletNo Inlet/Perennial OutletIntermittent Inlet/No Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/Perennial Inlet/No OutletPerennial Inlet/Perennial Inlet/No OutletPerennial Inlet/Perennial Inlet/No OutletPerennial Inlet/No OutletPerennial Inlet/Perennial Inlet/Pere
Inlet/Outlet Class (P): No Inlet/OutletOutletIntermittent Inlet/Intermittent Inlet/Intermittent OutletPerennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent I	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perenni
Inlet/Outlet Class (P): No Inlet/OutletOutletIntermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent OutletPerennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Intermittent Inte	No Inlet/Intermittent OutletNo Inlet/Perennial OutletIntermittent Inlet/No Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/No OutletPerennial Inlet/No OutletPerennial Inlet/No OutletPerennial Inlet/No OutletPerennial Inlet/Perennial Inlet/No OutletPerennial Inlet/Perennial Inlet/No OutletPerennial In
Inlet/Outlet Class (P): No Inlet/OutletOutletIntermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent OutletPerennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Interval Interval Interval Perennial Interval Interval Interval Perennial Interval Int	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No
Inlet/Outlet Class (P): No Inlet/OutletOutletIntermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent OutletPerennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Interval Interval Interval Perennial Interval Interval Interval Interval Perennial Interval I	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Per
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Ou	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/P
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Intermittently Exposed, In	No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet Intermittent Outlet Intermittent	No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Intervited Intermittent Intervited Intermittent Intervited Intermittent Intervited I	No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Intervious Classification (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evident Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Outflow Water Interval >5 yrs	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet

Crew Chief QA/QC check: J. Brownlak

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

	e ID: WOOHTON Field Target: 219 Date: 6-9-16 items not checked, please provide detailed explanation in the notes section of data form.
, or an	nome not enconed, predeci prestate detance expensional
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification? Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct? All dominant species have been determined and recorded per strata? Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
3.	Soil
	図 Soil profile is complete? 图 Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked? ☐ Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7.	Maps
	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

-8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X halen	Volper	X Wal	len !	Valger	6-11-16
Wetland Scientist (print)	. 4	Signature / Date		,	
			U		

X J Brownles

Field Crew Chief (print)

Signature / Date

SITE OFSCRIPTION					12-11-12
Survey Type: Centerline Acces	ss Road (explain) X Other	(explain)Field	d Target: 218	Мар #: <u>87</u> Мар	Date: 5 - 27
Date: 6-9-16	Project Name: Alaska LNG		Feature Id	: WIOGH-	SIOT
Investigators: Jessie B	rounice, ke	Ien Volpe	~	Team No.: W	106
State: Alaska	Region: Alaska	Milepost: 59	3 .		
Latitude: 63,142552	Lon	gitude: 149.41582	9.	Datum: WGS84	
Logbook No.:	Logbook Page No.: 37	0	7. 2	+100_SI	hru ool
OTT DAD METERS	South and the second section of		Was expensed to the first		
SITE PARAMETERS Subregion: Alaka Ranga		Landform (hillslope,	terrace, hummock	s. etc.): <	SCHOOL STREET,
Subregion: Alaska Range Slope (%):		Local relief (concave			
Pre-mapped Alaska LNG/NWI classifica	tion: 255173				Caux
Are climatic/hydrologic conditions on the		Evidence of Wildlife ? Are "Normal O	Circumstances" pre	esent:	
	ain in Notes)		No (If no, ex	plain in Notes.)	
Are Vegetation, Soil, or Hyd	Irology Significantly Distr	ırbed? No <u>√</u> (If ye	s, explain in Notes	s)	
Are Vegetation, Soil, or Hyd	Irology Naturally Problen	natic? No (If ye	es, explain in Notes	5.)	
SUMMARY OF FINDINGS	The Burnston			and the second	学。随着
Hydrophytic Vegetation Present? Yes_	No	Is the Sampled Area w	ithin a Wetland?	Yes	No
Hydric Soil Present? Yes_	<u> </u>	Wetland Type:	51B		* 1
Wetland Hydrology Present? Yes	. Мо	Alaska Vegetation Class	sification (Viereck):	1181,111	A 2_
Notes and Site Sketch: Please include Decorridor. Closed Willow Shrub con pard of wroter 94" deg Smaller on map. The willows to cal can me wetland up herce	South is Not we readows	of Standing Hz t standing a the	o through	out. Polygon	nu made "
	10/2	Charles of the Color	0	ulw b	

Page 1 of 4

VEGETATION (use scientific names of plants)			
Tree Stratum (Plot sizes: \\00')	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: 2 (ATTACK)
1. Picea Clauca	3		FACU	Total Number of Dominant Species Across All Strata: 2 () % Dominant Species that are OBL, FACW, or FAC: 100 (A)
2. Limoved to Short laight	-			70 Dominant Species that are OBL, FACW, of FAC. 100 (A)
3.				
4.				Prevalence Index worksheet:
* * Total Cover:	·			Total % Cover of: Multiply by:
50% of total cover	20	% of total cov	er:	OBL species:X1 =
Sapling/Shrub Stratum (16)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: $\frac{7}{3}$ $\times 2^2 = \frac{142}{3}$ FAC species $\frac{105}{3}$ $\times 3 = \frac{195}{3}$ FACU species $\frac{1}{3}$ $\times 4 = \frac{44}{3}$
1. Salix pulchra	70	У	FACW	UPL species X 5 =
2. Spirea stempnii	T		FACU	Column Totals: 147 (A) 381 (B)
3. Picer Calous	T		FACU	PI = B/A = 2,59
4.				The state of the s
5.				4
6.				
7.				
8.				
9.				
Total Cover: 50% of total cover:		% of total cov	er: 14.6	

VEGETATION (use scientific names of plants)	A GERMAN	3 7 0 8	AND THE RESIDENCE OF THE PROPERTY OF THE PROPE
Herb Stratum (ZG)	Absolute % Cover	Dominant Species? (Y/N)	Indicator . Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50%
1. Calamagnostis canadons 2. Equisorum sylvaticum 3. Mertensia Daniculata	555	Ä	FAC FAC	Prevalence Index is ≤ 3.0 — Morphological Adaptations¹ (Provide supporting data in Notes) — Problematic Hydrophytic Vegetation¹ (Explain)
4. Rumex Archeus 5. Sanguisorha canadensis	T		FAC	Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
6. Viola palustris 7. Veronica =0 8. Peta ates Arigidus	2		FACU	Mot % Cover of Wetland Bryophytes
9. Pearsp Polemonium acutiflor 10.			FAC	Total Cover of Bryophytes Oo % Cover of Water Hydrophytic Vegetation Present (Y/N):
Total Cover: 50% of total cover:		% of total cove	er:_ <u>(S. A</u>	Notes: (If observed, list morphological adaptations below):

WIOGHTOIZ

SOIL	The state of the state of the state of	L.	Date Featur	re II	MANA	4033000	100000	Soil Pit Required (Y/N)
SOIL PROFILI	E DESCRIPTION: (De	escribe	to the depth needed to d	docı	ment the	indicator or co	onfirm the absence	ce of indicators.)
Depth	Matrix		Redox Features				A-1 14	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Notes *
ne 0-3					12			Saturate d organics
Bul 3-4	104R 3/2	80	54R 2.5/2	20	(on	m/RC	Silt loan	Strong band of Con @ interface w/
100 4-60	Black	100					loain	0
Bw2 6-15	2.544/	80	74R 4/6 3	10	Con	m	Silt -	
	Ties						2	DI D. DOWN H. Markin
The second secon	Company of the Park of the Par	ion, RN	M=Reduced Matrix, CS=C	Cove	ered or Co	ated Sand Gr		PL=Pore Lining, M=Matrix.
HYDRIC SOIL	AND HER DESIGNATION IN COLUMN THE PARTY.	200	The second second	12:4	NO THEFT	STATE OF THE PARTY	S. S. Sandrick St. St. St. St. St. St.	FOR PROBLEMATIC HYDRIC SOILS ³
	tel (A1)		Alaska Gleyed (A1					Change (TA4) ⁴
Histic Epipedo			Alaska Redox (A14	_		/		Swales (TA5)/
Black Histic (A	3)	-	Alaska Gleyed Por	res ((A15)/\/			with 2.5Y Hue I without 5Y Hue or Redder Underlying
Hydrogen Sulfi	ide (A4)/		1				Layer	without 51 Hue of Redder Onderlying
Thick Dark Sur	rface (A12)	_					Other (Explain	n in Notes) ape position must be present unless
Restrictive Lay	f color change in Note rer (if present): Type: resent (Y/N):			h (ir	nches):			
*	FRIMARY INDICAT	ORS (any one indicator is suffic	cient)	SECONDARY	INDICATORS (2 or more required)
Surface Water	\ I	1	rface Soil Cracks (B6)	-	1	Water-stained eaves (B9)	W	Stunted or Stressed Plants (D1)
High Water Ta	ble (A2)	Inu (B	indation Visible on Aerial	lma	agery	Orainage Patt	erns (B10)//	Geomorphic Position (D2)
Saturation (A3)/	Sn	arsely Vegetated ncave Surface (B8)	j'		Oxidized Rhiz Living Roots (ospheres along	Shallow Aquitard (D3)
Water Marks (I	B1)/		url Deposits (B15)			Presence of R	educed	Microtopographic Relief (D4)
Sediment Dep	osits (B2)		drogen Sulfide lor (C1)	4		Salt Deposits (C5) FAC-Neutral Test (D5) _		
Drift Deposits	(B3)/*		y-Season ater Table (C2)			Votes:		
Algal Mat or C	rust (B4)//	Ot	her (Explain in Notes):					IX.
Iron Deposits ((B5)/							
STATE OF THE STATE	E-7-100 20 20 17 EVA	SEV F		1/2	NAME OF STREET	VOID NOT	THE PROPERTY	
Surface Water	Present (Y/N):	Y	Depth (in): 9				_	V
Water Table P	resent (Y/N):	y	Depth (in): 3		We	etland Hydro	ogy Present (Y/	N):
Saturation Pre (includes capil		1	Depth (in):		EC	. 17	us	
Notes:			+					- 1.7

AQUATIC SITE ASSESSMENT DATA FORM WIOGHTO12

VEGETATION VARIABLES P= Plot, M= Mamx
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed
Percent Cover (P): Tree (>5 dbh, >6m tall) O Sapling (<5 dbh, <6m tall) O Tall shrub (2-6m) 7O Short shrub (0.5-2m) O Short shrub (0.5-2
Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) 80%) Very High Density (80-100%) X
Interspersion of Cover & Open Water (P): 100% Cover or Open Water 25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches_ X Continuous Cover
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) Kliph (small groupings, diverse and interspersed)
HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES
Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric
Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Outlet
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated X Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded
Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Created
Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)
Frequency of Overbank Flooding (P): No Overbank Flooding X Return Interval 1-2 yrs Return Interval 2-5 yrs
Degree of Outlet Restriction (P): No Outflow X Restricted Outflow Unrestricted Outflow
Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading 5.8%
Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Glacial Till/Not Permeable
Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%) ✓
Evidence of Coope and Chaings (D), No Coope of Chains V Coope Observed
Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring
LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below
LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Above Connected Upstream & Downstream Unknown
LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below Only Connected Above Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)

J Brownlee

GPS Technician QA/QC check:

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

	items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification? Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct? All dominant species have been determined and recorded per strata? Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
3.	Soil
	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7.	Maps
	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

SITE DESCRIPTION	avia usk in a said a	4 15	3000	HINESON	語上的認識	
Survey Type: Centerline 💆 Acces	ss Road (explain) Of	ther (explai	n) <u>k</u>	Field Targ	et: <u>204</u>	Map #: <u>99</u> Map Date: <u>5 - 27</u>
Date: 6-10-16	Project Name: Alaska L	_NG		*	Feature Id:	WLOGHTO13
Investigators: Jessie &	ownlee, K	alex	1 XO1	per		Team No.: WVO6
State: Alaska	Region: Alaska		Milepost:	617.5		
Latitude: 62° 5 2' 23,8	5054" N. L	Longitude:	14905	0' 34	.674°N	Datum: WGS84
Logbook No.:	Logbook Page No.:	38	Picture No.:	P-WIC	OGH TO	013_001 4hru 004
SITE PARAMETERS	· 10-10-10-10-10-10-10-10-10-10-10-10-10-1	Gall S				
Subregion: Alaska Range						s, etc.): farrace ? / lowland
Slope (%): 3-5			Local relief (co	oncave, con	vex, none):	lat, hummacky
Pre-mapped Alaska LNG/NWI classifica	ation: U		Evidence of W	Vildlife Use:	Squirre (BPal
Are climatic/hydrologic conditions on the Yes No (if no exp	e site typical for this time of lain in Notes)	year?	Are "No Yes_k	rmal Circun	nstances" pre (If no, ex	sent: plain in Notes.)
Are Vegetation, Soil, or Hy	The state of the s	Disturbed?	No_X	_(If yes, exp	olain in Notes)
Are Vegetation, Soil, or Hy	drology Naturally Pro	blematic?	No_X	_ (If yes, ex	plain in Notes	5.)
SUMMARY OF FINDINGS	医型型的积累	STORE DE	F 3 75 12			
Hydrophytic Vegetation Present? Yes_	No/	_ ls t	he Sampled A	rea within	a Wetland?	Yes No
Hydric Soil Present? Yes_	NoX	We	tland Type:	V	j.; •	
Wetland Hydrology Present? Yes_	No	- Ala	ska Vegetation	1 Classificat	ion (Viereck):	1A2,11 BZ
Notes and Site Sketch: Please include I corridor. Talk madure. Pic Co diverse Forb common Hummucky Feature. Walk in From Road	onsty. Dry And	of Sant Son	lix & Bet ls w/ Sho	New yelf E	andersk 9 Bs ea,	ry of a very
						χ.

W106HT013

Tree Stratum (Plot sizes: \(\infty \)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
`	70 00101	(Y/N)	Otatus	No. of Dominant Species that are OBL, FACW, or FAC:
1. Picea Glovea	35	Y	FIACU	Total Number of Dominant Species Across All Strata: (C) (E)
2. Behla Nevalaskama	6		FACU	% Dominant Species that are OBL, FACW, or FAC: _5② (A/
3.				
i .	1			Prevalence Index worksheet:
Total Cover		4.		Total % Cover of: Multiply by:
50% of total cover	20.520	% of total cov	rer: <u> </u>	OBL species:X 1 =
Sapling/Shrub Stratum (Z6')	Absolute	Dominant	Indicator	FACW species: 25 x 2 = 50
	% Cover	Species? (Y/N)	Status	FAC species $108 \times 4 = 272$
· vaccinium uliginosum	35	V	FAC.	FACU species (08 X 4 = 27 7 9 1
vaccinium vitis-Idaea	T	1	FAC	Column Totals: [35 (A) 450 (B)
· Viburnum edule	2		FACU	PI = B/A = 3.33
Salix Dulchren	25	Y	FACUS	Frey Gade Neoffia Sp T
Empetrum nigrum	T		FAC	Trientalis examples
Betula negalaskava	3		FACU	Viola sp T
Piceon alarica	3		FACU	Delphinium plantum
Mantain Ash Sorbus	ing		FACU	
				Coali on borealis
Total Cover:			2 (Jangusorba Canadensis T FAC
50% of total cover:	34 20	% of total cov	er: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Aster sp. T
EGETATION (use scientific names of plants)			
erb Stratum(26)	Absolute	Dominant	Indicator	Hydrophytic Vegetation Indicators:
	% Cover	Species?	Status	
· Geranium eranthum	Q	(Y/N)	C1 (1)	N Prevalence Index is ≤ 3.0
· Rubus Arcticus	4	\ \	FACU.	Morphological Adaptations ¹ (Provide supporting data in
KUDUS /IICHEUS	Ü	V	FAC	Notes)
Cornus canadensis	7		FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
pyroja contrata	7		FAC	Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
1115 Set059	2		FACU	STATE OF THE PARTY
Lupinus Arctions			FACI	% Bare Ground
LUDINUS FRETICUS	/		7 735 60	% Cover of Wetland Bryophytes
Achellia mille Folium	1		FACI	
Achillia millefolium Chamerion augustifation	5		FACO	
Chamerion angustifation Chamerion angustifation Duniperus horizontali	5 /		UPL	
· Achillia Millefolium · Chamerton augustifation	250			

W106HT013

			6.10.16				THE STATE OF THE	6 1 5 5 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
JOH.	the state of the state of		Date Feat			T. 18 . 3	7	Soil Pit Required (Y/N)
SOIL PROFIL	E DESCRIPTION: (Describe	to the depth needed to	doc	ument the i	ndicator or	confirm the absence	e of indicators.)
Depth	Matrix		Redox Features			1 2		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc²	Texture	Notes
0: G-1								Dry organics
E 1-2	10412 4/2	100					Silt loam	· ·
	754R 3/3	5					511+	
	104R 4/6	95						
Bw 8-24	- 1	92					511+	
0.00	104R 4/4	8						
	1,531						A Company	
¹ Type: C=Con	centration, D=Depl	etion, RN	N=Reduced Matrix, CS	=Cove	ered or Co	ated Sand C	Grains. ² Location:	PL=Pore Lining, M=Matrix.
HYDRIC SOIL			新型型型型		400	A PARTY	INDICATORS	FOR PROBLEMATIC HYDRIC SOILS
Histosol or His	7		Alaska Gleyed (A	113)	N		Alaska Color C	Change (TA4) ⁴
Histic Epipedo			Alaska Redox (A	_	N		Alaska Alpine	Swales (TA5)
Black Histic (A			Alaska Gleyed P		(A15) M	1	Alaska Redox	
		-	Alaska Oleyea i	0100	(7110) <u></u>			without 5Y Hue or Redder Underlying
Hydrogen Sulf	ide (A4) <i>N</i>	11					Layer_ N	
Thick Dark Su	rface (A12)/						Other (Explain	
		etation, o	ne primary indicator of	wetla	ind hydrolo	gy, and an	appropriate landsca	ape position must be present unless
disturbed or pr	oblematic. If color change in N	otes.						the second second
	er (if present): Typ		- N - De	pth (i	nches):	-		9.5
		1						
Hydric Soil P	resent (Y/N):	N						
				-				
Notes:								
								•
HYDDOLOGY	DDIMARY INDICA	TOPE	any one indicator is suf	ficien	4)	SECONDAR	RY INDICATORS (2	or more required)
HIDROLOGI	PRIMARI INDICA	TORS (any one moleator is sur	HOICH	7	Nater-stain		Stunted or Stressed
Surface Water	(A1)/	Su	rface Soil Cracks (B6)			Leaves (B9)		Plants (D1)/
		Inu	ndation Visible on Aeri	ial Im			atterns (B10) N	Geomorphic Position (D2)/
High Water Ta	ible (A2)	- (B	nN					Geomorphic r osition (BZ)
Saturation (A3) <u>N</u>		arsely Vegetated ncave Surface (B8)	N		Oxidized Rh	nizospheres along s (C3)/	Shallow Aquitard (D3)N
Water Marks (B1) _ \(\forall \)	Ma	ırl Deposits (B15)	N		Presence of fron (C4)	Reduced	Microtopographic Relief (D4)
_		Hv	drogen Sulfide			Salt Deposit	to (CE)	FAC-Neutral Test (D5)
Sediment Dep	osits (B2)	— Od	lor (C1)				is, (C5)	TAO-Heatlar rost (55)
Drift Deposits	(B3)		y-Season ater Table (C2)/V			Notes:		
Algal Mat or C	rust (B4)	_ Ot	her (Explain in Notes):				-	
Iron Deposits	(B5)							
CONTRACTOR OF THE PARTY OF THE	PERCEINE NAME	CONTRA	WE STATE OF LINE	A128	Charles House	Park State	HALL TO STORY	The tenes passive series in the
Surface Water	Present (Y/N):	N	Depth (in):					./
Water Table P		N	Depth (in):		We	etland Hydi	rology Present (Y/	N):
		/٧						
Saturation Pre (includes capi		N	Depth (in):		EC			
Notes:								
			1.0					

AQUATIC SITE ASSESSMENT DATA FORM



VEGETATION VARIABLES P= PIOT, 1	ທ= watrix	and from -
Forested-Evergreen-Needle-leaved	acking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad- Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent	/
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) Tall herb (≥1	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0 m) Short herb (<1m) Moss-Lichen Floating Subm	.5-2m) nerged
	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerate	
Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)	(0-20%) Low Density (20-40%) Medium Density (40-60%) Hig	h Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattered	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-7 26-7 26-7 26-7 26-7 26-7 26-7 26-7	5% Scattered or
Plant Species Diversity (P): Low (< 5 plant	species) Medium (5-25 species) High (>25)	
Presence of Islands (M): Absent (none) _	One or Few Several to Many N/A	
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Continuous Cover	Site
Dead Woody Material (P): Low Abundance Abundant (>50% of surface)	(0-25% of surface) Moderately Abundant (25-50% of surface)	
Vegetative Interspersion (P): Low (large High (small groupings, diverse and interspers	patches, concentric rings) Moderate (broken irregular rings)ed)	
HGM Class (P): Slope Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe	·
COUNTRIADUES		
		Name of the Party of the
Soil Factors (P): Soil Lacking Mineral: Sandy	Histosol: Fibric Histosol: Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey	
HYDROLOGIC VARIABLES	THE PERSON OF THE PARTY OF THE	NAME OF THE PARTY
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent In Outlet Perennial Inlet/No Outlet	let/No
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent In Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Inlet/Perennial Outlet Perennial Outlet Perennial Outlet Inlet/Perennial Outlet Intermittent Inlet/Perennial Outlet Inlet/Perennial Out	let/No
Inlet/Outlet Class (P): No Inlet/Outlet Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent In Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Inlet/Perennial Outlet Perennial Outlet Perennial Outlet Inlet/Perennial Outlet Intermittent Inlet/Perennial Outlet Inlet/Perennial Out	let/No Perennial
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Servidence of Sedimentation (P): No Evidence Created	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent In Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Inlet/Perennial Outlet	Perennial bils Sediment
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Servidence of Sedimentation (P): No Eviden Created Microrelief of Wetland Surface (P): Absent	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent In Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Inlet/Perennial Outlet Perennial Outlet Perennial Outlet Semiperm. Flooded, Temporarily Flooded, Saturated Semiperm. Flooded Sediment Observed on Wetland Substrate Fluvaquent Score Observed Fluvaquent Fluvaquent Score Observed Fluvaquent Fluvaquent Score Observed Fluvaquent Fluva	Perennial bils Sediment
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Seated Perennial Intermittent Intermitten	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent In Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Inlet/Perennial Outlet Outlet Semiperm. Flooded Sediment Observed on Wetland Substrate Fluvaquent Score Observed Sediment Observed on Wetland Substrate Fluvaquent Score Observed Sediment Observed On Wetland Substrate Fluvaquent Score Observed Sediment Observed On Wetland Substrate Pronounced Verbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs	Perennial bils Sediment
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Eviden Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No O Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent In Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Inlet/Perennial Outlet Perennial Inlet/No Outlet Outlet Perennial Outlet Semiperm. Flooded Ce Observed Sediment Observed on Wetland Substrate Fluvaquent Score Poorly Developed (6in.) Well Developed (6-18in.) Pronounced verbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs Restricted Outflow Unrestricted Outflow	Perennial bils Sediment
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Evidenc Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Orelief of Outlet Restriction (P): No Outflow Water pH (P): No surface water C	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent In Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Inlet/Perennial Outlet Perennial Inlet/No Outlet Outlet Semiperm. Flooded Ce Observed Sediment Observed on Wetland Substrate Fluvaquent Sc Poorly Developed (6in.) Well Developed (6-18in.) Pronounced verbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs Ce Restricted Outflow Unrestricted Outflow	let/No Perennial bils Sediment (>18in.)
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Eviden Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No O Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water C Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent In Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Inlet/Perennial Outlet Perennial Inlet/No Outlet No Inlet/Perennial Inlet/Perennial Inlet/No Outlet No Inlet/Perennial Inlet/Per	let/No Perennial pils Sediment (>18in.) ading
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Eviden Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No O Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water C Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No See	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet No Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inl	let/No Perennial pils Sediment (>18in.) ading
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Oreturn Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water C Surficial Geologic Deposit Under Wetland of Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No See LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolate	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent In Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet No Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Outlet Perennial Inlet/No Outlet	let/No Perennial pils Sediment (>18in.) ading
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Oreturn Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water C Surficial Geologic Deposit Under Wetland of Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No See LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolate	No Inlet/Intermittent Outlet	let/No Perennial pils Sediment (>18in.) ading
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Evidence of Sedimentation (P): No Evidence of Sedimentation (P): No Evidence of Sedimentation (P): No Outlook Frequency of Overbank Flooding (P): No Outlook Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water C Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Sec LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolate Only Connected Above Connected	No Inlet/Intermittent Outlet	let/No Perennial pils Sediment (>18in.) ading
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Oreturn Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water C Surficial Geologic Deposit Under Wetland of Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No See LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolate Only Connected Above Connected Wetland Land Use: High Intensity (i.e., a) Watershed Land Use: 0-5% Rural	No Inlet/Intermittent Outlet	let/No Perennial pils Sediment (>18in.) ading

J. Brownless-

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

	re ID: W106HT013 Field Target: 204 Date: 6-10-16 Itiems not checked, please provide detailed explanation in the notes section of data form.
7 Or an	Remo not oncoxed, produce detailed explanation in the netter element of animal entire terms.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
	☒ Vegetation names are entered legibly for all strata present?☒ Cover calculations are complete and correct?
	All dominant species have been determined and recorded per strata?
	Indicator status is correct for each species?
	Dominance Test and Prevalence Index have been completed?
3.	Soil
	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	☑ Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and
	accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7.	Maps
	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X halen	Volverx	hillen	Volger	6-11-16
Wetland Scientist (print)	Signat	ure / Date		

Field Crew Chief (print)

X dossie Brownlee 6.11.16 Signature Date

SITE DESCRIPTION	al paras de la compa				NAME OF STREET	
A THE SHALLOWS THE WAY WE SHALL SHAL	ss Road (explain)	Other (expla	ain) <u>X</u>	Field Targ	et: <u>205</u>	Map #: 98 Map Date: 5.27
Date: (0-1()-1(0	Project Name: Alaska	a LNG			Feature Id:	W106 HT014.
Investigators: 305510	golivinos	. Kal	en Vo	Voer		Team No.:
State: Alaska	Region: Alaska		Milepost:	617.2		
Latitude: 62° 52' 47.19	14" N	Longitude	: 1490 50	0' 14.	0463%	Datum: WGS84
Logbook No.:	Logbook Page No.:	39	Picture No.:	P-WI	OGHTC	14-001 thru 004
SITE PARAMETERS	x.49% 154 158 158 168 168 168 168 168 168 168 168 168 16	有於和約6 6		gal seedad		
Subregion: Alaska Range		THE RESERVE TO SERVE	Landform (hill	Islope, terrac	ce, hummocks	s, etc.): Flood plain
Slope (%): 0 - 3			Local relief (c			
Pre-mapped Alaska LNG/NWI classifica	ition: (1 /62, 1/ 13	37	Evidence of V			
Are climatic/hydrologic conditions on the	e site typical for this time		Are "No	ormal Circun	nstances" pre	
Yes No (if no expl Are Vegetation, Soil, or Hyo	lain in Notes) drology Significantl	lv Disturbed?			olain in Notes	
Are Vegetation, Soil, or Hyd		Problematic?			olain in Notes	
SUMMARY OF FINDINGS	accompany to the same of the s		he is the		Tord Will	A TOP STREET, BANK
Hydrophytic Vegetation Present? Yes_	No	Is	the Sampled A	Area within	a Wetland?	YesNo
Hydric Soil Present? Yes_	X No	w	etland Type:	PSSIE		- in
Wetland Hydrology Present? Yes_	<u> </u>	— AI	aska Vegetatio	n Classificati	on (Viereck):	1131,11132
Notes and Site Sketch: Please include I corridor.	Directional & North Arrow	, Centerine,	Wet 1	3	S HOIT GETTE	mile, Prioto Eocatoris, and Garvey
			7/4			
			170			5 A. A. C.

10.

Total Cover:_

50% of total cover:

WIOGHTOIY

2 % Cover of Water

Notes: (If observed, list morphological adaptations below):

Hydrophytic Vegetation Present (Y/N):

	A			<u> </u>
VEGETATION (use scientific names of plan	its)			
Tree Stratum (Plot sizes: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	No. of Dominant Species that are OBL, FACW, or FAC:(Total Number of Dominant Species Across All Strata:(
1. Betula Nevalaskana	10	Y	FACU	% Dominant Species that are OBL, FACW, or FAC:(A
3.				
4.				Prevalence Index worksheet:
Total Cove	_	0% of total cov	/er:	Total % Cover of: Multiply by: OBL species:
Sapling/Shrub Stratum (Z(1)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 31 $\times 2 = 62$ FAC species 92 $\times 3 = 276$ FACU species 13 $\times 4 = 158$
· Alous tenuitolia	55	Y	FAC	UPL species X 5 =
Alors tenuitolia Salix pulchra	13		FACW	Column Totals: 15 (A) 405 (B)
1				PI = B/A = 2 . 68
A .				
Total Cove	r. 58			
50% of total cove	r: 29 20	% of total cov	rer: 11.6	Ψ
EGETATION (use scientific names of plan	ts)		No. of the	
erb Stratum(Z6)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50%
· Comarum palostre	10	Y	OBL	Prevalence Index is ≤ 3.0
Calama expostis cannolingis		Y	FAC	Morphological Adaptations ¹ (Provide supporting data in Notes)
Anch Rumex Arcticus	9		FAC	Problematic Hydrophytic Vegetation ¹ (Explain)
Viola palustris	8		FACU	¹ Indicators of hydric soil and wetland hydrology must be present unless
Equisation palustre	20	Y	FACW	disturbed or problematic.
Chrysosplenium andr	um 5		OBL	CELEUR PROPERTY STEELS OF SECTION
Polemonium acutiforum	10	Y	FAC	% Bare Ground
Forb 50	T	24	_	Cover of Wetland Bryophytes
0.	12		7 1	Total Cover of Bryophytes

20% of total cover:

WETLAND DETERMINATION DATA FORM Soil Pit Required (Y/N) Feature ID COIL Date SOIL PROFILE DESCRIPTION: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Matrix Redox Features Depth (inches) Color (moist) Color (moist) Type¹ Loc² Texture Notes Saturate or cream cs 8-16+ Da ²Location: PL=Pore Lining, M=Matrix. ¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. INDICATORS FOR PROBLEMATIC HYDRIC SOILS3 HYDRIC SOIL INDICATORS Histosol or Histel (A1) _ Alaska Gleved (A13) Alaska Color Change (TA4)4 Alaska Redox (A14) Alaska Alpine Swales (TA5) Histic Epipedon (A2) __/ Alaska Redox with 2.5Y Hue _ Black Histic (A3) Alaska Gleyed Pores (A15) Alaska Gleved without 5Y Hue or Redder Underlying Hydrogen Sulfide (A4) _ Layer Other (Explain in Notes) Thick Dark Surface (A12) One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic. ⁴Give details of color change in Notes. Depth (inches): Restrictive Layer (if present): Type:_ Hydric Soil Present (Y/N): Notes: SECONDARY INDICATORS (2 or more required) HYDROLOGY PRIMARY INDICATORS (any one indicator is sufficient) Stunted or Stressed Water-stained Surface Soil Cracks (B6) Surface Water (A1) Plants (D1) __/\/ Leaves (B9) Inundation Visible on Aerial Imagery Geomorphic Position (D2) Drainage Patterns (B10) High Water Table (A2) Oxidized Rhizospheres along Sparsely Vegetated Shallow Aquitard (D3) Saturation (A3) Living Roots (C3) Concave Surface (B8) Presence of Reduced Microtopographic Water Marks (B1) Marl Deposits (B15) Relief (D4) Iron (C4) Hydrogen Sulfide Salt Deposits (C5) FAC-Neutral Test (D5) Sediment Deposits (B2) Odor (C1) Notes: Dry-Season Drift Deposits (B3) Water Table (C2) Algal Mat or Crust (B4) Other (Explain in Notes): Iron Deposits (B5)

Wetland Hydrology Present (Y/N):

EC:

6.0

Surface Water Present (Y/N):

Water Table Present (Y/N):

Saturation Present (Y/N):

(includes capillary fringe)

Notes:

Depth (in):

Depth (in):

Depth (in):

AQUATIC SITE ASSESSMENT DATA FORM

VEGETATION VARIABLES P= Plot, M=	- watrix
Forested-Evergreen-Needle-leaved	king Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-
Percent Cover (P): Tree (>5 dbh, >6m tall) Dwarf shrub (<0.5m) Tall herb (≥1m	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) SO Short shrub (0.5-2m) Short shrub (0.5-2m) Floating Submerged Submerged
Number of Wetland Types (M): 3	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse ((80%) Very High Density (80-100%)	0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattered	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant sp	pecies) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) X	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): NOPENSmall Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover
Dead Woody Material (P): Low Abundance (0 Abundant (>50% of surface)	-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large p High (small groupings, diverse and interspersed	natches, concentric rings) Moderate (broken irregular rings)Xd)
HGM Class (P): Slope X Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
COU MARIARIES	
SOIL VARIABLES Soil Factors (P): Soil Lacking	Histosol:Fibric Histosol:Hemic Histosol: Sapric
Mineral: Gravelly Mineral: Sandy	Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES	Strain the stocker consists of the strain of
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial
Wetland Water Regime (P): Drier: Season Wet: Perm. Flooded, Intermittently Exposed, Se	nally Flooded, Temporarily Flooded, Saturatedemiperm. Flooded
Evidence of Sedimentation (P): No Evidence Created	e ObservedX Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment
Microrelief of Wetland Surface (P): Absent_	Poorly Developed (6in.) Well Developed (6-18in.) × Pronounced (>18in.)
Frequency of Overbank Flooding (P): No Overb	erbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs
Dègree of Outlet Restriction (P): No Outflow_	
	cumneutral (5.5-7.4) X Alkaline (>7.4) Acid (<5.5) pH Reading Co.C
Surficial Geologic Deposit Under Wetland (P Glacial Till/Not Permeable	P): High Permeability Stratified Deposits Low Permeability Stratified DepositsX
Basin Topographic Gradient (M): Low G	radient (<2%)
	· · · · · · · · · · · · · · · · · · ·
Basin Topographic Gradient (M): Low G	· · · · · · · · · · · · · · · · · · ·
Basin Topographic Gradient (M): Low G Evidence of Seeps and Springs (P): No Seep LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated	s or Springs Seeps Observed Intermittent Spring Perennial Spring
Basin Topographic Gradient (M): Low G Evidence of Seeps and Springs (P): No Seep LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated	s or Springs Seeps Observed Intermittent Spring Perennial Spring Wetlands within 400m, Not Connected Only Connected Below Upstream & Downstream Unknown
Basin Topographic Gradient (M): Low G Evidence of Seeps and Springs (P): No Seep LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated Only Connected Above Connected	s or Springs Seeps Observed Intermittent Spring Perennial Spring Wetlands within 400m, Not Connected Only Connected Below Upstream & Downstream Unknown

Crew Chief QA/QC check:

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

	e ID: WOGHTOL4 Field Target: 205 Date: 6-10-16 items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
	Vegetation names are entered legibly for all strata present?
	Cover calculations are complete and correct?
	All dominant species have been determined and recorded per strata? Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
	Indicator status is correct for each species?
	Dominance Test and Prevalence Index have been completed?
3.	Soil
	Soil profile is complete?
	Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
	Surface water, water table, and saturation depths are recorded in prosent.
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7	
7.	Марѕ
	Wetland boundaries have been corrected if necessary?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

SITE DESCRIPTION	No. 1 Carlotte	EN PAR	MATERIAL HON	见 以通信	#1559EU		
Survey Type: Centerline Acces	ss Road (explain)_X	Other (expla	ain)	Field Targ	et: <u>220</u>	Map #: <u>85</u> Map Date	e: 5.27
Date: (0-10-16	Project Name: Alask	a LNG			Feature Id:	WIDGHTDIS	
Investigators: Jessie F	Brownle	e, K	aler	1 VC	1 per	Team No.: WO	9
State: Alaska	Region: Alaska	,	Milepost:	0 588	5, S		
Latitude: 63°11′ 25.58″		Longitude	-1490 21	19.95		Datum: WGS84	
Logbook No.:	Logbook Page No.:	39	Picture No.:	P-WI	20HTC	15-001 thr	v 004
SITE PARAMETERS	Store Edward	PARTITION OF	加强代码的		WALK!		NEW YORK
Subregion: Alaska Range			Landform (hil	Islope, terrac	e, hummock	s, etc.): Back grade of	Mound
Slope (%): 3-5			Local relief (c			undulating.	
Pre-mapped Alaska LNG/NWI classifica	ition: PSSIB		Evidence of V	Vildlife Use:	None	O	
Are climatic/hydrologic conditions on the Yes No (if no expl	e site typical for this time ain in Notes)	of year?			stances" pre (If no, exp	sent: plain in Notes.)	
Are Vegetation, Soil, or Hyd	drology Significant	ly Disturbed?	No_X	_(If yes, exp	lain in Notes)	
Are Vegetation, Soil, or Hyd	drology Naturally F	Problematic?	No_X	_ (If yes, exp	olain in Notes	s.)	7
SUMMARY OF FINDINGS	4.1000000000000000000000000000000000000	CHEWIT		15100	原利用		是如此的
Hydrophytic Vegetation Present? Yes_	X No	ls	the Sampled A	Area within a	Wetland?	Yes X No	1
Hydric Soil Present? Yes	X No	_ w	etland Type:	T551	В.		
Wetland Hydrology Present? Yes_	X No	— Ala	aska Vegetatio	n Classificati	on (Viereck):	1 A 3, 11 B	2
Notes and Site Sketch: Please include Decorridor. Location of FT on or and arm considering is utfole dug in upland passibly wet long end Surrounding is all wet	the dry to marginus of a 50' x 25' inclusion and	epland	inclusion wes said	in an furated	other wil	se very wet	site.
MN NN Sox 2	855			Ċ	SE -D	7	

W106HT015

VEGETATION (use scientific names of pla	nts)			
Tree Stratum (Plot sizes: / (2))	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata:
1. Picea Colavea	20	Y	FACU	
2.				% Dominant Species that are OBL, FACW, or FAC:
3.				CAND THE TANK THE TAN
				Prevalence Index worksheet:
Total Cov	er: ZO		- 18	Total % Cover of: Multiply by:
50% of total cov	er:\	% of total cov	er:	OBL species: X 1 = O
Sapling/Shrub Stratum (24)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species:
Empetrum nigrum	7		FAL	UPL species
Batula Mana	a		FAC	Column Totals: \\ \(\text{Vet A} \) (A) \\ \(\text{A}\) (B)
3. Vaccinium uliginosum	7-	1	FAC	PI = B/A = 2 • 0
BRhododendrum fomentosur	M		FACU)	
Salix pulchra	18	Y	FACUS	
· vaccinium vitis -idaea	1		FAC	
· color diali	1			1
Spiraea Stevenli	0		FACU	
Spiraea StevenII	T		FACU	
Spirae a Steven II	(0 T 40	Y		
3. Picea Celavea	T 40	Y	FACU	
Picea Clavea Alnus finana	T 40	% of total cov	FACU	
Picea Clave a Alnus fines Total Cove 50% of total cove	T 40 er: 66 er: 33 20	% of total cov	FACU	
Picea Glavea Alnus F. Mganga Ribes T(15+E TTotal Cove 50% of total cove	T 40 er: 66 er: 33 20	% of total cov	FACU	Hydrophytic Vegetation Indicators:
Picea Glavea Alnus Among Ribes Tiste Total Cove 50% of total cove	T 40 er: 66 er: 3 3 20	Dominant Species?	FACU FAC er: 3.7	Hydrophytic Vegetation Indicators: Dominance Test is > 50%
Picea Clave a Alnus fingana Ribes Kiste Total Cove 50% of total cove FEGETATION (use scientific names of plantlerb Stratum (Ale)	T 40 er:	Dominant	FACU FAC er: 3.7	
Picea Clave a Alnus fingana Ribes Kiste Total Cove 50% of total cove EGETATION (use scientific names of planers Stratum (Ribes)	Absolute % Cover	Dominant Species?	FACU FACU er: 3.7 Indicator Status FACW	Dominance Test is > 50%
RIDES TOTAL COM STATE TOTAL COM SOW of total com EGETATION (use scientific names of plan lerb Stratum (The) Rubus chamemorus	Absolute % Cover	Dominant Species?	FACU FACU er: 3.7 Indicator Status FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0
FICE Glave a Alnus from STOTAL COM 50% of total com FIGHT Total Com 50% of total com FIGHT TOTAL FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL COM FIGHT TOTAL FIGHT TOTAL COM FIGHT TOTAL	Absolute % Cover	Dominant Species?	FACU FACU er: 3.7 Indicator Status FACW	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in
Spirate a Steventi Spirate a Steventi Ribes Tiste Total Cove 50% of total cove (EGETATION (use scientific names of planters Stratum (The) 1. Rubus chamaemorus 2. Perminerios augustificata 3. Cornus canadensis 1. Sangvisorba canadensis	Absolute % Cover	Dominant Species?	FACU FACU er: 3.7 Indicator Status FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
Spirate a Steventi Spirate a Steventi Picea Glave a Alnus f Meana Fishes Total Cove 50% of total cove FEGETATION (use scientific names of planters Stratum (The) 1. Rubus chameemorus 2. Phameria augustificus 3. Cornus canadensis 4. Jangvisorba canadensis	Absolute % Cover	Dominant Species?	FACU FACU Indicator Status FACW FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain)
Spirate a Steventi Spirate a Steventi Picea Glave a Alnus f Meana Fibes Triste Total Cove 50% of total cove FEGETATION (use scientific names of planters Stratum (The) 1. Rubus chamemorus 2. The chamerine augustifula 3. Cornus canadensis 4. Jangvisorba canadensis 5. Equisetum palustre	Absolute % Cover	Dominant Species?	FACU FACU FACU FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
RIDES Triste Total Covers 50% of total covers of planting and the stratum (De) 1. Rubus champemorus 2. Pochameria angustification consideration considera	Absolute % Cover	Dominant Species?	FACU FACU FACU FACU FACU FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic.
Spirate a Steventi Spirate a Steventi Picea Clave a Alnus f. Meana Fisher Total Cove 50% of total cove 50% of total cove EGETATION (use scientific names of plan Berb Stratum (The) I. Rubus chamaemorus Pichameria augustificas Cornus canadensis Languisarba canadensis Languisarba canadensis Equisetum palustre Spianulum annotiaum Equisetum Sylvaticum	Absolute % Cover	Dominant Species?	FACU FACU FACU FACU FACU FACU FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) ———————————————————————————————————
Spirate a Steventi Spirate a Steventi Alnus f. Moang Ribes T(15te Total Cow 50% of total cow (EGETATION (use scientific names of plantlerb Stratum (Absolute % Cover	Dominant Species?	FACU FACU FACU FACU FACU FACU FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic.
Spirate a Steventi 3. Picea Glavea 3. Alnus fincana Cipes T(15te Total Cove 50% of total cove 50% of total cove FEGETATION (use scientific names of plantier by Stratum (Dle) 1. Rubus chamaemorus 2. Thameria augustificati 3. Cornus canadensis 4. Sanguisorba canadensis 5. Equisetum palustre 6. Spiraulum annolinum 7. Equisetum Sylvaticum 8. Rubus arcticus 9. Correx biglowii 10. 0	Absolute % Cover	Dominant Species?	FACU FACU FACU FACU FACU FACU FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) — Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. — 2 % Bare Ground — 3 5 % Cover of Wetland Bryophytes — 5 Cover of Bryophytes — 7 Cover of Water
Spirate a Steventi 3. Picea Glavea 3. Alnus f. Moang Ribes T(15te Total Cove 50% of total cove 50% of total cove /EGETATION (use scientific names of plantlerb Stratum (Absolute % Cover T J J J J J J J J J J J J	Dominant Species?	FACU FACU FACU FACU FACU FACU FACU FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic. 2 % Bare Ground 25 % Cover of Wetland Bryophytes Total Cover of Bryophytes

			6.10.10				2 2 2			
SOIL	e de la	0	Date Featur	e ID_	alest,		超速的直流	Soil Pit Required (Y/N)		
SOIL PROFILE	DESCRIPTION:	(Describe	to the depth needed to d	ocum	ent the i	ndicator or	confirm the absenc	e of indicators.)		
Depth	Matrix		Redox Features				- 15			
(inches)	Color (moist)	%	Color (moist) 9	6 T	Гуре ¹	Loc ²	Texture	Notes		
Oi 0-3								Demo organica		
Da 3-5							Muck	Schurated organics		
1 5-12	Rodes	100					Colables	w/ Oa in sore space		
2 10	1000									
				10						
¹ Type: C=Con	centration, D=Depl	letion, RM	I=Reduced Matrix, CS=C	overe	d or Coa	ated Sand C	Grains. ² Location	: PL=Pore Lining, M=Matrix.		
HYDRIC SOIL	The same of the same of the	W. 19 1	STATE OF THE PARTY	il de	in large	U.5 405 EX	The second linear second linea	FOR PROBLEMATIC HYDRIC SOILS		
Histosol or His			Alaska Gleyed (A1	3)	N	- 1 4	Alaska Color (Change (TA4) ⁴		
Histic Epipedor			Alaska Redox (A14		N		Alaska Alpine			
	-		Alaska Gleyed Por		15) 4		Alaska Redox			
Black Histic (A			Alaska Gleyeu Folk	CS (/\	13) _19			without 5Y Hue or Redder Underlying		
Hydrogen Sulfi	de (A4)/\/						Layer/V			
Thick Dark Sur							Other (Explain			
		etation, o	ne primary indicator of we	etland	hydrolo	gy, and an	appropriate låndsc	ape position must be present unless		
disturbed or pr	oblematic. f color change in N	ntes					- 1	**		
	er (if present): Typ		V- Depth	(incl	nes):	40		-*+-		
ACAMA VIII		1		*						
Hydric Soil Pr	esent (Y/N):	Y			250			1 2		
Nistana			- 14	-						
Notes: Much	CAIO									
			10							
HADBUI UCA	PRIMARY INDICA	TORS (a	ny one indicator is suffici	ent)	S	ECONDAR	RY INDICATORS (2	2 or more required)		
HIDROLOGI	TAMMAKI INDIOA	-	The state of the s	1	Section 20 Sec	Vater-staine	- The second of	Stunted or Stressed		
Surface Water	(A1)/	Sur	face Soil Cracks (B6)	N_		eaves (B9)		Plants (D1)/_		
1 P 1 1 A 1 1 2 2 2	61- (AO) V	Inu	ndation Visible on Aerial	Image			atterns (B10)/	Geomorphic Position (D2)		
High Water Ta	ble (A2) _7	- (B7)					Geomorphic Fosition (DZ) _/o		
Saturation (A3)	1 /		arsely Vegetated				izospheres along (C3)	Shallow Aquitard (D3)		
		_	/	-		Presence of		Microtopographic		
Water Marks (I	31)/	Mai	rl Deposits (B15)//			ron (C4)		Relief (D4)		
	" "	Hvo	drogen Sulfide			Salt Deposits (C5) / FAC-Neutral Test (D5				
Sediment Depo	osits (B2)/V		or (C1)/		5	sait Deposit	s (C5)/V_	FAC-Neutral Test (D5)		
Drift Deposits ((B3) N	Dry	-Season		1	Notes:		4		
Drift Deposits (Wa	ter Table (C2)//	-						
Algal Mat or Ci	rust (B4)	_ Oth	ner (Explain in Notes):							
	1	_			-					
Iron Deposits (B5)/									
eye Contact (Can	ALCOHOLD IN	KIT THE	ALLOW TO BE KEN	1.2	and the same	Na Na Till Ber	Tentre springer	CONTRACTOR OF THE PROPERTY		
Surface Water	Present (Y/N):	7	Depth (in): 2.					🗸		
Water Table P	resent (Y/N)	V	Depth (in):		We	tland Hydr	ology Present (Y/	N):/		
valer rable Fi	1000111 (1714).	1								
Saturation Pres		y	Depth (in): 3		EC	. 40	DH	4.85		
(includes capill	ary fringe)	/						1.00		
Notes:										



VEGETATION VARIABLES P= Plot, N	ri= Matrix
Forested-Evergreen-Needle-leaved	Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Emergent-Non-persistent Emergent-
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) Tall herb (≥1	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) 70 Short shrub (0.5-2m) Short herb (<1m) Moss-Lichen Floating Submerged
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)	(0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattere	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral Cover X N/A
Plant Species Diversity (P): Low (< 5 plant	species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none)	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover
Dead Woody Material (P): Low Abundance Abundant (>50% of surface)	(0-25% of surface) X Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large High (small groupings, diverse and interspers	patches, concentric rings) Moderate (broken irregular rings)ed)
HGM Class (P): Slope	Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES	
Soil Factors (P): Soil Lacking	Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES	AND THE RESIDENCE OF THE PARTY
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet P
Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, 3	sonally Flooded, Temporarily Flooded, Saturated <u></u> Semiperm. Flooded
	ce Observed X Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment
	Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)
Frequency of Overbank Flooding (P): No O Return Interval >5 yrs	verbank Flooding X Return Interval 1-2 yrs Return Interval 2-5 yrs
Degree of Outlet Restriction (P): No Outflow	
	ircumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) PH Reading ½85 (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits X
	Gradient (<2%) High Gradient (≥2%) eps or Springs Seeps Observed Intermittent Spring Perennial Spring
LANDSCAPE VARIABLES (M)	
Wetland Juxtaposition: Wetland Isolate Only Connected Above Connecte	d Upstream & Downstream Unknown
Netland Land Use: High Intensity (i.e.,	ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)
Watershed Land Use: 0-5% Rural	5-25% Urbanized 25-50% Urbanized >50% Urbanized
Size: Small (<10 acres) Medi	um (10-100 arres) X Large (>100 acres)

Crew Chief QA/QC check: 53 rountee GPS Technician QA/QC check:

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Featur	e ID: W 106HT015 Field Target: 220 Date: 6-10-16
	items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
	Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct?
	→ All dominant species have been determined and recorded per strata?
	Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
3.	Soil
	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7.	Maps
	Wetland boundaries have been corrected if necessary? ☐ Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

X halen Wetland Scientist (print) Signature / Date

X halen Volence G-11-16

X JiBranlee

Field Crew Chief (print)

X

Signature / Date

le.10.16

Survey Type: Centerline Access Road (explain) Other (explain); Field Target: 2/7 Map #: 91 Map Date: 528. Date: Collow Project Name: Alaska LNG Feature Id: 2/18/4/70/6 Investigators: Tess & Convolve Logo Milepost: 576 State: Alaska Region: Alaska Milepost: 576 Latitude: (20 6 30,000 N Logbook Page No.: 4) Picture No.: Pulo6HTO16 Collow WGS84 Logbook No.: Logbook Page No.: 4) Picture No.: Pulo6HTO16 Collow WGS84 Logbook No.: Logbook Page No.: 4) Picture No.: Pulo6HTO16 Collow WGS84 Logbook No.: Logbook Page No.: 4) Picture No.: Pulo6HTO16 Collow WGS84 Logbook No.: Logbook Page No.: 4) Picture No.: Pulo6HTO16 Collow WGS84 Logbook No.: Logbook Page No.: 4) Picture No.: Pulo6HTO16 Collow WGS84 Logbook No.: Logbook Page No.: 4) Picture No.: Pulo6HTO16 Collow WGS84 Logbook No.: Logbook Page No.: 4) Picture No.: Pulo6HTO16 Collow WGS84 Logbook No.: Logbook Page No.: 4) Picture No.: Pulo6HTO16 Collow WGS84 Logbook No.: Logbook Page No.: 4) Picture No.: Pulo6HTO16 Collow WGS84 Logbook No.: Logbook Page No.: 4) Picture No.: Pulo6HTO16 Collow WGS84 Logbook No.: Logbook Page No.: 4) Picture No.: Pulo6HTO16 Collow WGS84 Logbook No.: Logbook Page No.: 4) Picture No.: Pulo6HTO16 Collow WGS84 Logbook No.: Logbook Page No.: 4) Picture No.: Pulo6HTO16 Collow WGS84 Logbook No.: Logbook Page No.: 4) Picture No.: Pulo6HTO16 Collow WGS84 Logbook No.: Logbook Page No.: 4) Picture No.: Pulo6HTO16 Collow Rose No. Alaska Vegetation Classification (Viereck): Ill A 2 Ill B 2 Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Suncorridor. Diverse Forb & Cal Can Meadow. Same veg and Suil For WoleHTO16 OP3 Which is another day Role Meadow Same veg and Suil For WoleHTO16 OP3 Which is another day Role Meadow Same veg and Suil For WoleHTO16 OP3 Which is another day Role Meadow Same veg and Suil For WoleHTO16 OP3 Which is another day Role Meadow Same veg and Suil For WoleHTO16 OP3 Which is another Logbook Page No. Alaska Vegetat	STITE DESCRIPTION	The State of the S		1.00	1750 14 15 15 15 15 15 15 15 15 15 15 15 15 15
Investigators: PESCE BOWNER Month Milepost: 576 State: Alaska Region: Alaska Milepost: 576 Latitude: (20 6' 39.00) N Longitude: 149° 28' 39.3971 Datum: WGS84 Logbook No.: Logbook Page No.: 4 Picture No.: WIOGH TOIG_COI Thru Color Thru Color Month Milepost: 576 SITE PARAMETERS Subregion: Alaska Range Landform (hillslope, terrace, hummocks, etc.): // side Siope (%): /5 Local relief (concave, convex, none): Convex Undulated Month Milepost: Month Milepost: Month Milepost: Month Milepost: Month Milepost: Milepost:	Survey Type: Centerline Acce	Road (explain) Other (ex	plain) Facility Field Targ		Map #: <u>9/</u> Map Date: <u>5/27 /</u> 4
State: Alaska Region: Alaska Latitude: (20 6' 30.00) N Logbook No.: Logbook Page No.: 4 Picture No.: P. WOGH TO 6. COI Thru College (%): 5 SITE PARAMETERS Subregion: Alaska Range Landform (hillslope, terrace, hummocks, etc.): 4. // side Slope (%): /5 Pre-mapped Alaska LNG/NWI classification: PEMI/SSIB Are climatic/hydrologic conditions on the site typical for this time of year? Yes \(\) No (if no explain in Notes) Are Vegetation Soil or Hydrology Naturally Problematic? No \(\) (if yes, explain in Notes) Are Vegetation Present? Yes \(\) No \(\) Is the Sampled Area within a Wetland? Yes \(\) No \(\) (If Q \) Ull B Z Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Suncorridor. Diverse Forb & Cal Can Meadow . Same Veg and Soil For WIOGHT ONG - P3	Date: 6-11-16	Project Name: Alaska LNG		Feature Id	
State: Alaska Region: Alaska Millepost: 576 Latitude: (20 6' 30.00)** N Logbook Page No.: 4 Picture No.: 5 Picture No.: 5 Picture No.: 5 Picture No.: 5 Picture No.: 6 Picture No.:	Investigators: Jessie B	ownlee, Kaler	1 Volger		Team No.: WVO6
Logbook No.: Logbook Page No.: 4 Picture No.: P. W. O. H. TO C. COI Thru C. SITE PARAMETERS Subregion: Alaska Range Landform (hillslope, terrace, hummocks, etc.): 5. // side Slope (%): /5 Pre-mapped Alaska LNG/NWI classification: PEMI/SS/B Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (if no explain in Notes) Are Vegetation Soil or Hydrology Significantly Disturbed? Are Vegetation Soil or Hydrology Naturally Problematic? No (If yes, explain in Notes) Hydrophytic Vegetation Present? Yes No Wetland Type: U Wetland Hydrology Present? Yes No Alaska Vegetation Classification (Viereck): /// A Z III B Z Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Suncorridor. Diverse Forb & Cal Can Meadow. Same Veg and Soil For WIOLHT OILs OP3	State: Alaska	Region: Alaska	Milepost: 596		
SITE PARAMETERS Subregion: Alaska Range Landform (hillslope, terrace, hummocks, etc.): A.//side Slope (%): /5 Pre-mapped Alaska LNG/NWI classification: PEMI/SS/B Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (if no explain in Notes) Are Vegetation, Soil, or Hydrology Significantly Disturbed? No (if yes, explain in Notes) No (if yes, explain in Notes) No (if yes, explain in Notes) Wetland Type: U Wetland Hydrology Present? Yes No Alaska Vegetation Classification (Viereck): /// A Z /// B Z Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Suncorridor. Diverse Forb & Cal Can Meadow. Same Veg and Soil For WIOLEH TO 16 OP 3	Latitude: (206' 39.00)	Longitu	de: 149° 28' 39.8	777%	Datum: WGS84
Subregion: Alaska Range Landform (hillslope, terrace, hummocks, etc.): 1, 1/5 idle Slope (%): /5 Pre-mapped Alaska LNG/NWI classification: PEMI/SS/B Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (if no explain in Notes) Are Vegetation Soil or Hydrology Significantly Disturbed? Are Vegetation Soil or Hydrology Naturally Problematic? No (If yes, explain in Notes.) SUMMARY OF FINDINGS Hydrophytic Vegetation Present? Yes No Wetland Type: U Wetland Hydrology Present? Yes No Alaska Vegetation Classification (Viereck): III A Z III B Z Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Suncorridor. Diverse Forb & Cal Can Meadow. Same Veg and Soil For WIOLEH TOIL OP 3		Logbook Page No.: 식	Picture No.: PW	06HT	016_001 thru cocy
Slope (%): /5 Pre-mapped Alaska LNG/NWI classification: PEMI/SSIB Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (if no explain in Notes) Are Vegetation, Soil, or Hydrology Significantly Disturbed? Are Vegetation, Soil, or Hydrology Naturally Problematic? No (If yes, explain in Notes.) SUMMARY OF FINDINGS Hydrophytic Vegetation Present? Yes No Is the Sampled Area within a Wetland? Yes No (Hydrology Present? Yes No Alaska Vegetation Classification (Viereck): A Z B Z Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Suncorridor. Diverse Forb & Cal Can Meadow. Same_ Veg and Soil For WIOLEHT OIL6_0P3	SITE PARAMETERS	JOSEPH ALIKE THEFT	MANAGE STATE	SHE VELL	
Cocal relief (concave, convex, none): Convex Undulatage	Subregion: Alaska Range		Landform (hillslope, terrac	ce, hummock	s, etc.): 1, // side
Are climatic/hydrologic conditions on the site typical for this time of year? Yes	,		Local relief (concave, con	vex, none):	Convex fundulating
Yes	Pre-mapped Alaska LNG/NWI classifica	on: PEMI/SSIB	Evidence of Wildlife Use:	Moose	beds 4 droppings
Are Vegetation, Soil, or Hydrology Naturally Problematic? No (If yes, explain in Notes.) SUMMARY OF FINDINGS Hydrophytic Vegetation Present? Yes No	Are climatic/hydrologic conditions on the Yes No (if no exp	site typical for this time of year? in in Notes)			
SUMMARY OF FINDINGS Hydrophytic Vegetation Present? Yes No Is the Sampled Area within a Wetland? Yes No 1 Hydric Soil Present? Yes No X Wetland Type: Wetland Hydrology Present? Yes No X Alaska Vegetation Classification (Viereck): /// A Z /// B Z Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Suncorridor. Diverse for b & Cal Can Meadow. Same Veg and Soil for WIOWHTONG OP3	Are Vegetation, Soil, or Hy	ology Significantly Disturbe	d? No X (If yes, exp	olain in Notes	3)
Hydrophytic Vegetation Present? Yes No No Wetland Type: Wetland Hydrology Present? Yes No X Alaska Vegetation Classification (Viereck): /// A Z III B Z Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Suncorridor. Diverse for b & Cal Can Meadow. Same Veg and Soil for WIOLEHT OIL OP3	Are Vegetation, Soil, or Hy	ology Naturally Problemation	? No (If yes, ex	plain in Notes	s.)
Hydric Soil Present? YesNoX Wetland Type: Wetland Type: Wetland Type: Wetland Type: Wetland Type: Alaska Vegetation Classification (Viereck): /// A Z /// B Z Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Suncorridor. Diverse for b & Cal Can Meadow. Same Veg and Soil for WioleH Tollo_0P3	SUMMARY OF FINDINGS	德国图》38. 苏兰斯语 图	建筑等。	in lest soul	A SECULIAR MARKET
Wetland Hydrology Present? YesNoX Alaska Vegetation Classification (Viereck): /// A Z III B Z Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Suncorridor. Diverse for b & Cal Can Meadow. Same Veg and Soil for WIOLEHT 016-0P3	Hydrophytic Vegetation Present? Yes_	No	Is the Sampled Area within	a Wetland?	Yes No
Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Suncorridor. Diverse for b & Cal Can Meadow. Same veg and Soil For Willell Tolle_0P3	Hydric Soil Present? Yes_	No	Wetland Type: U		
Diverse Forb & Cal Can Meadow. Same veg and soil For WIOLEHTOILE-0P3	Wetland Hydrology Present? Yes_	No ×	Alaska Vegetation Classificat	ion (Viereck):	MAZMBZ
East Cast	Diverse for b & Cal Cal Which is another di	for 6 meadorn to ; Found through This and al	veg and soil for	- W/061	HT016-0P3

WIOGHTOIG

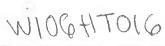
Tree Stratum (Plot sizes: 24	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC Total Number of Dominant Species Assess All States	-
				Total Number of Dominant Species Across All Strata: % Dominant Species that are OBL, FACW, or FAC:	
					-
				Prevalence Index worksheet:	
Total Cove	er:			Total % Cover of: Multiply by:	
50% of total cove		% of total cov	er:	OBL species: X 1 =	
Sapling/Shrub Stratum (26)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: $\frac{4}{2}$ \times 2 = $\frac{8}{2}$ FAC species $\frac{9}{2}$ \times 3 = $\frac{276}{2}$	
Populus balsamifera	1		FACU	FACU species 2 (X 4 = 84 UPL species X 5 = -	
Populus balsamifero	T		FACU-	Column Totals: 117 (A) 368 (B)	
				PI = B/A = 3.14	-
				vida	1
				Geranium eriaithum 4	1
i and the second				Coalium boreale T	F
					-
Total Cove	r:				
50% of total cove		% of total cove	·	The same of the sa	

lerb Stratum (2_Le)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50%
Ruhus Archeus	25	Y	FAC	/V Prevalence Index is ≤ 3.0
Chamerion Angustifilium	4		FACU	Morphological Adaptations ¹ (Provide supporting data in Notes)
Heracleum maximum	8		FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
· Veratrum Viride	25	Y	FAC	1 Indicators of hydric soil and wetland hydrology must be present unless
Equisetum sylvaticum	T		FAC	disturbed or problematic.
Calama armsti's coma densis	40	Y	FAC	数字的数字位数字 的数字数式图形 (1) 12 16 18
Delphinium glaveum	4		FACLES	% Bare Ground
Polemonium acutiflorum	2		FA C	% Cover of Wetland Bryophytes
Aster so	T		_	Total Cover of Bryophytes
Mertensia paniculata	5		FACU	% Cover of Water Hydrophytic Vegetation Present (Y/N):
Total Cover:_	118		11 -	
50% of total cover:	59 20	% of total cov	er: 15.6	(223704, not morphological adaptations below).



SOF	En English	A STATE OF	Date Feature ID	Mary Carl	A SECTION		Soil Pit Required (Y/N)
			e to the depth needed to docume		CONTRACTOR DESCRIPTION	confirm the absence	
	Matrix	COCIDO	Redox Features	crit the me	ioator or	- ale absence	of malacions./
Depth (inches)	Color (moist)	%		ype ¹	Loc ²	Texture	Notes
1	Color (molety	1		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
1 2-3	10412 2/2	100				loan	Dry organies
Jul 3-10	- /	100				very amuely	Filt loan
WI 0 10	15/15/1					9.	-
1412 10-24	10 YR 3/2	100			T.	gravely Silt 1	ocy
	The second second	tion, RN	M=Reduced Matrix, CS=Covered	d or Coate	d Sand (Committee of the Commit	PL=Pore Lining, M=Matrix.
	INDICATORS	4.50	国际和国际的	and the same	A SA	AND DESCRIPTION OF A PERSON OF	FOR PROBLEMATIC HYDRIC SOILS ¹
	tel (A1)/		Alaska Gleyed (A13)	-			hange (TA4) ⁴ /
	n (A2)/		Alaska Redox (A14)		-	-	Swales (TA5)/
Black Histic (A	3)	-	Alaska Gleyed Pores (A1	5)	_		with 2.5Y Hue
Hydrogen Sulfide (A4) _ N						Alaska Gleyed	without 5Y Hue or Redder Underlying
hick Dark Surface (A12)						Other (Explain	
One indicator	of hydrophytic veget	tation, o	ne primary indicator of wetland	hydrology	, and an	appropriate landsca	pe position must be present unless
listurbed or pr	oblematic. f color change in No	tes.					
Restrictive Lay	er (if present): Type	:_ "	Depth (inch	es):			
lotes:							
YDROLOGY	PRIMARY INDICAT	TORS (any one indicator is sufficient)	SE	CONDAR	RY INDICATORS (2	or more required)
Surface Water	(A1)/	Su	rface Soil Cracks (B6)		ter-staine ves (B9)		Stunted or Stressed Plants (D1)
ligh Water Ta	ble (A2)/√	Inu (B	undation Visible on Aerial Image 7)	ry Dra	inage Pa	atterns (B10)시	Geomorphic Position (D2)
Saturation (A3)		arsely Vegetated ncave Surface (B8)	Livi	Oxidized Rhizospheres along Living Roots (C3)		Shallow Aquitard (D3)
Vater Marks (I	B1)	Ма	arl Deposits (B15)		sence of (C4)	Reduced	Microtopographic not due Relief (D4) N & to wate
ediment Dep	osits (B2)		drogen Sulfide for (C1)	Sal	t Deposit	ts (C5)	FAC-Neutral Test (D5)
orift Deposits	(B3)//		y-Season ater Table (C2)/	Not	es:		
Algal Mat or Crust (B4) Ot			her (Explain in Notes):				
ron Deposits ((B5)/						
The shirt of				E THE S	The little	2015年1月5年	10000000000000000000000000000000000000
	Present (Y/N): /		Depth (in):	Wetla	nd Hydr	ology Present (Y/N	1):
Vater Table P Saturation Pre	sent (Y/N):		Depth (in):	EC:	~		
includes capill lotes:	lary fringe)		Depth (in):				
			*				

AQUATIC SITE ASSESSMENT DATA FORM



VLGETATION VARIABLES P= Plot,	M= Matrix
Primary Vegetation Type (P): Vegetation La Forested-Evergreen-Needle-leaved	acking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) Tall herb (≥1	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Short herb (<1m) Moss-Lichen Floating Submerged
	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)	(0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattere	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant	species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none)	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site
Dead Woody Material (P): Low Abundance Abundant (>50% of surface)	(0-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large High (small groupings, diverse and interspers	patches, concentric rings) Moderate (broken irregular rings)ed)
HGM Class (P): Slope Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES	
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy	Histosol: Fibric Histosol: Histosol: Sapric / Mineral: Silty Mineral: Clayey / Mineral: Clayey / Mineral: Clayey / Histosol: Sapric / Mineral: Clayey / Histosol: Sapric / Mineral: Clayey / Histosol: Sapric / Histosol: Sapr
HYDROLOGIC VARIABLES	
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent OutletNo Inlet/Perennial Outlet Intermittent Inlet/No .: Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Outlet
Inlet/Outlet Class (P): No Inlet/OutletOutlet Intermittent Inlet/Intermittent Outlet Perennial In	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No COutlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Inle
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No COutlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Inle
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Outlet_Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Evidence Of Sedimentation (No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inle
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Seas Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Coutlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Conally Flooded, Temporarily Flooded, Saturated Semiperm. Flooded Ce Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent_Frequency of Overbank Flooding (P): No Or Return Interval >5 yrs_	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Perennial Inlet/Perennial Inlet/Pe
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Evidence Treated Microrelief of Wetland Surface (P): Absent_Frequency of Overbank Flooding (P): No Oketurn Interval >5 yrs_Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water_Ci	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Evidence Treated Microrelief of Wetland Surface (P): Absent_Frequency of Overbank Flooding (P): No Oketurn Interval >5 yrs_Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water_Ci	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Ou
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent_Frequency of Overbank Flooding (P): No Oketurn Interval >5 yrs_Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water_Cisculture Glacial Till/Not Permeable_Basin Topographic Gradient (M): Low of the Interval Surface (M): Low	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No O
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Evidence Treated Microrelief of Wetland Surface (P): Absent_Frequency of Overbank Flooding (P): No Oketurn Interval >5 yrs_Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water_Cisurficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable_Basin Topographic Gradient (M): Low Geologic Office Seeps and Springs (P): No Seeps Evidence of Seeps and Springs (P): No Seeps Se	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Inlet/Intermittent Outlet_Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Evidence Oreated Microrelief of Wetland Surface (P): Absent_Frequency of Overbank Flooding (P): No Oreatern Interval >5 yrs_Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water_Cisuricial Geologic Deposit Under Wetland (Glacial Till/Not Permeable_Basin Topographic Gradient (M): Low Geologic Deposit Outlet (M)	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Inlet/No
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Inlet/Intermittent Outlet_Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Evidence Oreated Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Oreater Interval >5 yrs_Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water_Cisurficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable_Basin Topographic Gradient (M): Low Geologic Deposit Outlet (M): Wetland Juxtaposition: Wetland Isolate	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Evidence Treated Microrelief of Wetland Surface (P): Absent_Frequency of Overbank Flooding (P): No Oketurn Interval >5 yrs_Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water_Cisural Geologic Deposit Under Wetland (Glacial Till/Not Permeable_Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No See LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolate Only Connected Above_Connected	No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Inlet/Intermittent Inlet/Intermittent Outlet_Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent_Frequency of Overbank Flooding (P): No Orectain Interval >5 yrs_Degree of Outlet Restriction; (P): No Outflow Water pH (P): No surface water_Cisurficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable_Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No See LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolate Only Connected Above_Connected Wetland Land Use: High Intensity (i.e., and the content of t	No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Orector Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Ci Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable Basin Topographic Gradient (M): Low (Basin Topographic Gradient (M): Low (Ba	No Inlet/Intermittent Outlet

GPS Technician QA/QC check:

Wetland Determination Form QA/QC Checklist

	I his form to be completed before leaving the field site.
	e ID: WWGHTO W Field Target: Z14 Date: 6-11-16 items not checked, please provide detailed explanation in the notes section of data form.
roi, aii	items not checked, please provide detailed explanation in the notes seeden of data remin
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification? Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct? All dominant species have been determined and recorded per strata? Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
3.	Soil
	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7.	Maps
	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X halen Volper	x hal	en Valper	6-12-16
Wetland Scientist (print)	Signature / Date		

X J Brownlee X

Signature / Date

SITE DESCRIPTION			SALES AND					
Survey Type: Centerline Acces	s Road (explain)	Other (expl	ain) X Facility	Field Target: 2/5	Map #: <u>9/</u> Map Date: <u>5.27</u>			
Date: 6.11.16	Project Name: Alask	a LNG		Feature Id	WIOLEHT 017			
Investigators: Tessie Branda	e Koley V	of per			Team No.: WIOG			
State: Alaska	Region: Alaska		Milepost:	596				
Latitude: 63° 6'31.07"		Longitude	: -149° 2	28'5.72"	Datum: WGS84			
Logbook No.:	Logbook Page No.:	40	Picture No.:	P_14106HT017_0	01 thru - 004			
SITE PARAMETERS	·经济经济和	新疆里 德亚	AL HEAT		19.00mm (A.S.) (A.S.) (A.S.) (A.S.)			
Subregion: Alaska Range			Landform (hill	lslope, terrace, hummock	s, etc.): Hill 51 de			
Slope (%): 8-10	~		Local relief (c	oncave, convex, rione):	flightly convex			
Pre-mapped Alaska LNG/NWI classificat	ion: 1A2,11B	2		Vildlife Use: Howe				
Are climatic/hydrologic conditions on the Yes No (if no expla	site typical for this time in in Notes)	of year?		ormal Circumstances" pre				
Are Vegetation, Soil, or Hyd	rologySignificant	tly Disturbed?	? No	_(If yes, explain in Notes)			
Are Vegetation, Soil, or Hyd	rology Naturally I	Problematic?	No <u> </u>	_ (If yes, explain in Note:	5.)			
SUMMARY OF FINDINGS		TAPECON		this to the same of	。於 为 使 的 经 使 的 经 使 的 经 使 使 使 使 使 使 使 使 使 使 使			
Hydrophytic Vegetation Present? Yes	NoX_	Is	the Sampled A	Area within a Wetland?	Yes No			
Hydric Soil Present? Yes	No	w	Wetland Type:					
Wetland Hydrology Present? Yes	No <u> X</u>	AI	laska Vegetatio	n Classification (Viereck):	1A2,11C2			
Notes and Site Sketch: Please include D corridor. Talk mature oppen of No signs of hydrology. has been Dry,								

	A STATE OF THE STA			No. of the second	-	260			-
VEGETATION (use scientific names of plan	nts)						Mina		
Tree Stratum (Plot sizes: (00)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test w	ecies th	at are OB		_	(A
1. Picea Glovea	30	V	FACU	Total Number of Do		•			(B
2,				% Dominant Specie	s that a	re OBL, F	ACVV, or FA	(C:	7 (A/E
3.			8				1995		100
4.				Prevalence Index v	vorksh	et:	Office Property	2 Octobries	AND ADD
Total Cove	er: 30			Total % Cover of:			Multiply	by:	
50% of total cover	er: 15 20	% of total cov	ver:	OBL species:		_X1=		_	
Sapling/Shrub Stratum (24)	Absolute % Cover	Dominant Species?	Indicator Status	FACW species: FAC species	3	X 2 = _ X 3 = _	99		
		(Y/N)		FACU species	47	X 4 = _	188	_	
1. Spirgea Stevenii	10	7	FACU	UPL species	ļ	x 5 = _	5	_	
2. Vaccinium uhginosum	25	Y	FAC	Column Totals:	.84	(A) _	298	(B)	
3. Linnaea borealis	T		FACU	PI = B/A = 3	.54				
4. Juniperus horizantalis	1-		UPL	-					
5. Picea Glovea	7		FACU						
6. Empetrum Nigrum	4		FAC		(30)				
7. Betila nana	T		FAC "						
8. vaccinium vitis-idaea	T		FAC						
9,									
Total Cove									
50% of total cover	er: 20.5 20	% of total cov	er:\$12	- 1					

Herb Stratum (<u> 34</u>)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators:
1. Rubus pedatus	_/		FAC	Morphological Adaptations ¹ (Provide supporting data in
2. cornus canadansis	3	Y	FACO	Notes)
3. Chamerian angustifolium	7		FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
4. Rubus Arcticus	2		MAC	¹ Indicators of hydric soil and wetland hydrology must be present unless
5. Trienfalis Europaea	T		FACU	disturbed or problematic.
6. Calangostis lapponica	1		FAC	Control of the state of the sta
7. Coumnocarpium dryapteris	, 3	Y	FACU	% Bare Ground
8. 9040 50	2		_	Cover of Wetland Bryophytes
9. Spinavlum annothnum	3	Y	FACU	
10. Streptopus amparifolius	7		FACU	% Cover of Water Hydrophytic Vegetation Present (Y/N):
Total Cover:	15			Notes: (If observed, list morphological adaptations below):
50% of total cover:_	7.5 20	% of total cove	er	Assess (ii observed, list morphological adaptations below).

The same of the sa			6/16							
SOIL	地河 引发 表现的	朝鄉	Date Feat	ure IC	PARTIE PA	54660 148	Water May	Soil Pit Required (Y/N)		
SOIL PROFIL	E DESCRIPTION: (I	Describe	to the depth needed to	, docu	ment the	indicator or c	onfirm the abserice	of indicators.)		
Depth	Matrix		Redox Features					V		
(inches)	Color (moist)	.%	Color (moist)	%	Type ¹	Loc ²	Texture	Notes		
0: 0-3					<u> </u>			Dry organine		
E 3-60	104R 5/3	100				A L	Silt	0		
Bhs 6-9	7 SYR 3/4	20			61	dilla	Silt			
11111	2.5 YR 2.5/2	80			3			orn land		
R. 1 9-12	2 SUR 2.5/,	100)		1 - 4	e transly go	Black ornstein properties		
	104R 2/2	100					10 1	ne sandy loam		
1			-		-		1	33		
¹Type: C=Con	centration, D=Deple	tion, RN	/I=Reduced Matrix, CS=	Cove	red or Co	ated Sand G	rains. ² Location:	PL=Pore Lining, M=Matrix.		
HYDRIC SOIL	INDICATORS		经成项 特 计		(E) silly		INDICATORS F	OR PROBLEMATIC HYDRIC SOILS		
Histosol or His	tel (A1)/	7.	Alaska Gleyed (A	(13)	N		Alaska Color Ch	nange (TA4) ⁴		
Histic Epipedo	n (A2)	20	Alaska Redox (A	14)	. N		Alaska Alpine S	wales (TA5)		
Black Histic (A	171	1	Alaska Gleyed P	ores (A15) N	4.1	Alaska Redox w	vith 2.5Y Hue		
Hydrogen Sulf	7						Alaska Gleyed v	without 5Y Hue or Redder Underlying		
			-	-			Other (Evolain i	n Notes)		
Thick Dark Surface (A12)/ Other (Explain in Notes) 3 One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless										
disturbed or pr	oblematic.	-	no primary indicator or	Wotla	na nyarote	,g,, and an a	pp, op, iato iziizoon,			
	color change in No		N- Der	oth (in	ches):		11.1	· · · · · · · · · · · · · · · · · · ·		
Restrictive Lay	er (if present): Type	3	/v De	ptii (ii	iches)		- 1 - 1			
Hydric Soil Pr	esent (Y/N):/					4	4	2.56		
Notes:		000-								
e de la companya della companya della companya de la companya della companya dell							3			
HYDROLOGY	PRIMARY INDICA	TORS (a	any one indicator is suff	icient		SECONDARY	Y INDICATORS (2	or more required)		
Surface Water	(A1)/	Su	rface Soil Cracks (B6)	N		Water-stained eaves (B9)	1 /	Stunted or Stressed Plants (D1)		
High Water Ta	ble (A2)/	Inu (B)	indation Visible on Aeria	al Ima	gery [Orainage Pat	terns (B10) <u>ル</u>	_ Geomorphic Position (D2)		
Saturation (A3	_/_		arsely Vegetated ncave Surface (B8)	N		Oxidized Rhiz Living Roots	cospheres along (C3)	Shallow Aquitard (D3)		
Water Marks (31)/	Ма	rl Deposits (B15)/			Presence of Fron (C4)	Reduced N	Microtopographic Relief (D4)/		
Sediment Dep	osits (B2) /		drogen Sulfide or (C1)N			Salt Deposits (C5) N FAC-Neutral Test (D5) N				
Drift Deposits	вз)/	Dry Wa	y-Season ater Table (C2)/			Notes:				
Algal Mat or Crust (B4) Other (Explain in Notes):								. 7		
Iron Deposits (B5)									
OR PRINCESSALAN	TO SEE SEE SEE	500 958	THE PARTY OF THE P	N. S	3660	BILLER	TORRE MANUELLE			
Surface Water	Present (Y/N):	/ 1	Depth (in):					. (
Water Table P		/	Depth (in):		We	etland Hydro	logy Present (Y/N):		
Saturation Pre (includes capil		✓	Depth (in):		EC	:				
Notes:								4"		



VEGETATION VARIABLES P= Plot, A	A Warrix
Forested-Evergreen-Needle leaved	Scrub Shrub-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Emergent-Non-persistent Emergent-
Percent Cover (P): Tree (>5 dbh, >6m tall) Dwarf shrub (<0.5m) Tall herb (≥1	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Moss-Lichen Floating Submerged
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)	(0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattere	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or d or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant	species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none)	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover
Dead Woody Material (P): Low Abundance Abundant (>50% of surface)	(0-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large High (small groupings, diverse and interspers	patches, concentric rings) Moderate (broken irregular rings)ed)
HGM Class (P): Slope Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
CON VARIABLES	
SOIL VARIABLES	
Soil Factors (P): Soil Lacking. Mineral: Gravelly Mineral: Sandy	Histosol: Fibric Histosol: Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES	the state of the s
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In	No Inlet/Intermittent OutletNo Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet
Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S	onally Flooded, Temporarily Flooded, Saturated Semiperm. Flooded
Evidence of Sedimentation (P): No Evidence Created	ce Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment
	Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)
Frequency of Overbank Flooding (P): No O Return Interval >5 yrs	verbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs
Degree of Outlet Restriction (P): No Outflow	Restricted Outflow Unrestricted Outflow
Water pH (P): No surface water C	rcumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading
Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable	P): High Permeability Stratified Deposits Low Permeability Stratified Deposits
Basin Topographic Gradient (M): Low 6 Evidence of Seeps and Springs (P): No See	
LANDSCAPE VARIABLES (M)	THE RESERVE OF A STATE OF THE RESERVE OF THE PARTY OF THE
Wetland Juxtaposition: Wetland Isolate	d Wetlands within 400m, Not Connected Only Connected Below d Upstream & Downstream Unknown
,	
Wetland Land Use: High Intensity (i.e., a	g.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)
/	g.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space) 5-25% Urbanized 25-50% Urbanized >50% Urbanized
Watershed Land Use: 0-5% Rural	

JBrownles

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Fea	ature	e ID: W 106 HT017 Field Target: 215 Date: 6-11-16
Foi	all	items not checked, please provide detailed explanation in the notes section of data form.
	1.	Site Description
		Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
	2.	Vegetation
		At least 80% of onsite vegetation has been keyed to species, or collected for later identification? Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct? All dominant species have been determined and recorded per strata?
47 E		Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
	3.	Soil
		Soil profile is complete? Appropriate hydric soil indicators are marked?
	4.	Hydrology
		Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
	5.	Functions and Values
		Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
	6.	Field Logbook
		Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
	7.	Maps
		Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

 Two photos were taken for each Observation Point (vegetation/site overview)?

× halen	Volper	x hal	leis	Volver	6-12-16
Wetland Scientist (print)		Signature / Date			

Field Crew Chief (print)

Signature / Date

SITE DESCRIPTION .	Charles Control	Control of the second				
Survey Type: Centerline Acce	ss Road (explain) X Other (e	explain)	Field Target: 216	Map #: 91 Map Date: 5.27-10		
Date: 6-11-16	Project Name: Alaska LNG	,	Feature Id	WIOGHTOL8		
Investigators: Jessie Br	ownier, Kale	us Volt	Per	Team No.: W106		
State: Alaska	Region: Alaska	Milepost:	596	_ (v		
Latitude: 63° 6134,	379" N Longit	ude: 149° 28	1 20,772 w	Datum: WGS84		
Logbook No.:	Logbook Page No.: 니	Picture No.:	P-WIOGHTO	18-001 thro 004		
SITE PARAMETERS		No. of the last of				
Subregion: Alaska Range	11	Landform (hil	Islope, terrace, hummock	is, etc.): Concave		
Slope (%): 5-8		Local relief (c	concave, convex, none):	Swale of		
Pre-mapped Alaska LNG/NWI classifica	ition: 1 A 2, 11 B2	Evidence of V	Wildlife Use: Non	e		
Are climatic/hydrologic conditions on the			ormal Circumstances" pro	esent: oplain in Notes.)		
Are Vegetation, Soil, or Hyd			(If yes, explain in Notes			
Are Vegetation X , Soil X , or Hydrology Naturally Problematic? No (If yes, explain in Notes.)						
SUMMARY OF FINDINGS		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	· 加斯尔尔特· 西	以表示200万年。200万年最后的数据		
Hydrophytic Vegetation Present? Yes_	Х No	Is the Sampled	Area within a Wetland?	Yes No		
Hydric Soil Present? Yes_	X No	Wetland Type:	PS51B			
Wetland Hydrology Present? Yes_	Х Nо	Alaska Vegetation	n Classification (Viereck)	: 11B1, 111AZ		
Notes and Site Sketch: Please include It corridor. Closed Alder Shrebs All wet from lower P given the very diffice from countries on * While this site does No Considering if a wetlaw aboundance of Surfa Drier veg was pro- Soil reacted positive all depleted (ook	swale connecting 551/EMIB to here. 551/EMIB to here. With working and may, the technically meet and given the man ce water I water eferentially greater eferentially greater	Abandoned the obvious veg & soil my strong table to cowing a	indicators I hydrology of hummoile	300' to tanget feature visible am Now the lass indirectors of the y drier locals.		

WIOGHTOLS

VEGETATION (use scientific names of plants)			
Tree Stratum (Plot sizes:\00")	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: (A) Total Number of Dominant Species Across All Strata: (B)
1. Picea Colauca 2.	8	Y	FACU	Total Number of Dominant Species Across All Strata:(B) % Dominant Species that are OBL, FACW, or FAC:(A/B)
3.				后的数据2000年间,2000年间以下3000000000000000000000000000000000000
4.	4	1		Prevalence Index worksheet:
Total Cover 50% of total cover		% of total cov	er: <u></u> \.6_	Total % Cover of: Multiply by: OBL species:
Sapling/Shrub Stratum ("C()")	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 7 $x_2 = 14$ FAC species 109 $x_3 = 327$ FACU species 59 $x_4 = 234$
1. Ribes triste	4		FAC	UPL species X 5 =
2. Alnus viridis	85	Y	FAC	Column Totals: 75 (A) 577 (B)
3.				PI = B/A = 3.29
4.				
5.				
5.				
1,				
3.				
9.				
Total Cover: 50% of total cover:		% of total cove	er: 17.8	Α

VEGETATION (use scientific names of plants)	7		
Herb Stratum (Z6')	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50%
1. Sanguisorba conadensis 2. Strentopus ample a folius	. 3		FACU	
3. Equisehm sylvatium 4. Drypter's expansa 5. A	10	Y	FAC	Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
6. Trientalis europaea. 7. Dock	1		FACU -	5 % Bare Ground
8. viola palustris 9. Calamagnustis canadensis	10		FACUL	Cover of Wetland Bryophytes Total Cover of Bryophytes
O. Equisetem protesse Total Cover: 50% of total cover:		Hydrophytic Vegetation Present (Y/N): Notes: (If observed, list morphological adaptations below):		
		,	<u> </u>	

upland veg was growing preferentially on higher/drier ground.

WIOGHTOIS

3OIL Date Feature ID Soil Pit Required (Y/N)							
The state of the s	E DESCRIPTION: (De	escribe	to the depth needed to documer			e of indicators.)	
Depth	Matrix		Redox Features				
(inches)	Color (moist)	%	Color (moist) % Typ	pe ¹ Loc ²	Texture	Notes	
Oe 0-2						Saturated organics	
Bw1 2-8	104R 4/2	100		-7	very a much for	my send w/ cobbles	
BW2 8-10	104R4/2	100			greasy Havy Ane	Sandy IDam	
					0 0		
		ion, RM	M=Reduced Matrix, CS=Covered	or Coated Sand		: PL=Pore Lining, M=Matrix.	
HYDRIC SOIL	INDICATORS			STATE OF THE PARTY OF	Cities of heart water against	FOR PROBLEMATIC HYDRIC SOILS	
Histosol or His	tel (A1)		Alaska Gleyed (A13)			Change (TA4) ⁴	
Histic Epipedo	n (A2)//		Alaska Redox (A14)	- /		Swales (TA5)/	
Black Histic (A	.3)	+	Alaska Gleyed Pores (A15)_~		with 2.5Y Hue	
Hydrogen Sulf	ide (A4)				Layer	without 5Y Hue or Redder Underlying	
Thick Dark Sur	rface (A12)/				Other (Explain	in Notes)	
³ One indicator	of hydrophytic vegeta	ation, o	ne primary indicator of wetland h	ydrology, and ar	n appropriate landsca	ape position must be present unless	
disturbed or pr	oblematic. f color change in Note	00				4	
Restrictive Lay	er (if present): Type:	55. T	Depth (inche	s):			
2							
Hydric Soil Pi	resent (Y/N):	4	see Note on from	J			
			tion throughout. W		ris the could be	1	
Hotes. Spars	y positive a. a.	1146	The state of the state of the	0009 1000	13 Milliogram		
HYDROLOGY	PRIMARY INDICAT	ORS (a	any one indicator is sufficient)	SECONDA	RY INDICATORS (2	or more required)	
Surface Water	(A1)	Su	rface Soil Cracks (B6)	Water-stair Leaves (BS	V	Stunted or Stressed Plants (D1)	
High Water Ta	ble (A2)	Inu .(B7	indation Visible on Aerial Imagen	Drainage F	Patterns (B10)	Geomorphic Position (D2)	
Saturation (A3	<u> </u>	Sp Co	arsely Vegetated ncave Surface (B8)		thizospheres along ts (C3)	Shallow Aquitard (D3)	
Water Marks (B1)	Ma	arl Deposits (B15)	Presence of Iron (C4)	of Reduced	Microtopographic X Relief (D4)	
Sediment Dep	osits (B2)		drogen Sulfide or (C1)	Salt Depos	sits (C5)/	FAC-Neutral Test (D5)	
Drift Deposits	(B3)/		y-Season ater Table (C2)/	Notes:			
Algal Mat or C	rust (B4)/	Otl	her (Explain in Notes):				
Iron Deposits	(B5)/						
		5000		Delication of the last		Color State Color and Color State Color	
Surface Water	Present (Y/N):		Depth (in):	Motland Livi	irology Present (Y/I	M).	
Water Table P	resent (Y/N):		Depth (in): 3	wetiand Hyd	arology Present (17)	N)	
Saturation Pre (includes capil			Depth (in):	EC: 19		PH 5.29	
Notes:			**				

AQUATIC SITE ASSESSMENT DATA FORM

WIOGHTO18

	II= Matrix
Forested-Evergreen-Needle-leaved	Scrub Shrub-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-
Dwarf shrub (<0.5m) Tall herb (≥1)	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Moss-Lichen Floating Submerged
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)	(0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattere	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or d or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant s	species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none)	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches_	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site
Dead Woody Material (P): Low Abundance (Abundant (>50% of surface)	0-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large High (small groupings, diverse and intersperse	patches, concentric rings) Moderate (broken irregular rings)ed)
HGM Class (P): Slope Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES	
Soil Factors (P): Soil LackingMineral: GravellyMineral: Sandy_	Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES	Several Control of the Control of th
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent OutletNo Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial
	let/Perennial Outlet
	onally Flooded, Temporarily Flooded, Saturated
Wetland Water Regime (P): Drier: Seaso Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence	onally Flooded, Temporarily Flooded, Saturated emiperm. Flooded
Wetland Water Regime (P): Drier: Seaso Wet: Perm. Flooded, Intermittently Exposed, S	conally Flooded, Temporarily Flooded, Saturated semiperm. Flooded Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment
Wetland Water Regime (P): Drier: Seaso Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created	conally Flooded, Temporarily Flooded, Saturated
Wetland Water Regime (P): Drier: Season Wet: Perm. Flooded, Intermittently Exposed, Standard Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent_ Frequency of Overbank Flooding (P): No Overbank Flooding (P): N	ponally Flooded, Temporarily Flooded, Saturated
Wetland Water Regime (P): Drier: Season Wet: Perm. Flooded, Intermittently Exposed, Statement of Sedimentation (P): No Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent_ Frequency of Overbank Flooding (P): No Overbank Flooding (P):	ponally Flooded, Temporarily Flooded, Saturated
Wetland Water Regime (P): Drier: Sease Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent_ Frequency of Overbank Flooding (P): No Overban	ponally Flooded, Temporarily Flooded, Saturated
Wetland Water Regime (P): Drier: Sease Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent_ Frequency of Overbank Flooding (P): No Overban	onally Flooded, Temporarily Flooded, Saturated
Wetland Water Regime (P): Drier: Sease Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent_ Frequency of Overbank Flooding (P): No Overban	onally Flooded, Temporarily Flooded, Saturated
Wetland Water Regime (P): Drier: Seast Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent_ Frequency of Overbank Flooding (P): No Overban	onally Flooded, Temporarily Flooded, Saturated
Wetland Water Regime (P): Drier: Seast Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent_ Frequency of Overbank Flooding (P): No Overban	Consider the content of the conten
Wetland Water Regime (P): Drier: Sease Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent_ Frequency of Overbank Flooding (P): No Overban	conally Flooded, Temporarily Flooded, Saturated
Wetland Water Regime (P): Drier: Seass Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent_ Frequency of Overbank Flooding (P): No Overban	December Property

Vessie Brannac

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

		PID: WIOGHTOIS Field Target: 26 Date: 6-11-16
For	all i	items not checked, please provide detailed explanation in the notes section of data form.
	1.	Site Description
		Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
	2.	Vegetation
		At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
		Vegetation names are entered legibly for all strata present?
		Cover calculations are complete and correct? All dominant species have been determined and recorded per strata?
5		Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
	3.	Soil
-	*	Soil profile is complete? Appropriate hydric soil indicators are marked?
	4.	Hydrology
		Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
	5.	Functions and Values
51		Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
	6.	Field Logbook
		Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
	7.	Марѕ
		Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

X haley Valger X haley Valger 6-12-16
Wetland Scientist (print)
Signature / Date

X JBrownlee

Field Crew Chief (print)

SITE DESCRIPTION	Control of the Contro	16357		w this is a proper			
Survey Type: Centerline K Acce	ss Road (explain) Of	ther (expla	ain)	Field Target: 27	Map #: 83 Map Date: 5-27/1/		
Date: (0 - 1\-\(0	Project Name: Alaska L	NG .		d: WIOGHTO19			
Investigators: TRACIR	NOWNIEP.	Ka	ver	Vn per	Team No.: WVO6		
State: Alaska	Region: Alaska		Milepost: 2	575.6			
Latitude: 63° 191 59,77	71" /	ongitude	149081	7.0704" W	Datum: WGS84		
Logbook No.:	Logbook Page No.: 4	//	Picture No.:	P-WIOGH	T019-001 thru00		
SITE PARAMETERS							
Subregion: Alaska Range			Landform (hill	slope, terrace, hummo	cks, etc.): Lowland		
Slope (%): 0 - 3					Flat. hummorku		
Pre-mapped Alaska LNG/NWI classifica	ition: U:11C2 111A)		Evidence of V		0		
Are climatic/hydrologic conditions on the Yes No (if no expl	e site typical for this time of y ain in Notes)	year?	Are "No Yes	ormal Circumstances" p	resent: explain in Notes.)		
Are Vegetation, Soil, or Hyd	drology Significantly D	Disturbed?	No_X	_(If yes, explain in Not	es)		
Are Vegetation, Soil, or Hyd	drology Naturally Prob	olematic?	No	_ (If yes, explain in Not	es.)		
SUMMARY OF FINDINGS	ADDIVERSAL SERVICE	MONTH		Mark All R			
Hydrophytic Vegetation Present? Yes_	No	is t	the Sampled A	rea within a Wetland	YesNo		
Hydric Soil Present? Yes_	No	We	Wetland Type: PSS 1B				
Wetland Hydrology Present? Yes_	X No	Ala	iska Vegetation	Classification (Viereck): 11 CZ, 111 AZ		
Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey corridor. On transect from Airstrip to FT Location 27dle the entire area was wet except for the correctly mapped upland boundering the Air Reld. Site is a dwarf birch dwarf shrub wetland w/ Large Pockets of deep standing water in between hummock mounds.							
	upland wet	rangel.		647012_ B. A.C. CO.S.			
1	8日			12000 1251 B	NM ─>		

WETLAND DETERMINATION DATA FORM WIOGHTOIG

VEGETATION (use scientific names of plan	AND STREET		CONTRACTOR OF	(A) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C
Tree Stratum (Plot sizes:)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC:
1. Picea Colauca	(3		FACU	Total Number of Dominant Species Across All Strata:
2.			1	% Dominant Species that are OBL, FACW, or FAC: 100
3.				
i.				Prevalence Index worksheet:
Total Cove	er:	-		Total % Cover of: Multiply by:
50% of total cove		0% of total cov	er:	OBL species: X1=
Sapling/Shrub Stratum (7.6)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 15 $\times 2 = 30$ FAC species 125 $\times 3 = 375$
· Betile nana	45	V	FAC	FACU species
vaccinium uliginosum	25	Y	FAC	Column Totals: 143 (A) 417 (B)
· Rhododendrum tomentasum	1,5		FACU	PI = B/A = 2.91(0
Salia polehra	T		FACIL	
· Empitrum nigrum	20	Y	FAC	
vaccinium vitis-idaea	T		FAC	
THE CHILD IN THE STATE OF THE S			1110	
	T		EACIA	
· Andromeda polifolia	T		FACLE	
	T		FACLE	
Andromeda polifolia Picea Glauca	T			
· Andromeda polifolia · Picea Glauca	r: \08	9% of total cov	FACU	
Andromeda polifolia Picea Glauca Total Cove 50% of total cove	r: \08 or: 54 20	9% of total cov	FACU	
Total Coversion of plants of plants	r: \08 or: 54 20	Dominant Species? (Y/N)	FACU	Hydrophytic Vegetation Indicators: Dominance Test is > 50%
Total Cover 50% of total cover stratum (Z(p))	r: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Dominant Species?	er: Zloc	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0
Total Cover 50% of total cover stratum (Z(p))	r: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Dominant Species?	er: ZloG Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in
Total Cover 50% of total cover 50% of total cover stratum (Z(p)) * Corex bigelowing Rulous chamgements	r: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Dominant Species?	EACU er: Z\oC Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes)
Total Covers 50% of total	7: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Dominant Species?	Indicator Status FAC FACUL	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in
Total Cover 50% of total cover 50% of total cover 150% of total co	7: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Dominant Species?	Indicator Status FAC FACUL	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain)
Total Cover 50% of total cover 50% of total cover stratum (Z()) Corex bigelowing Rulous chamgemorus Petraites Frigidus	7: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Dominant Species?	Indicator Status FAC FACUL	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) Indicators of hydric soil and wetland hydrology must be present unless
Total Covers 50% of total	7: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Dominant Species?	Indicator Status FAC FACUL	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) Indicators of hydric soil and wetland hydrology must be present unless
Total Covers 50% of total	7: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Dominant Species?	Indicator Status FAC FACUL	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic.
Total Covers 50% of total	7: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Dominant Species?	Indicator Status FAC FACUL	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic.
Total Covers 50% of total	7: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Dominant Species?	Indicator Status FAC FACUL	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic. Bare Ground Cover of Wetland Bryophytes
Total Covers 50% of total	7: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Dominant Species?	Indicator Status FAC FACUL	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Bare Ground O Cover of Wetland Bryophytes Total Cover of Bryophytes

WIOWHT019

Type: C=Concentration	ion, D=Deplet ATORS N 12) Ophytic vegetatic. change in Noteesent): Type:	escribe to F % C So ion, RM=I	Alaska Gleyed Alaska Gleyed Alaska Gleyed Perimary indicator	% Ty	pe¹ Loc² M M or Coated Sand	Grains. ² Location: INDICATORS F. Alaska Color Ch Alaska Alpine St Alaska Redox w Alaska Gleyed w Layer () Other (Explain in appropriate landscap	Notes Demp organics Sahreded organics Vain PL=Pore Lining, M=Matrix. OR PROBLEMATIC HYDRIC SOILS ³ ange (TA4) ⁴ wales (TA5) with 2.5Y Hue y without 5Y Hue or Redder Underlying
Depth inches) Color Col	ion, D=Deplet ATORS N 12) Ophytic vegetatic. change in Noteesent): Type:	ion, RM=l	Redox Features Color (moist) 5	% Ty	pe¹ Loc² M M or Coated Sand	Grains. ² Location: INDICATORS F. Alaska Color Ch Alaska Alpine St Alaska Redox w Alaska Gleyed w Layer () Other (Explain in appropriate landscap	Notes Damp organics Saturated organics Jaun PL=Pore Lining, M=Matrix. OR PROBLEMATIC HYDRIC SOILS³ ange (TA4)⁴ wales (TA5) wales (TA5) with 2.5Y Hue without 5Y Hue or Redder Underlying in Notes) e position must be present unless
ype: C=Concentration ype: C=Concentration ype: C=Concentration ydrogen Sulfide (A4) hick Dark Surface (A- one indicator of hydrosturbed or problemate Give details of color of estrictive Layer (if pre- ydric Soil Present (Notes: A 10 -3 Color of color of present (Notes: A 10 -3 Color of colo	ion, D=Depletiators N 12) N ophytic vegetatic. change in Notresent): Type:	% C	Reduced Matrix, C Alaska Gleyed Alaska Gleyed Alaska Gleyed	S=Covered (A13) (A14) Pores (A15)	or Coated Sand	Grains. ² Location: INDICATORS F Alaska Color Ch Alaska Alpine So Alaska Redox w Alaska Gleyed w Layer / / Other (Explain in appropriate landscap	PL=Pore Lining, M=Matrix. PROBLEMATIC HYDRIC SOILS ³ ange (TA4) ⁴ wales (TA5) ith 2.5Y Hue // ith out 5Y Hue or Redder Underlying Notes) e position must be present unless
ype: C=Concentration	ion, D=Deplet ATORS N 12) Ophytic vegetatic. change in Note esent): Type:	ation, one	Reduced Matrix, C Alaska Gleyed Alaska Gleyed Alaska Gleyed	S=Covered (A13) (A14) Pores (A15)	or Coated Sand	Grains. ² Location: INDICATORS F Alaska Color Ch Alaska Alpine So Alaska Redox w Alaska Gleyed w Layer / / Other (Explain in appropriate landscap	PL=Pore Lining, M=Matrix. PROBLEMATIC HYDRIC SOILS ³ ange (TA4) ⁴ wales (TA5) ith 2.5Y Hue // ith out 5Y Hue or Redder Underlying Notes) e position must be present unless
ype: C=Concentration YDRIC SOIL INDICA stosol or Histel (A1) stic Epipedon (A2) ack Histic (A5) ydrogen Sulfide (A4) nick Dark Surface (A7) the indicator of hydrosturbed or problemation sturbed or problemation sturbed or problemation control of the problemation ydric Soil Present (A)	ion, D=DepleticaTORS N 12) Ophytic vegetatic. change in Noteesent): Type:	ion, RM=I	Reduced Matrix, C Alaska Gleyed Alaska Redox Alaska Gleyed	S=Covered I (A13) (A14) I Pores (A15	or Coated Sand	Grains. ² Location: INDICATORS F Alaska Color Ch Alaska Alpine So Alaska Redox w Alaska Gleyed w Layer // Other (Explain in appropriate landscap	PL=Pore Lining, M=Matrix. OR PROBLEMATIC HYDRIC SOILS ³ ange (TA4) ⁴
ype: C=Concentration YDRIC SOIL INDICA stosol or Histel (A1) stic Epipedon (A2) ack Histic (A5) ydrogen Sulfide (A4) aick Dark Surface (A4) the indicator of hydrosturbed or problemation stive details of color of estrictive Layer (if present (A1) ydric Soil Present (A2)	ion, D=DepleticaTORS N 12) Ophytic vegetatic. change in Noteesent): Type:	ion, RM=I	Reduced Matrix, C Alaska Gleyed Alaska Redox Alaska Gleyed	S=Covered I (A13) (A14) I Pores (A15	or Coated Sand	Grains. ² Location: INDICATORS F Alaska Color Ch Alaska Alpine So Alaska Redox w Alaska Gleyed w Layer // Other (Explain in appropriate landscap	PL=Pore Lining, M=Matrix. OR PROBLEMATIC HYDRIC SOILS³ ange (TA4)⁴/ vales (TA5)/_ ith 2.5Y Hue/_ ithout 5Y Hue or Redder Underlying in Notes) e position must be present unless
ype: C=Concentration FORIC SOIL INDICA Stosol or Histel (A1) Stic Epipedon (A2) Adrogen Sulfide (A4) Adrogen Sulfide (A4) And inck Dark Surface (A2) And inch Dark Surface (A3) And inch Dark Surface (A4) And inch Dark Surface (A4) And inch Dark Surface (A5) And inch Dark	ion, D=DepleticaTORS N 12) Ophytic vegetatic. change in Noteesent): Type:	ion, RM=I	Reduced Matrix, C Alaska Gleyed Alaska Redox Alaska Gleyed	S=Covered I (A13) (A14) I Pores (A15	or Coated Sand	Grains. ² Location: INDICATORS FOR Alaska Color Che Alaska Alpine Son Alaska Redox won Alaska Gleyed won Layer // Other (Explain in Appropriate landscap	PL=Pore Lining, M=Matrix. OR PROBLEMATIC HYDRIC SOILS ³ ange (TA4) ⁴
stosol or Histel (A1) stic Epipedon (A2) ack Histic (A5) ydrogen Sulfide (A4) nick Dark Surface (A7) nick Dark Surface (A7) one indicator of hydrosturbed or problemate sive details of color of estrictive Layer (if pre-	ATORS N 12) N ophytic vegetatic. change in Noteesent): Type:	ation, one	Alaska Gleyed Alaska Redox Alaska Gleyed	(A13) (A14) I Pores (A15	or Coated Sand	Alaska Color Ch Alaska Alpine St Alaska Redox w Alaska Gleyed w Layer (/ Other (Explain in appropriate landscap	ange (TA4) ⁴ // wales (TA5) // wales (TA5) // with 2.5Y Hue // without 5Y Hue or Redder Underlying In Notes) e position must be present unless
stosol or Histel (A1) stic Epipedon (A2) ack Histic (A5) ydrogen Sulfide (A4) nick Dark Surface (A7) nick Dark Surface (A7) ne indicator of hydrosturbed or problemate sive details of color of estrictive Layer (if pre- ydric Soil Present (Notes:	ATORS N 12) N ophytic vegetatic. change in Noteesent): Type:	ation, one	Alaska Gleyed Alaska Redox Alaska Gleyed	(A13) (A14) I Pores (A15	ydrology, and an	Alaska Color Ch Alaska Alpine St Alaska Redox w Alaska Gleyed w Layer (/ Other (Explain in appropriate landscap	ange (TA4) ⁴ // wales (TA5) // wales (TA5) // with 2.5Y Hue // without 5Y Hue or Redder Underlying In Notes) e position must be present unless
stosol or Histel (A1) stic Epipedon (A2) ack Histic (A5) ydrogen Sulfide (A4) nick Dark Surface (A7) nick Dark Surface (A7) one indicator of hydrosturbed or problemative details of color of estrictive Layer (if present (A7) ydric Soil Present (A7) otes:	ATORS N 12) N ophytic vegetatic. change in Noteesent): Type:	ation, one	Alaska Gleyed Alaska Redox Alaska Gleyed	(A13) (A14) I Pores (A15	ydrology, and an	Alaska Color Ch Alaska Alpine St Alaska Redox w Alaska Gleyed w Layer (/ Other (Explain in	ange (TA4) ⁴
stosol or Histel (A1) stic Epipedon (A2) ack Histic (A5) ack Histic (A6) ack H	N 12) N ophytic vegetatic. change in Noteesent): Type:	es. :	Alaska Redox Alaska Gleyed	(A14) I Pores (A15 of wetland h	ydrology, and an	Alaska Color Ch Alaska Alpine Sv Alaska Redox w Alaska Gleyed w Layer / / Other (Explain in appropriate landscap	ange (TA4) ⁴
stic Epipedon (A2) _ ack Histic (A5) _ /drogen Sulfide (A4) nick Dark Surface (A7 one indicator of hydrosturbed or problemative details of color of estrictive Layer (if present (A7) otes: A 10	N 12) N 12) N tic. change in Note esent): Type:	es. :	Alaska Redox Alaska Gleyed	(A14) I Pores (A15 of wetland h	ydrology, and an	Alaska Alpine St Alaska Redox w Alaska Gleyed w Layer (/ Other (Explain in appropriate landscap	wales (TA5)
ack Histic (A6) drogen Sulfide (A4) nick Dark Surface (A7) ne indicator of hydrosturbed or problemative details of color clestrictive Layer (if predictive Soil Present (Notes:	12)/\ ophytic vegetatic. change in Noteesent): Type:	es. :	Alaska Gleyed	I Pores (A15	ydrology, and an	Alaska Redox w Alaska Gleyed w Layer (/ Other (Explain in appropriate landscap	ith 2.5Y Hue ithout 5Y Hue or Redder Underlying Notes) e position must be present unless
ordrogen Sulfide (A4) sick Dark Surface (A- one indicator of hydro sturbed or problemat sive details of color of estrictive Layer (if pre- ordric Soil Present (Notes:	ophytic vegetatic. change in Noteesent): Type:	es. :	primary indicator	of wetland h	ydrology, and an	Alaska Gleyed w Layer // Other (Explain in appropriate landscap	n Notes) e position must be present unless
one indicator of hydrosturbed or problemat sturbed or problemat sive details of color of estrictive Layer (if pre- ydric Soil Present ()	ophytic vegeta tic. change in Note esent): Type:	es. :				Other (Explain in appropriate landscap	e position must be present unless
one indicator of hydrosturbed or problemat Sive details of color of estrictive Layer (if pre ydric Soil Present (ophytic vegeta tic. change in Note esent): Type:	es. :				appropriate landscap	e position must be present unless
YDROLOGY PRIMA						11	
	RY INDICAT	ORS (any	y one indicator is s	ufficient)	SECONDA	RY INDICATORS (2	or more required)
urface Water (A1)	У	Surfa	ce Soil Cracks (B6	5)	Water-stain Leaves (B9)		Stunted or Stressed Plants (D1)
igh Water Table (A2)	<u> </u>	Inund (B7)	lation Visible on A	erial Imagen	Drainage Pa	atterns (B10)	Geomorphic Position (D2)
aturation (A3)	_	Spars Conc	sely Vegetated ave Surface (B8) _	N	Living Roots	nizospheres along s (C3)	Shallow Aquitard (D3)
ater Marks (B1)	N	Marl I	Deposits (B15)	<u>/</u>	Presence of Iron (C4)	f Reduced	Microtopographic Relief (D4)
ediment Deposits (B2	2) _ N		ogen Sulfide (C1)		Salt Deposi	its (C5)	FAC-Neutral Test (D5)
ift Deposits (B3)	Ϋ́		Season r Table (C2)^	1_	Notes:		
gal Mat or Crust (B4))_/_	Other	r (Explain in Notes):			
on Deposits (B5)	N			20-2			vi de la companya de
of an Man - Day	4 (V/AI):	/ 5	tenth (in):	14.5		No. of the second	
urface Water Present ater Table Present (epth (in): (e Depth (in): Hopain	table ex	JEHED to re	rology Present (Y/N)	:
aturation Present (Y/I			Depth (in): \$2.3		EC: 20	PH 4.6	-1

AQUATIC SITE ASSESSMENT DATA FORM

VEGETATION VARIABLES P= Plot, M= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Forested-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed
Percent Cover (P): Tree (>5 dbh, >6m tall) Sapling (<5 dbh, <6m tall)
Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) 80%) Very High Density (80-100%) A
Interspersion of Cover & Open Water (P): 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover/_
Dead Woody Material (P): Low Abundance (0-25% of surface)X
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) X High (small groupings, diverse and interspersed)
HGM Class (P): Slope Flat_X Lacustrine Fringe Depressional
SOIL VARIABLES
Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty X. Mineral: Clayey
HYDROLOGIC VARIABLES
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Outlet Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Outlet Perennial Outlet Perennial Inlet/Intermittent Inlet/Intermitt
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/No Outlet Perennial Outlet
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Pe
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Per
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermitte
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermi
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet
Inlet/Outlet Class (P): No Inlet/Outlet

Crew Chief QA/QC check: J Brownlee

GPS Technician QA/QC check:

N

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Fe	atur	e ID: W 106HT019 Field Target: 276 Date: 6-11-16
Fo	r all	items not checked, please provide detailed explanation in the notes section of data form.
	1.	Site Description
		Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
	2.	Vegetation
		At least 80% of onsite vegetation has been keyed to species, or collected for later identification? Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct? All dominant species have been determined and recorded per strata? Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
	3.	Soil
		Soil profile is complete? Appropriate hydric soil indicators are marked?
	4.	Hydrology
		Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
	5.	Functions and Values
		Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
	6.	Field Logbook
		Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
	7.	Maps
		Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

X Kaley Volper X halen Valger 6-12-16
Wetland Scientist (print) Signature / Date

X JBrounlee

Signature / Da

SITE DESCRIPTION				
Survey Type: Centerline Acc	ess Road (explain) \(\frac{1}{2} \) Othe	r (explain)	Field Target: 247	Map #: <u>77</u> Map Date: <u>5.27/6</u>
Date: 6-12-16	Project Name: Alaska LNG		Feature Id	WOGHTOZO
Investigators: Jessie B	rownless. Kal	PM YOLF	ec	Team No.: WWG
State: Alaska	Region: Alaska	Milepost:	526	16
Latitude: (13°50' 48.8	3078"N Lon	gitude: 49º 1'	9.4788"W	Datum: WGS84
Logbook No.:	Logbook Page No.: 42			020-001:4h~00
SITE PARAMETERS	· · · · · · · · · · · · · · · · · · ·	1000年11日本第二		
Subregion: Alaska Range		Landform (hi	illslope, terrace, hummock	s, etc.): Lowland
Slope (%): 0-3		Local relief (concave, convex, none):	Flat
Pre-mapped Alaska LNG/NWI classific	cation: 🗸	Evidence of	Wildlife Use: unqulate	hair and browse
Are climatic/hydrologic conditions on to Yes No. (if no ex		ar? Are "N	lormal Circumstances" pre	esent: plain-in-Notes.)
Are Vegetation, Soil, or H		urbed? No	(If yes, explain in Notes	s)
Are Vegetation, Soil, or H	ydrology Naturally Probler	matic? No	(If yes, explain in Notes	S.)
SUMMARY OF FINDINGS		The State of	建筑和外外	E MATERIAL MATERIAL
Hydrophytic Vegetation Present? Yes	No	Is the Sampled	Area within a Wetland?	Yes No
Hydric Soil Present? Yes	NoX	Wetland Type:	Ų	
Wetland Hydrology Present? Yes	NoX	Alaska Vegetatio	on Classification (Viereck):	11C1,1A3
on Dot Row. Court explored Plots Soil is this otrophic Redox Features in Jame a Parks 1	Bet hybrid Shru but and Dry & there way that most most most thin	blayer w/ = fore only she ixo soils do. Site soils	sprice increasioning slight pro No primary by	operties, soil is expus edrolgy seen.
	OUT ROW & AHTMA LAND &			

For any the way

WIOGHTOZO

Tree Stratum (Plot sizes: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Absolute % Cover	Dominant Species?	Indicator Status	No. of Dominant Species that are OBL, FACW, or FAC: 3
The state of the s	, , , , , , , , , , , , , , , , , , , ,	(Y/N)		Total Number of Dominant Species Across All Strata:
Picea Glauca	4		FACU	% Dominant Species that are OBL, FACW, or FAC: 75 (
9			3	Prevalence Index worksheet:
Total Cover	14			Total % Cover of: Multiply by:
50% of total cover	:	% of total cov	er:	OBL species:X 1 =
apling/Shrub Stratum (2.6)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 4
Dasiphora fruticasa	5.%		FAC	UPL species X 5 =
* Betula Nana/Glandulosa *	55	Y	FAC	Column Totals: 111 (A) 455 (B)
vaccinium uliginosum	20	Y	FAC	PI = B/A = 4.09
Picea Colavea	15		Annual Control	
Populus balsamifera	T		FACU	*Many of the Betwle have undergone much hybridizing, Betwlenana/glandulosa/No.
73	45	Y	FACW	The Detory Many Derry
Jan Dole Mrs	110			
Salix Outehra	8	113		
Salix Coloura X'	8		FAC	
Salix Coloura W'	1 chras			
Salix Coloura Samasp Salix 3 Samasp Vaccinium vitis-idaea Total Cover	R Ichras T 152		FAC	
Salix Coloura & Sandasp Vaccinium vitis-idaea	R Ichras T 152	0% of total cov	FAC	
Salix Glavea Some asp Vaccinium vitis - idaea Total Cover	R 1chras 152 :_76 20	0% of total cov	FAC	
Salix Coloura Sound as p Vaccinium vitis - idaea Total Cover 50% of total cover	R 1chras 152 :_76 20	Dominant Species? (Y/N)	FAC	Hydrophytic Vegetation Indicators: Dominance Test is > 50%
Salix (clause 3 Sambas por Salix (clause 3 Sambas por Sambas por Some as por Some as por Some as por Some as por Stratum (256)	R	Dominant Species?	FAC er: 30.4	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0
Salix (clause a Same as p Vaccinium vitis - idaea Total Cover 50% of total cover GETATION (use scientific names of plants orb Stratum (26) Cornus Canadensis	R	Dominant Species?	FAC er: 30,4 Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0
Salix Glavea Some as p Vaccinium vitis - idaea Total Cover 50% of total cover EGETATION (use scientific names of plants erb Stratum (750') Cornus Canadensis Sangvisorba canadensis	R	Dominant Species?	FAC Indicator Status FACU 7	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in
Salix Coloura Some as p Salix Some as p Vaccinium Vitis - idaea Total Cover 50% of total cover EGETATION (use scientific names of plants erb Stratum (7.0) Cornus Canadensis Sanguisarba canadensis Calamagnostis canadensis	R	Dominant Species?	FAC Indicator Status FACU FACU FACU	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain)
Salix Glavea Salix Salix Samaap Total Cover 50% of total cover EGETATION (use scientific names of plants erb Stratum (756) Cornus Canadensis Sanguisarba canadensis Calamagrastis canadensis Carex sp	R	Dominant Species?	FAC Indicator Status FACU FACU FACU	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain)
Salix Glavea Salix Salix Sama as p Vaccinium vitis-idaea Total Cover 50% of total cover EGETATION (use scientific names of plants erb Stratum (256) Cornus Canadensis Sanguisarba canadensis Calamagnostis canadensis Canax sp Grass sp	R	Dominant Species?	FAC Indicator Status FACU FACU FACU	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
Salix Glavea Salix Salix Samkasp Vaccinium Vitis-idaea Total Cover 50% of total cover EGETATION (use scientific names of plants erb Stratum (7.6) Cornus Canadensis Sanguisarba canadensis Calamagnostis canadensis Carex sp Grasssp	R	Dominant Species?	FAC Indicator Status FACU FACU FACU	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
Salix (clave a Sama as possible of some as possible of total cover some scientific names of plants of Stratum (250') Cornus Canadensis Sanguisorba canadensis Calamagnshis canadensis Carex sp	R	Dominant Species?	FAC Indicator Status FACU FACU FACU	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic.
Salix Colavea Salix Salix Sama as p Vaccinium Vitis-idaea Total Cover 50% of total cover EGETATION (use scientific names of plants erb Stratum (7.0) Cornus Canadensis Sanguisarba canadensis Calamagnostis canadensis Carex sp Grasssp	R	Dominant Species?	FAC Indicator Status FACU FACU FACU	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic.
Salix Colavea Salix Salix Sama as p Vaccinium Vitis-idaea Total Cover 50% of total cover EGETATION (use scientific names of plants erb Stratum (7.6) Cornus Canadensis Canadensis Canadensis Canax sp Grass sp	R	Dominant Species?	FAC Indicator Status FACU FACU FACU	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
Salix Colavea Salix Salix Sama as p Vaccinium Vitis-idaea Total Cover 50% of total cover EGETATION (use scientific names of plants erb Stratum (7.0) Cornus Canadensis Sanguisarba canadensis Calamagnostis canadensis Carex sp Grasssp	R	Dominant Species?	FAC Indicator Status FACU FACU FACU	Hydrophytic Vegetation Indicators:

W1064T020

SOIL									
SOIL PROFILI	E DESCRIPTION;	(Describe	to the depth neede	d to docur	ment the in	dicator or co	nfirm the absence	of indicators.)	
Depth	Matrix		Redox Features						
nches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ² .	Texture	Notes	
De 0-3								1/2 was throw horizon is to	In S
3-4	10-184/1	100					V. Fine Candy los	m deposit likely from R	000
ul 4-11	104R4/2	30	7.54R 4/6	20	COA	Matrix	Gravelly silf lan	Coravele ~15%	
	2.545/a	30	754R 3/4	20	can	matrix			
N2 11-24	104R4/2	90	101R 5/40	10	con (FAIN)	Matrix	extremely George	The Saudy loon	
Type: C=Con	centration D=Depl	etion. RM	/I=Reduced Matrix, (CS=Cover	red or Coat	ed Sand Gra	ins. ² Location:	PL=Pore Lining, M=Matrix.	
	INDICATORS	1 10000	And Selection Market Selection		WIND SEE	Non-State Line	The same of the sa	OR PROBLEMATIC HYDRIC SOIL	S ³
The latest and the la	tel (A1)/	Mary Mary 1	Alaska Gleye	1 (A13)	1/		Alaska Color Ch	ange (TA4)⁴/	
listic Epipedo			Alaska Redox		N		Alaska Alpine S		
Black Histic (A			Alaska Gleyer		A15) A/	+1	Alaska Redox w		
		-	Alaska Gleyel	1 F 01 E3 (F	-(13) <u>/(</u>	_		vithout 5Y Hue or Redder Underlyin	ng
Hydrogen Sulfi	ide (A4) /V	-					Layer_ //		
	face (A12) /						Other (Explain i	n Notes) pe position must be present unless	
<u> </u>	er (if present): Typ	oe:	Ν	Depth (ind	cnes):				
lydric Soil Pi	resent (Y/N):						t. Sedimen Came R	tobserved in organic	lay
Hydric Soil Pr	resent (Y/N):	hie (si		eative its	KK H	hroughor	t. Sedimen Come for INDICATORS (2)		(a)
Hydric Soil Provides: Soil/	resent (Y/N): 15 Hixotrop PRIMARY INDICA	hic (s,	lightly Neg	eative its	KK to	hroughor		The state of the s	(4)
Hydric Soil Prolotes: Soil/HYDROLOGY	PRIMARY INDICA (A1)	ATORS (a	hightly Neg Becau any one indicator is rface Soil Cracks (B Indation Visible on A	cettve use its sufficient)	SE W Le	Aroughor ECONDARY ater-stained eaves (B9) _ rainage Patte	INDICATORS (2+	or more required) Stunted or Stressed	
lydric Soil Prolotes: Sor/	PRIMARY INDICA (A1) ble (A2)/	Su Inu (B)	hightly Neg Becau any one indicator is rface Soil Cracks (B Indation Visible on A	settive its	SE W Le gery Dr	Aroughor ECONDARY (ater-stained eaves (B9) _ rainage Patte xidized Rhizo ving Roots (C	erns (B10)/_ pspheres along (23)/_	Stunted or Stressed Plants (D1)/ Geomorphic Position (D2) Shallow Aquitard (D3)/	N N
Hydric Soil Provided in	PRIMARY INDICA (A1) ble (A2)	Su Inu (B) Sp Co	hight/y Neg Becausers on the second of the s	settive its	SE W Le gery Dr	CONDARY ater-stained eaves (B9) rainage Patterxidized Rhizo	erns (B10)/_ pspheres along (23)/_	Stunted or Stressed Plants (D1)/ Geomorphic Position (D2)	N
Hydric Soil Pi Notes: Say/ HYDROLOGY Surface Water High Water Ta Saturation (A3	PRIMARY INDICA (A1) ble (A2) N B1)	Surrors (a Surrors (B) Sp Co Ma	rface Soil Cracks (Bundation Visible on Art) arsely Vegetated ncave Surface (B8)	settive its	Step Dry	ECONDARY Pater-stained eaves (B9) rainage Patter exidized Rhizo ring Roots (Coresence of Roon (C4) alt Deposits (erns (B10)/ pspheres along C3)/ educed	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic	
Iydric Soil Pi Iotes: Ser/ IYDROLOGY Surface Water High Water Ta Saturation (A3 Vater Marks (I	PRIMARY INDICA (A1) ble (A2) B1) Osits (B2)	Su Inu (B7 Sp Co	Ingl. + /y Because Because Soil Cracks (Bundation Visible on Arr) arsely Vegetated neave Surface (B8) arri Deposits (B15) drogen Sulfide /	settive its	Step Dry	ECONDARY Pater-stained paves (B9) rainage Patter exidized Rhize ving Roots (Capence of Roots (C4)	erns (B10)/ pspheres along C3)/ educed	Stunted or Stressed Plants (D1)/ Geomorphic Position (D2) Shallow Aquitard (D3)/ Microtopographic Relief (D4)/	N N
Hydric Soil Pi Notes: Soi/ HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (I Sediment Dep	PRIMARY INDICA (A1) ble (A2) B1) osits (B2) (B3)	Sulfinum (B7 Sp Co	any one indicator is rface Soil Cracks (Bandation Visible on Ary) arsely Vegetated incave Surface (B8) ari Deposits (B15) drogen Sulfide or (C1) y-Season	settve ise its sufficient) 6) N erial Imag	Step Dry	ECONDARY Pater-stained eaves (B9) rainage Patter exidized Rhizo ring Roots (Coresence of Roon (C4) alt Deposits (erns (B10)/ pspheres along C3)/ educed	Stunted or Stressed Plants (D1)/ Geomorphic Position (D2) Shallow Aquitard (D3)/ Microtopographic Relief (D4)/	N
Aydric Soil Pilotes: Soil/ AYDROLOGY Surface Water High Water Ta Saturation (A3 Vater Marks (I) Sediment Dep	PRIMARY INDICA (A1) ble (A2) N osits (B2) rust (B4)	Sulfinum (B7 Sp Co	any one indicator is rface Soil Cracks (Bundation Visible on Ar) arsely Vegetated ncave Surface (B8) ari Deposits (B15) drogen Sulfide lor (C1) y-Season ater Table (C2)	settve ise its sufficient) 6) N erial Imag	Step Dry	ECONDARY Pater-stained eaves (B9) rainage Patter exidized Rhizo ring Roots (Coresence of Roon (C4) alt Deposits (erns (B10)/ pspheres along C3)/ educed	Stunted or Stressed Plants (D1)/ Geomorphic Position (D2) Shallow Aquitard (D3)/ Microtopographic Relief (D4)/	N N
Hydric Soil Pi Notes: Suf/ HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (I Sediment Dep Drift Deposits (Algal Mat or Coron Deposits (I	PRIMARY INDICA (A1) ble (A2) N osits (B2) rust (B4)	Sulfinum (B7 Sp Co	any one indicator is rface Soil Cracks (Bundation Visible on Ar) arsely Vegetated ncave Surface (B8) ari Deposits (B15) drogen Sulfide lor (C1) y-Season ater Table (C2)	settve ise its sufficient) 6) N erial Imag	Si VV Le gery Dr	ECONDARY fater-stained eaves (B9) rainage Patter exidized Rhizo form (C4) alt Deposits (on tes:	erns (B10)/ pspheres along 23)/ educed/ C5)/	Stunted or Stressed Plants (D1)/ Geomorphic Position (D2) Shallow Aquitard (D3)/ Microtopographic Relief (D4)/ FAC-Neutral Test (D5)/	
Hydric Soil Pi Notes: Suf/ HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (I Sediment Dep Drift Deposits (Algal Mat or Coron Deposits (I	PRIMARY INDICA (A1) ble (A2) (B3) rust (B4) Present (Y/N):	Sullinum (Br) Co	any one indicator is rface Soil Cracks (Bundation Visible on Argument of the Soil Cracks (Basel of Control of	settve ise its sufficient) 6) N erial Imag	Si VV Le gery Dr	ECONDARY fater-stained eaves (B9) rainage Patter exidized Rhizo form (C4) alt Deposits (on tes:	erns (B10)/ pspheres along C3)/ educed	Stunted or Stressed Plants (D1)/ Geomorphic Position (D2) Shallow Aquitard (D3)/ Microtopographic Relief (D4)/ FAC-Neutral Test (D5)/	N N
Hydric Soil Pi Notes: Suf/ HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (I Sediment Dep Drift Deposits (A) Algal Mat or Coron Deposits (Surface Water	PRIMARY INDICA (A1) ble (A2) (B3) rust (B4) Present (Y/N): resent (Y/N):	Sullinum (Br) Co	any one indicator is face Soil Cracks (Bundation Visible on Any) arsely Vegetated incave Surface (B8) ard Deposits (B15) drogen Sulfide for (C1) y-Season fater Table (C2) ther (Explain in Note:	settve ise its sufficient) 6) N erial Imag	Si VV Le gery Dr	ater-stained eaves (B9)	erns (B10)/ pspheres along 23)/ educed/ C5)/	Stunted or Stressed Plants (D1)/ Geomorphic Position (D2) Shallow Aquitard (D3)/ Microtopographic Relief (D4)/ FAC-Neutral Test (D5)/	N

AQUATIC SITE ASSESSMENT DATA FORM



VEGETATION VARIABLES PE Plot, N	= Matrix
Forested-Evergreen-Needle-leaved	Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) Tall herb (≥1m	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Moss-Lichen Floating Submerged
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)_	(0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattere	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or d or Peripheral Cover 1N/A
Plant Species Diversity (P): Low (< 5 plant s	species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none)	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover
Dead Woody Material (P): Low Abundance (Abundant (>50% of surface)	0-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large High (small groupings, diverse and intersperse	
HGM Class (P): Slope Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES	
	Histosol:Fibric Histosol:Hemic Histosol: Sapric
	Mineral: Silty Mineral: Clayey Mineral: Clayey
HYDROLOGIC VARIABLES	the second of th
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Perennial
Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S	onaîly Flooded, Temporarily Flooded, Saturated Semiperm. Flooded
Created /	Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)
Frequency of Overbank Flooding (P): No Ov	verbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs
Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow	Restricted Outflow Unrestricted Outflow
	rcumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading
	P): High Permeability Stratified Deposits Low Permeability Stratified Deposits
Basin Topographic Gradient (M): Low C Evidence of Seeps and Springs (P): No See	Gradient (<2%) High Gradient (≥2%) ps or Springs Seeps Observed Intermittent Spring Perennial Spring
LANDSCAPE VARIABLES (M)	
Wetland Juxtaposition: Wetland Isolate Only Connected Above Connected	d Wetlands within 400m, Not Connected Only Connected Below d Upstream & Downstream Unknown
Wetland Land Use: High Intensity (i.e., a	g.) Low Intensity (i.e. open space)
Watershed Land Use: 0-5% Rural	5-25% Urbanized >50% Urbanized
Size: (Small (<10 atras) Medic	ım (10-100 acres) しまでさくが0 acres)

Crew Chief QA/QC check:

GPS Technician QA/QC check:

JBrownlee

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Fe	ature	e ID: WIOGHTOZO Field Target: 242 Date: 6-12-16
		items not checked, please provide detailed explanation in the notes section of data form.
	1.	Site Description
		Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
	2.	Vegetation
		At least 80% of onsite vegetation has been keyed to species, or collected for later identification? Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct?
		All dominant species have been determined and recorded per strata? Indicator status is correct for each species?
		Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
	3.	Soil
		Soil profile is complete? Appropriate hydric soil indicators are marked?
	4.	Hydrology
		Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
	5.	Functions and Values
		Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
	6.	Field Logbook
		Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
	7.	Maps
		Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

X hales Wetland Scientist (print) Signature / Date

Wetland Scientist (print)

X. J Brownlee

Field Crew Chief (print)

Signature / Date

Survey Type: Centerline X Acce	ess Road (eyplain) Other (e	《公司》,然而是为《公司》,	ATTENDED	PERSONAL PROPERTY.	學數人學的
Date: (0 - \ 7 - \ 6	sas read (explain) etrici (e	explain) Field Targ	get: <u>239</u>	Мар #: <u>78</u> Мар [Date: 5.27 ·
7 1 - 1	Project Name: Alaska LNG	•	Feature Id:	WIDGHT	1507
Investigators: Jessie &	nownlee Kale	y Volger		Team No.: W	00
State: Alaska	Region: Alaska	Milepost: 533			
Latitude: (03° 47' 34.	89" N Longitu	ude: 148°55' 10.	.547%	Datum: WGS84	
Logbook No.:	Logbook Page No.: 42	Picture No.: PW(16HT0	+ 100-15	hru 00
SITE PARAMETERS	科尼亚的研究性型和经				
Subregion: ALASKA RAND	re	Landform (hillslope, terra	ce, hummock	s, etc.): Hillside	
Slope (%): 25 %		Local relief (concave, cor	vex, none):	convex	
Pre-mapped Alaska LNG/NWI classific	ation: U	Evidence of Wildlife Use:	NONE		
Are climatic/hydrologic conditions on th Yes(If no exp		Are "Normal Circur Yes X No			
Are Vegetation, Soil, or Hy	drology Significantly Disturb	ed? NoX(If yes, ex	plain in Notes)	
Are Vegetation, Soil, or Hy	drology Naturally Problemat	ic? No <u>人</u> (If yes, ex	plain in Notes	s.)	
SUMMARY OF FINDINGS	的/2012年,1913年,1913年 1913年至1913年,1913年	CONTRACTOR SERVICE (A)	深 均积		Carrie
Hydrophytic Vegetation Present? Yes_	No	Is the Sampled Area within	a Wetland?	Yeś	NoX
Hydric Soil Present? Yes_	NoX	Wetland Type: \bigcirc			
Wetland Hydrology Present? Yes_	NoX	Alaska Vegetation Classificat	ion (Viereck):	1A2,11B1	
Notes and Site Sketch: Please include	Directional & North Arrow, Centerli	ne, Length of feature, Distance	s from Cente	rline, Photo Locations	, and Survey
corridor.					
A.A.					

WETLAND DETERMINATION DATA FORM W106HT021

VEGETATION (use scientific names of pla	ints)			PRESIDENT AND
Tree Stratum (Plot sizes: (OO)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC:
1. Picea Colquea	.30	Y	FACU	% Dominant Species that are OBL, FACW, or FAC: 44 (A/E
2.				70 Dominant Species that are ODE, I ACW, OF I AC. (AVE
3.	- 15			Charles and the second of the second of
4.				Prevalence Index worksheet:
Total Cov				Total % Cover of: Multiply by:
50% of total cov	ver: 15 20	% of total cov	/er:	OBL species:X 1 =
Sapling/Shrub Stratum (26)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 15 $\times 2 = 30$ FAC species 104 $\times 3 = 312$ FACU species 38 $\times 4 = 152$
1. Alnus Viridis	-55	V	FAC	UPL species X 5 =
2. Linnaea borealis	5		FACU	Column Totals: 157 (A) 494 (B)
3. Pieca Colovea	T		FACU	PI = B/A = 3.14
4. Rosa acicularis	3		FACU	Moneses unifloral T FACU
5. Dasiphora Fruticosa	8		FAC	Empetrum nigrom S 8 FAC
6. Vaccinium vitis-idaea	3	7	FAC	Salv Arbusculaides S 15 FACE
7. Ribes to triste.	· I f		FAC	Arctous Alaine
8. Zhododendrum grvenlandikur	n 7		FAC	
9. Vaccinium uliasnosum	a		FAC	TAC
Total Cov 50% of total cov VEGETATION (use scientific names of plan	ver: <u>53.5</u> 20	9% of total cov	ver: 21.4	Boschniakia FT FACI
Herb Stratum (QC)	Absolute	Dominant	Indicator	Hydrophytic Vegetation Indicators:
	% Cover	Species? (Y/N)	Status	Dominance Test is > 50% Prevalence Index is ≤ 3.0
1. Equisetim prateise	3		FAC	Morphological Adaptations¹ (Provide supporting data in
2. Rubus Arcticus	2		FAC	Notes)
3. Valarian capitata	Ť		FAC	Problematic Hydrophytic Vegetation ¹ (Explain)
4. Corass 5P	3			¹ Indicators of hydric soil and wetland hydrology must be present unless
5 /	/			disturbed or problematic.
				THE RESIDENCE OF THE PARTY OF T
5 D / 10 / 1	7		16-17-C1.1	
6. Delphinium glancum	T 15	Y	FACW	% Bare Ground & under SCIE tree
5 D / 10 / 1	T 15	Y	FAC	
6. Delphinium glascum 7. Calamagrostis lapponica 8. Carex 357		Y		Cover of Wetland Bryophytes Total Cover of Bryophytes
6. Delphinium glascum 7. Calamagrostis lapponica 8. Carex 512		Y	FAC	% Cover of Wetland Bryophytes

5-11	THE RESERVE TO THE PARTY OF	-C-07-07-0	0,19,10	Salara Salara	S. Village	A MODELLAND	Alle Market Street Street	Call Die Donnland DVNII		
SOIL	PER CONTRACT			ture IC		THE THE PLAN	a and time the arts	Soil Pit Required (Y/N)		
		Describe	to the depth needed to	o docu	iment the i	ndicator or	confirm the absence	ce or indicators.)		
Deptil	Matrix	1 0/	Redox Features	0, 1	- 1	1 2	Tankuna	Mater		
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Notes		
0i 0-7								Dry Feather MOSS		
Oa 7-11	/					-		Moist organics - Not Mucky - just		
	104R 2/1	100						Frozen decomp		
Buf 15-20 1	10 412 3/1	IOD		C. E.		-		Frozen. Ice lenses		
		-			-			-		
						-				
1.Type: C=Conce	entration D=Denk	etion RN	l ∕l=Reduced Matrix, CS	=Cove	red or Coa	ted Sand C	Grains ² Location	: PL=Pore Lining, M=Matrix.		
HYDRIC SOIL IN	to a war to be a large	January 1	Treadsed Matrix, 66	2000	Break and	VIEW BANK		FOR PROBLEMATIC HYDRIC SOILS ³		
Histosol or Histel	CANADA SERVICE CONTRACTOR		Alaska Gleyed (A	413)	N	NAME OF STREET	THE PERSON NAMED IN COLUMN	Change (TA4) ⁴		
Histic Epipedon (-		Alaska Redox (A		N		Alaska Alpine			
Black Histic (A3)	-		Alaska Gleyed P	_			_	with 2.5Y Hue		
	7		Alaska Gleyeu F	ores (A13)		The second second	without 5Y Hue or Redder Underlying		
Hydrogen Sulfide	e (A4)					0	Layer_ N	_		
Thick Dark Surfa		_					Other (Explain			
One indicator of disturbed or prob		etation, o	ne primary indicator of	wetla	nd hydrolog	gy, and an	appropriate landsc	ape position must be present unless		
⁴ Give details of c	olor change in No									
Restrictive Layer	(if present): Typ	e:	De De	pth (in	iches): 00	ma Fre	13" C 13"			
Notes: Oa is Not	mucky but	is his	ghly decompos	sed.	, Not c	alling :	A 10			
HYDROLOGY P	RIMARY INDICA	TORS (a	any one indicator is suff	ficient)	S	ECONDAR	RY INDICATORS (2	2 or more required)		
Surface Water (A	(1) <u>/</u>	Su	rface Soil Cracks (B6)	٨		Vater-staine eaves (B9)		Stunted or Stressed Plants (D1)		
High Water Table	e (A2)/	Inu (B7	ndation Visible on Aeri	al Ima	gery D	rainage Pa	tterns (B10)/	Geomorphic Position (D2) _ N		
Saturation (A3)	N	Spa	arsely Vegetated ncave Surface (B8)	N ·			izospheres along (C3)	Shallow Aquitard (D3)		
Water Marks (B1)	Ма	rl Deposits (B15)/	1		Presence of Reduced Microtopographic Relief (D4)				
Sediment Deposi	its (B2)/V		drogen Sulfide or (C1)		s	Salt Deposits (C5) / FAC-Neutral Test (D5)				
Drift Deposits (B3	B)		/-Season Iter Table (C2)		N	otes:				
Algal Mat or Crust (B4) Other (Explain in Notes):					,					
Iron Deposits (B5	5)N		141							
HALL MOLLY				1 130		THE STREET	Control of the second			
Surface Water Pr	resent (Y/N):	N	Depth (in):	-	—	land U	alami Danas et 040	M. N		
Water Table Pres	sent (Y/N):	N	Depth (in):		Wet	land Hydr	ology Present (Y/I	N):		
Saturation Prese (includes capillar		V	Depth (in):	1	EC:					
Notes:										
								4		

AQUATIC SITE ASSESSMENT DATA FORM

VEGETATION VARIABLES P= Plot, M= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Forested-Evergreen-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Persistent Aquatic Bed
Percent Cover (P): Tree (>5 dbh, >6m tall) Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Dwarf shrub (<0.5m)
Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneyen Moderately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%)
Interspersion of Cover & Open Water (P): 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover >75% Scattered or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)
HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES
Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Inlet/Per
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Perennial Outlet Perennial Inlet/No Outlet Perennial Ou
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inle
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent I
Inlet/Outlet Class (P): No Inlet/Outlet
Inter/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet
Intet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet

O Brownice

GPS Technician QA/QC check:

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

-e	ature	eID: W1064T02/Field Target: 239 Date: 6-12-16
-o	r all .	items not checked, please provide detailed explanation in the notes section of data form.
		41
	1.	Site Description
		☐ Site description, site parameters and summary of findings are complete?☐ A detailed site sketch is included in logbook?
	2.	Vegetation
		 □ At least 80% of onsite vegetation has been keyed to species, or collected for later identification? □ Vegetation names are entered legibly for all strata present? □ Cover calculations are complete and correct? □ All dominant species have been determined and recorded per strata? □ Indicator status is correct for each species? □ Dominance Test and Prevalence Index have been completed?
		Dominance rest and revalence index have been completed:
	3.	Soil
		□ Soil profile is complete?□ Appropriate hydric soil indicators are marked?
	4.	Hydrology
		 □ Appropriate hydrology indicators are marked? □ Surface water, water table, and saturation depths are recorded if present?
	5.	Functions and Values
		☐ Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
	6.	Field Logbook
		 □ Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? □ Each logbook page is initialed and dated?
	7.	Maps
		□ Wetland boundaries have been corrected if necessary?□ Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
Two photos were taken for each Observation Point (vegetation/site overview)?

. 6.12.6

SITE DESCRIPTION	1.4. 数据的正写图。	A CHELDRANE	全面 国际 国际 国际	
Survey Type: Centerline	ess Road (explain) Other (e	explain)	Field Target: 225	Map #: <u>84</u> Map Date: <u>5.291</u> 6
Date: 6-12-16	Project Name: Alaska LNG		Feature Id	WIOGHTOZZ
Investigators: Sessie By	ownier kale	m VOIRE	25	Team No.: \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
State: Alaska	Region: Alaska	Milepost:	577.9	
Latitude: (63° 18' 41.	3562"N Longit	ude: 149º 11	'0.697"W	Datum: WGS84
Logbook No.:	Logbook Page No.: 47_	Picture No.:	P-W106H-	rozz-dol thru
SITE PARAMETERS				
Subregion: Alaska R	0.000	Landform (hil	llslope, terrace, hummock	s, etc.): Mand
Slope (%): 5 - 8 0/2	ow ege		concave, convex, none):	Convex
Pre-mapped Alaska LNG/NWI classific	ation:	Evidence of V	Wildlife Use: Now	
Are climatic/hydrologic conditions on the	e site typical for this time of year?	V	ormal Circumstances" pre	esent:
	olain in Notes) vdrology Significantly Disturb	ed? No X	No (If no, ex(If yes, explain in Notes	plain in Notes.)
Are Vegetation, Soil, or Hy Are Vegetation, Soil, or Hy		100	(If yes, explain in Note:	
SUMMARY OF FINDINGS	Waterally 1 Tobleman	A PAR LEGAL	0. 10. 42. 15.00 80.	A SULVISIAN DIVISIAN
Hydrophytic Vegetation Present? Yes_	X No	Is the Sampled	Area within a Wetland?	YesNoX
Tryurophylic Vegetation Tresent: Tes_		CB (000) 38 (000)		
Hydric Soil Present? Yes_	NoX	Wetland Type:	U .	9,-0
Wetland Hydrology Present? Yes_	NoX	Alaska Vegetatio	n Classification (Viereck)	1101
Notes and Site Sketch: Please include	Directional & North Arrow, Centerl	ine, Length of featu	ure, Distances from Cente	erline, Photo Locations, and Survey
corridor.	upund on alleria to till	Soils dois -	- Id to changling in	/ few Redox Features,
very gravelly soil. I	la siano of hydrology	1.	This attophic 4	// /cm Ass
Mound drops in eleve			s wet.	
See map for bounde	my and coding	1-1-1		e e
OP WIOGHTOZZ -OP	was in simular of	eg signat	here ~ 20' aw	ay and wet
rus.		G U		
Al Maria				
The state of the s	25	. ^		
		\		Marine
2				
To the state of th	7.7			
102	30			
JOHNTOSS	13.			
301	7551			

WETLAND DETERMINATION DATA FORM WIGHTOZZ

VEGETATION (use scientific names of plants) Lance			
Tree Stratum (Plot sizes: OO `	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: (A Total Number of Dominant Species Across All Strata: (B
1. Picca glanca	T		FACU	% Dominant Species that are OBL, FACW, or FAC: 100 (A/E
2. U				
3.			1	
4.				Prevalence Index worksheet:
Total Cover:				Total % Cover of: Multiply by:
50% of total cover:		r		OBL species: X1=
Sapling/Shrub Stratum (2Co)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 2 X2 = 42 FAC species: X3 = 252 FACU species: X4 = 4
1. Bewa nana	(60	Y	FAC	UPL species X 5 =
2. Vaccinium Wiainosum	15		FAC	Column Totals: 105 (A) 294 (B)
3. Empetam niarum	5		FAC	PI = B/A = 2 · 8
4. Vaccinium Vitis-idara	2		FAC	
5. Rhodebendan tomentour	20	Y	FACW	
6. Salix pulchra			FACW	
7. 50 lix sp	T			
8.				· ·
9.	100			7, 0
. Total Cover: 50% of total cover:	, , , , , , , ,	% of total cov	er: 21, Z	
VEGETATION (use scientific names of plants)		MAN 20		
Herb Stratum (ZG)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50%
1. Carex bigelowii	2		FAC	Y Prevalence Index is ≤ 3.0
2. farb so (composite)			_	Morphological Adaptations¹ (Provide supporting data in Notes)
3. Petasites frigidus	T		FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
4.				¹ Indicators of hydric soil and wetland hydrology must be present unless
5.				disturbed or problematic.
6.				
7.				% Bare Ground
8.				% Cover of Wetland Bryophytes
9.				Total Cover of Bryophytes + Lichen
0.			1.	% Cover of Water
Total Cover:				Hydrophytic Vegetation Present (Y/N):\ Notes: (If observed, list morphological adaptations below):
50% of total cover:	20'	% of total cov	er:	

WETLAND DETERMINATION DATA FORM WIOGHTOZZ

	Matrix		to the depth needed					- 4	5/1	
epth nches)	Color (moist)	1 %	Color (moist)	%	Type ¹	* Loc²		Texture	Notes	
C1: 01=5			Control (money)		71				Dry Mass organice	
01 0-2 De 2-4							3		Dry organics	_
	104R 3/2							V. Corevelly same	0	
	10484/3	910	546/1	3	Dep	RC	. ,	•		
			7.54R 5/4	1	com	M	0	fine sandy loa		
12 12-24	104R 5/2	100							evely loany sand	
Type: C=Cor	centration, D=Dept	etion, RN	//=Reduced Matrix, C	S=Cove	ered or Co	ated Sand	d Grai	ns. ² Location:	PL=Pore Lining, M=Matrix.	
YDRIC SOIL	INDICATORS	1000	E STATE OF	Elical	Barre 198	34	6.45	INDICATORS F	OR PROBLEMATIC HYDRIC SO	ILS
istosol or His	tel (A1)/		Alaska Gleyed	(A13) _	N			Alaska Color Cl	nange (TA4) ⁴	
listic Epipedo	n (A2)/		Alaska Redox	(A14) _	N	,		Alaska Alpine S	wales (TA5)	
lack Histic (A	.3)	14	Alaska Gleyed	l Pores ((A15) _ <i>N</i>				vith 2.5Y Hue/	
lydrogen Sulf	ide (A4)/\							Alaska Gleyed	without 5Y Hue or Redder Underly	ring
	rface (A12) _/							Other (Explain i	n Notes)	
lestrictive Lay	of color change in Nover (if present): Type	otes. De:	- N -	Depth (ir	nches):	_	-			
Restrictive Lay	resent (Y/N):	De:	-N-				the 1	propertie	0.	
lydric Soil P lotes: Third Ver	resent (Y/N): obraphic Sail y Few Redo	but		Not .	display	ying o			or more required)	
Nestrictive Lay Nydric Soil P Notes: Third Ver	resent (Y/N): resent (Y/N): otraphic Soil Y Few Redo	ATORS (a	it's dry 50 advws. any one indicator is surface Soil Cracks (Be	wot of sufficient	displey	ying o	ARY I		The second secon	
Nestrictive Lay Nydric Soil P Notes: Thirm Ver NYDROLOGY Surface Water	resent (Y/N): resent (Y/N):	ATORS (a	any one indicator is surface Soil Cracks (Building Visible on A	wot of sufficient	displey	SECOND. Water-sta Leaves (B	ARY I ined (9) Patter	ndicators (2	or more required) Stunted or Stressed	
Iydric Soil P lotes: Thire Ver IYDROLOGY Surface Water ligh Water Ta	resent (Y/N): resent (Y	Su Int. (B)	any one indicator is surface Soil Cracks (Building Visible on A	wot of sufficient (5) N	displey	SECOND. Water-sta Leaves (B	ARY I ined i9) Patter	rns (B10)	Stunted or Stressed Plants (D1)/ Geomorphic Position (D2) Shallow Aquitard (D3)/	~
Indes: This ver Information (A3	resent (Y/N):	Su Int. (B) Sp	any one indicator is surface Soil Cracks (Buildation Visible on A	wot of sufficient (5) N	displey	SECOND. Water-sta Leaves (B Drainage	ARY I ined i9) Patter Rhizosots (C	rns (B10)/ spheres along	Stunted or Stressed Plants (D1)/ Geomorphic Position (D2)	~
Indes: This ver Indes: This ve	resent (Y/N): resent (Y/N): resent (Y/N): resent (Y/N): resent (Y/N): Resont (Y/N):	Su Int. (B) Sp Co	any one indicator is surface Soil Cracks (Bundation Visible on A	wot of sufficient (5) N	displey	SECOND. Water-sta Leaves (B Drainage Oxidized I Living Roo	Patter Rhizosots (C: of Re	rns (B10)	Stunted or Stressed Plants (D1)/ Geomorphic Position (D2) Shallow Aquitard (D3)/ Microtopographic	
Agestrictive Lay Aydric Soil P Ayd	resent (Y/N): resent (Y/N): resent (Y/N): resent (Y/N): PRIMARY INDICA (A1) ble (A2) B1) osits (B2)	Surpression of the state of the	any one indicator is surface Soil Cracks (Brandation Visible on Ary) arsely Vegetated incave Surface (B8) arl Deposits (B15)	wot of sufficient (5) N	display	SECOND. Water-sta Leaves (B Drainage Oxidized I Living Roo Presence Iron (C4)	Patter Rhizosots (C: of Re	rns (B10)	Stunted or Stressed Plants (D1)/ Geomorphic Position (D2) Shallow Aquitard (D3)/ Microtopographic Relief (D4)/	
Hydric Soil P Hydric	resent (Y/N):	Surpression of the state of the	any one indicator is surface Soil Cracks (Bundation Visible on A r) arsely Vegetated ancave Surface (B8) arl Deposits (B15) drogen Sulfide / Jor (C1) y-Season	sufficient S) N erial Ima	display	SECOND. Water-sta Leaves (B Drainage Oxidized I Living Roo Presence Iron (C4) Salt Depo	Patter Rhizosots (C: of Re	rns (B10)	Stunted or Stressed Plants (D1)/ Geomorphic Position (D2) Shallow Aquitard (D3)/ Microtopographic Relief (D4)/	
Hydric Soil P Jotes: Thirm Ver HYDROLOGY Surface Water Joint Marks (Sediment Dep Drift Deposits Algal Mat or C	resent (Y/N):	Surpression of the state of the	any one indicator is surface Soil Cracks (Bundation Visible on A7) arsely Vegetated incave Surface (B8) and Deposits (B15) drogen Sulfide for (C1) y-Season ater Table (C2)	sufficient S) N erial Ima	display	SECOND. Water-sta Leaves (B Drainage Oxidized I Living Roo Presence Iron (C4) Salt Depo	Patter Rhizosots (C: of Re	rns (B10)	Stunted or Stressed Plants (D1)/ Geomorphic Position (D2) Shallow Aquitard (D3)/ Microtopographic Relief (D4)/	
Alydric Soil P Hydric Soil P Hydri	resent (Y/N):	Su Int. (B' Sp Co Dr. Wa	any one indicator is surface Soil Cracks (Buindation Visible on A 7) arsely Vegetated incave Surface (B8) arl Deposits (B15) drogen Sulfide / Joy-Season ater Table (C2) her (Explain in Notes	sufficient S) N erial Ima	display	SECOND. Water-sta Leaves (B Drainage Oxidized I Living Roo Presence Iron (C4) Salt Depo	Patter Rhizosots (C: of Re	rns (B10)	Stunted or Stressed Plants (D1)/ Geomorphic Position (D2) Shallow Aquitard (D3)/ Microtopographic Relief (D4)/	
Hydric Soil P Notes: This Ver HYDROLOGY Gurface Water High Water Ta Saturation (A3 Vater Marks (Gediment Dep Drift Deposits Algal Mat or C Tron Deposits	resent (Y/N): PRIMARY INDICA (A1) B1) W (B3) Present (Y/N): Present (Y/N):	Surpression of the state of the	any one indicator is surface Soil Cracks (Bundation Visible on A7) arsely Vegetated incave Surface (B8) and Deposits (B15) drogen Sulfide for (C1) y-Season ater Table (C2)	sufficient S) N erial Ima	displey	SECOND. Water-sta Leaves (B Drainage Oxidized I Living Roo Presence Iron (C4) Salt Depo Notes:	ARY I inned (9)	rns (B10)	Stunted or Stressed Plants (D1)/ Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)	

SSOTHDOIW

AQUATIC SITE ASSESSMENT DATA FORM

VEGETATION VARIABLES P= Plot, N	= watrix
Forested-Evergreen-Needle-leaved	Scrub Shrub-Evergreen-Needle-leaved
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) Tall herb (≥1	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Moss-Lichen Floating Submerged
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): EvenHighly UpevenModerately even
Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)	(0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & ⊅pen Water (P): Peripheral Cover >75% ocattere	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or d or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant s	species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none)	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover
Dead Woody Material (P): Low Abundance (Abundant (>50% of surface)	0-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large High (small groupings, diverse and intersperse	patches, concentric rings) Moderate (broken irregular rings)ed)
HGM Class (P): Slope Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
The state of the s	
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy	Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey
Outlet Intermittent Inlet/Intermittent	
Inlet/Outlet Class (P): No Inlet/Outlet Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perenn
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Onally Flooded, Temporarily Flooded, Saturated Semiperm. Flooded De Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment
Inlet/Outlet Class (P): No Inlet/Outlet Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Onally Flooded, Temporarily Flooded, Saturated Semiperm. Flooded
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No O	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Ir Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent_ Frequency of Overbank Flooding (P): No Or Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Ci	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Peren
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Ir Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent_ Frequency of Overbank Flooding (P): No Or Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Ci	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Ir Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent_ Frequency of Overbank Flooding (P): No Or Return Interval >5 yrs_ Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface/water Ci Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Ir Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent_ Frequency of Overbank Flooding (P): No Or Return Interval >5 yrs_ Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface/water Ci Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permoable Basin Topographic Gradient (M): Low 6	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Ir Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent_ Frequency of Overbank Flooding (P): No Or Return Interval >5 yrs_ Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Ci Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable Basin Topographic Gradient (M): Low G Evidence of Seeps and Springs (P): No See	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No
Inlet/Outlet Class (P): No Inlet/Outlet Outlet	No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet	No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet	No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet	No Inlet/Intermittent Outlet

JBrownle &

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Featur	re ID: WOUH TOZZ	Field Target: 225	Date: 6.12.110
100	ll items not checked, please provid		notes section of data form.
	Service Servic	1 6	
		GC *	_
- ×	. Site Description		
1.	. Site Description		
	☑ Site description, site para	meters and summary of fi	ndings are complete?
	A detailed site sketch is in	ncluded in logbook?	
2.	. Vegetation		4.7
	At least 80% of onsite veridentification?	getation has been keyed t	o species, or collected for later
	☑ Vegetation names are en	tered legibly for all strata	present?
	Cover calculations are co	emplete and correct?	
	All dominant species hav Indicator status is correct	e been determined and re	corded per strata?
	Dominance Test and Pre	valence Index have been	completed?
3.	. Soil		
	Soil profile is complete?		
	Appropriate hydric soil in	dicators are marked?	
	Liveline la ma		
4.	. Hydrology		
	Appropriate hydrology inc	dicators are marked?	
	Surface water, water table	le, and saturation depths a	are recorded if present?
5.	. Functions and Values		
0.		Tangan yan ta	
	区 Vegetation, soil, hydrolog wetland?	gic variables, and landsca	pe variables complete if site is a
	Field Lambook		
ъ.	. Field Logbook		
	Notes have been recorde	ed at each site, including g	general description, sketch, and
		wetland boundary as app	ropriate?
	Each logbook page is init	lialed and dated?	
7.	. Maps		
	TA Madamal bassadanian bass	a boon corrected if necess	eary?
	Wetland boundaries nave Maps are initialed and da	e been corrected if necessated?	saiy:

₿. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

X hallen Volper X hallen Valper 6- 12-16
Wetland Scientist (print) Signature / Date

X JBrownlee

Field Crew Chief (print)

Signature (Date

WETLAND DETERMINATION DATA FORM New Contwell 1 SITE DESCRIPTION Map #: 16 Map Date: 7, 15 1 Field Target: Other (explain) X Survey Type: Centerline ___ Access Road (explain)_ Feature Id: WIOLEHTOZ3 Project Name: Alaska LNG Date: 7. 27. 110 Team No.: W106 Investigators: Jessie Brown lee, Kim Holmes Milepost: State: Alaska 149 00 38.25" Longitude: Latitude: 63°51'21. 393 Logbook Page No.: Picture No.: P-WIOGHTOZ3-001 thru -004 Logbook No.: SITE PARAMETERS Lowland Landform (hillslope, terrace, hummocks, etc.): Subregion: Local relief (concave, convex, none): Flat to stightly concave Slope (%): Evidence of Wildlife Use: NONE Pre-mapped Alaska LNG/NWI classification: PSSIB II B 2, II CI Are climatic/hydrologic conditions on the site typical for this time of year? Are "Normal Circumstances" present: (If no, explain in Notes.) (if no explain in Notes) No_ ∠ (If yes, explain in Notes) Are Vegetation____, Soil___ Significantly Disturbed? , or Hydrology (If yes, explain in Notes.) , or Hydrology Naturally Problematic? Are Vegetation , Soil SUMMARY OF FINDINGS Is the Sampled Area within a Wetland? Hydrophytic Vegetation Present? Yes_ Wetland Type: PSS4/1B Hydric Soil Present? Wetland Hydrology Present? Alaska Vegetation Classification (Viereck): | A 2 , 11 C 2 Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey Open Pie Gla Forest, Majority of trees are 10-20' but healthy a not stunted. Bet Nan dominates the shrub commonity. Thick feather moss abounds. Sall was saturated and sluffing of into hole from the 8-10" larger. Positive XX reaction through out the Bowl horizon but it was faint. Sites was choosen to avoid no go' area all around. We were unable to walk entire polygon due to recess restrictions. While this site had marginal wetland indicators the mapped polygon looked like it was getting wetter from what visible from Site here. NA

VEGETATION (use scientific names of plants	5)	8 6 6		
Tree Stratum (Plot sizes: /OC)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: 7 (A) Tatal Number of Dominant Species Associated As
1. Picea Glavea	.5	y	FACU	Total Number of Dominant Species Across All Strata:(B) % Dominant Species that are OBL, FACW, or FAC:(A/B)
2.		36 T		A Bolliman openio that are obligation, or the Time (AB)
3.				
4.				Prevalence Index worksheet:
Total Cover	<u> </u>			Total % Cover of: Multiply by:
50% of total cover	: <u>2.5</u> 20	% of total cov	er:	OBL species:X 1 =
Sapling/Shrub Stratum (2(,)	Absolute	Dominant	Indicator	FACW species: 28 x 2 = 50
	% Cover	Species? (Y/N)	Status	FAC species $\frac{104}{35}$ \times
1. Rhododendrom tomentosum	125	Y	FACUS	UPL species X 5 =
2. Betula Nava	45	Y	FAC	Column Totals: 167 (A) 308 (B)
3. vaccinium vitis-idaea	20	У	FHC	PI = B/A = 3.04
4. Vaccinum oliginosum	30	7	FAC	
5. Picea Colauca	30	1	FACU	
6. Salix bebbiana	- 1		FAC	
7. Salix glower	7			
8.				
9.				
Total Cover:				
50% of total cover:	75.5 20	% of total cove	er: <u>30 · 2</u>	
1.00				7 100

Herb Stratum (Z()	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators:
1. Petisites Erisidus	3	Y	FACUS	Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data
2. Equisety a sylvatic um	3	Y	FAC	Notes)
1. Petisites Erigidus 2. Equisetum sylvatic um 3. Carex bige laurii 4.	5	¥	FAC	Problematic Hydrophytic Vegetation ¹ (Explain) 1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
6. 7. 8.		a 5		% Bare Ground % Cover of Wetland Bryophytes
9.				Total Cover of Bryophytes
Total Cover		% of total cove	er:_Z,2_	Hydrophytic Vegetation Present (Y/N):/ Notes: (If observed, list morphological adaptations below):

true definition for DZ

Soil Pit Required (Y/N) Feature ID SOIL SOIL PROFILE DESCRIPTION: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features Matrix Depth Loc2 Notes (inches) Color (moist) Type1 Texture Color (moist) Dry Feathern oss 0-4 07 Dry Feather MOS 4-10 Oc Damp organic/mineral OeA 6-7 concentrations are faint + hard to 104R. 3/20 Bul 7-19 7.54R 3/2 95 very Fine sandy loam Bw2 19-24 2.549/3 100 Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix. INDICATORS FOR PROBLEMATIC HYDRIC SOILS HYDRIC SOIL INDICATORS Alaska Gleyed (A13) Histosol or Histel (A1) Alaska Alpine Swales (TA5) Alaska Redox (A14) Histic Epipedon (A2) Alaska Redox with 2.5Y Hue Alaska Gleyed Pores (A15) Black Histic (A3) Alaska Gleyed without 5Y Hue or Redder Underlying Hydrogen Sulfide (A4) Layer_ Other (Explain in Notes) Yes Thick Dark Surface (A12) One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic. Give details of color change in Notes. Depth (inches): Restrictive Layer (if present): Type: Hydric Soil Present (Y/N): Yeo Positive XX in the Bulhorizon, somewhat frint though, SECONDARY INDICATORS (2 or more required) HYDROLOGY PRIMARY INDICATORS (any one indicator is sufficient) Stunted or Stressed Water-stained Surface Soil Cracks (B6) __ /V Surface Water (A1) Plants (D1) ____/ Leaves (B9) Geomorphic Position (D2) M 55 Inundation Visible on Aerial Imagery Drainage Patterns (B10) __ High Water Table (A2) Oxidized Rhizospheres, along Sparsely Vegetated Shallow Aquitard (D3) _____/ Saturation (A3) Living Roots (C3) ____ Concave Surface (B8) Presence of Reduced Microtopographic Marl Deposits (B15) Water Marks (B1) _____ Relief (D4) Iron (C4)_ Hydrogen Sulfide FAC-Neutral Test (D5) Salt Deposits (C5) N Sediment Deposits (B2) Odor (C1) Notes: Dry-Season Drift Deposits (B3)_ Water Table (C2) Other (Explain in Notes): Algal Mat or Crust (B4) Iron Deposits (B5) Surface Water Present (Y/N): Depth (in): Wetland Hydrology Present (Y/N): Depth (in): Water Table Present (Y/N): Depth (in): 8 -/0 11 Saturation Present (Y/N): (includes capillary fringe) Notes: Seep / 5 laffing soil from 8-10". Soil gets drien with depth.
Site is relative Lowland in relation to higher ground to North & South but not in

VEGETATION VARIABLES P= Plot, M= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed
Percent Cover (P): Tree (>5 dbh, >6m tall) 5 Sapling (<5 dbh, <6m tall) 30 Tall shrub (2-6m) Short shrub (0.5-2m) 35 Dwarf shrub (<0.5m) Tall herb (≥1m) Short herb (<1m) Moss-Lichen Floating Submerged
Number of Wetland Types (M):/_ Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) 80%) Very High Density (80-100%) Image: Control of the control of
Interspersion of Cover & Open Water (P): 100% Cover or Open Water X <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg. Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)
HGM Class (P): Slope FlatX Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Inl
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated
Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Created
Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)
Frequency of Overbank Flooding (P): No Overbank Flooding <u>X</u> Return Interval 1-2 yrs Return Interval 2-5 yrs Return Interval >5 yrs
Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow
Water pH (P): No surface water
Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits
Basin Topographic Gradient (M): Low Gradient (<2%)
LANDSCAPE VARIABLES (M)
Wetland Juxtaposition: Wetland Isolated X Wetlands within 400m, Not Connected Only Connected Below Only Connected Upstream & Downstream Unknown
Wetland Land Use: High Intensity (i.e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)
Watershed Land Use: 0-5% Rural 5-25% Urbanized 25-50% Urbanized >50% Urbanized
Siza: Small (<10 acres) X Modium (1) 100 acres) Large (>100 acres)

Crew Chief QA/QC check:

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Feature ID: WIOGHTOZ3 Field Target: Cantwell Date: 7.27./6

For all items not checked, please provide detailed explanation in the notes section of data form.

1. Site Description

- Site description, site parameters and summary of findings are complete?
- A detailed site sketch is included in logbook?

2. Vegetation

- At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
- Wegetation names are entered legibly for all strata present?
- Cover calculations are complete and correct?
- All dominant species have been determined and recorded per strata?
- Indicator status is correct for each species?
- Dominance Test and Prevalence Index have been completed?

3. Soil

- Soil profile is complete?
- Appropriate hydric soil indicators are marked?

4. Hydrology

- Appropriate hydrology indicators are marked?
- Surface water, water table, and saturation depths are recorded if present?

5. Functions and Values

Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?

6. Field Logbook

- Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
- ☑ Each logbook page is initialed and dated?

7. Maps

- Wetland boundaries have been corrected if necessary?
- Maps are initialed and dated?

8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- ☑ Two photos were taken for each Observation Point (vegetation/site overview)?

X	X
Wetland Scientist (print)	Signature / Date

X Jessie Brownlee

Field Crew Chief (print)

Signature / Date

100	and the same of	1	6.13.16						
SOIL	中国国际		The second secon	eature ID				_ Soil Pit Required (Y/N)	
SOIL PROFILE	DESCRIPTION: (D	Describe	to the depth needed	d to docu	ıment the	indicator or co	onfirm the absence	of indicators.)	
Depth	Matrix		Redox Features				1.5		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	-Texture	Notes	
0i 0-4								Dry father moss	
no 4-10		18						damp organics	
A 6-9	10YR 3/1	100					Silt loam		
Bulf 9-11.5	10YR 4/2	80	10 YR 4/3	20	Com	m	fine soud , look	Con are a interface w/upper hor	
Baf 11.5-14	10YR 4/1	100					Silfloom		
B61284-20	10 YR 4/3	80	7.54R 4/4	20	COM	M	loany sand	con are cinterface w/upper Bg he	
¹Type: C=Con	centration, D=Deple	tion, RN	/I=Reduced Matrix, C	S=Cove	red or Co	ated Sand Gr		PL=Pore Lining, M=Matrix.	
HYDRIC SOIL	INDICATORS	ALIRI	A ASSESSMENT	1224	A 10 8	Section 1	INDICATORS F	OR PROBLEMATIC HYDRIC SOILS	
Histosol or Hist	el (A1)/		Alaska Gleyed	I (A13) _	N		Alaska Color Ch	nange (TA4) ⁴	
Histic Epipedor	n (A2)/		Alaska Redox	(A14) _	N		Alaska Alpine S	wales (TA5)	
Black Histic (A	-		Alaska Gleyed	Pores (A15) 🙏	/	Alaska Redox w	vith 2.5Y Hue/V	
Hydrogen Sulfi			200				Alaska Gleyed v	without 5Y Hue or Redder Underlying	
						-	Layer /V	÷	
Thick Dark Sur							Other (Explain i		
One indicator		tation, o	ne primary indicator	of wetla	nd hydrolo	ogy, and an ap	propriate landscap	pe position must be present unless	
	color change in No	tes.			10.5			•	
Restrictive Lay	er (if present): Type	:	- Yes-	Depth (in	nches):	9 # :	'	As .	
0	five XX thr	U			li.			Committee to the state of the s	
HYDROLOGY	PRIMARY INDICAT	TORS (a	any one indicator is s	ufficient)	SECONDARY	INDICATORS (2	or more required)	
Surface Water	(A1)/	Su	rface Soil Çracks (Be	5) <u>/</u>		Water-stained Leaves (B9) _	N	Stunted or Stressed Plants (D1)	
High Water Tal	ole (A2)		Indation Visible on A	erial Ima	igery	Drainage Patte	erns (B10)/	Geomorphic Position (D2) _ N	
Saturation (A3)	7		arsely Vegetated ncave Surface (B8)	N		Oxidized Rhize Living Roots (ospheres along C3)	Shallow Aquitard (D3)	
Water Marks (E	B1)/J	Ма	rl Deposits (B15)	eposits (B15) / Presence of R Iron (C4) /				Microtopographic Relief (D4)	
Sediment Depo	osits (B2)/		drogen Sulfide, lor (C1)			Salt Deposits (C5) N FAC-Neutral Test (D5) N			
Drift Deposits (B3) _ /		y-Season ater Table (C2)			Notes:			
Algal Mat or Cr	ust (B4)	ner (Explain in Notes	Explain in Notes):				and the same		
Iron Deposits (I	B5)/							17	
Matter Wall	PRINTED TO SERVICE SER	B. Carrie	The fall and	10 may 195		而就是自己的			
Surface Water	Present (Y/N):	/	Depth (in): -					V	
Water Table Pr	resent (Y/N):	,	Depth (in):		We	etland Hydrol	ogy Present (Y/N)):	
Saturation Pres	sent (Y/N):		Depth (in):	pth (in): 8 EC:					
Notes:	,								

SINE DESCRIPTION		ministra de dispersión	A Car	Albania de la la la participa de la companya de la				
Survey Type: Centerline K Acces	ss Road (explain) Other (e	xplain) X Fac (11) Field Targe	et: <u>Z45</u>	Map #: 74 Map Date: 5 27 16				
Date: 0-13-16	Project Name: Alaska LNG	1	Feature Id:	WIOGLHOOI				
Investigators: Jessip Bo	ownles, kale	1 Volper		Team No.: WO				
State: Alaska	Region: Alaska	Milepost: 5/9, 8						
Latitude: 63°56' 7.385	Z'I N Longitu	ide: 14905' 39.6	785 W	Datum: WGS84				
Logbook No.:	Logbook Page No.: 43		Picture No.: P_ W106 L H001					
SITE PARAMETERS		ANTERIOR METALEN	沙沙河南	Winds I make the water and				
Subregion: Alaska Ro	airae	Landform (hillslope, terrace	, hummocks	s, etc.): h:// < ide				
Slope (%): 5-8°/p		Local relief (concave, conv						
Pre-mapped Alaska LNG/NWI classifica	tion: U			or pu droppings				
Are climatic/hydrologic conditions on the Yes No (if no expl	site typical for this time of year? ain in Notes)	Are "Normal Circums		sent: olain in Notes.)				
Are Vegetation, Soil, or Hyd	Irology Significantly Disturbe	ed? No_X(If yes, expl	ain in Notes)	*				
Are Vegetation, Soil, or Hyd	Irology Naturally Problemati	c? No <u>X</u> (If yes, expl	ain in Notes	.)				
SUMMARY OF FINDINGS	THE RESERVEN	经验证 有限外提的机器分	2000					
Hydrophytic Vegetation Present? Yes_	No	Is the Sampled Area within a	Wetland?	Yes No(
Hydric Soil Present? Yes	NoX	Wetland Type:						
Wetland Hydrology Present? Yes	X No	Alaska Vegetation Classificatio	n (Viereck):	1.43,112/				
Notes and Site Sketch: Please include D corridor.			and the same of	The same of the sa				
Closed Bet Nan St	(nb community w)	20/ Pic 6/a	trees	a saplingo,				
1 - > dies celles								
CII	rost starting @ 9	inches and show	D. 5191	is of being				
Juturate & between	n 11-14 inches long	g enough durin	g the 9	HOW ing season				
for concentrations	to translocate about	re. a interface wy	A and	stration likely				
Frust melts away.	Soils did not reac	+ to XX. Corre	4 504	4 1 1 141				
Soils have seasonal first starting the growing season saturates between 11-14 inches long enough during the growing season for concentrations to translocate above a interface of A and below as frost melts away. Soils did not react to XX. Current saturation likely frost melts away. Soils did not react to XX. Current saturation likely due to day I /z of vain yesterday. After ~ 30 minutes the pit had a little water in it but not much a all in contrast to wide Hool-OP3 that immediately								
init but Not much a all in contrast to widelt 001-0P3 that immediately								
Started to Fill in my From 2" depth + with good Flow. Site is transitionezone and is wetland by "LHOOLOP3. Recommend site revisit.								
Site is transition zone	e and is wetland by	LHOOLOP3. Reco	mmend	site revisit.				
				- "				
				1 ± 1				
18		1.0		_				

W106LH001

	Absolute	Dominant	Indicator	Dominance Test worksheet:	ACTION OF THE PARTY OF THE PART
Tree Stratum (Plot sizes:Inrib)	% Cover	Species? (Y/N)	Status	No. of Dominant Species that are C	
Picea Glauca	,15	Y	FACU	Total Number of Dominant Species % Dominant Species that are OBL,	_
k [†]				Control of Charges and the	
				Prevalence Index worksheet:	
Total Cov				Total % Cover of:	Multiply by:
50% of total cov	ver: 7.5 20	% of total cov	er: 3	OBL species:X 1 =	
Sapling/Shrub Stratum (26)	Absolute	Dominant	Indicator	FACW species:X 2 =	
	% Cover	Species? (Y/N)	Status	FAC species 170 X 3 = FACU species 18 X 4 =	
Betula Mana	65	Y	FAC	UPL species X 5 =	
vaccinium uliginosum	15		FAC	Column Totals: 128 (A)	
vaccinium vitir-idaes	RO	Y	FAC	PI = B/A = 274	
Picea glaves	3		FACU	3	- 4
Betila hybrid	(3)		FAC	**	
	i promit				
	V Total				
Total Cov	er: \ 06				
500/ 51 1 1	er: 53 20	0/ of total cov	717	4.	

Herb Stratum (24)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50%			
1. Equisatum sylvaticum 2. Palamagrostis lapponica	7	Y	FAC	Prevalence Index is ≤ 3.0 — Morphological Adaptations¹ (Provide supporting data in			
3. Petasites Frigidus	T		FACW FAC FACU	Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.			
5. Mertensia pariculata	T						
6. Carex blackwit	5	7	FAC	Ø % Bare Ground			
7. Trientalis europaea 8. Stellaria (1)	7		FAC	% Cover of Wetland Bryophytes			
9.							
Total Cover:_ 50% of total cover:_		% of total cov	er: ,-4	Hydrophytic Vegetation Present (Y/N): Notes: (If observed, list morphological adaptations below):			

AQUATIC SITE ASSESSMENT DATA FORM



÷GE TATION VARIABLES P= Plot, I	M= Matrix
Forested-Evergreen-Needle-leaved	acking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Emergent-Non-persistent Emergent-
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) Tall herb (≥1	Sapling (<5 dbh, <6m tall)
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)	6 (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattere	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant	species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none)	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover
Dead Woody Material (P): Low Abundance Abundant (>50% of surface)	(0-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large High (small groupings, diverse and interspers	e patches, concentric rings) Moderate (broken irregular rings) sed)
HGM Class (P): Slope Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES	CONTRACTOR OF THE PROPERTY OF
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy_	Histosol: Fibric Histosol: Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES	AND SHOP THE PROPERTY OF THE PARTY OF THE PA
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No t Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial
Inlet/Outlet Class (P): No Inlet/Outlet_ Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial nlet/Perennial Outlet sonally Flooded, Temporarily Flooded, Saturated
Inlet/Outlet Class (P): No Inlet/Outlet Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial nlet/Perennial Outlet sonally Flooded, Temporarily Flooded, Saturated
Inlet/Outlet Class (P): No Inlet/Outlet_ Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Evidence Created	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial inlet/Perennial Outlet Sonally Flooded, Temporarily Flooded, Saturated Semiperm. Flooded
Inlet/Outlet Class (P): No Inlet/Outlet_ Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Servidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No ROUTLET Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial I
Inlet/Outlet Class (P): No Inlet/Outlet_ Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Eviden Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No O	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No toutlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial inlet/Perennial Inlet/No Outlet Perennial Inlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Eviden Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No O Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water C	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perenn
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Eviden Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No O Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water C	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Eviden Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No O Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water C Surficial Geologic Deposit Under Wetland	No Inlet/Intermittent OutletNo Inlet/Perennial OutletIntermittent Inlet/No Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/N
Inlet/Outlet Class (P): No Inlet/Outlet Outlet	No Inlet/Intermittent OutletNo Inlet/Perennial OutletIntermittent Inlet/No Inlet/Perennial OutletPerennial Inlet/No O
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Eviden Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Orector Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water C Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No See	No Inlet/Intermittent OutletNo Inlet/Perennial OutletIntermittent Inlet/No Inlet/Perennial OutletPerennial Inlet/No O
Inlet/Outlet Class (P): No Inlet/Outlet Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No It Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inle
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Eviden Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No O Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water C Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No See LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolate Only Connected Above Connected Wetland Land Use: High Intensity (i.e., a	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inle
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Eviden Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Orector Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Countries Coun	No Inlet/Intermittent Outlet

Brownlee

GPS Technician QA/QC check:

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

	•
Featur	re ID: WIO(LHOO) Field Target: 245 Date: 10.13.16
For all	items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
	∀ Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct?
	All dominant species have been determined and recorded per strata?
	Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
3.	Soil
	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and
	accuracy of pre-mapped wetland boundary as appropriate? 图 Each logbook page is initialed and dated?
7.	Maps
	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

X halfy Volver X halley Valger G-13-16
Wetland Scientist (print)
Wetland Scientist (print)

X JBrownee

Field Crew Chief (print)

Signature / Date

SITE DESCRIPTION		
Survey Type: Centerline Acces	ss Road (explain) Other (explain) Facility Field Target: 249 Map #: 72 Map Date: 5.27.16
Date: 6-13-16	Project Name: Alaska LNG	Feature Id: WIO(oLH002
Investigators: Jessie B	rownlee, ka	ley Volper Team No.: WIOCO
State: Alaska	Region: Alaska	(Milepost: 507.4
Latitude: (4 ° 5' 55, 7	678"N Longi	tude: 149013' Z9.56850 Datum: WGS84
Logbook No.:	Logbook Page No.: 44	Picture No.: PW106LH002_001thruan
SITE PARAMETERS	Man Andrews 1988年	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
Subregion: Tanana - Kusko	Kurm Lowlands	Landform (hillslope, terrace, hummocks, etc.): Lowland
Slope (%): 3-5		Local relief (concave, convex, none): Flat / hwww.c.ky
Pre-mapped Alaska LNG/NWI classifica	tion: U	Evidence of Wildlife Use: Leave Scat
Are climatic/hydrologic conditions on the Yes No (if no expl	e site typical for this time of year? ain in Notes)	Are "Normal Circumstances" present: YesNo(If no, explain in Notes.)
Are Vegetation, Soil, or Hyd	drology Significantly Distur	bed? No(If yes, explain in Notes)
Are Vegetation, Soil, or Hyd	drology Naturally Problema	ntic? No (If yes, explain in Notes.)
SUMMARY OF FINDINGS	的關係的意思的	CALLES CONTRACTOR AND A SECOND SHOWN AS A SECOND
Hydrophytic Vegetation Present? Yes_	No	Is the Sampled Area within a Wetland? YesNo
Hydric Soil Present? Yes_	No	Wetland Type: U
Wetland Hydrology Present? Yes_	No	Alaska Vegetation Classification (Viereck): A Z , // C Z
even ofter rain the day Lower 2.5 y color is	Hick Moss cover before Crysterbath. parent naturial	time, Length of feature, Distances from Centerline, Photo Locations, and Survey of frost Q 9". Organics are John Q 6-8" on present in the upper frost layer. Telated 4 therefore calling 13.54 w/ Redox to small to map. Boarder is between
		* **

M/06 LH005

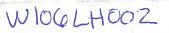
				4.25 °
VEGETATION (use scientific names of plan	ts)			
Tree Stratum (Plot sizes: \(\int\cappa^\cdot\)	Absolute % Cover	Dominant Species? (Y/N),	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: (A
1. Picea marian "30"	30	Y	FACIO	Total Number of Dominant Species Across All Strata: (B) (B) M Dominant Species that are OBL, FACW, or FAC: (A/E)
2.				% Dominant Species that are OBL, FACW, or FAC: (A/E
3.				
4.				Prevalence Index worksheet:
Total Cove 50% of total cove Sapling/Shrub Stratum(246)		% of total cov	ver:	Total % Cover of: OBL species: X 1 =
Sapinigramus Gradem (Dig 1	% Cover	Species? (Y/N)	Status	FAC species
· vaccinium vitis i daeg	20	Y	FAC	UPL species X 5 =
Rhodadendeum groenba	d'com 15	Y	FAC	Column Totals: 101 (A) 240 (B)
· VACCINIUM Uliginosum	1		FAC	PI = B/A = 2.57
Picea mariema	20	Y	FACW	W. Carlotte
· Salax polichra	3	-	FACUS.	
Empirom nigrum	1		FAC	
. 191				
Total Cove	and .	% of total cov	er: \7.4	
/EGETATION (use scientific names of plant	s)	THE PAY	Marie Con	
Herb Stratum (Z(o')	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50%
1. Ribus chamaemoros	8	V	MACU	
2. Carex bigelowii	20	V	FAC	Morphological Adaptations¹ (Provide supporting data in
3. Calamagrostis lapponica	1	1	FAC	Notes) Problematic Hydrophytic Vegetation ¹ (Explain)
1. Act = 50	1		1/1-	Indicators of hydric soil and wetland hydrology must be present unless

Herb Stratum (26.	% Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50% V. Dravelance Index is < 3.0
1. Rubus chamaemoros	8	Y	FACU	Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in
2. carex przelowi:	20	Y,	FAC	Notes)
3. Calamagrostis lapponica	1		FAC	Problematic Hydrophytic Vegetation ¹ (Explain)
4. Aster SP	T		SJ Rajovas	¹ Indicators of hydric soil and wetland hydrology must be present unless
5. Coeocavon lividium	T		FACU	disturbed or problematic.
6. Petasites frigidus	T		FACW	
7. Equisation prakase	+		FAC	% Bare Ground
8.				% Cover of Wetland Bryophytes
9.				
10.				Cover of Water
Total Cove 50% of total cove		% of total cov	er: <u>5,8</u>	Notes: (If observed, list morphological adaptations below):

W106 LH002

-	-	- 1	6.12.16					
SCIL		Property and		ture I		See		Soil Pit Required (Y/N)
SOIL PROFILE		escribe	to the depth needed t	to doc	ument t	he indicator or co	onfirm the absence	of Indicators.)
Depth	Matrix		Redox Features	T				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Notes
31 0-60								Dry Feather Moss
le 6-8	- 2/	-	- 7	-				Damp organics
Buf 8-12	164R 3/2		7:542 3/4	10	(on	matrix	very fine Sandy	Iram
2 0	104R =/, organ		7240 4/	-		1.1.1	0.11	were down takes
Smt	2.59 7/1	90	7.5 YR 4/6	ID	CON	mate, 1	Silt	very dry itikely
Type: Q =Con	centration, D=Deple	tion, RN	1=Reduced Matrix, CS	=Cov	ered or	Coated Sand Gr	ains. ² Location:	PL=Pore Lining, M=Matrix.
YDRIC SOIL	INDICATORS	P/1023	A STATE OF THE PARTY OF THE PAR	CHANGE OF THE PARTY OF THE PART	MARKET !	对人们 最影響	INDICATORS F	OR PROBLEMATIC HYDRIC SOILS3
listosol or Hist	tel (A1)	16	Alaska Gleyed (A13)	N		Alaska Color Ch	nange (TA4) ⁴
	n (A2) N CNOT sat	urated	Alaska Redox (A	414) _	N	_	Alaska Alpine S	wales (TA5)/
Black Histic (A			Alaska Gleyed F	ores	(A15)		Alaska Redox w	vith 2.5Y Hue _
lydrogen Sulfi	7						-/	without 5Y Hue or Redder Underlying
	face (A12) N			-			Other (Explain i	n Notes)
		ation, o	ne primary indicator of	f wetla	and hydi	rology, and an ap		pe position must be present unless
isturbed or pre	oblematic.							
	f color change in Not er (if present): Type		les De	epth (i	inches):	8		**
decision .	resent (Y/N): Notes on G	ent					ž.	
	1-A-01 At-7011104 200	PARE IN THE	to State of the st	210/24/10	Ou a series			20 22 20 20 40 C
IYDROLOGY	PRIMARY INDICAT	ORS (a	any one indicator is suf	fficien	t)		INDICATORS (2	
urface Water	(A1)/_		face Soil Cracks (B6)			Water-stained Leaves (B9) _	N _	Stunted or Stressed Due to ice
ligh Water Tal	ble (A2)	Inu (B7	ndation Visible on Aer	ial Im	agery	Drainage Patte	erns (B10)/	Geomorphic Position (D2)
Saturation (A3)	<u> </u>		arsely Vegetated ncave Surface (B8) _/	<i>\</i>		Oxidized Rhize Living Roots (ospheres along C3)	Shallow Aquitard (D3)
Vater Marks (E	31)	Ma	rl Deposits (B15)	N		Presence of R Iron (C4)	educed	Microtopographic Relief (D4)
Sediment Depo	osits (B2)		drogen Sulfide or (C1)			Salt Deposits (C5) FAC-Neutral Test (D5)		
Drift Deposits (B3)/_		r-Season iter Table (C2)/			Notes:		
lgal Mat or Cr	al Mat or Crust (B4) Other (Explain in Notes):							
ron Deposits (B5)/							
SECULO SE	TO MANAGEMENT OF THE				TO STATE OF	May Shirt	EL CONTRACTOR ASSESSMENT	ALL MODES TO A LEGISLATION OF THE PARTY OF T
urface Water	Present (Y/N): N		Depth (in):				(1)	. Y (-
Vater Table Pr	resent (Y/N):		Depth (in):			Wetland Hydrol	ogy Present (Y/N	: Y (secondary Indicator
Saturation Present (Y/N): (includes capillary fringe)						EC:		
Notes: From	t stantad met	ting	@ interface a	16	hore	was open	for auch	le .

AQUATIC SITE ASSESSMENT DATA FORM



Crew Chief QA/QC check: T Brownlee

GPS Technician QA/QC check:

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Featu	e ID: WIOLLHOOZ Field Target: 349 Date: 6.13.16
	items not checked, please provide detailed explanation in the notes section of data form.
	2.5
,1	Site Description
	Site description, site parameters and summary of findings are complete?
	A detailed site sketch is included in logbook?
2	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
	Vegetation names are entered legibly for all strata present?
	Cover calculations are complete and correct? All dominant species have been determined and recorded per strata?
2.0	Indicator status is correct for each species?
	Dominance Test and Prevalence Index have been completed?
3	Soil
	Soil profile is complete? Appropriate hydric soil indicators are marked?
4	Hydrology
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6	Field Logbook
j-	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7	Maps
·	
	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8.	PI	ho	to	S
----	----	----	----	---

Four photos were taken for each Wetland Determination Data Form (2 vegetation,	1
soil pit, 1 soil plug)?	

☐ Two photos were taken for each Observation Point (vegetation/site overview)?

X halen Volper X hally Volper 6-13-16
Wetland Scientist (print)

Wetland Scientist (print)

X J Brownlee

Field Crew Chief (print)

Signature / Date

SITE DESCRIPTION	and the second			The State of the S	•
Survey Type: Centerline 📈 Acce	ss Road (explain)	Other (exp	lain)	Field Target: 255	Map #: (ele_Map Date: 5: 27:16
Date: 6.20.16	Project Name: Alasi	ka LNG			d: WOLHOO \$ 3
Investigators: Jessie Brown	lee . Kaley Vo	loer			Toom No.
State: Alaska	Region: Alaska	4	Milepost: 4	168.1	ream No.: W/06
Latitude: (04°37' 47.8)	30" N	Longitude	: 1490 41	21.856"W	Datum: WGS84
Logbook No.: 2	Logbook Page No.:	0		0 1 11 2 - 11	203-001 thru 004
SITE PARAMETERS			ent the same of the same of	1= WOOLING	200111110009
Subregion: Tanana - Kuskokwin	lankada		Landform (hill	slope, terrace, hummoo	ks etc): (/
Slope (%): 6-3	1 Low lands			oncave, convex, none):	
Pre-mapped Alaska LNG/NWI classifica	tion: PEMI/SS	510		Vildlife Use: Nove	Concave
Are climatic/hydrologic conditions on the Yes No (if no expla	site typical for this time			rmal Circumstances" pr	resent: xplain in Notes.)
Are Vegetation, Soil, or Hyd	rology Significant	ly Disturbed?		_(If yes, explain in Note	
Are Vegetation, Soil, or Hyd	rology Naturally F	Problematic?	No_>	_ (If yes, explain in Note	es.)
SUMMARY OF FINDINGS	《 图集》等			() () () () () () () () () () () () () (LA TRACTICATION OF
Hydrophytic Vegetation Present? Yes_	X No	ls	the Sampled A	rea within a Wetland?	YesX No
Hydric Soil Present? Yes	No	_ w	etland Type:	PEMIF	
Wetland Hydrology Present? Yes_	No	— Ala	aska Vegetation	Classification (Viereck)	: III A 3
Notes and Site Sketch: Please include Decorridor. Swaling feature with Swaling forest is Ponds & swales pot man spots. Calla Palustri; Surrounding forest is (B) Tablet stopped working	Cal (on and Mosaic of Pred the walk in FFOI/SSIB	ominantly with m Mos	to a come welland vegetation to water	pel. Stunding to w/upland on clustering bodies.	on hummocky drier
on a straight lime	trans 1 1000	20	0		o which was a V:162,112.
frest of Dry all way to a	an (Highway	7),			

WETLAND DETERMINATION DATA FORM W106LH003

Tree Stratum (Plot sizes: 26	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC:/
1.		1		Total Number of Dominant Species Across All Strata:
				% Dominant Species that are OBL, FACW, or FAC: _/oO
				Prevalence Index worksheet:
Total Co	ver:			Total 9/ Co.
	ver: 20	0% of total co	ver:	OBL species:X1 =
apling/Shrub Stratum (26)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: X 2 = FAC species X 3 =/ S
Betula Negalaskana	T		FACE!	FACU species X 4 =
			FILMI	UPL species X 5 =
				Column Totals: (A) 76 (B)
	11111			PI = B/A =/./S
				Plot size adjusted to match Wetlan
	-			Polygon & Not the surrounding.
				Forest
Total Cov	rer:		-	
Total Cov 50% of total cov		% of total cov	er:	
50% of total cov	ver: 20	% of total cov	er:	
50% of total cov	ver: 20	1000		Hydrophytic Vegetation Indicators
50% of total cov	ver: 20	Dominant Species?	er:Indicator	Hydrophytic Vegetation Indicators: Dominance Test is > 50%
50% of total cov	nts) 20	Dominant	Indicator Status	Dominance Test is > 50% Prevalence Index is ≤ 3.0
50% of total cov	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in
50% of total covered to the stratum (Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes)
GETATION (use scientific names of plants b Stratum (Absolute % Cover	Dominant Species?	Indicator Status OBL FAC FACW	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain)
GETATION (use scientific names of plants Stratum (26) Comarum Palustre Calamagrostis Canadeasis Calium frifidium	Absolute % Cover	Dominant Species?	Indicator Status OBL CAC	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes)
GETATION (use scientific names of plants b Stratum (26) Comarum Palustre Calamagrosts Canadensis Calium frifidium Carex Utriculata	Absolute % Cover	Dominant Species?	Indicator Status OBL FAC FAC OBL OBL OBL OBL OBL OBL OBL OB	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
GETATION (use scientific names of plants to Stratum (26) Comarum Palustre Calamagrosts Canadensis Calium frifidium Carex Utriculata	Absolute % Cover	Dominant Species?	Indicator Status OBL FAC FACW	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
GETATION (use scientific names of plants of Stratum (26) Comarum Palustre Calamagrosts Canadensis Calium frifidium Carex Utriculata	Absolute % Cover	Dominant Species?	Indicator Status OBL FAC FAC OBL OBL OBL OBL OBL OBL OBL OB	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. ——————————————————————————————————
GETATION (use scientific names of plants of Stratum (26) Comarum Palustre Calamagrosts Canadensis Calium frifidium Carex Utriculata	Absolute % Cover	Dominant Species?	Indicator Status OBL FAC FAC OBL OBL OBL OBL OBL OBL OBL OB	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Bare Ground Cover of Wetland Bryophytes
GETATION (use scientific names of planting Stratum (26) Comarum Palustre Calamagrostis Canadensis Calium frifidium Carex Utriculata	Absolute % Cover	Dominant Species?	Indicator Status OBL FAC FAC OBL OBL OBL OBL OBL OBL OBL OB	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. ——————————————————————————————————
Carex Utriculata	Absolute % Cover	Dominant Species?	Indicator Status OBL FAC FAC OBL OBL OBL OBL OBL OBL OBL OB	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

SOL PROFILE DESCRIPTION. (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Depth (miches) Color (moist) K Color (moist) Color (Color Color Color Color (moist) Color (Color Color Color Color (moist) Color (Color Color		Descrine	Date Feature ID	of the indiant		Soil Pit Required (Y/N)
Color (moist) % Color (moist) % Type Loc Texture Notes	Depth Matrix		Redox Features	nt the indicator of	r confirm the absen	ce of indicators.)
Type: C-Concentration, D-Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Graits. *Location: PL-Pore Lining, M-Matrix. Type: C-Concentration, D-Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Graits. *Location: PL-Pore Lining, M-Matrix. Type: C-Concentration, D-Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Graits. *Location: PL-Pore Lining, M-Matrix. Type: C-Concentration, D-Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Graits. *Location: PL-Pore Lining, M-Matrix. Type: C-Concentration, D-Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Graits. *Location: PL-Pore Lining, M-Matrix. Type: C-Concentration, D-Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Graits. *Location: PL-Pore Lining, M-Matrix. Type: C-Concentration, D-Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Graits. *Location: PL-Pore Lining, M-Matrix. Type: Alaska Gleyed Pores (A13)		1%		ne ¹ 1 no ²	Taratura	
S - / Z S -			yo Ty	pe Loc	Texture	
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. *Location: PL=Pore Lining, M=Matrix, PVDRIC SOIL INDICATORS Indicator of Histel (A1)	Da 4.8	4				Daturated organics
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. *Location: PL=Pore Lining, M=Matrix. **YPRIC SOIL INDICATORS** INDICATORS FOR PROBLEMATIC HYDRIC SOIL- Alaska Color Change (TA4)*	e 8-12				-	11
INDICATORS INDICATORS INDICATORS INDICATORS FOR PROBLEMATIC HYDRIC SOILS Institute Institu					-	The state of the s
INDICATORS INDICATORS INDICATORS INDICATORS FOR PROBLEMATIC HYDRIC SOILS Isitosol or Histel (A1)						
INDICATORS INDICATORS INDICATORS INDICATORS FOR PROBLEMATIC HYDRIC SOILS Isitosol or Histel (A1)						
INDICATORS INDICATORS INDICATORS INDICATORS FOR PROBLEMATIC HYDRIC SOILS Islated on Histel (A1)	Tuno: C=Consentation D.D. I	. 51			10 100 100	
Alaska Gleyed (A13)		etion, RN	I=Reduced Matrix, CS=Covered	or Coated Sand		
Alaska Redox (A14)	ASSESSMENT	76.	Alacha Olympia de Alexandre			
Alaska Gleyed Pores (A15) — Alaska Rodew own with 2.5Y Hue — Alaska Gleyed without 5Y Hue or Redder Underlying Layer — Other (Explain in Notes) Pore indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless sturbed or problematic. Sturded or problematic. Other (Explain in Notes) Secondary Indicator of wetland hydrology, and an appropriate landscape position must be present unless sturbed or problematic landscape position must be present unless sturbed or problematic landscape position must be present unless sturbed or problematic landscape position must be present unless sturbed or problematic landscape position must be present unless sturbed or problematic landscape position must be present unless sturbed or problematic landscape position must be present unless sturbed or problematic landscape position must be present unless sturbed or present (Y/N): Operation (Secondary Indicator of wetland hydrology and an appropriate landscape position must be present (Indicator of wetland hydrology without 5Y Hue or Redder Underlying Layer Other (Explain in Notes) Water-stained Landscape position must be present (Indicator of wetland hydrology Present (Indicator of Wetland		- 4				
Alaska Gleyed without 5Y Hue or Redder Underlying Layer Alaska Gleyed without 5Y Hue or Redder Underlying Layer Drie Indicator of hydrophylic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless sturbed or problematic. Silve details of color change in Notes. Sestrictive Layer (if present): Type Depth (inches): SECONDARY INDICATORS (2 or more required) Water-stained Leaves (B9) Stunted or Stressed Plants (D1) Stunted or Stressed Plants (D1) Surface Soil Cracks (B6) Deaves (B9) Presence (B9) Shallow Aquitard (D3) Deaves Surface (B8) Deaves (B9) Shallow Aquitard (D3) Shallow Aquitard (D3) Deaves Surface (B8) Shallow Aquitard (D3) Shallow Aquitard (D3) Shallow Aquitard (D3) Shallow (D4) S		_				
hick Dark Surface (A12)			Alaska Gleyed Pores (A15)			
One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless issurbed or problematic. Sive details of color change in Notes. PyDROLOGY PRIMARY INDICATORS (any one indicator is sufficient) Secondary Indicators (2 or more required) PyDROLOGY PRIMARY INDICATORS (any one indicator is sufficient) Surface Soil Cracks (B6)					Layer_	without 54 Hue or Redder Underlying
Depth (inches):					Other (Explain	in Notes)
Depth (inches): Depth (inc	istalised of problematic.		ne primary indicator of wetland hy	drology, and an	appropriate landsca	ape position must be present unless
Interval (A1) Surface Soil Cracks (B6) Water-stained Leaves (B9) Concave (B1) Present (A2) Surface Surface (B1) Present (B10) Pr	Give details of color change in No	ites.				
Autration (A3) Y Sparsely Vegetated (B1) Viriage (B1) Vir	estrictive Layer (ii present). Type		Depth (inches):	**	- Test - 1
Surface Soil Cracks (B6) Water Table (A2) Surface Soil Cracks (B6) Surface (B9) Sur	VDDOLOGV DDIMADV INDICAT					
Surface Votice (V1)		TOPS /a	ny ono indicatorio aufficia di	l ercouper	VINDON TO TO VO	
Inundation Visible on Aerial Imagery (B7) Drainage Patterns (B10) Sparsely Vegetated Concave Surface (B8) Narl Deposits (B15) Hydrogen Sulfide Odor (C1) Salt Deposits (C5) Notes: Depth (in): D	. 1	TORS (a	ny one indicator is sufficient)			
Sparsely Vegetated Concave Surface (B8)	. 1			Water-staine	ed /	Stunted or Stressed
Water Marks (B1) Marl Deposits (B15) Presence of Reduced Iron (C4) Microtopographic Relief (D4) Microtopogra	surface Water (A1)	Sur	face Soil Cracks (B6)	Water-staine Leaves (B9)	ed /	Stunted or Stressed Plants (D1)
Odor (C1)	igh Water Table (A2)	Sur Inur (B7	face Soil Cracks (B6)	Water-staine Leaves (B9) Drainage Pa Oxidized Rh	etterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Igal Mat or Crust (B4) Other (Explain in Notes): On Deposits (B5) Other (Explain in Notes): Ourface Water Present (Y/N):	igh Water Table (A2) aturation (A3)	Sur Inur (B7 Spa Cor	race Soil Cracks (B6)	Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of	ed // etterns (B10) // izospheres along (C3)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic
urface Water Present (Y/N):	igh Water Table (A2) aturation (A3) Vater Marks (B1)	Sur Inur (B7) Spa Cor Mar	race Soil Cracks (B6)	Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4)	ed // etterns (B10) // izospheres along (C3) // Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
urface Water Present (Y/N):	ligh Water Table (A2) saturation (A3) Vater Marks (B1) sediment Deposits (B2)	Sur Inur (B7) Spa Cor Mar Hyd Odd	race Soil Cracks (B6)	Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposits	ed // etterns (B10) // izospheres along (C3) // Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Vater Table Present (Y/N): Depth (in): Dep	Surface Water (A1) / High Water Table (A2) / Saturation (A3) / Water Marks (B1) / Sediment Deposits (B2) / Orift Deposits (B3) / Orift Deposits (B3)	Surrice Surric	race Soil Cracks (B6)	Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposits	ed // etterns (B10) // izospheres along (C3) // Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Atter Table Present (Y/N): Depth (in): Dep	ligh Water Table (A2) aturation (A3) Vater Marks (B1) ediment Deposits (B2) rift Deposits (B3) Igal Mat or Crust (B4)	Surrice Surric	race Soil Cracks (B6)	Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposits	ed // etterns (B10) // izospheres along (C3) // Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
aturation Present (Y/N): Includes capillary fringe) Depth (in): Depth (in): Depth (in): Depth (in):	Jurface Water (A1)	Surrice Span Con Mar Hyd Odc Dry-Wat Oth	race Soil Cracks (B6)	Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposits	ed // etterns (B10) // izospheres along (C3) // Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Pri 5.39	Jurface Water (A1)	Sur Inur (B7) Spa Con Mar Hyd Odc Dry-Wat Other	race Soil Cracks (B6)	Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposits Notes:	izospheres along (C3)Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
otos.	igh Water Table (A2) aturation (A3) /ater Marks (B1) ediment Deposits (B2) rift Deposits (B3) lgal Mat or Crust (B4) on Deposits (B5) urface Water Present (Y/N): /ater Table Present (Y/N):	Sur Inur (B7) Spa Cor Mar Hyd Oddo Dry Wat	race Soil Cracks (B6)	Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposits Notes:	izospheres along (C3)Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) (I):
	igh Water Table (A2) aturation (A3) /ater Marks (B1) /ater Marks (B2) /ater Marks (B2) /ater Marks (B2) /ater Marks (B3) /ater Marks (B4) /ater Marks (B4) /ater Marks (B4)	Sur Inur (B7) Spa Cor Mar Hyd Oddo Dry Wat	race Soil Cracks (B6)	Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposits Notes:	izospheres along (C3)Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) (I):

AQUATIC SITE ASSESSMENT DATA FORM



Primary Vagatation Town (D)	
Scrub Shrub-Evergreen-Broad-leaved Persistent Aquatic Bed	Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Emergent-Non-persistent Emergent-
Percent Cover (P): Tree (>5 dbh, >6m tall) Dwarf shrub (<0.5m) Tall herb (≥	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Short shrub (0.5-2m) Moss-Lichen Floating Submerged
Number of Wetland Types (M): _2_	Evenness of Wetland Type Distribution (M): EvenHighly Uneven Moderately even
Vegetation Density/Dominance (P): Sparse 80%)XVery High Density (80-100%	e (0-20%) Low Papaity (20.40%)
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scatter	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral CoverX N/A
Plant Species Diversity (P): Low (< 5 plant	t species) Medium (5-25 species)X High (>25)
Presence of Islands (M): Absent (none)	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary Scattered Stome
Dead Woody Material (P): Low Abundance Abundant (>50% of surface)	(0-25% of surface) Moderately Abundant (25-50% of surface)
/egetative Interspersion (P): Low (large ligh (small groupings, diverse and interspers	e patches, concentric rings) Moderate (broken irregular rings)sed)
IGM Class (P): Slope X Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES	
Soil Factors (P): Soil Lacking	Histosol:Fibric Histosol:HemicX Histosol: Sapric
illeral: Gravelly inineral: Sandy_	Mineral: Silty Mineral: Clayey Mineral: Clayey
IYDROLOGIC VARIABLES	
nlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent OutletNo Inlet/Perennial OutletIntermittent Inlet/No t OutletIntermittent Inlet/Perennial OutletPerennial Inlet/No Outlet
	Sonally Flooded Temporarily Flooded Saturated
vidence of Sedimentation (P): No Eviden	nce Observed
	Poorly Developed (6in.) X Well Developed (6-18in.) Pronounced (>18in.)
requency of Overbank Flooding (P): No O	Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.) Developed (6in.) Return Interval 1-2 yrs Return Interval 2-5 yrs
etum mtervar >5 yrs	Overbank Flooding X Return Interval 1-2 yrs Return Interval 2-5 yrs
egree of Outlet Restriction (P): No Outflow	Overbank Flooding X Return Interval 1-2 yrs Return Interval 2-5 yrs Return Interval 2-5 yrs Restricted Outflow Unrestricted Outflow
egree of Outlet Restriction (P): No Outflow /ater pH (P): No surface water C urficial Geologic Deposit Under Wetland	Overbank Flooding X Return Interval 1-2 yrs Return Interval 2-5 yrs Return Interval 2-5 yrs Restricted Outflow Unrestricted Outflow
egree of Outlet Restriction (P): No Outflow /ater pH (P): No surface water C urficial Geologic Deposit Under Wetland /lacial Till/Not Permeable asin Fopographic Gradient (M): Low	Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs W Restricted Outflow Unrestricted Outflow Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading 5.3 \(\) (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Gradient (<2%) High Gradient (>2%)
egree of Outlet Restriction (P): No Outflow /ater pH (P): No surface water C urficial Geologic Deposit Under Wetland lacial Till/Not Permeable asin Fopographic Gradient (M): Low	Overbank Flooding X Return Interval 1-2 yrs Return Interval 2-5 yrs Return Interval 2-5 yrs Restricted Outflow Unrestricted Outflow PH Reading 5.34 (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits X
egree of Outlet Restriction (P): No Outflow /ater pH (P): No surface water C urficial Geologic Deposit Under Wetland lacial Till/Not Permeable asin Fopographic Gradient (M): Low vidence of Seeps and Springs (P): No See	Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs w Restricted Outflow Unrestricted Outflow Sircumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) \text{\text{pH Reading } \$\sigma 3 \text{\text{\text{P}}} \text{\text{(P)}: High Permeability Stratified Deposits Low Permeability Stratified Deposits \text{\text{Gradient (<2%) \text{\text{\text{\text{Migh Gradient (≥2%)}}}}
egree of Outlet Restriction (P): No Outflow /ater pH (P): No surface water C urficial Geologic Deposit Under Wetland /lacial Till/Not Permeable asin Fopographic Gradient (M): Low vidence of Seeps and Springs (P): No See ANDSCAPE VARIABLES (M) /etland Juxtaposition: Wetland Isolate	Poverbank Flooding
egree of Outlet Restriction (P): No Outflow /ater pH (P): No surface water C urficial Geologic Deposit Under Wetland /lacial Till/Not Permeable asin Fopographic Gradient (M): Low vidence of Seeps and Springs (P): No See ANDSCAPE VARIABLES (M) /etland Juxtaposition: Wetland Isolate	Overbank Flooding
egree of Outlet Restriction (P): No Outflow /ater pH (P): No surface water C urficial Geologic Deposit Under Wetland /acial Till/Not Permeable asin Γopographic Gradient (M): Low vidence of Seeps and Springs (P): No See ANDSCAPE VARIABLES (M) //etland Juxtaposition: Wetland Isolate //etland Land Use: High Intensity (i.e., a	Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs
egree of Outlet Restriction (P): No Outflow Vater pH (P): No surface water C urficial Geologic Deposit Under Wetland Idacial Till/Not Permeable asin Fopographic Gradient (M): Low vidence of Seeps and Springs (P): No See ANDSCAPE VARIABLES (M) Vetland Juxtaposition: Wetland Isolate nly Connected Above Connected Vetland Land Use: High Intensity (i.e., a Vatershed Land Use: 0-5% Rural	Overbank Flooding

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Fe	atur	e ID: W10614003 Field Target: 255 Date: 6/20/16
		items not checked, please provide detailed explanation in the notes section of data form.
	1.	Site Description
		Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
	2.	Vegetation
		At least 80% of onsite vegetation has been keyed to species, or collected for later identification? Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct? All dominant species have been determined and recorded per strata?
		Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
	3.	Soil
		☑ Soil profile is complete?☑ Appropriate hydric soil indicators are marked?
	4.	Hydrology
		Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
	5.	Functions and Values
		Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
	6.	Field Logbook
		Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
	7.	Maps
		Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

NA Two photos were taken for each Observation Point (vegetation/site overview)?

Wetland Scientist (print)

Wetland Scientist (print)

Signature / Date

Of ZZ/16

X JBrownlee

Field Crew Chief (print)

Signature / Date

SITE DESCRIPTION			National States of the Control of th	
Survey Type: Centerline Acces	ss Road (explain) Other	(explain)	Field Target: 254	Map #: <u>67</u> Map Date: <u>5.27</u>
Date: (0 - 20 - 16	Project Name: Alaska LNG			d: W1062HCOLA
	brown less, Ka	les Vol	000	Team No.: WOG
State: Alaska	Region: Alaska	Milepost:	471.9	
Latitude: 64.58475	Lon	gitude: 149.11440	0	Datum: WGS84
Logbook No.: 2	Logbook Page No.:			04-001 4hry 004
SITE PARAMETERS	MEMORITA PRODUCTION		CALCONIC TO	ROBERT TO STATE OF THE STATE OF THE
Subregion: Tanama Kuskokwim	(a. V.	Landform (hi	ilslope, terrace, hummoo	cks, etc.): low land
-1 (4)	cco ands		concave, convex, none):	
Pre-mapped Alaska LNG/NWI classifica	ation: PCN13			ed resetation
Are climaţic/hydrologic conditions on the			ormal Circumstances" p	resent:
Are Vegetation, Soil, or Hyd		urbed? No\(\bar{\lambda}\)	(If yes, explain in Note	es)
Are Vegetation, Soil, or Hyd		\ \	(If yes, explain in Not	es.)
SUMMARY OF FINDINGS	A NEW PROPERTY OF		100000-11000	
Hydrophytic Vegetation Present? Yes_	X No	Is the Sampled	Area within a Wetland	? YesX No
Hydric Soil Present? Yes_	X No	Wetland Type:	PEMI/SSIB	
Wetland Hydrology Present? Yes_	No	Alaska Vegetatio	on Classification (Vierech	x): 111AZ, // BZ
Notes and Site Sketch: Please include I corridor. Area Is much drier than during a very wet year a Soil shows consistent Watertable was expended that would be PEMIF but most of Atlacettan of site the of other area. Cal Can was hummuch	n currently mapped time. saturation of water ected to rise to any to east is we came across her areas should to here was a lot his	J. Imagery Jable. Le a 15" Q fine Not that a few sma won to PET ghen % B c site	for area must depth of 12- of visit. Far From the 112" deep por 11B sillows show	have been flower 15" 15" 15 point. mob that should ubs than in most

W106LH004

	s)		A STATE OF THE PARTY OF THE PAR	A CONTRACTOR OF THE PARTY OF TH
Tree Stratum (Plot sizes: 1.	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata: (E
2.				% Dominant Species that are OBL, FACW, or FAC: 100 (A/
3.				
4.				Prevalence Index worksheet:
Total Cover	r			Total % Cover of: Multiply by:
50% of total cove)% of total cov	er:	OBL species: <u>55</u> X1 = <u>55</u>
Sapling/Shrub Stratum (40 100)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species:
1. Salix alunes	20	Y	FAC	UPL species <i>₽</i> X 5 = <i>₽</i>
1. Salix planca 2. Salix pulchra	T	-	FACU)	Column Totals: 110 (A) 220 (B)
3.				PI = B/A = 2.0
4.				
5.	× 1			
6.				
7.				
8.				
9.				
Total Cove 50% of total cove	r: <u>10</u> 20	0% of total cov	er: <u>Ч</u>	
Total Cover 50% of total cover VEGETATION (use scientific names of plant	r: \\\ \(\) 20			
Total Cover 50% of total cover VEGETATION (use scientific names of plant	r: 10 20	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50%
Total Cover 50% of total cover vegetation (use scientific names of plant Herb Stratum (<u> </u>	s) Absolute % Cover	Dominant	Indicator Status	Dominance Test is > 50% Prevalence Index is ≤ 3.0
Total Cover 50% of total cover 50% of total cover VEGETATION (use scientific names of plant Herb Stratum (24)	s) Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in
Total Cover 50% of total cover vegetation (use scientific names of plant Herb Stratum (24) 1. Calamagnostis canadensis 2. Equisatum fluviatile	s) Absolute % Cover	Dominant Species?	Indicator Status FAC OB L	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes)
Total Cover 50% of total cover vegetation (use scientific names of plant Herb Stratum (24) 1. Calamagnosk's canadensis 2. Equisatum fluviatile 3. Geum Macrophyllum	s) Absolute % Cover	Dominant Species?	Indicator Status FAC OBL FAC	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain)
Total Cover 50% of total cover vegetation (use scientific names of plant Herb Stratum (24) 1. Calamagrask's canadensis 2. Equisatum fluviatile 3. Coeum Macrophy llum 4. Coalium trifidum	s) Absolute % Cover	Dominant Species?	Indicator Status FAC OB L	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes)
Total Cover 50% of total cover 50% of total cover vegetation (use scientific names of plant Herb Stratum (26) 1. Calamagrask's canadensis 2. Equisatum fluviatile 3. Coeum Macrophy llum 4. Coalium trifidum	s) Absolute % Cover	Dominant Species?	Indicator Status FAC OBL FAC FAC	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
Total Cover 50% of total cover 50% of total cover vegetation (use scientific names of plant Herb Stratum (26) 1. Calamogrask's canadensis 2. Equisatum fluviatile 3. Geem Macrophyllum 4. Coalium trifidum 5. Achillea mille folium 6. Equisetum Arveneo	s) Absolute % Cover	Dominant Species?	Indicator Status FAC OBL FAC FAC FACW FACW	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
Total Cover 50% of total cover 50% of total cover vegetation (use scientific names of plant Herb Stratum (24) 1. Calamogrash's canadensis 2. Equisatum fluviatile 3. Coeum macrophy llum 4. Coalium trifidum 5. Achillea mille folium 6. Fausetum Arveneo 7. Rumex Sp	s) Absolute % Cover	Dominant Species?	Indicator Status FAC OBL FAC FAC FACW FACW	Dominance Test is > 50% Prevalence Index is ≤ 3.0 — Morphological Adaptations¹ (Provide supporting data in Notes) — Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
Total Cover 50% of total cover 50% of total cover vegetation (use scientific names of plant Herb Stratum (26) 1. Calamogrask's canadensis 2. Equisatum fluviatile 3. Geem Macrophyllum 4. Coalium trifidum 5. Achillea mille folium 6. Equisetum Arveneo 7. Rumex 50 8. Stelleric 50	s) Absolute % Cover	Dominant Species?	Indicator Status FAC OBL FAC FAC FACW FACW	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Bare Ground Cover of Wetland Bryophytes Total Cover of Bryophytes
Total Cover 50% of total cover 5	s) Absolute % Cover	Dominant Species?	Indicator Status FAC OBL FAC FAC FAC FAC OBL FAC OBL FAC OBL FAC OBL	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Bare Ground Cover of Wetland Bryophytes Total Cover of Bryophytes Cover of Water
Total Cover 50% of total cover 5	Absolute % Cover 30 30 5	Dominant Species?	Indicator Status FAC OBL FAC FAC FAC FAC FAC	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Bare Ground Cover of Wetland Bryophytes Total Cover of Bryophytes

A STATE OF THE PARTY OF THE PAR	CONTRACTOR OF THE PARTY OF THE	Silver 117			and the State of the	CANADA HONO	mand an heart of	Call Dit Paradred (VIN)
SOIL		STATE OF	Date Feature	Section.	14 4 5 7 1			Soil Pit Required (Y/N)
SOIL PROFIL		escribe	to the depth needed to do	cume	nt the in	dicator or co	infirm the absence	e or indicators.)
Depth	Matrix		Redox Features	-	1	1 . 2		
(inches)	Color (moist)	%	Color (moist) %	Ту	pe ¹	Loc²	Texture	Notes
A/BW 0-10	104R 3/2	75					Silt land	Phonisons have much mixing
	2.54 4/2		7.5YR 4/4 5		n	RC M	0.44	
Be 10-24	2.54 3/1	75	7.54R 4/4 2	C	20	m RC	5.17	Thixitrophic & bulging
0								U
		-		_				
	20			-				
1- 0.0		ion DA	 //=Reduced Matrix, CS=Co	warad	or Cool	od Sand Cr	oine ² l acation:	PL=Pore Lining, M=Matrix.
THE RESERVE AND ADDRESS OF THE PARTY.	THE RESERVE OF THE PARTY OF THE	ion, Ki	VI-Reduced Matrix, CS-CC	vereu	UI COAI	led Sand Gr		FOR PROBLEMATIC HYDRIC SOILS ³
HYDRIC SOIL	the contract of the contract o	433	Alaska Claved (A12	Sec. Land	9903998	1997879	ENGLISH VICTORIA	hange (TA4) ⁴
Histosol or His			Alaska Gleyed (A13					
Histic Epipedo			Alaska Redox (A14)					Swales (TA5)
Black Histic (A	3)	7	Alaska Gleyed Pore	s (A15)			with 2.5Y Hue/ without 5Y Hue or Redder Underlying
Hydrogen Sulf	ide (A4)						Layer .	without 51 Tide of Redder Orderlying
	rface (A12)						Other (Explain	
		ation, c	ne primary indicator of we	tland I	nydrolog	y, and an ap	propriate landsca	pe position must be present unless
disturbed or pr	oblematic. f color change in Not	es.						
Restrictive Lay	er (if present): Type		N Depth	(inche	es):	-		
			-	-				
_	resent (Y/N):	У	- 4					
Notes: <	(Theliane the	50	110	7/1	laterial	already starts
at of	rige in Min	290.	1 1 +11 -00	00	1/-	oveni	alven are	senc of water + OBL
Species	u 2.5 / pu	Je	1017 SIVI COLXI	0	7	2 3013	8	3 Jack / 202
		ORS (any one indicator is sufficient	ent)	SI	ECONDARY	INDICATORS (2	or more required)
C. S Mate	(04)	C.,	rface Sail Creeks (BS)	1	W	ater-stained	1.	Stunted or Stressed
Surface Water	(A1)/V		rface Soil Cracks (B6)			eaves (B9) _	~	Plants (D1)
High Water Ta	ible (A2)	Int (B	Indation Visible on Aerial I	mager	y Di	rainage Patt	erns (B10)/	Geomorphic Position (D2)
	1/		arsely Vegetated		0:	xidized Rhiz	ospheres along	Challess Assistant (D2)
Saturation (A3)	Co	oncave Surface (B8)/				C3) <u>3</u> –	Shallow Aquitard (D3)
Water Marks (B1)	Ma	arl Deposits (B15)			resence of R	teduced	Microtopographic
Trater marks (Det Politica			on (C4)		Relief (D4)
Sediment Dep	osits (B2)		drogen Sulfide for (C1)/		S	alt Deposits	(C5) _/	FAC-Neutral Test (D)
D 10 D	(DO) 1/	-	y-Season V		N	otes:		No.
Drift Deposits	(B3)	W	ater Table (C2)	-				
Algal Mat or C	rust (B4)	Ot	her (Explain in Notes):					
-		-						
Iron Deposits	(B5)/ <u>'</u>			Constitution			and the second second	
		200			NAME OF	是的特色间形	Line Wie - and	and the second of the second
Surface Water	Present (Y/N):	-	Depth (in): -		141-1	land theda-t	logy Present (Y/I	m. Y
Water Table P	resent (Y/N):		Depth (in): See Note		vvet	iand Hydroi	logy Present (17)	4):
Saturation Pre (includes capil	/		Depth (in): /O		EC:	192	pt	4 5.94
Notes: water has	seeped in to pect the w	a depoder	oth of 2" ofter tuble to rise to	30 oth	minut is h	es. See	ping Starts	s From a depth of 15"

AQUATIC SITE ASSESSMENT DATA FORM W 106LH004

VEGETATION VARIABLES P= Plot, M= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed
Percent Cover (P): Tree (>5 dbh, >6m tall) Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) /5 Dwarf shrub (<0.5m) Tall herb (≥1m) Short herb (<1m) ₹5 Moss-Lichen Floating Submerged C
Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) 80%) Very High Density (80-100%) X
Interspersion of Cover & Open Water (P): 100% Cover or Open Water X <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover >75% Scattered or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous CoverX
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) X High (small groupings, diverse and interspersed)
HGM Class (P): Slope _ Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric
Soil Factors (P): Soil Lacking Histosol: Fibric Histosol: Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty X Mineral: Clayey
HYDROLOGIC VARIABLES
HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inl
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inl
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet

J. Brownlee

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

		This form to be completed before leaving the field site.
Fea	ature	e ID: W106LH004 Field Target: 254 Date: 6-20-16
Fo	r all	items not checked, please provide detailed explanation in the notes section of data form.
	1.	Site Description
		Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
	2.	Vegetation
		At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
		Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct?
w.		All dominant species have been determined and recorded per strata? Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
	3.	Soil
		Soil profile is complete? Appropriate hydric soil indicators are marked?
	4.	Hydrology
		Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
	5.	Functions and Values
		Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
	6.	Field Logbook
		Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
	7.	Maps
		Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

X haley Volver X haley Volver G/22/16
Wetland Scientist (print) Signature / Date

X JBranlee

eld Crew Chief (print)

Simple (1)

SITE DESCRIPTION	Sure Sure San Sure Sure Sure Sure Sure Sure Sure Sure			
Survey Type: Centerline Acce	ss Road (explain) Other (e.	xplain) Facility	Field Target 258	Map #: <u>63</u> Map Date: <u>5.27</u>
Date: 6-21-16	Project Name: Alaska LNG		Feature Id	W10644005
	mlee, Kaley	loper		Team No.: WOG
State: Alaska	Region: Alaska	Milepost: 4	157	
Latitude: 64,75605	Longitu	ide: 148.811.	/3	Datum: WGS84
Logbook No.:	Logbook Page No.:	Picture No.:	P-WOBLH	905_001 thru 00
SITE PARAMETERS		Targania de la		
Subregion: Yukon Tanana V	plands	Landform (hills	slope, terrace, hummock	is, etc.): Lowland
Slope (%): 0-3		Local relief (co	oncave, convex, none):	Flat
Pre-mapped Alaska LNG/NWI classifica	ation: PFO4 SSIB 142	Evidence of W	Vildlife Use: Nove	
Are climatic/hydrologic conditions on the Yes No (if no exp	e site typical for this time of year? lain in Notes)	Are "No Yes_X	ormal Circumstances" pro	esent: plain in Notes.)
Are Vegetation, Soil, or Hy	drology Significantly Disturb	ed? No X	_(If yes, explain in Notes	s)
Are Vegetation, Soil, or Hy	drology Naturally Problemati	ic? No_X	_ (If yes, explain in Note	s.)
SUMMARY OF FINDINGS	Waster Tell Tarket			to the final transfer to the first terms and
Hydrophytic Vegetation Present? Yes_	No	Is the Sampled A	rea within a Wetland?	Yes No
Hydric Soil Present? Yes_	X No	Wetland Type:	PF04/5517	3
Wetland Hydrology Present? Yes_	No	Alaska Vegetation	Classification (Viereck)	1A2,11CZ
Notes and Site Sketch: Please include I corridor. Open Pic Mar forest by pockets of surface was 10+," **No tublet today. Spot	diverse show under ter 9 water table	story of the	extente Me emofrost @ 10	55. small Seathered " w/ organic soil

WETLAND DETERMINATION DATA FORM W100 LH005

paniculada

Total Cover:_

50% of total cover: 15

9.

10.

EGETATION (use scientific names of plants)				All and a separate state of the second second
ree Stratum (Plot sizes: 100)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	No. of Dominant Species that are OBL, FACW, or FAC: (A) Total Number of Dominant Species Across All Strata: (B)
· Picea Mariana	28	Y	FACLU	% Dominant Species that are OBL, FACW, or FAC: 57 (A/E
Betula Nevalaskana	2		FACU	W Bornman openio that are obligations and
· ·		71		
				Prevalence Index worksheet:
Total Cover:	30			Total % Cover of: Multiply by:
50% of total cover	:_ 15_ 20	% of total cov	er:	OBL species: X1= X1=
Sapling/Shrub Stratum (20)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 31 X 2 = 62 FAC species 49 X 3 = 207 FACU species 39 X 4 = 156
· Vaccinium uliginasum	20	Y	FAC	UPL species X 5 =
- Antone Subca	10		FAC	Column Totals: 139 (A) 425 (B)
Salix pulchra	3		FACU	PI = B/A = 3.05
· Rhododendrum Groenlandicum	10		FAC	
Betyla glaudulosa	2		FAC	
· vaccinium VItis-idaea	15	y	FAC	
· Rosa acidaris	A	1	FACU	
Bepla veoalaskana	T		FACU	
. Picea glavea	15	Y	FACU	
BETULA nava FACTotal Cover	749 r: 39.5 20	0% of total co	ver: 15.8	
VEGETATION (use scientific names of plant	s)	The same of the sa		The state of the same of the same
Herb Stratum (7 ()	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0
1. Equiretum Scirpoides	8	Y	FACU	Morphological Adaptations ¹ (Provide supporting data in
2. Ezwise fum arvense	12	Y	FAC	Notes)
3. Calamagnostis laponica	T		FAC	Problematic Hydrophytic Vegetation ¹ (Explain)
4. Cornus canadensi's	3		PACU	¹ Indicators of hydric soil and wetland hydrology must be present unless
5. valariana copitata	T		FAC	disturbed or problematic.
6. Petasites frigidus	T		FACH	The state of the s
7/ //	7	1		% Bare Ground

FACU

20% of total cover:

Page 2 of 4

% Cover of Wetland Bryophytes

Total Cover of Bryophytes

% Cover of Water

Notes: (If observed, list morphological adaptations below):

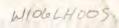
00

Hydrophytic Vegetation Present (Y/N):

6.21.16

SOIL PROFILE	F DESCRIPTION:	Docarib	DateFeature ID	CONTRACTOR OF THE SECOND	1.565	Soil Pit Required (Y/N)_
	Matrix	Describe	to the depth needed to docume Redox Features	nt the indicator o	r confirm the absen	ice of indicators.)
Depth (inches)	Color (moist)	%		1 1 2		
2. 62	Color (moist)	70	Color (moist) % Ty	pe ¹ Loc ²	Texture	Notes
0i 0-3	11 12 1	12		-		Saturated organics
ef 10-t		100				
					_	Fozem organics
*		4				0
				-		
Type: C=Con	centration, D=Deple	etion, RN	M=Reduced Matrix, CS=Covered	or Coated Sand	Grains. ² Location	n: PL=Pore Lining, M=Matrix.
YDRIC SOIL	INDICATORS		AR SHAPE TO SELECTION OF SELECT	第一直整新		FOR PROBLEMATIC HYDRIC SOIL
istosol or Hist			Alaska Gleyed (A13)			Change (TA4) ⁴
listic Epipedor			Alaska Redox (A14)			Swales (TA5)
lack Histic (A3	3)	+	Alaska Gleyed Pores (A15			with 2.5Y Hue
lydrogen Sulfic	de (A4)				Alaska Gleyed	d without 5Y Hue or Redder Underlying
hick Dark Surf					Other (Explain	n in Notes) —
		tation, o	ne primary indicator of wetland h	vdrology, and an	appropriate landso	ape position must be present unless
Give details of estrictive Layer ydric Soil Pre	color change in No	tes.	<u> </u>			ape position must be present unless
Give details of eestrictive Layer lydric Soil Pre- lotes:	color change in No er (if present): Type esent (Y/N):	ites.	**Permafies** Depth (inches	s): <i>1</i> 0		
Give details of estrictive Layer ydric Soil Pre otes:	color change in No er (if present): Type esent (Y/N):	ites.		s): <i>1</i> 0		2 or more required)
Give details of estrictive Layer ydric Soil Presotes: YDROLOGY I	color change in No er (if present): Type esent (Y/N):	FORS (a	ny one indicator is sufficient)	SECONDAR Water-staine Leaves (B9)	RY INDICATORS (2	
Give details of Restrictive Layer dydric Soil Presides:	color change in No er (if present): Type esent (Y/N):	FORS (a	ny one indicator is sufficient) face Soil Cracks (B6)	SECONDAR Water-staine Leaves (B9)	RY INDICATORS (2	2 or more required) Stunted or Stressed Plants (D1)
Give details of estrictive Layer ydric Soil Presotes: YDROLOGY If urface Water (igh Water Tab	color change in No er (if present): Type esent (Y/N):	FORS (a Sur Inui (B7 Spa	ny one indicator is sufficient) face Soil Cracks (B6)	SECONDAR Water-staine Leaves (B9) Drainage Pa	RY INDICATORS (2 ed	2 or more required) Stunted or Stressed Plants (D1)
give details of estrictive Layer ydric Soil Presotes: YDROLOGY I urface Water (igh Water Tab aturation (A3)	color change in No er (if present): Type esent (Y/N):	FORS (a Sur Inuit (B7 Spa Cor	ny one indicator is sufficient) face Soil Cracks (B6)	SECONDAR Water-staine Leaves (B9) Drainage Pa	RY INDICATORS (2 ed	2 or more required) Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Give details of estrictive Layer lydric Soil Presortes: YDROLOGY I urface Water (igh Water Tablaturation (A3)	color change in No er (if present): Type esent (Y/N): PRIMARY INDICA A1) le (A2) 1)	FORS (a Sur Inui (B7 Spa Cor Mai	ny one indicator is sufficient) face Soil Cracks (B6) Indation Visible on Aerial Imagery processory Vegetated acave Surface (B8) I Deposits (B15) rogen Sulfide or (C1)	SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of	ed itterns (B10) izospheres along (C3) Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic
Give details of Restrictive Layer dydric Soil Presides:	color change in Noter (if present): Type esent (Y/N):	FORS (a Sur Inuu (B7 Spa Cor Mai	ny one indicator is sufficient) face Soil Cracks (B6) Indation Visible on Aerial Imagery Indicator Surface (B8) I Deposits (B15) Irogen Sulfide	SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4)	ed itterns (B10) izospheres along (C3) Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Give details of Restrictive Layer Restrictive La	color change in Noter (if present): Type esent (Y/N):	FORS (a Sur Inui (B7 Spa Cor Mai Hyo Odc Dry Wat	ny one indicator is sufficient) face Soil Cracks (B6) indation Visible on Aerial Imagery insely Vegetated incave Surface (B8) I Deposits (B15) irogen Sulfide or (C1) Season	SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit	ed itterns (B10) izospheres along (C3) Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Give details of Restrictive Layer Restrictive La	color change in Noter (if present): Type esent (Y/N):	FORS (a Sur Inui (B7 Spa Cor Mai Hyo Odc Dry Wat	ny one indicator is sufficient) face Soil Cracks (B6)/ Indation Visible on Aerial Imagery In Sely Vegetated Incave Surface (B8)/ If Deposits (B15)/ Irogen Sulfide	SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit	ed itterns (B10) izospheres along (C3) Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Give details of Restrictive Layer Restrictive La	color change in Noter (if present): Type esent (Y/N):	FORS (a Sur Inui (B7 Spa Cor Mai Hyo Odc Dry Wat	ny one indicator is sufficient) face Soil Cracks (B6) ndation Visible on Aerial Imagery arsely Vegetated acave Surface (B8) I Deposits (B15) rogen Sulfide or (C1) Season er Table (C2) er (Explain in Notes):	SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit	ed itterns (B10) izospheres along (C3) Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Give details of Restrictive Layer Restrictive La	color change in Noter (if present): Type esent (Y/N):	FORS (a Sur Inui (B7 Spa Cor Mai Hyo Odc Dry Wat	ny one indicator is sufficient) face Soil Cracks (B6)/ Indation Visible on Aerial Imagery In Sely Vegetated Incave Surface (B8)/ If Deposits (B15)/ Irogen Sulfide	SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit Notes:	atterns (B10) izospheres along (C3) Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Give details of Restrictive Layer Restriction (A3) From the Restriction (A3) From	color change in Noter (if present): Type esent (Y/N):	FORS (a Sur Inui (B7 Spa Cor Mai Hyd Odd Dry Wat Oth	ny one indicator is sufficient) face Soil Cracks (B6)	SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit Notes:	ed itterns (B10) izospheres along (C3) Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)

AQUATIC SITE ASSESSMENT DATA FORM



VEGETATION VARIABLES P= Plot, M= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed
Percent Cover (P): Tree (>5 dbh, >6m tall) Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Dwarf shrub (<0.5m)
Number of Wetland Types (M):/ Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) Very High Density (80-100%)
Interspersion of Cover & Open Water (P): 100% Cover or Open Water 25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover >75% Scattered or Peripheral Cover N/A fray amount of water
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)
HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES
Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic K Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES
Inlet/Outlet Class (P): No Inlet/Outlet X No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Intermittent Outlet Intermittent Inlet/Intermittent In
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded
Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Created
Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)
Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs Return Interval >5 yrs Return In
Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow
Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading 4.9
Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Glacial Till/Not Permeable
Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%) Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring Peren
LANDSCAPE VARIABLES (M)
Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below Only Connected Upstream & Downstream Unknown
Wetland Land Use: High Intensity (i.e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space) X
Watershed Land Use: 0-5% Rural 5-25% Urbanized 25-50% Urbanized >50% Urbanized
Size: Small (<10 acres) Medium (10-100 acres)

J Brownlee

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

	re ID: <u>WICO LHOOS</u> Field Target: <u>QS8</u> Date: <u>Lo QI. IS</u> I items not checked, please provide detailed explanation in the notes section of data form.
	- The more should be provide detailed explanation in the notes section of data form.
1	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
	Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct?
	All dominant species have been determined and recorded per strata? Indicator status is correct for each species?
	Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
	The second completed.
3.	Soil
	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7.	Maps
-	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

Wetland Scientist (print)

Signature / Date

X J Brownlee

Field Crew Chief (print)

Signature / Date

1000	Project Name: Alaska LNG	xplain) Field Targ	Feature Id:	WIOGE HOOLE
Date: 0-2 -16	*	1/01.000		Team No.: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
nvestigators: 5655 P	counter, Falle	1		WIOD
State: Alaska	Region: Alaska			Datum: WGS84
atitude: 64,84195		ide: - 148.78056	VC 1 11	
Logbook No.:	Logbook Page No.: 2	Picture No.: P_W\(16LH	506-001 thru oor
SITE PARAMETERS		ALL DESIGNATION OF THE	张州然	en la marca como del
Subregion: Tomana Kuskoku	sim Cowlands	Landform (hillslope, terrac	e, hummock	s, etc.): Lowland/toesby
Slope (%): 3-6		Local relief (concave, con	vex, none):	undulating
Pre-mapped Alaska LNG/NWI classific	ation: P554/F041	Evidence of Wildlife Use:	Bear Sc	att, Moose hair
Are climatic/hydrologic conditions on the	ne site typical for this time of year?	Are "Normal Circum Yes No_	stances" pre (If no, ex	sent: plain in Notes.)
Are Vegetation, Soil, or Hy				
Are Vegetation, Soil, or Hy		ic? No (If yes, ex	olain in Notes	s.)
SUMMARY OF FINDINGS			es Carlo Boll	A METALL KANASA
Hydrophytic Vegetation Present? Yes	No	Is the Sampled Area within	Wetland?	Yes No
Hydric Soil Present? Yes_	No	Wetland Type: PFO4	/551 B	
Wetland Hydrology Present? Yes_	No	Alaska Vegetation Classificati	on (Viereck):	1A2,1162
Dry to hev. I	sos broken. GPS point	to taken on garm	n. Paint	s on map one approxim
			, ,	4
This point marks	the net Dry bo	ondany with t	ne N 9	+ NE being
This point marks	the net Dry be	ondany with t	ne N 9	+ NE being
This point marks	the next Dry be	ondany with t	ne N 9	+ NE being

W106L4006

VEGETATION (use scientific names of plan	ts)			
Tree Stratum (Plot sizes:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC:
1. Pirea Moriana	3.5	Y	FACW	Total Number of Dominant Species Across All Strata: (
2.				% Dominant Species that are OBL, FACW, or FAC: \(\textstyle \textstyle \) (A
3.				REPORT HOLD TO THE PROPERTY OF THE PERSON OF
4.				Prevalence Index worksheet:
Total Cove				Total % Cover of: Multiply by:
50% of total cove	r: 17.5 20	0% of total cov	er:	OBL species:X1 =
Sapling/Shrub Stratum (~ ~ ()	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 53
1. P. hadodendrum groenlandicum	45	Y	FAC	UPL species X 5 =
2. Rosa acicularis	13		FACU	Column Totals: 97 (A) 24/ (B)
3. Pretula Nroalaskama	(3)		FAC	PI = B/A = 2.48
4. vaccinium uliginosum	25	Y	FAC	
5. Empetrum nigrum	1 +		FAC	, 2
3. Harrinium vitis-idaea	10		FAC	
THE PARTY OF THE P				
	15		FACE	
7. Picea Mariana	15		FJACW	
7. Picea Nariana 8. Salix Sp 9.	1		FJACW	
7. Picea Mariana 8. Salix SP 9. Total Cove	r. 101 r. 50.520	% of total cov		
7. Picea Maria II a 8. Salix SP 9. Total Cove 50% of total cove	r:\0_ r:\0_ r:\5\0,.\520	the sp	er: 20 <u>.</u> 2	Hisdronbytic Vogotation Indicators
7. Picea Maria II a 3. Salix SP 9. Total Cove 50% of total cove	r. 101 r. 50.520	Dominant Species? (Y/N)		Hydrophytic Vegetation Indicators: Dominance Test is > 50%
Total Cove 50% of total cove VEGETATION (use scientific names of plant-	r: 101 r: 50.520 ss) Absolute	Dominant Species?	er: 20, 2	Dominance Test is > 50% Prevalence Index is ≤ 3.0
Total Cove Solve Sp Total Cove 50% of total cove /EGETATION (use scientific names of plant lerb Stratum ()	r: 101 r: 50.520 ss) Absolute	Dominant Species?	er: 20, 2 Indicator Status	Dominance Test is > 50% ✓ Prevalence Index is ≤ 3.0 — Morphological Adaptations¹ (Provide supporting data in
Total Cove 50% of total cove VEGETATION (use scientific names of plant lerb Stratum () 1. Faussehum gratense 2. Colema arushi e la spanica	r: 101 r: 50.520 ss) Absolute	Dominant Species?	er. 20, 2 Indicator Status FACW	Dominance Test is > 50% Prevalence Index is ≤ 3.0
Total Cove 50% of total cove VEGETATION (use scientific names of plant Herb Stratum () 1. Equise from proteinse 2. Colema according la propieca 3. Rubu s cham as more.	r: 101 r: 50.520 ss) Absolute	Dominant Species?	Indicator Status FACW FAC FACW	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes)
Total Cove 50% of total cove VEGETATION (use scientific names of plant Herb Stratum () 1. Equise from graterise lappanica. 2. Colema acrostice lappanica. 3. Rubus chamac Marus. 4. Cornus Canadansis	r: 101 r: 50.520 ss) Absolute	Dominant Species?	er: 20, 2 Indicator Status FACW FAC	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain)
7. Picea Naria 11 a 8. Salix SP 9. Total Cove 50% of total cove VEGETATION (use scientific names of plant Herb Stratum () 1. Eause from protense 2. Colema a cost is la ponica 3. Rubu z cham as marus 4. Cornus Canadansis 5. (acust si)	r: 101 r: 50.520 ss) Absolute	Dominant Species?	Indicator Status FACW FAC FACW	Dominance Test is > 50% ———————————————————————————————————
Total Cove 50% of total cove VEGETATION (use scientific names of plant Herb Stratum () 1. Fause from graterise 2. Colema graterise la pranica 3. Rubus - Grandon (15) 4. Cornus Canadon (15) 5. (out 1) (i) 6.	r: 101 r: 50.520 ss) Absolute	Dominant Species?	Indicator Status FACW FAC FACW	Dominance Test is > 50% ———————————————————————————————————
7. Picea Maria 11 a 8. Salix SP 9. Total Cove 50% of total cove VEGETATION (use scientific names of plant Herb Stratum () 1. Equise from protesse 2. Cale magnitus la prosica 3. Rubus cham remarus 4. Cornus Canadonsis 5. Cornus Canadonsis 6. 7.	r: 101 r: 50.520 ss) Absolute	Dominant Species?	Indicator Status FACW FAC FACW	Dominance Test is > 50% ———————————————————————————————————
7. Picea Maria 11 a 8. Salix SP 9. Total Cove 50% of total cove VEGETATION (use scientific names of plant Herb Stratum () 1. Equiversing graterise 2. Colomo graterise 3. Rubus a hom as usus 4. Cornus Canadansis 5. Cornus Canadansis 6.	r: 101 r: 50.520 ss) Absolute	Dominant Species?	Indicator Status FACW FACW FACW	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
7. Picea Maria Ha 8. Salix SP 9. Total Cove 50% of total cove VEGETATION (use scientific names of plant Herb Stratum () 1. Equise from protesse 2. Colema acrossis lappanica 3. Rubus cham as marus 4. Cornus Canadansis 5. Cornus Canadansis 6. 7. 8.	r: 101 r: 50.520 ss) Absolute	Dominant Species?	Indicator Status FACW FAC FACW	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Bare Ground Cover of Wetland Bryophytes

WIOGEHOUGE

SOIL BBUFIL	F DESCRIPTION: (Describe	e tò the depth needed to document	the indicator or	confirm the absence	of indicators.)
	Matrix	Besone	Redox Features		** *	
Depth inches)	Color (moist)	1%	Color (moist) % Typ	e ¹ Loc ²	Texture	Notes
m! Od						Saturated organics
30 609						Sud ofa
P. C. 3.+					-	FORKA OFFENICS
15-1						Q.,
8						
Type: C=Co	ncentration, D=Depl	etion, RI	M=Reduced Matrix, CS=Covered of	or Coated Sand (PL=Pore Lining, M=Matrix.
IYDRIC SOIL	INDICATORS	The state of	[1] [2] [2] [2] [3] [3] [3] [4] [4] [4] [4] [4] [4] [4] [4] [4] [4	Research Control	William Treatment of the Park	FOR PROBLEMATIC HYDRIC SOIL
listosol or Hi	stel (A1)		Alaska Gleyed (A13)			hange (TA4) ⁴
listic Epipedo	on (A2)		Alaska Redox (A14)			Swales (TA5)
Black Histic (A	A3)		Alaska Gleyed Pores (A15)			with 2.5Y Hue
lydrogen Sul	fide (A4)	-			Layer	without 5Y Hue or Redder Underlying
Thick Dark Su	ırface (A12)				Other (Explain	in Notes)
One indicato	r of hydrophytic vege	etation,	one primary indicator of wetland hy	drology, and an	appropriate landsca	ape position must be present unless
disturbed or p	roblematic. of color change in N	-4				
Restrictive La	yer (if present): Typ	e:	Ma front Depth (inches): 9		
Restrictive La	yer (if present): Typ	otes.	ne from Depth (inches):_9		
Restrictive La	yer (if present): Typ	ie: <u>P</u>		9:_9		4,
Restrictive La	yer (if present): Typ	ie: <u>P</u>		5):_9		
Restrictive La	yer (if present): Typ	ie: <u>P</u>		9:_9		
Restrictive La	yer (if present): Typ	ie: <u>P</u>		9:_ 4		
Restrictive La Hydric Soil F Notes:	yer (if present): Typ	y			RY INDICATORS (2	or more required)
Restrictive La Hydric Soil F Notes: HYDROLOG	yer (if present): Typ Present (Y/N): Y PRIMARY INDICA	TORS	(any one indicator is sufficient)	SECONDAI Water-stain	ed /	Stunted or Stressed
Restrictive La Hydric Soil F Notes: HYDROLOG	yer (if present): Typ	TORS ((any one indicator is sufficient) urface Soil Cracks (B6)	SECONDAI Water-stain Leaves (B9	ed /	Stunted or Stressed Plants (D1)
Restrictive La Hydric Soil F Notes: HYDROLOG Surface Wate	Present (Y/N): Present (Y/N): Y PRIMARY INDICA	ATORS (any one indicator is sufficient) urface Soil Cracks (B6)	SECONDAI Water-stain Leaves (B9	ed /	Stunted or Stressed
Restrictive La Hydric Soil F Notes: HYDROLOG Surface Water High Water T	Present (Y/N): Present (Y/N): Y PRIMARY INDICA or (A1)	SI In (B	any one indicator is sufficient) urface Soil Cracks (B6) undation Visible on Aerial Imagery	SECONDAI Water-stain Leaves (B9 Drainage Pa	atterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Restrictive La Hydric Soil F Notes: HYDROLOG Surface Water High Water T	Present (Y/N): Present (Y/N): Y PRIMARY INDICA or (A1)	SI In (B	(any one indicator is sufficient) urface Soil Cracks (B6) undation Visible on Aerial Imagery	SECONDAI Water-stain Leaves (B9 Drainage Pi Oxidized RI Living Root	atterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3)
Restrictive La Hydric Soil F Notes: HYDROLOG	Y PRIMARY INDICA or (A1) able (A2)	SI SI CC	any one indicator is sufficient) urface Soil Cracks (B6) undation Visible on Aerial Imagery	SECONDAI Water-stain Leaves (B9 Drainage Pi Oxidized RI Living Root	atterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic
Restrictive La Hydric Soil F Notes: HYDROLOG Surface Wate High Water T Saturation (A Water Marks	Y PRIMARY INDICA or (A1) able (A2) (B1)/	SI M	(any one indicator is sufficient) urface Soil Cracks (B6) undation Visible on Aerial Imagery (37) parsely Vegetated oncave Surface (B8) arl Deposits (B15)	SECONDAI Water-stain Leaves (B9 Drainage Pi Oxidized Ri Living Root Presence o Iron (C4)	atterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Restrictive La Hydric Soil F Notes: HYDROLOG Surface Wate High Water T Saturation (A	Y PRIMARY INDICA or (A1) able (A2) (B1)/	SI M	urface Soil Cracks (B6)undation Visible on Aerial Imagery orarsely Vegetated oncave Surface (B8)	SECONDAI Water-stain Leaves (B9 Drainage Pi Oxidized Ri Living Root Presence o Iron (C4) Salt Deposi	atterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic
Restrictive La Hydric Soil F Notes: HYDROLOG Surface Water High Water T Saturation (A Water Marks Sediment De	Y PRIMARY INDICA or (A1) able (A2) (B1)/ posits (B2)/	SI M H O D	(any one indicator is sufficient) urface Soil Cracks (B6) undation Visible on Aerial Imagery (37) parsely Vegetated oncave Surface (B8) arl Deposits (B15) ydrogen Sulfide dor (C1) ry-Season	SECONDAI Water-stain Leaves (B9 Drainage Pi Oxidized Ri Living Root Presence o Iron (C4)	atterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Restrictive La Hydric Soil F Notes: HYDROLOG Surface Water High Water T Saturation (A Water Marks Sediment De	Y PRIMARY INDICA or (A1) able (A2) (B1)/ posits (B2)/	SI M H O D	unface Soil Cracks (B6)	SECONDAI Water-stain Leaves (B9 Drainage Pi Oxidized Ri Living Root Presence o Iron (C4) Salt Deposi	atterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Restrictive La Hydric Soil F Notes: HYDROLOG Surface Wate High Water T Saturation (A Water Marks Sediment Deposits	Y PRIMARY INDICA or (A1) able (A2) (B1)/ posits (B2)/	SI M H O D W	(any one indicator is sufficient) urface Soil Cracks (B6) undation Visible on Aerial Imagery (37) parsely Vegetated oncave Surface (B8) arl Deposits (B15) ydrogen Sulfide dor (C1) ry-Season	SECONDAI Water-stain Leaves (B9 Drainage Pi Oxidized Ri Living Root Presence o Iron (C4) Salt Deposi	atterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Restrictive La Hydric Soil F Notes: HYDROLOG Surface Wate High Water T Saturation (A Water Marks Sediment Deposits Algal Mat or 0	yer (if present): Typ Present (Y/N): Y PRIMARY INDICA or (A1)/ able (A2)/ (B1)// posits (B2)// (B3) Crust (B4)/	SI M H O D W	(any one indicator is sufficient) urface Soil Cracks (B6) undation Visible on Aerial Imagery (7) parsely Vegetated procave Surface (B8) arl Deposits (B15) ydrogen Sulfide dor (C1) ry-Season fater Table (C2)	SECONDAI Water-stain Leaves (B9 Drainage Pi Oxidized Ri Living Root Presence o Iron (C4) Salt Deposi	atterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Restrictive La Hydric Soil F Notes: HYDROLOG Surface Wate High Water T Saturation (A Water Marks Sediment Deposits Algal Mat or 0	yer (if present): Typ Present (Y/N): Y PRIMARY INDICA or (A1)/ able (A2)/ (B1)// posits (B2)// (B3) Crust (B4)/	SI M H O D W	(any one indicator is sufficient) urface Soil Cracks (B6) undation Visible on Aerial Imagery (7) parsely Vegetated procave Surface (B8) arl Deposits (B15) ydrogen Sulfide dor (C1) ry-Season fater Table (C2)	SECONDAI Water-stain Leaves (B9 Drainage Pi Oxidized Ri Living Root Presence o Iron (C4) Salt Deposi	atterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Restrictive La Hydric Soil F Notes: HYDROLOG Surface Water High Water T Saturation (A Water Marks Sediment Deposits Algal Mat or (I	yer (if present): Typ Present (Y/N): Y PRIMARY INDICA or (A1)/ able (A2)/ (B1)// posits (B2)// Crust (B4)/ (B5)/	SI M H O D W	unface Soil Cracks (B6)	SECONDAI Water-stain Leaves (B9 Drainage Pi Oxidized Ri Living Root Presence o Iron (C4) Salt Deposi	atterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Restrictive La Hydric Soil F Notes: HYDROLOG Surface Water High Water T Saturation (A Water Marks Sediment Deposits Algal Mat or (I	yer (if present): Typ Present (Y/N): Y PRIMARY INDICA or (A1)/ able (A2)/ (B1)// posits (B2)// (B3) Crust (B4)/	SI M H O D W	unface Soil Cracks (B6)	SECONDAI Water-stain Leaves (B9 Drainage Pa Oxidized Ri Living Root Presence of Iron (C4) Salt Deposit Notes:	atterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Restrictive La Hydric Soil F Notes: HYDROLOG Surface Wate High Water T Saturation (A Water Marks Sediment Deposits Algal Mat or (I Iron Deposits Surface Wate	yer (if present): Typ Present (Y/N): Y PRIMARY INDICA or (A1)/ able (A2)/ (B1)// posits (B2)// Crust (B4)/ (B5)/	SI M H O D W	unface Soil Cracks (B6)	SECONDAI Water-stain Leaves (B9 Drainage Pa Oxidized Ri Living Root Presence of Iron (C4) Salt Deposit Notes:	atterns (B10) nizospheres along s (C3) f Reduced tts (C5)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Restrictive La Hydric Soil F Notes: HYDROLOG Surface Wate High Water T Saturation (A Water Marks Sediment Deposits Algal Mat or (I Iron Deposits Surface Wate	Present (Y/N): Present (Y/N): Present (Y/N): Present (Y/N): Present (Y/N): Present (Y/N):	SI M H O D W	unface Soil Cracks (B6)	SECONDAI Water-stain Leaves (B9 Drainage Pa Oxidized Ri Living Root Presence of Iron (C4) Salt Deposit Notes:	atterns (B10) nizospheres along s (C3) f Reduced tts (C5)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)

AQUATIC SITE ASSESSMENT DATA FORM



VEGETATION VARIABLES P= Plot, M= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed
Percent Cover (P): Tree (>5 dbh, >6m tall) Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Dwarf shrub (<0.5m)
Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) 80%) Very High Density (80-100%) 4
Interspersion of Cover & Open Water (P): 100% Cover or Open Water 26-75% Scattered or Peripheral Cover <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Ratches; Parts of Site Open Small Scattered Patches Continuous CoverX
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)
HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe N
COLL VARIABLES
Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic V Histosol: Sapric
Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES
HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet No Out
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/Perennial Outle
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/Perennial O
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennia
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Outlet Perennial Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Intermitte
Inlet/Outlet Class (P): No Inlet/Outlet

Crew Chief QA/QC check:

GPS Technician QA/QC check:

Wetland Determination Form QA/QC Checklist
This form to be completed before leaving the field site.

Featur	e ID: WIOLHOOLE Field Target: 259 Date: 6.21.16
	items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification? Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct? All dominant species have been determined and recorded per strata? Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
3.	Soil
	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7.	Maps
	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

Wetland Scientist (print)

Signature / Date

Field Crew Chief (print)

Signature Date

		and the same	D SALE HANDS OF THE PARTY OF		No. 15 Page 5	ANTO INC. NO. OF THE PARTY OF T	O LESS ALL MANAGE
SITE DESCRIPTION	. Bood (combin)	Other (ave		Field Tors	get: <u>256</u>	Map #: <u>64</u> Map D	12to: 5 27 1
Survey Type: Centerline 🙏 Acces			nain)	Fleid Targ			
Date: (0-21-16)	Project Name: Alask	17.0	· · · ·	1.10	realtire id.	Team No.: W	
Investigators: Jessie &	monvier,	Kell	TY VI	MEN		realitino Vo (00
State: Alaska	Region: Alaska	1	Milepost:	461.7		Datum: WGS84	340
Latitude: 64,702830			e: 148,95		NOCL		
Løgbook No.:	Logbook Page No.:	3	Picture No.:	1-W	106LF	1007-001	thrusol
SITE PARAMETERS				THE THE	Grand Control	PASCE ASSESSED.	以所為的數
Subregion: Tanana Kustokwin	n Lowlands		Landform (hill	Islope, terra	ce, hummock	s, etc.): Lowland	J
Slope (%): /) - (Local relief (c	concave, con	nvex, none):	Flat	
Pre-mapped Alaska LNG/NWI classifica	tion: PSS4/F047	31AZ	Evidence of V	Vildlife Use:	Wolf De	n	
Are climatic/hydrologic conditions on the Yes No (if no expl	e site typical for this time ain in Notes)	of year?			nstances" pre (If no, ex	sent: plain in Notes.)	
Are Vegetation, Soil, or Hyd	drology Significant	tly Disturbed	1? No_&	_(If yes, exp	plain in Notes		
Are Vegetation, Soil, or Hyd	drology Naturally F	Problematic?	? No <u>∝</u>	_ (If yes, ex	plain in Notes	i.)	ALL SALES OF THE SALES
SUMMARY OF FINDINGS	selective bases	A STATE OF THE		A CHECKE			
Hydrophytic Vegetation Present? Yes_	No		s the Sampled A	Area within	a Wetland?	Yes	No_X
Hydric Soil Present? Yes	NoX	v	Vetland Type:	U			
Wetland Hydrology Present? Yes_	No	A	Naska Vegetation	n Classificat	ion (Viereck):	1A 2,110	2 -
Notes and Site Sketch: Please include Decorridor. Tall Pic Mar Open Thick Feather miles 9 11 Raines today & water table because face Soffer Plot on back side of This point marks the south along & SI Site revisities re WIOLDHOOT- OP has act	torest Sever Size Server Size Server Size Server Size Shigher, Jrier This boundary Ightly higher commended ive flow 4 issue Ory Ory	resulting quound petwe	I that app een wet s compair	filling and le rears to the	post of but reles so be a NW a suround:	wolfden. no Dry to no wetlan	\g q
1, ,		0 4 -					

WETLAND DETERMINATION DATA FORM WOGLHOOT

VEGETATION (use scientific names of plan	its)			
Tree Stratum (Plot sizes: 100 .)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC:
1. Picea mariana	30	Y	FACW	Total Number of Dominant Species Across All Strata:
2. Betula Neoahstana	2		FACE	% Dominant Species that are OBL, FACW, or FAC: <u>から</u>
3.				
1.	Jisela.			Prevalence Index worksheet:
Total Cove	10		6.11	Total % Cover of: Multiply by:
• 50% of total cove Sapling/Shrub Stratum ()	1	0% of total cov	1	OBL species: X1 =
paping/Shrub Stratum (2000)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 46 X 2 = 42 FAC species 73 X 3 = 219 FACU species /2 X 4 = 18
Rhadaden drum gruenlandicu	100	Y	FAC	UPL species X5 = -
· vaccinium vitis-idaea	20,8	Y	FAC	Column Totals: 13) (A) 359 (B)
· Linnaea borealis	7	lig - '	EACU	PI = B/A = 2.74
· Arcthus rubra	-4		FAI	Vaccinium Viginosum 5 HY
Behla glandulosa	2		FAC	Rosa accelaring T H
Picea Colowca Mariana	75	Y	FACW	
· Betula Negalaskang	7	100	FACT	The second secon
al ix stienca	10		FAC	
al ix stienca	10 5 rr 93		FAC	
Total Cove	or: 41.5 20	% of total cov	FAC	
Total Cove 50% of total cove	or: 41.5 20	Dominant Species?	FAC	Hydrophytic Vegetation Indicators: Dominance Test is > 50%,
Total Cove 50% of total cove /EGETATION (use scientific names of planter Stratum ()	ts) Absolute	Dominant	er: 6.6 Indicator	Dominance Test is > 50%, Prevalence Index is ≤ 3.0
Total Cove 50% of total cove EGETATION (use scientific names of plant lerb Stratum (2 ()	ts) Absolute	Dominant Species?	er: G. G Indicator Status	Dominance Test is > 50%, Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data
EGETATION (use scientific names of planters Stratum (ts) Absolute	Dominant Species?	er: 6.6 Indicator	Dominance Test is > 50%, Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data Notes)
Total Cove 50% of total cove EGETATION (use scientific names of plant lerb Stratum (2) Equisatum scientific names Equisatum prateus a Geocaulon lividium	ts) Absolute	Dominant Species?	Indicator Status FACU FACU FACU	Dominance Test is > 50%, Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data
Total Cove 50% of total cove FEGETATION (use scientific names of plant lerb Stratum (2) Leguise fum scientific scient	ts) Absolute	Dominant Species?	Indicator Status FACU FACU	Dominance Test is > 50%, Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data Notes) Problematic Hydrophytic Vegetation¹ (Explain)
Total Cove 50% of total cove 50% of total cove ferb Stratum (2) 1. Equisatum scientific names of plan 2. Equisatum pratanses 2. Equisatum pratanses 3. Caeo Caulon lividium 4. Colous canadensis 5. Padicularis	ts) Absolute	Dominant Species?	Indicator Status FACU FACU FACU	Dominance Test is > 50%, Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data Notes) Problematic Hydrophytic Vegetation¹ (Explain) Indicators of hydric soil and wetland hydrology must be present unit
Total Cove 50% of total cove 50% of total cove EGETATION (use scientific names of plant lerb Stratum (2) Equisatum scientific names of plant lerb Stratum (2) Equisatum pratans a Equisatum pratans a Coco caulon lividium Coco caulon lividium Coco caulon lividium Foch sp	ts) Absolute	Dominant Species?	Indicator Status FACU FACU FACU	Dominance Test is > 50%, Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data Notes) Problematic Hydrophytic Vegetation¹ (Explain) Indicators of hydric soil and wetland hydrology must be present unit
Total Cove 50% of total cove 50% of total cove scientific names of plan lerb Stratum (ts) Absolute	Dominant Species?	Indicator Status FACU FACU FACU	Dominance Test is > 50%, Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data Notes) Problematic Hydrophytic Vegetation¹ (Explain) Indicators of hydric soil and wetland hydrology must be present unidisturbed or problematic.
Total Cove 50% of total cove 50% of total cove /EGETATION (use scientific names of plant Herb Stratum (2 () 1. Equisatum scientific names of plant Herb Stratum () 2. Equisatum pratans & 2. Equisatum pratans & 3. Caeo Caulon lividium 4. Colous canadensis 5. Padaulacis 6. Padaulacis 7. Calamagrosh's lapponica 8.	ts) Absolute	Dominant Species?	Indicator Status FACU FACU FACU	Dominance Test is > 50%, Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data Notes) Problematic Hydrophytic Vegetation¹ (Explain) Indicators of hydric soil and wetland hydrology must be present unidisturbed or problematic. Means of the present unidisturbed or problematic.
Total Cove 50% of total cove 50% of total cove /EGETATION (use scientific names of plant terb Stratum (2) 1. Equisatum scientific names of plant terb Stratum (2) 2. Equisatum pratens & 2. Equisatum pratens & 3. Caeo Caulon lividium 4. Colous canadensis 5. Padauagrash's lapponica 3. Foch sp (alawagrash's lapponica 3.	ts) Absolute	Dominant Species?	Indicator Status FACU FACU FACU	Dominance Test is > 50%, Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unidisturbed or problematic. Bare Ground We Cover of Wetland Bryophytes Total Cover of Bryophytes Cover of Water
Total Cove 50% of total cove 50% of total cove /EGETATION (use scientific names of plant Herb Stratum (2 () 1. Equisatum scientific names of plant Herb Stratum (2 () 2. Equisatum prateus a 3. (a co caulon lividium 4. Cos ous caudon lividium 4. Cos ous caudon si s 5. Padiculas s 6. Foch sp 7. Calamagrosh's lapponica 8. 9. 10.	Absolute % Cover	Dominant Species?	Indicator Status FACU FACU FACU	Dominance Test is > 50%, Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unidisturbed or problematic. Bare Ground We Cover of Wetland Bryophytes Total Cover of Bryophytes Cover of Water Hydrophytic Vegetation Present (Y/N):
Total Coversion Total Coversion Solventific names of planters Stratum (2) 1. Equisatum scientific names of planters Stratum (2) 1. Equisatum scientific names of planters Stratum (2) 1. Equisatum scientific names of planters Solventific names of planters Solventin names of planters Solventific names of planters Solventific nam	Absolute % Cover	Dominant Species?	Indicator Status FACU FACU FACU	Dominance Test is > 50%, Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unidisturbed or problematic. Bare Ground We Cover of Wetland Bryophytes Total Cover of Bryophytes Cover of Water

W10614.007

10-21.16 Soil Pit Required (Y/N) Feature ID SOIL Date_ SOIL PROFILE DESCRIPTION: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features Matrix Depth % Type¹ Loc² Texture Notes (inches) % Color (moist) Color (moist) 0-5 5-6 Sil sam 10-18 2/1 100 75-124/4 SILF DOINT 30 7.0 M CON M loom 10812 1/2 5 92.1 ²Location: PL=Pore Lining, M=Matrix. ¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. INDICATORS FOR PROBLEMATIC HYDRIC SOILS3 HYDRIC SOIL INDICATORS Alaska Color Change (TA4)4 Alaska Gleyed (A13) Histosol or Histel (A1) Alaska Alpine Swales (TA5) Histic Epipedon (A2) Alaska Redox (A14) Alaska Redox with 2.5Y Hue Alaska Gleyed Pores (A15) Black Histic (A3) Alaska Gleyed without 5Y Hue or Redder Underlying Hydrogen Sulfide (A4) Layer Other (Explain in Notes) Thick Dark Surface (A12) One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic. Give details of color change in Notes. Restrictive Layer (if present): Type: Sessonal Front Depth (inches): Hydric Soil Present (Y/N): NEG DIX SECONDARY INDICATORS (2 or more required) HYDROLOGY PRIMARY INDICATORS (any one indicator is sufficient) Stunted or Stressed/ Water-stained Surface Soil Cracks (B6) Surface Water (A1) Plants (D1) Leaves (B9) Inundation Visible on Aerial Imagery Geomorphic Position (D2) High Water Table (A2) N See Not Drainage Patterns (B10) Oxidized Rhizospheres along Sparsely Vegetated Shallow Aquitard (D3) Saturation (A3) Living Roots (C3) Concave Surface (B8) Microtopographic Presence of Reduced Marl Deposits (B15) _ Water Marks (B1) _ Relief (D4) Iron (C4) _/ Hydrogen Sulfide FAC-Neutral Test (D5) Salt Deposits (C5)_ Sediment Deposits (B2) Odor (C1) Not calling vatertube despite water in p.t. Its rained hard the past few chy and its run off in Dry-Season Drift Deposits (B3) Water Table (C2) Other (Explain in Notes): Algal Mat or Crust (B4) Iron Deposits (B5) Depth (in): Surface Water Present (Y/N): NSEC Wetland Hydrology Present (Y/N): Water Table Present (Y/N): Depth (in): DH 5.3 Saturation Present (Y/N): Depth (in): EC: (includes capillary fringe) Didn't go cord plepth in field but noted pursence Notes: of saturation

AQUATIC SITE ASSESSMENT DATA FORM WOGLHOOT

VEGETATION VARIABLES P= Plot, M= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Aquatic Bed
Percent Cover (P): Tree (>5 dbh, >6m tall) Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Dwarf shrub (<0.5m)
Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%)
Interspersion of Cover & Open Water (P): 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)
HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES
Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES
Let 4/O 4/4 Ober 70 No Let 4/O 4/4 And Andrew Court Annual
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Inlet
Outlet Intermittent Inlet/Intermittent Outlet / Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial
Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/
Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet In
Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/
Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet
Outlet Intermittent Inlet/Intermittent Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Inlet/Perennial Inlet/Perennial Outlet
Outlet Intermittent Inlet/Intermittent Outlet Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Inlet/Perennial In
Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet
Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Inlet/No Ou
OutletIntermittent Inlet/Intermittent OutletPerennial Inlet/Perennial OutletPerennial Inlet/Intermittent OutletPerennial Inlet/Perennial OutletPerennial Inlet/Intermittent OutletPerennial Inlet/Perennial OutletPerennial Inlet/Intermittent OutletPerennial Inlet/Perennial OutletPerennial Inlet/Intermittent Outlet
Outlet
Outlet
Outlet Intermittent Intel/Intermittent Utlet Intermittent Intel/Perennial Outlet Perennial Intel/No Outlet Perennial Intel/Intermittent Outlet Perennial Intel/Perennial Intel/Perennial Intel/Perennial Intel/Perennial Intel/Perennial Intel/Perennial Intel/Perennial Outlet Perennial Intel/Perennial Intel/Perennial Outlet Perennial Intel/Intermittent Outlet Perennial Intel/Intermittent Outlet Perennial Intel/Perennial Outlet Perennial Intel/Intermittent Outlet Outlet Outlet Outlet Outlet Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Observed of Wetland Substrate Fluvaquent Soils Sediment Observed of Wetland Substrate Fluvaquent Soils Sediment Observed of Overbank Flooding (P): No Overbank Flooding Perennial Intel/Interval 2-2 yrs Return Interval 2-5 yrs Return Interval 2-5 yrs Return Interval 2-5 yrs Perennial Sediment Observed Perennial Intel/Interval 2-5 yrs Return Interval 2-5 yrs Return Interval 2-5 yrs Perennial Intel/Interval 2-5 yrs Perennial Intel/Interval 2-5 yrs Perennial Interval 2-5 yrs Pere

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

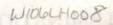
Featu	re ID: <u>IJIO6LH 667</u> Field Target: <u>25le</u> Date: <u>(a. 21.116</u>
For al	I items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification? Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct?
	Cover calculations are complete and correct? All dominant species have been determined and recorded per strata? Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
3.	Soil
	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	 Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7.	Maps
	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X	
Signature / Date	hollsteps
X Dranles	2 6.21/6
	Signature / Date

Surrou Type: Conterline X Acce	一种的一种种的一种种的一种种的一种种的一种种的一种种的一种种的一种种的一种种的	With the same	老和老 的名词复数	State of the same of the same of	recognization action with a con-
Survey Type. Centernite Acce	ess Road (explain)	Other (expla	ain)	Field Target: 262	Map #: 100 Map Date: 5:27-14
Date: 6.22-16	Project Name: Alaska	LNG		Feature Id	4/10624008
	mile kaley U	olper	108	*	Team No.: W106
State: Alaska	Region: Alaska		Milepost:	141.8	
Latitude: 64. 56 28.865	1	Longitude	: -14804	1'22.550"	Datum: WGS84
Logbook No.: 2	Logbook Page No.:	4	Picture No.:	P_WIOGLHOOS-	.001 thru _004
SITE PARAMETERS	· · · · · · · · · · · · · · · · · · ·			A The makes the state of the	Constitution of the second
Subregion: Tomana Kuskoku	in lowlands		Landform (hil	llslope, terrace, hummock	(s, etc.): hillside /lowland
Slope (%): 5-8			Local relief (d	concave, convex, none):	Flat
Pre-mapped Alaska LNG/NWI classific	cation: PF64/5541	3	Evidence of \	Wildlife Use: Squared	highway
Are climatic/hydrologic conditions on t	he site typical for this time plain in Notes)	of year?		lormal Circumstances" pr	
Are Vegetation, Soil, or H		ly Disturbed	? No <u>X</u>	(If yes, explain in Note	s)
Are Vegetation, Soil, or H	lydrology Naturally F	Problematic?	No_X	(If yes, explain in Note	es.)
SUMMARY OF FINDINGS	经验证的 多数数型	Service Control		All Marketine	
Hydrophytic Vegetation Present? Yes	s X No	Is	the Sampled	Area within a Wetland?	Yes NoX
Hydric Soil Present? Yes	No_X	_ v	Vetland Type:	J	
Wetland Hydrology Present? Yes	No	_ A	alaska Vegetatio	on Classification (Viereck): 1AZ/1//Z
Notes and Site Sketch: Please include corridor. Open Pic Mar For Almost all of The west (see map Continued to wall Still Lry.	ransect from dis	m LZh	o here won gan,	reather me pos wit, It	dries of just to

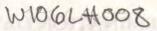


- in the state of plants	VIII A		. Staple's	A STATE OF THE STA	
VEGETATION (use scientific names of plants				D. I area Test workshoot	
	Absolute	Dominant	Indicator	Dominance Test worksheet:	(A)
Tree Stratum (Plot sizes:)	% Cover	Species?	Status	No. of Dominant Species that are obe, 171011, 511115	
		(Y/N) ·		Total Number of Bornman openies / in the second of the sec	(B)
1. Picca Moriano	30	1	FACW	% Dominant Species that are OBL, FACW, or FAC: 1000	A/B)
2.					
3.				In the second second	
4.				Prevalence Index worksheet:	
Total Cover	: 30			Total % Cover of: Multiply by:	
50% of total cover	:_ 15_ 20	% of total cov	er:	OBL species: X1=	
Sapling/Shrub Stratum (26)	Absolute	Dominant	Indicator		
Saping/Situb Stratum (% Cover	Species?	Status	FAC species 17 x3 = 51	
		(Y/N)		FACU speciesX 4 =	
1. Rhochdendrum groenlandia	m 3		FAC	UPL species X 5 =	
2. vaccinium uns Idaea	5		FAC	Column Totals: 7 (A) 157 (B)	
3. Rosa acicularis	T		FACO	PI = B/A = 2,24	
4. Alnus viridis	5		FAC		
5. Picea Mariant	20	Y	FACIL		
6. vaccinium diginosum	2	N E CAN	FAC		
7. 5alix 50	7		-		
8.					
9.					
Total Cove	146	0% of total co	ver:_ 7		

lerb Stratum	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: y Dominance Test is > 50% Prevalence Index is ≤ 3.0
Equisation prateins	2	1	FACH	Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain)
4. Cornus canadensis 5. Refasites Frigidus	T		FACU	Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
6. Calomagrostic canadensis 7. 8.	2	7	FAC	% Bare Ground % Cover of Wetland Bryophytes Total Cover of Bryophytes
9. Total Cove	5			Modes: (If observed, list morphological adaptations below):

SOIL PROFILE		-						
Depth	Matrix		Redox Features				C. Landing	6
nches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Notes
i 0-le								Dry Feather moss
e 6-11								Damp organies
wif 11-15	104R 4/2	70	101R3/4	5	Con	M	silt loan	Dank color is O/A-Materia
	104/2/2	25						Bong cryoterboted
				1				
Type: C=Con	centration D=Dept	etion PA	1=Reduced Matrix, C	S=Cow	arad ar Ca	ated Sand (Prains 21 acation	: PL=Pore Lining, M=Matrix.
	INDICATORS	etion, Kiv	I-Reduced Matrix, C	S-COVE	ered or Co	aled Sand (The second second second	FOR PROBLEMATIC HYDRIC SOILS ³
	tel (A1)	21076-00	Alaska Gleyed	(A13)		(W W) 44	NAME AND ADDRESS OF TAXABLE PARTY.	Change (TA4) ⁴
	n (A2)	-	Alaska Redox	1000		-		Swales (TA5)
	3)	-	Alaska Gleyed			-		with 2.5Y Hue
ydrogen Sulfi			Alaska Gleyed	Poles	(A15)			with 2.51 Fide
hick Dark Sur	face (A12)			-			Other (Explain	in Notes)
		etation, o	ne primary indicator	of wetla	and hydrolo	ogy, and an		ape position must be present unless
Give details of estrictive Laye	color change in No er (if present): Typ	otes.	ost [Depth (in	nches):	11		
lotes:	esent (Y/N):	despi	te			<i>u</i> - 1-		
Not ce	seling Ax		te Feath					
lotes: Not ce	seling Ax		Feath					2 or more required)
otes: Not ce	seling Ax	TORS (a	iny one indicator is s	ufficient	t) :		RY INDICATORS (
VDROLOGY	eling Ad	TORS (a	iny one indicator is s face Soil Cracks (B6 ndation Visible on A	ufficient	t) :	SECONDAR Water-staine Leaves (B9)	RY INDICATORS (2 or more required) Stunted or Stressed
otes: Not ce YDROLOGY urface Water igh Water Tab	PRIMARY INDICA (A1) Die (A2)	Sui Inu (B7	iny one indicator is s face Soil Cracks (B6 ndation Visible on A	ufficient	agery	SECONDAR Water-staine Leaves (B9) Drainage Pa	ed etterns (B10)	2 or more required) Stunted or Stressed Plants (D1)
otes: YDROLOGY urface Water igh Water Tata aturation (A3)	PRIMARY INDICA (A1)	Sui Inu (B7 Spa Con	face Soil Cracks (Bendation Visible on Adarsely Vegetated	ufficient i) erial Ima	agery [SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rh	ed itterns (B10) izospheres along (C3)	Stunted or Stressed Plants (D1) Geomorphic Position (D2)
otes: YDROLOGY urface Water igh Water Tata aturation (A3) //ater Marks (E	PRIMARY INDICA (A1) Die (A2) M B1)	Sur Inu (B7 Spa Coo	race Soil Cracks (Be ndation Visible on Ad arsely Vegetated ncave Surface (B8)	ufficient i) erial Ima	t) s	Water-stained Leaves (B9) Drainage Pathology Oxidized Rhabition Roots Presence of Iron (C4) Salt Deposit	ed	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic
IVDROLOGY urface Water ligh Water Tat aturation (A3) Vater Marks (E	PRIMARY INDICA (A1) Die (A2) B1) Disits (B2)	Sui Inu (B7 Spa Coi Ma Hyd Od	iny one indicator is sufface Soil Cracks (Be indation Visible on Act) indation Visible on Act) indicated Vegetated incave Surface (B8) indicates (B15) indicates (B15)	ufficient i) erial Ima	t) s	Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4)	ed	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
YDROLOGY urface Water ligh Water Tat aturation (A3) Vater Marks (E ediment Depo	PRIMARY INDICA (A1) Die (A2) B1) Disits (B2) B3)	Sui Inu (B7 Spa Coi Ma Hyd Od Dry Wa	riny one indicator is sufface Soil Cracks (Bendation Visible on Adv) arsely Vegetated incave Surface (B8) rl Deposits (B15) drogen Sulfide or (C1)	wifficient (S) Perial Image	t) s	Water-stained Leaves (B9) Drainage Pathology Oxidized Rhabition Roots Presence of Iron (C4) Salt Deposit	ed	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
yDROLOGY urface Water ligh Water Tat aturation (A3) Vater Marks (E ediment Depo	PRIMARY INDICA (A1) Die (A2) B1) Disits (B2) ust (B4)	Sui Inu (B7 Spa Coi Ma Hyd Od Dry Wa	ri Deposits (B15) drogen Sulfide or (C1)	wifficient (S) Perial Image	t) s	Water-stained Leaves (B9) Drainage Pathology Oxidized Rhabition Roots Presence of Iron (C4) Salt Deposit	ed	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
yDROLOGY urface Water igh Water Tat aturation (A3) /ater Marks (E ediment Deposits (I lgal Mat or Cri on Deposits (E	PRIMARY INDICA (A1) // Die (A2) // B3) // Ust (B4) // B5) //	Sui Inu (B7 Spa Coi Ma Hyd Od Dry Wa	riny one indicator is sufface Soil Cracks (B6 andation Visible on Act) arsely Vegetated ancave Surface (B8) If Deposits (B15) drogen Sulfide or (C1)	wifficient (S) Perial Image	t) s	Water-stained Leaves (B9) Drainage Pathology Oxidized Rhabition Roots Presence of Iron (C4) Salt Deposit	ed	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Interest Notice Intere	PRIMARY INDICA (A1)	Sui Inu (B7 Spa Coi Ma Hyd Od Dry Wa	ri Deposits (B15) drogen Sulfide or (C1)	wifficient (S) Perial Image	agery [Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit Notes:	ed	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
yDROLOGY urface Water ligh Water Tata aturation (A3) Vater Marks (E) ediment Deposits (I) lgal Mat or Cri on Deposits (I) urface Water Vater Table Pri aturation Pres	PRIMARY INDICA (A1) Die (A2) B1) Disits (B2) Ust (B4) Present (Y/N): Sent (Y/N):	Sui Inu (B7 Spa Coi Ma Hyd Od Dry Wa	riny one indicator is sufface Soil Cracks (B6 andation Visible on Act) arsely Vegetated ancave Surface (B8) In Deposits (B15) drogen Sulfide or (C1)	wifficient (S) Perial Image	agery [Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit Notes:	ed etterns (B10) izospheres along (C3) Reduced s (C5)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
YDROLOGY urface Water ligh Water Tat aturation (A3) Vater Marks (E ediment Depo rift Deposits (I lgal Mat or Cri on Deposits (E urface Water I vater Table Pri aturation Pres ncludes capilla	PRIMARY INDICA (A1) Dele (A2) B1) Disits (B2) B3) Ust (B4) Present (Y/N): Sent (Y/N): ary fringe)	Sun Inu (B7 Spa Con Ma Hyw Od Dry Wa	any one indicator is sufface Soil Cracks (Beindation Visible on Act) arsely Vegetated incave Surface (B8) If Deposits (B15) drogen Sulfide or (C1)	erial Ima	wee	Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit Notes:	ed etterns (B10) izospheres along (C3) Reduced s (C5)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)

AQUATIC SITE ASSESSMENT DATA FORM W106L4008



VEGETATION VARIABLES P= Plot, M= Matrix
Primary */egetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed
Percent Cover (P): Tree (>5 dbh, >6m tall) Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Dwarf shrub (<0.5m)
Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) Very High Density (80-100%)
Interspersion of Cover & Open Water (P): 100% Cover or Open Water 25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover >75% Scattered or Peripheral Cover
Plant Species Diversity (P): Low (< 5 plant species) High (>25)
Presence of Islands (M): Absent (none) One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)
HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES
Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Outlet Perenn
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded
Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Created
Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)
Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs
Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow
Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading
Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Glacial Till/Not Permeable
Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%) Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring
LANDSCAPE VARIABLES (M)
Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below Only Connected Above Connected Upstream & Downstream Unknown
Wetland Land Use: High Intensity (i.e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)
Watershed Land Use: 0-5% Rural 5-25% Urbanized 25-50% Urbanized >50% Urbanized
Size: Small (<10 acres) Medium (10-100 acres) Large (>100 acres)
0007 1 1 0100 1 1 01

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Featu	ure ID: 1006 LH008 Field Target: 262 Date: 6-22-16
For a	Il items not checked, please provide detailed explanation in the notes section of data form.
1	. Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2	
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification? Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct? All dominant species have been determined and recorded per strata? Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
3.	Soil
	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7.	Maps
	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X halen	Volver	X hallers	Volker	6-27-16
Wetland Scientist (print)	"	Signature / Date	noun	

X J Brownlee

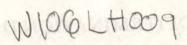
Field Crew Chief (print)

X febrounder 6.22.16

Signature / Date

SITE DESCRIPTION				
Survey Type: Centerline Acce	SS Road (explain) Other (e		Field Target: 265	Map #: 57 Map Date: 5 - 27-16
Date: 6 22.16	Project Name: Alaska LNG		Feature Id	: W106LH009
Investigators: Jessie B	rownlee, Ka	ley-1	10 per	Team No.: W \ O(a
State: Alaska	Region: Alaska	Milepost:	140.2	
Latitude: 64.962975	Longit Longit	ude: -148.	683889°	Datum: WGS84
Logbook No.: 2	Logbook Page No.: 4			09_001 thru 004
SITE PARAMETERS		ENGLY SEXULATION		12-01 (1110 00-)
Subregion: Tanang - Kuskoku	in landa	Landform (hil	Islope, terrace, hummock	s. etc.): / _ /
Slope (%): 0-3	Sim Colo (Males)		concave, convex, none):	
Pre-mapped Alaska LNG/NWI classifica	tion: PSSI/EMIB		Wildlife Use: Massel	
Are climatic/hydrologic conditions on the Yes No (if no explanation)			ormal Circumstances" pre	
Are Vegetation, Soil, or Hyd	Irology Significantly Disturb	ed? No /	_(If yes, explain in Notes	
Are Vegetation, Soil, or Hyd	rology Naturally Problemat	ic? No	_ (If yes, explain in Notes	.)
SUMMARY OF FINDINGS	AC AG ATMENT	58 子稿食	以及於於於於於	14.1 图图 (A) (A)
Hydrophytic Vegetation Present? Yes_	No	Is the Sampled A	Area within a Wetland?	YesNo
Hydric Soil Present? Yes_	X No	Wetland Type:	PS518	
Wetland Hydrology Present? Yes_	No	Alaska Vegetation	Classification (Viereck):	1101
Notes and Site Sketch: Please include D corridor.				
Shows Community Allwet from 17 to	- of Bet Nama, let	Colon, Cho	Cal, + Vac 01	1
Allwet from LZ to	here. All wet F	for here	to LZ Via	different
roote.			ST.	(, , , , , , , , , , , , , , , , , , ,
H 1 - 10 0 (Ho early 2	corldat	Land easi	ly sue to wetness
Came 91.	The Carry 1			
. so we could a	+ do any of's			
1 11 11 11 11 11				1000

WETLAND DETERMINATION DATA FORM W 106 L H009



EGETATION (use scientific names of plants	1			Mark Land Company of the Company of
ree Stratum (Plot sizes:)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	No. of Dominant Species that are OBL, FACW, or FAC: (A) Total Number of Dominant Species Across All Strata: (B)
1. Larix laricing	1		FACW	% Dominant Species that are OBL, FACW, or FAC: 75 (A/B
Picea Glavea	8	Y	FACU	
Betvla Necalaskain	1		FAC	The second secon
VC-10/4				Prevalence Index worksheet:
Total Cover				Total % Cover of: Multiply by:
50% of total cover	= 5 20	% of total cov	er:	OBL species: X1=
Sapling/Shrub Stratum (20)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 37 X2 = 74 FAC species 55 X3 = 165
•		(1/4)		FACU species / O X 4 = 40
1. Changedaphie calycidata	30	4	FACE	UPL species $X = 5$ Column Totals: 102 (A) 279 (B)
2. Salse fuscescens	5		FACE	PI = B/A = $\frac{2.73}{}$
3. Betwee NRAG	13		FAC	PI = B/A =
4. Carix Correina	3		CACH)	
5. Pice + Claves	2	-	FACU	
6. Betula appaloskana	3	1	FAC	
7. Vaccinion Siginosam	20	1	FAC	the Comment of the Section
8. Rhododendrum groenlandieum			FAC	
9. Betwee glandulosa	10		FAC	
Total Cove		0% of total co	ver: 17	The state of the state of the state of
VEGETATION (use scientific names of plan	ts)			
Herb Stratum ()	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0
1. Calamarcosts caradensis	5	Y	FAC	Morphological Adaptations¹ (Provide supporting data in
2. Famune lus SP	1			Notes)
3. Equisation appears	1		FAC	Problematic Hydrophytic Vegetation ¹ (Explain)
4. Petasites frigidus	in		FACO	Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
5. Comoram palistre	T		OBL	disturbed of problematic.
6. Carex biaclowii	11		FAC	
7.				% Bare Ground
8.			1	% Cover of Wetland Bryophytes
9.				Total Cover of Bryophytes 3 % Cover of Water
10.				Hydrophytic Vegetation Present (Y/N):
Total Cov	- 11 -	20% of total of	over:	Notes: (If observed, list morphological adaptations below):

WIDELHOOS

WETLAND DETERMINATION DATA FORM

6 22-16 SOIL Date Feature ID Soil Pit Required (Y/N) SOIL PROFILE DESCRIPTION: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Matrix Depth Redox Features (inches) Color (moist) % Color (moist) % Type1 Loc2 Texture Notes 4-16 Da u ¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix. HYDRIC SOIL INDICATORS INDICATORS FOR PROBLEMATIC HYDRIC SOILS3 Histosol or Histel (A1) Alaska Gleyed (A13) Alaska Color Change (TA4)4 Histic Epipedon (A2) Alaska Redox (A14) Alaska Alpine Swales (TA5) Black Histic (A3) Alaska Gleyed Pores (A15) Alaska Redox with 2.5Y Hue Hydrogen Sulfide (A4) Alaska Gleyed without 5Y Hue or Redder Underlying Layer Thick Dark Surface (A12) Other (Explain in Notes) One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless Give details of color change in Notes. Restrictive Layer (if present): Type: Free Depth (inches): Hydric Soil Present (Y/N): Notes: HYDROLOGY PRIMARY INDICATORS (any one indicator is sufficient) SECONDARY INDICATORS (2 or more required) Surface Water (A1) Water-stained Surface Soil Cracks (B6) Stunted or Stressed Leaves (B9) Plants (D1) Inundation Visible on Aerial Imagery High Water Table (A2) Drainage Patterns (B10) Geomorphic Position (D2) Sparsely Vegetated Saturation (A3) Oxidized Rhizospheres along Concave Surface (B8) Shallow Aquitard (D3) Living Roots (C3) Water Marks (B1) Presence of Reduced Marl Deposits (B15) Microtopographic Iron (C4) Relief (D4) Hydrogen Sulfide Sediment Deposits (B2) Salt Deposits (C5) Odor (C1) FAC-Neutral Test (D5) Drift Deposits (B3) Dry-Season Notes: Water Table (C2) Algal Mat or Crust (B4) Other (Explain in Notes): Iron Deposits (B5) Surface Water Present (Y/N): Depth (in): Water Table Present (Y/N): Wetland Hydrology Present (Y/N): Depth (in): Saturation Present (Y/N): (includes capillary fringe) Depth (in): EC: Notes:

AQUATIC SITE ASSESSMENT DATA FORM

VEGETATION VARIABLES P= Plot, M	= Watrix
Forested-Evergreen-Needle-leaved Scrub Shrub-Evergreen-Broad-leaved Persistent Aquatic Bed	ckingForested-Deciduous-Needle-leavedForested-Deciduous-Broad-leavedScrub Shrub-Deciduous-Needle-leavedScrub Shrub-Deciduous-Broad-leavedScrub Shrub-Evergreen-Needle-leavedEmergent-Non-persistentEmergent-
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) Tall herb (≥1m	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Short shrub (0.5-2m) Short shrub (0.5-2m) Submerged
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately evenX
Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)_	(0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattered	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or d or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant s	species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none)	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous CoverX
Dead Woody Material (P): Low Abundance (Abundant (>50% of surface)	0-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large High (small groupings, diverse and intersperse	patches, concentric rings) Moderate (broken irregular rings)ed)
HGM Class (P): Slope K Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES	
Soil Factors (P): Soil Lacking	Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES	
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Outlet Perennial Outlet Inlet/Perennial Outlet Inl
Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S	onally Flooded, Temporarily Flooded, Saturated
	ce Observed K Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment
Microrelief of Wetland Surface (P): Absent	
Frequency of Overbank Flooding (P): No O Return Interval >5 yrs	verbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs
Degree of Outlet Restriction (P): No Outflow	Restricted Outflow Unrestricted Outflow
A PROPERTY OF THE PROPERTY OF	ircumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading 5-81
Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable	(P): High Permeability Stratified Deposits Low Permeability Stratified Deposits
Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No See	Gradient (<2%) High Gradient (≥2%) eps or Springs Seeps Observed Intermittent Spring Perennial Spring
LANDSCAPE VARIABLES (M)	
Wetland Juxtaposition: Wetland Isolate	d Wetlands within 400m, Not Connected Only Connected Below d Upstream & Downstream Unknown
Wetland Land Use: High Intensity (i.e.,	ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)
Watershed Land Use: 0-5% Rural X	5-25% Urbanized 25-50% Urbanized >50% Urbanized
Size: Small (<10 acres) Medi	um (10-100 acres)
Crow Chief OA/OC check:	GPS Technician OA/OC check:

J Brownlee

Wetland Determination Form QA/QC Checklist This form to be consoled the second of the

Featur	e ID: 1210012009 Field Target: 265 Date: 622.16
For all	items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification? Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct? All dominant species have been determined and recorded per strata? Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
3.	Soil
	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked?. Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7.	Maps
	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X halen	101	per x haler	n Valger	6-27-16
Wetland Scientist (print)	1	Signature / Date	0	

Field Crew Chief (print)

Signature / Date

TE DESCRIPTION	a folial participation	Kalana			
Survey Type: Centerline Acces	s Road (explain)	Other (expla	ain) Facility	Field Target: ⊘⟨⊘	Map #: <u>& (</u> Map Date: <u> ろ・ </u>
Date: 6,22,2016	Project Name: Alask	a LNG		Feature Id:	WIOGEHOIO
Investigators: Jessie Brown	lee Kaley Vo	per			Team No.: WIO6
State: Alaska	Region: Alaska		Milepost:	445.2	
Latitude: 64.892749		Longitude	-148.6	83006	Datum: WGS84
Logbook No.: 2	Logbook Page No.:	5		P-W106LH010_00	of thro -004
SITE PARAMETERS	(EEE) 其对 (EEE) 和 (EEE)	多数在数层有例	国籍	过度得到 以外涨	分别是在1000000000000000000000000000000000000
Subregion: / Lk on - Tamama	Molendo	A Miles of the Control of	Landform (hi	illslope, terrace, hummock	s, etc.): Hills/de.
Slope (%): 5 - 8	()		Local relief (concave, convex, none):	Flat
Pre-mapped Alaska LNG/NWI classificat	ion: PF04/5548	/A 2	Evidence of	Wildlife Use: Moose	tracks
Are climatic/hydrologic conditions on the Yes No (if no expla	site typical for this time ain in Notes)	of year?	Are "N Yes_	Normal Circumstances" pre	esent: plain in Notes.)
Are Vegetation, Soil, or Hyd	rology Significant	ly Disturbed?	No_X	(If yes, explain in Notes)
Are Vegetation, Soil, or Hyd	rology Naturally F	Problematic?	No	(If yes, explain in Notes	5.)
SUMMARY OF FINDINGS		10	NEW PROPERTY.		
Hydrophytic Vegetation Present? Yes_	No	ls	the Sampled	Area within a Wetland?	Yes NoX
Hydric Soil Present? Yes	NoX	_ w	etland Type:	U	
Wetland Hydrology Present? Yes	No_X	— Al	aska Vegetatio	on Classification (Viereck):	11 A 1
Notes and Site Sketch: Please include Decorridor. Dry/Spruce town for Frost 10'					

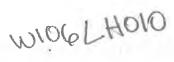
W106 LH010

Tree Stratum (Plot sizes: /00)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata: % Dominant Species that are OBL, FACW, or FAC:	
1. Piceo Colauca	1		FACU		
? Picea Marlana	1		FACUS	70 Dominant opedes that are OBE, 1 AOV, 011 AO	
3. (more to shrub layer)					
1.				Prevalence Index worksheet:	
Total Cover				Total % Cover of: Multiply by:	
50% of total cover	20	% of total cov	er:	OBL species:X 1 =	
Sapling/Shrub Stratum (26)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 31	
- Rhochdendrum groenlandice	m 4		FAC	UPL species X 5 =	
Vaccinjum vitis-idaea	1		FAC	Column Totals: <u>42 (A) /76 (B)</u>	
· Vaccinium Uliainosum	7		FAC	PI = B/A = 2.83	
Pices Mariana	30	V	FACUS		
· Picea Glauca	20	7	FACU	*	
3.					
).					
Total Cover:	57				
50% of total cover:	28.5 20	% of total cov	er: //. 4		

		Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50%	
1. Cornus Canadensis	T		FACU	Prevalence Index is ≤ 3.0 —— Morphological Adaptations¹ (Provide supporting data in
2. Equisation sylvation	.5	Y	FAC	Notes)
3. grass Sp	7		_	Problematic Hydrophytic Vegetation ¹ (Explain)
4. Geocanion lividium	7		FACU	¹ Indicators of hydric soil and wetland hydrology must be present unles
5.				disturbed or problematic.
6.				拉斯斯斯 智慧中的国际的国际智慧的
7.				% Bare Ground
8.				% Cover of Wetland Bryophytes
9.				Total Cover of Bryophytes
10.		1		% Cover of Water
Total Cover 50% of total cover		% of total cov	er:/	Hydrophytic Vegetation Present (Y/N): Notes: (If observed, list morphological adaptations below):

SOIL PROFILE DESCRIPTION: (De Depth inches) Matrix Color (moist) De 5-7 Bul 7-10 10/R 4/2	escribe	to the depth needed to	docume				
Pepth Matrix Color (moist) 0 -5 0 -5 0 -7 0 7 -70 10 78 4/2				ent the in	dicator or	confirm the absence	of indicators.)
Color (moist) 0 0-5 e 5-7 s 7-10 1078 4/2	%	NEUOX I EALUICS				1	-
0-5 0e 5-7 01 7-10 10/R 4/2		Color (moist)	% T	ype ¹	Loc ²	Texture	Notes
e 5-7 11 7-10 10/R 4/2		()					Dry feather moss
11 7-10 10/R 4/2							Damp organies
	85	10 4R 4/4	10 0	-n	PM.	Sittleam	Damp of the
UP 11 15 10 XR 4/7	0	7.54R3/z	6		pr	C/II TOUM	
	85	101R4/4	No.	uh		511+Com	
14 10-13 10/15	05	7.5 48 13		con	m	2) /// Jan	
		TIO 115 10	2 0	on	100		
ype: C=Concentration, D=Depletion	on RM	=Reduced Matrix_CS=	Covered	or Coa	ted Sand G	Grains. ² Location:	PL=Pore Lining, M=Matrix.
YDRIC SOIL INDICATORS	DII, TON	reduced Middix, 66	50500	Carry Control	E6 2		FOR PROBLEMATIC HYDRIC SOILS
TOTAL PROPERTY OF STREET		Alaska Gleyed (A	13)	N	2004 E83	Alaska Color Cl	
stosol or Histel (A1)	-			1		Alaska Alpine S	
stic Epipedon (A2)		Alaska Redox (A		5 pl		_	
ack Histic (A3)N		Alaska Gleyed P	ores (A1	5) <u>rv</u>		Alaska Redox v	without 5Y Hue or Redder Underlying
ydrogen Sulfide (A4) <u>√</u>						Layer	- without 31 Flue of Reduct officerying
nick Dark Surface (A12)						Other (Explain	in Notes)
otes: Negative XX +	throu	ighout					
YDROLOGY PRIMARY INDICATO	ORS (a	ny one indicator is suff	icient)	S	FCONDAR	W. W. T.	
urface Water (A1)		face Soil Cracks (B6)	-	-	LOCITOR	RY INDICATORS (2	or more required)
unace water (AT)		ace Soll Clacks (Bo)	√_		/ater-staine	ed /	Stunted or Stressed Plants (D1)
	Inui (B7	ndation Visible on Aeri		— Le	/ater-staine eaves (B9)	ed /	Stunted or Stressed
igh Water Table (A2)	(B7	ndation Visible on Aeri		ry D	/ater-staine eaves (B9) rainage Pa	atterns (B10)	Stunted or Stressed Plants (D1)
igh Water Table (A2)	Spa Cor	ndation Visible on Aeri		ry D O Li	/ater-staine eaves (B9) rainage Pa xidized Rh	atterns (B10) izospheres along b (C3)	Stunted or Stressed Plants (D1) Geomorphic Position (D2)
aturation (A3)	(B7 Spa Cor Mai	ndation Visible on Aeri orsely Vegetated orseve Surface (B8)		D O Li	later-staine eaves (B9) rainage Pa exidized Rh iving Roots resence of	izospheres along (C3)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic
aturation (A3)	(B7 Spa Cor Mai Hyd Odd	Indation Visible on Aeri		D D Li	Vater-staine eaves (B9) rainage Pa exidized Rh iving Roots resence of on (C4)	izospheres along (C3)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
aturation (A3)	(B7 Spa Cor Mai Hyc Odd Dry Wa	Indation Visible on Aerical Visi		D D Li	Vater-staine eaves (B9) rainage Pa exidized Rh iving Roots resence of on (C4)	izospheres along (C3)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
aturation (A3)	(B7 Spa Cor Mai Hyc Odd Dry Wa	Indation Visible on Aeria Insely Vegetated Incave Surface (B8)/ Income Deposits (B15)/ Income Sulfide In		D D Li	Vater-staine eaves (B9) rainage Pa exidized Rh iving Roots resence of on (C4)	izospheres along (C3)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
aturation (A3)	(B7 Spa Cor Mai Hyc Odd Dry Wa	Indation Visible on Aeria Insely Vegetated Incave Surface (B8)/ Income Deposits (B15)/ Income Sulfide In		D D Li	Vater-staine eaves (B9) rainage Pa exidized Rh iving Roots resence of on (C4)	izospheres along (C3)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
aturation (A3)	(B7 Spac Cor Mai Hyc Odd Dry Wa	Indation Visible on Aeria Insely Vegetated Incave Surface (B8)/ Income Deposits (B15)/ Income Sulfide In		Derry D Color P In	Vater-staine eaves (B9) rainage Pa xidized Rh ving Roots resence of on (C4) alt Deposit otes:	atterns (B10) izospheres along s (C3) Reduced s (C5)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
aturation (A3)	(B7 Spa Cor Mai Hyc Odd Dry Wa Oth	Indation Visible on Aeria In Service (B8) In Deposits (B15) In Open Sulfide In Cor (C1) Season Iter Table (C2) In Open Sulfide Iter (Explain in Notes):		Derry D Color P In	Vater-staine eaves (B9) rainage Pa xidized Rh ving Roots resence of on (C4) alt Deposit otes:	izospheres along (C3)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)

AQUATIC SITE ASSESSMENT DATA FORM



VEGE (A√ION VARIABLES P= Plot, M= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed Aquatic Bed Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Non-persisten
Percent Cover (P): Tree (>5 dbh, >6m tall) Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Dwarf shrub (<0.5m)
Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even
/egetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
nterspersion of Cover & Open Water (P): 100% Cover or Open Water <25% Scattered/Peripheral Cover26-75% Scattered or Peripheral CoverN/A
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface)
regetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) ligh (small groupings, diverse and interspersed)
IGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe
OIL VARIABLES
oil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric
fineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey
YDROLOGIC VARIABLES
YDROLOGIC VARIABLES No Inlet/Outlet Class (P): No Inlet/Outlet
No Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perenn
No Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet
No Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No O
Intermittent Inlet/No Intermittent Inlet/No Intermittent Inlet/No Intermittent Inlet/No Intermittent Inlet/Intermittent Inlet/I
No Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet
Intermittent Inlet/No Intermittent Inlet/No Intermittent Inlet/No Intermittent Inlet/No Intermittent Inlet/Intermittent Inlet/I
No Inlet/Outlet Class (P): No Inlet/Outlet

Crew Chief QA/QC check:

GPS Technician QA/QC check:

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

	This form to be completed before leaving the field site.
	e ID: WOGLHOLO Field Target: 260 Date: 6-22-16 items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification? Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct? All dominant species have been determined and recorded per strata? Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
3.	Soil
	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7.	Maps
	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

X Kalen Volver X Mall Valger 6-24-16
Wetland Scientist (print)
Signature / Date

X JBrownlee

Field Crew Chief (print)

Signature / Date

SITE DESCRIPTION		Albert Sal		加里哥	15686	A COLUMN	
Survey Type: Centerline Acces	ss Road (explain)	Other (expl	ain) Facility	Field Targe	et: <u>257</u>	Map #: <u>65</u> Ma	ap Date: <u>5. 27. //</u>
Date: 6.23.14	Project Name: Alask	a LNG			Feature Id:	MIOPTHOL	
Investigators: Jessie \$	Syounles	, Ka	leen	Volve	35	Team No.: \	1100
State: Alaska	Region: Alaska	1	Milepost:	467.	1		
Latitude: 64, 639 61°		Longitude	=-149.	05077	160	Datum: WGS84	
Logbook No.:	Logbook Page No.:	6	Picture No.:	P_WIO	(PLHO)	1-001+	NYU 004
SITE PARAMETERS	A STATE OF THE STA	(Sanda)	THE RESERVE			MANUAL STREET	No. Market
Subregion: Tanana Kuskokia	in lastands		Landform (hil	llslope, terrace	e, hummock	s, etc.): Lowlan	1 (2)
01 101	- 3		Local relief (c				F 4 1
Pre-mapped Alaska LNG/NWI classifica	ation: U:1CZ		Evidence of V	Wildlife Use:	Moose	dropping2	
Are climatic/hydrologic conditions on the Yes No (if no expl	e site typical for this time lain in Notes)	of year?	Are "No	ormal Circum No		esent: plain in Notes.)	1
Are Vegetation, Soil, or Hyd	drologySignificant	ly Disturbed?	? No	(if yes, expl	ain in Notes)	0.74
Are Vegetation, Soil, or Hyd	drology Naturally P	Problematic?	No <u></u> ⊀.	(If yes, exp	lain in Notes	5.)	
SUMMARY OF FINDINGS		2/2010年					A CHARLES
Hydrophytic Vegetation Present? Yes_	No	Is	the Sampled A	Area within a	Wetland?	Yes	_ NoX
Hydric Soil Present? Yes_	NoX	_ w	etland Type:	U		-	
Wetland Hydrology Present? Yes_	X No	— AI	laska Vegetatioi	n Classificatio	on (Viereck):	162	
Notes and Site Sketch: Please include Decorridor. Open metere Pic Conference March Pic Conference Moss Blanket including the very fall side plot Site is many Seasonal Frost at 13" and Area gests progression of hydric soil. Morph work was confirm work was confirmed to 100 of	la Forest " ling foor. All of willow & ald gingl, site rev y/ saturation at rely wetter to ping to the N	40.60' dry fra les and isit or the No orth E	fall. Dis m walk I higher ? ecommen	verse sh in, Co la & B ided.	rub und ding in	that is o	th thick after

WIOGLHOI

	Absolute	Dominant	Indicator	Dominance Test worksheet:
ree Stratum (Plot sizes: 100)	% Cover	Species? (Y/N)	Status	No. of Dominant Species that are OBL, FACW, or FAC:
· Betula Negalaskang	5		FACH	Total Number of Dominant Species Across All Strata: % Dominant Species that are OBL, FACW, or FAC: 80 (
Picas -laura	40	Y	MACU	% Dominant Species that are OBL, FACW, or FAC
- Comment				
1				Prevalence Index worksheet:
Total Cove	45		0	Total % Cover of: Multiply by:
50% of total cove	r: 2215 20	% of total cov	er:	OBL species: X1= O
Sapling/Shrub Stratum (26)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: O $X2 = O$ A
· Rhododendrum groenlandicum	15	Y	FAC	UPL species X5 = X5
vaccinium vitis-idaea	(3		FAC	Column Totals: (A) 382 398
· Rosa acicularis	1	2	FACU	PI=B/A= 3×63 3.55
Linnaea boreglis	4		FACU	Arctous cobra 5 8
Alays incang	8	Y	FAC	
Salix glavea	12	Y	FAC	picea glaca 3
				12 - 1 - 1 - 1 - 1
Shephe die canadensis	2		FACU	Betula glandulos TS EA
Shepherdia canadensis	2		FACU	DETUTA GLANDUIST 1 S
3. Empetrum nigrum	2		FAC FAC	DETUTA GIAMOUIOSA T
Shepherdia canadensis Empetrum nigrum	7 1 1 7: 55		FAC	DEJUIG GLAMOUISS J S
Empetrum nigrum Alaus viridis fruticosa	-	0% of total cov	FAC	DEJUIG GLANDUISH J
Shepherdia canadensis Empetrum nigrum Alaus vicidis fruticosa Total Cove 50% of total cove	r: 27.520	0% of total cov	FAC	DEJUTA GIAMOUTOS T
Empetrum nigrum Alaus viridis frutiosa Total Cove 50% of total cove	r: 27.520	0% of total cov	FAC	Hydrophytic Vegetation Indicators:
Total Cove September Canadensis Empetrum Nigrum Alaus vicidis frutions Total Cove 50% of total cove	r: 27.520		FAC FAC	Hydrophytic Vegetation Indicators: Dominance Test is > 50%
Total Coversion of total coversions of plant derb Stratum (26)	r: 27.520 rs) Absolute	Dominant Species?	FAC Ver: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0
Total Cove Stratum (26) 1. Ceocaulon lividium	r: 27.520 rs) Absolute	Dominant Species?	FAC Ver: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0
Total Cove 50% of total cove FEGETATION (use scientific names of plant Herb Stratum (26) 1. Geographon lividium 2. Cornus canadensis	Absolute % Cover	Dominant Species?	FACU	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in
Total Cove Shepherdia canadensis Empetrum nigrum Alnus vicidis fruticosa Total Cove 50% of total cove /EGETATION (use scientific names of plant Herb Stratum (26) 1. Geocoplan lividium 2. Cornus canadensis 3. Chamerian angustificium 4.	Absolute % Cover	Dominant Species?	FACU FACU FACU	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain)
Total Cove Shepherdia canadensis Empetrum nigrum Alaus vicidis fruticosa Total Cove 50% of total cove /EGETATION (use scientific names of plant Herb Stratum (26) 1. Geocoplan lividium 2. Cornus canadensis 3. Chamerian angustificium 4. Mertensia paniculata	Absolute % Cover	Dominant Species?	FACU FACU FACU	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain)
Total Cove Total Cove 50% of total cove VEGETATION (use scientific names of plant Herb Stratum (26) 1. Geocoplan lividium 2. Cornus canadensis 3. Chamerian angustificium 4. Mertensia paniculata 5. Rubus Arcticus	Absolute % Cover	Dominant Species?	FACU FACU FACU	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
Total Cove Total Cove Total Cove 50% of total cove VEGETATION (use scientific names of plans Herb Stratum (26) 1. Geocoplan lividium 2. Cornus canadensis 3. Chamerian angustifilium 4. Mertensia paniculata 5. Rubus Arcticus 6. Equisatum 50	Absolute % Cover	Dominant Species?	FACU FACU FACU	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
Total Cove Total Cove Total Cove 50% of total cove VEGETATION (use scientific names of plant Herb Stratum (26) 1. Geocoulon lividium 2. Cornus canadensis 3. Chamerian angustifulium 4. Mertensia paniculata 5. Rubus Arcticus 6. Equischim 57) 7.	Absolute % Cover	Dominant Species?	FACU FACU FACU	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unlesdisturbed or problematic.
Total Cove Shepherdia conadensis B. Empetrum nigrum P. Alnus viridis frutiosa Total Cove 50% of total cove VEGETATION (use scientific names of plant Herb Stratum (26) 1. Geocoplan lividium 2. Cornus conadensis 3. Chamerian angustificium 4. mertensia paniculata 5. Rubus Arcticus	Absolute % Cover	Dominant Species?	FACU FACU FACU	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unlesdisturbed or problematic. % Bare Ground
Total Cove Total Cove Total Cove 50% of total cove VEGETATION (use scientific names of plans Herb Stratum (26) 1. Geocoolon lividium 2. Cornus canadensis 3. Chamerian angustifilium 4. Mertensia paniculata 5. Rubus Arcticus 6. Equisatum 57) 7. 8.	Absolute % Cover	Dominant Species?	FACU FACU FACU	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. % Bare Ground % Cover of Wetland Bryophytes

WIOLELHOIL

COIL	A STATE OF THE STA	e dia r	Date Featu	ire ID). 海型量			Soil Pit Required (Y/N)
SOIL PROFILE	DESCRIPTION: (D	escribe	to the depth needed to			indicator or o	confirm the absence	e of indicators.)
	Matrix	CSCIIDC	Redox Features	***		1 _ 1/		
Depth (inches)	Color (moist)	%		%	Type ¹	Loc ²	Texture	Notes
	COICI (IIIOICI)	-						Dry Feather MOSS
Oi 0-7 Bul 7-8	101R3/2	150		134			Siltloam	
	10/R 2/1	100					Loam	Black
7	10 YR 4/2	70	1072 4/4	30	(0)	W	Siltloan	
BWR 10-13 BWRF 13-24		70		30	con	m	Siltloan	Platex
DW 07 13-21	101/6 16	10	70/15 7 1					
¹Type: C=Cor	ncentration, D=Deple	tion, RM	1=Reduced Matrix, CS=	Cove	ered or Co	pated Sand C		: PL=Pore Lining, M=Matrix.
	INDICATORS		"一"以后中时 ,"是是一	WAY.		AND THE REAL PROPERTY.	INDICATORS	FOR PROBLEMATIC HYDRIC SOILS ³
Histosol or His	stel (A1)		Alaska Gleyed (A	(13)_	~			Change (TA4) ⁴
	on (A2)		Alaska Redox (A	14)_	N			Swales (TA5)
	(3)		Alaska Gleyed Po	ores	(A15)			with 2.5Y Hue
Hydrogen Sul	1		3.1.8	-	<u> </u>	7 7	Layer_ P	without 5Y Hue or Redder Underlying
Thick Dark Su	rface (A12)			15			Other (Explain	ape position must be present unless
Hydric Soil P Notes:	resent (Y/N):	N		7	4			
HYDROLOG	Y PRIMARY INDICA	TORS (any one indicator is suf	ficien	it)	SECONDA	RY INDICATORS (2 or more required)
	er (A1)		urface Soil Cracks (B6)	1		Water-stain Leaves (B9)		Stunted or Stressed Plants (D1)
High Water T	able (A2)		undation Visible on Aeri	ial Im	agery	Drainage Pa	atterns (B10) N	Geomorphic Position (D2)
Saturation (A	3) A Y 43	Sp	parsely Vegetated oncave Surface (B8)	N		Living Roots		Shallow Aquitard (D3)
Water Marks	(B1)	Ma	arl Deposits (B15)		_	Presence of Iron (C4)	f Reduced	Microtopographic Relief (D4)
Sediment De	posits (B2) N		dor (C1)			Salt Deposi	its (C5)	FAC-Neutral Test (D5)
Drift Deposits	(B3) N	Dr	ry-Season later Table (C2)			Notes:	*	
Algal Mat or	Crust (B4)	_ 0	ther (Explain in Notes):		Tu .			
Iron Deposits	(B5)							
100000 1000	的人的政治是是一种	Contract of	Day to the Company of		*****	200 MA		
Surface Water	er Present (Y/N):	1	Depth (in):		V	Vetland Hyd	rology Present (Y	(N): Y
Water Table	Present (Y/N):	1	Depth (in):		V	reualiu nyu	loogy Fresent (1	
Saturation Pro		+ 1	Depth (in): 7		E	C:		prodes
Notes:					99			

VEGETATION VARIABLES P= Plot, N	M= Matrix
Forested-Evergreen-Needle-leaved	Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) Tall herb (>1	Sapling (<5 dbh, <6m tall)
	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
	(0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattere	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or do or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant :	species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none)	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover
Dead Woody Material (P): Low Abundance (Abundant (>50% of surface)	(0-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large High (small groupings, diverse and intersperse	patches, concentric rings) Moderate (broken irregular rings)ed)
HGM Class (P): Slope Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES	
Soil Factors (P): Soil Lacking	Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES	
Inlet/Outlet Class (P): No Inlet/Outlet Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Pere
Wetland Water Regime (P): Drier: Seaso Wet: Perm. Flooded, Intermittently Exposed, S	onally Flooded, Temporarily Flooded, Saturated
	e Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment
	Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)
Return interval >5 yrs	verbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs
Degree of Outlet Restriction (P): No Outflow	Restricted Outflow Unrestricted Outflow
	rcumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading
Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable Basin Topographic Gradient (M): Low C	rcumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Gradient (<2%) High Gradient (≥2%)
Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable Basin Topographic Gradient (M): Low C Evidence of Seeps and Springs (P): No See	rcumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Gradient (<2%) High Gradient (≥2%)
Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable Basin Topographic Gradient (M): Low C Evidence of Seeps and Springs (P): No Seep LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated	P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Gradient (<2%) High Gradient (≥2%) ps or Springs Seeps Observed Intermittent Spring Perennial Spring Wetlands within 400m, Not Connected Only Connected Relow.
Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable Basin Topographic Gradient (M): Low C Evidence of Seeps and Springs (P): No Seep LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated	P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Gradient (<2%) High Gradient (≥2%) ps or Springs Seeps Observed Intermittent Spring Perennial Spring Metlands within 400m, Not Connected Only Connected Below Upstream & Downstream Unknown
Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable	rcumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Gradient (<2%) High Gradient (≥2%) ps or Springs Seeps Observed Intermittent Spring Perennial Spring d Wetlands within 400m, Not Connected Only Connected Below Upstream & Downstream Unknown
Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable Basin Topographic Gradient (M): Low C Evidence of Seeps and Springs (P): No Seep LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated Only Connected Above Connected Wetland Land Use: High Intensity (i.e., a	rcumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Gradient (<2%) High Gradient (≥2%) ps or Springs Seeps Observed Intermittent Spring Perennial Spring d Wetlands within 400m, Not Connected Only Connected Below I Upstream & Downstream Unknown g.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Feature	ID: WIOLE HOLL Field Target: 257 Date: 6.23.16
For all i	tems not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	 ☑ Site description, site parameters and summary of findings are complete? ☑ A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
	Wegetation names are entered legibly for all strata present?
	Cover calculations are complete and correct?
	All dominant species have been determined and recorded per strata?
	 Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
3.	Soil
	☑ Soil profile is complete?
-	Appropriate hydric soil indicators are marked?
4.	Hydrology
	 Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and
	accuracy of pre-mapped wetland boundary as appropriate? ■ Each logbook page is initialed and dated?
7.	Maps
	Wetland boundaries have been corrected if necessary?
	☑ Maps are initialed and dated?

8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X halen	10/000	X Maller	Valger	6-27-16
Wetland Scientist (print)	4 / 5	Signature / Date	1	2. Vegetatio

a Vice approve	The state of the s	AV COMME	SALES AND A SHOP	March Waller of the	
SITE DESCRIPTION	ARED CAMPED TO SEE TO	NACTOR S	AND AND PARTY.	ELLIT AND SECOND	Man H. 2/ Man Date: 5 22 //
Survey Type: Centerline Acces			ain) <u>Facility</u>	Field Target: 250	Map #: <u>7/</u> Map Date: <u>5 27 //</u>
Date: 6.23.110	Project Name: Alaska	a LNG		Feature II	d: W106PH012
Investigators: Jessie Brownee	. Kaley Volper				Team No.: WIOO
State: Alaska	Region: Alaska		-	505.5	
Latitude: 64,123981370	Z°	Longitude	:- 149,2	438293702	Datum: WGS84
Logbook No.: 2	Logbook Page No.:	Ce	Picture No.:	P_W1061+	t012_001 thru 004
SITE PARAMETERS	ad Deskie Steeley (19	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	All drives	THE PROPERTY OF	
Subregion: Tanana - Kusko	Kutm Lowland	do	Landform (hil	lislope, terrace, hummoc	ks, etc.): Lowland
Slope (%): 0 - 3	EW) III DO ON	Section Co.	Local relief (c	concave, convex, none):	Flat.
Pre-mapped Alaska LNG/NWI classificat	tion: PSS1/4/B 11	C2,11A	Evidence of V	Wildlife Use: Nowe	
Are climatic/hydrologic conditions on the Yes No (if no expla	site typical for this time			ormal Circumstances" pi	
Are Vegetation, Soil, or Hyd	rology Significant	ly Disturbed	? No_X	(If yes, explain in Note	s)
Are Vegetation, Soil, or Hyd	rology Naturally P	roblematic?	No_X	(lf yes, explain in Note	es.)
SUMMARY OF FINDINGS	3年,是为李沙特社	S PERIOD	Market A	THE REPORT OF	La de la companya del la companya de
Hydrophytic Vegetation Present? Yes_	<u>X</u> No	Is	the Sampled	Area within a Wetland?	Yes No
Hydric Soil Present? Yes	<u> </u>	_ w	etland Type:	PS51/4B	
Wetland Hydrology Present? Yes	<u> </u> Мо	_ A	laska Vegetatio	n Classification (Viereck): 11C2, 1/A3
Notes and Site Sketch: Please include Dicorridor. Stunted dwarf Pic Communities. Twssock					

WIOGLHOIZ

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot sizes: /0c)	% Cover	Species? (Y/N)	Status	No. of Dominant Species that are OBL, FACW, or FAC:
		(1714)		Total Number of Dominant Species Across All Strata:
				% Dominant Species that are OBL, FACW, or FAC: 100
				Prevalence Index worksheet:
/				And the second s
Total Cover		NOV of total cove		Total % Cover of: Multiply by: OBL species: \(\sqrt{9} \) \(\text{X} \) 1 = \(\sqrt{8} \)
50% of total cover			<u> </u>	FACW species: 41 x2 = 32
pling/Shrub Stratum (24)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FAC species 54 X3 = 162 FACU species C X4 = 0
Betile Nana	15		FAC	UPL species X 5 =
Myrica gale	18	Y	OBL	Column Totals: \\ 3 (A) \\ \ \ \ \ \ \ (B)
Dasiphora fruticosa	4		FAC	PI=B/A= 2.32
vaccinium oliginosum	20	Y	FAC	Vaccinium vitis-idaea 2 FAC
Picea mariana	20	Y	FACU	
Rhandendrum groenlandiam			FAC	Salix pulchra T
Salix hebbiana	/		FAC	
Andromeda polifolia	7		FACIN	_
Salix reticulata	7		FAC	
Total Cover:	38			
50% of total cover:	44 20	% of total cove	er: 17.6	
50% of total covers	, ,	% of total cove	er: 17,6	
GETATION (use scientific names of plants	, ,	% of total cove	er: 17,6	Hydrophytic Vegetation Indicators:
GETATION (use scientific names of plants)	Dominant Species?		Hydrophytic Vegetation Indicators: Dominance Test is > 50%
GETATION (use scientific names of plants	Absolute % Cover	Dominant	Indicator Status	V
GETATION (use scientific names of plants	Absolute % Cover	Dominant Species?	Indicator Status	Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0
GETATION (use scientific names of plants	Absolute % Cover	Dominant Species?	Indicator Status FAC FACU	Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0
GETATION (use scientific names of plants to Stratum (2le)	Absolute % Cover	Dominant Species?	Indicator Status	Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in
GETATION (use scientific names of plants rb Stratum (2/e)	Absolute % Cover	Dominant Species?	Indicator Status FAC FACU	Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
GETATION (use scientific names of plants rb Stratum (2le) Conex bige lowin Ecrophorum vaginatum Rubus chamaemorus	Absolute % Cover	Dominant Species?	Indicator Status FAC FACU FACU	Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain)
Conex bige lowing Ecophorum Vaginatum Rubus chamaemorus	Absolute % Cover	Dominant Species?	Indicator Status FAC FACU FACU	Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0
Conex bige lowing Ecophorum Vaginatum Rubus chamaemorus	Absolute % Cover	Dominant Species?	Indicator Status FAC FACU FACU	Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0
Conex bige lowing Ecophorum Vaginatum Rubus chamaemorus	Absolute % Cover	Dominant Species?	Indicator Status FAC FACU FACU	Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0
Conex bige lowing Ecophorum Vaginatum	Absolute % Cover	Dominant Species?	Indicator Status FAC FACU FACU	Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic.
GETATION (use scientific names of plants rb Stratum (Absolute % Cover	Dominant Species?	Indicator Status FAC FACU FACU	Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Bare Ground We Cover of Wetland Bryophytes Total Cover of Bryophytes Cover of Water
Conex bige lowing Ericphorum Vaginatiom Rubus chamaemorus	Absolute % Cover	Dominant Species?	Indicator Status FAC FACU FACU	Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic. Bare Ground Metand Bryophytes Total Cover of Bryophytes

CONTRACTOR SERVICE	DOMESTIC OF THE OWNER,	WATER STREET	U 03.14	- Low 100	THE NUMBER OF STREET	SHE THE RESIDENCE OF THE PARTY	Cail Dit Doguiror (V/M)
30IL	E DECORPTION.	(Describe		ature ID	the indicator or	earlism the channe	Soil Pit Required (Y/N)
		Describe	to the depth needed	to document	the indicator of	commit the absence	e of indicators.)
Depth (inches)	Matrix Color (moist)	1 %	Color (moist)	% Type	1 Loc²	Texture	Notes
	Color (Irloist)	70	Color (moist)	76 Type	Loc	Texture	The state of the s
70-4				+			Saturated organics
na 4-11		-		1			
						VI.	
Type: C=Cor	ncentration, D=Depl	letion, RI	M=Reduced Matrix, C	S=Covered or	Coated Sand (: PL=Pore Lining, M=Matrix.
YDRIC SOIL	INDICATORS		2000年1月2		100000	INDICATORS	FOR PROBLEMATIC HYDRIC SOILS
listosol or His	stel (A1)		Alaska Gleyed	(A13)/		Alaska Color C	Change (TA4) ⁴
Histic Epipedo	n (A2)/		Alaska Redox ((A14)/_		Alaska Alpine	Swales (TA5)
3lack Histic (A	(3) <u>\(\(\(\lambda \) \)</u>		Alaska Gleyed	Pores (A15) _	N		with 2.5Y Hue _ \(\sum_
	fide (A4)		4-			Alaska Gleyed	without 5Y Hue or Redder Underlying
	rface (A12) _ N					Other (Explain	
		etation, o	one primary indicator o	of wetland hyd	Irology, and an		ape position must be present unless
Give details on Restrictive La	roblematic. of color change in N yer (if present): Typ resent (Y/N):	oe: <u>Pern</u>		epth (inches)	://	• •	*
Give details on Restrictive La	of color change in N yer (if present): Typ	oe: <u>Pern</u>		epth (inches)	//	<u> </u>	-4:
Give details of Restrictive Lastrictive	of color change in N yer (if present): Typer resent (Y/N):	oe: <u>Jern</u>				RY INDICATORS (2	? or more required)
Give details of Restrictive Last Hydric Soil P Notes:	of color change in N yer (if present): Type resent (Y/N): PRIMARY INDICA	ATORS (any one indicator is st	ufficient)	SECONDAI Water-stain	RY INDICATORS (2	or more required) Stunted or Stressed
Give details of Restrictive Last Hydric Soil P Notes:	of color change in N yer (if present): Type resent (Y/N): PRIMARY INDICA	ATORS (any one indicator is si	ufficient)	SECONDAR	ed .	The state of the s
Give details of Restrictive Last Hydric Soil P Notes: HYDROLOGY	of color change in N yer (if present): Type resent (Y/N): PRIMARY INDICATE TO (A1)	ATORS (any one indicator is si rface Soil Cracks (B6 undation Visible on Ae	ufficient)	SECONDAR Water-stain Leaves (B9)	ed .	Stunted or Stressed
Give details of Restrictive Last Hydric Soil P Notes: HYDROLOGY Surface Wate High Water Ta	of color change in N yer (if present): Type resent (Y/N): PRIMARY INDICA or (A1)	ATORS (Su Inn (B	any one indicator is so rface Soil Cracks (B6 undation Visible on Ae 7)	ufficient)) erial Imagery	SECONDAR Water-stain Leaves (B9) Drainage Pa	ed Natterns (B10) National Nat	Stunted or Stressed Plants (D1)
Give details of Restrictive Land Hydric Soil Posterior P	of color change in N yer (if present): Type resent (Y/N): PRIMARY INDICA (A1) Able (A2)	ATORS (Su Int (B Sp Cc	any one indicator is so rface Soil Cracks (B6 undation Visible on Ae	ufficient)) erial Imagery	SECONDAR Water-stain Leaves (B9) Drainage Pa Oxidized Rh	ed Matterns (B10) Mat	Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Give details of Restrictive Last Hydric Soil P Notes: HYDROLOGY Surface Wate High Water Ta Saturation (AS	of color change in New (if present): Typer (if present): Typer (if present): Typer (if present (Y/N):	ATORS (Su Int (B Sp Cc Ma	any one indicator is surface Soil Cracks (B6 undation Visible on Ae 7) arsely Vegetated uncave Surface (B8) arl Deposits (B15)	ufficient)) erial Imagery	SECONDAN Water-stain Leaves (B9) Drainage Pa Oxidized Rr Living Roots Presence of	atterns (B10)/ nizospheres along s (C3) f Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2)Y Shallow Aquitard (D3) Microtopographic
Give details of Restrictive Last Hydric Soil P Notes: HYDROLOGY Surface Wate High Water Tasturation (ASWater Marks) Sediment Dep	of color change in New (if present): Typer (if present): Typeresent (Y/N): PRIMARY INDICATE (A1) Able (A2) B1) Oosits (B2)	ATORS (Sulling - (B Sp. Cc Ma - Hy Oc Dr	any one indicator is surface Soil Cracks (B6 undation Visible on Ae 7)	ufficient)) erial Imagery	SECONDAR Water-stain Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4)	atterns (B10)/ nizospheres along s (C3) f Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) Y
Give details of Restrictive Lastrictive	resent (Y/N): PRIMARY INDICATE (A1) Able (A2) (B3) (B3)	ATORS (Su Int (B Sr Cc Ma Hy Oc Dr W	any one indicator is surface Soil Cracks (B6 undation Visible on Ae 7) arsely Vegetated uncave Surface (B8) arl Deposits (B15) drogen Sulfide dor (C1)	ufficient)) erial Imagery	SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit	atterns (B10)/ nizospheres along s (C3) f Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) Y
Give details of Restrictive Last Restrictive Last Restrictive Last Phydric Soil Phydric Soil Phydroce Water Marks (Mater Mater M	resent (Y/N): PRIMARY INDICATE (A1) B1) Posits (B2) Furst (B4)	ATORS (Su Int (B Sr Cc Ma Hy Oc Dr W	any one indicator is surface Soil Cracks (B6 undation Visible on Ae 7) Parsely Vegetated uncave Surface (B8) Parl Deposits (B15) Pardrogen Sulfide for (C1) Parsely Vegetated uncave Surface (B8) Partrogen Sulfide for (C1)	ufficient)) erial Imagery	SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit	atterns (B10)/ nizospheres along s (C3) f Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) Y
Give details of Restrictive Last Restric	resent (Y/N): PRIMARY INDICATE (A1) B1) Posits (B2) Furst (B4)	ATORS (Su Int (B Sr Cc Ma Hy Oc Dr W	any one indicator is surface Soil Cracks (B6 undation Visible on Ae 7) Parsely Vegetated uncave Surface (B8) Parl Deposits (B15) Pardrogen Sulfide for (C1) Parsely Vegetated uncave Surface (B8) Partrogen Sulfide for (C1)	ufficient)) erial Imagery	SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit	atterns (B10)/ nizospheres along s (C3) f Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) Y
Give details of Restrictive Last Restrictive Last Restrictive Last Phydric Soil Phydric Soil Phydroce Water Marks of Saturation (AST Water Marks of Sediment Deposits Algal Mat or Coloron Deposits	resent (Y/N): PRIMARY INDICATE (A1) B1) Posits (B2) Furst (B4)	ATORS (Su Int (B Sr Cc Ma Hy Oc Dr W	any one indicator is surface Soil Cracks (B6 undation Visible on Ae 7) Parsely Vegetated uncave Surface (B8) Parl Deposits (B15) Pardrogen Sulfide for (C1) Parsely Vegetated uncave Surface (B8) Partrogen Sulfide for (C1)	ufficient)) erial Imagery	SECONDAR Water-stain Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit Notes:	atterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2)Y Shallow Aquitard (D3) Microtopographic Relief (D4)Y FAC-Neutral Test (D5)Y
Give details of Restrictive Last Restriction (AST Restric	resent (Y/N): Type (if present): Type (if present): Type (if present): Type (if present): Type (if present (Y/N): Type (if present): Type (if present (Y/N): Type (If present): Type (If present): Type (If present (Y/N): Type (If present): Type (If	ATORS (Su Int (B Sp Cc Ma Dr W Ot	any one indicator is so rface Soil Cracks (B6 undation Visible on Ae 7) parsely Vegetated incave Surface (B8) arl Deposits (B15) drogen Sulfide dor (C1) y-Season ater Table (C2)	ufficient)) erial Imagery	SECONDAR Water-stain Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit Notes:	atterns (B10)/ nizospheres along s (C3) f Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2)Y Shallow Aquitard (D3) Microtopographic Relief (D4)Y FAC-Neutral Test (D5)Y

AQUATIC SITE ASSESSMENT DATA FORM



VEGETATION VARIABLES P= Plot, I	M= Matrix
Forested-Evergreen-Needle-leaved	acking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) Tall herb (≥1	Sapling (<5 dbh, <6m tall)
Number of Wetland Types (M): 3	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)	e (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattere	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant	species) Medium (5-25 species)
Presence of Islands (M): Absent (none) _	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover X
Dead Woody Material (P): Low Abundance Abundant (>50% of surface)	(0-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large High (small groupings, diverse and interspers	patches, concentric rings) Moderate (broken irregular rings) sed)
HGM Class (P): Slope X Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES	
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy	Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES	n en primer l'estrantian de l'acceptant l'acceptant l'acceptant l'acceptant l'acceptant l'acceptant l'acceptant
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial nlet/Perennial Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed,	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennia
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence Oreated	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/N
Inlet/Outlet Class (P): No Inlet/OutletOutletIntermittent Inlet/Intermittent Inlet/Intermittent OutletPerennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Comments of Control of Co	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/No Outlet Perennial
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evident Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Creater Interval >5 yrs	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/N
Inlet/Outlet Class (P): No Inlet/Outlet	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water C	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/N
Inlet/Outlet Class (P): No Inlet/OutletOutletIntermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent OutletPerennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Neturn Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Constitution of the proof	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidenceated Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No CReturn Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water CSurficial Geologic Deposit Under Wetland Glacial Till/Not Permeable Basin Topographic Gradient (M): Low	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidenceated Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No CReturn Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Curicial Geologic Deposit Under Wetland Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No See	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perenni
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Microrelief of Wetland Surface (P): No Outflow Water ph (P): No surface water Comparison of Co	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennia
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Microrelief of Wetland Surface (P): No Outflow Water ph (P): No surface water Comparison of Co	t OutletIntermittent Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/Perennial OutletPerennial Inlet/Perennial OutletPerennial Inlet/Perennial OutletPerennial Inlet/Perennial OutletPerennial OutletPerennial Inlet/Perennial Inlet/Perennia
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence Oreated Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Microrelief of Wetland Surface (P): No Outflow Water ph (P): No surface water Comparison of Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Second Connected Above Connected Wetland Land Use: High Intensity (i.e.,	t OutletIntermittent Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/Perennial OutletPerennial Inlet/Perennial OutletPerennial Inlet/Perennial OutletPerennial Inlet/Perennial OutletPerennial Inlet/Perennial Inlet/Perennial Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidenceated Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No CReturn Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Comparison of Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Section Converted Above Connected Wetland Use: High Intensity (i.e., Watershed Land Use: 0-5% Rural Considered Section Considered Land Use: O-5% Rural Considered Consider	t Outlet

J Brownles

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Fea	ture	ID: (NIO(2 LTIO) 2 Field Target: 250 Date: 1, 23 16
For	all i	tems not checked, please provide detailed explanation in the notes section of data form.
	1.	Site Description
		 ☑ Site description, site parameters and summary of findings are complete? ☑ A detailed site sketch is included in logbook?
	2.	Vegetation
		At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
		☑ Vegetation names are entered legibly for all strata present?
		 ☑ Cover calculations are complete and correct? ☑ All dominant species have been determined and recorded per strata? ☑ Indicator status is correct for each species?
		☐ Indicator status is correct for each species? ☐ Dominance Test and Prevalence Index have been completed?
	3.	Soil
		Soil profile is complete? Appropriate hydric soil indicators are marked?
	4.	Hydrology
		☑ Appropriate hydrology indicators are marked?☑ Surface water, water table, and saturation depths are recorded if present?
	5.	Functions and Values
	2	▶ Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
	6.	Field Logbook
		Notes have been recorded at each site, including general description, sketch, and
		accuracy of pre-mapped wetland boundary as appropriate?
	7.	Maps
		Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

X halen Volfer X halen Volfer 6-27-16
Wetland Scientist (print)
Signature / Date

X JBrownlee

Field Crew Chief (print)

X S.B.

-1			•	
SITE DESCRIPTION	And the Line of the last		2/2/2	57 - 5 77 "
Survey Type: Centerline Acce	ss Road (explain) Other (ex	plain) facility	Field Target: 266	Map #; <u>57</u> Map Date: <u>5.27.1</u> 6
Date: 6-24-16	Project Name: Alaska LNG	-10 1	Feature Id	WICKELHOIS
Investigators: Jessie	browniee, Ke	alen 1	NOTHER	Team No.: WV6
State: Alaska	Region: Alaska	Milepost:	404	
Latitude: 65° Z6' 55.	941" N Longitu	de: 1480 14	00.100	Datum: WGS84
Logbook No.:	Logbook Page No.: 7	Picture No.:	P-WIOCOLH C	013-001 thru ook
SITE PARAMETERS	· 中,一本,一章等的	Marine Con	The Management	
Subregion: Ray Montains		Landform (hi	llslope, terrace, hummock	is, etc.): Hillside
Slope (%): 5-8				Juf to slightly convex
Pre-mapped Alaska LNG/NWI classific	ation: P554/B 1A2	Evidence of	Wildlife Use: SYMAN av	imal ronways
Are climatic/hydrologic conditions on the Yes No (if no exp	ne site typical for this time of year? plain in Notes)	Are "N Yes_	ormal Circumstances" pre	esent: rplain in Notes.)
Are Vegetation, Soil, or Hy	drology Significantly Disturbe	ed? No	(If yes, explain in Notes	3)
Are Vegetation, Soil, or Hy	drology Naturally Problemati	c? No K	(If yes, explain in Note	s.)
SUMMARY OF FINDINGS	是全国的 一篇 第三	The State of the Land	1000年度至10年	是1000年100日本
Hydrophytic Vegetation Present? Yes_	No	Is the Sampled	Area within a Wetland?	Yes No
Hydric Soil Present? Yes_	No	Wetland Type:	Neland	
Wetland Hydrology Present? Yes_	X No	Alaska Vegetatio	on Classification (Viereck)	1/AZ
Notes and Site Sketch: Please include	Directional & North Arrow, Centerli	ne, Length of feat	ure, Distances from Cent	erline, Photo Locations, and Survey
open Pic Mar fores	Liledunted trees	~ 15' tall	and under 3'	"DBH. I am diversity
			1 1 - 14	CAT ALT I I I A MAIN
water but fively from	in other harsh growin	ig condition	nd such as ex	treme cold winters
4 Frost all".	0	0		The state of the s
1 1100			7	
				and the same of
\$	A 4			
	OS A			<i>*</i>
	1 4			
		P .		
	5101	Elliot H	WY	
	JOUEH 013-	CITIOTI M		
-	3		W .	

WETLAND DETERMINATION DATA FORM WYOG LHO 13

	ts)			Maria Company of the Late of the Company
ree Stratum (Plot sizes: ///)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC:
		()		Total Number of Dominant Species Across All Strata:
				% Dominant Species that are OBL, FACW, or FAC:
	-	W. V.		Prevalence Index worksheet:
Total Cove	r			
50% of total cove	-	0% of total cov	er.	Total % Cover of: Multiply by: OBL species: X 1 = O
Sapling/Shrub Stratum (>6*)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 45 x 2 = 90 FAC species 24 x 3 = 72
Picea Mariana	45	Y	FACIL	FACU species
Rosa acicularis	1		FACO	Column Totals: 7 (A) 170 (B)
vaccinium vitis-idaea	8		FAC	PI = B/A = 2, 4
vaccinium uliginosum	8		FAL	
Spirace Steppii	1		FACU	
Rhododendrum groenlandicum	3		FAC	
Rhododendrum groenlandien	T		FACU	
0				
Total Cover		% of total cov	er 13,2	
Total Cover	r: 33 20	% of total cov	er: \\\ 3,2	
Total Cover 50% of total cover EGETATION (use scientific names of plant	r: 33 20			Hydrophytic Vegetation Indicators:
Total Cover 50% of total cover EGETATION (use scientific names of plant erb Stratum (r: 33 20	Dominant Species? (Y/N)	er: \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is < 3.0
Total Cover 50% of total cover 50% of total cover scientific names of plant erb Stratum (24)	r: 33 20 s) Absolute	Dominant Species?	Indicator	Dominance Test is > 50% Prevalence Index is ≤ 3.0
Total Cover 50% of total cover 50% of total cover tota	r: 33 20 s) Absolute	Dominant Species?	Indicator Status	Dominance Test is > 50%
Total Cover 50% of total cover 50% of total cover constant (20) Cornus canadeasis Equipment sylvaticum Calamagnists lapponica	r: 33 20 s) Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in
Total Cover 50% of total cover 50% of total cover constant (20) Cornus canadeasis Equipment sylvaticum Calanageasis lapponica	r: 33 20 s) Absolute % Cover	Dominant Species?	Indicator Status FACU FAC	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes)
Total Cover 50% of total cover 50% of total cover tota	r: 33 20 s) Absolute % Cover	Dominant Species?	Indicator Status FACU FAC FAC FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain)
Total Cover 50% of total cover 50% of total cover 150% of total co	r: 33 20 s) Absolute % Cover	Dominant Species?	Indicator Status FACU FAC	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
Total Cover 50% of total cover 50% of total cover consistent (24) Cornus canadensis Equipment sylvaticum Colomiquetis lapponica Petasites feigious Pyrola grandiflora Grass sp	r: 33 20 s) Absolute % Cover	Dominant Species?	Indicator Status FACU FAC FAC FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
Total Cover 50% of total cover 50% of total cover tota	r: 33 20 s) Absolute % Cover	Dominant Species?	Indicator Status FACU FAC FAC FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic.
Total Cover 50% of total cover 50% of total cover conscientific names of plant erb Stratum (24) Cornus canadensis Equipment sylvaticum Calamagnists lapponica Petasites frigidus Pyrola grandiflora Grass sp	r: 33 20 s) Absolute % Cover	Dominant Species?	Indicator Status FACU FAC FAC FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic. % Bare Ground
Total Cover 50% of total cover 50% of total cover 50% of total cover EGETATION (use scientific names of plant erb Stratum (24) Cornus canadensis Equipment Sylvaticum Calamagnitis lapponica Petasites frigious Pyrola grandiflora grass sp	r: 33 20 s) Absolute % Cover	Dominant Species?	Indicator Status FACU FAC FAC FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic. Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic.
Total Cover 50% of total cover 50% of total cover 150% of total co	Absolute % Cover	Dominant Species?	Indicator Status FACU FAC FAC FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic. ———————————————————————————————————

SOIL PROFILE	DECORPTION:	D	I LORD TANK	ature II	Total Control			Soil Pit Required (Y/N)
					1 11 1			
Jonth	104	Describe		to doct	iment the	indicator or	confirm the absence	e of Indicators.)
inches)	Matrix	100	Redox Features	T 0/	T 1	1 2	Tandona	Notes
	Color (moist)	%	Color (moist)	%	Type ¹	Loc²	Texture	Notes
Di 0-5		-		-				Dry feather MOSS
De 5.7	11.1041	Qx.	1100 9/4	+			-111	Dann organics
	104R 4/2	90	101R 4/4	5	Con	M	Sitt loam	Damp but Prot saturated
Wif 11-15	10-1R 4/3	1.12	10/12/14	3	(C)	pr /	Sill Carama	very dry + platex
- MA				-		1		,
Type: C=Conc	centration, D=Deple	etion, RN	ı /i=Reduced Matrix, C	S=Cove	ered or Coa	ated Sand (Grains. ² Location:	PL=Pore Lining, M=Matrix.
YDRIC SOIL I	INDICATORS	(A. 7 (II) &	计500 多种品质的	180 miles	re like	到90亿部分	INDICATORS I	OR PROBLEMATIC HYDRIC SOILS
listosol or Histe	el (A1) N		Alaska Gleyed	(A13)_	N		Alaska Color C	hange (TA4) ⁴ /
Histic Epipedon (A2) Alaska				(A14) _	N		Alaska Alpine S	Swales (TA5)
Black Histic (A3)	(a)/	10	Alaska Gleyed	Pores ((A15) N		Alaska Redox v	vith 2.5Y Hue
lydrogen Sulfid	le (A4) √							without 5Y Hue or Redder Underlying
hick Dark Surfa		-		_	-		Other (Explain	in Notes)
		etation, o	ne primary indicator	of wetla	nd hvdrolo	ov. and an	and the same of th	pe position must be present unless
isturbed or pro	blematic.		, , , , , , , , , , , , , , , , , , ,		,,	3,1		
	color change in No	otes.						and the second s
			st	epth (in	iches):	//		
Restrictive Laye	er (if present): Type esent (Y/N):	e: <u>Fvo:</u> /-	st	Pepth (in	iches):	//		
Restrictive Laye	er (if present): Type	e: <u>Fvo:</u> /-		epth (in	nches):,	//		
Nestrictive Laye	er (if present): Typesent (Y/N):	e: <i>Tro</i>	any one indicator is s			//	Y INDICATORS (2	The state of the s
Restrictive Layer Hydric Soil Pre Notes: Thix o	er (if present): Typesent (Y/N):	e: From		ufficient) s	SECONDAR Vater-staine eaves (B9)	ed /	or more required) Stunted or Stressed Plants (D1) 1
Nestrictive Laye	esent (Y/N):/V PRIMARY INDICA A1)/V	TORS (a	any one indicator is s face Soil Cracks (B6 ndation Vişible on Ae	ufficient) S	Vater-staine eaves (B9)	ed /	Stunted or Stressed See Front
Restrictive Layer Hydric Soil Pre Hydres: Thi xo HydroLogy F Gurface Water (A	esent (Y/N):/V PRIMARY INDICA A1)/V	TORS (a Sun (B7	any one indicator is s face Soil Cracks (B6 ndation Vişible on Ae	ufficient) S	Vater-staine .eaves (B9) Orainage Pa	tterns (B10)	Stunted or Stressed Sec front Note:
Restrictive Layer Hydric Soil Pre Hydres: Thi xo HydroLogy F Gurface Water (A	PRIMARY INDICA A1) Le (A2)	TORS (a Suin- (B) Sp. Co	riny one indicator is so face Soil Cracks (B6 ndation Visible on Ae ') arsely Vegetated ncave Surface (B8)_	ufficient) S V L igery C L	Vater-staine eaves (B9) Orainage Pa Oxidized Rh	tterns (B10)/ izospheres along (C3)	Stunted or Stressed See Front Plants (D1) N See Front Note:
Restrictive Layer Hydric Soil Pre Hydrology F Hydrolog	PRIMARY INDICA A1) Le (A2) N A1) N N N N N N N N N N N N N	TORS (a Suin- (B7 Co Ma	nny one indicator is s face Soil Cracks (B6 ndation Visible on Ae ') arsely Vegetated ncave Surface (B8)_	ufficient) \(\) erial Ima	y L L C L L F H	Vater-staine eaves (B9) Orainage Pa Oxidized Rh Living Roots Presence of	tterns (B10) izospheres along (C3) Reduced	Stunted or Stressed See Front Plants (D1) N Geomorphic Position (D2) N Shallow Aquitard (D3) Y Microtopographic
Restrictive Layer Rydric Soil Pre Notes: Thi xo RYDROLOGY F Surface Water (A Sigh Water Table Saturation (A3) Vater Marks (B Sediment Depos	PRIMARY INDICA (A1) (B2) sits (B2)	TORS (a Suin- (B7 Co Ma Hym Od Dry Od Dry Co	any one indicator is s rface Soil Cracks (B6 ndation Visible on Ae r) arsely Vegetated ncave Surface (B8) rl Deposits (B15) drogen Sulfide,	ufficient) \(\) erial Ima	y V L C C L L F III	Vater-staine Leaves (B9) Drainage Pa Dxidized Rh Living Roots Presence of ron (C4)	tterns (B10) izospheres along (C3) Reduced	Stunted or Stressed See Front Plants (D1) N Shallow Aquitard (D3) N Shallow Aquitard (D3) N Microtopographic Relief (D4)
Restrictive Layer Hydric Soil Pre Hydrocogy F Gurface Water (A High Water Table Saturation (A3)	PRIMARY INDICA (A1) (a) (a) (b) (b)	TORS (a Suin- (B7 Co Ma Hyu Od Dry Wa	any one indicator is s rface Soil Cracks (B6 ndation Visible on Ac) arsely Vegetated ncave Surface (B8) rl Deposits (B15) drogen Sulfide or (C1) r-Season	ufficient)	y V L C C L L F III	Vater-staine eaves (B9) Drainage Pa Dxidized Rh Living Roots Presence of ron (C4) Salt Deposit	tterns (B10) izospheres along (C3) Reduced	Stunted or Stressed See Front Plants (D1) N Shallow Aquitard (D3) N Shallow Aquitard (D3) N Microtopographic Relief (D4)
All particular of the second o	PRIMARY INDICA A1) Le (A2) N Sits (B2) N JIST (B4)	TORS (a Suin- (B7 Co Ma Hyu Od Dry Wa	any one indicator is s rface Soil Cracks (B6 ndation Visible on Ae rarsely Vegetated ncave Surface (B8) rl Deposits (B15) drogen Sulfide or (C1) r-Season nter Table (C2)	ufficient)	y V L C C L L F III	Vater-staine eaves (B9) Drainage Pa Dxidized Rh Living Roots Presence of ron (C4) Salt Deposit	tterns (B10) izospheres along (C3) Reduced	Stunted or Stressed Plants (D1) N Geomorphic Position (D2) N Shallow Aquitard (D3) N Microtopographic Relief (D4)
Interview Layer Interv	PRIMARY INDICA A1) Le (A2) N Sits (B2) N J J J J J J J J J J J J	TORS (a Sulfame of Sul	any one indicator is s Iface Soil Cracks (B6 Indation Visible on Ae	ufficient)/ erial Ima	y V L C C L L F III	Vater-staine eaves (B9) Drainage Pa Dxidized Rh Living Roots Presence of ron (C4) Salt Deposit	tterns (B10) izospheres along (C3) Reduced	Stunted or Stressed Plants (D1) N Geomorphic Position (D2) N Shallow Aquitard (D3) N Microtopographic Relief (D4)
Restrictive Layer Rydric Soil Pre Notes: Thix of RYDROLOGY F Surface Water (A Righ Water Table Saturation (A3) Vater Marks (B Rediment Deposits (B	PRIMARY INDICA A1) Le (A2) N Sits (B2) N J J J J J J J J J J J J	TORS (a Suin- (B7 Co Ma Hyu Od Dry Wa	any one indicator is s rface Soil Cracks (B6 ndation Visible on Ae rarsely Vegetated ncave Surface (B8) rl Deposits (B15) drogen Sulfide or (C1) r-Season nter Table (C2)	ufficient)/ erial Ima	y V L L Gerry C L S N	Vater-staine, eaves (B9) Drainage Pa Dxidized Rh Living Roots Presence of ron (C4) Salt Deposit	tterns (B10) izospheres along (C3) Reduced s (C5)	Stunted or Stressed Plants (D1) \(\sqrt{1} \) Geomorphic Position (D2) \(\sqrt{1} \) Shallow Aquitard (D3) \(\sqrt{2} \) Microtopographic Relief (D4) \(\sqrt{1} \) FAC-Neutral Test (D5) \(\sqrt{2} \)
Restrictive Layer Rydric Soil Pre Rydric Soil	PRIMARY INDICA A1) Le (A2) N Sits (B2) Present (Y/N):	TORS (a Sull Inu (B7 Co Ma Hyward Oth	any one indicator is s Iface Soil Cracks (B6 Indation Visible on Ae	ufficient)/ erial Ima	y V L L Gerry C L S S N	Vater-staine, eaves (B9) Drainage Pa Dxidized Rh Living Roots Presence of ron (C4) Salt Deposit	tterns (B10) izospheres along (C3) Reduced	Stunted or Stressed Plants (D1) \(\
Interview Layer Interv	PRIMARY INDICA A1) Ple (A2) Sits (B2) Dist (B4) Present (Y/N): Pent (Y/N): Pent (Y/N):	TORS (a Sull Inu (B7 Co Ma Hyward Oth	any one indicator is sufface Soil Cracks (B6 andation Visible on Act) arsely Vegetated ancave Surface (B8)	ufficient)/ erial Ima	y V L L Gerry C L S S N	Vater-staine, eaves (B9) Drainage Pa Dxidized Rh. iving Roots Presence of ron (C4) Salt Deposit: Notes:	tterns (B10) izospheres along (C3) Reduced s (C5)	Stunted or Stressed Plants (D1) \(\sum \) \

AQUATIC SITE ASSESSMENT DATA FORM

VEGLIATION VARIABLES P= Plot, M	
Forested-Evèrgreen-Needle-leaved Scrub Shrub-Evergreen-Broad-leaved Persistent Aguatic Bed	Cking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Emergent-Non-persistent Emergent-
Dwarf shrub (<0.5m) fall field (21)	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) n) Short herb (<1m) Moss-Lichen Floating Submerged
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
80%) Very High Density (80-100%)_	
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattere	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or d or Peripheral Cover N/A
	species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none)	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover
Dead Woody Material (P): Low Abundance Abundant (>50% of surface)	(0-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large High (small groupings, diverse and interspers	ed)
HGM Class (P): Slope Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
TOUR VARIABLES	
SOIL VARIABLES Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy	Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES	and the supplied and the second of the secon
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Outlet
	sonally Flooded, Temporarily Flooded, Saturated
Evidence of Sedimentation (P): No Evide	nce Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment
Microrelief of Wetland Surface (P): Absen	
Frequency of Overbank Flooding (P): No Return Interval >5 yrs	Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs
Degree of Outlet Restriction (P): No Outflo	w Restricted Outflow Unrestricted Outflow
Water pH (P): No surface water	Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading
Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable	I (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits
Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Se	v Gradient (<2%) High Gradient (≥2%) eeps or Springs Seeps Observed Intermittent Spring Perennial Spring
LANDSCAPE VARIABLES (M)	AND THE RESIDENCE OF THE PARTY
Wetland Juxtaposition: Wetland Isola Only Connected Above Connected Con	ted Wetlands within 400m, Not Connected Only Connected Below ted Upstream & Downstream Unknown
Wetland Land Use: High Intensity (i.e.	, ag.) Low Intensity (i.e., forestry) Low Intensity (i.e. open space)
Watershed Land Use: 0-5% Rural	5-25% Urbanized >50% Urbanized >50% Urbanized
Me Sall (=10 acres) Me	dium (10-100 acres) Large (>100 acres)

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

F	eature	ID: W10644013 Field Target: 266 Date: 6.24.26
		ems not checked, please provide detailed explanation in the notes section of data form.
	1.	Site Description
		Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
	2.	Vegetation
		At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
		Vegetation names are entered legibly for all strata present?
		 ☑ Cover calculations are complete and correct? ☑ All dominant species have been determined and recorded per strata?
		✓ Indicator status is correct for each species?
		Dominance Test and Prevalence Index have been completed?
	3.	Soil
,		Soil profile is complete? Appropriate hydric soil indicators are marked?
	4.	Hydrology
		Appropriate hydrology indicators are marked?
		Surface water, water table, and saturation depths are recorded if present?
	5.	Functions and Values
		☑ Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
	6.	Field Logbook
		Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
		☑ Each logbook page is initialed and dated?
	7.	Maps
		Wetland boundaries have been corrected if necessary?
		Maps are initialed and dated?

8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

x halen	Volper X Magan	Volker 6-27-16
Wetland Scientist (print)	Signature / Date	nonategov E

Signature / Date

Field Crew Chief (print)

WETLAND DETERMINATION DATA FORM New FT Fairbanks 10

SITE DESCRIPTION	THE PARTY OF THE P				祖 國際監	
Survey Type: Centerline Acces	s Road (explain)	Other (expla	ain)X	Field Targ	jet:	Map #: 6 Map Date: 7:15:16
Date: 7.19:10	Project Name: Alaska	a LNG			Feature Id:	W106LH014
Investigators: Jessie Brou	unlee					Team No.: W106
State: Alaska	Region: Alaska		Milepost:	402		
Latitude: 65.468947	0	Longitude	148.65	7168	di.	Datum: WGS84
Logbook No.: 2	Logbook Page No.:	38	Picture No.	W106L	4014.00	1 thro - 004
SITE PARAMETERS	SAME SHOW THE PARTY OF THE PART		我是他原		WASHING TO SERVICE AND ADDRESS.	
Subregion: Ray Mountains			Landform (h	illslope, terra	ce, hummocks	s, etc.): Lowland
Slope (%): 6-3			Local relief (concave, con	ivex, none): /	Tat
Pre-mapped Alaska LNG/NWI classifica	tion; NA , Not prem	apped	Evidence of	Wildlife Use:	NONE	
Are climatic/hydrologic conditions on the Yes X No (if no expl	site typical for this time				nstances" pre (If no, ex	sent: plain in Notes.)
Are Vegetation, Soil, or Hyd		ly Disturbed?			plain in Notes	
Are Vegetation, Soil, or Hyd		Problematic?	No_X	(If yes, ex	plain₊in N otes	.)
SUMMARY OF FINDINGS	District Constitution of the Constitution of t	MO SHEET	Miles in the		WEIGHT !	
Hydrophytic Vegetation Present? Yes_	No	ls	the Sampled	Area within	a Wetland?	Yes No
Hydric Soil Present? Yes	X No	w	etland Type:	PSS1/	FOUR	*
Wetland Hydrology Present? Yes_	No	— AI	aska Vegetatio	on Classificat	ion (Viereck):	1A3, 11 CZ
Notes and Site Sketch: Please include Dicorridor. Pic Mariwoodland (from the Sphagnum of Found extends into the Birch is a canopy on Image would help answ	the Birch for large PUBL	dense Water to est (s t inge o be	Bet Noble @ econogo dby Co PUBHS	(an +) 5.) But o	Rhogrando abr	o shrub community.
					4	
Airstrip	A Carlo	375	wet ATV	P	79	PAP E

Tree Stratum (Plot sizes: 100	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: (A Total Number of Dominant Species Across All Strata: (C) (B)
1. Picea mariana	10	У	FACW	% Dominant Species that are OBL, FACW, or FAC: (A/E) (A/E)
2. Behla Neoalas kana	2		FACU	A bominant opecies that are ODE, I AGVV, 011 AC (A/I
3.				
4.				Prevalence Index worksheet:
Total Cover:	12			Total % Cover of: Multiply by:
50% of total cover	<i>(o</i> 20	% of total cov	rer: <u>2.4</u>	OBL species:X 1 =
Sapling/Shrub Stratum (Z.C)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 68
1. Vaccinium vitis-idaea	50	Y	FAC	UPL species X 5 = X 5 = X
2 Phododendrum groenlandicum	40	Y	FAC	Column Totals: 217 (A) 587 (B)
3. Chamaeda phne calyculata	2	1:	FACW	PI = B/A = 2.70
4. Betile Nana	45	7	FAC	
5. Phodendrum tomentosum	15		FACIL	
6. Sipiaea Stevenii	2		FACU	- Betula negaliskana 5 3 EAC
7. Salix pulchra	3		FACIL	
8. Vaccinium Ukginosum	(3		FAC	1
			I TC	
9. Salx bebbiene	T		TAC	
9. Salx bebbious Total Cover: 50% of total cover:	84 20	% of total cov	EAC	
Total Cover: 50% of total cover: VEGETATION (use scientific names of plants	<u>84</u> 20	使 化制度	er: 3340	Hudan physic Vorgetation in diseases
9. Salx bebbienen Total Cover.	84 20	Dominant Species? (Y/N)	EAC	Hydrophytic Vegetation Indicators: Dominance Test is > 50%
Total Cover: 50% of total cover: VEGETATION (use scientific names of plants Herb Stratum (26)	20 Absolute	Dominant Species? (Y/N)	er: 3346 Indicator Status	Dominance Test is > 50% ✓ Prevalence Index is ≤ 3.0
Total Cover: 50% of total cover: VEGETATION (use scientific names of plants Herb Stratum (26)	Absolute % Cover	Dominant Species?	er: 3210	Dominance Test is > 50% ✓ Prevalence Index is ≤ 3.0 — Morphological Adaptations¹ (Provide supporting data in
Total Cover: 50% of total cover: VEGETATION (use scientific names of plants Herb Stratum (26) 1. Rubus Chamaemorus 2. Eriophorum Vaginadum	Absolute % Cover	Dominant Species? (Y/N)	er: 3310 Indicator Status	Dominance Test is > 50% ✓ Prevalence Index is ≤ 3.0 — Morphological Adaptations¹ (Provide supporting data in Notes)
Total Cover: 50% of total cover: VEGETATION (use scientific names of plants Herb Stratum (26) 1. Rubus chamaemorus 2. Eriophorum vaginadum 3. 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status FACW FACW	Dominance Test is > 50% ✓ Prevalence Index is ≤ 3.0 — Morphological Adaptations¹ (Provide supporting data in
Total Cover: 50% of total cover: 50% of total cover: VEGETATION (use scientific names of plants Herb Stratum (26) 1. Rubus champemorus 2. Eriophorum vaginadum 3. Calamagnostis canadensis	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status FACW FACW FAC	Dominance Test is > 50% ✓ Prevalence Index is ≤ 3.0 — Morphological Adaptations¹ (Provide supporting data in Notes) — Problematic Hydrophytic Vegetation¹ (Explain)
Total Cover: 50% of total cover: 50% of total cover: VEGETATION (use scientific names of plants Herb Stratum (26) 1. Rybys chamaemorus 2. Eriophorum vaginadym 3. Calamagnostis canadensis 4. Calamagnostis lappanina	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status FACW FACW	Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
Total Cover: 50% of total cover: 50% of total cover: VEGETATION (use scientific names of plants Herb Stratum (26) 1. Rubus chamaemorus 2. Eriaphorum vaginatum 3. Calamagnistis canadensis 4. Calamagnistis lappinina 5. Carex lugelmii	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status FACW FACW FAC	Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
Total Cover: 50% of total cover: 50% of total cover: VEGETATION (use scientific names of plants Herb Stratum (26) 1. Ruhus chamaemorus 2. Eriophorum vaginadum 3. Calamagnishis canadensis 4. Calamagnishis lappining 5. Carex lugelinii 6.	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status FACW FACW FAC	Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
Total Cover: 50% of total cover: 50% of total cover: VEGETATION (use scientific names of plants Herb Stratum (26) 1. Ruhus champemorus 2. Eriophorum vaginadum 3. Calamagnustis canadensis 4. Calamagnustis lapanica 5. Carex lugelmii 6. 7. 8.	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status FACW FACW FAC	Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Mean Service S
Total Cover: 50% of total cover: 50% of total cover: VEGETATION (use scientific names of plants Herb Stratum (26) 1. Ruhus champemorus 2. Eriophorum vaginadum 3. Calamagnustis canadensis 4. Calamagnustis lapanica 5. Carex lugelmii 6.	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status FACW FACW FAC	Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Mean Service S

30IL	E DESCRIPTION: (e to the depth needed		the indicator or	confirm the absen	CE OF INGICALOTS.)
	Matrix	Describe	Redox Features	2 (0 0000,,,0			
Depth inches)	Color (moist)	1 %	Color (moist)	% Typ	e ¹ Loc ²	Texture	Notes
0-5							Saturated organics
. 5.8	-					-	1'
9 8-12	2.543/1	90	10YR 4/4	10 00	m m RC	Silt loam	
29 F 12-+	same as abo		but Frozen				4
						21 - 21 - 21	n: PL=Pore Lining, M=Matrix.
	THE PARTY OF THE P	etion, R	M=Reduced Matrix, (CS=Covered (or Coated Sand		n: PL=Pore Lining, W=Matrix. S FOR PROBLEMATIC HYDRIC SOILS
	INDICATORS	11.5	ASSESSMENT OF THE	1 (4 40)	新 拉克·米斯斯巴斯	Committee of the Commit	Change (TA4) ⁴ N
- Harrison	stosol or Histel (A1) Alaska Gleyed (A13) N						
listic Epipedo			Alaska Redox		101		S OWAICS (17 to)
Black Histic (A Hydrogen Sulf	/		Alaska Gleyed	1 Pores (A15)			x with 2.5Y Hue/ d without 5Y Hue or Redder Underlying
Thick Dark Su	rface (A12)						in in Notes) / XX
Restrictive Lay	of color change in Note (if present): Type	oe: <u>Per</u>	na frost	Depth (inches	5):		
Restrictive Lay	resent (Y/N):)e: <u></u> <i>№ /</i>	na frost	Depth (inches	,		
Hydric Soil P	resent (Y/N):	oe: Peri	any one indicator is:	1	,	RY INDICATORS	(2 or more required)
Hydric Soil Position Hydric Soil Position Hydrology	resent (Y/N):	eral		sufficient)	,	ied ,	(2 or more required) Stunted or Stressed Plants (D1)
Hydric Soil Positive Hydric Soil Positive Hydrology Surface Water	resent (Y/N):	eral ATORS I	any one indicator is	sufficient)	SECONDA Water-stair Leaves (BS	ied ,	Stunted or Stressed
Hydric Soil Positive Hydrocogy Hydrocogy Gurface Water Ta	resent (Y/N):	ATORS I	any one indicator is surface Soil Cracks (Bundation Visible on A	sufficient) 6) \(\foatieta \) Aerial Imagery	SECONDA Water-stair Leaves (B9 Drainage F Oxidized R Living Roof	atterns (B10) $$ hizospheres along s (C3) $$	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3)
Hydric Soil Polytonic	resent (Y/N):	ATORS I	any one indicator is surface Soil Cracks (Bundation Visible on Augusta)	sufficient) 6) <u>J</u> serial Imagery	SECONDA Water-stair Leaves (B9 Drainage F Oxidized R	atterns (B10) $$ hizospheres along s (C3) $$	Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Hydric Soil Polydric Soil Polydric Soil Polydric Soil Polydric Soil Polydric Soil Polydric Water Marks (Mater Mater M	resent (Y/N):	ATORS I	any one indicator is surface Soil Cracks (Bundation Visible on A	sufficient) 6) <u>J</u> serial Imagery	SECONDA Water-stair Leaves (B9 Drainage F Oxidized R Living Root Presence c Iron (C4) Salt Depos	atterns (B10) $$ hizospheres along s (C3) $$	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic
Hydric Soil Position Hydric Soil Position HydroLOGY Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep	resent (Y/N):Y resent (Y/N):Y resent (Y/N):Y resent (Y/N):Y PRIMARY INDICA (A1)X able (A2)Y (B1)X posits (B2)X	ATORS I	any one indicator is surface Soil Cracks (Bundation Visible on A (7) Noarsely Vegetated oncave Surface (B8) arl Deposits (B15)	sufficient) 6) <u>J</u> serial Imagery	SECONDA Water-stair Leaves (B9 Drainage F Oxidized R Living Root Presence of Iron (C4)	atterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Hydric Soil Position Hydric Soil Position HydroLOGY Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Deposits	resent (Y/N):Y resent (Y/N):Y resent (Y/N):Y resent (Y/N):Y PRIMARY INDICA (A1)X able (A2)Y (B1)X posits (B2)X	ATORS I	any one indicator is: urface Soil Cracks (Bundation Visible on A (7)	sufficient) 6) <u>V</u> verial Imagery	SECONDA Water-stair Leaves (B9 Drainage F Oxidized R Living Root Presence c Iron (C4) Salt Depos	atterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Hydric Soil Position Hydric Soil Position Hydric Soil Position HydroLogy Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Deposits Algal Mat or C	resent (Y/N):	ATORS I	any one indicator is: urface Soil Cracks (Bundation Visible on A (7)	sufficient) 6) <u>V</u> verial Imagery	SECONDA Water-stair Leaves (B9 Drainage F Oxidized R Living Root Presence c Iron (C4) Salt Depos	atterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Hydric Soil Polydric Soil Polydric Soil Polydric Soil Polydric Soil Polydric Soil Polydric Water Water High Water Tasaturation (A3 Water Marks (Sediment Depolydrift Deposits Algal Mat or Colon Deposits	resent (Y/N):Y resent (Y/N):Y resent (Y/N):Y resent (Y/N):Y PRIMARY INDICA (A1)N able (A2)Y able (A2)Y able (B4)N crust (B4)N (B5)N	ATORS I	any one indicator is surface Soil Cracks (Bundation Visible on A 17) Noarsely Vegetated oncave Surface (B8) arl Deposits (B15) ydrogen Sulfide dor (C1) Noy-Season later Table (C2) Notes	sufficient) 6) <u>V</u> verial Imagery	SECONDA Water-stair Leaves (B9 Drainage F Oxidized R Living Root Presence c Iron (C4) Salt Depos	atterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Hydric Soil Polydric Soil Polydric Soil Polydric Soil Polydric Soil Polydric Soil Polydric Water Water High Water Tasaturation (A3 Water Marks (Sediment Depolydrift Deposits Algal Mat or Colon Deposits	resent (Y/N):	ATORS I	any one indicator is: urface Soil Cracks (Bundation Visible on A (7)	sufficient) 6) <u>V</u> verial Imagery	SECONDA Water-stair Leaves (BS Drainage F Oxidized R Living Roof Presence of Iron (C4) Salt Depose Notes:	atterns (B10)	Stunted or Stressed Plants (D1)

AQUATIC SITE ASSESSMENT DATA FORM

W1066H014

VEGLIATION / ARIABLES P= Plot, M= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Forested-Evergreen-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent
Percent Cover (P): Tree (>5 dbh, >6m tall) /⊘ Sapling (<5 dbh, <6m tall) /⊘ Tall shrub (2-6m) Short shrub (0.5-2m) /⊘ Dwarf shrub (<0.5m)
Number of Wetland Types (M):/ Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) 80%) Very High Density (80-100%) X
Interspersion of Cover & Open Water (P): 100% Cover or Open Water Peripheral Cover >75% Scattered or Peripheral Cover N/A N/A 25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover_ K
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)
Vegetative Interspersion (P): Low (large patches, concentric rings) / Moderate (broken irregular rings) / High (small groupings, diverse and interspersed)
HGM Class (P): Slope FlatX Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES
Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric
Mineral: Gravelly Mineral: Sandy Mineral: Silty X Mineral: Clayey
HYDROLOGIC VARIABLES
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Out
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded
Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Created
Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) / Pronounced (>18in.)
Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrsReturn Interval >5 yrs
Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow
Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading 5-86
Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Glacial Till/Not Permeable
Basin Topographic Gradient (M): Low Gradient (<2%)
Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring
LANDSCAPE VARIABLES (M)
Wetland Juxtaposition: Wetland Isolated
Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below
Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below Only Connected Above Connected Upstream & Downstream X Unknown

Crew Chief QA/QC check:

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Feature ID: WIO644014 Field Target: Fairbanks Date: 7.19.16

For all items not checked, please provide detailed explanation in the notes section of data form.

1. Site Description

- ☑ Site description, site parameters and summary of findings are complete?
- A detailed site sketch is included in logbook?

2. Vegetation

- At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
- ☑ Vegetation names are entered legibly for all strata present?
- Cover calculations are complete and correct?
- All dominant species have been determined and recorded per strata?
- Indicator status is correct for each species?
- ☑ Dominance Test and Prevalence Index have been completed?

3. Soil

- ⊠ Soil profile is complete?
- Appropriate hydric soil indicators are marked?

4. Hydrology

- Surface water, water table, and saturation depths are recorded if present?

5. Functions and Values

Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?

6. Field Logbook

- Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
- ☑ Each logbook page is initialed and dated?

7. Maps

- Wetland boundaries have been corrected if necessary?
- ☐ Maps are initialed and dated?

_	_	_		
8.	n.	hω	4.~	_
Λ	_	(141	111	-

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X	X	
Wetland Scientist (print)	Signature / Date	40.00
X Jessie Brownlee	X O	7.19.16
Field Crew Chief (print)	Signature / Date	

New Fairbanks 4

SITE DESCRIPTION	MEN 24 19 14 19 14 19 14 19 14 19 14 19 14 19 14 19 14 19 14 19 14 19 14 19 14 19 14 19 14 19 14 19 14 19 14 1		A Mark Inch			
Survey Type: Centerline Acces	ss Road (explain) Of	ther (explai	n)	Field Targ	jet:	Map #: 14 Map Date: 7.15.16
Date: 7.22.16	Project Name: Alaska L			Feature Id:	W1062H015	
Investigators: Jessie Brownlee	Kin Holmes					Team No.: WIOG
State: Alaska	Region: Alaska		Milepost:	460		
Latitude: 64.68354	L	ongitude:	-148.89	1698.8		Datum: WGS84
Logbook No.: 2	Logbook Page No.: 39	8	Picture No.:	P-WICKE	14015-0	01 thr 2004
SITE PARAMETERS	国际发展的		元出版 取			WEST STATE
Subregion: Yukon - Tanana	Volands		Landform (hillslope, terrace, hummocks, etc.):			
Slope (%): 5-8			Local relief (concave, con	ivex, none):	CONVEX
Pre-mapped Alaska LNG/NWI classifica	tion: U: 102. 1103	2				oppings
Are climatic/hydrologic conditions on the Yes No (if no expl		year?	Are "N Yes	ormal Circun No	nstances" pre (If no, exp	sent: plain in Notes.)
Are Vegetation, Soil, or Hyd	drology Significantly [Disturbed?	No	(If yes, exp	olain in Notes	
Are Vegetation, Soil, or Hyd	drology Naturally Prol	blematic?	No_X	(If yes, ex	plain in Notes	5.)
SUMMARY OF FINDINGS	一人的人 在外的特殊		而是的	學面開政		
Hydrophytic Vegetation Present? Yes_	No	_ ls t	he Sampled	Area within	a Wetland?	Yes NoX
Hydric Soil Present? Yes_	No X	. We	etland Type:	U		3
Wetland Hydrology Present? Yes_	NoX	- Ala	iska Vegetatio	n Classificat	ion (Viereck):	102,1102
Notes and Site Sketch: Please include Ecorridor. Dry mature mixed fourst a mound but surrounding Soil is dry site. It is soil is sluffing off. The From Road to this point	Aspen, Bet Neo forest has been has rained off and	dry al	Gla al So. No Jays, one	of 100 signs que side e	hell. is hydrol	Site is on a slight

in a single

VEGETATION (use scientific names of plants	5)			
Tree Stratum (Plot sizes: 180)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: (A) Total Number of Dominant Species Across All Strata: (B)
1. Picca Colavea	130	У	FACU	
2. Populus tremuloides 3. Betula Negalaskama	10	1 -	FACU	% Dominant Species that are OBL, FACW, or FAC: (A/B)
3. Behla Nepalaokana	20	y	FACU	
4.				Prevalence Index worksheet:
Total Cover:	60			Total % Cover of: Multiply by:
50% of total cover	<u>30</u> 20	% of total cov	rer: 12	OBL species:X1 =
Sapling/Shrub Stratum (20)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: $X = -$ FAC species $X = 3$ FACU species $X = 404$
1. viburnom eduk	4.5	Y	FACU	UPL species X 5 =
2. Rosa micularis	2		FAC. U	Column Totals: 1/7 (A) 467 (B)
3. / innaea borealis	2		FACU	PI = B/A = 3.9?
4.				
5.				
6.				
7.				
8.				
9.				
Total Cover: 50% of total cover:		% of total cov	er: 9.8	

Herb Stratum(Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50%
1. Lycopodium complanate 2. Chameron ansustificium	n T	y	OPL FACU	Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes)
3. Coeocaulin lividium 4. Mertensia paniculado	7		FACU	Problematic Hydrophytic Vegetation ¹ (Explain) 1 Indicators of hydric soil and wetland hydrology must be present unless
6. Calamagraphis Caralis	T 1		FACU	disturbed or problematic.
8. Equisetum repens	T		FACW	% Bare Ground (lear lifter) % Cover of Wetland Bryophytes
0.			-	Total Cover of Bryophytes
Total Cover 50% of total cover		% of total cov	er: <u>//</u>	Hydrophytic Vegetation Present (Y/N):



Soil Pit Required (Y/N) Feature ID SOIL SOIL PROFILE DESCRIPTION: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features Matrix Depth Loc² Texture Notes (inches) Color (moist) Type¹ Color (moist) 0-2 75YR 3/3 Silt loam 2-10 Rw! 1048 4/4 5.11 hour 104R4/3 1-10 90 (411 10 YR 4/4 Silt loan 95 M 10/12 4/2 con 10-21 Type: @=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains, ²Location: PL=Pore Lining, M=Matrix. INDICATORS FOR PROBLEMATIC HYDRIC SOILS3 HYDRIC SOIL INDICATORS Alaska Color Change (TA4) Alaska Gleyed (A13) Histosol or Histel (A1) N Alaska Alpine Swales (TA5) Alaska Redox (A14) Histic Epipedon (A2) Alaska Redox with 2.5Y Hue Alaska Gleyed Pores (A15) ... 1 Black Histic (A3) Alaska Gleyed without 5Y Hue or Redder Underlying Hydrogen Sulfide (A4) Layer Other (Explain in Notes) Thick Dark Surface (A12) _ One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic. Give details of color change in Notes. Restrictive Layer (if present): Type: Depth (inches): Hydric Soil Present (Y/N): Notes: SECONDARY INDICATORS (2 or more required) HYDROLOGY PRIMARY INDICATORS (any one indicator is sufficient) Stunted or Stressed Water-stained Surface Soil Cracks (B6) Surface Water (A1) Plants (D1) Leaves (B9) Inundation Visible on Aerial Imagery Geomorphic Position (D2) _ N Drainage Patterns (B10) High Water Table (A2) (B7)Oxidized Rhizospheres along Sparsely Vegetated See Note Saturation (A3) Concave Surface (B8) Living Roots (C3) _ Presence of Reduced Microtopographic Marl Deposits (B15) Water Marks (B1) Relief (D4) Iron (C4) Hydrogen Sulfide FAC-Neutral Test (D5) Salt Deposits (C5) Sediment Deposits (B2) _ Odor (C1) Notes: Dry-Season Drift Deposits (B3) __ Water Table (C2) Other (Explain in Notes): Algal Mat or Crust (B4) Iron Deposits (B5) Depth (in): Surface Water Present (Y/N): Wetland Hydrology Present (Y/N): Water Table Present (Y/N): Depth (in): Saturation Present (Y/N): Depth (in): (includes capillary fringe) Notes: Slight saturation from I are of get that was thisotropic and stuffing off But not calling saturation due to minimal amount and several days of rain.

Wastlos

AQUATIC SITE ASSESSMENT DATA FORM

VEGLIATION VARIABLES P= Plot, I	V= Matrix
Forested-Evergreen-Needle-leaved	acking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0,5m) Tall herb (≥1	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Short herb (<1m) Moss-Lichen Floating Submerged
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)	(0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattere	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant	species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none)	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches, Parts of Site
Dead Woody Material (P): Low Abundance Abundant (>50% of surface)	(0-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large High (small groupings, diverse and interspers	patches, concentric rings) Moderate (broken irregular rings)
HGM Class (P): Slope Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
DOU WAR(ARLEO	
SOIL VARIABLES Soil Factors (P): Soil Lacking	Characterists / District Characterists Chara
Mineral: Gravelly Mineral: Sandy	Histosol: Fibric Histosol: Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey
HADDOLOGIC ANDIABLES	
HYDROLOGIC VARIABLES	
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Outlet_Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial I
Inlet/Outlet Class (P): No Inlet/Outlet Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial I
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial I
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Servidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Onally Flooded, Temporarily Flooded, Saturated Semiperm, Flooded Ce Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No O Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Ou
Inlet/Outlet Class (P): No Inlet/Outlet Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Peren
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial Intermittent Outlet Perennial Intermittent Outlet Pe	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial Intermittent Outlet Perennial Intermittent Outlet Pe	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No O Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water C: Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable Basin Topographic Gradient (M): Low G Evidence of Seeps and Springs (P): No See	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No O Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Ci Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable Basin Topographic Gradient (M): Low (B) Evidence of Seeps and Springs (P): No See	No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No O Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Ci Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No See LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolate Only Connected Above Connected	No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No O Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Ci Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Geologic Deposit Outlet (M):	No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No O Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Ci Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No See LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolate Only Connected Above Connected	No Inlet/Intermittent Outlet

Brownere

Crew Chief QA/QC check:

GPS Technician QA/QC check:

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

	New
Feature	e ID: WIOLG LHOIS Field Target: Fairbanks Date: 7.22.16
For all	items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
	Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct?
31	All dominant species have been determined and recorded per strata? Indicator status is correct for each species?
	Dominance Test and Prevalence Index have been completed?
3.	Soil
	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
×	☑ Appropriate hydrology indicators are marked? ☑ Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
	Each logbook page is initialed and dated?
7.	Maps
	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X	X	
Wetland Scientist (print)	Signature / Date	

X Jessie Brounlee X 7.22.16

Field Crew Chief (print)

Signature / Date

SITE DESCRIPTION Map #: 13 Map Date: 7.18.16 Field Target: Access Road (explain)_ Other (explain) Survey Type: Centerline_ Feature Id: WIOGLHOIL Project Name: Alaska LNG 7.22.14 Team No.: W106 Investigators: Jessie Brownlee & Kim Holmes Milepost: 441 Region: Alaska State: Alaska Datum: WGS84 Latitude: 64.946748 Longitude: -148.644106 Picture No .: P-WIOG LHOME - OO1 Thru - OO4 Logbook No.: Logbook Page No.: SITE PARAMETERS Landform (hillslope, terrace, hummocks, etc.): Subregion: Yukon - Tanama Local relief (concave, convex, none): Slope (%): Evidence of Wildlife Use: Pre-mapped Alaska LNG/NWI classification: Not applicable NONE Are climatic/hydrologic conditions on the site typical for this time of year? Are "Normal Circumstances" present: (If no, explain in Notes.) No_ (if no explain in Notes) Yes Significantly Disturbed? No X (If yes, explain in Notes) _, Soil Are Vegetation , or Hydrology No (If yes, explain in Notes.) _, Soil Naturally Problematic? Are Vegetation or Hydrology SUMMARY OF FINDINGS Hydrophytic Vegetation Present? Yes No Is the Sampled Area within a Wetland? No Wetland Type: Yes Hydric Soil Present? Wetland Hydrology Present? Yes Alaska Vegetation Classification (Viereck): 1A2,11C2 Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey Mature open Pic Mar forest w/ thick feather moss & Rho Cro shrob community walked down slope + popped holes, thicken organics, water table @ ~ 6" Soil is thirotropic + appears damp/saturated when dog up/disturbed but peds are dry when Broken open small pockets of sphagnum Moss are present 4 increase down slope.

D New Fairbanks 3

				Section 19 19 19 19 19 19 19 19 19 19 19 19 19
VEGETATION (use scientific names of plants)			
Tree Stratum (Plot sizes: 180)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: 3 (A) Total Number of Dominant Species Across All Strata: (B)
1. Picea Mariana	25	Y	FACW	Total Number of Dominant Species Across All Strata: (B) % Dominant Species that are OBL, FACW, or FAC: 75 (A/B)
2. Piece glavea AB		7	FACUL	% Dominant Species that are OBL, FACW, of FAC (AVB)
3. Betela repalaskana	5		FACU	
4.				Prevalence Index worksheet:
Total Cover	30			Total % Cover of: Multiply by:
50% of total cover	:1520	% of total cov	er: <i>(o</i>	OBL species: X 1 =
Sapling/Shrub Stratum (24)	Absolute	Dominant	Indicator	FACW species: 30 X 2 = 60
	% Cover	Species?	Status	FAC species 85 X 3 = 255
		(Y/N)		FACU species 28 X 4 = 1 (2
1. Rhododendrum grocalandicum	45	Y	FAC	UPL species X 5 =
E Spiraea Stevenii	18	Y	FACU	Column Totals: 143 (A) 427 (B)
3. Rosa acicularis	4		FACU	PI = B/A = 2.98
4. yaccinium vitis-idaea	10		FAC	
5. Picea martana	5		FACW	
6. Alnus vicidis Proticosa	2		FAC	
7.				
8.		-		
9.				
Total Cover:	84			
50% of total cover	<u>42</u> 20	% of total cov	er: 16.8	
VEGETATION (use scientific names of plants				
Herb Stratum (\tag{2}\(\begin{array}{c}\)	Absolute	Dominant Species?	Indicator	Hydrophytic Vegetation Indicators:

Herb Stratum (Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0
1. Fausetum sylvateum 2. Coeocaulin lividium	25	7.	FACU	Morphological Adaptations¹ (Provide supporting data in Notes)
4. Calumogrostis apponica	1		FAC	Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
5. Calamagrastis Canadassis.	2		FAC	disturbed or problematic.
7,				% Bare Ground
9.				/O % Cover of Wetland Bryophytes/OO Total Cover of Bryophytes
10.				% Cover of Water Hydrophytic Vegetation Present (Y/N):
Total Cove		% of total cov	ver: <u>5.8</u>	Notes: (If observed, list morphological adaptations below):

			T 000 18					
SOIL			202	ature ID		DATE OF STREET	. 医别克克斯氏病	Soil Pit Required (Y/N)
SOIL PROFILE	DESCRIPTION: (D	escribe		to docu	ument the	indicator or	confirm the absence	e of indicators.)
Depth	Matrix	9	Redox Features	-		1 .		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc²	Texture	Notes
oi 0-5								Dry feather MOSS
De 5.7								Damp organics
A 7-8	104R 3/2	100					Siltlan	
Burl 8-14	104R4/3	87	7 SYR 4/4	5			Siltloan	someturbation throughout
2	10 YR 4/1	8			-		" "	
Bud 14-24	104R 4/2	100					gravelly silt	pan good structure
¹ Type: C=Con	centration, D=Deple	tion. RM	=Reduced Matrix. C	S=Cove	ered or Co	ated Sand C	Grains. ² Location:	PL=Pore Lining, M=Matrix.
HYDRIC SOIL	Control of the Control of the Control	U 10523	35 ESP (1) 25 F (2)	100	(古花) (1) (1)	576278		FOR PROBLEMATIC HYDRIC SOILS
Histosol or Hist		OTHER DESIGNATION	Alaska Gleyed	(A13)	N			hange (TA4) ⁴ /V
Histic Epipedor	1		Alaska Redox			26	Alaska Alpine S	
Black Histic (A		-	Alaska Gleyed			-	Alaska Redox v	
Hydrogen Sulfi	11		, ildona Gioyeo	1 0103 ((· · · ·)			without 5Y Hue or Redder Underlying
Thick Dark Sur	face (A12) N						Other (Explain	in Notes)
Notes: Very	thixotropic			9	1 1			140
HYDROLOGY	PRIMARY INDICAT	TORS (a	ny one indicator is s	sufficient)	SECONDAR	RY INDICATORS (2	or more required)
Surface Water	(A1)/	Sur	face Soil Cracks (Be	6) <u>N</u>		Nater-staine _eaves (B9)		Stunted or Stressed Plants (D1)
High Water Ta	ble (A2)/	Inu (B7	ndation Visible on A	erial Ima	agery	Drainage Patterns (B10)		Geomorphic Position (D2)
Saturation (A3)	N		arsely Vegetated ncave Surface (B8)	N		Oxidized Rhizospheres along Living Roots (C3)		Shallow Aquitard (D3)
Water Marks (I	31)	Ма	rl Deposits (B15)	Ŋ		Presence of Reduced Iron (C4) Microtopographic Relief (D4)		
Sediment Depo	osits (B2)		drogen Sulfide or (C1)			Salt Deposits (C5) FAC-Neutral Test (D5)		
Drift Deposits ((B3)		-Season ter Table (C2)N			Notes:		
Algal Mat or Ci	rust (B4)	Oth	er (Explain in Notes	s):				
Iron Deposits (B5)		1 1 1 m					
Out to	D	1	Donath (in)			PER DESIGNATION OF THE PERSON		
Surface Water Water Table P		7	Depth (in):		We	etland Hydr	ology Present (Y/N	n:N
Saturation Pre-	sent (Y/N):	7	Depth (in):		EC	:		
Notes: Note	alling salvat	Kon B	Kits thixo:	soil q ken c	once y	ord bree	ak a clod instructed on	tead of digging it out us the undisturbed face.

AQUATIC SITE ASSESSMENT DATA FORM

VEGETATION VARIABLES P= Plot,	M= Matrix
Forested-Evergreen-Needle-leaved	.acking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) Tall herb (>	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) 1m) Short herb (<1m)
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%	e (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scatter	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant	species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none)	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches_	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site
Dead Woody Material (P): Low Abundance Abundant (>50% of surface)	(0-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (larger High (small groupings, diverse and interspersion)	e patches, concentric rings)Moderate (broken irregular rings)sed)
HGM Class (P): SlopeFlat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES	HERBELLE VILLE VILLE VILLE SERVICE SER
	Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES	THE SERVICE OF THE SE
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermitter Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Outlet Inlet/Perennial Outlet Perennial O
Inlet/Outlet Class (P): No Inlet/Outlet Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Inlet/Perennial Outlet Perennial Ou
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evide Created	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Inlet/Perennial Outlet Perennial Inlet/Perennial
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermitter Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evide Created Microrelief of Wetland Surface (P): Absen	No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence of Sedimentation (P): No Evidence of Sedimentation (P): No Evidence of Wetland Surface (P): Absentice of Wetland Surface (P): Absentice of Overbank Flooding (P): No Committee of Sedimentation (P): No Evidence of Sedimen	No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evide Created Microrelief of Wetland Surface (P): Absen Frequency of Overbank Flooding (P): No CReturn Interval >5 yrs Degree of Outlet Restriction (P): No Outflood Water pH (P): No surface water (Compared to the content of the cont	No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evide Created Microrelief of Wetland Surface (P): Absen Frequency of Overbank Flooding (P): No Outlook Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflook Water pH (P): No surface water (C) Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable	No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidenceated Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Permittently Exposed, Evidence of Overbank Flooding (P): No Created Prequency of Overbank Flooding (P): No Created Prepared P	No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evide Created Microrelief of Wetland Surface (P): Absen Frequency of Overbank Flooding (P): No Outlook Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflook Water pH (P): No surface water (C) Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Se	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Inle
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evide Created Microrelief of Wetland Surface (P): Absen Frequency of Overbank Flooding (P): No Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflot Water pH (P): No surface water (C) Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Sea	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evide Created Microrelief of Wetland Surface (P): Absen Frequency of Overbank Flooding (P): No Outflot Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflot Water pH (P): No surface water (C) Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Sea LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolat Only Connected Above Connected	No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evide Created Microrelief of Wetland Surface (P): Absen Frequency of Overbank Flooding (P): No Created Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflot Water pH (P): No surface water (C) Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Sea	No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evide Created Microrelief of Wetland Surface (P): Absen Frequency of Overbank Flooding (P): No Outflot Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflot Water pH (P): No surface water (C) Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Sea LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolat Only Connected Above Connected	No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evide Created Microrelief of Wetland Surface (P): Absen Frequency of Overbank Flooding (P): No Geturn Interval >5 yrs Degree of Outlet Restriction (P): No Outflot Water pH (P): No surface water (C) Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Sea LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolat Only Connected Above Connected Wetland Land Use: High Intensity (i.e., Watershed Land Use: 0-5% Rural	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Porennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Porennial Outlet Perennial Inlet/Porennial Outlet Perennial Inlet/Porennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Porennial Outlet Perennial Inlet/Porennial In

J Brownlee

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Feature ID: WIOGLHOIG Field Target: Fair banks For all items not checked, please provide detailed explanation in the notes section of data form. 1. Site Description Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook? 2. Vegetation At least 80% of onsite vegetation has been keyed to species, or collected for later identification? ☑ Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct? All dominant species have been determined and recorded per strata? M Indicator status is correct for each species? ☑ Dominance Test and Prevalence Index have been completed? 3. Soil Soil profile is complete? M Appropriate hydric soil indicators are marked? 4. Hydrology Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present? 5. Functions and Values ∠ Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland? 6. Field Logbook Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated? 7. Maps

Wetland boundaries have been corrected if necessary?

Maps are initialed and dated?

8.	Ph	nf.	ne
O. i	711	οι	US

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X	X	
Wetland Scientist (print)	Signature / Date	

X Jessic Brownlee X 7.22.16

Field Crew Chief (print)

Signature / Date

(083 6539

New Fairbanks SITE DESCRIPTION Map #: 7 Map Date: 7 - 15-14 Other (explain) X Field Target: Survey Type: Centerline____ Access Road (explain)___ Feature Id: Project Name: Alaska LNG W106LH017 Team No.: Investigators: Jessie Brownlee Kim Holmes Region: Alaska Milepost: 407 State: Alaska Datum: WGS84 Latitude: 65.398704 -148.4585708 Longitude: Logbook Page No.: 39 Picture No.: P-W106 LH017, 001 thro -004 Logbook No.: SITE PARAMETERS Landform (hillslope, terrace, hummocks, etc.): Subregion: Ray mountains Local relief (concave, convex, none): CONVEX Slope (%): Evidence of Wildlife Use: NOW Pre-mapped Alaska LNG/NWI classification: Not makened Are "Normal Circumstances" present: Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in Notes.) (if no explain in Notes) X (If yes, explain in Notes) Significantly Disturbed? No_ . Soil Are Vegetation , or Hydrology_ 入 (If yes, explain in Notes.) or Hydrology Naturally Problematic? Are Vegetation____, Soil_ SUMMARY OF FINDINGS Is the Sampled Area within a Wetland? Hydrophytic Vegetation Present? Yes___ Wetland Type: No Hydric Soil Present? Yes Wetland Hydrology Present? Alaska Vegetation Classification (Viereck): 11 A 3, 11 CZ Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey Stunded Pie Mar woodland on era steep slope watertable @ 12 with thick organics over very gravelly silt loam on transect on walk from the trail, It gets wet very soon on transect

	1/4	\$ 18		Y SAME TO SAME THE SAME TO SAME THE SAM
VEGETATION (use scientific names of plant	s)			
Tree Stratum (Plot sizes: /٥٥)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: \$\frac{45}{5}\$ (A) Total Number of Dominant Species Across All Strata: \$\frac{5}{5}\$ (B)
1. Picea Mariana	5	У	FACW	% Dominant Species that are OBL, FACW, or FAC: 100 (A/B)
2.				(A/B)
3.				
4.				Prevalence Index worksheet:
Total Cover	. 5			Total % Cover of: Multiply by:
50% of total cover	r: 2,5 20	% of total cov	er:	OBL species:X1 =
Sapling/Shrub Stratum (24)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 33 X 2 = lolo FAC species 57 X 3 = 171 FACU species X 4 = 4
1. Picea mariana	13		FACW	UPL species X 5 =
2. Spirea Stevenii	1		FACU	Column Totals: 91 (A) 241 (B)
3. Vaccinium Ulginosum	15	Y	FAC	PI = B/A = 2.64
4. Rhododendrum tomentosum	10		FACW	
5. vaccinium vitis-idaea	25	7	FAC	
6. Vaccinium oxycoccus	T		OBL	
7. Betula nana	2	*	FAC	2.0
8. And rameda polifolia	T		FACW	jk i
9.				
Total Cover				-
50% of total cover	: <u>33 </u>	% of total cov	er: 13.2	
VEGETATION (use scientific names of plants)	N I S I S		CANADA TAN CERTAIN THE SALES OF
Herb Stratum (24)	Absolute	Dominant	Indicator	Hydrophytic Vegetation Indicators:

VEGETATION (use scientific names of plan	ts)	A GET		松 物供的2000年的特別的共享的2000年的900
Herb Stratum (24)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50%
1. carex bigelowii 2. Rubus chamaemorus 3. Daniel Chamaemorus	. 15	À	FAC FACU	Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes)
4. Drosera rotundifolia 5.	+		FAC	Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
6. 7. 8.				% Bare Ground% Cover of Wetland Bryophytes
9. IO. Total Cove		% of total cov	И	

OIL			7.23.16			
	THE STREET		Date Feature ID	A STREET	THE LOW SECTION	Soil Pit Required (Y/N)
CIL PROFILE	E DESCRIPTION: (I	Describe	to the depth needed to docume	nt the indicator or	confirm the absence of	indicators.)
epth	Matrix		Redox Features			
nches)	Color (moist)	%	Color (moist) % T	/pe ¹ Loc ²	Texture 1	Notes
: 6-5		78				Dompo Feather Mess
5-10						Saturated organics
w 10-45	101R3/2	100			granelly sittles	0
<i>p</i> 10 . 2						
- 40 - 10 - 10 - 10 - 10 - 10 - 10 - 10	4 3 2					
13	4					10 00 00 00 00 00 00 00 00 00 00 00 00 0
ype: C=Con	centration, D=Deple	etion, RM	1=Reduced Matrix, CS=Covered	or Coated Sand		L=Pore Lining, M=Matrix.
YDRIC SOIL	INDICATORS	5 7 7 7	国教练队员	型 张 洲 郑	INDICATORS FO	R PROBLEMATIC HYDRIC SOILS
istosol or His	tel (A1)/		Alaska Gleyed (A13)	N	Alaska Color Char	nge (TA4) ⁴ N
	n (A2)	4	Alaska Redox (A14)	N	Alaska Alpine Swa	ales (TA5)
lack Histic (A		-	Alaska Gleyed Pores (A1	5)/	Alaska Redox with	2.5Y Hue
lydrogen Sulfi						hout 5Y Hue or Redder Underlying
					Layer N	(Matan)
hick Dark Sui	fface (A12) N		in an indicator of wattened	hudralass, and an	Other (Explain in I	
One indicator isturbed or pr		etation, o	ne primary indicator of wetland	nyarojogy, and an	appropriate landscape	position must be present unless
Give details o	f color change in No					
estrictive Lay	er (if present): Typ	e: <u>N</u>	Depth (inch	es):		
otes:		4				11
Wood oou						
PURULUGY	PRIMARY INDICA	TORS (any one indicator is sufficient)	SECONDA	RY INDICATORS (2 or	more required)
	PRIMARY INDICA		any one indicator is sufficient) rface Soil Cracks (B6)	SECONDA Water-stain Leaves (B9	ned /	Stunted or Stressed Plants (D1)
Surface Water	(A1)/	Su	rface Soil Cracks (B6)	Water-stain Leaves (B9	ned /	Stunted or Stressed
Surface Water	(A1)	Su Inu - (B)	rface Soil Cracks (B6)	Water-stain Leaves (B9 Ty Drainage P Oxidized Ri Living Root	ratterns (B10) \(\) hizospheres along s (C3) \(\)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3)
ourface Water ligh Water Ta saturation (A3	(A1)	Su Inu (B) Sp Co	rface Soil Cracks (B6)	Water-stain Leaves (B9 Ty Drainage P Oxidized RI	ratterns (B10) \(\) hizospheres along s (C3) \(\)	Stunted or Stressed Plants (D1)/ Geomorphic Position (D2)/
Surface Water High Water Ta Saturation (A3 Vater Marks ((A1)	Su Inu (Bi Sp Co Ma	rface Soil Cracks (B6) Indation Visible on Aerial Image (7) Indation Visible on Aerial Image (7) Indation Visible on Aerial Image (7) Indicate Surface (B8) Indicate Surface (B8) Indicate Surface (B15) Indicate Surface Surface (B15) Indicate Surface Surface (B15) Indicate Surface Surface (B15) Indicate Surface Sur	Water-stain Leaves (B9 Ty Drainage P Oxidized RI Living Root Presence o Iron (C4) Salt Depos	atterns (B10)/ hizospheres along s (C3) of Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic
Surface Water High Water Ta Saturation (A3 Vater Marks (Sediment Dep	hble (A2)	Su Inu (B) Sp Co Ma	rface Soil Cracks (B6)	Water-stain Leaves (B9 Ty Drainage P Oxidized Ri Living Root Presence o Iron (C4)	atterns (B10)/ hizospheres along s (C3) of Reduced	Stunted or Stressed Plants (D1)/ Geomorphic Position (D2)/ Shallow Aquitard (D3)/ Microtopographic Relief (D4)//
Surface Water Ta saturation (A3 Vater Marks (Sediment Dep Drift Deposits	(A1)	Su Inu (BT Sp Co Ma	rface Soil Cracks (B6)	Water-stain Leaves (B9 Ty Drainage P Oxidized RI Living Root Presence o Iron (C4) Salt Depos	atterns (B10)/ hizospheres along s (C3) of Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
urface Water Taligh Water Taliaturation (A3 Vater Marks (Deciment Deporift Deposits algal Mat or C	(A1)	Su Inu (BT Sp Co Ma	rface Soil Cracks (B6) Indation Visible on Aerial Image (7) arsely Vegetated Incave Surface (B8) Intl Deposits (B15) drogen Sulfide Ior (C1) y-Season Inter Table (C2)	Water-stain Leaves (B9 Ty Drainage P Oxidized RI Living Root Presence o Iron (C4) Salt Depos	atterns (B10)/ hizospheres along s (C3) of Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Orift Deposits Mgal Mat or C	(A1)	Su Inu (BT Sp Co Ma	rface Soil Cracks (B6) Indation Visible on Aerial Image (7) arsely Vegetated Incave Surface (B8) Intl Deposits (B15) drogen Sulfide Ior (C1) y-Season Inter Table (C2)	Water-stain Leaves (B9 ry Drainage P Oxidized Ri Living Root Presence o Iron (C4) Salt Depos Notes:	atterns (B10) hizospheres along s (C3) of Reduced its (C5)	Stunted or Stressed Plants (D1)/ Geomorphic Position (D2)/ Shallow Aquitard (D3)/ Microtopographic Relief (D4)//
Surface Water Tales (A3 Water Marks (A3 Comment Deported Deposits (A1) (A1) (A1) (A1) (A1) (A1) (A1) (A1)	(A1)	Su Inu (B7 Sp Co Maa Hy Odd Dry Wa	rface Soil Cracks (B6)	Water-stain Leaves (B9 ry Drainage P Oxidized Ri Living Root Presence o Iron (C4) Salt Depos Notes:	atterns (B10)/ hizospheres along s (C3) of Reduced	Stunted or Stressed Plants (D1)/ Geomorphic Position (D2)/ Shallow Aquitard (D3)/ Microtopographic Relief (D4)//
Surface Water Ta Saturation (A3 Vater Marks (Sediment Dep Orift Deposits Algal Mat or C Fron Deposits ((A1)	Su Inu (B7 Sp Co Maa Hy Odd Dry Wa	rface Soil Cracks (B6) Indation Visible on Aerial Image 7) arsely Vegetated Indation Visible on Aerial Image 7) Arrange Indation Visible on Aerial Image 7) Indation Visible on Aerial Image 8) Indation Visible on Aerial Image 9	Water-stain Leaves (B9 ry Drainage P Oxidized Ri Living Root Presence o Iron (C4) Salt Depos Notes:	ratterns (B10)/ hizospheres along s (C3) of Reduced its (C5)/ lrology Present (Y/N):	Stunted or Stressed Plants (D1)

AQUATIC SITE ASSESSMENT DATA FORM

VEGETATION VARIABLES P= Plot, M= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed
Percent Cover (P): Tree (>5 dbh, >6m tall) Sapling (<5 dbh, <6m tall) /5 Tall shrub (2-6m) Short shrub (0.5-2m) ₩ Dwarf shrub (<0.5m)
Number of Wetland Types (M):/_ Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) 80%) X Very High Density (80-100%) X
Interspersion of Cover & Open Water (P): 100% Cover or Open Water X <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) X_ High (>25)
Presence of Islands (M): Absent (none) X One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg. Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover X
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)
HGM Class (P): SlopeX Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe
COULVARIANTES
SOIL VARIABLES
Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES
HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/Index Perennial Outlet Perennial Inlet/Index Intermittent Inlet/Index Index I
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Per
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Intermi
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet

JB rown/ee

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

	New		
Feature ID: WIOLE LHOIT	Field Target: Fairbanks	Date:_	7.23.16
For all items not checked, please prov			
For all items not checked, please pro-	ride detailed expression in the		

1. Site Description

- Site description, site parameters and summary of findings are complete?
- A detailed site sketch is included in logbook?

2. Vegetation

- At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
- ✓ Vegetation names are entered legibly for all strata present?
- ☑ Cover calculations are complete and correct?
- All dominant species have been determined and recorded per strata?
- Dominance Test and Prevalence Index have been completed?

3. Soil

- Soil profile is complete?
- Appropriate hydric soil indicators are marked?

4. Hydrology

- ☑ Appropriate hydrology indicators are marked?
- Surface water, water table, and saturation depths are recorded if present?

5. Functions and Values

Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?

6. Field Logbook

- Motes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?

7. Maps

- ☑ Wetland boundaries have been corrected if necessary?
- Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

X
Wetland Scientist (print)
Signature / Date

X Jessie Brownlee X Date

Field Crew Chief (print)

Signature / Date

Map #: 7_ Map Date: _ 7/5./
e Id: NIOGLHO18
Team No.: WIOW
Datum: WGS84
10018-001 thru -004
NOT EXCUSE A COMMEN
nocks, etc.): Hill side
e): undulating
- U
" present: ; explain in Notes.)
otes)
lotes.)
nd? YesXNo
eck): 1(A 3, 11 C Z
with vater perching uch wetter as is

VEGETATION (use scientific names of plants)	A STATE OF		
Tree Stratum (Plot sizes: 160)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC:
1. Picea mariama	5	γ	FACW	% Dominant Species that are OBL, FACW, or FAC: (A/B)
2.				% Dominant Species that are OBL, FACW, of FAC. (AB)
3.				
4.				Prevalence Index worksheet:
Total Cover				Total % Cover of: Multiply by:
50% of total cover	: <u>2.5</u> 20	% of total cov	rer:	OBL species: X 1 =
Sapling/Shrub Stratum (26)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 35
1. Picea Mariana	15	7	FACW	UPL species
2. Maccinium OXY COCCUS	1		OBL	Column Totals: 87 (A) 885 (B)
3. vaccinium uliginasum	8		FAC	PI = B/A = 2.5%
4. Vaccinium vitis. idaea	20	Y	FAC	Empetrum Nigrom ST FAC
5. Chamaedaphne calvoulate	2		FACW;	211
6. Rhadodendrum tomentosa	7		FACU	Betula Nama 9 2 FAC
7. Andromeda polifolia	2		FACW	
8. Alnos froticosa	1		FAC	
9. Spirara stevenii	T		FACU	
Total Cover:				
50% of total cover	:_29 20	% of total cov	rer: (\o	
VEGETATION (use scientific names of plants)		NE SERVICE	Evaluation of the Company of the Com
Herb Stratum (24)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Y Dominance Test is > 50%
1. A condamon alaskanum	4	, , ,	FAC	Prevalence Index is ≤ 3.0
2. Rubus Chamaemorus	3		FACW	Morphological Adaptations¹ (Provide supporting data in Notes)
3. Carex higelowii	5	Y	FAC	Problematic Hydrophytic Vegetation ¹ (Explain)
4. Coepeaulon lividium	1		FACU	¹ Indicators of hydric soil and wetland hydrology must be present unless
5. Eriophorum vaginatum	1		FACW	disturbed or problematic.
6. Egyisetum sylvaticum	10	7	FAC	是是10年,10年代第二十二年代的1945年(1945年) 1945年 - 1945年(1945年)
7. Brosom rotundifolia	7		OBL	% Bare Ground
8.			7	% Cover of Wetland Bryophytes
9.				/OO Total Cover of Bryophytes
10.			,	% Cover of Water
Total Cover:	24		l	Hydrophytic Vegetation Present (Y/N):
50% of total covers		% of total cov	er: <u>4 , 8</u>	Notes: (If observed, list morphological adaptations below):

		+ -	1123-16	-		To	Andrew Control	0.150.50
SOIL		Tot	Date Feat				Serve and	Soil Pit Required (Y/N)
SOIL PROFILE		escribe	to the depth needed to	doc	ument the	indicator or	confirm the absence	of indicators.)
Depth -	Matrix		Redox Features		1 - 1	1. 2		Maria
inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Notes
0-11								Dans organies (sphagnu
1-13		2/8	1104R 5/2	5	-	M		Saturated organizes
13-14	104R 4/2	95	104/24/4	5	con	w	very growelly	silf laam
swif 14=+	Same as Bus	60	frozen					
===	godin -					- 34		
Гуре: C≍Con	L centration, D=Depleti	on, Ri	I И=Reduced Matrix, CS=	=Cov	ered or C	oated Sand (PL=Pore Lining, M=Matrix.
YDRIC SOIL	INDICATORS	1	经过的性格	29	14-12-12		THE REAL PROPERTY AND PERSONS ASSESSMENT	FOR PROBLEMATIC HYDRIC SOILS
istosol or His	tel (A1)	1	Alaska Gleyed (A	413)	N.	. 10	Alaska Color C	
istic Epipedo	n (A2) Y		Alaska Redox (A	14)_	N	,	Alaska Alpine S	
Black Histic (A	3)		Alaska Gleyed P	ores	(A15)	/	Alaska Redox v	
lydrogen Sulf	ide (A4)/						Layer	without 5Y Hue or Redder Underlying
hick Dark Su	rface (A12)/						Other (Explain	in Notes) V pe position must be present unless
lotes:	resent (Y/N):	4	4					
HYDROLOGY	PRIMARY INDICAT	ORS (any one indicator is suf	ficien	it)	SECONDA	RY INDICATORS (2	or more required)
Surface Water	(A1) N	Sı	rface Soil Cracks (B6)	Ŋ		Water-stain Leaves (B9)		Stunted or Stressed Plants (D1)
ligh Water Ta	able (A2)/\	Inc (B	undation Visible on Aeri 7)	ial Im	nagery	Drainage Pa	atterns (B10) N	Geomorphic Position (D2)
Saturation (A3)	Sp Co	parsely Vegetated oncave Surface (B8)	N			nizospheres along s (C3)	Shallow Aquitard (D3)
Vater Marks (B1)/	M	arl Deposits (B15)	N	-,2	Presence of Iron (C4)	f Réduced	Microtopographic Relief (D4)
Sedimeřit Dep	osits (B2)		drogen Sulfide dor (C1)				ts (C5)/	FAC-Neutral Test (D5)
Orift Deposits	(B3)	Di W	y-Season ater Table (C2)			Notes:		
Algal Mat or C	rust (B4)	O	her (Explain in Notes):					
ron Deposits	(B5)							
Surface Water	r Present (Y/N):		Depth (in):		A PARTY OF	FOLDER		V
	Present (Y/N):	*]	Depth (in):		v	Vetland Hyd	rology Present (Y/f	N):
Saturation Pre includes capil			Depth (in):		E	C: //b	22_	5.7 pH
Notes: Wat	u slowly see	olas	in from O	e/	Bwl	interface	ce	

AQUATIC SITE ASSESSMENT DATA FORM

W106LH018

VEGETATION VARIABLES P= Plot, M= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent
Percent Cover (P): Tree (>5 dbh, >6m tall) Sapling (<5 dbh, <6m tall)
Number of Wetland Types (M):/_ Evenness of Wetland Type Distribution (M): EvenX_Highly UnevenModerately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) 80%) Very High Density (80-100%) X
Interspersion of Cover & Open Water (P): 100% Cover or Open Water
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) K One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover_ K
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)
HGM Class (P): Slope / Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES
Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Outlet
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, SaturatedX Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded
Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Created
Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)
Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs Return Interval 2-5 yrs
Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow
Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading 5.7
Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits 4 Glacial Till/Not Permeable
Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%)
Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring
Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring
Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below
Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below Only Connected Above Connected Upstream & Downstream Unknown

Crew Chief QA/QC check:

GPS Technician QA/QC check:

Wetland Determination Form QA/QC Checklist

	This form to be completed before leaving the field site.
	Neu
	e ID: WIOLOHOLE Field Target: Fairbanks Date: 7.23.16
For all	items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
	☑ Vegetation names are entered legibly for all strata present?
	□ Cover calculations are complete and correct?
	 ☑ All dominant species have been determined and recorded per strata? ☑ Indicator status is correct for each species?
	Dominance Test and Prevalence Index have been completed?
3.	Soil
_	☑ Soil profile is complete?
-	Appropriate hydric soil indicators are marked?
4.	Hydrology
	☑ Appropriate hydrology indicators are marked? ☑ Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	্য Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Motes have been recorded at each site, including general description, sketch, and
	accuracy of pre-mapped wetland boundary as appropriate?
	☑ Each logbook page is initialed and dated?
7.	Maps
	☑ Wetland boundaries have been corrected if necessary?
	Mans are initialed and dated?

8. Photos

Field Crew Chief (print)

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- ☑ Two photos were taken for each Observation Point (vegetation/site overview)?

X	X	
Wetland Scientist (print)	Signature / Date	
	V	and I was
1 Jessie Brownlee	X	4.23.66

Signature / Date

New Fairbanks 4 SITE DESCRIPTION Map #: 7 Map Date: 7.15.16 Field Target: Other (explain) X Survey Type: Centerline_ Access Road (explain)_ Feature Id: W/OGLH019 Project Name: Alaska LNG Date: 7.23.16 Team No.: WOO Investigators: Jessie Brownlee Kim Holmes Milepost: 407 Region: Alaska Datum: WGS84 Longitude: -148.469244 Latitude: 65.397166 Picture No.: P_W Ole LHO19_001 thro _db Logbook No.: Logbook Page No.: SITE PARAMETERS Landform (hillslope, terrace, hummocks, etc.): Subregion: Mountains Local relief (concave, convex, none): und Jlating Slope (%): 51) Evidence of Wildlife Use: None Pre-mapped Alaska LNG/NWI classification: Not ose mapple Are climatic/hydrologic conditions on the site typical for this time of year? Are "Normal Circumstances" present: (If no, explain in Notes.) _ (if no explain in Notes) / (If yes, éxplain in Notes) Significantly Disturbed? Are Vegetation____, Soil_ ___, or Hydrology (If yes, explain in Notes.) Naturally Problematic? Are Vegetation____, Soil_ , or Hydrology SUMMARY OF FINDINGS Is the Sampled Area within a Wetland? Hydrophytic Vegetation Present? Yes Wetland Type: PSS4/13 入 · No.. Hydric Soil Present? Alaska Vegetation Classification (Viereck): | | A 3, | | C 2 Wetland Hydrology Present? Yes Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey Stunted Pic Mar woodland with thick sphagnum moss and permatrost et ~ 12". Weter is actively scaping in from under organic layer + above frost. Orwalk over from North side of hill, most all of area was wet. What was dry had Mixed Forest signature

44

22 20% of total cover: 8.8

Total Cover:

50% of total cover:__

9.

10.

W106LH019

VEGETATION (use scientific names of plan	ts)	情性地		
Tree Stratum (Plot sizes:/DO)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: 5 (A
1. Picea Mariana	\$	Y	FACE	Total Number of Dominant Species Across All Strata:(E
2.				% Dominant Species that are OBL, FACW, or FAC: ∠(A)
3.				STORES OF THE MENT OF THE STORE
4.	100			Prevalence Index worksheet:
Total Cove	r. 5	-		Total % Cover of: Multiply by:
50% of total cover	er: 2.5 20	0% of total cov	ver:	OBL species:X 1 =
Sapling/Shrub Stratum (26)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 75 X 2 = 150 FAC species 53 X 3 = 159 FACU species X 4 =
1. Betola Nang	. 2		FAC	UPL species X5 =
2. vaccinium vitis-idaea	20	4	FAC	Column Totals: 128 (A) 309 (B)
3. vaccinium ulisinosum	20	Y	FAC	PI = B/A = 2.41
1. Rhododendrum tomentosum	15		FACE	
5. Picea mariana	20	Y	FACW	
· vaccinium oxycoccus	T		OBL	
· Alnus viridis Fruticosa	2		KAC	
Andromeda Polifolia	17		FACW	
chamaedophie calveula	th T		FACW	
Total Cove)% of total cov	ver: 15.8	
VEGETATION (use scientific names of plant	ts)		SEE TO	
Herb Stratum (Ro)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50% ✓ Prevalence Index is ≤ 3.0
1. Aconogonon alaskanum	4		FAC	Morphological Adaptations¹ (Provide supporting data in
2. Eriophorum Vaginatatum	35	Y	FACE	Notes)
3. Rubus chamaemorus	T		FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
1. Drosera rotundifolia	T		OBL	¹ Indicators of hydric soil and wetland hydrology must be present unless
. Corex bigelowii	5	,	FAC	disturbed or problematic.
6.		1		THE RESERVE AND THE PROPERTY OF THE PARTY OF
7.				% Bare Ground
0				(a/) Of Course of Motland Brianhite

Total Cover of Bryophytes

% Cover of Water

Notes: (If observed, list morphological adaptations below):

Hydrophytic Vegetation Present (Y/N):

				to docume	enii ine ii		Committee absence	c of indicators.)
OIL PROFILE	1	Describe	Redox Features			idioator or o		
Depth inches)	Matrix	1 %		% T	ype ¹	Loc ²	Texture	Notes
	Color (moist)	76	Color (moist)	70 1	ype	Loc	Texture	
1 0-6		-		-		-		Damp sphegnum Saturated organics
e 6-12			14				gravelly sil	
1-12-+	104R 3/2	-		-	_		gravelly sil	T been
-						-		
	-	-	-					
Type: C=Con	centration, D=Deple	etion, RI	I M=Reduced Matrix, C	S=Covered	d or Coa	ited Sand G	rains. ² Location:	PL=Pore Lining, M=Matrix.
The second second second	INDICATORS	AN PURIL	自连联系统数据	STATE OF THE PARTY	S. Fred	A SECTION AND A		FOR PROBLEMATIC HYDRIC SOILS
Mary Med Philippines	stel (A1)/	Alloway's In	Alaska Gleyed	(A13)	N		Alaska Color C	hange (TA4) ⁴
7	on (A2)		Alaska Redox		N	-		Swales (TA5)//
	(3)	30	Alaska Gleyed		5) N			with 2.5Y Hue
100	fide (A4)		Maska Sloyea	1 0,00 (11				without 5Y Hue or Redder Underlying
hick Dark Su	rface (A12)						Other (Explain	in Notes) N
One indicator	of hydrophytic vege	etation, o	one primary indicator	of wetland	hydrolo	gy, and an a	appropriate landsca	ape position must be present unless
listurbed or pr	roblematic.							16 2 5 4
Give details o	of color change in No ver (if present): Type	e: Per	mafrost	Depth (inch	ies):	12	1	The of the same
		- ^ -		100		-		
100								- 2
lydric Soil Pr	resent (Y/N):	Y		3 4			20	No.
Zunasi.	resent (Y/N):	Y		9.4			9	A second
August	resent (Y/N):	Y		y :			- 15	
Notes:				4 4				
lotes:			any one indicator is s	ufficient)	S	ECONDAR	Y INDICATORS (2	or more required)
Notes:	PRIMARY INDICA	TORS (any one indicator is surface Soil Cracks (Be	1	V	ECONDAR Vater-staine eaves (B9)	d \	Stunted or Stressed Plants (D1)
Notes: HYDROLOGY Surface Water	PRIMARY INDICA	TORS (5)	_ V	Vater-staine eaves (B9)	d \	Stunted or Stressed
Notes: HYDROLOGY Surface Water High Water Ta	PRIMARY INDICA (A1) able (A2)	Su In- (B	urface Soil Cracks (Be	5)	- L	Vater-staine eaves (B9) Orainage Pa	tterns (B10)/	Stunted or Stressed Plants (D1)
Notes: HYDROLOGY Surface Water High Water Ta	r (A1) / able (A2)	Su In (B	urface Soil Cracks (Be undation Visible on A 7) parsely Vegetated	erial Image	V L	Vater-staine eaves (B9) Prainage Pat Oxidized Rhi	tterns (B10)/ zospheres along (C3)	Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Notes: HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (r (A1) / able (A2)	SI In (B	urface Soil Cracks (B6 undation Visible on A (7) parsely Vegetated oncave Surface (B8) arl Deposits (B15)	erial Image	V L C C L III	Vater-staine eaves (B9) Orainage Par Oxidized Rhi Living Roots Presence of	tterns (B10)/ zospheres along (C3) Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2)/ Shallow Aquitard (D3) Microtopographic
Notes: HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep	r (A1) Able (A2) Able (A2) Able (B1) Able (B2)	SI In (B	urface Soil Cracks (Be undation Visible on A 7) parsely Vegetated oncave Surface (B8) arl Deposits (B15) ydrogen Sulfide or (C1)	erial Image	V L C C L C F III	Vater-staine eaves (B9) Orainage Par Oxidized Rhi iving Roots Presence of ron (C4)	tterns (B10)/ zospheres along (C3) Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2)/ Shallow Aquitard (D3) Microtopographic Relief (D4)
Notes: HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits	r (A1) Able (A2) Able (A2) Able (B1) Able (B2)	SI In (B	urface Soil Cracks (Be undation Visible on A (7) parsely Vegetated oncave Surface (B8) arl Deposits (B15) ydrogen Sulfide dor (C1)	S)	V L C C L C F III	Vater-staine eaves (B9) Orainage Par Oxidized Rhi Living Roots Oresence of ron (C4)	tterns (B10)/ zospheres along (C3) Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2)/ Shallow Aquitard (D3) Microtopographic Relief (D4)
Notes: HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C	r (A1) / able (A2) / (B1) / cosits (B2) / (B3) / Crust (B4) //	SI In (B	urface Soil Cracks (Be undation Visible on A. 7) Darsely Vegetated oncave Surface (B8) arl Deposits (B15) ydrogen Sulfide or (C1) ry-Season ater Table (C2)	S)	V L C C L C F III	Vater-staine eaves (B9) Orainage Par Oxidized Rhi Living Roots Oresence of ron (C4)	tterns (B10)/ zospheres along (C3) Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2)/ Shallow Aquitard (D3) Microtopographic Relief (D4)
Notes: HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C	r (A1) / able (A2) / (B1) / cosits (B2) / (B3) / Crust (B4) //	SI In (B	urface Soil Cracks (Be undation Visible on A. 7) Darsely Vegetated oncave Surface (B8) arl Deposits (B15) ydrogen Sulfide or (C1) ry-Season ater Table (C2)	S)	V L C C L C F III	Vater-staine eaves (B9) Orainage Par Oxidized Rhi Living Roots Oresence of ron (C4)	tterns (B10)/ zospheres along (C3) Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2)/ Shallow Aquitard (D3) Microtopographic Relief (D4)
Notes: HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C	(A1) Able (A2) Able (A2) Able (B1) Able (B2) Able (B3) Able (B3) Able (B4) Able (B5)	SI In (B	unface Soil Cracks (Be undation Visible on A. 7) parsely Vegetated oncave Surface (B8) arl Deposits (B15) ydrogen Sulfide of (C1) yy-Season (ater Table (C2)	S)	V L C C L C F III	Vater-staine eaves (B9) Orainage Par Oxidized Rhi Living Roots Oresence of ron (C4)	tterns (B10)/ zospheres along (C3) Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2)/ Shallow Aquitard (D3) Microtopographic Relief (D4)
Notes: HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits (Surface Water	r (A1) Able (A2) Able (A2) Able (A2) Able (B1) Able (B2) Able (B3) Able (B3) Able (B3) Able (B4) Able (B5) Able (B5) Able (B5) Able (B5) Able (B7) Able	SI In (B	unface Soil Cracks (Be undation Visible on A 27) parsely Vegetated oncave Surface (B8) arl Deposits (B15) gydrogen Sulfide or (C1) ry-Season later Table (C2) ther (Explain in Notes) Depth (in):	S)	V L L C C C C C C C C C C C C C C C C C	Vater-staine eaves (B9) Orainage Par Dividized Rhi iving Roots Oresence of ron (C4) Salt Deposits Notes:	tterns (B10)/ zospheres along (C3) Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Notes: HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C	r (A1) Able (A2) Able (A2) Able (A2) Able (A2) Able (B1) Able (B2) Able (B3) Able (B3) Able (B3) Able (B4) Able (B5) Able (B5) Able (B5) Able (B5) Able (B5) Able (B7/N): Able (B7/N)	SI In (B	urface Soil Cracks (Be undation Visible on A (7)) parsely Vegetated oncave Surface (B8) arl Deposits (B15) ydrogen Sulfide (by Season (ater Table (C2)) ther (Explain in Notes)	S)	V L L C L L C L L C L L C L L C L L C L L C L L C L L C L L C L L C L L C L C L L C L	Vater-staine eaves (B9) Orainage Par Oxidized Rhi Living Roots Oresence of ron (C4) Calt Deposits Notes:	tterns (B10)/ izospheres along (C3) Reduced s (C5)/	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)

AQUATIC SITE ASSESSMENT DATA FORM

VEGETATION VARIABLES P= Plot, M= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Forested-Evergreen-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Persistent Aquatic Bed
Percent Cover (P): Tree (>5 dbh, >6m tall) Sapling (<5 dbh, <6m tall)
Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) 80%) X Very High Density (80-100%) Very High Density (80-100%)
Interspersion of Cover & Open Water (P): 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)
HGM Class (P): Slope X Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric
Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES
Inlet/Outlet Class (P): No Inlet/Outlet K No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Intermittent Outlet Intermittent Outlet Intermittent Outlet Inlet/Intermittent Outlet Intermittent Outlet Intermitten
Inlet/Outlet Class (P): No Inlet/Outlet K No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Inlet/Intermitte
Inlet/Outlet Class (P): No Inlet/Outlet K No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial
Inlet/Outlet Class (P): No Inlet/OutletK No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet
Inlet/Outlet Class (P): No Inlet/Outlet K No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Inlet/No Outl
Inlet/Outlet Class (P): No Inlet/Outlet K No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Outl
Inlet/Outlet Class (P): No Inlet/Outlet _K No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Outlet Perennial Inlet/No Outlet Perennial Outlet Perennial Inlet/No Outlet Perennial Outlet Perennial Inlet/No Outlet _
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet K No Inlet/Intermittent Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Intermit
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Intermi
Inlet/Outlet Class (P): No Inlet/Outlet K No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet

Crew Chief QA/QC check:

GPS Technician QA/QC check:

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

	New			
Feature ID: WIGG LH019	Field Target: Fairbanks 9)ate:	7.23	16
For all items not checked, please pro	ovide detailed explanation in the notes	section	of data fo	orm.

1. Site Description

- 図 Site description, site parameters and summary of findings are complete?
- A detailed site sketch is included in logbook?

2. Vegetation

- At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
- ☑ Vegetation names are entered legibly for all strata present?
- Cover calculations are complete and correct?
- All dominant species have been determined and recorded per strata?
- Indicator status is correct for each species?
- Dominance Test and Prevalence Index have been completed?

3. Soil

- Soil profile is complete?
- Appropriate hydric soil indicators are marked?

4. Hydrology

- Appropriate hydrology indicators are marked?
- Surface water, water table, and saturation depths are recorded if present?

5. Functions and Values

Wegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?

6. Field Logbook

- Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
- Ex Each logbook page is initialed and dated?

7. Maps

- Wetland boundaries have been corrected if necessary?
- Maps are initialed and dated?

8. Photos

Field Crew Chief (print)

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X	X
Wetland Scientist (print)	Signature / Date
X Jessie Brownlee	X 7.23:16

Signature / Date

SITE DESCRIPTION	Unit STORE		7 - Th		1011	banks 5
Survey Type: Centerline Acce	ss Road (explain)	Other (explain)	X	Field Targe	et:	Map #: 15 Map Date: 7-15-1
Date: 7.24.16	Project Name & No.:	Alaska LNG 60	418403		Feature Id	WIOGLHOZO
Investigators: Jessie Brown	lee, kin Holme	e s				Team No.: W104
State: Alaska	Region: Alaska		lilepost:	473.8		
Latitude: 64.55621		Longitude:	-149.1,	18677		Datum: WGS84
Logbook No.:				H020-	001 thru_004	
SITE PARAMETERS		Hall bery		100		Message Version
Subregion: Tanana Kuskok	cwim Lowland	La La	andform (hil	Islope, terrace	e, hummock	s, etc.): River Tierrace
Slope (%): 6-3				concave, conv		
Pre-mapped Alaska LNG/NWI classifica	ation: Not pre mappy	sed Ex	vidence of V	Vildlife Use:	None	
Are climatic/hydrologic conditions on the Yes No (if no exp	e site typical for this time lain in Notes)	of year?	Are "No	ormal Circum:		sent: plain in Notes.)
Are Vegetation, Soil, or Hyd	drology Significantl	ly Disturbed?	NoX	_(If yes, expl	ain in Notes)
Are Vegetation, Soil, or Hyd	drology Naturally P	Problematic?	NoX	_ (If yes, exp	ain in Notes	3.)
SUMMARY OF FINDINGS	N. T. A.	****	11.50	In roll	TO THE	Charles and
Hydrophytic Vegetation Present? Yes_	No	is the	Sampled A	Area within a	Wetland?	Yes No
Hydric Soil Present? Yes_	NoX	Wetla	nd Type:			
Wetland Hydrology Present? Yes_	NoX_	Alaska	a Vegetation	n Classificatio	n (Viereck):	ICZ, IIBZ
Notes and Site Sketch: Please include Decorridor. Dry River Terrace at Site is still Dry, OPe Thick (Nearly 100% Communities & Sail i	long the Nana in Mixed Come cover) & Ege	na River, opy of Pic opy of Pic	Wate 61a, 18	- is we et Neo 9 le else	y the	h currently but half tree like Sel Gold ay of Shrub Trook
Navada river	SECHORE WAS A SECURITY OF WAS A SECOND WAS A SECURITY OF WAS	(ROAD)	科学	4 P		

VEGETATION (use scientific names of plant	s)				THE PARTY				The same
Tree Stratum (Plot sizes:	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	No. of Dominant Spec	cies that a				
1. Picca Colours	35	1	FACU	Total Number of Dominant Species Across All Strata: (5 (B) % Dominant Species that are OBL, FACW, or FAC: 80 (A/B)					
2. Betula Neoalas Kana	10	7	FAC	76 Dominant Opecies	liial ale O	DL, I A	CVV, OI I AC		_ (A/D)
3.				Street Street	355	49		TEN Y	O U
4.				Prevalence Index wo	orksheet:				
Total Cover	45			Total % Cover of:			Multiply by	<u>'</u>	
50% of total cover	r: <u>22.5</u> 20	% of total cov	rer:				_		
Sapling/Shrub Stratum (24)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species:S	<u>3</u> △x	3 =	150		
1. Alaus Vividis Frutleosa	- 15	7	FAC	UPL species_	/	5 = _			
2. Vibranom edule	1		FACO	Column Totals:				(B)	
3. Rosa acicularis	.5		FACU	PI = B/A =					
4. Jalix claures	.25	Y	FAC						
5.									
6.									
7.									
8.			11						
9.			140						
Total Cover 50% of total cover		% of total cov	er: 9,2						

Herb Stratum (24)	Absolute Dominar % Cover Species (Y/N)			Hydrophytic Vegetation Indicators: Dominance Test is > 50%
1. Equiselum proteise 2. 3.	\$5	Y	FACLU	Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain)
5. 6.				Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
7. 8. 9.				% Bare Ground **** *******************************
10.	er: ちラ er: リス <u>ろ</u> 20	% Cover of Water Hydrophytic Vegetation Present (Y/N): Notes: (If observed, list morphological adaptations below):		

A.			7.24	1.16						
SOIL			Date	Feature I	D			Soil Pit Required (Y/N)		
SOIL PROFILI	E DESCRIPTION: (D	escribe	to the depth ne	eded to doc	ument the	indicator or c	onfirm the absence	e of indicators.)		
Depth	Matrix	Redox Featur	es							
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Notes		
0i 0-4								Dry organics		
C 4-24	10 YR 5/2	95	7.5YR 4/6	5	Con	M RC	Very fine Soney	loan w/pelkete of silt loans		
							1	7		
	centration, D=Deple	tion, R	M=Reduced Mat	trix, CS=Cov	ered or Co	ated Sand Gr	1	PL=Pore Lining, M=Matrix.		
HYDRIC SOIL			B. J. S.	. 100	4317 0		INDICATORS FOR PROBLEMATIC HYDRIC SOILS ³			
Histosol or His	tel (A1)		Alaska G	leyed (A13)	N	-	Alaska Color Change (TA4) ⁴			
Histic Epipedo	n (A2) <u>N</u>		Alaska R	edox (A14) _	N		Alaska Alpine Swales (TA5)/			
Black Histic (A	3)		Alaska G	leyed Pores	(A15)/\/	/	Alaska Redox with 2.5Y Hue			
Hydrogen Sulfi	de (A4)/\			t to the second				Alaska Gleyed without 5Y Hue or Redder Underlying Layer		
of the second se	face (A12)/\/					**	n Notes) 📈			
disturbed or pre Give details of	oblematic. f color change in Not	tes.			-	ogy, and an a	ppropriate landsca	pe position must be present unless		
Restrictive Lay	er (if present): Type	:	V	Depth (i	nches):	Land (*)				
Hydric Soil Pr	esent (Y/N):	V			1	100				
Notes:										
HYDROLOGY	PRIMARY INDICAT	ORS (any one indicato	or is sufficien	t) :	SECONDARY	INDICATORS (2	or more required)		
Surface Water	(11)	S.	rfaco Soil Crack	(c (B6) A/	. 3	Water-stained		Stunted or Stressed		

RS (any one indicator is sufficient)	SECONDARY INDICATORS (2 or more required)					
Surface Soil Cracks (B6)/V	Water-stained Leaves (B9)	Stunted or Stressed Plants (D1)				
Inundation Visible on Aerial Imagery (B7)	Drainage Patterns (B10)/	Geomorphic Position (D2)				
Sparsely Vegetated Concave Surface (B8)	Oxidized Rhizospheres along Living Roots (C3)	Shallow Aquitard (D3)				
Marl Deposits (B15)	Presence of Reduced Iron (C4)	Microtopographic Relief (D4)				
Hydrogen Sulfide Odor (C1)	Salt Deposits (C5)	FAC-Neutral Test (D5)				
Dry-Season Water Table (C2)	Notes:					
Other (Explain in Notes):		*				
Depth (in):	6.0					
Depth (in):	Wetland Hydrology Present (Y/N):					
Depth (in):	EC:					
	Surface Soil Cracks (B6)	Surface Soil Cracks (B6)/				

VEGETATION VARIABLES P= Plot, I	M= Matrix
Forested-Evergreen-Needle-leaved	acking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) Tall herb (≥1	Sapling (<5 dbh, <6m tall)
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)	e (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattered	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant	species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none)	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover
Dead Woody Material (P): Low Abundance Abundant (>50% of surface)	(0-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large High (small groupings, diverse and interspers	e patches, concentric rings) Moderate (broken irregular rings)sed)
HGM Class (P): Slope Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES	
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy_	Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES	
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial nlet/Perennial Outlet
Inlet/Outlet Class (P): No Inlet/Outlet_ Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed,	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/OutletOutlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inwetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence Of Sedimentation (P): N	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inl
Inlet/Outlet Class (P): No Inlet/OutletOutlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inwetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence Of Sedimentation (P): N	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No
Inlet/Outlet Class (P): No Inlet/Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No One Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Committent Outlet Intermittent Intermittent Outlet Intermittent Inte	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennia
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Intermittent Intermittent Outlet Intermittent Int	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Pere
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Intermittent Intermittent Outlet Intermittent Int	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outl
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Intermittently Exposed, Sevidence of Sedimentation (P): No Evident Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Outflow Return Interval >5 yrs_Perennial Inlet/Interval >5 yrs_Perennial Interval >5 yrs_Perennial >5 yrs_Perennial >5 yrs_Pe	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Per
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet Intermittently Exposed, Sevidence of Sedimentation (P): No Evident Created_Microrelief of Wetland Surface (P): No Evident Outlet Outlet Interval >5 yrs_Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water_Perennial Glacial Till/Not Permeable_Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Seet LANDSCAPE VARIABLES (M)	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Senally Flooded, Temporarily Flooded, Saturated Semiperm. Flooded Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.) Pronounced
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Intermittent I	t OutletIntermittent Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/Perennial OutletPerennial Inlet/Perennial OutletPerennial Inlet/Perennial OutletPerennial OutletPerennial Inlet/Perennial OutletPerennial OutletPerennial Inlet/Perennial OutletPerennial OutletPerennial Inlet/Perennial OutletPerennial Inlet/Perennial OutletPerennial OutletPerennial Inlet/Perennial Inl
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Intermittent Inter	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet Intermittently Exposed, Sevidence of Sedimentation (P): No Evident Created Microrelief of Wetland Surface (P): No Evident Outlet Perennial Interval >5 yrs_Perennial Interval >5 yrs_Perenni	t OutletIntermittent Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/Perennial OutletPerennial Inlet/Perennial OutletPerennial Inlet/Perennial OutletPerennial OutletPerennial Inlet/Perennial OutletPerennial OutletPerennial Inlet/Perennial OutletPerennial OutletPerennial Inlet/Perennial OutletPerennial Inlet/Perennial OutletPerennial OutletPerennial Inlet/Perennial Inl

JBranniee

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

г а.	- 4.	New Field Target: Fairbanks 5 Date: 7.24,16
		items not checked, please provide detailed explanation in the notes section of data form.
roi	ali i	tems not checked, please provide detailed explanation in the notes seemen at 222
	4	Site Description
	7.	Site Description
		Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
	2.	Vegetation
		At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
		 ✓ Vegetation names are entered legibly for all strata present? ✓ Cover calculations are complete and correct?
-		All dominant species have been determined and recorded per strata?
6		 ✓ Indicator status is correct for each species? ✓ Dominance Test and Prevalence Index have been completed?
	3.	Soil
9	-	☑ Soil profile is complete?☑ Appropriate hydric soil indicators are marked?
	4.	Hydrology
		Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
	5.	Functions and Values
		Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
	6.	Field Logbook
		Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
		Each logbook page is initialed and dated?
	7.	Maps
		Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil plug)?
- ☑ Two photos were taken for each Observation Point (vegetation/site overview)?

^	^	
Wetland Scientist (print)	Signature / Date	^
X Jessie Brownlee	X Q	7.24.16
Field Crew Chief (print)	Signature / Date	

SITE DESCRIPTION	MAIST TO			To a second	New	Fairbank:	5 P	
Survey Type: Centerline Access Road (explain) Other (explain) Field Target: Map #: // Map Date: 7-15-16								
Date: 7.24.16	Project Name & No.:	Alaska LNC	6 60418403			W106 LH	021	
Investigators: Jessie Brownlee	Kim Halmes					Team No.:		
State: Alaska	Region: Alaska		Milepost:	416.3				
Latitude: 65.2721		Longitude	-148			Datum: WGS	584	
Logbook No.:	Logbook Page No.:	39			1021001	the -004		
SITE PARAMETERS	21121	THE STATE	THE REAL PROPERTY.	Ve Silve	CONTRACTOR OF THE PARTY OF THE	347/17	BLE ALLS	
Subregion: Ray Mountaes	ins		Landform (hi	llslope, terrac	e, hummocks	s, etc.): 4/1/s	ide	
Slope (%): /5 - /8						Convex		
Pre-mapped Alaska LNG/NWI classifica	tion: U ;1 C Z		Evidence of	Wildlife Use:	Moose k	Draws		
Are climatic/hydrologic conditions on the Yes No (if no expl.		of year?		ormal Circum	stances" pre			
Are Vegetation, Soil, or Hyd	· · · · · · · · · · · · · · · · · · ·	tly Disturbed	? No_X	(If yes, exp	ain in Notes)		
Are Vegetation, Soil, or Hyd	drologyNaturally F	Problematic?	No_X	(If yes, exp	lain in Notes	.)		
SUMMARY OF FINDINGS		Table -	30 -		ID WE	AL SOME	all and the	
Hydrophytic Vegetation Present? Yes_	No	Is	the Sampled	Area within a	Wetland?	Yes	No	
Hydric Soil Present? Yes_	No	w	etland Type:	U				
Wetland Hydrology Present? Yes_	No^	— А	Alaska Vegetation Classification (Viereck): / C Z, // C Z					
Notes and Site Sketch: Please include Decorridor. Dry hillside of Bet Neo Hillside of	spplings ~	10' fall	q thick &	tho Coro	shrub 1	layer w/ fe	w Porbs present	

	16	5 2 2 2	Sol West	CONTRACTOR OF THE PROPERTY OF THE PARTY OF T
VEGETATION (use scientific names of plant	s)	12.11.51		
Tree Stratum (Plot sizes: 100)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata:
1. Betula Negalaskana	10	Y	FACO	% Dominant Species that are OBL, FACW, or FAC:
2. Picea MANIANA	4	Y	FACW	76 DOMINIANT Species that are OBL, PACVY, OF PAC.
3. Picea moriuma (Stags)	~ 10			
4.				Prevalence Index worksheet:
Total Cover	-		· ·	Total % Cover of: Multiply by:
50% of total cove	r:7 20	% of total cov	rer: 2.8	OBL species:X 1 =
Sapling/Shrub Stratum (Su)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species:
1. Rhochdendrum Govenlandeum	35	У	FAC	UPL speciesX 5 =
2. vaccinium vitis-idaea	30	У	FAC	Column Totals: 11 (A) 363 (B)
3. Betula Nepolaskan	25	7	FACU	PI = B/A = 3.27
4. Populus tremuloides	/		FAW	
5. Rhododendrum topentosum	2		FACL	
6. Vaccinium oliginisum	3		FAC	X -
7. Sal x SY)	1		-	
8.				
9.				
Total Cover 50% of total cover		% of total cov	er: 19.16	

Herb Stratum (&C)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Solution Prevalence Index is ≤ 3.0
1. Calamagrostis /apponica	1		x7+c	Morphological Adaptations¹ (Provide supporting data in
2. grass Srs	T			Notes)
3. Pedicularis 50	The same of		Brown .	Problematic Hydrophytic Vegetation ¹ (Explain)
4.	.)	1		¹ Indicators of hydric soil and wetland hydrology must be present unless
5.	51			disturbed or problematic.
6. (6 n)	Tell			
7. 100 TO ST STORY	7			% Bare Ground
8. Adam Lay				% Cover of Wetland Bryophytes
9.				Tidet (cent in feet Total Cover of Bryophytes
10.				Cover of Water
Total Cove	r:		-	Hydrophytic Vegetation Present (Y/N):
50% of total cove	r: 20	% of total cov	er:	Notes: (If observed, list morphological adaptations below):

			7.24.10	,				
SOIL				Feature ID			1 5 7 2 ()	Soil Pit Required (Y/N)
SOIL PROFILE	E DESCRIPTION: (De	escribe		ed to docu	ıment the i	ndicator or	confirm the absence	of indicators.)
Depth	Matrix		Redox Features	-	-	1 0		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Notes
0i 0-2	- /							Dry organies
A 2-3	104R 2/	100					loam	U
Bul 3-8	104R 4/4	98	104R 4/1	2	Dep	(V	siltloam	I DOUBLY I
Bw 28-20	104R 4/2	100					extremly gr	quelly sand
	<u> </u>					-		
	*			+		-		
¹Type: C=Con	l centration, D=Depleti	ion, RM	=Reduced Matrix.	CS≃Cove	red or Coa	ted Sand (Grains. ² Location:	PL=Pore Lining, M=Matrix.
HYDRIC SOIL			y k to en in a		To sin			OR PROBLEMATIC HYDRIC SOILS ³
Histosol or Hist	7		Alaska Gleye	ed (A13)	N	-		nange (TA4) ⁴ /
Histic Epipedor		- 1	Alaska Redo		N		Alaska Alpine S	-/
Black Histic (A	-	1	Alaska Gleye		A15) N			vith 2.5Y Hue _ N
Hydrogen Sulfi	- 1							without 5Y Hue or Redder Underlying
Thick Dark Sur	face (A12)/	5					Other (Explain i	n Notes) 📈
		ation, or	ne primary indicato	r of wetlar	nd hydrolog	gy, and an	appropriate landscap	pe position must be present unless
disturbed or pro	oblematic. f color change in Note	es.					4	
	er (if present): Type:			Depth (in	ches):	Ange-		
Hydric Soil Pr	esent (Y/N):							
	esent (1/14).							
Notes:								
			•					
4								- 0
HYDROLOGY	PRIMARY INDICATO	ORS (a	ny one indicator is	sufficient)	S	ECONDAF	RY INDICATORS (2	or more required)
		T				ater-staine		Stunted or Stressed
Surface vvater	(A1)	1	face Soil Cracks (E		L.	eaves (B9)		Plants (D1)
High Water Tal	ble (A2)/	Inur (B7	ndation Visible on A	Aerial Ima	gery D	rainage Pa	utterns (B10)	Geomorphic Position (D2)
Saturation (A3)	Marginal see Note	Spa	rsely Vegetated cave Surface (B8)	N		xidized Rh ving Roots	izospheres along	Shallow Aquitard (D3)
Water Marks (E	1			4	Р	resence of	Reduced	Microtopographic ,
vvalei iviaiks (E	51)	Marl Deposits (B15) N			- Ir	on (C4)	r.f	Relief (D4)
Sediment Depo	osits (B2)	Odd	rogen Sulfide or (C1)N		S	alt Deposit	s (C5)	FAC-Neutral Test (D5)
Drift Deposits ((B3)/		-Season er Table (C2)^	J	N	otes:		
Algal Mat or Cr	rust (B4)		er (Explain in Note	es):	40			d .
Iron Deposits (B5)							
		No.	O LA LA TANA	LA TOTAL				
Surface Water	Present (Y/N):	Ī	Depth (in): —					
Water Table Pi	resent (Y/N):	-	Depth (in): —		Wet	land Hydr	ology Present (Y/N)	: <u> </u>
Saturation Pres			Depth (in):		EC:	-	-	
Notes: Silis	slightly damn	@ ba	indacy break	betw	reen B	w/ 9	Buz likely	due to different

WIOGIHORI

VEGETATION VARIABLES P= Plot, M=	Matrix
Porested-Evergreen-Needle-leaved 5	king Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-
Percent Cover (P): Tree (>5 dbh, >6m tall) Dwarf shrub (<0.5m) Tall herb (≥1m)	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Short shrub (-5-2m) Short shrub (-5-2m) Short shrub (-5-2m) Tall shrub (2-6m) Short shrub (-5-2m) Sh
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse (C 80%) Very High Density (80-100%)	0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattered	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant sp	ecies) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none)	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): NOpen Small Scattered Patches	lo Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover
Dead Woody Material (P): Low Abundance (0-Abundant (>50% of surface)	-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large partially from the state of	atches, concentric rings) Moderate (broken irregular rings)
HGM Class (P): Slope Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES	
Soil Factors (P): Soil Lacking H Mineral: Gravelly Mineral: Sandy	listosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES	
Inlet/Outlet Class (P): No Inlet/Outlet_ Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No outlet Perennial Inlet/No Outlet Perennial Outlet
Wetland Water Regime (P): Drier: Seasor Wet: Perm. Flooded, Intermittently Exposed, Se	nally Flooded, Temporarily Flooded, Saturated miperm. Flooded
Evidence of Sedimentation (P): No Evidence Created	Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment
	Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)
Frequency of Overbank Flooding (P): No Overbeturn Interval >5 yrs	rbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs
Degree of Outlet Restriction (P): No Outflow_	Restricted Outflow Unrestricted Outflow
	umneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading
Surficial Geologic Deposit Under Wetland (P) Glacial Till/Not Permeable): High Permeability Stratified Deposits Low Permeability Stratified Deposits
Basin Topographic Gradient (M): Low Gr Evidence of Seeps and Springs (P): No Seeps	adient (<2%) High Gradient (≥2%) s or Springs Seeps Observed Intermittent Spring Perennial Spring
LANDSCAPE VARIABLES (M)	Water de 20th 400 v N.4.0
	Wetlands within 400m, Not Connected Only Connected Below Jpstream & Downstream Unknown
Wetland Land Use: High Intensity (i.e., ag	.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)
Watershed Land Use: 0-5% Rural	5-25% Urbanized 25-50% Urbanized >50% Urbanized
	5-25% Urbanized 25-50% Urbanized >50% Urbanized n (10-100 acres) Large (>100 acres)

JBrownfee

Wetland Determination Form QA/QC Checklist

		This form to be completed before leaving the field site.
		New
Feat	ure	Field Target: Farrbanks 6 Date: 7-24-16
For a	all i	tems not checked, please provide detailed explanation in the notes section of data form.
•	1.	Site Description
		Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2	2.	Vegetation
		At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
		✓ Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct?
		All dominant species have been determined and recorded per strata?
		☐ Indicator status is correct for each species? ☐ Dominance Test and Prevalence Index have been completed?
;	3.	Soil
	-	☑ Soil profile is complete?☑ Appropriate hydric soil indicators are marked?
4	4.	Hydrology
		Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
	5.	Functions and Values
		Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
(6.	Field Logbook
		Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
		Each logbook page is initialed and dated?
•	7.	Maps
		Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X	X							
Wetland Scientist (print)	Signature / Date							

Signature / Date

Field Crew Chief (print)

New Fairbanks 2

SITE DESCRIPTION		1000			STITE		
Survey Type: Centerline Acce	ss Road (explain)	_ Other (expl	ain)X	Field Target:	_	Map #: 12 Map Date: 7.15.14	
Date: 7.24.16	Project Name & No.	: Alaska LNC	60418403	F	eature ld:	WIOGLHOZZ	
Investigators: Jessie Brown	ee Kintlome	S				Team No.: WIDW	
State: Alaska	Region: Alaska		Milepost:	418.4			
Latitude: 65.24575		Longitude	: 148.60	170		Datum: WGS84	
Logbook No.: 😞	Logbook Page No.:	39	Picture No.:	P-WIOGEH	02.2_0	x01 thru -004	
SITE PARAMETERS	- 10-15-1	1	16 (J. P.) In	F-1616		March Control	
Subregion: Ray Mountain	^	The second	Landform (hil	llslope, terrace,	hummocks	, etc.): //://side	
Slope (%): 5- 2				concave, convex		Flat	
Pre-mapped Alaska LNG/NWI classifica	ation: Not premaying	sed	Evidence of \	Wildlife Use:	use about	Paras Bear scatt	
Are climatic/hydrologic conditions on the Yes No (if no exp	e site typical for this time		Are "N	ormal Circumsta	ances" pres	sent!/	
Are Vegetation, Soil, or Hy	drology Significar	ntly Disturbed?	P No_×	(If yes, explain	n in Notes)		
Are Vegetation, Soil, or Hy	drology Naturally	Problematic?	No×	_ (If yes, explai	n in Notes.)	
SUMMARY OF FINDINGS	Sec. 10.107/4				100		
Hydrophytic Vegetation Present? Yes_	NoX	Is	the Sampled	Area within a W	etland?	YesNoX	
Hydric Soil Present? Yes_	NoX	w	etland Type:	U			
Wetland Hydrology Present? Yes_	No	— AI	aska Vegetatio	n Classification	(Viereck):	1C2,11B2_	
Notes and Site Sketch: Please include I corridor.	Directional & North Arro	w, Centerline,				ine, Photo Locations, and Survey	
1255110000000	Cart A P.	C1		ees ~ 100' ter		1 - mixed in.	
Dry mature Mixed opposit	The The	6000	Det Nea	WITH SOME	111	The stee Cost Cost	
Soil organic laver us	SANDO F FORD	Cammon	1 1 1 1 1 1 1 1 1 1 1 1	nas Geo	LIN,	KOS YCI, CO. CIT	
Joil: organic layer w. than other sites.					han	gree clay prosp	
On transport from a	I here all o	othe are	ea is dry	1			
On transact from LZ here, all of the area is dry.							
OATAI							
		N					
		3					
		7901					

VEGETATION (use scientific names of plants)		1000	CHICA COLONIA DE LA COLONIA DE	314	
Tree Stratum (Plot sizes: (D)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC:(A) Total Number of Dominant Species Across All Strata:(B) % Dominant Species that are OBL, FACW, or FAC:(A/B)		
1. Behila Negalostona	50	4	FACU			
1. Behila Negalaslanda 2. Picea Colauca	30	Y	FACU			
3. Picea Mariana	5		FREW			
4.				Prevalence Index worksheet:		
Total Cover: 55				Total % Cover of: Multiply by:		
50% of total cover: 27.5 20% of total cover: 1				OBL species:X 1 =		
Sapling/Shrub Stratum (2(a)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: S X 2 = 10 FAC species X 3 = 79		
1. Rosa acinstaris	18	4	FACU	FACU species 163 X 4 = 417 UPL species X 5 =		
2. Ribes triste	4		FAC	Column Totals: 141 (A) 521 (B)		
3. Linnaea borealis	7		FACU	PI = B/A = 3.69		
4. Alous viridis fraticosa	-20	7	FAC			
5. vaccinium vitis-idaen	5		FAC			
6.						
7.						
8.						
9.						
Total Cover: 47 50% of total cover: 23.520% of total cover: 9.4						

Herb Stratum (24)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0
1. Geocadon lividium	12	Y	FACO	Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
2. Cornus canadensis	20	4	FACO	
3. Colomogrostis canadensis	4		FAC	
4. Equisiting Scirpoides	3		FACU	
5. pyrolo 50	2		-	
6. Mertensia paniculada	T		FACU	
7.				% Bare Ground
8.			9	% Cover of Wetland Bryophytes
9.	1			% Total Cover of Bryophytes % Cover of Water
10.				
Total Cover 50% of total cover		l	er: <u>8,2</u>	Hydrophytic Vegetation Present (Y/N): Notes: (If observed, list morphological adaptations below):

Soil Pit Required (Y/N)

WETLAND DETERMINATION DATA FORM

Date

SOIL

7.24.16

Feature ID

Depth	LE DESCRIPTION: (Describe Matrix		Redox Features					,	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Notes	
01 0-2	-			7		1		Dans Featler 11035	
3c 2-6	3-							Dorro organies	
A 6-7	104R 3/2	100					10am	30.13	
7-10	Rocks	100							
C2- 10-20	2.11	100					gravelly s	til loan	
V-							- 0 - 7		
13									
Type: C≃Con	centration, D=Deple	etion, RN	M=Reduced Matrix, CS=0	Cover	ed or Co	ated Sand C	Grains. ² Location	n: PL=Pore Lining, M=Matrix.	
HYDRIC SOIL	INDICATORS	11 15	Salta Paris	nis.		1000	INDICATORS	FOR PROBLEMATIC HYDRIC SOILS	
Histosol or Histel (A1) N Alaska Gleyed (A13)							Alaska Color	Change (TA4) ⁴ /	
Histic Epipedor	n (A2)		Alaska Redox (A1-				Alaska Alpine	Swales (TA5)	
Black Histic (A	3)/		Alaska Gleyed Por	res (A	(15) <u>//</u>		Alaska Redox	with 2.5Y Hue/	
Hydrogen Sulfi	de (A4)							d without 5Y Hue or Redder Underlying	
	face (A12) N						Layer Fyplair	n in Notes)	
		tation o	ne primary indicator of w	etlan	d hydrolo	gv. and an		cape position must be present unless	
disturbed or pre	oblematic.		The printing interest of the	- 11.	,	9,, 4	а р рторпато тапесо	ape pecine. Much so present amos	
	f color change in No er (if present): Typ		Dont	h (inc	hes):	47			
riestrictive Lay	er (ii present). Typ	·	Dept	ii (iiic	1165)				
Hydric Soil Pr	esent (V/N):								
Notes:									
HYDROLOGY	PRIMARY INDICA	TORS (a	any one indicator is suffic	ient)	5	ECONDAR	Y INDICATORS (2 or more required)	
	1			J		Water-stained Stunted or Stressed			
Surface Water	(A1)	Su	face Soil Cracks (B6)N			Leaves (B9)N		Plants (D1)/	
High Water Tal	ble (A2) _ N		ndation Visible on Aerial	lmag	ery [Prainage Pa	tterns (B10)/	Geomorphic Position (D2) N	
	. 1	(B7	arsely Vegetated				zospheres along		
Saturation (A3))N	Co	ncave Surface (B8)			iving Roots		Shallow Aquitard (D3)N	
Water Marks (E	31)	Ma	rl Deposits (B15)		F	Presence of Reduced		Microtopographic	
vvaler Marks (L	51); <u> </u>		14	_	li li	Iron (C4)		Relief (D4)	
Sediment Depo	osits (B2)	- Hy	drogen Sulfide or (C1)/		s	Salt Deposits (C5)		FAC-Neutral Test (D5)	
	- (/-Season /			lotes:			
Drift Deposits (B3)/	Wa	iter Table (C2)		- 1	.0.00.			
Algal Mat or Cr	rust (B4)		ner (Explain in Notes):		-				
Algai Mat Of Ci	usi (64)	- 011	iei (Expiaiii iii Notes).			*			
ron Deposits (I	B5) <i>\</i>								
Surface Water	Present (Y/N):	N	Depth (in):					1.1	
Water Table Pr	ropont (V/N):	1	Donth (in)		We	tland Hydro	ology Present (Y/	N):	
vvalei iable Pi	esent (1/N). /		Depth (in):				+	The second secon	
Saturation Pres	sent (Y/N):	1	Depth (in):		EC:				
(includes capilla	ary fringe)		Deptit (iii).						
Notes:									

VEGETATION VARIABLES P= Plot, M:	= Matrix
Forested-Evergreen-Needle-leaved	king Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) Tall herb (≥1m	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Short
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse (80%) Very High Density (80-100%)_	0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattered	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant s	pecies) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none)	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches_	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover
Dead Woody Material (P): Low Abundance (C Abundant (>50% of surface)	0-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P) : Low (large purely High (small groupings, diverse and intersperse	patches, concentric rings) Moderate (broken irregular rings)d)
HGM Class (P): Slope Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES	
Soil Factors (P): Soil Lacking	Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES	
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Class (P): No Inlet/Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial et/Perennial Outlet
Wetland Water Regime (P): Drier: Seaso Wet: Perm. Flooded, Intermittently Exposed, Se	
Trota r offin r roodod, intermitterity Expeded, of	nally Flooded, Temporarily Flooded, Saturated emiperm. Flooded
Evidence of Sedimentation (P): No Evidence	nally Flooded, Temporarily Flooded, Saturated
Evidence of Sedimentation (P): No Evidence Created	emiperm. Flooded
Evidence of Sedimentation (P): No Evidence Created	emiperm. Floodede Observed on Wetland Substrate Fluvaquent Soils Sediment Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)
Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Overbank Interval >5 yrs Degree of Outlet Restriction (P): No Outflow	emiperm. Flooded e Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.) erbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs Restricted Outflow Unrestricted Outflow
Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Overbeater Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Circ	emiperm. Flooded e Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.) erbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs Restricted Outflow Unrestricted Outflow cumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading
Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent	emiperm. Flooded
Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Overbank Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Circles Surficial Geologic Deposit Under Wetland (F)	emiperm. Flooded
Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent	emiperm. Flooded
Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent	eniperm. Flooded Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.) erbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs Restricted Outflow Unrestricted Outflow cumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading P): High Permeability Stratified Deposits Low Permeability Stratified Deposits eradient (<2%) High Gradient (≥2%) ps or Springs Seeps Observed Intermittent Spring Perennial Spring
Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent	eniperm. Flooded
Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent	emiperm. Flooded Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.) erbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs Restricted Outflow Unrestricted Outflow cumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading P): High Permeability Stratified Deposits Low Permeability Stratified Deposits iradient (<2%) High Gradient (≥2%) bis or Springs Seeps Observed Intermittent Spring Perennial Spring Wetlands within 400m, Not Connected Only Connected Below
Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent	emiperm. Flooded

JBrownlee

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

New

Feature ID: WIOL LHOZZ

Field Target: Fair banks 2 Date: 7.24.16

For all items not checked, please provide detailed explanation in the notes section of data form.

1. Site Description

- Site description, site parameters and summary of findings are complete?
- ☐ A detailed site sketch is included in logbook?

2. Vegetation

- At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
- Vegetation names are entered legibly for all strata present?
- ☑ Cover calculations are complete and correct?
- All dominant species have been determined and recorded per strata?
- ☑ Indicator status is correct for each species?
- ☑ Dominance Test and Prevalence Index have been completed?

3. Soil

- Soil profile is complete?
- Appropriate hydric soil indicators are marked?

4. Hydrology

- Appropriate hydrology indicators are marked?
- ☑ Surface water, water table, and saturation depths are recorded if present?

5. Functions and Values

☑ Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?

6. Field Logbook

- Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
- ☑ Each logbook page is initialed and dated?

7. Maps

- Wetland boundaries have been corrected if necessary?
- Maps are initialed and dated?

8. Photos

Field Crew Chief (print)

- ☑ Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1) soil pit, 1 soil plug)/?
- ☑ Two photos were taken for each Observation Point (vegetation/site overview)?

^	^
Wetland Scientist (print)	Signature / Date
X Jessie Brownlee	X 7'. 2.4.16
Field Crew Chief (print)	Signature / Date

- New Fairbanks 7 SITE DESCRIPTION Map #: 10 Map Date: 7.15.16 Survey Type: Centerline Access Road (explain)_____ Other (explain)_ Field Target: Feature Id: W106LH023 Project Name & No.: Alaska LNG 60418403 Investigators: Jessie Brownlee, Kim Holmes Team No .: (2) 106 Milepost: 4/4 Region: Alaska State: Alaska Longitude: - 148 6073 Latitude: Datum: WGS84 65.3028 Logbook No.: Logbook Page No.: Picture No .: P-W/06/25-001 thru 004 SITE PARAMETERS Subregion: Ray mountains Landform (hillslope, terrace, hummocks, etc.): Slope (%): Local relief (concave, convex, none): Pre-mapped Alaska LNG/NWI classification: Not-Evidence of Wildlife Use: Square Are climatic/hydrologic conditions on the site typical for this time of year? Are "Normal Circumstances" present: (if no explain in Notes) (If no, explain in Notes.) $\underline{\mathsf{K}}$ (If yes, explain in Notes) Are Vegetation_ . Soil or Hydrology Significantly Disturbed? Naturally Problematic? No___X__ (If yes, explain in Notes.) Are Vegetation____, Soil_ _, or Hydrology **SUMMARY OF FINDINGS** Hydrophytic Vegetation Present? Yes____ Is the Sampled Area within a Wetland? Hydric Soil Present? Wetland Type: Wetland Hydrology Present? Alaska Vegetation Classification (Viereck): / Д / Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey FT placed in Narrow Pic Mar stand surrounded by Bet New dry forest Veg species & gercent are to represent the Pic Mar signature, Not surrounding Forest.

Poughole in weltest looking spot and it's dry. Thick Feather sphagnom moss cover ground.

Soil is dry sphagnum withick A horizon over growelly Constarted. No signa of Hydrology All dry on transect from LZ.

Tree Stratum (Plot sizes:)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: (A
1. Pices Mariana	30	У	CACU)	Total Number of Dominant Species Across All Strata: (B
2.				% Dominant Species that are OBL, FACW, or FAC: 7_5 _ (A/E
3.				Was the same and the first the
4.				Prevalence Index worksheet:
Total Cover:	30			Total % Cover of: Multiply by:
50% of total cover	15 20	% of total cov	er:(OBL species:X 1 =
Sapling/Shrub Stratum (2(e)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 70
1. Rhododendram groenlandieum	3		F716	UPL species X 5 =
2. Spiraea Stevenii	4		FACU	Column Totals: 87 (A) 190 (B)
3. Vaccinium vitis-idaea	5		FAC	PI = B/A = 2.25
4. Picea Mariana	40	Y	FACW	
5. Vaccinium oliginasum	7		FAC	-
6. V				
7.				
8.				
9.				
Total Cover:				-
50% of total cover:	26 20	% of total cov	er: <u>10,4</u>	
VEGETATION (use scientific names of plants			ST. COPIE	Maria Maria State William Programme
Herb Stratum (29 9)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators:
1. Calamagrostis canadensis	4	Y	FAC	Prevalence Index is ≤ 3.0
2. Rubus chamaemorus	7		FACIL	Morphological Adaptations ¹ (Provide supporting data in Notes)
3. Georgulan lividium		Y	FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
4.				¹ Indicators of hydric soil and wetland hydrology must be present unless
5.	1			disturbed or problematic.
6.				A THE RESIDENCE OF THE PARTY OF
7.	L			% Bare Ground
8.			(% Cover of Wetland Bryophytes
9.				Total Cover of Bryophytes
10.			÷	% Cover of Water
Total Cover: 50% of total cover:	S 2.5 20	% of total cov	er:	Hydrophytic Vegetation Present (Y/N):

SOIL			DateFeature	ID		DUNIER	Soil Pit Required (Y/N)
SOIL PROFILE	E DESCRIPTION: (D	escribe	to the depth needed to do	cument th	e indicator or	confirm the absence	e of indicators.)
Depth	Matrix		Redox Features		-		
(inches)	Color (moist)	%	Color (moist) %	Type ¹	Loc ²	Texture	Notes
01 0-4	-						Dry Sphagnum
Oc 4-6	-						Dry organics
A 6-12		100			-	gravelly lo	
(12-24	104R 5/2	100				growelly silf	loan
4						0	4
				-			
¹Type: C-Cop	centration D-Donlot	ion PM	=Reduced Matrix, CS=Co	vored or C	Control Cand G	Proinc 21 continu	PL=Pore Lining, M=Matrix.
HYDRIC SOIL		iori, nivi	=neduced Matrix, CS=Co	vereu or c	oateu Sanu G		FOR PROBLEMATIC HYDRIC SOILS ³
Histosol or Hist			Alaska Gleyed (A13)	N		Alaska Color C	
Histic Epipedor			Alaska Redox (A14)			Alaska Alpine S	nange (1714)
Black Histic (A			Alaska Gleyed Pores		- J	Alaska Redox v	
Hydrogen Sulfi	-/		Alaska Gleyeu Foles	s (A15) <u> </u>		Alaska Gleyed	without 5Y Hue or Redder Underlying
Thick Dark Sur	face (A12)					Other (Explain i	in Notes)
³ One indicator disturbed or pro ⁴ Give details of	of hydrophytic vegeta	es.		land hydro (inches):	ology, and an a		pe position must be present unless
Hydric Soil Pro	esent (Y/N): N						
Notes:							
-							
Laborate State of the Laborate State State of the Laborate State State State of the Laborate State S							
HYDROLOGY	PRIMARY INDICAT	ORS (ar	ny one indicator is sufficier	nt)	SECONDAR	Y INDICATORS (2	or more required)
Surface Water	(A1)/	Surf	ace Soil Cracks (B6)	1	Water-staine Leaves (B9)	, ,	Stunted or Stressed Plants (D1)
High Water Tat	ole (A2) N	Inun (B7)	dation Visible on Aerial Im	nagery	Drainage Patterns (B10)		_ Geomorphic Position (D2)
Saturation (A3)	N		rsely Vegetated cave Surface (B8)N		Oxidized Rhizospheres along Living Roots (C3)		Shallow Aquitard (D3)
Water Marks (E	31) <u>N</u>	Marl	Deposits (B15)		Presence of Reduced Iron (C4)		Microtopographic Relief (D4)
Sediment Depo	osits (B2) N	Hyd Odo	rogen Sulfide r (C1)		Salt Deposits (C5)		FAC-Neutral Test (D5)
Drift Deposits (вз) \		Season er Table (C2) _/		Notes:		4
Algal Mat or Cr	ust (B4)N	Othe	er (Explain in Notes):				
Iron Deposits (E	B5)						
Surface Water	Present (Y/N):		Depth (in):				
Water Table Pr			Depth (in):	w	etland Hydro	logy Present (Y/N)	:
Saturation Pres	sent (Y/N):	,	Depth (in):	E	C:	*	
(includes capilla	ary minge)						**
140163.							

VEGETATION VARIABLES P= Plot, M= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed
Percent Cover (P): Tree (>5 dbh, >6m tall) Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Dwarf shrub (<0.5m)
Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%)
Interspersion of Cover & Open Water (P): 100% Cover or Open Water 25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)
HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe
OOH VARIARIES
SOIL VARIABLES
Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet_ Perennial Inlet/Perennial Outlet_ Perennial Inlet/Intermittent Outlet_ Perennial Inlet/Perennial Inlet/Perennia
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perenn
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet_ Perennial Inlet/No Outlet_ Perennial Inlet/Perennial Outlet_ Perennial Outlet_ Perennial Outlet_ Perennial Inlet/Perennial Outlet_ Perennial Outlet_ Perennial Inlet/Perennial Inlet/Perennial Outlet_ Perennial Inlet/Perennial Inlet/Perennial Outlet_ Perennial Inlet/Perennial Inlet/Perennial Outlet_ Perennial Inlet/Perennial Inlet/Per
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet_ Perennial Inlet/Perennial Inlet/Intermittent Outlet_ Perennial Inlet/Perennial Inlet/Peren
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Peren
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet
Inlet/Outlet Class (P): No Inlet/Outlet

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

New

Feature ID: WIDGLHOZ3	Field Target: Fairbanks 7 Date:	7.25.16
· cataro := ·		The second second
For all items not checked, please provide	de detailed explanation in the notes secti	on of data form.

1.	Site	Description
----	------	-------------

- Site description, site parameters and summary of findings are complete?
- A detailed site sketch is included in logbook?

2. Vegetation

- At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
- Vegetation names are entered legibly for all strata present?
- All dominant species have been determined and recorded per strata?
- Indicator status is correct for each species?
- Dominance Test and Prevalence Index have been completed?

3. Soil

- Appropriate hydric soil indicators are marked?

4. Hydrology

- Appropriate hydrology indicators are marked?
- Surface water, water table, and saturation depths are recorded if present?

5. Functions and Values

Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?

6. Field Logbook

- Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
- ☑ Each logbook page is initialed and dated?

7. Maps

- Wetland boundaries have been corrected if necessary?
- Maps are initialed and dated?

8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- ☑ Two photos were taken for each Observation Point (vegetation/site overview)?

X	X	
Wetland Scientist (print)	Signature / Date	

X Jessie Brownlee

Field Crew Chief (print)

Signature / Date

	more than an age of the Contract of	The south of the south of the	A THE OLD THE STATE OF THE STAT	7. 经产业的 计可以记录 计数据 计图像 计图像 计图像 计图像 图像 图
SITE DESCRIPTION	Kam attendings and a popular	SELLE ALEX	the Carlotte College	
Survey Type: Centerline Acce	ss Road (explain) Other	(explain) X	Field Target: <u>247</u>	_ · ·
Date: 7.26.16	Project Name: Alaska LNG		Feature le	1: W106 LH024
Investigators: Jessie Brownlee	, Kim Holmes			Team No.: WIOG
State: Alaska	Region: Alaska	Milepost:	517.9	
Latitude: 63.960457	Long	gitude: -/49./	256109	Datum: WGS84
Logbook No.: 2	Logbook Page No.: 4/8	Picture No.:	P. WIOGLH024	-001 thru -004
SITE PARAMETERS	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)			
Subregion: Alaoka Range		Landform (h	illslope, terrace, hummoc	ks, etc.): Hillside
Slope (%): 5-8		Local relief (concave, convex, none):	Flat
Pre-mapped Alaska LNG/NWI classifica	ation: PFOY/SSAR 1A	Evidence of	Wildlife Use: NONE	
Are climatic/hydrologic conditions on the Yes _ / No (if no exp	e site typical for this time of year		Normal Circumstances" p メ No (If no, e	
Are Vegetation, Soil, or Hy	drology Significantly Distu	urbed? No <u>X</u>	(If yes, explain in Note	s)
Are Vegetation, Soil, or Hy	drology Naturally Problem	natic? No 🙏	(If yes, explain in Note	es.)
SUMMARY OF FINDINGS	alkoway Megyry	是我们是 的	经过程的证据	
Hydrophytic Vegetation Present? Yes_	X No	Is the Sampled	Area within a Wetland?	Yes No
Hydric Soil Present? Yes_		Wetland Type:	P\$54/1B	
Wetland Hydrology Present? Yes_	人 No	Alaska Vegetatio	on Classification (Viereck): //A2, 11CZ
Notes and Site Sketch: Please include I corridor. Pic Mar Stunted oper of plot. i.e. Eri vag Water table C 8" of Walked around Mapping Several large ponds Area was largely we	forest w/ most to fursceles + Cor Big perma frost a 12" Ded polygon, sma are present. unsu	create two 12" of 5	26' but longer overco & hummon advirated organ	spruce are outside is through out plat. incs. und throughout site,
			+	

VEGETATION (use scientific names of plants)			
Tree Stratum (Plot sizes: 100)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: (A)
1. Picea MAMANA	5	Y	FACU	Total Number of Dominant Species Across All Strata: (B) % Dominant Species that are OBL, FACW, or FAC: 85 (A/B)
2. Picea glavea	5	4	FACU	% Dominant Species that are OBL, FACW, of FAC (A/B)
3.				
4.				Prevalence Index worksheet:
Total Cover:	10			Total % Cover of: Multiply by:
50% of total cover:	<u> </u>	% of total cov	er:	OBL species:X 1 =
Sapling/Shrub Stratum (26)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: $46 \times 2 = 90$ FAC species $96 \times 3 = 288$
1. Betvla NONG	80	У	FAC.	FACU species
2. Rhododendrum grvenlandicum	8		FAC	Column Totals: 151 (A) 418 (B)
3. vaccinium vitis -idaea	18	Y	FAC	PI = B/A = 2,74
4. Vaccinium oliginasum	8		FAC	Sallx reticulate S 2 FAC
5. Pices Mariana	80	Y	FACL	Arctous rubra . S. lo FAC
6. Alnus viridis forticosa	8		FAC	Picea Colavea 5 5 FACO
7. Salix glarea	4		FAC	Salix SP ST
8. Salix pulches	1		FACW	
9. Dasiphora fruticosa	1		FAC	
Total Cover:			0.00	
50% of total cover:	50.5 20	% of total cov	er: 0.2	+ 1
VEGETATION (use scientific names of plants)	加展 (金)	1000	3098 VIS	CANADA SE TORINA MARKATAN MARK
Herb Stratum (26)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50%

Herb Stratum (26)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0
1. Carea blaclowii	20	Y	FAC	
2. Eriophorum vaginatum	15	1	FACL)	Notes)
3. Eginsetum Arvence	1		FAC	Problematic Hydrophytic Vegetation ¹ (Explain)
4. Petraites Frigidus	3		FACW	¹ Indicators of hydric soil and wetland hydrology must be present unless
5. Rubus chamaemorus	1		FACUS	disturbed or problematic.
6. Grass SP	T		-	
7.				% Bare Ground
8.				% Cover of Wetland Bryophytes
9.				Total Cover of Bryophytes
10.			*	% Cover of Water
Total Cover			5	Hydrophytic Vegetation Present (Y/N):
50% of total cover	<u>20</u> 20	% of total cov	er: <u>&</u>	, and the second

			7.26				5 NEO- 5 SAME	
SCIL	College Astron		Date Feature	200	Table 1 Control	BEF ELLE	Soil Pit Required (Y/N)	
SOIL PROFILE	DESCRIPTION: (I	Describe	to the depth needed to do	cument	the indicator or	confirm the absence	e of indicators.)	
Depth	Matrix		Redox Features	-				
(inches)	Color (moist)	%	Color (moist) %	Тур	e ¹ Loc ²	Texture	Notes	
0: 0-3							Saturated arganies	
00 3-6				1			t v 0 6%	
Oa 6-12							" not much a	
	1							
						A.		
¹Type: C=Con	centration, D=Deple	etion, RN	M=Reduced Matrix, CS=Co	vered o	r Coated Sand C		: PL=Pore Lining, M=Matrix.	
HYDRIC SOIL	INDICATORS	10 10 10	ROY SHARE	COLUMN TO	to the second	INDICATORS	FOR PROBLEMATIC HYDRIC SOILS ³	
Histosol or His	el (A1) /		Alaska Gleyed (A13	N		Alaska Color C	Change (TA4) ⁴	
Histic Epipedo			Alaska Redox (A14)	N		Alaska Alpine	Swales (TA5)	
Black Histic (A			Alaska Gleyed Pore	s (A15)	N	Alaska Redox	with 2.5Y Hue	
	.1					Alaska Gleyed	without 5Y Hue or Redder Underlying	
Hydrogen Sulf	de (A4)					Layer_ N		
Thick Dark Sur		_				Other (Explain		
One indicator disturbed or pr		etation, c	one primary indicator of we	tland hy	drology, and an	appropriate landsca	ape position must be present unless	
⁴ Give details o	color change in No	otes.				y-	* · ·	
Restrictive Lay	er (if present): Typ	e: Pei	ma froste Depth	(inches):_/2		10. 4 17	
Hydric Soil Pi	resent (Y/N):/		-					
Notes:	-							
HYDROLOGY	PRIMARY INDICA	TORS (any one indicator is sufficie	ent)	SECONDAR	RY INDICATORS (2	2 or more required)	
Surface Water	(A1): //	Su	urface Soil Cracks (B6)N	/	Water-staine Leaves (B9)		Stunted or Stressed Plants (D1)	
High Water Ta	ble (A2)	Inc	undation Visible on Aerial I	magery		atterns (B10)	Geomorphic Position (D2) _ //	
	.7	-	parsely Vegetated ,		Oxidized Rh	izospheres along	Shallow Aquitard (D3)	
Saturation (A3	<u> </u>		oncave Surface (B8)		Living Roots	s (C3)	The state of the s	
Water Marks (B1) /	Ma	arl Deposits (B15)N	_	Presence of Iron (C4)	Reduced	Microtopographic Relief (D4)	
Sediment Dep	osits (B2)		ydrogen Sulfide dor (C1)		Salt Deposit	ts (C5)	FAC-Neutral Test (D5)	
Drift Deposits	(B3)	Dr	y-Season ater Table (C2)	-	Notes:			
Algal Mat or C	rust (B4)		ther (Explain in Notes):			1		
Iron Deposits	-		1.					
and a supposite	Makes and Supplement	THE STREET	THE CONTRACT OF THE PARTY OF TH	art Total	week at the state of	COT INTERNATION	WITH THE TAX TO THE TOTAL TO THE	
Surface Water	Present (Y/N):	V	Depth (in):	Contract Spins	Trace and the			
Sunace vvale	1 1000Ht (1714). /	•	Doput (iii)		Wetland Hydr	rology Present (Y/	N):	
Water Table P	resent (Y/N):	1	Depth (in):		Trouding Try			
Saturation Pre (includes capi	sent (Y/N): lary fringe)	1	Depth (in):		EC:_ 142		10.44 PH	
Notes:								

AQUATIC SITE ASSESSMENT DATA FORM

VEGE, ANON VARIABLES P= Plot, M= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Forested-Evergreen-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Persistent Aquatic Bed
Percent Cover (P): Tree (>5 dbh, >6m tall) ∅ Sapling (<5 dbh, <6m tall) ♂ Tall shrub (2-6m) Short shrub (0.5-2m) ♂ Dwarf shrub (<0.5m)
Number of Wetland Types (M): 2 Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately evenX
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) 80%) Very High Density (80-100%) X
Interspersion of Cover & Open Water (P): 100% Cover or Open Water / <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)
HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES
Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric_X
Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Inlet
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated X Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded
Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Created
Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)
Frequency of Overbank Flooding (P): No Overbank Flooding / Return Interval 1-2 yrs Return Interval 2-5 yrs Return Interval >5 yrs
Degree of Outlet Restriction (P): No Outflow X Restricted Outflow Unrestricted Outflow
Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading 6.44
Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Glacial Till/Not Permeable
Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%)
Evidence of Seeps and Springs (P): No Seeps or Springs X Seeps Observed Intermittent Spring Perennial Spring
LANDSCAPE VARIABLES (M)
Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below Only Connected Above Connected Upstream & Downstream
OUIT COMPOSION FROM CONTROLLED CO

Crew Chief QA/QC check:

GPS Technician QA/QC check:

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Fe	ature	e ID: <u>W/06LH024</u> Field Target: <u>247</u> Date: <u>7.26.16</u>
		items not checked, please provide detailed explanation in the notes section of data form.
	1.	Site Description
		Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
	2.	Vegetation
		At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
		✓ Vegetation names are entered legibly for all strata present? ✓ Cover calculations are complete and correct?
		 ☑ All dominant species have been determined and recorded per strata? ☑ Indicator status is correct for each species?
		Dominance Test and Prevalence Index have been completed?
	3.	Soil
	-	 ✓ Soil profile is complete? ✓ Appropriate hydric soil indicators are marked?
	4.	Hydrology
		전 Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
	5.	Functions and Values
		図 Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
	6.	Field Logbook
		Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
		Each logbook page is initialed and dated?
	7.	Maps
		Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

Field Crew Chief (print)

- E Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- ☑ Two photos were taken for each Observation Point (vegetation/site overview)?

	^	
Wetland Scientist (print)	Signature / Date	
Y - 0	Y	7.26.16

Signature / Date

OLDS DESCRIPTION		de Stoleton	Same Color		STATE OF STREET STREET
SITE DESCRIPTION	o Doed (ovelsis)	Other (ave)	ain) X	Field Target: 246	Map #: <u>75 Map Date: 5 · 2</u> 7
	s Road (explain)		am)_/\	.1	
Date: 7.26.16	Project Name: Alask	a LNG		Feature Id	MINGELION
Investigators: Jessie Brown	ee Kin Holm	les			Team No.: WIOU
State: Alaska	Region: Alaska		Milepost:	518.4	
Latitude: 63.951167		Longitude	149.1	20618	Datum: WGS84
Logbook No.: 2	Logbook Page No.:	40	Picture No	- PWOGLHO25-00	of thru-004
SITE PARAMETERS	HAROLINE STATE	阿维斯斯	20.50		
Subregion: Alaska Ran	3e		Landform (h	nillslope, terrace, hummock	s, etc.): Toe slope
Slope (%): ~ 5	9			(concave, convex, none):	
Pre-mapped Alaska LNG/NWI classificat	tion: UICZ			Wildlife Use: game +	
Are climatic/hydrologic conditions on the Yes No(if no expla	site typical for this time ain in Notes)	of year?	Are "	Normal Circumstances" pre <u>メ</u> No (If no, ex	esent:
Are Vegetation, Soil, or Hyd	rology Significant	tly Disturbed	? No	(If yes, explain in Notes	s)
Are Vegetation, Soil, or Hyd	rology Naturally F	Problematic?	No	🔼 (If yes, explain in Note:	s.)
SUMMARY OF FINDINGS	3.4是西南州南部	相连跨鐵	A PARTIE !		A CONTRACTOR AND A STATE
Hydrophytic Vegetation Present? Yes_	<u>Х</u> Nо	Is	the Sampleo	Area within a Wetland?	YesX No
Hydric Soil Present? Yes_	X No	v	etland Type:	PFOY/SSIB	ire.
Wetland Hydrology Present? Yes_	X No			ion Classification (Viereck)	1A2,11CZ
Notes and Site Sketch: Please include Dicorridor. Open Ple Mar Forest (layer with thick feath Soil is sondy under 9-11". Wader was a and filling the pith	2 toes lope of he moss oroun	hills .	Some who	of Low density	of Shrub & Emergon

VEGETATION (use scientific names of plant	s)	AMERICAN PROPERTY.		
Tree Stratum (Plot sizes: /oò)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC:
1. Picea mariona	15	Y	FACW	Total Number of Dominant Species Across All Strata: (B) % Dominant Species that are OBL, FACW, or FAC: 83 (A/B)
2.		\.		W Bornmant opened that are OBE, TAGW, OF TAG (Arb)
3.	1			
4.				Prevalence Index worksheet:
Total Cover 50% of total cover		% of total cov	er:_3	Total % Cover of: Multiply by: OBL species:
Sapling/Shrub Stratum (84)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 40
1. Vaccinium uliginosum	18	Y	FAC	UPL species X 5 =
2. vaccinium vitis-Idaea	16	Y	FAC	Column Totals: 95 (A) 248 (B)
3. Rhododendrum tomentosum	5		FACW	PI = B/A = 2.61
4. Rhododendrum graenlandikum	4.		FAC	
5. Retula Nana	5		FAC	
6. Pices mariana	20	Y	FACIN	
7. Spiraca stevenii	T		FACU	
8. Salin glavea	1		FAC	
9.				
Total Cover		% of total cov	er: <u> 3.8</u>	

Herb Stratum (34)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0
1. Equisatum sylpitaum	2		FAC	Morphological Adaptations¹ (Provide supporting data in
2. Calamagratice lapponica	2		FAC	Notes)
3. Carex bizelawii	4	Y	FAC	Problematic Hydrophytic Vegetation ¹ (Explain)
4. Geocastin lividium	3	4	FACU	¹ Indicators of hydric soil and wetland hydrology must be present unless
5. Petasites Friendus	7=		FACUL	disturbed or problematic.
6. Equiselum arvense	7		FAC	
7.				% Bare Ground
8.		4		% Cover of Wetland Bryophytes
9.				Total Cover of Bryophytes
10.			- 13	Cover of Water
Total Cove		l 9% of total cov	er: <u>2.2</u>	Hydrophytic Vegetation Present (Y/N):

WIOGLHOZS

SOIL PROFILE DESCRIPTION: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) SOIL PROFILE DESCRIPTION: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Soil Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Soil Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Soil Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Notes Dry Feather Moss Soil Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Notes Notes Notes Notes Notes Notes Notes Soil Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Notes	1-			+ 26-16	Will broken	V5003.9 in 10	CONTRACTOR OF STREET	A PRODUCT OF A SALES OF THE PARTY.	Coll Dit Poquired (V/M)
Depth meters Matrix Redox Features Color (moist) % Color (moist) % Type Loc Color (moist) % Type Loc Color (moist) % Type Color (Color (moist) % Type Color (moist) % Type Color (moist) % Type Color (moist) % Type Color (Color (moist) % Typ	SOIL	经验证 从图:		The state of the s					Soil Pit Required (Y/N)
Color (moist) % Color (moist) % Type Loc Texture Notes	SOIL PROFILE		escribe		to doc	ument the	indicator or	confirm the absence	or indicators.)
Could (inclusion) The County (inclusion)	Depth	Matrix		Redox Features					
Second S	inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc²	Texture	
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. 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. 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. 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. 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. 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. 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. 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. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Coated Sand Grains. Type: C=Cooted Sand	oi 03								
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. \$\frac{1}{2}\text{Sand}\$ Inamy Cine Sand Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. \$\frac{1}{2}\text{Scadion: PL=Pore Lining, M=Matrix.} Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. \$\frac{1}{2}\text{Scadion: PL=Pore Lining, M=Matrix.} Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. \$\frac{1}{2}\text{Scadion: PL=Pore Lining, M=Matrix.} Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. \$\frac{1}{2}\text{Scadion: PL=Pore Lining, M=Matrix.} Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. \$\frac{1}{2}\text{Scadion: PL=Pore Lining, M=Matrix.} Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. \$\frac{1}{2}\text{Scadion: PL=Pore Lining, M=Matrix.} Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. \$\frac{1}{2}\text{Scadion: PL=Pore Lining, M=Matrix.} Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. \$\frac{1}{2}\text{Scadion: PL=Pore Lining, M=Matrix.} Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. \$\frac{1}{2}\text{Alaska Gleyed Pores (A15)} \times Alaska Gleyed Pores (A15) \times Alaska	70 C								Saturated organics W/M
Type: C=Concentration, p=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. *Location: PL=Pore Lining, M=Matrix. Type: C=Concentration, p=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. *Location: PL=Pore Lining, M=Matrix. INDICATORS FOR PROBLEMATIC HYDRIC SOILS' Alaska Gleyed (A13)	0	7.54R4/4	50	7. SYR 3/3	50	Con	M	loany sand	organic material mixed into concerto
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. **Location: PL=Pore Lining, M=Matrix.** HYDRIC SOIL NDICATORS Institute Insti									
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. **Location: PL=Pore Lining, M=Matrix.** HYDRIC SOIL NDICATORS Institute Insti	11-17	101R4/2	100					Loamy Fine	sand
INDICATORS INDICATORS	-Mari								A STATE OF THE STA
INDICATORS INDICATORS		A COLUMN							F - 2
Alaska Color Change (TA4)* Alaska Color Change (TA4)* Alaska Alpine Swales (TA5) Alaska Clor Change (TA4) Alaska Alpine Swales (TA5) Alaska Clore Alaska Redwa with alaska Cleve Without SY Hue or Redder Underlying Layer Alaska Cleve Without SY Hue or Redder Underlying Layer Alaska Cleve Without SY Hue or Redder Underlying Layer Alaska Cleve Without SY Hue or Redder Underlying Layer Alaska Cleve Without SY Hue or Redder Underlying Layer Alaska Cleve Without SY Hue or Redder Underlying Layer Alaska Cleve Without SY Hue or Redder Underlying Layer Alaska Cleve Without SY Hue or Redder Underlying Layer Alaska Cleve Without SY Hue or Redder Underlying Layer Alaska Cleve Without SY Hue or Redder Underlying Layer Alaska Cleve Without SY Hue or Redder U	Type: C=Cond	centration, D=Deple	tion, RN	//=Reduced Matrix, C	S=Cov	ered or Co	oated Sand (
Alaska Alpine Swales (TA5) Alaska Gleyed Pores (A15) Alaska Gleyed Without 5Y Hue or Redder Underlying Layer Alaska Gleyed Without 5Y Hue or Redder Underlying Layer Alaska Gleyed Without 5Y Hue or Redder Underlying Layer Alaska Gleyed Without 5Y Hue or Redder Underlying Layer Alaska Gleyed Without 5Y Hue or Redder Underlying Layer Alaska Gleyed Without 5Y Hue or Redder Underlying Layer Alaska Gleyed Without 5Y Hue or Redder Underlying Layer Alaska Gleyed Without 5Y Hue or Redder Underlying Layer Alaska Gleyed Without 5Y Hue or Redder Underlying Layer Other (Explain in Notes) Other (Explain in Notes) Other (Explain in Notes) SECONDARY INDICATORS (2 or more required) Water-stained Layer (if present) Surface Water (A1) Water-stained Layer (Fine Company C	YDRIC SOIL	INDICATORS	STATE	1406904930340		M. FETT WAR	CHIANE	INDICATORS F	OR PROBLEMATIC HYDRIC SOILS
Alaska Redox (A14) Alaska Redox with 2.5Y Hu Alaska Gleyed without 5Y Hue or Redder Underlying Layer Alaska Cleyed Without 5Y Hu	listosol or Histe	el (A1)	The same	Alaska Gleyed	(A13)	N		Alaska Color Ch	ange (TA4) ⁴
Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Without SY Hue Adaska Gleyed Pores (A15) Alaska Gleyed Without SY Hue or Redder Underlying Alaska Gleyed Without SY Hue or Redder Underlying Layer Alaska Gleyed Without Sy Hue or Redder Underlying Layer Alaska Gleyed Without Sy Hue or Redder Underlying Layer Alaska Gleyed Without Sy Hue or Redder Underlying Layer Alaska Gleyed Without Sy Hue or Redder Underlying Layer Alaska Gleyed Without Sy Hue or Redder Underlying Layer Alaska Gleyed Without Sy Hue or Redder Underlying Layer Alaska Gleyed Without Sy Hue or Redder Underlying Layer Alaska Gleyed Without Sy Hue or Redder Underlying Layer Alaska Gleyed Without Sy Hue or Redder Underlying Layer Alaska Gleyed Without Sy Hue or Redder Underlying Layer Alaska Gleyed Without Sy Hue or Redder Underlying Layer Alaska Gleyed Without Sy Hue or Redder Underlying Layer Alaska Gleyed Without Sy Hue or Redder Underlying Layer Alaska Color (Fig. 1) Alaska Gleyed Witho		737	-	Alaska Redox	(A14)	N.		Alaska Alpine S	wales (TA5)
Adask Gleyed without 5Y Hue or Redder Underlying Layer (A12)	- Laboratoria	1		Alaska Gleyed	Pores	(A15)	J	Alaska Redox w	ith 2.5Y Hue
Thick Dark Surface (A12) Other (Explain in Notes) One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic. Give details of color change in Notes. Restrictive Layer (if present): Type: Frast	The Later Co.			1 2 2 2					vithout 5Y Hue or Redder Underlying
Concept Conc	ENTRALED								No.
isturbed or problematic. Give details of color change in Notes. Restrictive Layer (if present): Type: Fresh Depth (inches): // Hydric Soil Present (Y/N): // Notes: Spelly positive & & Loil is this worker C Hydrogy PRIMARY INDICATORS (any one indicator is sufficient) Surface Water (A1)	Thick Dark Surf	face (A12)N							
Cive details of color change in Notes. Restrictive Layer (if present): Type: Fost Depth (inches): Hydric Soil Present (Y/N): Y Notes: Spetty Postitive & & Soil is this actor of C HYDROLOGY PRIMARY INDICATORS (any one indicator is sufficient) Surface Water (A1)	One indicator of	of hydrophytic vege	tation, c	one primary indicator	of wetla	and hydrol	logy, and an	appropriate landscap	se position must be present unless
Depth (inches): Hydric Soil Present (Y/N):			tes.	100					AL TO
HYDROLOGY PRIMARY INDICATORS (any one indicator is sufficient) Surface Water (A1) Surface Soil Cracks (B6) Laves (B9) Surface (B10) Surface			. E	st s	Depth (inches):	17		
HYDROLOGY PRIMARY INDICATORS (any one indicator is sufficient) Surface Water (A1)	Give details of	er (if present): Type	E. FIT	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1					
HYDROLOGY PRIMARY INDICATORS (any one indicator is strificient) Surface Water (A1)	Give details of Restrictive Laye		/	decolor,					
Surface Water (A1)	Give details of Restrictive Layer Hydric Soil Pre	esent (Y/N):	/			olc			
Saturation (A3)	Give details of Restrictive Layer Hydric Soll Pre Notes: Spot	y positive a	X	Soil is this	o-trop	it)			
Saturation (A3) Concave Surface (B8) Living Roots (C3) Microtopographic Relief (D4) Relief (D4)	Give details of Restrictive Layer Hydric Soil Pro	PRIMARY INDICA	TORS (Soil is this any one indicator is s	a-trap	it)	Water-stain	ed (Stunted or Stressed
Water Marks (B1)	Give details of Restrictive Layer Hydric Soil Pro Notes: Spot	PRIMARY INDICA	TORS (Joil is this any one indicator is surface Soil Cracks (Boundation Visible on A	otrop sufficier	it)	Water-stain Leaves (B9) Drainage Pa	ed V	Stunted or Stressed Plants (D1)
Sediment Deposits (B2) Nodor (C1) Sait Deposits (C5) Sait Deposits (C5	Hydric Soil Pro Notes: Spott HYDROLOGY Surface Water of	PRIMARY INDICA (A1) N	TORS (St.	Joil is this any one indicator is surface Soil Cracks (Boundation Visible on A	otropotropotropotropotropotropotropotro	/ / nagery	Water-stain Leaves (B9) Drainage Pa Oxidized Rh	ed Natterns (B10) Natterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Drift Deposits (B3) Dry-Season Water Table (C2) Notes: Algal Mat or Crust (B4) Other (Explain in Notes): Iron Deposits (B5) Depth (in): Wetland Hydrology Present (Y/N): Depth (in):	Hydric Soll Pro Notes: Spott Hydrace Water (High Water Tab	PRIMARY INDICA (A1) V ble (A2) V Y	SL Interest (B	any one indicator is surface Soil Cracks (Boundation Visible on A 7). Noarsely Vegetated oncave Surface (B8)	otropotropotropotropotropotropotropotro	/ / nagery	Water-stain Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence o	atterns (B10) nizospheres along s (C3) f Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic
Algal Mat or Crust (B4) Other (Explain in Notes): Iron Deposits (B5) Depth (in): Wetland Hydrology Present (Y/N): Depth (in): Depth (in):	Hydric Soil Pro Notes: 5pp+ HYDROLOGY Surface Water High Water Tab Saturation (A3) Water Marks (E	PRIMARY INDICA (A1) V ble (A2) V 31)	TORS (St. Sp. Co. Mar.	any one indicator is surface Soil Cracks (Boundation Visible on A 7) Noarsely Vegetated oncave Surface (B8) arl Deposits (B15)	otropotropotropotropotropotropotropotro	/ / nagery	Water-stain Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4)	atterns (B10) nizospheres along s (C3) f Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Surface Water Present (Y/N): Water Table Present (Y/N): Depth (in):	Hydric Soil Pro Notes: Spot Hydrace Water (A) High Water Tab Saturation (A3) Water Marks (E) Sediment Depo	PRIMARY INDICA (A1) ble (A2) y osits (B2)	Sulfano (B) Sp. Co. Mis	any one indicator is surface Soil Cracks (Be undation Visible on A 7). Darsely Vegetated oncave Surface (B8) arl Deposits (B15)	otropotropotropotropotropotropotropotro	/ / nagery	Water-stain Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposi	atterns (B10) nizospheres along s (C3) f Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Water Table Present (Y/N): Depth (in): Dep	Hydric Soil Pro Notes: Spot Hydrace Water of High Water Tab Saturation (A3) Water Marks (E Sediment Depo	PRIMARY INDICA (A1)	St. Sp. Co. Mi.	any one indicator is surface Soil Cracks (Boundation Visible on A 7) parsely Vegetated oncave Surface (B8) arl Deposits (B15) ydrogen Sulfide or (C1) y-Season ater Table (C2)	otrop	/ / nagery	Water-stain Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposi	atterns (B10) nizospheres along s (C3) f Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Water Table Present (Y/N): Depth (in): Dep	Hydric Soil Proposite (Eagle Mater Marks (Eagle Mater Deposite (Eagle Mater Deposite (Eagle Mater Deposite (Eagle Mater Carlotte Deposite (Eagle Mater Carl	PRIMARY INDICA (A1)	St. Sp. Co. Mi.	any one indicator is surface Soil Cracks (Boundation Visible on A 7) parsely Vegetated oncave Surface (B8) arl Deposits (B15) ydrogen Sulfide or (C1) y-Season ater Table (C2)	otrop	/ / nagery	Water-stain Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposi	atterns (B10) nizospheres along s (C3) f Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Water Table Present (Y/N): Depth (in): 19 Saturation Present (Y/N): Depth (in): 9 EC: 35	Hydric Soil Pro Notes: Spot Hydrace Water of High Water Tab Saturation (A3) Water Marks (E Sediment Depo Drift Deposits (I Algal Mat or Cr	PRIMARY INDICA (A1)	St. Sp. Co. Mi.	any one indicator is surface Soil Cracks (Bundation Visible on A 7). Darsely Vegetated oncave Surface (B8) arl Deposits (B15) ydrogen Sulfide dor (C1) y-Season later Table (C2) ther (Explain in Notes	otrop	/ / nagery	Water-stain Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposi	atterns (B10) nizospheres along s (C3) f Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Saturation Present (Y/N): (includes capillary fringe) Depth (in): 9 EC: 35 5.86	Hydric Soil Pro Notes: Spott Hydric Soil Pro Notes: Spott Hydric Soil Pro Notes: Spott HydroLOGY Surface Water (High Water Tab Saturation (A3) Water Marks (E Sediment Deposits (I Algal Mat or Cr Iron Deposits (I	PRIMARY INDICA (A1)	TORS (St. St. St. St. Co. Miles St. Co. Mil	any one indicator is surface Soil Cracks (Bundation Visible on A 7). Darsely Vegetated oncave Surface (B8) arl Deposits (B15) ydrogen Sulfide dor (C1) y-Season later Table (C2) ther (Explain in Notes	otrop	nt)	Water-stain Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit Notes:	atterns (B10) nizospheres along s (C3) f Reduced ts (C5)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
	Hydric Soil Pro Notes: Spett HYDROLOGY Surface Water (A) Water Marks (E) Sediment Depo Drift Deposits (I) Algal Mat or Cr Iron Deposits (I) Surface Water	PRIMARY INDICA (A1)	TORS (St. St. St. St. Co. Miles St. Co. Mil	any one indicator is surface Soil Cracks (Be undation Visible on A 7). Darsely Vegetated oncave Surface (B8) arl Deposits (B15)	otrop	nt)	Water-stain Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit Notes:	atterns (B10) nizospheres along s (C3) f Reduced ts (C5)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)

AQUATIC SITE ASSESSMENT DATA FORM

W1062H025

VEGETATION VARIABLES P= Plot, A	W= Matrix
Forested-Evergreen-Needle-leaved X	Scrub Shrub-Deciduous-Needle-leaved
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) 5 Tall herb (≥1	Sapling (<5 dbh, <6m tall)
Number of Wetland Types (M): 2	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even _X
Vegetation Density/Dominance (P): Sparse 80%)	(0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattere	100% Cover or Open Water X <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant	species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none)	X One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover
Dead Woody Material (P): Low Abundance Abundant (>50% of surface)	(0-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large High (small groupings, diverse and interspers	patches, concentric rings) Moderate (broken irregular rings)ed)
HGM Class (P): Slope Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
COU VARIABLES	
SOIL VARIABLES Soil Factors (P): Soil Lacking	Histosol:Fibric Histosol:Hemic Histosol: Sapric
Mineral: Gravelly Mineral: Sandy	Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES	The second secon
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent OutletNo Inlet/Perennial OutletIntermittent Inlet/No OutletPerennial Inlet/Perennial OutletPerennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent OutletNo Inlet/Perennial OutletIntermittent Inlet/No OutletIntermittent Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/Perennial Outletonally Flooded, Temporarily Flooded, Saturated
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence	No Inlet/Intermittent OutletNo Inlet/Perennial OutletIntermittent Inlet/No OutletIntermittent Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/Perennial Outletonally Flooded, Temporarily Flooded, Saturated
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inle
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inle
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Ir Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Or Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outl
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Ir Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Or Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Ci Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable Basin Topographic Gradient (M): Low O	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Ir Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent_ Frequency of Overbank Flooding (P): No Or Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Ci Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable Basin Topographic Gradient (M): Low G Evidence of Seeps and Springs (P): No See	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Inlet/No Outlet Inlet/No Outlet Perennial Inlet/No Outlet In
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Ir Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Or Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Ci Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable Basin Topographic Gradient (M): Low (Evidence of Seeps and Springs (P): No See LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated Only Connected Above Connected	No Inlet/Intermittent Outlet

Crew Chief QA/QC check:

GPS Technician QA/QC check:

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Fea	ature	eID: WICHO25 Field Target: 246 Date: 7-26-16
For	all	items not checked, please provide detailed explanation in the notes section of data form.
	1.	Site Description
		☑ Site description, site parameters and summary of findings are complete? ☑ A detailed site sketch is included in logbook?
	2.	Vegetation
		At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
		 ▶ Vegetation names are entered legibly for all strata present? ▶ Cover calculations are complete and correct?
56		All dominant species have been determined and recorded per strata?
		Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
	3.	Soil
	-	Soil profile is complete? Appropriate hydric soil indicators are marked?
	4.	Hydrology
		Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
	5.	Functions and Values
		Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
	6.	Field Logbook
		Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
	7.	Maps
		Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8.	Pł	145	fn	c
().	ГΙ	w	w	3

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X	X	
Wetland Scientist (print)	Signature / Date	
* . # #		
X Jessie Browlee	X desser Bon	8.9.16
Field Crew Chief (print)	Signature / Date	

Survey Type: Centerline	SITE DESCRIPTION	EN STA	ALLESS .			the state of	The Local	AND THE PERSON
Investigators: Jessell Browner, Kaley Volper Team No.: W 106 State: Alaska Region: Alaska D Milepost: /S(.3) Latitude: Les. 37075 Longitude: -149. 32/332 Datum: WGS84 Logbook No.: Logbook Page No.: 32 Picture No.: Juli(LANO) - 001 + 1/10 004 SITE PARAMETERS Subregion: Brooks Range Landform (hillslope, terrace, hummocks, etc.): Mound, reverterace Slope (%): S Local relief (concave, convex, none): Conuck Pre-mapped Alaska LNG/NWI classification: Pend 55 LB Evidence of Wildlife Use: Present: Yes No (if no explain in Notes) Are dimatic/hydrologic conditions on the site typical for this time of year? Yes No (if no explain in Notes) Are Vegetation Soil or Hydrology Significantly Disturbed? No (if yes, explain in Notes) Hydrophytic Vegetation Present? Yes No Wetland Type: J Wetland Type: J Wetland Type: J	Survey Type: Centerline Access Road	(explain)Ot	ther (expla	in)	Field Target:	3/2	Map #: <u>/</u>	Map Date: 6.9.11
State: Alaska Region: Alaska Longitude:	Date: 7-13-16 Project	t Name & No.: Ala	laska LNG	60418403	Fea	ature Id:	WIOGPACC)/
Logbook No.: 2 Logbook Page No.: 37 Picture No.: Picture	Investigators: Jessil Brown	ce, Kaler	1 VO	per	¥.		Team No.: \	W106
SITE PARAMETERS Subregion: Bracks Range Landform (hillslope, terrace, hummocks, etc.): mond, recreterace Slope (%): 5 Local relief (concave, convex, none): Convex Pre-mapped Alaska LNG/NWI classification: PEM/SSLB Evidence of Wildlife Use: Parameters Are climatic/hydrologic conditions on the site typical for this time of year? Yes No_ (if no explain in Notes) Are Vegetation, Soil, or Hydrology Significantly Disturbed? No_ (If yes, explain in Notes) Are Vegetation, Soil, or Hydrology Naturally Problematic? No_ (If yes, explain in Notes.) BUMMARY OF FINDINGS Hydrophytic Vegetation Present? Yes No_ X		n: Alaska	U	Milepost:	151.3			
SITE PARAMETERS Subregion: Bracks Range Landform (hillslope, terrace, hummocks, etc.): mond, recreterace Slope (%): 5 Local relief (concave, convex, none): Convex Pre-mapped Alaska LNG/NWI classification: PEM/SSLB Evidence of Wildlife Use: Parameters Are climatic/hydrologic conditions on the site typical for this time of year? Yes No_ (if no explain in Notes) Are Vegetation, Soil, or Hydrology Significantly Disturbed? No_ (If yes, explain in Notes) Are Vegetation, Soil, or Hydrology Naturally Problematic? No_ (If yes, explain in Notes.) BUMMARY OF FINDINGS Hydrophytic Vegetation Present? Yes No_ X	Latitude: 68.37075	L	Longitude:	-149.35	21232		Datum: WGS8	34
Subregion: Brooks Range Landform (hillslope, terrace, hummocks, etc.): Mond, rever ferrace Slope (%): 5 Local relief (concave, convex, none): Pre-mapped Alaska LNG/NWI classification: PEM 55 LB Evidence of Wildlife Use: Pre-mapped Millslope, terrace, hummocks, etc.): Mond, rever ferrace Evidence of Wildlife Use: Pre-mapped Millslope, terrace, hummocks, etc.): Mond, rever ferrace Local relief (concave, convex, none): Evidence of Wildlife Use: Pre-mapped Millslope, terrace, hummocks, etc.): Mond of the state of th					A	4001_	001 thr	1004
Local relief (concave, convex, none): Convex	SITE PARAMETERS	024 11 112	PATE A	1073A Tal. 2	AND BUILDING	TO WA	TOWN ASST	10 (20 San
Local relief (concave, convex, none): Convex	Subregion: Ranka Paraca			Landform (hill	slope, terrace, hu	ummocks	s, etc.): Mondo	, river terrace
Are climatic/hydrologic conditions on the site typical for this time of year? YesNo(if no explain in Notes) Are "Normal Circumstances" present: YesNo(If no, explain in Notes.) Are Vegetation, Soil, or Hydrology Significantly Disturbed? No(If yes, explain in Notes) Are Vegetation, Soil, or Hydrology Naturally Problematic? No(If yes, explain in Notes.) SUMMARY OF FINDINGS Hydrophytic Vegetation Present? Yes No Is the Sampled Area within a Wetland? Yes No Hydric Soil Present? Yes No Wetland Type:								
Yes No (if no explain in Notes) Are Vegetation , Soil , or Hydrology Significantly Disturbed? No (If yes, explain in Notes) Are Vegetation , Soil , or Hydrology Naturally Problematic? No (If yes, explain in Notes.) SUMMARY OF FINDINGS Hydrophytic Vegetation Present? Yes No Is the Sampled Area within a Wetland? Yes No Hydric Soil Present? Yes No Wetland Type:	Pre-mapped Alaska LNG/NWI classification: /	EMYSS1B		Evidence of V	Vildlife Use: 🏳	sarine s	5	
Are Vegetation, Soil, or Hydrology Naturally Problematic? No (If yes, explain in Notes.) SUMMARY OF FINDINGS Hydrophytic Vegetation Present? Yes No			year?	200	ormal Circumstan No(ices" pres If no, exp	sent: blain in Notes.)	
Hydrophytic Vegetation Present? Yes No But Wetland? Yes No Wetland Type:	Are Vegetation, Soil, or Hydrology	Significantly [Disturbed?	No_X	_(If yes, explain i	in Notes)		
Hydrophytic Vegetation Present? YesNoX	Are Vegetation, Soil, or Hydrology_	Naturally Prob	blematic?	No	(If yes, explain	in Notes.	.)	
Hydric Soil Present? YesNoX Wetland Type:	SUMMARY OF FINDINGS	制度を表現	Wall of	of the Make	CON - SHEET	表示即		THE RESERVE
	Hydrophytic Vegetation Present? Yes	No	_ is	the Sampled A	rea within a We	tland?	Yes	NoX
Wetland Hydrology Present? Yes NoX Alaska Vegetation Classification (Viereck):	Hydric Soil Present? Yes	_ NoX	_ We	etland Type:	U			
	Wetland Hydrology Present? Yes	NoX	- Ala	ska Vegetatior	n Classification (V	/iereck):	11 6.2,	11 01
Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey corridor.		al & North Arrow, C	Centerline,	Length of featu	re, Distances fror	m Center	line, Photo Loca	tions, and Survey
Short to Dwarf Shrub community. Dry sandy soil w/out sign of saturation		ommonity.	Dir	Sandy S	Toil what	si em	d edin	25
No signs of hydrology. A Dry RUSB is to the north of very rocky soil.	No signa of hydrology.	A Dry Rus	B 15 -	b) #.	4 /.	3, 3,	6 Sarura	2-04
All dry from OP 2.	All dry from OP-?			I'VE NOV	The of se	ry ro	cky soil.	
							4	-
· · ·								
				ů.	of			

W106PA001

1001	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot sizes:	% Cover	Species?	Status	No. of Dominant Species that are OBL, FACW, or FAC:
1.	1.5	(Y/N)		Total Number of Dominant Species Across All Strata:
2.				% Dominant Species that are OBL, FACW, or FAC: <u>33</u> (/
3.	1 -			e de la company
				Prevalence Index worksheet:
Total Cove	r:			Total % Cover of: Multiply by:
50% of total cover	er: 20	0% of total cov	/er:	OBL species:X1 =
Sapling/Shrub Stratum (26)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 35 x2 = 70 FAC species 23 x3 = 69 FACU species 22 x4 = 88
· Salix pulchra	20	Y	FACW	UPL species 10 X5 = 50
Calix reticulata	15		FAC	Column Totals: 90 (A) 277 (B)
Dryas integrifolia	20	Y	FACU	PI = B/A = 3.07
· Rhododendrium lepponicum	3	*	FA-(Carer Sp T K -
Salix richardsonii	15		FACW	
Arctous rubon	5		FAC	
			15-	
			1	
Total Cove			ue 6	
Total Cove		0% of total cov	ver: 15.6	
50% of total cove	r: <u>3 9</u> 20	of total cov	rer:15 = 6	
50% of total cove	s) Absolute	Dominant	Indicator	Hydrophytic Vegetation Indicators:
50% of total cove	r: <u>3 </u>	Dominant Species?	門可則領	Dominance Test is > 50%
50% of total cove FEGETATION (use scientific names of plant Herb Stratum (s) Absolute	Dominant	Indicator	N Dominance Test is > 50% N Prevalence Index is ≤3.0
50% of total cove /EGETATION (use scientific names of plant Herb Stratum (s) Absolute	Dominant Species?	Indicator Status	Dominance Test is > 50% N Prevalence Index is ≤3.0 Morphological Adaptations¹ (Provide supporting data in
EGETATION (use scientific names of plant lerb Stratum (26') 1. Pediscularis 1 2. Ogistropis Campestris	Absolute % Cover	Dominant Species?	Indicator Status	Notes Dominance Test is > 50% V
EGETATION (use scientific names of plant lerb Stratum (26') Pediscularis Campestris Anthoxanthum monticola	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test is > 50% N Prevalence Index is ≤3.0 Morphological Adaptations¹ (Provide supporting data in
1. Pediscularis 1 2. Contropis Campestris 3. Anthoxanthum Monticola 4. Equistum angus	Absolute % Cover	Dominant Species?	Indicator Status (UPL) UPL FAC	Dominance Test is > 50% Notes Problematic Hydrophytic Vegetation¹ (Explain)
1. Pediscularis 1 2. Opintropis Campestris 3. Anthoxanthum Monticola 1. Equistion arraise 5. Tofieldia pusilla	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test is > 50% Prevalence Index is ≤3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
1. Pediscularis 1. Pediscularis Compestris 3. Anthoxanthum Monticola 4. Equistion analyse 5. To fieldia pusilla 6. Hedysarum alpinum	Absolute % Cover	Dominant Species?	Indicator Status (UPL) UPL FAC	Dominance Test is > 50% Prevalence Index is ≤3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
1. Pediscularis 1 2. Campestris 3. Anthoxanthum Monticola 4. Equistum anaise 5. To fieldia posilla 6. Hedysarum alpinum 7. grass 2 6. Equisetum varia gatum	Absolute % Cover	Dominant Species?	Indicator Status (UPL) UPL FAC	Dominance Test is > 50% Prevalence Index is ≤3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Bare Ground C % Cover of Wetland Bryophytes
1. Pediscularis 1 2. Campestris 3. Anthoxanthum Monticola 4. Equistum anaise 5. To fieldia posilla 6. Hedysarum alpinum 7. grass 2 6. Equisetum varia gatum	Absolute % Cover	Dominant Species?	Indicator Status WPL UPL FAC FAC FAC FAC FAC FAC FAC FA	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Bare Ground When the problematic is > 50% Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Dhat is a supporting data in Notes) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
1. Pediscularis 2. Controls Compestris 3. Anthoxanthum Monticola 4. Equistion and pinum 5. Tofieldia pusilla 6. Hedysarum alpinum 6. grass 2 7. Bistorta vivipara 6. Bistorta vivipara 6.	Absolute % Cover	Dominant Species?	Indicator Status WPL UPL FAC FAC FAC FAC FAC FAC FAC FA	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. D Bare Ground Cover of Wetland Bryophytes Total Cover of Bryophytes Cover of Water
1. Pedicularis 1 2. Cychropis Campestris 3. Anthoxanthum Monticola 4. Equistum analyse 5. To fieldia pusilla 6. Hedysarum alpinum 7. grass 2	Absolute % Cover	Dominant Species?	Indicator Status WPL UPL FAC FAC FAC FAC FAC FAC FAC FA	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Bare Ground When the problematic is > 50% Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Dhat is a supporting data in Notes) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

· WIOLAPAOOI

SOIL	100 110 110			eature ID		3 AE	DESCRIPTION OF THE PARTY OF THE	Soil Pit Required (Y/N)_
OIL PROFILE	DESCRIPTION: (Describe	to the depth neede	d to docur	ment the	indicator or	confirm the absen	ce of indicators.)
Depth	Matrix		Redox Features	bro		`.		
nches) (Color (moist) `	%	Color (moist)	%	Type ¹	Loc ²	Texture	Notes
ne 02								Dry organics
7 2-4	104R 3/2	100					Silt loans	7 0
4-7	104R 3/2	98	104R 4/4	2	con	M	Sandy loan	2
	101R 4/2	99	104R 3/6	1	con	KC	SILF loon	
76 12-13	104R 3/2	200						
ice note								
						(T-10)		
Type: C=Con	centration, D=Dept	etion, RN	M=Reduced Matrix, (CS=Cove	red or Co	ated Sand (n: PL=Pore Lining, M=Matrix.
YDRIC SOIL	INDICATORS	B1931		MARKE.	1500	42, 151)	La la tantaga de la	FOR PROBLEMATIC HYDRIC SOI
istosol or Hist	tel (A1)		Alaska Gleye					Change (TA4) ⁴ /
listic Epipedo	n (A2)		Alaska Redox					Swales (TA5)
lack Histic (A	3)		Alaska Gleye	d Pores (/	415) <u>N</u>			with 2.5Y Hue _/V
lydrogen Sulfi	de (A4) _ N						Alaska Gleye	d without 5Y Hue or Redder Underlyi
Thick Dark Sur	face (A12) N						Other (Explai	n in Notes)
One indicator	of hydrophytic yea	etation, c	one primary indicator	of wetlar	nd hydrolo	ogy, and an		cape position must be present unless
Restrictive Lay	f color change in N ver (if present): Typer resent (Y/N):	pe:^		Depth (in				14 /
Restrictive Lay	resent (Y/N):	pe:^					11 8 BWZ,	51/t loam & Sandy loa
Restrictive Lay Hydric Soil Pr Notes: Remai	resent (Y/N):	pe: A Sown	to 24 one pe,	peading	band	is 7 8 a		51/t loam & Sandy low 2 or more required)
Restrictive Lay Hydric Soil Pr Notes: Remail	resent (Y/N):	Jown		peading	band	is 7 8 a	RY INDICATORS	
Restrictive Lay Hydric Soil Pr Notes: Remai	resent (Y/N): PRIMARY INDICA (A1) Very (if present): Type PRIMARY INDICA (A1)	Jown	any one indicator is urface Soil Cracks (Eundation Visible on A	peading sufficient)	band	SECONDAR Water-stain Leaves (B9)	RY INDICATORS	2 or more required) Stunted or Stressed Plants (D1)
Restrictive Lay Hydric Soil Pr Notes: Remai HYDROLOGY Surface Water High Water Ta	resent (Y/N): PRIMARY INDICA (A1) Dible (A2)	ATORS (any one indicator is urface Soil Cracks (Eundation Visible on A	sufficient) Sef) Aerial Ima	band	SECONDAF Water-stain Leaves (B9) Drainage Pa	ed (Matterns (B10)	2 or more required) Stunted or Stressed Plants (D1)
Restrictive Lay Hydric Soil Pr Notes: Rema HYDROLOGY Surface Water High Water Ta Saturation (A3	resent (Y/N):	ATORS (: Su Int. (B) Sp	any one indicator is urface Soil Cracks (Eundation Visible on A7)	sufficient) Sef) Aerial Ima	band	SECONDAR Water-stain Leaves (B9) Drainage Pa	ed human (B10) hizospheres along s (C3)	2 or more required) Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Restrictive Lay Hydric Soil Pr Notes: Remai HYDROLOGY Surface Water High Water Ta Saturation (A3	resent (Y/N):	ATORS (Su Int (B Sp Co Ma	any one indicator is urface Soil Cracks (Eundation Visible on A7).	sufficient) Sef) Aerial Ima	gery	SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4)	ed human atterns (B10) hizospheres along s (C3) f Reduced	2 or more required) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic
Restrictive Lay Hydric Soil Pr Notes: Remai HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (I Sediment Dep	resent (Y/N):	ATORS (Su Int (B Sp Cc Ma Hy Or	any one indicator is Inface Soil Cracks (E Jundation Visible on A T) Parsely Vegetated Porcave Surface (B8) arl Deposits (B15) Judrogen Sulfide	sufficient) Sef) Aerial Ima	gery	SECONDAR Water-stained Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4)	ed hatterns (B10)nizospheres along s (C3)f Reduced	2 or more required) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Restrictive Lay Hydric Soil Pr Notes: Remai	resent (Y/N):	ATORS (Int. Sum Int. (B) Sp Co Ma Hy Or Dr W	any one indicator is Inface Soil Cracks (E Jundation Visible on A T) Parsely Vegetated Paracy Surface (B8) Paracy Surface (B15) Adrogen Sulfide Juncy Season	sufficient) Aerial Ima	gery	SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4)	ed hatterns (B10)nizospheres along s (C3)f Reduced	2 or more required) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Restrictive Lay Hydric Soil Pr Notes: Remai HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (I Sediment Dep Drift Deposits Algal Mat or C	resent (Y/N):	ATORS (Int. Sum Int. (B) Sp Co Ma Hy Or Dr W	any one indicator is Inface Soil Cracks (E Jundation Visible on A T) Parsely Vegetated Parace Surface (B8) For Correct Surface (B15) Adrogen Sulfide Jury-Season Atter Table (C2)	sufficient) Aerial Ima	gery	SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4)	ed hatterns (B10)nizospheres along s (C3)f Reduced	2 or more required) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Hydric Soil Proposits of the proposite o	resent (Y/N):	ATORS (Int. Sum Int. (B) Sp Co Ma Hy Or Dr W	any one indicator is Inface Soil Cracks (E Jundation Visible on A T) Parsely Vegetated Parace Surface (B8) For Correct Surface (B15) Adrogen Sulfide Jury-Season Atter Table (C2)	sufficient) Aerial Ima	gery	SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4)	ed hatterns (B10)nizospheres along s (C3)f Reduced	2 or more required) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Hydric Soil Proposits of the proposite o	resent (Y/N): PRIMARY INDICA (A1)	ATORS (Int. Sum Int. (B) Sp Co Ma Hy Or Dr W	any one indicator is urface Soil Cracks (Eundation Visible on A7). Darsely Vegetated oncave Surface (B8) arl Deposits (B15) ard Deposits (B15) ydrogen Sulfide dor (C1) y-Season ater Table (C2) ther (Explain in Note	sufficient) Aerial Ima	gery	SECONDAR Water-stain Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit Notes:	ed hatterns (B10)nizospheres along s (C3)f Reduced	2 or more required) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)

EGETATION VARIABLES P= Plot, M= Matrix
rimary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved_ Forested-Deciduous-Broad-leaved_ prested-Evergreen-Needle-leaved_ Scrub Shrub-Deciduous-Needle-leaved_ Scrub Shrub-Deciduous-Broad-leaved_ prested-Evergreen-Needle-leaved_ Scrub Shrub-Deciduous-Needle-leaved_ Scrub Shrub-Deciduous-Broad-leaved_ prested-Evergreen-Needle-leaved_ Scrub Shrub-Evergreen-Needle-leaved_ Emergent-Non-persistent_ Emergent- prested-Evergreen-Needle-leaved_ Emergent-Non-persistent_ Emergent- prested-Evergreen-Needle-leaved_ Scrub Shrub-Evergreen-Needle-leaved_ Emergent-Non-persistent_ Emergent-Non-persistent_ Emergent-Non-persistent_ Emergent-Needle-leaved_ Emergent-Non-persistent_ Emergent-Non-persistent_ Emergent-Non-persistent_ Emergent-Needle-leaved_ Emergent-Non-persistent_ Emergent-Needle-leaved_ Eme
ercent Cover (P): Tree (>5 dbh, >6m tall) Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Warf shrub (<0.5m) Tall herb (\(\text{\rm}\) Short herb (<1m) Moss-Lichen Floating Submerged
umber of Wetland Types (M): Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
egetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60- 0%) Very High Density (80-100%)
terspersion of Cover & Open Water (P): 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered eripheral Cover N/A
ant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
resence of Islands (M): Absent (none) One or Few Several to Many N/A
over Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site open Small Scattered Patches Continuous Cover
ead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) bundant (>50% of surface)
getative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) gh (small groupings, diverse and interspersed)
GM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe
ON WARIARI ES
DIL VARIABLES pil Factors (P): Soil Lacking Histosol: Fibric Histosol: Hemic Histosol: Sapric
pil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey
wineral, dayey
/DROLOGIC VARIABLES
/DROLOGIC VARIABLES et/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Outlet Perennial Inlet/No Outlet Perennial Outlet Perennial Inlet/No Outlet Perennial
/DROLOGIC VARIABLES det/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Pere
tet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet
Application of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.) Sequency of Overbank Flooding (P): No Overbank Flooding Return Interval 3-5 yrs
A performance of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Correlled of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.) Sequency of Overbank Flooding (P): No Outflow Restricted Outflow Unrestricted Outflow Unrest
Comparison of Control of Contro
Approach (Control of Control of C
Properties of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Corceller of Wetland Surface (P): No Overbank Flooding (P): No Overbank Flooding (P): No Overbank Flooding (P): No Overbank Flooding (P): No Outflow Restricted Outflow Unrestricted Outflow Unrestricted Outflow Unrestricted Outflow Atkaline (>7.4) Acid (<5.5) pH Reading Fidelial Outlow Perennial Outlow Intermittent Inlet/No Inlet/No Inlet/No Outlot Intermittent Inlet/No Outlot Perennial Outlet Perennial Outlet Perennial Outlet Perennial Outlet Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Outl
Action Color C
Action Properties ### Action Prope
ADDROLOGIC VARIABLES ### ADDROLOGIC VARIABLES (M) ### ADDROLOGIC V
Action Comments of Service Connected Districts (S.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring (P): No Seeps or Springs Seeps Observed Intermittent Spring (P): No Seeps or Springs Seeps Observed Intermittent Spring Lead (District) (I.e., open space) attended Springs (P): No Seeps or Springs (P): No Connected Dustream & Downstream (P): No Seeps or Springs (P): No Seeps or Springs (P): No Connected Dustream & Downstream (P): No Seeps or Springs (P): No Seeps or Springs (P): No Connected Dustream & Downstream (P): No Seeps or Springs (P): No Seeps or Springs (P): No Connected Dustream & Downstream (P): No Connected Dustreasity (I.e., open space) (P): No Internsity (I.e., open space)
ADDROLOGIC VARIABLES ### ADDROLOGIC VARIABLES (M) ### ADDROLOGIC V

J Brownlee

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Feature	e ID: W (06PA00) Field Target: 3(2 Date: 7:13:16
	items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
	Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct? All dominant species have been determined and recorded per strata? Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
3.	Soil
51 - 51	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
,	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7.	Maps
	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)? Two photos were taken for each Observation Point (vegetation/site overview)?

X Maley Morer X Mally Jaffer 7-17-16
Wetland Scientist (print)
Signature / Date

X JBrountee X Ann

SITE DESCRIPTION	The Name of Street, St			
and lightly and the state of th	ss Road (explain) Othe	er (explain)_X	Field Target: 31	Map #: 11 Map Date: 6.9.16
Date: 7-12-16	Project Name: Alaska LN	3	Feature Id:	W106PA00Z
Investigators: Jessie Bo	unlee, Kalen	Volper		Team No.: WIOG
State: Alaska	Region: Alaska	Milepost:	156.2	
Latitude: 68. 30332	Loi	ngitude: -149.35.		Datum: WGS84
Logbook No.: 2	Logbook Page No.: 32			2001 thru 004
SITE PARAMETERS	以你没有办法性的	MANUE VERNIER	THE STATE OF THE S	CONTROL DE LA CO
Subregion: 60045 Fav	\00	Landform (hi	llslope, terrace, hummock	s, etc.): Hillside
Slope (%): ~ 5-10	J.	Local relief (d	concave, convex, none):	Slightly concave
Pre-mapped Alaska LNG/NWI classifica	ation: PEMI/5513	ILAZ Evidence of	12	0 1
Are climatic/hydrologic conditions on the Yes No (if no exp	e site typical for this time of ye lain in Notes)		ormal Circumstances" pre	esent: plain in Notes.)
Are Vegetation, Soil, or Hyd		turbed? No X	(If yes, explain in Notes)
Are Vegetation, Soil, or Hy	drology Naturally Proble	matic? No 🚉	(If yes, explain in Notes	s.) (-0 ¹)
SUMMARY OF FINDINGS	可用的 经公司 计图书的			
Hydrophytic Vegetation Present? Yes_	No	Is the Sampled	Area within a Wetland?	Yes K No
Hydric Soil Present? Yes_)	Below No	Wetland Type:	PSSI/EMIB	
Wetland Hydrology Present? Yes_	X No	Alaska Vegetatio	on Classification (Viereck):	11 C 2 111 AZ
Notes and Site Sketch: Please include I corridor. Short to Daronf shrubo is packets of standing we to the south of this possible to the south of this possible to the south of the soil as inference it hydric given the war phof the soil as inference who hydrology. its NY 68.30342 -149.355	ter as you move lot as indicator but as tentable @ 3". S I by the high to the North and higher inclosuation	yp slope. A yp slope. A yo slope. A il Likely La	small RYSB Judgement to	therb community- stream runs of still consider due to the high

Page 1 of 4

W106 PA 00Z

	nts)	April 1		ANALY TELEPHONES OF THE STATE O
Tree Stratum (Plot sizes:)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC:
1,				Total Number of Dominant Species Across All Strata:
2.				% Dominant Species that are OBL, FACW, or FAC: 100 (A
3.			-	
1.				Prevalence Index worksheet:
Total Cove	er:			Total % Cover of: Multiply by:
50% of total cove	er: 20	0% of total cov	/er:	OBL species: X1=
Sapling/Shrub Stratum (26)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 35 $x = 70$ FAC species 78 $x = 234$ FACU species 4 $x = 6$
· Betolo Nama	25	Y	FAC	UPL species
Empetrum Migrum	15	Y	FAC	Column Totals: $\sqrt{7}$ (A) 3 ZO (B)
Salex reflectate	10		F4C	PI = B/A =
Rhododowdram tomentosum	20	Y Y	FACIN	Bistorta Vivipara MH T IFA
Vaccinium viitis-idaen	8		FAC	Carex 2
vaccinion disinosum	2		FAC	and a
Sill politice	15	Y	F74601	Wall H T
_ '	900 m			
1)	7		FACU	Valeriana Capitata H T FA
. 1).	4		FACU	- Carex bigelound # 6
Cassione te tracana Total Cove	4 er: 99		FACO	Fools go H T
1).	4 er: 99	% of total cov	FACO	Fools go H T
Total Cove	4 er: 99 er: 49.5 20	% of total cov	FACO	Fools go H T
Total Cove 50% of total cove	4 er: 99 er: 49.5 20	Dominant Species?	FACO	Canex bigelows H G Y FA Follo go H + T Chemation latifollia H + FAI Hydrophytic Vegetation Indicators: Dominance Test is > 50%
Total Cove 50% of total cove EGETATION (use scientific names of plane)	er: 99.5 20 ts) Absolute	Dominant	rer: 19.8 Indicator Status	Canex bigelown H 6 Y FA Foots go H + T Characion latifollia H + FA Hydrophytic Vegetation Indicators: Y Dominance Test is > 50% Prevalence Index is ≤ 3.0
Total Cove 50% of total cove EGETATION (use scientific names of plane) Equisely arvense	er: 99.5 20 ts) Absolute % Cover	Dominant Species?	rer: 19.8 Indicator Status	Chemation difollia H FA Chemation difollia H + Chemation FA Chemation difollia H + Chemation H + Chemation difollia H + FA Hydrophytic Vegetation Indicators: Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in
Total Cove 50% of total cove EGETATION (use scientific names of plane) Egystem arvense Paparer apponium	er: 99.5 20 ts) Absolute % Cover	Dominant Species?	er 19.8 Indicator Status FAC FACO	Chemation latifollia H FA Chemation latifollia H + FA Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes)
Total Cove 50% of total cove EGETATION (use scientific names of plan erb Stratum (26) Equischer arvense	er: 99.5 20 ts) Absolute % Cover	Dominant Species?	Indicator Status FACU FACU	Canex bigelow H G Y FA Fools The Character latifollia H T T T T T T T T T T T T T T T T T T
Total Cove 50% of total cove EGETATION (use scientific names of plane) Egystem arvense Lapayer apponium Susserea anastrolia Language Congression	Absolute % Cover	Dominant Species?	Indicator Status FAC FAC FAC	Chemation latifollia H ← FA Chemation latifollia H ← FA Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes)
Total Cove 50% of total cove 50% of total cove Equisely arvense Paparer arvense Paparer appointment Soussivea anastificia Medicin promise Africa lessing:	Absolute % Cover	Dominant Species?	Indicator Status FACU FAC NL	Hydrophytic Vegetation Indicators: Y Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
Total Cove 50% of total cove 50% of total cove EGETATION (use scientific names of plan erb Stratum (26) Equischer arvense Paparer apponicum Saussurea an austribilia Long per L	Absolute % Cover	Dominant Species?	Indicator Status FAC FAC FAC	Hydrophytic Vegetation Indicators: Y Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
Total Cove Total Cove 50% of total cove EGETATION (use scientific names of plan erb Stratum (26) Equischem arvense Apponium Sale Source an austribilia Long Cong Africa (255 ing.) Bistoria officinalis Cura Sp	Absolute % Cover	Dominant Species?	er 19.8 Indicator Status FAC FAC NL NL	Hydrophytic Vegetation Indicators: Y Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
Total Cove 50% of total cove 50% of total cove EGETATION (use scientific names of plan erb Stratum (26) Egnselm arvense Paparer apponicum Saussurea angustifolia Long per Long per Africa lessingil Bistoria officinalis Cura Sp Peticularis forgious 2015	Absolute % Cover	Dominant Species?	er 19.8 Indicator Status FAC FAC NL NL NL	Hydrophytic Vegetation Indicators: Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. W Bare Ground W Cover of Wetland Bryophytes Total Cover of Bryophytes
Total Cove 50% of total cove 50% of total cove EGETATION (use scientific names of plan erb Stratum (26) Egyischem arvense Paparer apponicum Saussurea angustifolia Long per Long per Africa lessing: Biodocka officinalis Cura Sp Peticularis fingibus Salifacta Mirculus Salifacta Mirculus	Absolute % Cover	Dominant Species?	er 19.8 Indicator Status FAC FAC NL NL	Hydrophytic Vegetation Indicators: Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. W Bare Ground W Cover of Wetland Bryophytes Total Cover of Bryophytes → Vicket S Cover of Water
EGETATION (use scientific names of plan lerb Stratum (26) Equisely apponicum Sous source and out folia Long Constant (255 ing.) Bishorte officinalis Cure Sp Peticularis Gagasis	4 4 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Dominant Species?	er 19.8 Indicator Status FAC FAC NL NL NL	Hydrophytic Vegetation Indicators: Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. W Bare Ground W Cover of Wetland Bryophytes Total Cover of Bryophytes → Lichem

WIOGPADOZ

OIL	A STATE OF THE STA	West 20	7 · /3 · // Date Featu	ro ID	Light (N. A. V. C. A. V. In A. S.		Soil Pit Required (Y/N)
	E DESCRIPTION: (A STATE OF THE PARTY OF	to the depth needed to		ne indicator or	confirm the absence	
	Matrix	Describe	Redox Features	document	ic indicator or		4 4
Depth inches)	Color (moist)	1%	Color (moist)	% Type ¹	Loc ²	Texture	Notes
	Color (moist)	170	Color (moist)	70 17pc			Saturated organics
2 0-3	3/	(12)				silf I war	gardan + soft Allable
	104R 3/2	100				Silty clay	
w 2 10-16	10VR 4/2	100				Sing clay	
		+					
		1					
	At-						
vpe: C=Con	ncentration, D=Deple	etion, RN	/I=Reduced Matrix, CS=	Covered or	Coated Sand (Grains. ² Location:	PL=Pore Lining, M=Matrix.
YDRIC SOIL	INDICATORS	MA WIT	对从和格里或让 自	THE WALL	de la broading	INDICATORS F	OR PROBLEMATIC HYDRIC SOILS
istosol or His	stel (A1)/		Alaska Gleyed (A	13)/		Alaska Color C	hange (TA4) ⁴ /
	n (A2) _ N	+	Alaska Redox (A1	11		Alaska Alpine S	Swales (TA5)
lack Histic (A			Alaska Gleyed Po	res (A15) _	N	Alaska Redox v	vith 2.5Y Hue <i>rJ</i>
	fide (A4)		7				without 5Y Hue or Redder Underlying
						Other (Explain	in Notes)
hick Dark Su			no primary indicator of y	vetland hyd	rology and an		pe position must be present unless
one indicator	roblematic.	station, C	the primary indicator of v	welland flyd	iology, and an	арргорияте тапасс	
isturbed or pr							
live details of estrictive Lay		e: /-	Departrost Dep		165	(Sec. 121 00	G. J.
Give details of lestrictive Lay	yer (if present): Typ	e: <u> ۲۰</u> عد ۲۰۰	us RPJ to pas		165	(See Note on	Good page)
Give details of estrictive Lay	yer (if present): Typ	e: <u> ۲۰</u> عد ۲۰۰	us RPJ to pas		50 Yes		
Give details of testrictive Lay	resent (Y/N): N	e: Ye	us RPJ to pas	s siiks	50 Yes	(See Note on	or more required)
Give details of testrictive Lay lydric Soil Properties: Neg XXX IYDROLOGY	resent (Y/N): N	hrough	hout	s silvs	50 Yes	RY INDICATORS (2	
Sive details of estrictive Lay lydric Soil Protes: A range Neg X Dr. YDROLOGY urface Water	resent (Y/N): N	hrough	any one indicator is suffi rface Soil Cracks (B6)_	s sails	SECONDAR Water-stain Leaves (B9)	RY INDICATORS (2	or more required) Stunted or Stressed
Give details of testrictive Lay lydric Soil Protes: Neg (X.) IYDROLOGY Surface Water Talligh Water Talligh	resent (Y/N): N	hrave hrave Su Su Su Su Su	any one indicator is sufficient on Aeria 7)	s sails	SECONDAR Water-stain Leaves (B9)	edatterns (B10)	or more required) Stunted or Stressed Plants (D1)/ Geomorphic Position (D2)/ Shallow Aquitard (D3)/
Give details of testrictive Lay lydric Soil Processing X X X IYDROLOGY Surface Water Talestaturation (A3	resent (Y/N): N PRIMARY INDICA (A1) Y able (A2) Y	TORS (C	any one indicator is suffi rface Soil Cracks (B6) _ undation Visible on Aeria 7) arsely Vegetated	sails	SECONDAR Water-stain Leaves (B9) Drainage Pa	edatterns (B10)atzospheres along s (C3)	or more required) Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Give details of Restrictive Lay lydric Soil Prology Neg X Draw lydroce Water digh Water Tasaturation (A3 Vater Marks (resent (Y/N): Normal Primary Indicator (A1) Normal Primary Indicator (A2) Normal Primary Indicator (A2) Normal Primary Indicator (A2) Normal Primary Indicator (A2) Normal Primary Indicator (A3) Normal Primary Indicat	trong	any one indicator is suffir rface Soil Cracks (B6) undation Visible on Aeria 7) arsely Vegetated incave Surface (B8) arl Deposits (B15) rdrogen Sulfide/	sails	SECONDAR Water-stain Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of	atterns (B10) / Dizospheres along (C3) / FReduced	or more required) Stunted or Stressed Plants (D1)/ Geomorphic Position (D2)/ Shallow Aquitard (D3)/ Microtopographic
Give details of testrictive Lay lydric Soil Property Neg (XD) lydroce Water Saturation (A3) vater Marks (Sediment Dep	resent (Y/N): New York (Y/N): New York (Y/N): New York (A1) New York (A1) New York (A2) New York (B1) New York (B2) New York (B2	TORS (Su Inu (B Sp Cc Ma Hy Oc Dr	any one indicator is suffir rface Soil Cracks (B6) undation Visible on Aeria 7) arsely Vegetated encave Surface (B8)	sails	SECONDAR Water-stain Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4)	atterns (B10) / Dizospheres along (C3) / FReduced	or more required) Stunted or Stressed Plants (D1)/ Geomorphic Position (D2)/ Shallow Aquitard (D3)/ Microtopographic Relief (D4)/
Give details of estrictive Lay lydric Soil Processing IX	resent (Y/N): Normal Present (Y/N): Normal P	TORS (Company)	any one indicator is sufficient on Aeria (B6)	sails	SECONDAR Water-stain Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4)	atterns (B10) / Lizospheres, along (C3) / F Reduced	or more required) Stunted or Stressed Plants (D1)/ Geomorphic Position (D2)/ Shallow Aquitard (D3)/ Microtopographic Relief (D4)/
ydric Soil Protes: Neg XXX YDROLOGY urface Water igh Water Ta aturation (A3 Vater Marks (ediment Dep rift Deposits Igal Mat or C	yer (if present): Typ resent (Y/N): PRIMARY INDICA r (A1) y able (A2) (B1) cosits (B2) (B3) Crust (B4)	TORS (Company)	any one indicator is suffir rface Soil Cracks (B6) undation Visible on Aeria 7) arsely Vegetated incave Surface (B8) arl Deposits (B15) drogen Sulfide/ for (C1) y-Season ater Table (C2)	sails	SECONDAR Water-stain Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4)	atterns (B10) / Lizospheres, along (C3) / F Reduced	or more required) Stunted or Stressed Plants (D1)/ Geomorphic Position (D2)/ Shallow Aquitard (D3)/ Microtopographic Relief (D4)/
Give details of Restrictive Lay lydric Soil Proposits Neg X Descriptive Water Table Saturation (A3 Vater Marks (Sediment Deports Deposits Neg I Mat or Coron Deposits	resent (Y/N): New York (Y/N):	hrough surfaces (Control of the Control of the Cont	any one indicator is suffir face Soil Cracks (B6) undation Visible on Aeria 7) arrsely Vegetated oncave Surface (B8) arl Deposits (B15) drogen Sulfide for (C1) y-Season ater Table (C2) her (Explain in Notes):	sails	SECONDAR Water-stain Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4)	atterns (B10) / Lizospheres, along (C3) / F Reduced	or more required) Stunted or Stressed Plants (D1)/ Geomorphic Position (D2)/ Shallow Aquitard (D3)/ Microtopographic Relief (D4)/
Give details of Restrictive Lay lydric Soil Proposits Neg X Descriptive Water Tage Water Marks (Sediment Deposits Neg X Descriptive Water Tage Water Marks (Sediment Deposits Neg X Descriptive Water Tage Water Marks (Sediment Deposits Neg X Descriptive Water Tage Water Marks (Sediment Deposits Neg X Descriptive Water Tage Water Marks (Sediment Deposits	resent (Y/N): Normal Property (If present): Typeresent (Y/N): Normal Property (Y/N): Normal	TORS (Company)	any one indicator is suffir rface Soil Cracks (B6) undation Visible on Aeria 7) arsely Vegetated incave Surface (B8) arl Deposits (B15) drogen Sulfide/ for (C1) y-Season ater Table (C2)	sails	SECONDAR Water-stain Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit Notes:	atterns (B10) sizospheres, along s (C3) Freduced sts (C5)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Give details of Restrictive Lay Aydric Soil Property New York Conference Water Table Saturation (A3 Vater Marks (A3 Vater Mark	resent (Y/N): New York (If present): Typeresent (Y/N): New York (Y/N): New York (A1) New York (A1) New York (A2) New York (B3) New York (B4) New York (B4) New York (B5) New York (B7): New Yo	hrough surfaces (Control of the Control of the Cont	any one indicator is suffir face Soil Cracks (B6) undation Visible on Aeria 7) arrsely Vegetated oncave Surface (B8) arl Deposits (B15) drogen Sulfide for (C1) y-Season ater Table (C2) her (Explain in Notes):	sails	SECONDAR Water-stain Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit Notes:	atterns (B10) / Lizospheres, along (C3) / F Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Give details of Restrictive Lay Hydric Soil Proposits Neg X Degraph And Andrew Water Marks (Gediment Deposits Algal Mat or Coron Deposits	resent (Y/N): PRIMARY INDICA (A1) Able (A2) (B1) Crust (B4) Present (Y/N): Present (Y/N): Present (Y/N):	TORS (Sulphing Sp. Co. Ma Hy Oc. Dr. W.	any one indicator is suffir face Soil Cracks (B6) undation Visible on Aeria 7) arsely Vegetated oncave Surface (B8) arl Deposits (B15) drogen Sulfide for (C1) y-Season ater Table (C2) her (Explain in Notes):	sails	SECONDAR Water-stain Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit Notes:	atterns (B10) sizospheres along s (C3) f Reduced ts (C5)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)

AQUATIC SITE ASSESSMENT DATA FORM

WOUTHOUZ

VEGETATION VARIABLES A P= Plot, M= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Forested-Evergreen-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Persistent Aquatic Bed
Percent Cover (P): Tree (>5 dbh, >6m tall) Sapling (<5 dbh, <6m tall)
Number of Wetland Types (M):/ Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) Very High Density (80-100%)
Interspersion of Cover & Open Water (P): 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered, or Peripheral Cover N/A N/A
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)
HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric
Mineral: Gravelly Mineral: Sandy Mineral: Silty X Mineral: Clayey
HYDROLOGIC VARIABLES
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Inl
Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated
Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Created
Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)
Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs Return Interval 2-5 yrs
Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow
Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading 8.79
Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Glacial Till/Not Permeable
Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%) Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring
, Marie 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
LANDSCAPE VARIABLES (M)
Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below Only Connected Upstream & Downstream Unknown
Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below
Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below Only Connected Above Connected Upstream & Downstream / Unknown

Crew Chief QA/QC check:

GPS Technician QA/QC check:

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

F - 4	e ID: W106 PA002 Field Target: 311 Date: 7.13.16
For all	items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later
	identification? Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct?
	All dominant species have been determined and recorded per strata? Indicator status is correct for each species?
	Dominance Test and Prevalence Index have been completed?
3.	Soil
-	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7.	Maps
	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

X hales lolper X hales laber 7-17-16

Wetland Scientist (print)

Signature / Date

X JBrowntee

Field Crew Chief (print)

Signature / Date

SITE DESCRIPTION	Survey of San and San and	WALES AND AND	Carlo Maria Sa		Version of the second
Survey Type: Centerline Acce	ess Road (explain)Othe	er (explain) /	Field Target: 3/0	Map #: /2 N	lap Date: 6-9-16
Date: 7-13-16	Project Name: Alaska LNC	G	Feature	Id: WIOGPAC	03
Investigators: Jessie Bo	owner, Kent	en Vo	per	Team No:: V	1106
State: Alaska	Region: Alaska	Milepost	: 160.4		4
Latitude: 68,24782 °R 68°	14 '52.15" Lor	ngitude: 149,4	9/0 1490 25'8.7	Datum: WGS8	34
Logbook No.: 2	Logbook Page No.: つう	Picture I	40:1 P-W1060 PA	4003-0	o with 10
SITE PARAMETERS		Total Control	Section Section	turbone service	在2000年初
The Court of the C		Landform	h (hillslope, terrace, hummo	ocks, etc.): 4//_	· /·
Subregion: Brooks Mange Slope (%): ~ 10-15			ef (concave, convex, none		
Pre-mapped Alaska LNG/NWI classific	ation: Occulo muß		of Wildlife Use:	C. ZYIOX XV	
Are climatic/hydrologic conditions on th	e site typical for this time of ye		e "Normal Circumstances"		
- 10	plain in Notes)	Ye	1	explain in Notes.)	
Are Vegetation, Soil, or Hy			(If yes, explain in No		
Are Vegetation, Soil, or Hy SUMMARY OF FINDINGS	drologyNaturally Proble	ematic? No_	(if yes, explain in No	iles.)	
In the second se	X No.	le the Samp	led Area within a Wetland	I? Yes	No X
Hydrophytic Vegetation Present? Yes_	No	is the Samp	eu Area Within a Wettand	1. 100	
Hydric Soil Present? Yes_	NoX	Wetland Typ	e: U		
Wetland Hydrology Present? Yes_	No	Alaska Vege	tation Classification (Viered	sk): 11 C 2	1
Notes and Site Sketch: Please include corridor. Dry Sal Pul Shruk Walked From road of Several drainings Dry Location of original From the Color of original From the PAOOS-OP U.	to the NW and a R4513 are around the 310: 68.24	the diversure was a was	ity & low den el dry. 149.41774 who	re W106PA003.	OPWas conduc
WIOGRACO3_OPZ U 11C2,1101 Bal Pol 9 Dryce Soll Dry 9 Rak. No sign of wotlands	Som Can to he	200			
Car GPS 68.24893 *Note or walk to road * No to blet. All point	149.42142 (From op2 site go s taken on Cear	68014' 560 twet @ 1 min (68°	15" 149° 25' 17.10 08.24493 149 14'41.75" 149.0	(") 3.41771 "25" 03.76"	Page 1 c

W106 PA003

	nts)			
Tree Stratum (Plot sizes: \OO\)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: 2 (Total Number of Dominant Species Across All Strata: 3 (
1.	1			% Dominant Species that are OBL, FACW, or FAC: 66-7(A
2.				70 Dominant Species that are OBL, 1 ACM, 01 FAC.
3.		-		
				Prevalence Index worksheet:
Total Cove	er:		1	Total % Cover of: Multiply by:
50% of total cov	er: 20	% of total cov	rer:	OBL species:X1 =
Sapling/Shrub Stratum (Z(a)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 35
Salix pulchra	35	Y	FACE	UPL species 9 X 5 = 45
· Dryas octopetalis	8		UPL	Column Totals: 57 (A) 158 (B)
· Salix reticulada	6		FAC	PI = B/A = 2.77
•				
	the second second second			
).				
Total Cove 50% of total cove	er: <u>24, 5</u> 20	% of total cov	rer: 9.8	
Total Cove 50% of total cove EGETATION (use scientific names of plan	er: <u>24,5</u> 20			Hadanakati Vantsian Indiatana
Total Cove 50% of total cove EGETATION (use scientific names of plan	er: <u>24, 5</u> 20	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators:
Total Cove 50% of total covered by the scientific names of planer by Stratum (Z(6)	er: <u>24, 5</u> 20	Dominant Species?	Indicator	Dominance Test is > 50% Y Prevalence Index is ≤ 3.0
Total Coverage of total coverage of plane of Stratum (Z(6))	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test is > 50%
Total Cover 50% of total cover 50% of total cover tota	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in
Total Cover 50% of total cover 50% of total cover 150% of total co	Absolute % Cover	Dominant Species?	Indicator Status FACIS FACIS	Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain)
Total Cover 50% of total cover 50% of total cover 50% of total cover 50% of total cover 1 folion 1 for some statem (Z(a)) 1. pyrola as erifolion 2 folion 3. Carer higolowii 1. Oxytropis 'Compestris	Absolute % Cover	Dominant Species?	Indicator Status FACIS	Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes)
Total Cover 50% of total cover 5	Absolute % Cover	Dominant Species?	Indicator Status FACI FAC NL(UPL)	Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
Total Cover 50% of total cover 5	Absolute % Cover	Dominant Species?	Indicator Status FACU FAC NL(UPL)	Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
Total Cover 50% of total cover 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Absolute % Cover	Dominant Species?	Indicator Status FACI FAC NL(UPL)	Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
Total Cover 50% of total cover 50% of total cover 50% of total cover 50% of total cover for the stratum (Z6) 1. ourrola as erif lols a 2. Saussurea angustifolium 3. Carex higolomii 4. Oxytropis Campestris 5. Was I 6. Sledaria Marketha 7. Peducularia Capitata 8. Carex 34	Absolute % Cover	Dominant Species?	Indicator Status FACU FAC NL(UPL)	Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
Total Covers 50% of total covers 50% of total covers 50% of total covers 50% of total covers of planting the stratum (Z6) 1. ourrola as erifolis a 2. Saussurea angustifolium 3. Carex higologis 4. Oxytropis Compestris 5. man 1 6. stellaria manthibusa 7. Peducularis Capitata 8. Carex 34 9.	Absolute % Cover	Dominant Species?	Indicator Status FACU FAC NL(UPL)	Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Bare Ground W Cover of Wetland Bryophytes
1. pyrola aserifolia 2. Gaussurea angustishlium 3. Carer higolowiii 4. Oxytropis Compestris 5. man I 6. Sledania Marthada 7. Pedveularia Capitata 8. carex 3	Absolute % Cover	Dominant Species?	Indicator Status FACU FAC NL(UPL)	Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Bare Ground W Cover of Wetland Bryophytes Total Cover of Bryophytes
Total Covers 50% of total covers 50% of total covers 50% of total covers 50% of total covers of planting the stratum (Z6) 1. ourrola as erifolis a 2. Saussurea angustifolium 3. Carex higologis 4. Oxytropis Compestris 5. man 1 6. stellaria manthibusa 7. Peducularis Capitata 8. Carex 34 9.	Absolute % Cover	Dominant Species?	Indicator Status FACI FACI NL(UPL)	Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Bare Ground W Bare Ground Cover of Wetland Bryophytes Total Cover of Bryophytes Cover of Water

WIDEPADOR

SOIL PROFIL	F DESCRIPTION:	(Describe	to the depth needed to	document	me in	dicator or c	onfirm the absence	or murcators.)
Depth	Matrix	(Redox Features	71				
inches)	Color (moist)	%	Color (moist)	% Туре	e ¹	Loc ²	Texture	Notes
De 0-2								
1 2.3	104R 2/2	100				19	Loam	
3~S	104R 3/2	100					Silt Loan	
b 5-5.8		100					Loan	
Bwz	104R 3/2	100	-			Grovel	y v One sandy los	1
						-		
Tuno: C=Cor	centration D=Den	letion RM	 	Covered o	r Coat	ed Sand G	ains ² Location:	PL=Pore Lining, M=Matrix.
OTHER DESIGNATION OF THE PERSON OF THE PERSO	INDICATORS	iction, ra	N-Reduced Matrix, CO-	-isovered o	TOOAL	cu Garia G		OR PROBLEMATIC HYDRIC SOIL
A CONTRACTOR OF THE PARTY OF TH	tel (A1)	STORES.	Alaska Gleyed (A	13) ~	20,000	A STATE OF THE PARTY OF THE PAR	AND DESCRIPTION OF THE PERSON.	hange (TA4) ⁴
	n (A2) /	-	Alaska Redox (A				Alaska Alpine S	
Black Histic (A			Alaska Gleyed Po		N		-	with 2.5Y Hue
	ide (A4)						Alaska Gleyed	without 5Y Hue or Redder Underlyin
						412	Other (Explain	in Notoe)
	rface (A12) /V	etation o	ne primary indicator of	wetland hy	drolog	v and an a	The second secon	pe position must be present unless
	f color change in N yer (if present): Typ		NO Dep	oth (inches):			
Restrictive Lay		pe:	No Dep	oth (inches):			
Restrictive Lay	yer (if present): Typeresent (Y/N):	pe:	NO Dep				/ INDICATORS (2	or more required)
Restrictive Lay Hydric Soil Poly Notes: HYDROLOGY	ver (if present): Typer (if present): Typeresent (Y/N):	ATORS (icient) -	SE		l (or more required) Stunted or Stressed Plants (D1)
Restrictive Lay Hydric Soil P Notes: HYDROLOGY Surface Water	resent (Y/N):	ATORS (any one indicator is suff rface Soil Cracks (B6) _ undation Visible on Aeria	icient)	SE W Le	ECONDAR ater-stained eaves (B9)	l (Stunted or Stressed Plants (D1)N
Hydric Soil Polotes: HYDROLOGY Surface Water Ta	resent (Y/N): PRIMARY INDICATION (A1) able (A2)	ATORS (Su Int (B	any one indicator is suff rface Soil Cracks (B6) _ undation Visible on Aeria	icient)	St W Le Dr O:	econdar ater-stained eaves (B9) rainage Pat xidized Rhiz ving Roots	terns (B10) on ed	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3)
Restrictive Lay Hydric Soil P Notes: HYDROLOGY Surface Water High Water Ta Saturation (A3	resent (Y/N): PRIMARY INDICATION (A1) Able (A2)	ATORS (Su Inu (B) Sp Cc	any one indicator is suff rface Soil Cracks (B6) _ undation Visible on Aeria 7) arsely Vegetated incave Surface (B8) arl Deposits (B15)	icient)	SE W Lee Dr Ox Lin	econdar ater-stained aves (B9) rainage Pat	terns (B10) on ed	Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Restrictive Lay Hydric Soil P Notes: HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (PRIMARY INDICATION (A1) Note that the second (Y/N):	ATORS (Su Int (B Sp Cc Ma	any one indicator is suff rface Soil Cracks (B6) undation Visible on Aeria 7) arsely Vegetated incave Surface (B8) arl Deposits (B15) drogen Sulfide lor (C1)	icient)	SE W Lee Dr On Lin Pr Iron Se	ater-stained eaves (B9) _ rainage Pat xidized Rhiz ving Roots resence of I on (C4)alt Deposits	terns (B10) on ed	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic
Restrictive Lay Hydric Soil P Notes: HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep	PRIMARY INDICATION (A1) No sits (B2) No sits (B2) No sits (B2) No site	ATORS (Su Int (B Sp Cc Ma Hy Oc	any one indicator is suff rface Soil Cracks (B6) _ undation Visible on Aeria 7) arsely Vegetated incave Surface (B8) arl Deposits (B15) drogen Sulfide,	icient)	SE W Lee Dr On Lin Pr Iron Se	ater-stained eaves (B9) rainage Pat kidized Rhiz ving Roots resence of I	terns (B10) on ed	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Restrictive Lay Hydric Soil Pi Notes: HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep	PRIMARY INDICATION (A1) No sits (B2) No sits (B2) No sits (B2) No site	ATORS (Su Int (B Sp Cc Ma Hy Oc Dr W	any one indicator is suff rface Soil Cracks (B6) undation Visible on Aeria 7) arsely Vegetated incave Surface (B8) arl Deposits (B15) drogen Sulfide for (C1) v-Season (1000)	icient)	SE W Lee Dr On Lin Pr Iron Se	ater-stained eaves (B9) _ rainage Pat xidized Rhiz ving Roots resence of I on (C4)alt Deposits	terns (B10) on ed	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Restrictive Lay Hydric Soil Pi Notes: HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C	resent (Y/N): PRIMARY INDIC (A1) N able (A2) N (B1) N cosits (B2) N (B3) N crust (B4) N	ATORS (Su Int (B Sp Cc Ma Hy Oc Dr W	any one indicator is suff rface Soil Cracks (B6) undation Visible on Aeria 7) arsely Vegetated incave Surface (B8) arl Deposits (B15) drogen Sulfide for (C1) y-Season ater Table (C2)	icient)	SE W Lee Dr On Lin Pr Iron Se	ater-stained eaves (B9) _ rainage Pat xidized Rhiz ving Roots resence of I on (C4)alt Deposits	terns (B10) on ed	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Restrictive Lay Hydric Soil P Notes: HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits	resent (Y/N): PRIMARY INDIC (A1) N able (A2) N (B1) N cosits (B2) N (B3) N crust (B4) N	ATORS (Su Int (B Sp Cc Ma Hy Oc Dr W	any one indicator is suff rface Soil Cracks (B6) undation Visible on Aeria 7) arsely Vegetated incave Surface (B8) arl Deposits (B15) drogen Sulfide for (C1) y-Season ater Table (C2)	icient)	SE W Lee Dr On Lin Pr Iron Se	ater-stained eaves (B9) _ rainage Pat xidized Rhiz ving Roots resence of I on (C4)alt Deposits	terns (B10) on ed	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Restrictive Lay Hydric Soil P Notes: HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits	resent (Y/N): PRIMARY INDICA (A1) N able (A2) N (B1) N cosits (B2) N crust (B4) N (B5) N r Present (Y/N):	ATORS (Su Int (B Sp Cc Ma Hy Oc Dr W	any one indicator is suff rface Soil Cracks (B6) _ undation Visible on Aeria 7) arsely Vegetated incave Surface (B8) arl Deposits (B15) drogen Sulfide, lor (C1) y-Season ater Table (C2) her (Explain in Notes):	icient)	SE W Lee Dr On Lin Pr Iro	ater-stained aves (B9) rainage Pat xidized Rhiz ving Roots resence of I on (C4)	terns (B10) on ed	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)

AQUATIC SITE ASSESSMENT DATA FORM

VEGETATION VARIABLES P= Flot,	M≐ Matrix	
Forested-Evergreen-Needle-leaved_	Lacking Forested-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Evergreen-Needle-leaved Emergen	o-Deciduous-Broad-leaved
Percent Cover (P): Tree (>5 dbh, >6m [®] tall)_ Dwarf shrub (<0.5m) Tall herb (≥	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m tall) Moss-Lichen	Short shrub (0.5-2m) FloatingSubmerged
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): EvenHi	ghly UnevenModerately even
Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%	e (0-20%) Low Density (20-40%) Medium Density	nsity (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scatter	100% Cover or Open Water <25% Scattered/Periplered or Peripheral Cover N/A	heral Cover 26-75% Scattered or
Plant Species Diversity (P): Low (< 5 plant	t species) Medium (5-25 species) High (>2	5)
Presence of Islands (M): Absent (none)	One or Few Several to Many	N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches_	: No Veg Solitary, Scattered Stems 1 or Me	ore Large Patches; Parts of Site
Dead Woody Material (P): Low Abundance Abundant (>50% of surface)	e (0-25% of surface) Moderately Abundant (25-50% of	f surface)
Vegetative Interspersion (P): Low (large High (small groupings, diverse and interspers	re patches, concentric rings) Moderate (broken irregularsed)	ar rings)
HGM Class (P) Slope Flat	Lacustrine Fringe Depressional Riverine	Estaurine Fringe
PP 1		
		To the second se
SOIL VARIABLES	and the second of the second o	· · · · · · · · · · · · · · · · · · ·
Soil Factors (P): Soil Lacking	Histosol:Fibric Histosol:Hemic Histosol: Mineral: Silty Mineral: Clayey	Sapric
Soil Factors (P): Soil Lacking	Histosol:Fibric Histosol:Hemic Histosol: Mineral: Silty Mineral: Clayey	Sapric
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet	Histosol:Fibric Histosol:Hemic Histosol: Mineral: Silty Mineral: Clayey No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Perennial Out	tlet Intermittent Inlet/No
Soil Factors (P): Soil LackingMineral: GravellyMineral: Sandy HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/OutletOutletIntermittent Inlet/Intermittent Inlet/Intermittent OutletPerennial	Histosol:Fibric Histosol:Hemic Histosol: Wineral: Silty Mineral: Clayey No Injet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Perennial Outlet Perennial O	tlet Intermittent Inlet/No
Soil Factors (P): Soil Lacking		tlet Intermittent Inlet/No
Soil Factors (P): Soil LackingMineral: GravellyMineral: Sandy HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/OutletOutletIntermittent Inlet/Intermittent Inlet/Intermittent OutletPerennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created		tlet Intermittent Inlet/No erennial Inlet/No Outlet Perennial ate Fluvaquent Soils Sediment
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence Of Sedimentation (P): Absention	Histosol: Fibric Histosol: Hemic Histosol: W. Mineral: Silty Mineral: Clayey Mineral: Clayey No Injet/Intermittent Outlet No Injet/Perennial Outlet Intermittent Injet/Perennial Outlet Plant Outlet Properties of the American Security Flooded, Saturated Security Flooded Flooded Flooded Security Flooded Flood	tlet Intermittent Inlet/No erennial Inlet/No Outlet Perennial ete Fluvaquent Soils Sediment 8in.) Pronounced (>18in.)
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent		tletIntermittent Inlet/No erennial Inlet/No OutletPerennial ateFluvaquent Soils Sediment 8in.)Pronounced (>18in.) Return Interval 2-5 yrs
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflood Water pH (P): No surface water	Histosol:Fibric Histosol:Hemic Histosol: Mineral: Silty Mineral: Clayey No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Perennial Outlet Planter Inlet/Perenni	tlet Intermittent Inlet/No erennial Inlet/No Outlet Perennial ete Fluvaquent Soils Sediment 8in.) Pronounced (>18in.) Return Interval 2-5 yrs (<5.5) pH Reading
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Glacial Till/Not Permeable	No Injet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Injet/Perennial Outlet Perennial Outlet Intermittent Injet/Perennial Outlet Perennial Outle	tlet Intermittent Inlet/No erennial Inlet/No Outlet Perennial ete Fluvaquent Soils Sediment 8in.) Pronounced (>18in.) Return Interval 2-5 yrs
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence Of Sedimentation (P): No Evidence of Wetland Surface (P): Absentice of Overbank Flooding (P): No Created Microrelief of Wetland Surface (P): No Outflow Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Glacial Till/Not Permeable	Histosol: Fibric Histosol: Hemic Histosol: Histosol: Mineral: Clayey Mineral:	tlet Intermittent Inlet/No erennial Inlet/No Outlet Perennial ate Fluvaquent Soils Sediment 8in.) Pronounced (>18in.) Return Interval 2-5 yrs (<5.5) pH Reading eability Stratified Deposits
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence of Sedimentation (P): No Evidence of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Natural Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Created Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Seeps	Histosol: Fibric Histosol: Hemic Histosol: Hemic Histosol: Mineral: Clayey Mi	tlet Intermittent Inlet/No erennial Inlet/No Outlet Perennial ate Fluvaquent Soils Sediment 8in.) Pronounced (>18in.) Return Interval 2-5 yrs (<5.5) pH Reading eability Stratified Deposits
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Greturn Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Set LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated Sand Springs (P): No Set Set Seeps and Springs (P): No Set Set Seeps and Springs (M)	Histosol: Fibric Histosol: Hemic Histosol: Mineral: Clayey Mineral: Silty Mineral: Clayey Histosol: Mineral: Clayey Histosol: Mineral: Clayey	tletIntermittent Inlet/No erennial Inlet/No OutletPerennial ateFluvaquent Soils Sediment 8in.)Pronounced (>18in.) Return Interval 2-5 yrs (<5.5)pH Reading eability Stratified Deposits
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Microrelief of Wetland Surface (P): No Outflow Water pH (P): No surface water Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Set LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolate Only Connected Above Connected	Histosol: Fibric Histosol: Hemic Histosol: Mineral: Clayey Mineral: Silty Mineral: Clayey Min	tlet Intermittent Inlet/No erennial Inlet/No Outlet Perennial ate Fluvaquent Soils Sediment 8in.) Pronounced (>18in.) Return Interval 2-5 yrs (<5.5) pH Reading eability Stratified Deposits pring Perennial Spring Only Connected Below
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Greturn Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Set LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolated Sand Springs (P): No Set Set Seeps and Springs (P): No Set Set Seeps and Springs (M)	Histosol: Fibric Histosol: Hemic Histosol: Mineral: Clayey Mineral: Silty Mineral: Clayey Min	tlet Intermittent Inlet/No erennial Inlet/No Outlet Perennial ate Fluvaquent Soils Sediment 8in.) Pronounced (>18in.) Return Interval 2-5 yrs (<5.5) pH Reading eability Stratified Deposits pring Perennial Spring
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Microrelief of Wetland Surface (P): No Outflood Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflood Water pH (P): No surface water Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Sean Connected Above Connected Wetland Juxtaposition: Wetland Isolate Only Connected Above High Intensity (i.e., Watershed Land Use: 0-5% Rural	Histosol: Fibric Histosol: Hemic Histosol: Mineral: Clayey Mineral: Silty Mineral: Clayey Min	tlet Intermittent Inlet/No erennial Inlet/No Outlet Perennial ate Fluvaquent Soils Sediment 8in.) Pronounced (>18in.) Return Interval 2-5 yrs (<5.5) pH Reading eability Stratified Deposits pring Perennial Spring Only Connected Below w Intensity (i.e. open space)

5 Brown to by

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Featur	e ID: 106PA 003 Field Target: 310 Date: 7.13.16
For all	items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
	☑ Vegetation names are entered legibly for all strata present?
6	 ☐ Cover calculations are complete and correct? ☐ All dominant species have been determined and recorded per strata? ☐ Indicator status is correct for each species?
	Dominance Test and Prevalence Index have been completed?
3.	Soil
	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked?Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7.	Maps
	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

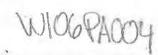
Field Crew Chief (print)

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X	X
Wetland Scientist (print)	Signature / Date
X Jessie Bronnles	X 0 7:13.16

Signature / Date

SITE DESCRIPTION	Helicia de la la	Hoald	The state of the s	Harley Co.		
Survey Type: Centerline Acces	ss Road (explain)	Other (expl	ain)	Field Target	t:3 3	Map #: 9_Map Date: 6.9.16
Date: 7-14-16	Project Name: Alask	a LNG			Feature Id:	W106PA004
Investigators: Jessic Brownles	- Kaley Volper	- 9				Team No.: W 106
State: Alaska	Region: Alaska		Milepost:	145		
Latitude: 68,45748°	The state of the s	Longitude	:- 149 L	19094	07°	Datum: WGS84
Logbook No.: 2	Logbook Page No.:	33	Picture No.:	P_ W101	6PAOC	54-001 thru 004
SITE PARAMETERS		10000000		900		
Subregion: Brooks Range			Landform (hill	Islope, terrace	, hummocks	s, etc.): hill-skle
Slope (%): 0-3				oncave, conve		
Pre-mapped Alaska LNG/NWI classifica	tion: PEM 1/551	B	Evidence of V	Vildlife Use:	grand	squirret signting
Are climatic/hydrologic conditions on the Yes No (if no exp	e site typical for this time ain in Notes)	of year?	Are "No Yes	ormal Circums No		sent: plain in Notes.)
Are Vegetation, Soil, or Hy	drologySignificant	ly Disturbed	? No.X	_(If yes, expla	ain in Notes)
Are Vegetation, Soil, or Hy	drology Naturally F	roblematic?	NoX	_ (If yes, expla	ain in Notes	s.)
SUMMARY OF FINDINGS	经现在是 基本	(C) 100 (F)	医普斯斯 加尔	Malega		avantus augus
Hydrophytic Vegetation Present? Yes_	No	Is	the Sampled A	Area within a	Wetland?	Yes No
Hydric Soil Present? Yes_	No X	_ w	/etland Type:	Ú.		18/00
Wetland Hydrology Present? Yes_	NoX	A	laska Vegetatior	n Classificatio	n (Viereck):	11 CZ, 11 DI
Notes and Site Sketch: Please include I corridor. Dwarf Shrub community Soil is thick organ west divides this water	ty of Dryon I tres but dry am wet flowlure Fr	- nt, Dwo drock	y, This is	li and survey conve	Salixt Loour	ndary () vst to the minuty to the east,
WIOUPROON_OP Swale PSS	VEMIB. >10"	of organ	ales Not 3	intuented	but th	asolo, elgal Cross,
Road	1			-		*
		wetter	Swale in Dryctime	7	_	and Q.
	gets graguess wetler tou road,	sard	MIDEPHOOM OF Dry swate feather	430 bb 0019		- k E



Tree Stratum (Plot sizes:()	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC:
1.		(1/N)		Total Number of Dominant Species Across All Strata:
2,			-	% Dominant Species that are OBL, FACW, or FAC:2(A
3.	-			
1.		-		Prevalence Index worksheet:
Total Cove	r.		1	Total % Cover of: Multiply by:
50% of total cove)% of total cov	/er:	OBL species: X1=
Sapling/Shrub Stratum (Z())	Absolute % Cover	Dominant Species? (Y/N)	Indicator - Status	FACW species: 1 X 2 = 2 FAC species 2 4 X 3 = 78 FACU species 50 X 4 = 2.00
· Cassione tetragora	4		FACU	UPL species X5 = 10
Dryas integrifolia	40	Y	FACO	Column Totals: 79 (A) 290 (B)
Rhododendrum Campanicum	8	-	FAG	PI = B/A = 3.67
Salix reticulata	8		FAC	Salta polchro
· Betula Nana	2		FAC	Emperium algorn
vaccinium oliginasion	4		FAMI	
Arctous (ber	2		FAC	Oall's Mehardsonii
Sh. S. T.	1			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
· Solix Michea	4		FACU	
Total Cover	r: <u>37</u> 20	% of total cov	rer: 14.8	
EGETATION (use scientific names of plant	3)			
CARLO SERVICE AND CONTRACTOR OF THE PROPERTY O	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators:
erb Stratum (26)	Absolute	Species?	1	Dominance Test is > 50% Prevalence Index is ≤ 3.0
Bisher officinalis	Absolute % Cover	Species?	Status	Dominance Test is > 50%
· Bistocta officinalis	Absolute % Cover	Species?	Status N L (U)	Dominance Test is > 50% V Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in
Bishorta officinalis · Soussone of angustifolia · Pedichlar & Capitata	Absolute % Cover	Species?	Status NL(U) FAC	Notes Notes Notes Notes Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in
Bistoria officinalis Bistoria officinalis Baussarea angustifolia Pedicular s capitadea Oxytropis compestate	Absolute % Cover	Species?	Status NL(U) FAC FACU	Dominance Test is > 50% Notes Problematic Hydrophytic Vegetation¹ (Explain)
erb Stratum (26) · Bistoria officinalis · Saussarea angustifolia · Pedichlar s capitation · Coxytropis compestalis · Forlo so	Absolute % Cover	Species?	Status NL(U) FAC FACU NL(U)	Norphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) Indicators of hydric soil and wetland hydrology must be present unless
Bistocka officinalis Bistocka officinalis Baussacea angustifolia Pedicular s capitata Coxytropis compestalis Forto so Care, Scirpoldea	Absolute % Cover	Species?	Status NL(U) FAC FACU	Norphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) Indicators of hydric soil and wetland hydrology must be present unless
Bisneta officinalis Bisneta officinalis Baussue a angustifolia Pedichlar s capitata Caxytropis compestalis Forto ap Care Scirpoldea Care a Scirpoldea Care a Scirpoldea	Absolute % Cover	Species?	Status NL(U) FAC FACU NL(U)	Dominance Test is > 50% Nerevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Bare Ground Cover of Wetland Bryophytes
Bistocta officinalis Bistocta officinalis Bistocta officinalis Bistocta officinalis Causages angustifolia Capitada Carea Scinpoldea Carea Capponicism Carea Scinpoldea Carea Scinpoldea Carea Scinpoldea Carea Scinpoldea Carea Scinpoldea Carea Scinpoldea	Absolute % Cover	Species?	Status NL(U) FAC FACU NL(U) FACU	Dominance Test is > 50% Notes Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Bare Ground Cover of Wetland Bryophytes Notice of Total Cover of Bryophytes
Dedichlar & Capitada Carrons compestate Carron Scirpoldea Carron Capponics Papaver lapponics Appaver lapponics Appaver lapponics	Absolute % Cover	Species?	Status NL(U) FAC FACU NL(U) FACU	Dominance Test is > 50% Nerevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Bare Ground Cover of Wetland Bryophytes

		7	14.16				NAME OF THE OWNER, WHEN	1000
SOIL	2000年第二日			ature ID			道。 10 10 10 10 10 10 10 10 10 10 10 10 10 1	Soil Pit Required (Y/N)
SOIL PROFILI	E DESCRIPTION: (De	scribe		to docur	ment the i	ndicator or	confirm the absence	of indicators.)
Depth	Matrix		Redox Features	1	1	1		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Notes
Di 0-2								Dry Coother moss
De 2-7		-010	- F7			9		Danp highly protestown Calmos
BW 7-18	104R 3/3	90	104R4/6	3	Con	m	ircobbly.Tilo	4 Dry very Erroble, quat struct
Bw 10-19	10YR 3/2	100					v cobbly si lo	1000 (1000 1000 1000 1000 1000 1000 100
	1			+				1.200184
¹ Type: C=Cor	ncentration, D=Depleti	on, RM	I /I=Reduced Matrix, C	S=Cove	red or Co	ated Sand (Grains. ² Location:	PL=Pore Lining, M=Matrix.
MANUAL PROPERTY AND	INDICATORS	NAT N	从外外的	V FOR LAND	PANES	NO VICES		OR PROBLEMATIC HYDRIC SOILS
Histosol or His	stel (A1)	A STATE OF THE PARTY OF THE PAR	Alaska Gleyed	(A13)	N		Alaska Color Cl	hange (TA4) ⁴ N
	on (A2)		Alaska Redox		N		Alaska Alpine S	Swales (TA5)
Black Histic (A		-	Alaska Gleyed		A15) N		Alaska Redox v	vith 2.5Y Hue _ N
	fide (A4)						Alaska Gleyed	without 5Y Hue or Redder Underlying
	ırface (A12)						Other (Explain	in Notes)
Restrictive Lay	resent (Y/N): Jepths Large in Note of Color change in				t des	-	the deepest	organie side.
	PRIMARY INDICAT						RY INDICATORS (2	
Surface Water	1	T	rface Soil Cracks (B	1	1	Nater-stain _eaves (B9		Stunted or Stressed Plants (D1)
High Water Ta	able (A2)/	Inu (B)	undation Visible on A	erial Ima	gery [Orainage P	atterns (B10)/	Geomorphic Position (D2)
Saturation (A3	3)		arsely Vegetated incave Surface (B8)	N			hizospheres along s (C3)	Shallow Aquitard (D3)
Water Marks ((B1)/	Ma	arl Deposits (B15)^	/		Presence or ron (C4)	f Reduced	Microtopographic Relief (D4)/
Sediment Dep	posits (B2)	Hy Oc	drogen Sulfide			Salt Deposi	its (C5)/	FAC-Neutral Test (D5)
Drift Deposits	(B3)/		y-Season ater Table (C2)			Notes:		
Algal Mat or C	Crust (B4)	Ot	her (Explain in Note	s):				-9
Iron Deposits	(B5)/							
VERNE SERVICE	ESCALE SINGS	4115	1/2 100 120	1000	1	F-136976	16927 - 324	Section of the Sectio
Surface Wate	er Present (Y/N):		Depth (in):					\downarrow
Water Table F	Present (Y/N):		Depth (in):		We	etland Hyd	rology Present (Y/N	1):
Saturation Pre (includes capi			Depth (in): -		EC	:		
Notes:							13	

AQUATIC SITE ASSESSMENT DATA FORM

VEGETATION VARIABLES P= Plot, M=	Matrix
Forested-Evergreen-Needle-leaved	kingForested-Deciduous-Needle-leavedForested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leavedScrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leavedEmergent-Non-persistentEmergent-
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) Tall herb (>1m	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0,5-2m) Short herb (<1m) Moss-Lichen Floating Submerged
	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse ((80%) Very High Density (80-100%)_	D-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattered	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant sp	pecies) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none)	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): NOPENSmall Scattered Patches	lo Veg Solitary, Scattered Stems1 or More Large Patches; Parts of Site Continuous Cover
Dead Woody Material (P): Low Abundance (0 Abundant (>50% of surface)	-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large p High (small groupings, diverse and interspersed	atches, concentric rings) Moderate (broken irregular rings)
HGM Class (P): Slope Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES	
Soil Factors (P): Soil Lacking F	listosol:Fibric Histosol:Hemic Histosol: Sapric
Mineral: Gravelly Mineral: Sandy	Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES	The state of the s
Inlet/Outlet Class (P): No Inlet/Outlet Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Outlet Perennial Outlet Perennial Outlet Perennial Outlet Inlet/No Outlet Perennial Outlet Perennia
Wetland Water Regime (P): Drier: Season Wet: Perm. Flooded, Intermittently Exposed, Se	nally Flooded, Temporarily Flooded, Saturated
	Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment
	Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)
Frequency of Overbank Flooding (P): No Overb	erbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs
	Restricted Outflow Unrestricted Outflow
7	cumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading
Glacial Till/Not Permeable): High Permeability Stratified Deposits Low Permeability Stratified Deposits
Basin Topographic Gradient (M): Low Gr Evidence of Seeps and Springs (P): No Seeps	tradical (2001)
LANDSCAPE VARIABLES (M)	
Wetland Juxtaposition: Wetland Isolated	s or Springs Seeps Observed Intermittent Spring Perennial Spring
Wetland Juxtaposition: Wetland Isolated	Sor Springs Seeps Observed Intermittent Spring Perennial Spring Wetlands within 400m, Not Connected Only Connected Below Upstream & Downstream Unknown
Wetland Juxtaposition: Wetland Isolated Connected Above Connected Wetland Use: High Intensity (i.e., ag	Sor Springs Seeps Observed Intermittent Spring Perennial Spring Wetlands within 400m, Not Connected Only Connected Below Upstream & Downstream Unknown

Crew Chief QA/QC check: JEVOURLER GPS Technician QA/QC check:

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

	This form to be completed before leaving the note exe.
Footur	re ID: <u>WI06PA004</u> Field Target: 313 Date: 7 · 14 · 16
For all	items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification? Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct? All dominant species have been determined and recorded per strata? Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
3.	Soil
-	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	 ☑ Appropriate hydrology indicators are marked? ☑ Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7.	Maps
	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X	X	
Wetland Scientist (print)	Signature / Date	

A Jessie Brownlee

Field Crew Chief (print)

Signature / Date

8.9:16

SITE DESCRIPTION			CONTRACTOR OF THE PARTY OF THE	Helica Kan	34.24.6	2. 九类鱼鱼的100
Survey Type: Centerline Acces	ss Road (explain)X	Other (expla	nin)	Field Targ	et: <u>الا</u>	Map #: 8 Map Date: 6-9-16
Date: 7-15-16	Project Name: Alask	a LNG			Feature Id	
Investigators: Jessie Bow	mice, Kalen	1 VO1	per			Team No.: WVO6
State: Alaska	Region: Alaska	U	Milepost:	136		
Latitude: 68,5 6462	60	Longitude	: -149,	506	7670	Datum: WGS84
Logbook No.: 2	Logbook Page No.:	34	Picture No.:	P-WIC	CORAO	35-001 thru 004
SITE PARAMETERS	科学科的模型	MATERIAL STATES	非社会的	M. SHI	Nearth	
Subregion: Brooks foothill	•					s, etc.): Jucile
Slope (%): 3-5			Local relief (c	oncave, con	vex, none)	DAcave-
Pre-mapped Alaska LNG/NWI classifica	ation: PSSI/EMII	3 1112	Evidence of V			
Are climatic/hydrologic conditions on the Yes No (if no exp	e site typical for this time lain in Notes)	of year?	Are "No Yes_X		nstances" pre (If no, ex	esent: plain in Notes.)
Are Vegetation, Soil, or Hy	drology Significant	ly Disturbed?	No_X	_(If yes, ex	olain in Notes	3)
Are Vegetation, Soil_X, or Hy	drology Naturally F	Problematic?	No	_ (If yes, ex	plain in Note	s.)
SUMMARY OF FINDINGS	WHEEL SOM	A SHUR				
Hydrophytic Vegetation Present? Yes_			the Sampled A	Area within	a Wetland?	Yes No
Hydric Soil Present? Yes_	Y (See where ball	w	etland Type:	PEMI/S	551C	
Wetland Hydrology Present? Yes_	У Nо	Al	aska Vegetatio	n Classificat	ion (Viereck)	111AZ, 11CZ
Notes and Site Sketch: Please include I corridor. Man made (winder trail?) Swalling feature Runs for Swalling feature Runs for I wetter I was soil This plot has algel / Ba The surface w/a di While some drien areas an wester modifier w/a few **Soil doesn't meet an indi Surface water, watertable classification.	om road to the way than surround than surround from surface ? are ground, soll werse Emerge ATF connecting & slope. a present in this upland inclusing ? caton but using ?	sest con fun fun fun grußs. all pocker stevere stevere stevere stevere stevere stevere stevere	shrub e Public of small frong hydre	ority of	water, water, standing, area is	PUBH together. Standing water saturated to water a B trending mone to Co

W106PA005

/EGETATION (use scientific names of plan	ts)	AND THE RES	TE THE REAL PROPERTY.	(中国)(22)(14)(4)(4)(4)(4)(4)(4)(4)(4)(4)(4)(4)(4)(4		THE ST	
ree Stratum (Plot sizes: 100)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, I	FACW, o	or FAC	: 3 (
		(Y/N)		Total Number of Dominant Species Acro			
				% Dominant Species that are OBL, FAC	W, or FA	AC: _{(00 (A
				AND PROPERTY OF THE PARTY OF TH	NEW S	188.9	HAS OV
				Prevalence Index worksheet:	W. Carlot		
Total Cove				Land to the second second	Multiply	hur	
		NO/ of total cou	0.51	OBL species:X 1 =		DY.	
50% of total coverapling/Shrub Stratum(26°)	Absolute % Cover	Dominant Species?	Indicator Status	FACW species: 9 X 2 =	18		
P // -	1	(Y/N)	FAC	FACU species		-	
Betola Nama	8	Y	FACW	UPL species X5=	1510	(D)	
Salex pulchra	3		FAC	Column Totals: 55 (A)		(B)	,
vaccinium ulianas um	T		FAC	Rhododendrum Lapponicum	1	1	F
Dryas integrifolia	2		FACU	Salix reticulata	3	1	1-
Rhododondrun tomentosum	+-		FACW	Shellaria longipes	-	1	F
	,		FACW	Ped 20	-	Τ	F
Valix historias	/		1 010				
	1.5	Y			14	T	
Sal a alaxensis	,5	Y	FAC		H	T	-
Sal a alaxensis			FAC	Calamagiostis canadensis Caren aquatalis Pedicularis		T	FA
Emperor viganon Total Cove 50% of total cove	er: <u>11,5</u> 20		FAC	Calamagiostis canadensis Caren agratalis	H H	T - T - T - T - T - T - T - T - T - T -	-
Emperior uniquem Total Cove 50% of total cove	er: <u>11,5</u> 20		FAC	Calamagiostis canadensis Caren aquatalis Pediculari 5 Hydrophytic Vegetation Indicators: Y Dominance Test is > 50%	H H	T	-
Total Covers of planer of Stratum (26)	ts) Absolute	0% of total cov Dominant Species?	FAC FAC Indicator	Calamagiostis canadensis Caren aquatalis Pedicularis Hydrophytic Vegetation Indicators: Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0	H H H	T	00
Emperous signam Total Cove 50% of total cove EGETATION (use scientific names of plan erb Stratum (26) Annica lessingir	ts) Absolute	0% of total cov Dominant Species?	FAC FAC Indicator Status	Calamagiostis canadensis Caren aquatalis Pediculari 5 Hydrophytic Vegetation Indicators: Y Dominance Test is > 50%	H H H	T	08
Empetrum migram Total Cove 50% of total cove EGETATION (use scientific names of plan erb Stratum (26) Arnica lessingit Bisdarta vivipara	ts) Absolute	0% of total cov Dominant Species?	FAC FAC er: 4 C Indicator Status NL	Calanagiostis canadensis Caren aguatalis Pediculari 5 Hydrophytic Vegetation Indicators: Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Prov	HH HH	porting	00
Emperorum inigatum Total Cove 50% of total cove EGETATION (use scientific names of plan erb Stratum (26) Annica lessingir Bistarta Vivipara	Absolute % Cover	0% of total cov Dominant Species?	FAC FAC Indicator Status NL FAC	Calamagiostis canadensis Caren aguatalis Pedicularis Hydrophytic Vegetation Indicators: Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Prov. Notes)	ride supprion (Exp	porting plain)	data in
Emperouni vigama Total Cove 50% of total cove EGETATION (use scientific names of plan erb Stratum (26) Arnica lessingit Bistorta vivipara Carex bizelawii Acontum delphiniifolium	Absolute % Cover	0% of total cov Dominant Species?	Indicator Status NL FAC FAC	Caren aguatalis Pedicularis Hydrophytic Vegetation Indicators: Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Prov. Notes) Problematic Hydrophytic Vegetat	ride supprion (Exp	porting plain)	data in
Emperorum uniquem Total Cove 50% of total cove EGETATION (use scientific names of plan erb Stratum (26) Annica lessingit Bistorta vivipara Carex bizelawii Acontum delphiniifolium	Absolute % Cover	0% of total cov Dominant Species?	Indicator Status NL FAC FAC FAC	Calamagiostis canadersis Caren aguatalis Pedicularis Hydrophytic Vegetation Indicators: Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Prov. Notes) Problematic Hydrophytic Vegetat Indicators of hydric soil and wetland hydrological problematic Hydrophytic Vegetate Indicators of hydric soil and wetland hydrological problematic Hydrophytic Vegetate Note Problematic Hydrophytic Vegetate	ride supprion (Exp	porting plain)	data in
Emperorum migram Total Cove 50% of total cove 50% of total cove EGETATION (use scientific names of plan erb Stratum (26) Armica lessingit Bishorta vivipara Carex bigulanii Aconstum delphiniifolium Tofieldia pusille Tofieldia (cecinea	Absolute % Cover	0% of total cov Dominant Species?	FAC FAC FAC FAC FAC FAC FAC FAC	Calamagiostis canadersis Caren aguatalis Pedicularis Hydrophytic Vegetation Indicators: Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Prov. Notes) Problematic Hydrophytic Vegetat Indicators of hydric soil and wetland hydrological problematic Hydrophytic Vegetate Indicators of hydric soil and wetland hydrological problematic Hydrophytic Vegetate Note Problematic Hydrophytic Vegetate	ride supprion (Exp	porting plain)	data in
Sal alaxensis Emperorum migram Total Cove 50% of total cove EGETATION (use scientific names of plan erb Stratum (26) Arnica lessingii Bistarta vivipara Carex bigularii Acondum delphiniifolium Tofieldia pusille Tofieldia (cecinea	Absolute % Cover	0% of total cov Dominant Species?	FAC FAC FAC FAC FAC FAC FAC FAC	Calamagiostis canadensis Caren agratalis Pedicularis Hydrophytic Vegetation Indicators: Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Prov. Notes) Problematic Hydrophytic Vegetate ¹ Indicators of hydric soil and wetland hydrological disturbed or problematic.	vide supprison (Exp	porting plain) pe prese	data in
Emperorum migram Total Cove 50% of total cove EGETATION (use scientific names of plan erb Stratum (26) Armica lessingir Bishorta Vivipara Carex bigelouii Acondum delphiniifolium Tofieldia pusilla Tofieldia (cecinea Corasa SE) Forb SP	Absolute % Cover	0% of total cov Dominant Species?	FAC FAC FAC FAC FAC FAC FAC FAC	Hydrophytic Vegetation Indicators: Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Prov. Notes) Problematic Hydrophytic Vegetat¹ Indicators of hydric soil and wetland hydrological disturbed or problematic.	ride supplion (Exp	porting plain) pe prese	data in
EGETATION (use scientific names of plan lerb Stratum (26) Arnica lessingit Bishorta Vivipara Carex biselanii Acondum delphiniifolium Tofieldia pusilla Tofieldia (occinea	Absolute % Cover	0% of total cov Dominant Species?	FAC FAC FAC FAC FAC FAC FAC FAC	Calamagiostis canadensis Caren agastalis Pedicularis Hydrophytic Vegetation Indicators: Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Prov. Notes) Problematic Hydrophytic Vegetat ¹ Indicators of hydric soil and wetland hydrological disturbed or problematic. Bare Ground 10 % Cover of Wetlan	ride supplied in the supplied	porting plain) pe prese	data in

		******************	1512,16	-		
SOIL	於為此行為金額。		Date Feature ID	STATE OF STREET	VE THE PROPERTY OF	Soil Pit Required (Y/N)
SOIL PROFIL		scribe	to the depth needed to document	the indicator	or confirm the absenc	e of indicators.)
Depth	Matrix		Redox Features	1 . 2		
(inches)	Color (moist)	%	Color (moist) % Type	Loc ²	Texture	Notes
0: 0-2					-	Saturated organics
Bw 24	2545/2	100			very gravelly !	Sindy loam
C 4-15	-NA-	_			SANDY Grave	4.
-	8	-				
¹Type: C=Cor	centration D=Denletic	n RN	I	Coated San	d Grains ² Location	: PL=Pore Lining, M=Matrix.
THE RESERVE OF THE PARTY OF THE	INDICATORS	SOCIAL PROPERTY.	M-reduced Matrix, Go Govered of	Dedica Call		FOR PROBLEMATIC HYDRIC SOILS
Histosol or His	Manager and the second	412 50	Alaska Gleyed (A13)	A STATE OF THE STA	AND DESCRIPTION OF THE PERSON.	Change (TA4)4/_
Histic Epipedo			Alaska Redox (A14)			Swales (TA5)
Black Histic (A		-	Alaska Gleyed Pores (A15)	<u></u>		with 2.5Y Hue
A STATE OF THE PARTY OF THE PAR	ide (A4)/		Alaska Gleyeu Fores (A15)	_~		without 5Y Hue or Redder Underlying
The second second	rface (A12)	-			Other (Explain	in Notes) / (See Note on Front)
One indicator	of hydrophytic vegeta	- tion, o	ne primary indicator of wetland hyd	irology, and a		ape position must be present unless
disturbed or pr						100
	er (if present): Type:_		o Depth (inches)	-		
	· -		Note on Front) The 13W Section			
HYDROLOGY	PRIMARY INDICATO	RS (a	any one indicator is sufficient)	SECOND	ARY INDICATORS (2	or more required)
Surface Water	(A1) <u>Y</u>	Su	rface Soil Cracks (B6)	Water-sta Leaves (E		Stunted or Stressed Plants (D1)
High Water Ta	ble (A2) <u>Y</u>	Inu (B7	Indation Visible on Aerial Imagery	Drainage	Patterns (B10) _ N	Geomorphic Position (D2)
Saturation (A3) <u>Y</u>	Sp	arsely Vegetated ncave Surface (B8)		Rhizospheres along ots (C3)	Shallow Aquitard (D3)
Water Marks (B1) <u> </u>	Ma	arl Deposits (B15)	Presence Iron (C4)	of Reduced Marginal	Microtopographic Relief (D4)
Sediment Dep	osits (B2) _ 🎝	Hy	drogen Sulfide lor (C1)	Salt Depo	osits (C5)/_	FAC-Neutral Test (D5)
Drift Deposits	(B3) ~	Dry	y-Season ater Table (C2)	Notes:		
Algal Mat or C	rust (B4)		her (Explain in Notes):			100
Iron Deposits ((B5) Y (on edge)					
there is a service	对对自然的 。当年	The s	La Le TO EXPENSAGO AND	ALL VINE TO	行性性的	
Surface Water	Present (Y/N):		Depth (in): 2			17
Water Table P	resent (Y/N):		Depth (in): 2_	Wetland Hy	rdrology Present (Y/	N):
Saturation Pre (includes capil	sent (Y/N): lary fringe)		Depth (in):	EC: 105	5	PH 6.45
Notes:						

AQUATIC SITE ASSESSMENT DATA FORM

VEGETATION VARIABLES P= Plot, M= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Broad-leaved Emergent-Non-persistent Emergent-Persistent X Aquatic Bed
Percent Cover (P): Tree (>5 dbh, >6m tall) ○ Sapling (<5 dbh, <6m tall)
Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) 80%) X Very High Density (80-100%) Very High Density (80-100%)
Interspersion of Cover & Open Water (P): 100% Cover or Open Water <25% Scattered/Peripheral Cover
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches, Parts of Site Open X Small Scattered Patches Continuous Cover
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)
HGM Class (P): Slope x Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES
Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES
HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent I
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perenn
HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/Perennial Outl
HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet X Intermittent Inlet/Perennial Outlet Perennial Inlet/Per
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet & Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Per
Inlet/Outlet Class (P): No Inlet/Outlet
Inter/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet
Inter/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Inlet/Perennial Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Inlet/
Inter/Outlet Class (P): No Inlet/Outlet
Intet/Outlet Class (P): No Inlet/Outlet
Inter/Outlet Class (P): No Inlet/Outlet
HYDROLOGIC VARIABLES Inlet/Coutlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Outlet Intermittent Inlet/Intermittent Inlet/

J Brownke

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Feature	e ID: 106 PA 605 Field Target: 314 Date: 7.15.16
	items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	 At least 80% of onsite vegetation has been keyed to species, or collected for later identification? Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct?
	All dominant species have been determined and recorded per strata? Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
3.	Soil
	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	図 Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
	☑ Each logbook page is initialed and dated?
7.	Maps
	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)? Two photos were taken for each Observation Point (vegetation/site overview)?

8. Photos

Field Crew Chief (print)

X	X	21
Wetland Scientist (print)	Signature / Date	
		- 1 A
V	V	1 . 8 9 . 16

Signature / Date

SITE DESCRIPTION				217	
Survey Type: Centerline Acces	ss Road (explain) Other (e	xplain)X	Field Targe		Map #: 7 Map Date: 69.16
Date: 7-15-16	Project Name: Alaska LNG	2.8		Feature Id:	WICEPAOOL
Investigators: Jessic Bro	mlee, Kalen	Volper	4		Team No.: WO6
State: Alaska	Region: Alaska	Milepost:	131		i barri
Latitude: 68.6179 691	7° Longitu		10		Datum: WGS84
Logbook No.:	Logbook Page No.: 34	Picture No.:	: 6-MIG	GRAZ	106_001 thru 004
SITE PARAMETERS	POR DEPOSITOR OF THE				
Subregion: Brooks Foothill	5	Landform (h	illslope, terrace	, hummock	s, etc.): Hilside shoulder
Slope (%): (b-/5		Local relief (concave, conv	ex, none)	dulating concave
Pre-mapped Alaska LNG/NWI classifica	ation: 1) 11-P, II AL	Evidence of	Wildlife Use: (caribo	bones
Are climatic/hydrologic conditions on the	e site typical for this time of year? lain in Notes)	Are "N	Normal Circums No	stances" pre (If no, ex	esent: plain in Notes:)
Are Vegetation, Soil, or Hy	drology Significantly Disturb	ed? No X	(If yes, expl	ain in Notes	
Are Vegetation, SoilX, or Hy	drology Naturally Problemat	tic? No	(If yes, exp	lain in Notes	s.)
SUMMARY OF FINDINGS			发热性解 数		
Hydrophytic Vegetation Present? Yes_	X No	Is the Sampled	Area within a	Wetland?	Yes No
Hydric Soil Present? Yes_	X see Soll Not No on 3rd page	Wetland Type:	PSSI/E	MIB	
Wetland Hydrology Present? Yes_		Alaska Vegetati	on Classificatio	on (Viereck)	: 11D2, 111HZ
Notes and Site Sketch: Please include corridor. Downf 5hrh commun. Boundary to here but that are rocky and without without and the man and the man are the man and the man are the man a	Land segod is com dry & wany mic ontowns It's INPURS	s. Site is warplex with ro swale	h many that a	moene a	extend wet
%	WIOGPROUP				

WETLAND DETERMINATION DATA FORM WIOGRA 006

VEGETATION (use scientific names of plants)	10 00 00		
Tree Stratum (Plot sizes: 1001)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance-Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: 3 (A) Total Number of Dominant Species Across All Strata: (B)
2.				% Dominant Species that are OBL, FACW, or FAC: (A/B)
4. Total Cover:		Say Locality	7-1-2	Prevalence Index worksheet: Total % Cover of: Multiply by:
50% of total cover:	20	% of total cov	er:	OBL species:X1 =
Sapling/Shrub Stratum (7.6)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 24 X2 = 48 FAC species 5 X3 = 153 FACU species 5 X4 = 20
1. Encetum Nisrum	. 4	L. ZIZE SI	FAC	UPL species / X 5 = 5
2. Selix ceticulata	18	Y	FAC	Column Totals: 8/ (A) 22(e (B)
3- yarrinium uliginosum	5		FAC	PI = B/A = 2.79
4 vaccinium Vifis-idama	8.		FAC	9500 .
5.5 dix pulchen	20	Y	FACW	
6. Cassiope tetragina	4		FACU	William to the second of the second
7. Betula niana	4		FA	
8. Rhadodendrum tomentosim	, L 3		FACID	A STATE OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN
9.		s F		
Total Cover		% of total cov	er: 12.8	and the places of the

VEGETATION (use scientific names of plant	ts)			AND COMPANY OF THE PROPERTY OF
Herb Stratum (Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0
1. Pyrola aseriflora	//		LACU	Morphological Adaptations¹ (Provide supporting data in
2. Palasites frisidus	3	-	FACW.	Notes)
3. Eistorta exticinalis	×2	XH	opt NL	Problematic Hydrophytic Vegetation ¹ (Explain)
4. Armoca lessingit	T		UPL	¹ Indicators of hydric soil and wetland hydrology must be present unless
5. Bistorta vivipara	T		FAC	disturbed or problematic.
6. Pedicularis	\mathcal{T}		_	
7. Valoriana considet	T		FAC	% Bare Ground
8. curry bigelowit	12	Y	FAC-	35_ % Cover of Wetland Bryophytes
9. gruss 570	T		-	
10 calamagrostis canadonsis	7		FAC	% Cover of Water Hydrophytic Vegetation Present (Y/N):
Total Cove	110 000 0000			Notes: (If observed, list morphological adaptations below):
50% of total cove	r:1165 20	% of total cov	rer: 4x6	
1 Distance	8.5		3.4	1
Augh &			7	1

epth hiches)	DESCRIPTION: (De	scribe			ina ant the	indicator or	confirm the abconco	of indicators)
nches) 6		25	Redox Features	o doct	iment the	indicator or e	confirm the absence	of indicators.)
5-8	Matrix	%	Color (moist)	%	Type ¹	Loc ²	Texture	Notes
5-8	Color (moist)	70	Color (moist)	70	Type	Loc	Texture	Saturated organics
				, in	J		. Silt loam	high organic mater
	104R 3/2	100	101R 5/41	2	(m	SiHloan	Sticky
	2.543/2	98	(0/12 -/4)	4	(01	700		Mari -
2 10-16	2.544/2	100					very gravelly s	
TO THE		-						M I-W
Marie and the second	16- 72							
vpe: C=Cond	centration, D=Depleti	on, RN	/=Reduced Matrix, CS	=Cove	ered or Co	ated Sand C	Grains. ² Location:	PL=Pore Lining, M=Matrix.
The latest and the la	INDICATORS		10 A		NEW PROPERTY.	深温度201		OR PROBLEMATIC HYDRIC SOILS
istosol or Hist			Alaska Gleyed (A13)	N	- , , / II	Alaska Color Ch	nange (TA4)4
istic Epipedor	The second second		Alaska Redox (/				Alaska Alpine S	Swales (TA5)
lack Histic (A3	No. of the last of		Alaska Gleyed I	_			Alaska Redox v	vith 2.5Y Hue/_
								without 5Y Hue or Redder Underlying
ydrogen Sulfic						134	Layer N	in Naton)
nick Dark Sur	face (A12)			Countie	and bloden	eau and an	Other (Explain i	pe position must be present unless
isturbed or pro	of hydrophytic vegeta oblematic. f color change in Note		me primary indicator o	Wella	and Hydror	ogy, and an	арргорпасо тапасос.	
	er (if present): Type:		De De	epth (i	nches):	10		
ydric Soil Pr	resent (Y/N):	Y-	busing 13 P5	40	wavel I	ndicator,	was il does in	thrmeet any indicator
otes: But	and slope go	Hy	programme was	ter	4.00			to 511 9 surface 13 clearly awetland
YDROLOGY	PRIMARY INDICAT	ORS (any one indicator is su	fficien	t)	SECONDA	RY INDICATORS (2	
urface Water	(A1) <u>Y</u>	Su	rface Soil Cracks (B6)	N		Water-stain Leaves (B9)		Stunted or Stressed Plants (D1) _/
ligh Water Ta	ble (A2)	Int (B	undation Visible on Ae 7)	rial Im	agery	Drainage Pa	atterns (B10)	Geomorphic Position (D2)
Saturation (A3)) <u>' </u>	Sp Co	arsely Vegetated incave Surface (B8)	4.		Oxidized Rh	nizospheres along s (C3)	Shallow Aquitard (D3)
	B1) N	Ma	arl Deposits (B15)	N_		Presence of Iron (C4)	Reduced ~	Microtopographic Relief (D4)
Vater Marks (I	· · · · · · · · · · · · · · · · · · ·						/134/30	
Vater Marks (E	osits (B2) N		drogen Sulfide dor (C1)	×-	HEA.	Salt Deposi	ts (C5)	FAC-Neutral Test (D5)
Vater Marks (E	osits (B2)	Dr		40	1564	Salt Deposi	ts (C5)	FAC-Neutral Test (D5)
Vater Marks (F	osits (B2) N	Dr W	y-Season	0	A COLUMN		ts (C5)/	FAC-Neutral Test (D5)
Vater Marks (t Sediment Depo Orift Deposits (osits (B2) N (B3) N (rust (B4) Y	Dr W	y-Season ater Table (C2)	10			ts (C5)	FAC-Neutral Test (D5)
Vater Marks (E Sediment Depo Orift Deposits (Algal Mat or Ci ron Deposits (osits (B2) N (B3) N (rust (B4) Y (B5) N	Dr W	y-Season ater Table (C2)				ts (C5)	FAC-Neutral Test (D5)
Vater Marks (E Sediment Depo Orift Deposits (Algal Mat or Ci ron Deposits (osits (B2) N (B3) N (rust (B4) Y	Dr W	y-Season ater Table (C2)	de Tol	A.	Notes:		
Vater Marks (E Sediment Depo Orift Deposits (Algal Mat or Ci ron Deposits (osits (B2) N (B3) N rust (B4) Y (B5) N r Present (Y/N): Y	Dr W	y-Season ater Table (C2) N her (Explain in Notes) Depth (in): 4	d to		Notes:	rology Present (Y/N	
Vater Marks (Foodiment Deposits (Mgal Mat or Cron Deposits (Mgartace Water	r Present (Y/N):	Dr W	y-Season ater Table (C2) N her (Explain in Notes) Depth (in): 4	d to	seep b	Notes:	rology Present (Y/N	

VEGETATION VARIABLES P= Plot, N	V= Matrix
Forested-Evergreen-Needle-leaved Scrub Shrub-Evergreen-Broad-leaved Persistent Aquatic Bed	ackingForested-Deciduous-Needle-leavedScrub Shrub-Deciduous-Broad-leavedScrub Shrub-Deciduous-Needle-leavedScrub Shrub-Deciduous-Broad-leavedScrub Shrub-Evergreen-Needle-leavedEmergent-Non-persistentEmergent-
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) Tall herb (≥1	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) 40 m) Short herb (<1m) 40 Moss-Lichen Short shrub (0.5-2m) 40
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)	(0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattere	100% Cover or Open Water<25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral CoverX N/A
Plant Species Diversity (P): Low (< 5 plant	species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) _	X One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover
Dead Woody Material (P): Low Abundance Abundant (>50% of surface)	(0-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large High (small groupings, diverse and interspers	e patches, concentric rings) Moderate (broken irregular rings) sed)
HGM Class (P): SlopeFlat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
THE RESERVE OF THE PERSON OF T	
SOIL VARIABLES	
	Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey Mineral:
HYDROLOGIC VARIABLES	
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial
Inlet/Outlet Class (P): No Inlet/Outlet	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermitten Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Sea: Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial
Iniet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermitten Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Sea: Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No
Iniet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermitten Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Sea: Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No
Iniet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Sea: Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No C Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflood	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Perennial Inlet/Perennial Inlet/No Outlet Perennial
Iniet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermitten Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Sea: Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Note of Sedimentation (P): No Create	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perenni
Intet/Outlet Class (P): No Inlet/Outlet	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Pe
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Sea: Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Oktober Return Interval >5 yrs	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet
Intet/Outlet Class (P): No Inlet/Outlet	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perenni
Inlet/Outlet Class (P): No Inlet/Outlet Outlet	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perenni
Inlet/Outlet Class (P): No Inlet/Outlet Outlet	t Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Sea: Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Microrelief of Wetland Surface (P): No Outlook Return Interval >5 yrs	t Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet	t Outlet

5B

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

	This form to be completed a series of
Feature	ID: W106 PA006 Field Target: 315 Date: 7.15.16
For all it	ems not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	 Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification? Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct? All dominant species have been determined and recorded per strata? Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
2	Soil
Э.	
	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7.	Maps
	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

X
Wetland Scientist (print)
Signature / Date

X J Brown/ce

Field Crew Chief (print)

Signature / Date

SITE DESCRIPTION	14年の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の		Walnut line his 18	Company of the Compan
Survey Type: Centerline Acces	ss Road (explain) Other (e	xplain) ×	Field Target: 3/4	Map #: <u>4</u> Map Date: <u>6.9.16</u>
Date: 7-15-16	Project Name: Alaska LNG	+	Feature Id	W (06 P/(00 T
	ownlee, Kale	us Vole	er	Team No.: WWO
State: Alaska	Region: Alaska	Milepost:	124	
Latitude: (08.6773147	Longito	ude: -149.12	5155ZZ°	Datum: WGS84
Logbook No.: 2	Logbook Page No.: 3 4	Picture No.:	P-W1068:	4007-001 thru oc
Control Management (1985)		Sharp change San	· · · · · · · · · · · · · · · · · · ·	the service was not been all all and
SITE PARAMETERS	// -	Landform (hills	slope, terrace, hummock	ss, etc.): 1/1/4.0
Subregion: Brooks Foothil	15			Flat to stightly convex
Slope (%): ~5	ation: DEMI 1663		Vildlife Use: Carib	0 1
Pre-mapped Alaska LNG/NWI classifications of the climatic/hydrologic conditions on the conditions of t	1 - 1 1 1 - 1 -		ormal Circumstances" pre	esent:
Yes No (if no exp	lain in Notes)	Yes_X	No (If no, ex	(plain in Notes.)
Are Vegetation, Soil, or Hy		1	_(If yes, explain in Notes	
Are Vegetation, Soil, or Hy	drology Naturally Problema	tic? No_X	_ (If yes, explain in Note	
SUMMARY OF FINDINGS	V	STATE OF THE PARTY OF		Mar X
Hydrophytic Vegetation Present? Yes_	No	Is the Sampled A	Area within a Wetland?	Yes No
Hydric Soil Present? Yes_	No	Wetland Type:	PEMI/SSIB	7
Wetland Hydrology Present? Yes_	No	Alaska Vegetation	n Classification (Viereck)	111 AZ, 11 DZ
Notes and Site Sketch: Please include corridor. Dumb shrub & Emerger about. A few frost learn throughout the Po	soil/bone ground provided by	ot mark Plo	Vag and third to Pockeds of	Standing water

VEGETATION (use scientific names of plant	s)						
Tree Stratum (Plot sizes: 100)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: (A) Total Number of Dominant Species Across All Strata: (B)			
2.				% Dominant Species that are OBL, FACW, or FAC:	(A/B		
3.							
4.				Prevalence Index worksheet:			
Total Cover	:			Total % Cover of: Multiply by:			
50% of total cover	r: 20	% of total cov	er:	OBL species: X 1 =X			
Sapling/Shrub Stratum (24)	Absolute	Dominant	Indicator	FACW species:			
	% Cover	Species? (Y/N)	Status	FAC species			
1. vaccinium vitis-idaea	50	Y	FAC	UPL species X 5 = 5			
2. Rhododendrum tomentosum	.30	Y	FACW	161 57.2			
3. Salix pulchea	lo		FACL	PI=B/A= 2.47	7. 1		
4. Betula Nana	3		FAC		100		
5.					FIN		
6.							
7.							
8.							
9.							
Total Cover		% of total cov	er: <u> 7, 8</u>				

Herb Stratum(24)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0
1. Bistorta officinalis 2. Carex bigelowii	15	Y	NL (U) FAC	Morphological Adaptations ¹ (Provide supporting data in Notes)
3. Petasites Frigidus 4. Eriophrum unginatum 5. Saxifrag sp	45	Y	FACU)	Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soli/and wetland hydrology must be present unless disturbed or problematic.
6.				ال Bare Ground
7. 8.				% Bare Ground SO % Cover of Wetland Bryophytes
9.				
10.				% Cover of Water Hydrophytic Vegetation Present (Y/N):
Total Cove		% of total cov	ver: 12.4	Notes: (If observed, list morphological adaptations below):

Soil Pit Required (Y/N) Date Feature ID SOIL SOIL PROFILE DESCRIPTION: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features Matrix Loc² Texture Notes % Type¹ (inches) Color (moist) Color (moist) 4-18 10412 4/4 Silt loan 5 COM Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix. INDICATORS FOR PROBLEMATIC HYDRIC SOILS¹ HYDRIC SOIL INDICATORS Alaska Color Change (TA4)4 Histosol or Histel (A1) Alaska Gleyed (A13) Alaska Alpine Swales (TA5) Histic Epipedon (A2) Alaska Redox (A14) Alaska Redox with 2.5Y Hue Alaska Gleyed Pores (A15) Black Histic (A3) Alaska Gleyed without 5Y Hue or Redder Underlying Hydrogen Sulfide (A4) Layer Other (Explain in Notes) -Thick Dark Surface (A12) One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic. "Give details of color change in Notes. Perma Grost Depth (inches): Restrictive Layer (if present): Type: Hydric Soil Present (Y/N): Notes: SECONDARY INDICATORS (2 or more required) HYDROLOGY PRIMARY INDICATORS (any one indicator is sufficient) Stunted or Stressed Water-stained Surface Soil Cracks (B6) Surface Water (A1) Plants (D1) Leaves (B9)_ Inundation Visible on Aerial Imagery Geomorphic Position (D2) Drainage Patterns (B10) M High Water Table (A2) Oxidized Rhizospheres along Sparsely Vegetated Shallow Aquitard (D3) Saturation (A3) Living Roots (C3) _ Concave Surface (B8) Microtopographic Presence of Reduced Marl Deposits (B15) _ ^ Water Marks (B1) Relief (D4) Iron (C4) Hydrogen Sulfide FAC-Neutral Test (D5) Salt Deposits (C5) Sediment Deposits (B2) Odor (C1) Notes: Dry-Season Drift Deposits (B3) __ N Water Table (C2) Other (Explain in Notes): Algal Mat or Crust (B4) Iron Deposits (B5) Surface Water Present (Y/N): Depth (in): N Wetland Hydrology Present (Y/N): Water Table Present (Y/N): Depth (in): Saturation Present (Y/N): EC: Depth (in): (includes capillary fringe) Notes:

AQUATIC SITE ASSESSMENT DATA FORM

W106PA007

VEGETATION VARIABLES P= Plot, M	= Matrix
Forested-Evergreen-Needle-leaved Scrub Shrub-Evergreen-Broad-leaved Persistent Aquatic Bed	cking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) _ ∠⊘ Tall herb (≥1n	Sapling (<5 dbh, <6m tall) O Tall shrub (2-6m) Short shrub (0.5-2m) O Short shrub (0.5-2m)
Number of Wetland Types (M):/_	Evenness of Wetland Type Distribution (M): EvenModerately evenModerately even
Vegetation Density/Dominance (P): Sparse (80%) Very High Density (80-100%)_	(0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattered	100% Cover or Open Water < <25% Scattered/Peripheral Cover 26-75% Scattered or d or Peripheral Cover
Plant Species Diversity (P): Low (< 5 plant s	pecies) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none)	One or Few Several to Many N/A
Cöver Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover
Dead Woody Material (P): Low Abundance (Abundant (>50% of surface)	0-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large High (small groupings, diverse and intersperse	patches, concentric rings) Moderate (broken irregular rings)
HGM Class (P): Slope Flat_X_	Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES	Histosol:Fibric Histosol:Hemic Histosol: Sapric
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy	
Timiorali Giarony timiorali Garay	Tamora, Only
HYDROLOGIC VARIABLES	
HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Perennial
HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial let/Perennial Outlet Perennial Out
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial let/Perennial Outlet Perennial Out
Inlet/Outlet Class (P): No inlet/Outlet Class (P): No inlet/Outlet Class (P): No inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seaso Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Evidence Created	
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial let/Perennial Outlet Perennial Inlet/No Outlet Perennial onally Flooded, Temporarily Flooded, Saturated Semiperm. Flooded Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seaso Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Overbank Floodi	
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Sease Wet: Perm. Flooded, Intermittently Exposed, Stevidence of Sedimentation (P): No Evidence Of Sedimentation (P): No Evidence Of Sedimentation (P): No Evidence Of Sedimentation (P): No Outlet Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Outlet Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Cit Surficial Geologic Deposit Under Wetland (Indicated Till/Not Permeable Basin Topographic Gradient (M): Low Outlet Levidence of Seeps and Springs (P): No Seep Landscape Variables (M) Wetland Juxtaposition: Wetland Isolated	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennia
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Sease Wet: Perm. Flooded, Intermittently Exposed, Stevidence of Sedimentation (P): No Evidence Of Sedimentation (P): No Evidence Of Sedimentation (P): No Evidence Of Sedimentation (P): No Outlet Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Outlet Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Cit Surficial Geologic Deposit Under Wetland (Indicated Till/Not Permeable Basin Topographic Gradient (M): Low Outlet Levidence of Seeps and Springs (P): No Seep Landscape Variables (M) Wetland Juxtaposition: Wetland Isolated	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet I
Inlet/Outlet Class (P): No Inlet/Outlet	
Inlet/Outlet Class (P): No Inlet/Outlet	

Jessie Bround

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

		This form to be completed before leaving the west said
E	ature	e ID: WIO 6 PA 007 Field Target: 314 Date: 7.15.16
F	or all	items not checked, please provide detailed explanation in the notes section of data form.
	1.	Site Description
		Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
	2.	Vegetation
		At least 80% of onsite vegetation has been keyed to species, or collected for later identification? ✓ Vegetation names are entered legibly for all strata present? ✓ Cover calculations are complete and correct? ✓ All dominant species have been determined and recorded per strata? ✓ Indicator status is correct for each species? ✓ Dominance Test and Prevalence Index have been completed?
	3.	Soil
	*	Soil profile is complete? Appropriate hydric soil indicators are marked?
	4.	Hydrology
		Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
	5.	Functions and Values
		Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
	6.	Field Logbook
		Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
	7.	Maps
		Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X	X	
Wetland Scientist (print)	Signature / Date	
V	V	7 10.11

Signature / Date

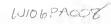
	LNG	Volger	Field Targe	Feature Id:		Map Date: <u>6.9./6</u>
gion: Alaska	ey)	Volgen		Feature Id:	1.11/2/2 PAC	
gion: Alaska	0	Yolper	-		WINETHE	800
	U	11 . 4			Team No.:	W106
		Milepost:	76			
	Longitude:	-148.82	2796°		Datum: WG	584
gbook Page No.:	35	Picture No.:	-W10	68A00	100-80	thru 004
No. WHEN SHOOT OF	To be seen		100/40		阿雷拉斯 加	
		Landform (hillsle	ope, terrace	e, hummocks	s, etc.): River	terrage
		Local relief (con	ncave, conv	ex, none)	Highly Co	ncave
NDLIII AZ	_	Evidence of Wil	Idlife Use:)	ox drops	ing Passe	rine west on grow
typical for this time of Notes)	f year?	Are "Norr Yes X	mal Circum No	stances" pre (If no, ex	sent: olain in Notes.)	
gy Significantly	Disturbed?	No X	(If yes, exp	lain in Notes)	
gy Naturally Pro	oblematic?	No_K	(If yes, exp	lain in Notes	s.)	
	南州即是		ELD DRIP	海		SALAND TO A
NoX	_ ls	the Sampled Are	ea within a	Wetland?	Yes	NoX
NoX	_ we	etland Type:	J			
NoX	– Ala	aska Vegetation (Classification	on (Viereck):	1102	
W . I	Sal R:	veral sig	gno of char	depisi	Honol &	irob.
	fleunce NO	fleunce NO signs	fleunce No signs of hydre	fleunie No signs of hyperology	figure No signs of hyperology. D: NON	figure No signs of hydrology. D: NONE

VEGETATION (use scientific names of plants	5)			
Tree Stratum (Plot sizes: \\OO\)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC:(A) Total Number of Dominant Species Across All Strata:(B)
1.				% Dominant Species that are OBL, FACW, or FAC:(A/B)
2.				
3.				
4.				Prevalence Index worksheet:
Total Cover				Total % Cover of: Multiply by:
50% of total cover	: 20	% of total cov	er:	OBL species: X1 = V
Sapling/Shrub Stratum (7.6)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 19 $\times 2 = 38$ FAC species 27 $\times 3 = 81$ FACU species 21 $\times 4 = 84$
1. Salix reticulata	6		KAC	UPL species X 5 = X
2. Arctinus ruber	8		FAC	Column Totals: (0) (A) 709 (B)
3. Rhadadendrom lapponica	Le		FAC	PI=B/A= 3.06
4. Dryas Integrifolia	15	Y	FACU	
5. Salix Richardsonii	18	Y	FACE	
6. Vaccinium uliginosum	6		FAC	1000
7. Jalix pulchra	1		FACU	Į.
8.				0.00
9.				11/
Total Cover	_			
50% of total cover	: <u>30</u> 20	% of total cov	er: <u>12</u>	The state of the s
	Was division	DATE OF THE PARTY	A SECTION OF	

Herb Stratum (Z/g')	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators:
1. Equesitum Acuense	1		FAC	Morphological Adaptations¹ (Provide supporting data in
2. Bistorta Vivipara	T		FAC	Notes)
3. Hedysarum alpinum	2	Y	FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
4. Pedeularis SP	1			¹ Indicators of hydric soil and wetland hydrology must be present unless
5. Lupinus Arcticus	4	Y	FACU	disturbed or problematic.
6. Toficldia pusilla	T		FAC	为。他们的自己是是那么是以及自己的。 第15
7. Oxytropis campestris	1		GOL	% Bare Ground
8. Favischen Variegatim	T		FACW	% Cover of Wetland Bryophytes
9. Parnossia palustris	T		FACUL	
10. CIVEX 50	T		142.	% Cover of Water Hydrophytic Vegetation Present (Y/N):
Total Cover 50% of total cover		% of total cov	ver: 1,8	Notes: (If observed, list morphological adaptations below):
			-1	

			1.16018					
SOIL	A STATE OF THE STA		18/0000	ature II		2 (1) 10	STATE OF STREET	Soil Pit Required (Y/N)
SOIL PROFILE	DESCRIPTION: (De	escribe	to the depth needed	to doc	ument the	e indicator or co	onfirm the absence	of indicators.)
Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc²	Texture	Notes
0i 0-1.5					W. As			Dry organice
C1 1.5-3	-/	100					Sandy loca	0
30	10412 912	100					China, Isem	
Aib 3-4 (2 4-7	104R 3/2	100					ufine sandy b	200
Ooh 7-8	10412 12	10-			-4-1		grine siendy a	
Ooh 7-0	2544/	97.	107R4/4	8	con	M RC		con @interface w/sond below
B2 8-9 C3 9-24	(2.5) 7/1	Value of	1012 14	0	Con	INC ICC	loamy sand	Control of the contro
1Tupe: C=Con	centration D=Denlet	ion RM	=Reduced Matrix, C	S=Cov	ered or C	oated Sand G		PL=Pore Lining, M=Matrix.
HYDRIC SOIL		QUALITY OF	32.5	975730	DE COM	NA Segles de		OR PROBLEMATIC HYDRIC SOILS
A STATE OF THE PARTY OF THE PAR	ALL TOTAL CONTRACTOR OF THE PARTY OF THE PAR	Sen Herris	Alaska Gleyed	(Δ13)	N	A DE MIENTER	STREET, STREET	nange (TA4) ⁴
Histosol or Hist			Alaska Redox (_		Swales (TA5) N
Histic Epipedor		-				7		vith 2.5Y Hue
Black Histic (A		15	Alaska Gleyed	Pores	(A15) <u>~</u>			without 5Y Hue or Redder Underlying
Hydrogen Sulfi	de (A4)						Layer_ N	
Thick Dark Sur	face (A12)						Other (Explain i	in Notes)
One indicator	of hydrophytic vegeta	ation, o	ne primary indicator of	of wetla	and hydro	ology, and an a	ppropriate landsca	pe position must be present unless
disturbed or pr	oblematic.							and the second state of
Give details of	f color change in Not er (if present): Type	es.	0	enth (i	nches):_	-		
Restrictive Lay	er (ii present). Type	-		epui (i	nones)		-	
133								
Hydric Soil Pr	resent (Y/N): N						0	
Notes: 4	es changes i	V571	onst 24 inch	hes	to very	fire sound	lown w/ con	acentration pick up
But beyond	scope of desc	ript	m					acentration piete up
- 100 cm	. 0							
HYDROLOGY	PRIMARY INDICAT	ORS (a	iny one indicator is si	ufficien	t)	SECONDAR	Y INDICATORS (2	or more required)
Surface Water	(A1)/	Sui	face Soil Cracks (B6)/	Nr.	Water-stained Leaves (B9)	d //	Stunted or Stressed Plants (D1)
High Water Ta	ble (A2)	Inu (B7	ndation Visible on Ae	erial Im	agery	Drainage Pat	terns (B10)	Geomorphic Position (D2) _ 🏑
Saturation (A3)	Spa	arsely Vegetated ncave Surface (B8)	N		Oxidized Rhiz Living Roots	zospheres along (C3)/	Shallow Aquitard (D3)
Water Marks (I	B1) _ 🗸		rl Deposits (B15)	N	_	Presence of I	Reduced	Microtopographic Relief (D4)
Sediment Deposits (B2) V Hydro		drogen Sulfide or (C1)/	Irogen Sulfide			(C5) _ N	FAC-Neutral Test (D5)	
Drift Deposits	(B3) <u></u>	Dry	/-Season ater Table (C2)			Notes:	- 1-	
Algal Mat or C	rust (B4) _ N		ner (Explain in Notes));				
Iron Deposits (1	1						
15 TO LEGIS (1941)	THE STATE OF THE S	700	4.47年改新强烈。	THE REAL PROPERTY.	172006	The State of the S		THE RESERVE OF THE PROPERTY OF
Surface Water	Present (Y/N):	V	Depth (in): -					,/
Water Table P		N	Depth (in):		V	Vetland Hydro	ology Present (Y/N	1):
Saturation Pre (includes capil	sent (Y/N):	5	Depth (in): ~		E	c;		
Notes:	rary minge/			_				
NOTES.								

AQUATIC SITE ASSESSMENT DATA FORM



VEGETATION VARIABLES P= Plot, N	V= Matrix
Forested-Evergreen-Needle-leaved	ackingForested-Deciduous-Needle-leavedScrub Shrub-Deciduous-Broad-leavedScrub Shrub-Deciduous-Needle-leavedScrub Shrub-Deciduous-Broad-leavedScrub Shrub-Evergreen-Needle-leavedEmergent-Non-persistentEmergent-
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) Tall herb (≥1	Sapling (<5 dbh, <6m tall)
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)	(0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattere	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant	species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) _	One or Few Several to Many N/A
	No Veg Solitary, Scattered Stems or More Large Patches; Parts of Site
Dead Woody Material (P): Low Abundance Abundant (>50% of surface)	(0-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large High (small groupings, diverse and interspers	e patches, concentric rings) Moderate (broken irregular rings) Sed)
HGM Class (P): Slope Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
* *	
SOIL VARIABLES	A STATE OF THE STA
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy	Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES	
HIDROLOGIC VARIABLES	
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet
Inlet/Outlet Class (P): No Inlet/OutletOutlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inle
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermitten Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Eviden	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outl
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermitten Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Eviden	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermitten Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Sea: Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outl
Inlet/Outlet Class (P): No Inlet/OutletOutlet Intermittent Inlet/Intermittent Intermittent	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/No O
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No C Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflood Water pH (P): No surface water Outlet Outlet Outlet	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inl
Inlet/Outlet Class (P): No Inlet/OutletOutlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Prequency of Overbank Flooding (P): No Created Prepared P	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Pere
Inlet/Outlet Class (P): No Inlet/OutletOutlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Pere
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Intermittent Intermitten	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Intermittent Inter	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Intermittent Inter	t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Intermittent Inter	t Outlet
Inlet/Outlet Class (P): No Inlet/Outlet_OutletIntermittent Inlet/Intermittent Intermittent Intermitte	toutletIntermittent Intet/Perennial OutletPerennial Intet/Perennial Intet/Perennial OutletPerennial Intet/Perennial OutletPerennial Intet/Perennial OutletPerennial Intet/Perennial OutletPerennial Intet/Perennial OutletPerennial Intet/Perennial Outlet

JBrown Lee

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Feat	ure	e ID: W66 PA008 Field Target: 320 Date: 7-16-16
For a	all i	items not checked, please provide detailed explanation in the notes section of data form.
•	1.	Site Description
		Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
:	2.	Vegetation
		At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
		☑ Vegetation names are entered legibly for all strata present?
		 ☐ Cover calculations are complete and correct? ☐ All dominant species have been determined and recorded per strata?
		☑ Indicator status is correct for each species?
		Dominance Test and Prevalence Index have been completed?
	3.	Soil
7	-	Soil profile is complete? Appropriate hydric soil indicators are marked?
	4.	Hydrology
		✓ Appropriate hydrology indicators are marked?✓ Surface water, water table, and saturation depths are recorded if present?
	5.	Functions and Values
		✓ Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
,	6.	Field Logbook
		Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
		Each logbook page is initialed and dated?
	7.	Maps
		₩ Wetland boundaries have been corrected if necessary?✓ Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

X	X	
Wetland Scientist (print)	Signature / Date	
X Jessie Brownlee	X Jessie Bronle	7.16.6
Field Crew Chief (print)	Signature / Date	

SITE DESCRIPTION	Appendix on the Late of the La		DESCRIPTION OF	The state of	MAIN TONIO
Survey Type: Centerline	Access Road (explain) Other	(explain)_ス	Field Target: 3/9	Map #: <u>4</u>	Map Date: <u>6.9.7</u>
ate: 7-16-16	Project Name: Alaska LNG		Feature Id:	WIOGPA	209
vestigators: Jessie	Brownlee Kalen	Volger		Team No.:	W106
tate: Alaska	Region: Alaska	Milepost:	98		
atitude: 68.98235	8\° Long	gitude: ~148, 8	216470	Datum: WG	
ogbook No.:	Logbook Page No.: 35	Picture No.:	P-WOGPAC	209-001	thru 000
ITE PARAMETERS	ANNUAL STREET	GRAND WITH	STATE OF THE PARTY	和E 斯斯特	
subregion: Brooks foo	thills	Landform (hill	slope, terrace, hummock	s, etc.): 100	bne
lope (%): / 5		Local relief (c	oncave, convex, none): ,	ex Halubou	
re-mapped Alaska LNG/NWI cla	ssification: PSSI/EMIES	Evidence of V	Vildlife Use: Owl pelet	game	phy grobbin
Are climatic/hydrologic conditions	on the site typical for this time of yea o explain in Notes)		ormal Circumstances" pre		
	or Hydrology Significantly Dist		(If yes, explain in Notes		Winds.
Are Vegetation, Soil,		×	(If yes, explain in Notes	s.)	
SUMMARY OF FINDINGS	ACCURATION ASSESSED.	NEW NEW YORK		THE PROPERTY OF	WALL STREET
lydrophytic Vegetation Present?	Yes No	Is the Sampled	Area within a Wetland?	Yes	NoX
Hydric Soil Present?	Yes NoX	Wetland Type:	U		- 1415
Wetland Hydrology Present?	Yes NoX	Alaska Vegetatio	n Classification (Viereck)	1132,	1102
cocation of FT moved correctly. See op whose paper form is an odd m woundulating uneven , In area overall, site westland	clude Directional & North Arrow, Cent 1 30 20 to North do on how 1 009 00. I am unsure ound that rings the PBH nicrotopography. 's very wet. only this p	of the historical ring t	tis bare ground hat is ~5' ab	the Cocati d w/ little ove the s	on of the veg (Herbs
		7			
PUBHX:	Ji06.974.009	PEM1/S	75/13 NG		



VEGETATION (use scientific names of plan	ts)			
Tree Stratum (Plot sizes: 1001)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or F
1.				Total Number of Dominant Species Across All Strate % Dominant Species that are OBL, FACW, or FAC:
2.				
3.				
4.				Prevalence Index worksheet:
Total Cove	Total % Cover of: Multiply by			
50% of total cover: 20% of total cover:				OBL species: X1= X1=
Sapling/Shrub Stratum (261)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: $\begin{array}{cccccccccccccccccccccccccccccccccccc$
1. Arctous Rober	4/	r yı	FAC	UPL species X 5 = O
2. Salix pulchra	5.		FACW	Column Totals: 66 (A) 214
3. Salise glavece	15	Y	FAC	PI=B/A= 3.24
4. Dryas Integritalia	25	Y	FACU	grass 5p T
5. Solix reticulata	2/.		FAC	
6. Dasiphora fruticosa	T		FACW	
7. Sheperdia Canadensis	+		FACU	
8.				
9.				
Total Cove	r: 53			
50% of total cover	r. 26.5 20	% of total cov	rer: 10.6	

Herb Stratum (16	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Prevalence Index is ≤ 3.0		
1. Parnassia palostris	1		FACUL	Morphological Adaptations¹ (Provide supporting data in Notes) —— Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless		
2. Hedysarum olpinum	7	Y	FACU			
3. Favisatum Arvense	5	Y	FAC			
4. Tofeldia Dusilla	T	1	FAC			
5. Gentiana prostrata	T		FACW	disturbed or problematic.		
6. Ristorta Vivipara	T		FAC			
7. Corasa SD	T			% Bare Ground		
8. Care 4 512	1		-	% Cover of Wetland Bryophytes		
9. Ezwisedum Floriatike	T		OBL	Total Cover of Bryophytes % Cover of Water Hydrophytic Vegetation Present (Y/N):		
10. Castilleia miniata	T		FAC			
Total Cov 50% of total cov	_	Notes: (If observed, list morphological adaptations below):				

Soil Pit Required (Y/N) SOIL Date Feature ID_ SOIL PROFILE DESCRIPTION: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Matrix Redox Features Depth Loc² Texture Notes (inches) Color (moist) Color (moist) Type¹ Silf loam 104R3/1 254 5/1 Dep 10 YR 4/4 M ¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix. INDICATORS FOR PROBLEMATIC HYDRIC SOILS HYDRIC SOIL INDICATORS Alaska Color Change (TA4)4 Alaska Gleyed (A13) Histosol or Histel (A1) Alaska Alpine Swales (TA5) Alaska Redox (A14) Histic Epipedon (A2) Alaska Gleyed Pores (A15) Alaska Redox with 2.5Y Hue Black Histic (A3) Alaska Gleyed without 5Y Hue or Redder Underlying Hydrogen Sulfide (A4) Layer Other (Explain in Notes) Thick Dark Surface (A12) One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic. Give details of color change in Notes. Depth (inches): Restrictive Layer (if present): Type: Hydric Soil Present (Y/N): Notes: No horizonation, No boundary differences, Homogonous Sitt loam wovery few & very faint Features w/a few small packets organize mater Same textue, color a density to depth. SECONDARY INDICATORS (2 or more required) HYDROLOGY PRIMARY INDICATORS (any one indicator is sufficient) Stunted or Stressed Water-stained Surface Soil Cracks (B6) Surface Water (A1) Plants (D1) N Leaves (B9) Inundation Visible on Aerial Imagery Geomorphic Position (D2) Drainage Patterns (B10) High Water Table (A2) Oxidized Rhizospheres along Sparsely Vegetated Shallow Aquitard (D3) _ Saturation (A3) Concave Surface (B8) Living Roots (C3) Presence of Reduced Microtopographiq Marl Deposits (B15) Water Marks (B1) Relief (D4) Iron (C4) Hydrogen Sulfide FAC-Neutral Test (D5) Salt Deposits (C5) Sediment Deposits (B2) Odor (C1) Notes: Dry-Season Drift Deposits (B3) ____N Water Table (C2) Other (Explain in Notes): Algal Mat or Crust (B4) Iron Deposits (B5) Surface Water Present (Y/N): Depth (in): Water Table Present (Y/N): Depth (in): -Saturation Present (Y/N): EC: Depth (in): -(includes capillary fringe) Notes:

AQUATIC SITE ASSESSMENT DATA FORM

VEGETATION VARIABLES P= Plot, N		TAXABLE PROPERTY OF THE PARTY O
	M= Matrix	
Forested Evergreen-Needle-leaved Scrub Shrub-Evergreen-Broad-leaved Persistent Aquatic Bed	acking Forested-Deciduous-Needle-leaved Forested-Deciduous-Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-B Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persiste	road-leaved ntEmergent-
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) Tall herb (≥1	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short herb (<1m) Moss-Lichen Floating	Short shrub (0.5-2m) Submerged
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): EvenHighly Uneven	Moderately even
Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)	e (0-20%) Low Density (20-40%) Medium Density (40-60%))	High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattered	100% Cover or Open Water <25% Scattered/Peripheral Cover ed or Peripheral Cover N/A	26-75% Scattered or
Plant Species Diversity (P): Low (< 5 plant	t species) Medium (5-25 species) High (>25)	
Presence of Islands (M): Absent (none)	One or Few Several to Many N/A	
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Pate	ches; Parts of Site
Dead Woody Material (P): Low Abundance Abundant (>50% of surface)	e (0-25% of surface) Moderately Abundant (25-50% of surface)	
Vegetative Interspersion (P): Low (large High (small groupings, diverse and interspers		
HGM Class (P): Slope Flat	Lacustrine Fringe Depressional Riverine E	staurine Fringe
SOIL VARIABLES	Listed and the Control of the Contro	THE SAME SAME TANK
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy	Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Clayey Mineral:	
HYDROLOGIC VARIABLES	A THE MAN AND AND AND AND AND AND AND AND AND A	Charles Albanish as "
Inlet/Outlet Class (P): No Inlet/Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Outlet Perennial Outlet No. 10 Inlet/Perennial Outlet No. 10 Inlet/Pere	Intermittent Inlet/No No Outlet Perennial
Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed,	sonally Flooded, Temporarily Flooded, Saturated Semiperm. Flooded	
Evidence of Sedimentation (P): No Eviden	nce Observed Sediment Observed on Wetland Substrate	Fluvaquent Soils Sediment
Microrelief of Wetland Surface (P): Absent	nt Poorly Developed (6in.) Well Developed (6-18in.)	
		Pronounced (>18in.)
Frequency of Overbank Flooding (P): No C Return Interval >5 yrs	Overbank Flooding Return Interval 1-2 yrs Return Interva	al 2-5 yrs
Frequency of Overbank Flooding (P): No C Return Interval >5 yrs	Overbank Flooding Return Interval 1-2 yrs Return Interval w Restricted Outflow Unrestricted Outflow	al 2-5 yrs
Frequency of Overbank Flooding (P): No C Return Interval >5 yrs	Overbank Flooding Return Interval 1-2 yrs Return Interval DW Restricted Outflow Unrestricted Outflow Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5)	al 2-5 yrs pH Reading
Frequency of Overbank Flooding (P): No C Return Interval >5 yrs	Overbank Flooding Return Interval 1-2 yrs Return Interval Dow Restricted Outflow Unrestricted Outflow Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) Deposits Low Permeability Stratified Deposits Low Permeability Stratified	al 2-5 yrs pH Reading
Frequency of Overbank Flooding (P): No C Return Interval >5 yrs	Overbank Flooding Return Interval 1-2 yrs Return Interval 1-2 yrs Return Interval 1-2 yrs Return Interval 1-2 yrs Return Interval 2-2 yrs Return Inter	pH Reading
Frequency of Overbank Flooding (P): No CReturn Interval >5 yrs	Overbank Flooding Return Interval 1-2 yrs Return Interval 1-2 yrs Return Interval 1-2 yrs Return Interval 1-2 yrs Return Interval 2-2 yrs Return Inter	pH Reading
Frequency of Overbank Flooding (P): No C Return Interval >5 yrs Degree of Outlet Restriction (P): No Outfloo Water pH (P): No surface water C Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Se	Overbank Flooding Return Interval 1-2 yrs	pH Reading ed Deposits Perennial Spring
Frequency of Overbank Flooding (P): No CReturn Interval >5 yrs	Overbank Flooding Return Interval 1-2 yrs Return Interval over Restricted Outflow Unrestricted Outflow Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) d (P): High Permeability Stratified Deposits Low Permeability Stratified Permeability	pH Reading ed Deposits Perennial Spring ted Below
Frequency of Overbank Flooding (P): No CReturn Interval >5 yrs	Overbank Flooding Return Interval 1-2 yrs Return Interval over Restricted Outflow Unrestricted Outflow Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) drop Permeability Stratified Deposits Low Permeability Stratified Outflow Permeability Stratified Deposits Low Permeability Stratified Permeability St	pH Reading ed Deposits Perennial Spring ted Below e. open space)
Frequency of Overbank Flooding (P): No CReturn Interval >5 yrs	Overbank Flooding Return Interval 1-2 yrs Return Interval over Restricted Outflow Unrestricted Outflow Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) d (P): High Permeability Stratified Deposits Low Permeability Stratified Permeability	pH Reading ed Deposits Perennial Spring ted Below e. open space)
Frequency of Overbank Flooding (P): No CReturn Interval >5 yrs	Overbank Flooding Return Interval 1-2 yrs Return Interval over Restricted Outflow Unrestricted Outflow Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) drop Permeability Stratified Deposits Low Permeability Stratified Outflow Permeability Stratified Deposits Low Permeability Stratified Permeability St	pH Reading ed Deposits Perennial Spring ted Below e. open space)

JBrownlex

GPS Technician QA/QC check:

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

	4
Featu	re ID: WIO6PA 609 Field Target: 319 Date: 7.16.16
	Il items not checked, please provide detailed explanation in the notes section of data form.
1	. Site Description
	☑ Site description, site parameters and summary of findings are complete? ☑ A detailed site sketch is included in logbook?
2	. Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
	Vegetation names are entered legibly for all strata present?
	 Cover calculations are complete and correct? All dominant species have been determined and recorded per strata?
	Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?
3	. Soil
	Soil profile is complete? Appropriate hydric soil indicators are marked?
4	. Hydrology
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5	. Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6	. Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
	Each logbook page is initialed and dated?
7.	. Maps
	☑ Wetland boundaries have been corrected if necessary? ☑ Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

X	X	
Wetland Scientist (print)	Signature / Date	
X J Brownlee	X Jessie Brown	ee 7.16.16

ITE DESCRIPTION				The state of the s
urvey Type: Centerline	Access Road (explain)	Other (explain) X	Field Target: 3/7	Map #: _5_Map Date: <u>6.9.(6</u>
ate: 7 - \ 6 - \ 6	Project Name: Alas	ka LNG	Feature lo	i: WIOGPAOIO
nvestigators: Jessie B	cownlee, K	alen Vol	ver	Team No.: 1106
tate: Alaska	Region: Alaska	Milepost:	114	
atitude: (8°4515	0.751" N	Longitude: \48°5	1'24,419" W	Datum: WGS84
ogbook No.: Z	Logbook Page No.:	36 Picture No	: P-WIOGP	4010-001 thruc
ITE PARAMETERS	Christian Michigan			THE RESERVE OF THE PARTY OF THE
ubregion: Brooks Foo	thill a	Landform (hillslope, terrace, hummoc	ks, etc.): Lowland
lope (%): 0-3		Local relief	(concave, convex, none):	Flat
re-mapped Alaska LNG/NWI clas	ssification: U II D Z. III	k7 Evidence	of Wildlife Use: Nowe	
re climatic/hydrologic conditions			"Normal Circumstances" p	
re Vegetation, Soil,	or Hydrology Significat	ntly Disturbed? No)	(If yes, explain in Note	es)
re Vegetation, Soil,	or Hydrology Naturally	Problematic? No	(If yes, explain in Note	es.)
UMMARY OF FINDINGS	TO LONG THE REPORT OF	ALTO PATRICIAL SECTION		
lydrophytic Vegetation Present?	YesNo	Is the Sample	d Area within a Wetland?	Yes No
ydric Soil Present?	YesY No	Wetland Type	PSSI/EMI	В
Vetland Hydrology Present?	YesKNo	Alaska Vegeta	tion Classification (Viereck): 11CZ, 111 A 3_
hydrology indicators drainage channels w Area got shows qu	w/ water stained higher / dries	mounds in between hydrology wear road but	een the wet an from NE to Sc pon Seeing that	site + exploring
	Dry			ROAD

WETLAND DETERMINATION DATA FORM W106 PAO 10

VEGETATION (use scientific names of plants	9)		MARIE SERVICE	
Tree Stratum (Plot sizes: (00 \)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC:
1.				% Dominant Species that are OBL, FACW, or FAC: (A/B)
2.				(35)
3.				
4.				Prevalence Index worksheet:
Total Cover:			1.	Total % Cover of: Multiply by:
50% of total covers	: 20	% of total cov	rer:	OBL species:X 1 =
Sapling/Shrub Stratum (Z.G)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species:
1. Betula Mana	35	Y	FAC	UPL species
2. Empetrum nigrum	-		FAC	Column Totals: 10 2 (A) 304 (B)
3. Rhododendrum tomentosum	l.		FACW	PI = B/A = 2.98
4. Vaccinium vitis-idaea	3		FAC	Acctous ruber 3/3/ FA
5. Salix pulches	55		FACU	Andromeda polifoia SI PARC
6. vaccinium uliginasum	20	Y	FA. C	Phododendrum tomentosum 8 2 1500
7. cassione tetragona	3		FACU	Salix fuscescenso ST De
8. Dryas Integrifolia	7		FACU	Salix Richardsonii S 4
9. Salix retirolata	4		PAC	
Total Cover:			100	
50% of total cover	1 (01) 20	0% of total cov	/er: 17 / (A	
VEGETATION (use scientific names of plants)	12.74		
Herb Stratum (26')	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50% ✓ Prevalence Index is ≤ 3.0
1. Bistorta officinalis	/		NL (U)	Morphological Adaptations¹ (Provide supporting data in
2. Stellaria longials	T		FAC	Notes)
3. Saussurea augustifalia	T		FAC	Problematic Hydrophytic Vegetation¹ (Explain)
4. Eavisetim Avense	8	Y	FAC	¹ Indicators of hydric soil and wetland hydrology must be present unless
5. Bistorta Vivioara	T		FAL	disturbed or problematic.
6. Toli-Idia Quesila	1		FAC	
7. Padicularis SP	7			% Bare Ground
8. Carex 5D	T			% Cover of Wetland Bryophytes
9. valeriana Scouleri	T		FAC	Total Cover of Bryophytes
10.	,	1		% Cover of Water
Total Cover:	P_:		-U	Hydrophytic Vegetation Present (Y/N):
50% of total cover	1	0% of total cov	ver: \ , 8	Notes: (If observed, list morphological adaptations below):

Notes:

Soil Pit Required (Y/N) Feature ID SOIL Date SOIL PROFILE DESCRIPTION: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features Matrix Depth (inches) Loc² Texture Notes Color (moist) % Color (moist) % Type¹ 0.5 Dans organics wicobbles 2.544 88 10-12 4/4 5-20 10 2 M ¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix. INDICATORS FOR PROBLEMATIC HYDRIC SOILS3 HYDRIC SOIL INDICATORS Alaska Color Change (TA4)4 Alaska Gleyed (A13) Histosol or Histel (A1) Histic Epipedon (A2) Alaska Redox (A14) Alaska Alpine Swales (TA5) Black Histic (A3) Alaska Gleyed Pores (A15) Alaska Redox with 2.5Y Hue Alaska Gleyed without 5Y Hue or Redder Underlying Hydrogen Sulfide (A4) Layer Thick Dark Surface (A12) Other (Explain in Notes) ³One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic. Give details of color change in Notes. Restrictive Layer (if present): Type: Depth (inches): -Hydric Soil Present (Y/N): Notes: Spotty XX in mineral HYDROLOGY PRIMARY INDICATORS (any one indicator is sufficient) SECONDARY INDICATORS (2 or more required) Stunted or Stressed Water-stained Surface Water (A1) Surface Soil Cracks (B6) Leaves (B9) Plants (D1) _ N Inundation Visible on Aerial Imagery N Drainage Patterns (B10) Geomorphic Position (D2) Oxidized Rhizospheres along Sparsely Vegetated Shallow Aquitard (D3) Saturation (A3) Concave Surface (B8) Living Roots (C3) Presence of Reduced Microtopographic Water Marks (B1) Marl Deposits (B15) Iron (C4) _ Relief (D4) Hydrogen Sulfide FAC-Neutral Test (D5) Salt Deposits (C5) Sediment Deposits (B2) Odor (C1) Notes: Dry-Season Drift Deposits (B3) Water Table (C2) Algal Mat or Crust (B4) Edge Other (Explain in Notes): Iron Deposits (B5) Depth (in): Surface Water Present (Y/N): Wetland Hydrology Present (Y/N): Water Table Present (Y/N): Depth (in): Saturation Present (Y/N): EC: PH 6.22 Depth (in): (includes capillary fringe)

AQUATIC SITE ASSESSMENT DATA FORM WIOLPAOIO

VEGETATION VARIABLES P= Plot, N	I= Matrix
Forested-Evergreen-Needle-leaved	Scrub Shrub-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) Tall herb (≥1n	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) /O m) Short herb (<1m) 35 Moss-Lichen /5 Floating Submerged O
Number of Wetland Types (M): 3	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse 80%)X_ Very High Density (80-100%)_	(0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattere	100% Cover or Open WaterX <25% Scattered/Peripheral Cover 26-75% Scattered or d or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant :	species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none)	X One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site X Continuous Cover
Dead Woody Material (P): Low Abundance Abundant (>50% of surface)	(0-25% of surface)X Moderately Abundant (25-50% of surface) 套
Vegetative Interspersion (P): Low (large High (small groupings, diverse and interspers	patches, concentric rings) Moderate (broken irregular rings) <
HGM Class (P): Slope 🐧 Flat X	Lacustrine Fringe Depressional Riverine Estaurine Fringe
*	
SOIL VARIABLES	
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy_	Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES	
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent OutletNo Inlet/Perennial OutletIntermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Outlet
Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S	onally Flooded, Temporarily Flooded, Saturated/ Semiperm. Flooded
Evidence of Sedimentation (P): No Eviden Created	ce Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment
Microrelief of Wetland Surface (P): Absent	Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)
Frequency of Overbank Flooding (P): No O Return Interval >5 yrs	verbank Flooding X Return Interval 1-2 yrs Return Interval 2-5 yrs
Degree of Outlet Restriction (P): No Outflow	
Water pH (P): No surface water C	
Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable	
Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No See	Gradient (<2%)X High Gradient (≥2%) eps or Springs_X Seeps Observed Intermittent Spring Perennial Spring
LANDSCAPE VARIABLES (M)	The transfer of the transfer o
Wetland Juxtaposition: Wetland Isolate	ed Wetlands within 400m, Not Connected Only Connected Below d Upstream & DownstreamX Unknown
Wetland Land Use: High Intensity (i.e.,	
	5-25% Urbanized 25-50% Urbanized >50% Urbanized
Size: Small (<10 acres) Medi	um (10-100 acres)
Crew Chief QA/QC check:	GPS Technician QA/QC check: √ √

JBrownlee

GPS Technician QA/QC check: 🗸 🗸

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

	items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	 ☑ Site description, site parameters and summary of findings are complete? ☑ A detailed site sketch is included in logbook?
2.	Vegetation
3.	 ✓ At least 80% of onsite vegetation has been keyed to species, or collected for later identification? ✓ Vegetation names are entered legibly for all strata present? ✓ Cover calculations are complete and correct? ✓ All dominant species have been determined and recorded per strata? ✓ Indicator status is correct for each species? ✓ Dominance Test and Prevalence Index have been completed? ✓ Soil
	Appropriate hydric soil indicators are marked?
4.	Hydrology
	☒ Appropriate hydrology indicators are marked?☒ Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	∇egetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
	1. 2.

Notes have been recorded at each site, including general description, sketch, and

7. Maps

6. Field Logbook

図 Wetland boundaries have been corrected if necessary?

accuracy of pre-mapped wetland boundary as appropriate?

☑ Maps are initialed and dated?

☑ Each logbook page is initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

Field Crew Chief (print)

Signature / Date

SITE DESCRIPTION	100 A 100 A 100 A	45000		attra Large		Service de la constant de
Survey Type: Centerline Access Road (explain)	Other (explanation)	ain)	Field Targe	et: <u>322</u>	Map #: <u></u>	p Date: 6.9.16
Date: 7 - (p - \ 7	aska LNG			Feature Id:	WIOGPAC	11 -
Investigators: Jessie Growne	e, Kale	y Vol	ap.		Team No.: 📐	1100
State: Alaska Region: Alaska		Milepost:	5le			
Latitude: (19° 32,8426' N	Longitude	: 14803	5.69	521 W	Datum: WGS84	
Logbook No.: Logbook Page No	n: 36	Picture No.:	P-WK	OGPAC	DII-ODI	thru 004
SITE PARAMETERS	NAMES AND POSITOR	I Park Str	PG 1 (3 (4 (5))	Jenere .	Application of	
Subregion: Beaufort Castal Plain	NAMES OF TAXABLE PARTY.	Landform (hil	Islope, terrace	e, hummocks	s, etc.): (ow) an	1
Slone (%):		Local relief (c				1/2 1/2
Pre-mapped Alaska LNG/NWI classification: PE M 1/55		Evidence of V	Wildlife Use:	Caribou	FROCKS, L	role + squine
Are climatic/hydrologic conditions on the site typical for this t			ormal Circum	stances" pre	sent:	2011
Yes No (if no explain in Notes)		Yes	1000		plain in Notes.)	
Are Vegetation, Soil, or Hydrology Signific	cantly Disturbed?			lain in Notes		1
Are Vegetation, Soil, or HydrologyNatura	ally Problematic?	NoX	_ (If yes, exp	lain in Notes	.)	Version like the control of
SUMMARY OF FINDINGS					是由民民和政	
Hydrophytic Vegetation Present? Yes No	√ Is	the Sampled A	Area within a	Wetland?	Yes_X	No
Hydric Soil Present? YesNoN	w	etland Type:	PEMI/S	SIB TO	U (see	vote below for de
Wetland Hydrology Present? Yes No	— AI	aska Vegetatio	n Classificatio	on (Viereck):	MAZ, ND	in change of
Notes and Site Sketch: Please include Directional & North A corridor. Dwarf Shrub/Emergent community. Proceed of Site Sandwhiched in between Weird pink alog of cryptograms lawest por Point doesn't make a soil indicator. Saturation in the up largers go e boundary of the wetland Sandwiched WIOBPA (SIL. OP U'. 11 DI, IICZ	m 2 uplease int Before st Bot warns is vident by	mmocking ads. Afer cepaplan SPJ to we the BJ	w/ Bare Not as d. Sacture aire it du w/out Ce Therefore	ground wet es to do so	reachment of	base of elevating
D64 400	OG PACI! ON	Di		The state of the s	W-D	Page 1 of 4



Tree Stratum (Plot sizes: \(\int \O \O \)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	No. of Dominant Species that are OB			144	No. of London
1.	MI.			Total Number of Dominant Species A % Dominant Species that are OBL, F			- 1	70,000
2.		×		% Dominant opecies that are OBL, 1	ΑΟνν, ο	A PAG.		(ハロ)
3.		100						
4.		7		Prevalence Index worksheet:				and stable
Total Cover:				Total % Cover of:	Mul	tiply by	C.	
50% of total cover:	20	% of total cov	er:	OBL species: X 1 =				
Sapling/Shrub Stratum (2 ()	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: X 2 = FAC species X 3 = FACU species 17 X 4 =	24	1		
1. Deser 1.1. Off-	15	Y -	FACO	UPL species X 5 =				
1. Dryas: integrifolia	1		FAC	Column Totals: 28 (A)				
2. vaccinium uliginosum 3. Cassiope tetragona	1		FACU	PI = B/A = 3.82	N. DE	13.1		Stalker
4. Arctous ruber	2	11.20	FAC	Hedysarum alpinum	H	T:	1,4	FACU
5. Solix reticulata	T		FAC	Pingovicula vulgaris	1+1	+		0BL
6. Salu fuscescens	T		FACW	Salix richardsonil	5	T		FACW
7. Salix pulchra	7		FACW	grass sp	H	T	1	
						1	DIT GOT	A PROPERTY OF
	1		FAC		-	1		100 mm
8. Dasiphora fruticosa	2			per sp	H	T		- NI (
8. Dasiphora fruticosa	2	0% of total cov	FAC		Н	T		NL
8. Dasiphora froticosa 9. Rhododendrum lamicum Total Cover: 50% of total cover:	2 11 11 20	0% of total cov	FAC	Pen sp Boykinia richardsonii	H	T		- NLC
8. Dasiphora Fritionsa 9. Rhododendrum lagranicum Total Cover:	2 11 11 20	Dominant Species? (Y/N)	FAC	Pea 3P Boykin in cichardson il Potentilla bi flora Hydrophytic Vegetation Indicators N Dominance Test is > 50% 3	H H	T		- NLC
8. Dasiphora froticosa 9. Rhododendrum legenicum Total Cover: 50% of total cover: VEGETATION (use scientific names of plants Herb Stratum (2 ())	2 11 11 20	Dominant Species?	FAC FAC er: 4.4 Indicator	Pea 3P Boykin is cichardson! Potentilla bi ffors Hydrophytic Vegetation Indicators N Dominance Test is > 50% 3 Prevalence Index is ≤ 3.0	H H H	TTT	ding da	Ar(
8. Dasiphora fricosa 9. Rhododendrum lamicum Total Cover: 50% of total cover: VEGETATION (use scientific names of plants Herb Stratum (2 (0))	2 12 1 20) Absolute % Cover	Dominant Species?	FAC FAC er: 4.4 Indicator Status	Pea 3P Boykin in cichardson il Potentilla bi flora Hydrophytic Vegetation Indicators N Dominance Test is > 50% 3	H H H	TTT	rting da	AL(
8. Dasiphora fricosa 9. Rhododendrum lemenicum Total Cover: 50% of total cover: VEGETATION (use scientific names of plants Herb Stratum (2(a))	2 12 1 20) Absolute % Cover	Dominant Species?	FAC FAC er: 4.4 Indicator Status	Per 3P Boykin in cichardson il Potentilla bi Aora Hydrophytic Vegetation Indicators N Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (F	H H H	T		Ar(
8. Dasiphora froticosa 9. Rhododendrum lemenicum Total Cover: 50% of total cover: VEGETATION (use scientific names of plants Herb Stratum (2 (a)) 1. Splane a catulis 2. Toficilia pusillia 3. Cover a quatalis	2 12 1 20) Absolute % Cover	Dominant Species?	FAC FAC Indicator Status UPL FAC	Potentila bi flora Hydrophytic Vegetation Indicators Notes	H H H Provide	support (Expla	in)	NL(い
8. Dasiphora froticosa 9. Rhododendrum lamicum Total Cover: 50% of total cover: VEGETATION (use scientific names of plants Herb Stratum (2 (0) 1. Silvene actualis 2. Toficilia pusillia 3. Carra aqualalis 4. Care y Isair polidera 5.	2 12 1 20) Absolute % Cover	Dominant Species?	FAC er: 4.4 Indicator Status UPL FAC OBL	Hydrophytic Vegetation Indicators N Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations (Final Notes) Problematic Hydrophytic Veg	H H H Provide	support (Expla	in)	ルレ(い
8. Dasiphora froticosa 9. Rhododendrum Lamicum Total Cover: 50% of total cover: VEGETATION (use scientific names of plants Herb Stratum (2 (0)) 1. Splane actualis 2. Toficilia pusillia 3. Corex aqualulis 4. Corex (Scientolidea) 5. Corex 2 moti Black	2 12 1 20) Absolute % Cover	Dominant Species?	FAC er: 4.4 Indicator Status UPL FAC OBL	Hydrophytic Vegetation Indicators N Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Findicators of hydric soil and wetland hydrophytic Veg	H H H Provide	support (Expla	in)	ルレ(い
8. Dasiphora fruticosa 9. Rhododendrum lamnicum Total Cover: 50% of total cover: VEGETATION (use scientific names of plants Herb Stratum (2 (0)) 1. Silvere a chulis 2. Toficilia pusillia 3. Carex a qualulis 4. Carex I sciendalis 5. Carex 2 muti Black 6. Carex 3 little single	2 12 1 20) Absolute % Cover	Dominant Species?	FAC er: 4.4 Indicator Status UPL FAC OBL	Hydrophytic Vegetation Indicators N Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Findicators of hydric soil and wetland hydrophytic Veg	Provide etation arology m	support (Expla	in)	ルレ(data in
8. Dasiphora fricosa 9. Rhododendrum legenicum Total Cover: 50% of total cover: VEGETATION (use scientific names of plants Herb Stratum (2 (o') 1. Splane a catulis 2. Toficilia pusillia 3. Care a qualulis 4. Care x I sein polidera 5. Care x 2 muti Riack 6. Care x 3 / the single 7. Richard Constants	2	Dominant Species?	FAC FAC Indicator Status UPL FAC OBL FACU	Hydrophytic Vegetation Indicators N Dominance Test is > 50% N Prevalence Index is ≤ 3.0 Morphological Adaptations (F. Notes) Problematic Hydrophytic Veg Indicators of hydric soil and wetland hyd disturbed or problematic. % Bare Ground % Cover of We	Provide etation arology m	suppor (Expla	in) present	ルレ(い
8. Dasiphora fruticosa 9. Rhododendrum lamicum Total Cover: 50% of total cover: 6. Cover: 6. Cover: 6. Cover: 7. Bistorta vivipara 8. Saxifraga oppositifolia 9.	2 12 1 20) Absolute % Cover	Dominant Species?	FAC FAC OBL FAC FAC FAC FAC	Hydrophytic Vegetation Indicators N Dominance Test is > 50% N Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (F. Notes) Problematic Hydrophytic Veg¹ Indicators of hydric soil and wetland hyd disturbed or problematic. % Bare Ground % Cover of Were corded — Total Cover of	Provide etation arrology multiland Bryophy	support (Explainst be property)	in) present	NL(い
8. Dasiphora fricosa 9. Rhododendrum lamnicum Total Cover: 50% of total cover: 50% of total cover: VEGETATION (use scientific names of plants Herb Stratum (2 (a)) 2. Toficilia pusillia 3. Carex aqualulis 4. Carex I sciendolisea 5. Carex 2 muti Riack 6. Carex 3 little single 7. Bistarta vivipara 8. Saxifraga appositifolia	2	Dominant Species?	FAC er: 4,4 Indicator Status UPL FAC OBL FACU FACU	Hydrophytic Vegetation Indicators N Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations (F. Notes) Problematic Hydrophytic Vegetation indicators of hydric soil and wetland hydrogetations (F. Notes) Bare Ground (F. Notes) "Matter Street (F. Notes) (F. Notes) "Matter Street (F. Notes) (F.	Provide etation and the strand Bryophy ter	support (Explainst be property)	in) present	NL(い

			7 lell				- 10	
SOIL			THE RESERVE OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TW	eature II			N. P. S.	Soil Pit Required (Y/N)
SOIL PROFILI	E DESCRIPTION: (I	Describe	to the depth needed	to docu	ument the	indicator or	confirm the absence	e of indicators.)
Depth	Matrix	1	Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc²	Texture	Notes
Oe 0-2	-			120	Joseph Company			Damp organics
Bw 2-3 Or 3-5	5YR 3/4	50	5413 5/6	50	CON	m	silf loam	Band of 100% concentrations. Damps organics
Ba 5-8	2543/			3			Sitloan	. 0
C 8-24	_						very gravelly	sand (grains increasing in size wider
¹Type: C=Con	centration, D=Deple	etion, RM	M=Reduced Matrix, C	S=Cove	ered or C	oated Sand (Grains. ² Location:	PL=Pore Lining, M=Matrix.
HYDRIC SOIL	THE RESERVE THE PARTY OF THE PA			216	43 E 164			FOR PROBLEMATIC HYDRIC SOILS ³
Histosol or His	THE REAL PROPERTY AND ADDRESS OF THE PERSON NAMED IN COLUMN TWO PERSONS AND ADDRESS OF THE PERSON NAMED IN COLUMN TWO PERSON NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TWO PERSON NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TWO PERSON NAMED	STATE OF THE PARTY	Alaska Gleyed	(A13)	N	_	Alaska Color C	hange (TA4) ⁴ /
Histic Epipedo	/		Alaska Redox	(A14) _	N		Alaska Alpine	Swales (TA5)
Black Histic (A			Alaska Gleyed	Pores	(A15)	N	Alaska Redox	with 2.5Y Hue
Hydrogen Sulf			V is	_/			Layer_ N	without 5Y Hue or Redder Underlying
Thick Dark Su	rface (A12)						Other (Explain	in Notes) \(\subseteq \text{ape position must be present unless} \)
Hydric Soil Pr Notes: Ne g		ee No	te on front	No		1		
HYDROLOGY	PRIMARY INDICA	TORS (any one indicator is	sufficient	t)	SECONDA	RY INDICATORS (2	or more required)
Surface Water	(A1) = N	Su	ırface Soil Cracks (B	6)_ ~		Water-stain Leaves (B9)		Stunted or Stressed Plants (D1)
High Water Ta	ble (A2) _ N	Int - (B	undation Visible on A 7)	erial Ima	agery	Drainage Patterns (B10) Geomorphic Position		Geomorphic Position (D2),
Saturation (A3)	Sp Co	parsely Vegetated oncave Surface (B8)	У		Living Roots		Shallow Aquitard (D3)
Water Marks (B1) /	Ma	arl Deposits (B15)	J		Presence of Reduced Iron (C4)/ Microtopographic Relief (D4)/		
Sediment Dep	osits (B2)		drogen Sulfide dor (C1)			Salt Deposi	ts (C5)/_	FAC-Neutral Test (D5)
Drift Deposits	(B3)/_		y-Season ater Table (C2)/			Notes:		
Algal Mat or C	rust (B4) Edge	_ Ot	her (Explain in Notes	s):				
Iron Deposits	(B5)/							
Surface Water	Present (Y/N):	-N	Depth (in):		NO ALICH ME		TWO ISSUED IN	V
Water Table P	resent (Y/N):	/	Depth (in): /8		V	Vetland Hyd	rology Present (Y/	N):
Saturation Pre (includes capil			Depth (in): /(a		E	c: 65	1 pH	6.36
Notes:	- 17 /		AS _					

AQUATIC SITE ASSESSMENT DATA FORM Wet land poplared boundary!

VEGETATION VARIABLES P= Plot, M	i= Matrix
Forested-Evergreen-Needle-leaved	ckingForested-Deciduous-Needle-leavedForested-Deciduous-Broad-leavedScrub Shrub-Deciduous-Needle-leavedScrub Shrub-Deciduous-Broad-leavedScrub Shrub-Evergreen-Needle-leavedEmergent-Non-persistentEmergent-
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) Tall herb (≥1r	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) & O Short herb (<1m) Moss-Lichen T Floating Submerged C
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even
Vegetation Density(Dominance (P): Sparse 80%) Very High Density (80-100%)_	(0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover>75% Scattere	100% Cover or Open Water X <25% Scattered/Peripheral Cover 26-75% Scattered or d or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant s	species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none)	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover
Dead Woody Material (P): Low Abundance (Abundant (>50% of surface)	(0-25% of surface)X Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large High (small groupings, diverse and intersperse	patches, concentric rings) Moderate (broken irregular rings)ed)
HGM Class (P): Slope Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES	
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy	Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES	THE PARTY OF THE P
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Outlet Perennial Outlet Inlet/Perennial Outlet Inl
Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, \$	onally Flooded, Temporarily Flooded, Saturated Semiperm. Flooded
	ce Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment
Microrelief of Wetland Surface (P): Absent	Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)
Frequency of Overbank Flooding (P): No O Return Interval >5 yrs	verbank Flooding
Degree of Outlet Restriction (P): No Outflow	
	ircumneutral (5.5-7.4)
Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable	(P): High Permeability Stratified Deposits Low Permeability Stratified Deposits
Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No See	Gradient (<2%)
LANDSCAPE VARIABLES (M)	The state of the s
Wetland Jux aposition: Wetland Isolate Only Connected Above Connecte	d Upstream & Downstream Unknown Only Connected Below
Wetland Land Use: High Intensity (i.e.,	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Wetland Care Ose. Then interiory (i.e.,	ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)
Watershed Land Use: 0-5% Ruralx	ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space) 5-25% Urbanized 25-50% Urbanized >50% Urbanized
Watershed Land Use: 0-5% Rural X	

OBrownlee

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Feature	e ID: wowPA of Field Target: 322 Date: 7.16.17
	items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	 At least 80% of onsite vegetation has been keyed to species, or collected for later identification? ✓ Vegetation names are entered legibly for all strata present? ✓ Cover calculations are complete and correct? ✓ All dominant species have been determined and recorded per strata?
	☑ Indicator status is correct for each species?☑ Dominance Test and Prevalence Index have been completed?
3.	Soil
8 -	☑ Soil profile is complete?☑ Appropriate hydric soil indicators are marked?
4.	Hydrology
	 ☑ Appropriate hydrology indicators are marked? ☑ Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	✓ Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7.	Maps
	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- ☑ Two photos were taken for each Observation Point (vegetation/site overview)?

X	X The same of the
Wetland Scientist (print)	Signature / Date
X J Brownlee	X Sessie Brownlee 7.16.17
Field Crew Chief (print)	Signature / Date

WEILAND DETERM				CD Ne	WFT Coli	1 Foot #3
SITE DESCRIPTION		eden deserted	AND SHIP OF		Manufacture of the second	
Survey Type: Centerline Acces	ss Road (explain)	Other (expl	ain) X	Field Targ	et:	Map #: Map Date: 7 15 16
Date: 7-17-16	Project Name: Alask	rá LNG			Feature Id:	W106PA012
Investigators: Jessie Ba	ownlee, Ka	len y	Olper	54 L		Team No.: WO6
State: Alaska	Region: Alaska	J	Milepost:	163		
Latitude: 68,2139459	30	Longitude	: -149,3	87699	140	Datum: WGS84
Logbook No.: 2	Logbook Page No.:	37	Picture No.:	P-W	106 PAC	12-001 thru ady
SITE PARAMETERS			ALCONOMIC TO SE	7053		CONTRACTOR OF THE
Subregion: Brook Range	F2 -		Landform (hil	Islope, terra	ce, hummock	s, etc.): Hillside Base of Alluvial A
Slope (%): 15						let to slightly concave
Pre-mapped Alaska LNG/NWI classifica	tion: PSSI/EM	13				droppings, grand squir
Are climatic/hydrologic conditions on the Yes No (if no exp	e site typical for this time ain in Notes)	e of year?	Are "No	ormal Circur No	nstances" pre (If no, ex	esent: plain in Notes.)
Are Vegetation, Soil, or Hyd	drologySignifican	tly Disturbed	? No_X	_(If yes, ex	olain in Notes	3)
Are Vegetation, SoilX, or Hy	drology Naturally	Problematic?	No	_ (If yes, ex	plain in Note	s.)
SUMMARY OF FINDINGS				原 对新疆路	AX que la c	
Hydrophytic Vegetation Present? Yes_	No	Is	the Sampled	Area within	a Wetland?	YesXNo
Hydric Soil Present? Yes_	X see Note X Below No	v	Vetland Type:	P551/	EMIB	The second second
Wetland Hydrology Present? Yes_	X No	A	laska Vegetatio	n Classifica	ion (Viereck)	11CZ, 181AZ
Notes and Site Sketch: Please include I corridor. Diverse trasmeting careat uf Much water pumping of from plot. It's wet upsile topupland C	pe of here of		TE A WAY	to inc	the wo	erline, Photo Locations, and Survey ase of Allustral fun 1245B runs 10 to No. 10 ern updated overturm the resouth of home. PI to wave it due to 90BL species found
APRON	stays wet 10 Haggin		wet down			

			- Luciani	
VEGETATION (use scientific names of plant	s)			
Tree Stratum (Plot sizes: 180)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: (A) Total Number of Dominant Species Across All Strata: (B)
1.				% Dominant Species that are OBL, FACW, or FAC: 67 (A/B)
2.				76 Bornmant opcoles that are GBE, 17(GV), GT7(G)
3.				
4.				Prevalence Index worksheet:
Total Cove	r:		,	Total % Cover of: Multiply by:
50% of total cove	r: 20	% of total cov	er:	OBL species:
Sapling/Shrub Stratum (26)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: $\begin{array}{cccccccccccccccccccccccccccccccccccc$
1. Cassiope tetragena	10	Y	FACU	UPL species
2. NECCINIUM MIGINASUM	10	Y	FAC	Column Totals: 13Z (A) 407 (B)
3. Betalo Nana	15	Y	FAC	PI = B/A = 3.08
4. Salix retievlata	14		FAC	Carron utriculata H T OBL
5. Salix pulchra	25	Y	FAC	
6. Vaccinium ultis-idaea	8		FAC	
7. Emoctrum rignum	5		FAC	
8. Bhabdendrom tomentoxism	3		FACUL	
9. Drugs Integrifilia	10	Y	FACU	
Total Cove	r: 90			-
50% of total cover	r: 45 20	% of total cov	er: <u>\4</u>	
VEGETATION (use scientific names of plant	ls)	TO THE		Pale Programmes and the Mean of the Market
Herb Stratum (26)	Absolute	Dominant	Indicator	Hydrophytic Vegetation Indicators:

1. Carex higelawii 2. Calimaganhis canadensis 3. Carex robudala 3. Carex robudala 4. Problematic Hydrophytic Vegetation¹ (Explain) 4. Problematic Hydrophytic Vegetation¹ (Explain) 4. Problematic Hydrophytic Vegetation¹ (Explain) 5. Finisohorum angustifolium 7. Forb sp (Aster) 7. Forb sp (Aster) 8. Bistorta viripara 9. Problematic Sp 7. Problematic Hydrophytic Vegetation¹ (Explain) 7. Forb sp (Aster) 7. Forb sp (Aster) 8. Bistorta viripara 9. Problematic Hydrophytic Vegetation¹ (Explain) 7. Forb sp (Aster) 7. Forb sp (Aster) 8. Bistorta viripara 9. Problematic Hydrophytic Vegetation¹ (Explain) 7. Forb sp (Aster) 8. Bistorta viripara 9. Problematic Hydrophytic Vegetation¹ (Explain) 7. Forb sp (Aster) 8. Bistorta viripara 9. Problematic Hydrophytic Vegetation¹ (Explain) 8. Bistorta viripara 9. Problematic Hydrophytic Vegetation¹ (Explain) 9. Problematic Hydrop			
2. Calamaganhic canadensis 3. Care a robundala 4. Saussurea angush folia 5. Finisphurum angush folia 6. Petasites frigidus 7. Forb sp (Aster) 7. Forb sp (Aster) 8. Bistorte viripara 7. Problematic Hydrophytic Vegetation (Explain) 8. Bistorte viripara 9. Pedicularis sp	vide supporting data in		
4. Saussurea angust Folia T FAC Indicators of hydric soil and wetland hydrology must be presed disturbed or problematic. 5. Fit ophorum angust folium T OBL disturbed or problematic. 6. Petasites frigidus T FACU 7. Forb sp (Aster) T FACU 8. Bistorta viripara T FAC 9. Pedicularis sp Total Cover of Bryophytes 1 Indicators of hydric soil and wetland hydrology must be presed disturbed or problematic. 1 Indicators of hydric soil and wetland hydrology must be presed disturbed or problematic.			
5. Fit opherum angustifolium 6. Petasites frigidus 7. Forb sp (Aster) 8. Bistorte viripara 7. Forb sp (Aster) 7. Forb sp (Aster) 8. Bistorte viripara 7. Forb sp (Aster) 8. Bistorte viripara 7. Forb sp (Aster) 8. Bistorte viripara 8. Bistorte viripara 9. Pedicularis sp (Cover of Wetland Bryophytes)	ain)		
5. First opherum angustifelium 6. Petasites frigidus 7. Forb sp (Aster) 7. Forb sp (Aster) 8. Bistorte viripara 7. Forb sp (Total Cover of Bryophytes 9. Pedicularis sp	nt unless		
7. Forb sp (Aster) 8. Bistorta vivipara T FAC 9. Pedicularis sp T Sover of Wetland Bryophytes (C) W Sover of Weter (C) W Sover	14		
7. Forb sp (Aster) 8. Bistorta vivipara 7. Forb sp (Aster) 8. Bistorta vivipara 7. Forb sp (Aster) 8. Cover of Wetland Bryophytes 9. Pedicularis sp 7. Forb sp (Aster) 8. Cover of Wetland Bryophytes 10. Pedicularis sp	A STATE OF		
B. Bistorta vivipara T FAC 30 % Cover of Wetland Bryophytes 80 Total Cover of Bryophytes (2) % Cover of Weter A			
9. Pedicularis sp. Total Cover of Bryophytes			
70 Cover of water V			
10. Eriopharum Saginatum 2 FACU Hydrophytic Vegetation Present (Y/N):			
Total Cover: 4 U Notes: (If observed, list morphological adaptations beld	w):		
50% of total cover: 21 20% of total cover: 3.9			

WIOLFAUZ

and the second	A STATE OF THE PARTY OF THE PAR	-5-1115-110	41116	T. Mark	VEIDLE !	and the second second	alta de la companya del companya de la companya del companya de la				
SOIL	BESTER BETTE	STORES OF STREET	Date Featu	0.455				Soil Pit Required (Y/N)			
SOIL PROFILI		escribe	to the depth needed to	docu	iment the	indicator or co	nfirm the absence	e of indicators.)			
Depth 3	Matrix		Redox Features			Loc ²					
(inches)	es) Color (moist) % Color (moist) % Type						Texture	Notes			
01 6-2								Saturated organics			
Oc 2.6						2		(· · · · · · · · · · · · · · · · · · ·			
Bg 6-10	544/	100				Sill Camo	11.				
Raf 10-+	5441	100				groundly 5	14	Frozen			
0 8					0 0						
- 7				-			To the second	ie .			
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. *Location: PL=Pore Lining, M=Matrix.											
HYDRIC SOIL INDICATORS FOR PROBLEMATIC HYDRIC SOILS ³											
Histosol or Histel (A1) Alaska Gleyed (A13) Alaska Color Change (TA4) ⁴											
	n (A2)		Alaska Redox (A1	_				Swales (TA5)			
	7							with 2.5Y Hue			
Black Histic (A	3)	-	Alaska Gleyed Po	ores (A15) _ /\	/		without 5Y Hue or Redder Underlying			
Hydrogen Sulfi	de (A4)/_						Layer N	without 31 Tide of Redder Oridenying			
Thick Dark Sur	face (A12)/						Other (Explain	in Notes) N			
		tion, or	ne primary indicator of v	vetla	nd hydrol	logy, and an app	propriate landsca	pe position must be present unless			
disturbed or pro											
Restrictive Lav	f color change in Note er (if present): Type:	es. Derr	viscost Den	th (ir	ches):	<i>T</i> o					
riodinoliro Luy				, in							
Hydric Soll Pr	esent (V/N). See	Note	on front page				~				
Notes: Faint	Comp positive	XX	ir spots.								
								**			
				- A A S A S A S							
HYDROLOGY	PRIMARY INDICATE	ORS (a	ny one indicator is suffi	cient)- 15,	SECONDARY	NDICATORS (2	or more required)			
Surface Water	(A1)	Sun	face Soil Cracks (B6) _	N		Water-stained	. 1	Stunted or Stressed			
		1				Leaves (B9)	N ,	Plants (D1) N			
High Water Tal	ble (A2)	(B7	ndation Visible on Aeria	ıı ıma	igery	Drainage Patte	rns (B10) <u> </u>	Geomorphic Position (D2) N			
	1/	Spa	rsely Vegetated	,	-	Oxidized Rhizospheres along Shellow Aquitord (D2)					
Saturation (A3)	<u> </u>	Cor	cave Surface (B8)	<u> </u>		Living Roots (C3) Shallow Aquitard (D3)					
Water Marks (E	24) (l Deposits (B15)/			Presence of Reduced Microtopographic					
vvalei iviaiks (E	01)				-	Iron (C4) N Relief (D4) Y					
Sediment Depo	osits (B2)	Hydrogen Sulfide Salt Deposits (C5)					C5) N	FAC-Neutral Test (D5)			
	,	_	or (C1)								
Drift Deposits (В3)/	Dry-Season Water Table (C2)									
Water Table (G2)							1.2				
Algal Mat or Crust (B4) _ / Other (Explain in Notes):											
Iron Deposits (B5)											
Total Deposits (TO A TO A STATE OF THE STATE OF		San San Berliner		- St St.	manufacture and the second		Material State of Sta			
Ourface Min	Decemb (V/A): N	112000	Danth (in):	1700	Control of	THE RESERVE					
Surface Water	rieseni (T/N);		Depth (in):	1.	100	otland Usdea!	gy Present (Y/N	n- Y			
Water Table Pr	resent (Y/N):		Depth (in): expected	70 (95e W	enanu mydrolo	gy Fresent (1/N	J•			
	Y		to point of se	Sep (7						
Saturation Pres			Depth (in):		E	c: 1/8	DH	6.4			
(includes capilla	ary ininge)		y-				<i></i>	* /			
Notes:			*								

AQUATIC SITE ASSESSMENT DATA FORM



VEGETATION VARIABLES P= Plot, F	M= Matrix
Forested-Evergreen-Needle-leaved Scrub Shrub-Evergreen-Broad-leaved Persistent Aquatic Bed	ackingForested-Deciduous-Needle-leavedForested-Deciduous-Broad-leavedScrub Shrub-Deciduous-Broad-leavedScrub Shrub-Evergreen-Needle-leavedEmergent-Non-persistentEmergent-
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) _	Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Im) Short herb (<1m)
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)	e (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattered	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant	species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none)	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site
Dead Woody Material (P): Low Abundance Abundant (>50% of surface)	(0-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large High (small groupings, diverse and interspers	e patches, concentric rings) Moderate (broken irregular rings) sed)
HGM Class (P): Slope ≺ Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES	
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy	Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES	
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent OutletNo Inlet/Perennial Outlet Intermittent Inlet/No at Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea	t OutletX Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Sonally Flooded, Temporarily Flooded, SaturatedX
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermitten Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea: Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Eviden	t OutletX Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Sonally Flooded, Temporarily Flooded, SaturatedX
Inlet/Outlet Class (P): No Inlet/Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Inle	t OutletXIntermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Semiperm. Flooded
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermitten Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Sea: Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent	Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Intermittent In	Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Inlet/No Out
Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermitten Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea: Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Creater Interval >5 yrs Degree of Outlet Restriction (P): No Outflood	Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Intermittent Intermitten	Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Pe
Inlet/Outlet Class (P): No Inlet/Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Characteristics (P): Drier: Seat Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): No Evider Created Microrelief of Wetland Surface (P): No Outflood Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflood Water pH (P): No surface water Comparison of Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable	Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/P
Inlet/Outlet Class (P): No Inlet/Outlet_OutletIntermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Intermittently Exposed, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Perennial Inlet	Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/P
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet Intermittently Exposed, Intermittently Expo	Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial I
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet Intermittently Exposed, Intermittently I	Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Inlet Inle	Intermittent Interview Int
Inlet/Outlet Class (P): No Inlet/Outlet_Outlet Intermittent Inlet/Intermittent Intermittent	Intermittent Inlet/Perennial Outlet

JBrownlee

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

	This form to be completed before leaving the note site.
Ttu	re ID: WIOGPACIZ Field Target: Colo Got #3 Date: 7.17.16
For all	items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later
	identification? Vegetation names are entered legibly for all strata present?
	All dominant species have been determined and recorded per strata? Indicator status is correct for each species?
	Dominance Test and Prevalence Index have been completed?
3.	Soil
	☑ Soil profile is complete?
-	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and
	accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7.	
	Wetland boundaries have been corrected if necessary?
	Maps are initialed and dated?

8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X	
Signature / Date	n-mitepeV
ee X Jessie Bro	mlee 7.17.19

SITE DESCRIPTION	MANAGE CONTRACTOR	19g		LO, BANK	CALLS COM	自 和自然的自然的。
Survey Type: Centerline K Acce	ss Road (explain) Othe	er (explai	n)	Field Targ	get: <u>/84</u>	Map #: 130 Map Date: 5 20 14
Date: 5.22.2016	Project Name: Alaska LNC	3			Feature Id:	WIOGITOOI "
Investigators: Jess'e Bo	annier, Kale	1/1	10/per			Team No.: WIOG ,
State: Alaska	Region: Alaska	7	Milepost:	743.5	5	
Latitude: 610 22' 01,521	5" N Lor	ngitude:				Datum: WGS84
Logbook No.:	Logbook Page No.:		Picture No.:	6-MIOC	T1001_	001 thru _004
SITE PARAMETERS	A STATE OF STATE	NE SE	STATISTICS OF STATISTICS	TIME SERVICE	標準)/語(司	深。在2.30 00000000000000000000000000000000000
Subregion: Cook Inlet Ba	2,10		Landform (hill	Islope, terra	ce, hummock	s, etc.): Tellare
Slope (%): 0-3	200		Local relief (c	oncave, con	vex, none):	Flat, hommocky
Pre-mapped Alaska LNG/NWI classifica	ation: PF114/554B		Evidence of V			
Are climatic/hydrologic conditions on the		ar?		rmal Circun	nstances" pre	esent: plain in Notes.)
Yes		turbed?			plain in Notes	
Are Vegetation, Soil, or Hyd			No_X	_ (If yes, ex	plain in Notes	5.)
SUMMARY OF FINDINGS	THE REPORT OF THE PARTY OF THE	(She	操作 [2]	RADIO BY	SENIE P	。 第188章 医克里克斯氏病
Hydrophytic Vegetation Present? Yes_	X No	ls t	he Sampled A	\rea within	a Wetland?	Yes No
Hydric Soil Present? Yes_	X No	We	tland Type:	PF041	3	
Wetland Hydrology Present? Yes_	/ No	Ala	ska Vegetation	n Classificat	ion (Viereck):	1A2,11C2
Notes and Site Sketch: Please include I corridor. on traverse from LZ 3 the topo break to was the only upland	142.6 to here 6 the South East inclusion of ~	8 7 30 g	184 All this Field yandswid	of Binge I tange	the forces	t was wet entill widelous
Shab layer. Organic soils >16" 11	the water table			10% 4	blueben	ny stalse huckbelony
PFOIR - 0 7	TA A B					
upland	610					

VEGETATION (use scientific names of plan	ts)			
Tree Stratum (Plot sizes: 190)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: 4 (A
1. Picea Mariana 25'	-40	THE Y	FACW	Total Number of Dominant Species Across All Strata: (B % Dominant Species that are OBL, FACW, or FAC: (A/B)
2.				W Bollimant opecies that are OBE, 1710VI, of 1710. 1110
3.		-1		
4.				Prevalence Index worksheet:
Total Cove				Total % Cover of: Multiply by:
50% of total cove	er: 20 20	% of total cov	er: <u> </u>	OBL species: X1 = O
Sapling/Shrub Stratum (24)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 43 x 2 = 86 FAC species 68 x 3 = 204 FACU species 40 x 4 = 106
1. Elenziesia ferruginea	20	Y	FACU	UPL species X 5 = O
Vaccinium VITIS-intrea	20	Y	FAC	Column Totals: 151 (A) 450 (B)
3. Empetrum nigrum	2A 5	, ,	FAC	PI = B/A = Z.99
4. Linnaga porcalis	20	Y	FACU	
5. Vaccinium avalitation	35	y	FAC	
Betula papyrifera	T			
1. Picea martana	T		FACW	
8.				
9.				
Total Cove		% of total cov	er: <u>ZS</u>	
VEGETATION (use scientific names of plan	s) 22 (1)	200	建 国的"小龙	
Herb Stratum (2)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50%
1. Equisetum advaticum	8	Y	FAC	Y Prevalence Index is ≤ 3.0
2. Rubus chamaemorus	3		FACLE	Morphological Adaptations¹ (Provide supporting data in Notes)
3. Cornus Camadensis	T		FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
4.				¹ Indicators of hydric soil and wetland hydrology must be present unless
5.		12		disturbed or problematic.
6.				STATES OF THE REPORT OF THE PARTY OF THE PARTY.
7.				% Bare Ground
8.				<u>ℰ</u> ⊘ % Cover of Wetland Bryophytes
9.				_ <i></i>
10.			-	% Cover of Water
	. \\			Hydrophytic Vegetation Present (Y/N):
Total Cove 50% of total cove		% of total cov	er: 2.2	Notes: (If observed, list morphological adaptations below):

			5.22-16		184			У
SOIL	2000年20日	WHEN PRINTED		ature II			1297, 1-60	Soil Pit Required (Y/N)
SOIL PROFIL	E DESCRIPTION: (I	Describe	to the depth needed	to doc	ument the i	indicator or	confirm the absence	e of indicators.)
Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Notes
0-10	مش	Jan 7						
10-110	San Angel							
4	15							
A second								
								The state of the s
							2	
	and the same of th	etion, RM	/I=Reduced Matrix, C	S=Cov	ered or Co	ated Sand C		PL=Pore Lining, M=Matrix,
HYDRIC SOIL	INDICATORS	200	正规40年6日		STATE OF THE PARTY.		And the second section of the second	FOR PROBLEMATIC HYDRIC SOILS
Histosol or His	stel (A1)X		Alaska Gleyed				_	hange (TA4) ⁴ <i>N</i>
Histic Epipedo			Alaska Redox			,		Swales (TA5) N
Black Histic (A	(3) <u>N</u>	700	Alaska Gleyed	Pores	(A15) <u>^</u>	J		with 2.5Y HueN
Hydrogen Sulf	fide (A4)/						Alaska Gleyed	without 5Y Hue or Redder Underlying
Thick Dark Su	rface (A12)						Other (Explain	in Notes) N
		tation, o	ne primary indicator	of wetla	and hydrolo	gy, and an	appropriate landsca	pe position must be present unless
disturbed or p	roblematic.							
	of color change in No yer (if present): Type			epth (i	nches):	_		
Hydric Soil P	resent (Y/N):							
Notes: .//	10 - 1	7	. dl /					
Notes. toith	Afew sand	icnse	mroughour .					*
			*					y .
HYDROLOGY	PRIMARY INDICA	TORS (a	any one indicator is s	ufficien	t) 5	SECONDAR	RY INDICATORS (2	or more required)
Name of the Party	./				A DESCRIPTION OF THE PERSON NAMED IN	Nater-staine	THE RESERVE OF THE PARTY OF THE	Stunted or Stressed
Surface Wate	r (A1)	Su	rface Soil Cracks (B6)^		eaves (B9)	1	Plants (D1)
High Water Ta	able (A2)	Inu (B7	ndation Visible on Ae	erial Im	agery [Orainage Pa	utterns (B10)	Geomorphic Position (D2)/_
Saturation (A3	3)/		arsely Vegetated ncave Surface (B8) _	N		Oxidized Rh Living Roots	Shallow Aquitard (D3)	
Water Marks (B1)	Ma	rl Deposits (B15)	N		Presence of Reduced Iron (C4) Microtopographic Relief (D4)		
Sadiment Densite (B2) Hydrogen Sulfide						Salt Deposits (C5) $\!$		
Dov Season Notes:								
Drift Deposits (B3)/ Dry-Season Water Table (C2)/						PH 4.7		
Algal Mat or Crust (B4) Other (Explain in Notes):						EC 32	-	
Iron Deposits	(B5)							
EAST TO ME	Service Service			MA E	Party and		Liver per Artis	以表示。 10. 10. 10. 10. 10. 10. 10. 10. 10. 10.
Surface Wate	r Present (Y/N):	V	Depth (in):			96		. /
Water Table F	Present (Y/N):	- 1	Depth (in):		We	etland Hydr	ology Present (Y/N	1):
Saturation Pre			Depth (in):		EC	: 32		
Notes:	,		*					
					4-7			

AQUATIC SITE ASSESSMENT DATA FORM

VEGETATION VARIABLES P= Plot, M= Matrix
Primary Vegetation Type (P): Vegetation LackingForested-Deciduous-Needle-leavedForested-Deciduous-Broad-leavedForested-Evergreen-Needle-leavedScrub Shrub-Deciduous-Needle-leavedScrub Shrub-Deciduous-Broad-leavedScrub Shrub-Evergreen-Needle-leavedEmergent-Non-persistentEmergent-PersistentAquatic Bed
Percent Cover (P): Tree (>5 dbh, >6m tall)
Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): EvenX_ Highly Uneven Moderately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) Wery High Density (80-100%) X
Interspersion of Cover & Open Water (P): 100% Cover or Open Water

Crew Chief QA/QC check:

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

		e ID: WIOG TIOO \ Field Target: \84 Date: 5-22-16											
Fo	r all	items not checked, please provide detailed explanation in the notes section of data form.											
	4	Site Description											
	١.	One Description											
		Site description, site parameters and summary of findings are complete?											
		A detailed site sketch is included in logbook?											
		cnform											
	2.	Vegetation											
		At least 80% of onsite vegetation has been keyed to species, or collected for later identification?											
		Vegetation names are entered legibly for all strata present?											
		Cover calculations are complete and correct?											
		All dominant species have been determined and recorded per strata?											
		Indicator status is correct for each species?											
		Dominance Test and Prevalence Index have been completed?											
-	3.	Soil											
		☐ Soil profile is complete?											
	•	Appropriate hydric soil indicators are marked?											
	4.	Hydrology											
		☑ Appropriate hydrology indicators are marked?											
		Surface water, water table, and saturation depths are recorded if present?											
	5.	Functions and Values											
		内 Vegetation, soil, hydrologic variables, and landscape variables complete if site is a											
		wetland?											
	6.	Field Logbook											
		The beautiful to a second of each site including general description, sketch, and											
		Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?											
		☐ Each logbook page is initialed and dated?											
	7.	Maps											
		Mattend houndaries have been corrected if necessary?											
		区 Wetland boundaries have been corrected if necessary? 区 Maps are initialed and dated?											

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

X halfy logor X hally began 5-22
Wetland Scientist (print) Signature / Date

X J. Brown lee

Field Crew Chief (print)

Signature / Date

Survey Type: Centerline Acce	ss Road (explain)	Other (expl			00		
			ain)	Field Targ	jet: <u>83</u>	Map #: 120 Map Date: 5.2015	
Date: 5-22-16	Project Name: Alask	a LNG			Feature Id:	W106T100Z	
Investigators: 55512 &	ownlee,	Kale	y Vol	per	will-	Team No.: W O	
State: Alaska	Region: Alaska		Milepost:	743	3.8		
Latitude: 6102152,79	54" N	Longitude	: 150°51	137.0	830"W	Datum: WGS84	
Logbook No.: \	Logbook Page No.:	3	Picture No.:	P-W10	6 T 100	12-001 thru -004	
SITE PARAMETERS	(19) (1) (1) (1) (1) (1)	HEAD HA	Maria Control	所以到	學程為	SPECIAL PROPERTY.	
Subregion: Cook Ink+ Pasi	n		Landform (hill	Islope, terrad	ce, hummock	s, etc.): (outland	
Slope (%):			Local relief (c	oncave, con	vex, none):	Flat	
Pre-mapped Alaska LNG/NWI classific	ation: PSSI/EMIE		Evidence of V	Vildlife Use:	trails		
Are climatic/hydrologic conditions on the YesXNo(if no exp	e site typical for this time lain in Notes)	of year?	Are "No Yes>	/	nstances" pre (If no, ex	sent: plain in Notes.)	
Are Vegetation, Soil, or Hy	drology Significant	ly Disturbed	? No_ <u></u>	_(If yes, exp	olain in Notes)	
Are Vegetation, Soil, or Hy	drology Naturally F	Problematic?	NoX	_ (If yes, ex	plain in Notes	s.)	
SUMMARY OF FINDINGS					E LESSON		
Hydrophytic Vegetation Present? Yes_	No	Is	the Sampled A	Area within	a Wetland?	Yes No	
Hydric Soil Present? Yes_	<u> </u>	_ w	etland Type:	P55/E			
Wetland Hydrology Present? Yes_	У Nо	A	Alaska Vegetation Classification (Viereck): // C 2 , /// A 3				
Notes and Site Sketch: Please include corridor. Small PSSE in a Polygon should be small site of Profession and a profession of the small state of	enter of proof	ready is the Education	map for sand with mager were	the sur thand -	for North	dary and coding circle welled with	

VEGETATION (use scientific names of plants	s)			AND THE STATE OF THE PROPERTY OF
Tree Stratum (Plot sizes: 100)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksifeet. No. of Dominant Species that are OBL, FACW, or FAC: 2 (A) Total Number of Dominant Species Acrose All Strata: (B)
1.				% Dominant Species that are OBL, FACW, or FAC: 100 (A/B)
2.	7			W Dominant Species that are OBE, 1 ACVV, OF 1 AC(AVD)
3.				数格群等法数多数300000000000000000000000000000000000
4.				Prevalence Index worksheet:
Total Cover	r:			Total % Cover of: Multiply by:
50% of total cover	r: 20	% of total cov	er:	OBL species: 31 x1= 31
Sapling/Shrub Stratum (26)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: // X 2 = 2 2 FAC species 50 X 3 = 150 FACU species X4 =
1. Befula nama	40	Y	FAC	UPL species X 5 =
2. Rhododendrum tomentosum	5		FACU	Column Totals: 92 (A) 203 (B)
3. Myrica gale	10		ORL	PI = B/A = 2.2
4. Dasiphora Froticosa	T		FAC	,
5. Picea Mariana	T		EACW	7
6. VacciAIUM OXYEOCCUS	1		081	
7. Vaccinium Mistansum	3		FAC	100
8.				
9.				12
Total Cover		% of total cov	er: <u> </u>	
VEGETATION (use scientific names of plants	s)	GEO COMPA		
Herb Stratum (🔬)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators:

Herb Stratum (🔬)	Absolute % Cover			Hydrophytic Vegetation Indicators:
1. Rubus chamaemorus 2. Calamagnadis sanadensis 3. Caret Sp Aquatilis 4. Rubus Ardadus	4 40 3	Y	FACU FAC PAL FAC	Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
5. Equisation Fluviatile 6. Sundans Drosera retunditoliq 7.	T		OBL.	% Bare Ground % Cover of Wetland Bryophytes
9. Total Cover	: 3 3 : \(\(\(\(\(\(\)\)\)\) 20% of total cover: \(\(\(\)\)\)			Total Cover of Bryophytes 3 % Cover of Water Hydrophytic Vegetation Present (Y/N): Notes: (If observed, list morphological adaptations below):

OIL	San San Art and an art		Date F	eature ID_		THE RESERVE OF THE PERSON NAMED IN	The state of the last	Soil Pit Required (Y/N)
	LE DESCRIPTION: (Describe	77	d to docun	nent the i	ndicator or	confirm the abser	ice of indicators.)
epth	Matrix		Redox Features					
eptin nches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Notes
0-16								
100								
							4	1 2
							2, ,,	
THE RESERVE AND ADDRESS OF THE PARTY NAMED IN	oncentration, D=Depl	etion, RI	M=Reduced Matrix,	CS=Cover	ed or Co	ated Sand G		n: PL=Pore Lining, M=Matrix.
THE PART DESIGNATION OF THE PARTY OF THE PAR	LINDICATORS		TIRESON DIO LES	140.40	September 1	5.200000000	THE RESERVE OF THE PARTY OF THE	FOR PROBLEMATIC HYDRIC SOILS
stosol or Hi			Alaska Gleye		N			Change (TA4) ⁴
stic Epiped	1		Alaska Redox		15) 10	-		x with 2.5Y Hue
ack Histic (A3)N		Alaska Gleye	d Pores (A	(15)	_		x with 2.5Y Hue Net Without 5Y Hue or Redder Underlying
/drogen Su	lfide (A4)		i i i				Layer N	
	urface (A12)N	_					Other (Expla	
ne indicato	of hydrophytic veg	etation, o	one primary indicato	of wetlan	d hydrolo	gy, and an	appropriate lands	cape position must be present unless
	problematic. of color change in N	otes.						
	ayer (if present): Typ		man I T	Depth (inc	hooli	agent-chTF inc)		
/dric Soil F	Present (Y/N):	y		Deptil (inc	, iles)			
ydric Soil F otes:	Present (Y/N):	Y				SECONDAR	Y INDICATORS	(2 or more required)
ydric Soil F otes:	Present (Y/N):	TORS (sufficient)	No.	Vater-staine	ed /	(2 or more required) Stunted or Stressed Plants (D1)
ydric Soil F otes: YDROLOG urface Wate	Present (Y/N):	St Inc	any one indicator is	sufficient)	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Vater-staine eaves (B9)	ed /	Stunted or Stressed
ydric Soil Fotes: YDROLOG urface Water T	Present (Y/N): Y PRIMARY INDICA er (A1) Table (A2)	St. Interest (B	any one indicator is urface Soil Cracks (E undation Visible on A	sufficient) 6)/ Aerial Imag	gery [Vater-staine eaves (B9) Orainage Pa	tterns (B10)/\scriptizespheres along	Stunted or Stressed Plants (D1)
ydric Soil Fotes: YDROLOG urface Water gh Water T	Present (Y/N): Y PRIMARY INDICA er (A1) Fable (A2) 3)	St. Inn. (B	any one indicator is urface Soil Cracks (Eundation Visible on A7)	sufficient) 6)/ Aerial Imag	gery (Vater-staine eaves (B9) Orainage Pa Oxidized Rh	tterns (B10) // izospheres along	Stunted or Stressed Plants (D1) Geomorphic Position (D2)
ydric Soil Fotes: YDROLOG urface Water igh Water T aturation (A	Present (Y/N): Y PRIMARY INDICA er (A1) Table (A2) (B1)	St. Co. Ma	any one indicator is urface Soil Cracks (E undation Visible on A 7) /	sufficient) 6)/ Aerial Imag	gery [Vater-staine eaves (B9) Drainage Pa Dxidized Rh Living Roots Presence of ron (C4) Salt Deposit	tterns (B10)/\displaystyle izospheres along (C3)\ Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic
ydric Soil Fotes: YDROLOG urface Water igh Water T aturation (A /ater Marks	Present (Y/N): Present (Y/N): Y PRIMARY INDICA er (A1) fable (A2) (B1) posits (B2)	St. Inn. (B St. Cc M: Hy Oc	any one indicator is urface Soil Cracks (E undation Visible on A 7) parsely Vegetated oncave Surface (B8) arl Deposits (B15) urdrogen Sulfide	sufficient) 6)/ Aerial Imag	gery [Vater-staine Leaves (B9) Drainage Pa Dxidized Rh Living Roots Presence of ron (C4)	tterns (B10)/\displaystyle izospheres along (C3)\ Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) V
ydric Soil Fotes: YDROLOG urface Water igh Water T aturation (A /ater Marks ediment De rift Deposits	Present (Y/N): Present (Y/N): Y PRIMARY INDICATE Experiment (A1) (B1) Prosits (B2) Experiment (Y/N): Experiment (Y/N):	St. Inn. (B St. Cc M: Hy Oc Dr W	any one indicator is urface Soil Cracks (E undation Visible on A 7) parsely Vegetated oncave Surface (B8) arl Deposits (B15) urdrogen Sulfide dor (C1)	sufficient) 66)	gery [Vater-staine eaves (B9) Drainage Pa Dxidized Rh Living Roots Presence of ron (C4) Salt Deposit	tterns (B10)/\displaystyle izospheres along (C3)\ Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) V
ydric Soil Fotes: YDROLOG urface Water igh Water T aturation (A /ater Marks ediment De rift Deposits	Present (Y/N): Present (Y/N): Y PRIMARY INDICATION Expert (A1) (B1) Prosits (B2) Crust (B4)	St. Inn. (B St. Cc M: Hy Oc Dr W	any one indicator is urface Soil Cracks (Eundation Visible on 7) parsely Vegetated oncave Surface (B8) arl Deposits (B15)	sufficient) 66)	gery [Vater-staine eaves (B9) Drainage Pa Dxidized Rh Living Roots Presence of ron (C4) Salt Deposit	tterns (B10)/\displaystyle izospheres along (C3)\ Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) V
ydric Soil Fotes: YDROLOG urface Water igh Water T aturation (A Vater Marks ediment Deposits Igal Mat or G on Deposits	Present (Y/N):	St. Inn. (B St. Cc M: Hy Oc Dr W	any one indicator is urface Soil Cracks (E undation Visible on A 7) parsely Vegetated oncave Surface (B8) arl Deposits (B15) urfogen Sulfide dor (C1) y-Season later Table (C2) ther (Explain in Note	sufficient) 66)	gery [Vater-staine eaves (B9) Drainage Pa Dxidized Rh Living Roots Presence of ron (C4) Salt Deposit	tterns (B10)/\displaystyle izospheres along (C3)\ Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) V
ydric Soil Footes: YDROLOG urface Water ligh Water T aturation (A Vater Marks ediment Deposits ligal Mat or 0 on Deposits urface Water	Present (Y/N): Present (Y/N): Y PRIMARY INDICATION Expert (A1) (B1) Prosits (B2) Crust (B4)	St. Inn. (B St. Cc M: Hy Oc Dr W	any one indicator is urface Soil Cracks (E undation Visible on A 7) parsely Vegetated oncave Surface (B8) arl Deposits (B15) urfogen Sulfide dor (C1) y-Season later Table (C2) ther (Explain in Note	sufficient) 66)	gery (Vater-staine, eaves (B9) Drainage Pa Dxidized Rh. iving Roots Presence of ron (C4) Salt Deposit	tterns (B10)/\displaystyle izospheres along (C3)\ Reduced	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
ydric Soil Fotes: YDROLOG urface Water igh Water T aturation (A /ater Marks ediment De rift Deposits gal Mat or (con Deposits /ater Table aturation Pr	Present (Y/N): Present (Y/N): Present (Y/N): Present (Y/N): Present (Y/N): Present (Y/N):	St. Inn. (B St. Cc M: Hy Oc Dr W	any one indicator is urface Soil Cracks (Eundation Visible on 77) parsely Vegetated oncave Surface (B8) arl Deposits (B15) ydrogen Sulfide dor (C1) y-Season later Table (C2) ther (Explain in Note	sufficient) 66)	gery (Vater-staine, eaves (B9) Drainage Pa Dxidized Rh. iving Roots Presence of ron (C4) Salt Deposit	tterns (B10)/\footnote{\sqrt{V}} izospheres along (C3)/\footnote{\sqrt{P}} Reduced s (C5)/\footnote{\sqrt{V}}	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) Z/N):

AQUATIC SITE ASSESSMENT DATA FORM

VEGETATION VARIABLES - P= Plot, M= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved X Forested-Evergreen-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved X Scrub Shrub-Evergreen-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed
Percent Cover (P): Tree (>5 dbh, >6m tall) Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Short shrub (<0.5m) I Tall herb (≥1m) Short herb (<1m) 33 Moss-Lichen So Floating Submerged
Number of Wetland Types (M): 3 Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) 80%) Y Very High Density (80-100%)
Interspersion of Cover & Open Water (P): 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) K One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover
Dead Woody Material (P): Low Abundance (0-25% of surface) $\underline{\hspace{1cm}}^{\chi}$ Moderately Abundant (25-50% of surface) $\underline{\hspace{1cm}}$ Abundant (>50% of surface) $\underline{\hspace{1cm}}$
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)
HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES
Soil Factors (P): Soil Lacking Histosol:Fibric X Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES
HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennia
Inlet/Outlet Class (P): No Inlet/Outlet X No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Outlet
Inlet/Outlet Class (P): No Inlet/Outlet X No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermitten
Inlet/Outlet Class (P): No Inlet/Outlet X No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial I
Inlet/Outlet Class (P): No Inlet/Outlet X No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Created
Inlet/Outlet Class (P): No Inlet/Outlet X No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermitten
Inlet/Outlet Class (P): No Inlet/Outlet X No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet
Inlet/Outlet Class (P): No Inlet/Outlet X No Inlet/Intermittent Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Outlet Perennial Inlet/No Outlet In
Inlet/Outlet Class (P): No Inlet/Outlet _X No Inlet/Intermittent Outlet
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermit
Inlet/Outlet Class (P): No Inlet/OutletXNo Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Inlet/
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inl
Inlet/Outlet Class (P): No Inlet/Outlet _X No Inlet/Intermittent Outlet _ Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Inlet/Intermit
Inlet/Outlet Class (P): No Inlet/Outlet X No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet

Crew Chief QA/QC check:

Brownlee

GPS Technician QA/QC check:

KV

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Featu	re ID: W106T1002 Field Target: 183 Date: 5.20:16							
	items not checked, please provide detailed explanation in the notes section of data form.							
1.	Site Description							
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?							
2.	Vegetation							
	 At least 80% of onsite vegetation has been keyed to species, or collected for later identification? ✓ Vegetation names are entered legibly for all strata present? ✓ Cover calculations are complete and correct? ✓ All dominant species have been determined and recorded per strata? ✓ Indicator status is correct for each species? ✓ Dominance Test and Prevalence Index have been completed? 							
3.	Soil							
	☑ Soil profile is complete? ☑ Appropriate hydric soil indicators are marked?							
4.	Hydrology							
	☑ Appropriate hydrology indicators are marked?☑ Surface water, water table, and saturation depths are recorded if present?							
5.	Functions and Values							
	☑ Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?							
6.	Field Logbook							
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?							
7.	Maps							
	☑ Wetland boundaries have been corrected if necessary? ☑ Maps are initialed and dated?							

8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X Walen V	her X	halen Valx	W 5-22-16
Wetland Scientist (print)	Signatur	re / Date	

X J. Brownlae

Field Crew Chief (print)

Signature / Date

SITE DESCRIPTION		Winds of			TARREST STATE	
Survey Type: Centerline Acces	s Road (explain)	Other (expla	ain) <u>×</u>	Field Target	:185	Map #: <u>//8</u> Map Date: <u>5 · 20 · //</u>
Date: 5-22-16	Project Name: Alaska	LNG			Feature Id:	W106T1003
Investigators: Jessie Br	owniee,	Kerli	en V	oper	*	Team No.: WIOG
State: Alaska	Region: Alaska		Milepost:	740		
Latitude: 610 231 10,40	7"N	Longitude	: 1500 40	0 53.6	36"w	Datum: WGS84
Logbook No.:	Logbook Page No.:	3	Picture No.:	2-W106-	11003	5-001 thru-004
SITE PARAMETERS	500年10日本日本大学	特别的信仰	世纪 就是怎么	では対象	THE REAL	
Subregion: Cook Inlet Basi	^	ACCUPATION NO.	Landform (hill	slope, terrace,	hummocks	s, etc.): Eta lout land
Slope (%): 0 - 3			Local relief (co			Flat
Pre-mapped Alaska LNG/NWI classificat	ion: PSS1/4B		Evidence of W	Vildlife Use:	trail	1 100
Are climatic/hydrologic conditions on the Yes No (if no expla		of year?	Are "No Yes)	rmal Circumst	ances" pre	sent: plain in Notes.)
Are Vegetation, Soil, or Hyd	rology Significantly	/ Disturbed?	No	_(If yes, expla	in in Notes)	
Are Vegetation, Soil, or Hydr	rology Naturally Pi	roblematic?	No_ ㅗ	_ (If yes, expla	in in Notes	.)
SUMMARY OF FINDINGS	图1000年4、安徽		EEEE LEE	free may a		这是自己的心态形式
Hydrophytic Vegetation Present? Yes	No	_ ls	the Sampled A	rea within a V	Vetland?	Yes No
Hydric Soil Present? Yes	<u> </u>	_ we	etland Type:	PSS4/10		
Wetland Hydrology Present? Yes	½ No	– Ala	aska Vegetation	Classification	(Viereck):	11A2,11C2
Notes and Site Sketch: Please include Dicorridor. Open Skunted provide Forest. To of wently 100%, Shoots com						
						ă.

Page 1 of 4

7.

8.

9.

10.

Total Cover:_

50% of total cover: 14.5 20% of total cover: 5.8

W1000 T1003

Hydrophytic Vegetation Present (Y/N):

/6 ○ % Cover of Wetland Bryophytes

Total Cover of Bryophytes

% Cover of Water

Notes: (If observed, list morphological adaptations below):

				£3+ + · · · · · · · · · · · · · · · · · ·
VEGETATION (use scientific names of plan	nts)			
Tree Stratum (Plot sizes: 100)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata: M Dominant Species that are OBL, FACW, or FAC: (A)
3.				
			-	Prevalence Index worksheet:
Total Cove	r ()			Total % Cover of: Multiply by:
50% of total cove		0% of total cov	rer:	OBL species: X 1 =
Sapling/Shrub Stratum (A)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 70 X 2 = 140 FAC species 5 X 3 = 153 FACU species 0 X 4 = 0
· Picea Mariana	(35	Y	FACW	UPL species
Rotilo Nanto	. 3		FAC	Column Totals: 122 (A) 294 (B)
Empetrum nigrum	45	Y	FAC	PI = B/A = 2.40
Rhodadendrum tomentasum	10		FACE	
vaccinium oxyenceus			OBL	
vaccinium Miginosum	3		FAC	
Andromeda polifilia	Ť		FACU	
,				
Total Cove		0% of total cov	er: 19.4	
EGETATION (use scientific names of plant	ts)			
erb Stratum (Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50% Provelopes Index is < 3.0
Rubus chamaemorus	25	Y	FACW	Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in
Eriophnoum sp (4			Notes)
7				Problematic Hydrophytic Vegetation ¹ (Explain)
				¹ Indicators of hydric soil and wetland hydrology must be present unless
				disturbed or problematic.
				Selection of the select

COP	THE RESERVE TO SERVE THE PARTY OF THE PARTY	OF ER	Date Fe						
12000	ILE DESCRIPTION: (Describe	to the depth needed	to docu		ndicator or	confirm the abser	ce of indicat	Soil Pit Required (Y/N)
	Matrix	DOCOMBO	Redox Features	. 10 0000		-			
Depth inches)	Color (moist)	%	Color (moist)	1%	Type ¹	Loc ²	Texture	Notes	
0-10				1 = 1					
10-+									
		1							
			1		200				-
				1	-				
		1		-					
Tumou C=C	encentration D-Dopl	otion Di	 M=Reduced Matrix, C	25=Covo	rod or Coo	ted Sand C	Praine 2 ocatio	n: PI =Pore	Lining, M=Matrix.
	IL INDICATORS	ellon, Kr	vi-Reduced Matrix, C	-S-C0VE	red or coa	ited Sand C			BLEMATIC HYDRIC SOILS
AN APPROXIMATION	listel (A1)dda+d	in dect	Alaska Gleyed	(A13)	N	The second	Alaska Color	CONTRACTOR OF THE PARTY.	The state of the s
listic Epiped		0 -10	Alaska Redox		7		Alaska Alpine		
lack Histic			Alaska Gleyed		-		Alaska Redo		
	ulfide (A4)		, madica didyon			-	Alaska Gleye		Hue or Redder Underlying
							Other (Expla	in in Notos)	nd land
	or of hydrophytic year	etation o	ne primary indicator	of wetlar	nd hydrolo	nv and an			n must be present unless
listurbed or	problematic.		one primary indicator	OI WOULD	ia nyaroto;	gy, and an	appropriate faile		,
Give details	of color change in Ne ayer (if present): Typ	otes.	-7	S 11 /1	-11	10			
lydric Soil	Present (Y/N):	/					t frost g	met A:	2,
Hydric Soil	Present (Y/N):	bet .	did Not dig po	ast /	10 " whe	n we h		and the second	
Hydric Soil	Present (Y/N):	bet .	did Not dig po	ast /	"0" whe	n we h	Y INDICATORS	(2 or more re	
Hydric Soil	Present (Y/N):	bet intores (any one indicator is surface Soil Cracks (B6	ast /	S V	m we h	Y INDICATORS	(2 or more re	equired)
Hydric Soil Notes: pressi	Present (Y/N):	bet intores (any one indicator is surface Soil Cracks (Boundation Visible on A	ast /	S W	ECONDAR Vater-staine eaves (B9)	Y INDICATORS	(2 or more re Stu Pla	equired) inted or Stressed
Hydric Soil Notes: Possi HYDROLOG Gurface Water	Present (Y/N): bly a historol BY PRIMARY INDICA er (A1) Table (A2)	Su Inc. (B	any one indicator is surface Soil Cracks (Beaundation Visible on A	ast /	S V L gery D	ECONDAR Vater-staine eaves (B9) rrainage Pa	Y INDICATORS	(2 or more re Stu Pla Ge	equired) unted or Stressed unts (D1)
Notes: Possi NOTES: Possi NYDROLOG Surface Water Taligh W	Present (Y/N): bly a historel BY PRIMARY INDICA er (A1) Table (A2) A3) (Su Su Inu	any one indicator is surface Soil Cracks (Boundation Visible on Arthurstell Vegetated	ast /sufficient) S) N erial Image	S W L. gery D C L	ECONDAR Vater-staine eaves (B9) rrainage Pa	tterns (B10)	(2 or more re Stu Pla Ge Sh	equired) unted or Stressed unts (D1) omorphic Position (D2)
Hydric Soil Notes: Possi HYDROLOG Surface Wat High Water Saturation (A	Present (Y/N): bly a historel BY PRIMARY INDICA er (A1) Table (A2) A3) (Su Inu (B Sp Cc	any one indicator is surface Soil Cracks (Beaundation Visible on Act)	ast /sufficient) S) N erial Image	S W L gery D C L F Ir	ECONDAR Vater-staine eaves (B9) varainage Pa exidized Rhi iving Roots resence of on (C4)	tterns (B10) zospheres along (C3) Reduced	(2 or more re Stu Pla Ge Sh Mic Re	equired) unted or Stressed unts (D1) omorphic Position (D2) allow Aquitard (D3) crotopographic /
Hydric Soil Notes: Possi HYDROLOG Surface Water High Water Saturation (A	Present (Y/N):	Survey (B) Sp. Cc	any one indicator is surface Soil Cracks (Beaundation Visible on Art) parsely Vegetated oncave Surface (B8) and Deposits (B15) drogen Sulfide	ast /sufficient) S) N erial Image	S W L gery D C L F Ir	ECONDAR Vater-staine eaves (B9) varianage Pa exidized Rhi iving Roots resence of on (C4)	tterns (B10) zospheres along (C3) Reduced	(2 or more re Stu Pla Ge Sh Mic Re	equired) unted or Stressed unts (D1) omorphic Position (D2) allow Aquitard (D3) crotopographic lief (D4)
Hydric Soil Notes: Possi HYDROLOG Surface Water High Water Saturation (A Water Marks Sediment De	Present (Y/N):	Su Su Inu (B Sp Cc Ma	any one indicator is surface Soil Cracks (Beaundation Visible on Adams on Care (B8) and Deposits (B15) and D	oust //	S W L gery D C L F Ir	ECONDAR Vater-staine eaves (B9) varainage Pa exidized Rhi iving Roots resence of on (C4)	tterns (B10) zospheres along (C3) Reduced	(2 or more re Stu Pla Ge Sh Mic Re	equired) unted or Stressed unts (D1) omorphic Position (D2) allow Aquitard (D3) crotopographic lief (D4)
Hydric Soil Notes: Possi HYDROLOG Surface Water High Water Saturation (A Water Marks Sediment De Orift Deposit	Present (Y/N):	Su Su Inu (B Sp Cc Ma	any one indicator is surface Soil Cracks (Beaundation Visible on Art) parsely Vegetated oncave Surface (B8) arl Deposits (B15) drogen Sulfide dor (C1) y-Season ater Table (C2)	oust //	S W L gery D C L F Ir	ECONDAR Vater-staine eaves (B9) varainage Pa exidized Rhi iving Roots resence of on (C4)	tterns (B10) zospheres along (C3) Reduced	(2 or more re Stu Pla Ge Sh Mic Re	equired) unted or Stressed unts (D1) omorphic Position (D2) allow Aquitard (D3) crotopographic lief (D4)
Hydric Soil Notes: PASSI HYDROLOG Surface Water High Water Saturation (A Water Marks Gediment De Drift Deposit Algal Mat or ron Deposit	Present (Y/N):	Su Su Inu (B Sp Cc Ma	any one indicator is surface Soil Cracks (Be undation Visible on Act) parsely Vegetated oncave Surface (B8) ard Deposits (B15) drogen Sulfide dor (C1) y-Season ater Table (C2) her (Explain in Notes	oust //	S W L gery D C L F Ir	ECONDAR Vater-staine eaves (B9) varainage Pa exidized Rhi iving Roots resence of on (C4)	tterns (B10) zospheres along (C3) Reduced	(2 or more re Stu Pla Ge Sh Mic Re	equired) unted or Stressed unts (D1) omorphic Position (D2) allow Aquitard (D3) crotopographic lief (D4)
Hydric Soil Notes: PASSI HYDROLOG Surface Water High Water Saturation (A Water Marks Gediment De Drift Deposit Algal Mat or ron Deposit	Present (Y/N):	Su Su Inu (B Sp Cc Ma	any one indicator is surface Soil Cracks (Beaundation Visible on Art) parsely Vegetated oncave Surface (B8) arl Deposits (B15) drogen Sulfide dor (C1) y-Season ater Table (C2)	oust //	S W L L Gery D C L S	ECONDAR Jater-staine eaves (B9) rrainage Pa exidized Rhi iving Roots resence of on (C4) alt Deposite otes:	tterns (B10) zospheres along (C3) Reduced s (C5)/	(2 or more results) Stupla Ge Share FA	equired) unted or Stressed unts (D1) omorphic Position (D2) allow Aquitard (D3) crotopographic lief (D4)
Hydric Soil Notes: PASSI HYDROLOG Surface Water High Water Saturation (A Water Marks Sediment De Drift Deposit Algal Mat or ron Deposit Surface Wat Water Table	Present (Y/N):	Su Su Inu (B Sp Cc Ma	any one indicator is surface Soil Cracks (Be undation Visible on Act) parsely Vegetated oncave Surface (B8) ard Deposits (B15) drogen Sulfide dor (C1) y-Season ater Table (C2) her (Explain in Notes	oust //	S W L L gery D C L S N	ECONDAR Vater-staine eaves (B9) rainage Pa exidized Rhiving Roots resence of on (C4) alt Deposite otes:	tterns (B10) zospheres along (C3) Reduced s (C5)/	(2 or more results) Stupla Ge Share FA	equired) unted or Stressed unts (D1) omorphic Position (D2) allow Aquitard (D3) crotopographic lief (D4)
Aydric Soil Notes: Possi AYDROLOG Surface Water Gaturation (A Vater Marks Sediment De Orift Deposit Algal Mat or ron Deposit Vater Table Saturation P includes ca	Present (Y/N):	Su Interest (B Sp Cc Ma Hy Ot	any one indicator is surface Soil Cracks (B6 undation Visible on Ac7) Parsely Vegetated oncave Surface (B8) arl Deposits (B15) drogen Sulfide dor (C1) y-Season ater Table (C2) her (Explain in Notes Depth (in):	oust //	S W L L gery D C L S N	ECONDAR Vater-staine eaves (B9) rainage Pa exidized Rhiving Roots resence of on (C4) alt Deposite otes:	tterns (B10) zospheres along (C3) Reduced s (C5)	(2 or more results) Stupla Ge Share FA	equired) unted or Stressed unts (D1) omorphic Position (D2) allow Aquitard (D3) crotopographic lief (D4)
Notes: Possi Notes: Possi Notes	Present (Y/N):	Su Interest (B Sp Cc Ma Hy Ot	any one indicator is surface Soil Cracks (Beaundation Visible on Adri) Depth (in): Depth (in):	oust //	S W L L gery D C L S N	ECONDAR Vater-staine eaves (B9) rainage Pa exidized Rhiving Roots resence of on (C4) alt Deposite otes:	tterns (B10) zospheres along (C3) Reduced s (C5)	(2 or more results of the state	equired) unted or Stressed unts (D1) omorphic Position (D2) allow Aquitard (D3) crotopographic lief (D4)

AQUATIC SITE ASSESSMENT DATA FORM

VEGETATION VARIABLES P= Pluc, A	v: Wutrix								
Primary Vegetation Type (P): Vegetation La Forested-Evergreen-Needle-leaved Scrub Shrub-Evergreen-Broad-leaved Persistent Aquatic Bed	acking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-								
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) Tall herb (≥1	Sapling (<5 dbh, <6m tall) 35 Tall shrub (2-6m) Short shrub (0.5-2m) Sho								
Number of Wetland Types (M):	Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even								
Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)	(0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-								
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattere	Interspersion of Cover & Open Water (P): 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A								
Plant Species Diversity (P): Low (< 5 plant	species) Medium (5-25 species)								
Presence of Islands (M): Absent (none) _									
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous CoverX								
Dead Woody Material (P): Low Abundance Abundant (>50% of surface)	(0-25% of surface) Moderately Abundant (25-50% of surface)								
Vegetative Interspersion (P): Low (large High (small groupings, diverse and interspers	patches, concentric rings) X Moderate (broken irregular rings) Polymer Moderate (broken irregular rings)								
HGM Class (P): Slope Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe								
SOIL VARIABLES									
Soil Factors (P): Soil Lacking	Histosol:Fibric								
Transport of the contract of t									
HYDROLOGIC VARIABLES									
Inlet/Outlet Class (P): No Inlet/OutletX Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Outlet								
Inlet/Outlet Class (P): No Inlet/Outlet X Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial								
Inlet/Outlet Class (P): No Inlet/OutletX Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Eviden Created	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Perenn								
Inlet/Outlet Class (P): No Inlet/Outlet X Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Eviden Created Microrelief of Wetland Surface (P): Absent	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perenni								
Inlet/Outlet Class (P): No Inlet/Outlet X Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Eviden Created Microrelief of Wetland Surface (P): Absent	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Perenn								
Inlet/Outlet Class (P): No Inlet/OutletX Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No O	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Per								
Inlet/Outlet Class (P): No Inlet/OutletX Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Eviden Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No O Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Ci	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet								
Inlet/Outlet Class (P): No Inlet/OutletX Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Eviden Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No O Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Ci	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Per								
Inlet/Outlet Class (P): No Inlet/OutletX Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Eviden Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No O Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water C: Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial								
Inlet/Outlet Class (P): No Inlet/OutletX Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Ir Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Eviden Created Microrelief of Wetland Surface (P): Absent_ Frequency of Overbank Flooding (P): No O Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Ci Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable Basin Topographic Gradient (M): Low of the control of the contro	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial								
Inlet/Outlet Class (P): No Inlet/OutletX Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Eviden Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No O Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Ci Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable Basin Topographic Gradient (M): Low G Evidence of Seeps and Springs (P): No See LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolate	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Peren								
Inlet/Outlet Class (P): No Inlet/OutletX Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Eviden Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No O Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Ci Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable Basin Topographic Gradient (M): Low G Evidence of Seeps and Springs (P): No See LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolate	No Inlet/Intermittent Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet								
Inlet/Outlet Class (P): No Inlet/OutletX Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Eviden Created Microrelief of Wetland Surface (P): Absent_ Frequency of Overbank Flooding (P): No O Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water C: Surficial Geologic Deposit Under Wetland (Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No See LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolate Only Connected Above Connected	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Outlet Perennial Inlet/No Outlet Perennial In								

Crew Chief QA/QC check:

GPS Technician QA/QC check:

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Feature	ure ID: <u>WYOGT 1003</u> Field To	arget: 185	Date: 5 22 16	
For all	Il items not checked, please provide detaile	ed explanation in the	notes section of data form.	
	Θ.	14	8	
1.	. Site Description			
	Site description, site parameters A detailed site sketch is included	and summary of fi in logbook?	indings are complete?	
2.	. Vegetation			
	At least 80% of onsite vegetation identification?	n has been keyed t	to species, or collected for I	ater
	✓ Vegetation names are entered le Cover calculations are complete All dominant species have been Indicator status is correct for each Dominance Test and Prevalence 	and correct? determined and re ch species?	ecorded per strata?	
3.	s. Soil			
-	区 Soil profile is complete? 区 Appropriate hydric soil indicators	s are marked?		
4.	. Hydrology			
	☑ Appropriate hydrology indicators☑ Surface water, water table, and	s are marked? saturation depths	are recorded if present?	
5.	5. Functions and Values			
	☑ Vegetation, soil, hydrologic varia wetland?	ables, and landsca	pe variables complete if sit	e is a
6.	i. Field Logbook		in a	
	Notes have been recorded at ea accuracy of pre-mapped wetlan Each logbook page is initialed a	d boundary as app	general description, sketch, propriate?	, and
7.	. Maps		•	
	□ Wetland boundaries have been □ Maps are initialed and dated?	corrected if neces	esary?	

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

SITE DESCRIPTION	multiple Marie Control		ALLE SHIP		
Survey Type: Centerline X Acce				Field Target: 190	Map #: <u>//2</u> Map Date: <u>5・20</u> 』/
Date: 5-23-16	Project Name: Alaska	a LNG		Feature Id:	W10671004
Investigators: Jessie Br	ownlee, Val-	erie v	VRTKIN	s, Kalen Vape	-Team No.: VV \ 06
State: Alaska	Region: Alaska		Milepost:	702.80	
Latitude: 61° 48' 49.820	7"N	Longitude	:150.18	7.32" W	Datum: WGS84
Logbook No.:	Logbook Page No.:	4	Picture No.:	P-W10671004.	.001 thru-004
SITE PARAMETERS	機和認為為於例例	1800	A 3 数据 100	A SHARLING STREET	化制度有效的 类。这种表
Subregion: Comple Inlet B	asiA		Landform (hill	Islope, terrace, hummock	s, etc.): Lowland
Slope (%): 0 - 3			Local relief (c	concave, convex, none): f	let to slightly concave
Pre-mapped Alaska LNG/NWI classifica	ation: PSSI/EML!	В	Evidence of V	Vildlife Use: NONE	U U
Are climatic/hydrologic conditions on the YesX No (if no expl	e site typical for this time ain in Notes)	of year?	Are "No Yes2	ormal Circumstances" pre	sent: plain in Notes.)
Are Vegetation, Soil, or Hyd	drology Significantl	y Disturbed?	No_X	_(If yes, explain in Notes	
Are Vegetation, Soil, or Hyd	drology Naturally P	roblematic?	NoX	_ (If yes, explain in Notes	.)
SUMMARY OF FINDINGS	PUSTS IN	Children and Children			
Hydrophytic Vegetation Present? Yes_	No	_ ls	the Sampled A	Area within a Wetland?	Yes No
Hydric Soil Present? Yes_	No	_ w	etland Type:	PSSI/EMIE	
Wetland Hydrology Present? Yes_	XNo	— Ala	aska Vegetatior	n Classification (Viereck):	11 C 2, 111 A 3
Notes and Site Sketch: Please include Ecorridor. PSSI/EMIE Sparse a 10 / Water inter	shrub and e	Mergen	+ growin		
AAA	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	49			

WETLAND DETERMINATION DATA FORM W106 TI 004

Tree Stratum (Plot sizes:)	Absolute · % Cover	Dominant Species? (Y/N)	Indicator Status							
1, 1								_		
2,		Actives wheels he designed and so his own		% Dominant Species	s that are	OBL, FA	CW, or FAC	100	_ (A	
3.	-				力	No.				
1.				Prevalence Index w	orksheet	CONTRACTOR OF THE PARTY OF THE	THE RESIDENCE OF	A SOLICIAN AND	PER COL	
Total Cover				Total % Cover of:			Multiply by	<u>r</u>		
50% of total cover	20	% of total cov	er:	OBL species:	10	X 1 =	10			
Sapling/Shrub Stratum (26)	Absolute	Dominant	Indicator	FACW species:	9	X 2 =	58			
	% Cover	Species?	Status	FAC species/	3	X 3 =	39			
		(Y/N)		FACU species		X 4 =	***			
· Betsle MARA	9	1	FAC	UPL species	-	X 5 = _				
Andromeda polifolia	15	1	FACW	Column Totals:	5 a	_(A)	107	(B)		
3. Rhododendrun tomentosun	(0		FACW	PI = B/A = 2.	05		_			
· Vaccinium Uliginosum	3		FAC							
Salix fuscescens	\$6		FACH)							
· vaccinium BXYC COCCUS	7		OBL							
Dicen Mariana	T	,	ALCW							
.'			3	Ŷ.						
).										
Total Cover:	39									
50% of total cover:	19.5 20	% of total cove	er: 7.8							

Absolute % Cover	Dominant Species? . (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators:
117	Y	OBL	Morphological Adaptations¹ (Provide supporting data in
/		_	Notes)
T		OBL	Problematic Hydrophytic Vegetation¹ (Explain)
2		FACW	¹ Indicators of hydric soil and wetland hydrology must be present unless
T		ORL	disturbed or problematic.
5'5 /			
			% Bare Ground
			% Cover of Wetland Bryophytes
			Total Cover of Bryophytes
			% Cover of Water
er: <u>14</u> er: 7 20	% of total cov	er: <u>2,8</u>	Hydrophytic Vegetation Present (Y/N):
	% Cover	% Cover Species? (Y/N) // // // // // // // // // // // // /	% Cover Species? Status (Y/N) // OBL / CBL / CBL

			5-23-16					Y
SOIL.	ACCORDING TO SELECT AND ADDRESS OF THE PARTY	2800000000		ture II		- PARTIES	1 1 1 1 1 1 1	Soil Pit Required (Y/N)
SOIL PROFIL	E DESCRIPTION: (D	escribe	to the depth needed	to doc	ument the	indicator or	confirm the absence	e of indicators.)
Depth	Matrix		Redox Features	,				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Notes
0-3		- 4						Fibric organic
3-9								heinse il !!
9-110	The state of the s							Sapric 1 11
								T
¹ Type: C=Cor	centration, D=Deplet	ion, RN	/I=Reduced Matrix, CS	S=Cove	ered or Co	ated Sand C	Grains. ² Location:	PL=Pore Lining, M=Matrix.
HYDRIC SOIL	INDICATORS		STATE OF THE PARTY	V 530	SALES OF	数据编型	INDICATORS I	OR PROBLEMATIC HYDRIC SOILS
Histosol or His	tel (A1)		Alaska Gleyed	(A13)	N		Alaska Color C	hange (TA4) ⁴
Histic Epipedo			Alaska Redox (Alaska Alpine S	
*	3)		Alaska Gleyed			-	Alaska Redox v	
			Alaska Olcycu	1 0103	(/110)			without 5Y Hue or Redder Underlying
Hydrogen Sulf	ide (A4)						Layer_ N	
	rface (A12)V	_					Other (Explain	
		ation, o	ne primary indicator o	of wetla	nd hydrolo	ogy, and an	appropriate landsca	pe position must be present unless
disturbed or po	obiematic. f color change in Not	es.						-49
Restrictive Lay	er (if present): Type	_	D	epth (ii	nches):			
				-				1
Hydric Soil P	resent (Y/N):				7			
Notes:								
140103.								
HYDROLOGY	PRIMARY INDICAT	ORS G	any one indicator is su	officient	0	SECONDAR	RY INDICATORS (2	or more required)
mionozoo.	/		A CONTRACTOR OF THE PARTY OF TH		CONTRACTOR NO.	Nater-staine		Stunted or Stressed
Surface Water	(A1)/	Su	rface Soil Cracks (B6)	<u> </u>		_eaves (B9)	/	Plants (D1)
Lijek Makes Te	his (40) V	Inc	indation Visible on Ae	rial Ima	agery ,	Oroinnao Da	atterns (B10)	Geomorphic Position (D2)
High Water Ta	ible (A2)	(B)	7)					Geomorphic Fosition (B2)/
Saturation (A3) Y		arsely Vegetated	./		Oxidized Rh Living Roots	izospheres along	Shallow Aquitard (D3)/\/
223			ncave Surface (B8)	N		Presence of		Microtopographic /
Water Marks (B1)/_	Ma	rl Deposits (B15)/	J		ron (C4)	Neduced	Relief (D4)
- N. F. I.		Hy	drogen Sulfide /			Salt Deposit	-105) N	FAC-Neutral Test (D5)
Sediment Dep	osits (B2) N		lor (C1)/		`	Sait Deposit	s (C5) _ + 4	FAC-Nedital Test (D5)
Drift Deposits	(B3) A		y-Season	1	1	Notes:		
Dilit Deposits	(65)	Wa	ater Table (C2)/\/	_				
Algal Mat or C	rust (B4)	Ot	her (Explain in Notes)	:				
	-	-						
Iron Deposits	(B5)/							
NA THE	71104	MASS	THE PART NEW	37/105	RECEIPTED IN	10000000000000000000000000000000000000	Mary Mary	deside the state of the second second
Surface Water	Present (Y/N):	Y	Depth (in):					V
Water Table P	resent (Y/N)·	1	Depth (in):		We	etland Hydr	ology Present (Y/N	0):
TTULO TABLE I	. 550 ik (1714).	7	- op ()			-,,		
Saturation Pre			Depth (in):		EC	: 86	~!	452
(includes capil	lary fringe)		(2)				PH	1.7)
Notes:								

AQUATIC SITE ASSESSMENT DATA FORM

VEGETATION VARIABLES P- Plot, M= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Forested-Evergreen-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved X Scrub Shrub-Evergreen-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent
Percent Cover (P): Tree (>5 dbh, >6m tall) Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Short shrub (0.5-2m) Short shrub (<0.5m) 340 Tall herb (≥1m) Short herb (<1m) M20 Moss-Lichen To Floating Submerged
Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) Very High Density (80-100%)
Interspersion of Cover & Open Water (P): 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) X One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered PatchesX Continuous Cover
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed) X
HGM Class (P): Slope Flat Lacustrine Fringe Depressional X Riverine Estaurine Fringe
SOIL VARIABLES
Soif Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric V
Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES
HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Peren
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial In
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Intermittent Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inle
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Peren
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Outlet Perennial Inlet/No Outlet Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outle
Inlet/Outlet Class (P): No Inlet/Outlet
Intet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Inlet/Intermitt

Jessie Brounlee

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Featur	e ID: W106T1004 Field Target: 190 Date: 5-23-16
For all	items not checked, please provide detailed explanation in the notes section of data form.
ror an	items not checked, please provide detailed explanation in the notes seemen si same and
1	Site Description
1.	
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
	Vegetation names are entered legibly for all strata present?
	Cover calculations are complete and correct? All dominant species have been determined and recorded per strata?
	Indicator status is correct for each species?
	Dominance Test and Prevalence Index have been completed?
3.	Soil
	Soil profile is complete?
-	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7.	Maps
	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

NA ☐ Two photos were taken for each Observation Point (vegetation/site overview)?

X hales Volper X Valley Volper 5/23/16

Wetland Scientist (print) Signature / Date

1 I Brownlee

Field Crew Chief (print)

Signature / Date

5.23.16

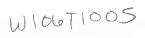
SITE DESCRIPTION	· 如此一个一个	是一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个
Survey Type: Centerline 🔏 Acces	ss Road (explain) Other (explain) Field Target: 19 Map #: 112 Map Date: 5.20 1/6
Date: 5/23/16	Project Name: Alaska LNG	Feature Id: W106 T1 005
Investigators: Jessie Ba	sunlee, Valeria	WATKING, KALY VOLPATEAM NO.: WIOG
State: Alaska	Region: Alaska	Milepost: 702,70
Latitude: 610 48 53,00	D3Z" N Longit	ude: \500 \7' 59, 2359"W Datum: WGS84
Logbook No.:	Logbook Page No.: 5	Picture No.: P_W106 T1005_001 +hrv -004
SITE PARAMETERS	HALL BELLEVIS TO THE STATE OF T	是在1996年度,但是主要企图的企图的。 1997年度
Subregion: Cook Inlet	Rosin	Landform (hillslope, terrace, hummocks, etc.): /ow/and
Slope (%): 0-3		Local relief (concave, convex, none): Flat hummocky
Pre-mapped Alaska LNG/NWI classifica	tion: V', 1C (Evidence of Wildlife Use: Moode droppings
Are climatic/hydrologic conditions on the Yes K No (if no expl	e site typical for this time of year? ain in Notes)	Are "Normal Circumstances" present: Yes No (If no, explain in Notes.)
Are Vegetation, Soil, or Hyd		ned? No(If yes, explain in Notes)
Are Vegetation, Soil, or Hyd	drology Naturally Problema	tic? No (If yes, explain in Notes.)
SUMMARY OF FINDINGS	AND THE RESIDENCE	
Hydrophytic Vegetation Present? Yes_	No	Is the Sampled Area within a Wetland? Yes No X
Hydric Soil Present? Yes_	NoX	Wetland Type:
Wetland Hydrology Present? Yes_	No	Alaska Vegetation Classification (Viereck): / C2, // B 2
corridor. Tall mature mixed to understory of 5hrub. No sign of hydrolog	rest ~ 60' tall of s & flick moss,	Bet Neo & Pie Mar with diverse

Tree Stratum (Plot sizes: 100)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC: 3 Total Number of Dominant Species Across All Strata: 4
1. Pires Marians	30	Y	FACUL	% Dominant Species that are OBL, FACW, or FAC:
2. Betula papyer and	20	Y	FAC	To some that are obt, 17611, of 176.
3.		-	17	图式 "信息要用的数据"。
4.	n la company			Prevalence Index worksheet:
Total Cov	er:_50			Total % Cover of: Multiply by:
50% of total cov	er: 25 20	% of total cov	rer:_\O	OBL species: X 1 =
Sapling/Shrub Stratum (み レ)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: 33 $\times 2 = 66$ FAC species 39 $\times 3 = 1/7$ FACU species 5 $\times 4 = 20$
1. Vaccinium whannes	3		FAC	UPL species X 5 = Ø
2. Salix Behbinna	10	Y	FAC	Column Totals: 77 (A) 203 (B)
3. vaccinim vitis-idaes	7/2		FAC	PI = B/A = 2 63
4. Betula neoglas kana	2		FAC	
5. Picea Mariano	2		FACUI	
0.				
6. 7. 8.				
7. 8. 9.			ī	
7. 8. 9. Total Cove 50% of total cove	er:	% of total cov	er <u>\</u>	
7. 8. 9. Total Cove 50% of total cove	er: 0 20		应性证明	
7. 8. 9. Total Cove 50% of total cove	er:	Dominant Species?	er:IndicatorStatus	Hydrophytic Vegetation Indicators:
7. 8. 9. Total Cove 50% of total cove VEGETATION (use scientific names of plan Herb Stratum (20)	ts) 20	Dominant	Indicator Status	
7. 8. 9. Total Cove 50% of total cove VEGETATION (use scientific names of plan Herb Stratum (20)	ts) Absolute % Cover	Dominant Species? (Y/N)	Indicator	
7. 8. 9. Total Cove 50% of total cove VEGETATION (use scientific names of plan Herb Stratum (ts) Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes)
7. 8. 9. Total Cover 50% of total cover 50% of total cover 10% of t	ts) Absolute % Cover	Dominant Species? (Y/N)	Indicator Status FACI FAC	Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in
Total Cove 50% of total cove VEGETATION (use scientific names of plan Herb Stratum (26) 1. Cornus conndensis 2. Equise fum Sylvaticum 3. Cohmagastis lappanea 4. Rubus chamaemacus 5.	ts) Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain)
Total Covered Solver Stratum (26) 1. Cornus Connadensis 2. Equise fum Sylvaticum 3. Cohnegonstis lapponica 4. Rubus chamaemacus 5. ametanum	ts) Absolute % Cover	Dominant Species? (Y/N)	Indicator Status FACI FAC	Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
Total Cove 50% of total cove VEGETATION (use scientific names of plan Herb Stratum (26) 1. Cornus conadensis 2. Fause fum sylvaticum 3. Cohnegorstis lappanica 4. Rubus chamaemacus 5. 7	ts) Absolute % Cover	Dominant Species? (Y/N)	Indicator Status FACI FAC	Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
Total Covered Solver Solver Stratum (26) 1. Cornus Connadensis 2. Equise fum Sylvaticum 3. Cohnegonstis lapponica 4. Rubus chamaemacus 5. amtsnum 6.	ts) Absolute % Cover	Dominant Species? (Y/N)	Indicator Status FACI FAC	y Dominance Test is > 50% y Prevalence Index is ≤ 3.0 m Morphological Adaptations¹ (Provide supporting data in Notes) problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. ### Bare Ground
Total Cove 50% of total cove VEGETATION (use scientific names of plan Herb Stratum (26) 1. Cornus conadensis 2. Equise fun sylvaticum 3. Cahmagashs lappanea 4. Rubus chamarus 5. 7 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0	ts) Absolute % Cover	Dominant Species? (Y/N)	Indicator Status FACI FAC	Y Dominance Test is > 50% Y Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. % Bare Ground % Cover of Wetland Bryophytes
Total Cove 50% of total cove VEGETATION (use scientific names of plan Herb Stratum (26) 1. Cornus conndensis 2. Equise fum Sylvaticum 3. Cohmagastis lappanea 4. Rubus chamaemacus 5.	ts) Absolute % Cover	Dominant Species? (Y/N)	Indicator Status FACI FAC	y Dominance Test is > 50% y Prevalence Index is ≤ 3.0 m Morphological Adaptations¹ (Provide supporting data in Notes) problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. ### Bare Ground

B

			5.23.16		10	7/				
SOIL	May Select	DESCRIPTION AND	Date Fe	DARDNING.		Y	10 10 10 10	Soil Pit Required (Y/N)		
SOIL PROFIL	E DESCRIPTION: (D	escribe	to the depth needed	to doc	ument the	indicator or co	onfirm the absence	of indicators.)		
Depth	Matrix		Redox Features							
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Notes		
0-3				7						
3-5	104RS/1	100				-	Cine Soudy los	Andic material		
5-14	7.54R 2.5/8	40					Sand - look			
	7 SYR 3/2	100					1			
14-24	10 YR 4/4	92	7.5 YR 4/0	8	Can	RC PL	Sandy loon			
		1								
								7		
¹ Type: C=Co	ncentration, D=Deplet	tion, RM	=Reduced Matrix, C	S=Cov	ered or Co	ated Sand Gr	ains. ² Location:	PL=Pore Lining, M=Matrix.		
HYDRIC SOIL	INDICATORS	D TOPE	THE PARTY OF THE	STATE OF	WEST WEST	100	INDICATORS F	OR PROBLEMATIC HYDRIC SOILS3		
THE RESERVE OF THE PARTY OF	stel (A1)/	O'K HILLSON	Alaska Gleyed	(A13)	N	AND STREET, ST	Alaska Color Ch	nange (TA4) ⁴ N		
Histic Epipedo			Alaska Redox	_	J		Alaska Alpine S			
			Alaska Gleyed		(A15) N		Alaska Redox w			
Black Histic (A			Alaska Gleyeu	roies	(A13) <u>11</u>			without 5Y Hue or Redder Underlying		
Hydrogen Sulf	fide (A4)/V						Layer N			
Thick Dark Su		_					Other (Explain i			
disturbed or p Give details of	roblematic. of color change in Not	es.			and hydrolo		ppropriate landscap	pe position must be present unless		
Restrictive La	yer (if present): Type	/		Jepin (i	nches)		-			
Hydric Soil P Notes:	resent (Y/N):							<u>.</u>		
HADBOLOGA	PRIMARY INDICAT	OPS (a)	ny one indicator is a	ufficien		SECONDARY	INDICATORS (2	or more required)		
Surface Water	1	1	face Soil Cracks (B6		1	Water-stained Leaves (B9)	HALL WHEN SHE SHE STAN	Stunted or Stressed Plants (D1)		
High Water Ta	able (A2)/	Inur	ndation Visible on A	erial Im		128.19.11	erns (B10)/	Geomorphic Position (D2) V		
Saturation (A3	3)	Spa	rsely Vegetated scave Surface (B8)	N		Oxidized Rhiz Living Roots (ospheres along	Shallow Aquitard (D3) N		
Water Marks (B1)/	_	l Deposits (B15)	N		Presence of R		Microtopographic Relief (D4)		
Sediment Dep	osits (B2)/		lrogen Sulfide or (C1)			Salt Deposits (C5) FAC-Neutral Test (D5)				
Drift Deposits	(B3) <u>N</u>	Dry	-Season ter Table (C2)	/		Notes:				
Algal Mat or Crust (B4) Other (Explain in Notes):										
Iron Deposits	(B5)									
	PARTS NOW	1000	Charles Tolk King			A STATE OF THE PARTY OF THE PAR	THE PARTY			
Surface Water	Present (Y/N):		Depth (in):							
Water Table F	resent (Y/N):		Depth (in):		We	etland Hydrol	ogy Present (Y/N)):		
Saturation Pre (includes capi	esent (Y/N):		Depth (in):		EC					
Notes:					10					

AQUATIC SITE ASSESSMENT DATA FORM



VEGETATION VARIABLES To Plot, M= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed
Percent Cover (P): Tree (>5 dbh, >6m tall) Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Dwarf shrub (<0.5m)
Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) Very High Density (80-100%)
Interspersion of Cover & Open Water (P): 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg. Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Cover Continuous Cover
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)
HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES
Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Histosol: Sa
HYDROLOGIC VARIABLES
HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outlet
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet P
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet_ Intermittent Inlet/Perennial Outlet_ Perennial Inlet/Perennial Inlet/Perennial Outlet_ Perennial Inlet/No Outlet_ Perenn
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perenn
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inle
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Outlet Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Outlet Perennial Outlet Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Outlet Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/N
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inle
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Inter
Inlet/Outlet Class (P): No Inlet/Outlet

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

	re ID: W\0007\005 Field Target: 19\ Date: 5-23-16
Featur	0.10.10.10.10.10.
For all	items not checked, please provide detailed explanation in the notes section of data form.
_	
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
	☑ Vegetation names are entered legibly for all strata present?
	☐ Cover calculations are complete and correct? ☐ All dominant species have been determined and recorded per strata?
	R Indicator status is correct for each species?
	☑ Dominance Test and Prevalence Index have been completed?
3.	Soil
	Soil profile is complete?
	Appropriate hydric soil indicators are marked?
4	Hydrology
4.	
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
-	Mana
7.	. Maps
	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

X halen Volger X halen Volger 5-23-16
Wetland Scientist (print) Signature / Date

15 Brownlee

Field Crew Chief (print)

Signature Date

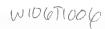
SIVE DESCRIPTION	Panta Att Modelle		- 1 - W. F.			All the Control of th	
Survey Type: Centerline 🔀 Acce	ss Road (explain)	Other (expla	ain)	Field Targ	et: 192	Map #: 1 Map Date: 5 - 20	
Date: 5/23/16	Date: 5/33/16 Project Name: Alaska LNG					:W106T1006	
Investigators: SB KV VW						Team No.: WIO6	
State: Alaska	Region: Alaska		Milepost: (pq \ , \				
Latitude: 61° 58' 3,812	23" N	Longitude	ude: 150° 11' 13, 2850" W Datum: WGS84				
Logbook No.:	Logbook Page No.:	× 5	Picture No.:	W106	T1006.	-veg-veg-pit-plug	
SITE PARAMETERS	在政治企业的	A STATE OF	1545		4 列間	STREET,	
Subregion: Southcentral (Cook Inlet Basin		Landform (hil	Islope, terra	ce, hummock	s, etc.): Lowland	
Slope (%): 0-3			Local relief (c	concave, con	vex, none):	Flat	
Pre-mapped Alaska LNG/NWI classifica	ation: U		Evidence of V	Wildlife Use:	Nose.	drappings	
Are climatic/hydrologic conditions on the Yes No (if no exp	e site typical for this time lain in Notes)	of year?	Are "N	ormal Circur	nstances" pre	esent: plain in Notes.)	
Are Vegetation, Soil, or Hyd		ly Disturbed?	No_'X	(If yes, ex	olain in Notes	s)	
Are Vegetation, Soil, or Hy	drology Naturally F	roblematic?	No_X	(If yes, ex	plain in Note	s.)	
SUMMARY OF FINDINGS	18 N. W. 160			14	"是我们的	《大学》,	
Hydrophytic Vegetation Present? Yes_	No	Is	the Sampled /	Area within	a Wetland?	YesX No	
Hydric Soil Present? Yes_	X No	_ w	etland Type:	PSS1	/3B	10-	
Wetland Hydrology Present? Yes_	X No	AI	aska Vegetatio	n Classificat	ion (Viereck)	1182,1102	
Notes and Site Sketch: Please include I corridor. Previously burned Pic in thick. Pockets of 57 all area between 1	Mar Forest wy	1 ~ 40%. through					
						4	

WIOGTIOOS WETLAND DETERMINATION DATA FORM

	SALES AND AND ADDRESS.		100	
Tree Stratum (Plot sizes: 100)	Absolute % Cover	Dominant Species? (Y/N)	Indicator	Dominance Test worksheet: No. of Dominant Species that are OBL, FACW, or FAC:
1,		11111		Total Number of Dominant Species Across All Strata:
2.				% Dominant Species that are OBL, FACW, or FAC:
3.			- 10	
1.	1	-		Prevalence Index worksheet:
Total Cover:	. 0			Total % Cover of: Multiply by:
50% of total cover)% of total cov	/er:	OBL species:X1 =
Sapling/Shrub Stratum (24)	Absolute	Dominant	Indicator	FACW species: \ \(\(\text{\alpha} \) \ \(\text{X} \) 2 = \ \(\frac{3}{2} \)
, , , ,	% Cover	Species? (Y/N)	Status	FAC species
· Rhododendown groenlandica	n 25	Y	FAC	UPL species X 5 = O
Betula Nana	6		FAC	Column Totals: 84 (A) 234 (B)
· vaccinium vitis-idaea	a		FAC	PI=B/A= 2,8
Betyla Negalaskana	30	Y	FAC	
· vaccinium ovalifolium	3		FAC	
Chamaedohne calvellata	8		FACLE	
· Rhododendrum towentosum	2		FACUL	
· Picea mariana	3		FACIAL	
· Vaccinium OXLLOCCUS	T		OBL	
Total Cover:	CONTRACTOR OF THE PARTY OF THE		10	
50% of total cover:	59.5 20	% of total cov	rer: 15.5	d.
		70 01 10101 001		
EGETATION (use scientific names of plants)		V201 228	
SALE AS A THURSDAY OF THE SALE) Absolute	Dominant	Indicator	Hydrophytic Vegetation Indicators:
THE YES LEMBERSON BARES AND THE STATE OF THE	STREET, STREET	Dominant Species?		Hydrophytic Vegetation Indicators:
lerb Stratum (24)	Absolute % Cover	Dominant	Indicator Status	1 \/.
Equisetum sylunticum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in
Equisetum sylvaticum Chamerion enquetifulum	Absolute % Cover	Dominant Species?	Indicator Status FA C	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes)
1. Faulsefum sylunticum 2. Chamerion angustifalium 3. Rubus chamaemorus	Absolute % Cover	Dominant Species?	Indicator Status FAC FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain)
1. Egyisefum sylvaticum 2. Chamerion angustiful um 3. Rubus chamaemorus 4. Gumnocarpium dryppens	Absolute % Cover	Dominant Species?	Indicator Status FA C	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless
1. Equisation (26) 1. Equisation sylvation 2. Chamerion angustiful um 3. Rubus chamaemarus 4. Gymnocarpium dryppens 5.	Absolute % Cover	Dominant Species?	Indicator Status FAC FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain)
lerb Stratum (26.) L'Equisefum sylunticum Chamerion angustifulum Rubus chamaemorus Cymnocarpium dryplens .	Absolute % Cover	Dominant Species?	Indicator Status FAC FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic.
1. Equisation sylvaticum 2. Chamerion angustiful um 3. Rubus chamaemorus 4. Gymnocarpium dryppens 5.	Absolute % Cover	Dominant Species?	Indicator Status FAC FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic. 8 Bare Ground
1. Fautsefum sylvations 2. Chamerian angustifalium 3. Rubus chamaemarus 4. Gymnocarpium dryppens 5.	Absolute % Cover	Dominant Species?	Indicator Status FAC FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic. % Bare Ground % Cover of Wetland Bryophytes
1. Favise fum sylvation 2. Chamerian angustifishum 3. Rubus chamaemarus 4. Gymnocarpium dryplens 5.	Absolute % Cover	Dominant Species?	Indicator Status FAC FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic.
2. Chamerian angustifishum 3. Rubus chamaemarus	Absolute % Cover	Dominant Species?	Indicator Status FAC FACU	Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic. % Bare Ground % Cover of Wetland Bryophytes % Brown of Bryophytes

SOIL PROFIL	T Madain		Daday Casturas				4	
Depth (inches)	Matrix	1	Redox Features	L	_ 1	1. 2		N. I
/inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc²	Texture	Notes
07	y							Suprice Organice
7-10	la maria		82	-				Saprie Organics
10-20	10483/2	98	104R 3/3	2	con	RC	they Fine Sandy	load
2 20-+	10VR3/2	100		18.				Cobbles present
ř					4.5			
	1 1					ļ		
¹Type: C=Cor	ncentration D=Deple	etion RN	/I=Reduced Matrix, C	S=Cove	ered or Coa	eted Sand C	Prains. ² Location	n: PL=Pore Lining, M=Matrix.
Alternative Automotive	INDICATORS	in all gray		(RXESS)	AND WAR	Shirt Co.		FOR PROBLEMATIC HYDRIC SOL
THE RESERVE TO SHIP	stel (A1) ✓	100	Alaska Gleyed	(A13)	A/	Market State (197)	The second second second	Change (TA4) ⁴
								Swales (TA5)
		(A2)						with 2.5Y Hue ~
Black Histic (A		-	Alaska Gleyed	Pores ((A15)			d without 5Y Hue or Redder Underlying
Hydrogen Sulf	fide (A4)						Layer_	—
Thick Dark Su	ırface (A12)/						Other (Explain	n in Notes)
Restrictive Lay	of color change in No yer (if present); Typ	e:^	<u></u>	Depth (ir	nches):			
Restrictive Lay		e:^		Depth (in	nches):			
Restrictive Lay Hydric Soil P Notes:	yer (if present): Typ	e: <u>/</u>						2 or more required)
Hydric Soil P Notes:	yer (if present): Typ	TORS (any one indicator is s	ufficient) s		Y INDICATORS (2 or more required) Stunted or Stressed Plants (D1)
Hydric Soil P Notes: HYDROLOGY Surface Water	yer (if present); Typ resent (Y/N):	TORS (a	any one indicator is s rface Soil Cracks (Be indation Visible on A	ufficient) S	ECONDAR Vater-staine eaves (B9)	Y INDICATORS (Stunted or Stressed Plants (D1)
Hydric Soil P Notes: HYDROLOGY Surface Water	yer (if present): Typ resent (YÎN): PRIMARY INDICA r (A1) able (A2)	Su Inu (B)	any one indicator is s rface Soil Cracks (Be indation Visible on A	ufficient	y Lagery C	ECONDAR Vater-staine eaves (B9) Orainage Pa	YINDICATORS (d /- tterns (B10) /- zospheres along	Stunted or Stressed Plants (D1)
Hydric Soil P Notes: HYDROLOGY Surface Water High Water Ta	yer (if present); Typ resent (Y/N):/ PRIMARY INDICA r (A1)/ able (A2)/	TORS (2 Su Inu (B) Sp Co	any one indicator is so rface Soil Cracks (Be indation Visible on Ar 7) Arsely Vegetated ncave Surface (B8)	ufficient i)/) S V L agery C L	ECONDAR Vater-staine eaves (B9) Orainage Pa Oxidized Rhi	tterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Hydric Soil P Notes: HYDROLOGY Surface Water High Water Ta	yer (if present); Typ resent (Y/N):/ PRIMARY INDICA r (A1)/ able (A2)/ (B1)/	Su Inu (B7 Co Ma	any one indicator is surface Soil Cracks (Be indation Visible on Act of the indicate Surface (B8) and Deposits (B15) and Deposits (B15) and Original Visible of (C1) and Cracks of the indicator	ufficient i)/	y V L agery C L L F III	Vater-staine eaves (B9) Orainage Pa Oxidized Rhi iving Roots Presence of on (C4)	tterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic
Hydric Soil P Notes: HYDROLOGY Surface Water High Water Ta Saturation (A3	yer (if present): Typ resent (Y/N):/ PRIMARY INDICA r (A1)/ able (A2)/ (B1)/ posits (B2)/	Su Inu (B) Sp Co Ma	any one indicator is sufface Soil Cracks (Be indation Visible on Arr) arsely Vegetated ncave Surface (B8) arl Deposits (B15) drogen Sulfide	ufficient i)/	y V L agery C L L F III	Vater-staine eaves (B9) Orainage Pa Oxidized Rhi iving Roots Presence of ron (C4)	tterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)Y
Hydric Soil P Notes: HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep	yer (if present): Typ Yesent (Y/N):/ YPRIMARY INDICA Pr (A1)/ Able (A2)/ (B1)/ Oosits (B2)/	Su Inu (B) Sp Co Ma Hy Od Dry Wa	any one indicator is surface Soil Cracks (Be indation Visible on Ac industrial Deposits (B15) drogen Sulfide or (C1)	ufficient S)V erial Ima	y V L agery C L L F III	Vater-staine eaves (B9) Orainage Pa Oxidized Rhi iving Roots Presence of on (C4)	tterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)Y
Hydric Soil P Notes: HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep	yer (if present): Typ Yesent (Y/N):/ YPRIMARY INDICA Pr (A1)/ Able (A2)/ (B1)/ Posits (B2)/ (B3)/ Crust (B4)/	Su Inu (B) Sp Co Ma Hy Od Dry Wa	any one indicator is surface Soil Cracks (Be indation Visible on Arr) arsely Vegetated ncave Surface (B8) arl Deposits (B15) drogen Sulfide for (C1)	ufficient S)V erial Ima	y V L agery C L L F III	Vater-staine eaves (B9) Orainage Pa Oxidized Rhi iving Roots Presence of on (C4)	tterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)Y
Hydric Soil P Notes: HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits	yer (if present): Typ resent (Y/N):/ PRIMARY INDICA r (A1)/ able (A2)/ (B1)/ cosits (B2)/ (B3)/ (B3)/ (B5)/	Su Inu (B) Sp Co Ma	any one indicator is s rface Soil Cracks (Be indation Visible on Ac rfacesely Vegetated incave Surface (B8) rd Deposits (B15) drogen Sulfide or (C1) r-Season ater Table (C2) her (Explain in Notes	ufficient S)V erial Ima	y V L agery C L L F III	Vater-staine eaves (B9) Orainage Pa Oxidized Rhi iving Roots Presence of on (C4)	tterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)Y
Hydric Soil P Notes: HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits	yer (if present): Typ resent (Y/N):/ PRIMARY INDICA r (A1)/ able (A2)/ (B1)/ cosits (B2)/ (B3)/ (B3)/ (B5)/	Su Inu (B) Sp Co Ma Hy Od Dry Wa	any one indicator is surface Soil Cracks (Be indation Visible on Arr) arsely Vegetated ncave Surface (B8) arl Deposits (B15) drogen Sulfide for (C1)	ufficient S)V erial Ima) S V L agery C L F III	Vater-staine eaves (B9) Prainage Pa Dividized Rhi iving Roots Presence of ron (C4)	tterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3)/ Microtopographic Relief (D4)/ FAC-Neutral Test (D5)/
Hydric Soil P Notes: HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits	yer (if present): Typ yer (if present): Typ	Su Inu (B) Sp Co Ma	any one indicator is s rface Soil Cracks (Be indation Visible on Ac rfacesely Vegetated incave Surface (B8) rd Deposits (B15) drogen Sulfide or (C1) r-Season ater Table (C2) her (Explain in Notes	ufficient S)V erial Ima) S V L agery C L F III	Vater-staine eaves (B9) Prainage Pa Dividized Rhi iving Roots Presence of ron (C4)	tterns (B10)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3)/ Microtopographic Relief (D4)/ FAC-Neutral Test (D5)/

AQUATIC SITE ASSESSMENT DATA FORM



VEGETATION VARIABLES P= Plot, N	Λ= Matrix
Forested-Evergreen-Needle-leaved	acking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Emergent-Non-persistent Emergent-
Percent Cover (P): Tree (>5 dbh, >6m tall)_ Dwarf shrub (<0.5m) Tall herb (≥1	Sapling (<5 dbh, <6m tall) 40 Tall shrub (2-6m) Short shrub (0.5-2m) 60 m) Short herb (<1m) Moss-Lichen Floating Submerged
Number of Wetland Types (M): 2	Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)	(0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-
Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattere	100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral Cover X N/A
Plant Species Diversity (P): Low (< 5 plant	species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none)	One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): Open Small Scattered Patches	No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous CoverX
Dead Woody Material (P): Low Abundance Abundant (>50% of surface)X	(0-25% of surface) Moderately Abundant (25-50% of surface)
Vegetative Interspersion (P): Low (large High (small groupings, diverse and interspers	patches, concentric rings) Moderate (broken irregular rings)X ed)
HGM Class (P): Slope Flat	Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES	
A CONTRACTOR OF THE PARTY OF TH	History Fibria History Homis History Convin
Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy_	Histosol: Fibric Histosol: Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES	the property with a product see that the product of
Inlet/Outlet Class (P): No Inlet/Outlet	No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Outlet
Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S	onally Flooded, Temporarily Flooded, SaturatedX Semiperm. Flooded
Evidence of Sedimentation (P): No Eviden Created	ce Observed
Microrelief of Wetland Surface (P): Absent	Poorly Developed (6in.) Well Developed (6-18in.) X Pronounced (>18in.)
Frequency of Overbank Flooding (P): No O Return Interval >5 yrs	verbank Flooding
Degree of Outlet Restriction (P): No Outflow	
	ircumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading 4.5
Glacial Till/Not Permeable	(P): High Permeability Stratified Deposits Low Permeability Stratified Deposits
	Gradient (<2%)
Evidence of Seeps and Springs (P): No See	eps or Springs Seeps Observed Intermittent Spring Perennial Spring
LANDSCAPE VARIABLES (M)	Control of the second of the s
Wetland Juxtaposition: Wetland Isolate Only Connected Above Connected	d Wetlands within 400m, Not Connected Only Connected Below d Upstream & Downstream Unknown
Wetland J.and Use: High Intensity (i.e., a	,
	ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)
Wetland Jand Use: High Intensity (i.e., a Watershed Land Use: 0-5% Rural	ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)

JBronsel 5-23-16

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Featur	e ID: <u>W/0677006</u> Field Target: <u>192</u> Date: <u>5.23.16</u>
	items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
	 ✓ Vegetation names are entered legibly for all strata present? ✓ Cover calculations are complete and correct?
	☑ All dominant species have been determined and recorded per strata?
	 ☑ Indicator status is correct for each species? ☑ Dominance Test and Prevalence Index have been completed?
3.	Soil
	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked? For Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Wegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated?
7,	Maps
	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- 🗹 Two photos were taken for each Observation Point (vegetation/site overview)?

X	X
Wetland Scientist (print)	Signature / Date
X JBrowntee	X Leave Browness
Field Crew Chief (print)	Signature / Date

SITE DESCRIPTION	THE MANAGEMENT OF	CONTRACTOR OF THE PARTY OF THE	Mary Sand			Aleman Andrews and about
Survey Type: Centerline X Acces	ss Road (explain)	Other (expla	in)	Field Targ	jet: 193	Map #: 110 Map Date: 5/20
Date: 5/23/16	Project Name: Alask	a LNG			Feature Id:	W106T1007
Investigators: JB, KV, VW						Team No.: WIGLO
State: Alaska	Region: Alaska		Milepost:	690,4		
Latitude: 01° 58' 34.96"		Longitude:	1500 11	. 49.48	И	Datum: WGS84
Logbook No.: /	Logbook Page No.:	5	Picture No.:	W1067	11007_	veg_veg_pi+_plucy
SITE PARAMETERS	10年の日本の日本学院	1	对数据对 证	別於從在	A PARTY N	
Subregion: SouthCentral	Cookinlet Ban	ein	Landform (hill	slope, terrac	ce, hummocks	s, etc.): lowlands
Slope (%): 3-3			Local relief (co	oncave, con	vex, none):	None
Pre-mapped Alaska LNG/NWI classifica	tion: PSSI/EMI	3	Evidence of W	/ildlife Use:	Moose	droppings
Are climatic/hydrologic conditions on the Yes No (if no expl	site typical for this time ain in Notes)	of year?	Are "No Yes	rmal Circun	nstances" pre (If no, exp	sent: olain in Notes.)
Are Vegetation, Soil, or Hyd	drologySignificant	y Disturbed?	No_X	_(If yes, exp	olain in Notes	
Are Vegetation, Soil, or Hyd	rology Naturally P	roblematic?	-No_X	_ (If yes, ex	olain in Notes	+ KV
SUMMARY OF FINDINGS	and he had to	Line and the Co	APPEND N			
Hydrophytic Vegetation Present? Yes_	No	ls t	the Sampled A	rea within	a Wetland?	YesXNo
Hydric Soil Present? Yes_	X No	We	etland Type:	PSSI/	EMIB	
Wetland Hydrology Present? Yes_	No	— Ala	iska Vegetation	Classificati	on (Viereck):	11 B2, TIL A2
Notes and Site Sketch: Please include Decorridor. Previously borned Pic Mar Fores But Neo regen sapplings ~10' Frees, many standing snags Cal Can patches through Many pockets of 10" does Watertable @ 6" and positive KX stating as 6".	tw/ trees ~ 60 tall. Many downs site. puddles	Centerline, I	Length of feature	re, Distance	s from Center	rline, Photo Locations, and Survey

				ALCOHOL: N	
VEGETATION (use scientific names of plants	s)				
Tree Stratum (Plot sizes:/O O '_)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Dominance Test worksheet: No. of Dominant Species that are	
1,				Total Number of Dominant Specie	
2.				% Dominant Species that are OBL	, FACW, or FAC:(A/B)
3.					
4.				Prevalence Index worksheet:	
Total Cover				Total % Cover of:	Multiply by:
50% of total cover	: 20	% of total cov	er:	OBL species:OX 1	=O
Sapling/Shrub Stratum (26')	Absolute	Dominant	Indicator	FACW species:X 2	= _ 2
	% Cover	Species?	Status	FAC species X 3	=/53
		(Y/N)		FACU species 7 X 4	=_ 28
1. Betuila necalaskana	20	Y	FAC	UPL species O X 5	=O
2. Vaccinium vitis-Idaga	1		FAC	Column Totals: 59 (A)	
3. Spirata Stevenii	3		FACY	PI = B/A = 3,10	
4. Salix belobiand	3		FAC		X.
5. Picea mariang	T		FACh/		
6. Vaccinsum ovaliforum	1		FAC		
7.					
8.					
9.					
Total Cover:		% of total cov	er: <u>3.6</u>	8	

VEGETATION (use scientific names of plants		15 (TO 1 /5)		
Herb Stratum (∂(o')	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators:
1. Equisedum Sylvaticum	3		FAC	Morphological Adaptations¹ (Provide supporting data in
2. Chameron anaustifolium	4		FACU	Notes)
3. Cornus suecica	3		FAC	Problematic Hydrophytic Vegetation ¹ (Explain)
4. Calamagiostis canadensis	20	Y	FAC	¹ Indicators of hydric soil and wetland hydrology must be present unless
5. Rubus chamaemorus	1		FACW	disturbed or problematic.
6.				
7,				% Bare Ground
8.				% Cover of Wetland Bryophytes
9.				
10				% Cover of Water
Total Cover: 50% of total cover:		Hydrophytic Vegetation Present (Y/N):		

			5.23.16		193)	A. Carrier	
JOIL .	国企业员 原作的	E 1102	Date Fea	ture II	0		新加州的东西	Soil Pit Required (Y/N)
SOIL PROFILE	E DESCRIPTION: (D	escribe	to the depth needed t	to doc	ument the i	indicator or co	onfirm the absence	of indicators.)
Depth	Matrix		Redox Features				- Self.	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc²	Texture	Notes
O 0-4								house organics
	104R 3/1	100					Sandy low	honic organics
	104R 4/2	98	2.54 4/4	2	Con	matrix	Sandy loan	Positive NIX
Bus 2 10-24	104R 4/3		7. SYR 3/3	10	Con	Matrice	INIMY SAND	
Cur we	15.17		7.54R 4/3	10	Con	matrix	1	(fra.)
			1.2713.02		2 2 2 2 2			3.31
15%							-	
Type: C=Con	centration, D=Deplet	ion, RM	/ /=Reduced Matrix, CS	S=Cove	ered or Coa	ated Sand Gra	ains. ² Location:	PL=Pore Lining, M=Matrix.
HYDRIC SOIL	INDICATORS	STATE OF	TO SET WATER OF SECTION	W. Land	22,770,81	- (% policy)	INDICATORS F	OR PROBLEMATIC HYDRIC SOILS
Histosol or His	tel (A1)	ALCOHOL: SP	Alaska Gleyed ((A13)	N		Alaska Color Ch	nange (TA4) ⁴ /
Histic Epipedo	- fr		Alaska Redox (A	_	7	-	Alaska Alpine S	
Black Histic (A			Alaska Gleyed F				Alaska Redox w	
			Thursday of the	0.00	(* /			without 5Y Hue or Redder Underlying
Hydrogen Sulfi	de (A4)/\						Layer_ N	
	face (A12) _ N	_					Other (Explain i	1 - 0 - 1 - 0 - 1 - 1 - 1 - 1
One indicator disturbed or pr		ation, c	ne primary indicator of	f wetla	ind hydrolo	gy, and an ap	propriate landscap	pe position must be present unless
	obiematic. f color change in Not	es.						
	er (if present): Type		De	epth (ii	nches):			*
		_						
Hydric Soil Pr	esent (Y/N):							
Notes: D	-/-/-1/	-	2 1 / 11	110		nt m . n	7 7 6000	1
Posit	ve a a thro	ught	Bw / layer. H	igh P	erecia	Conc un	BWEIN	
		•	70					
HYDROLOGY	PRIMARY INDICAT	ORS (any one indicator is su	fficient	S	ECONDARY	INDICATORS (2	or more required)
Page-National State of State o	CONTRACTOR OF THE PERSON OF TH	- Contracts		1	COLUMN TOWN	Vater-stained		Stunted or Stressed
Surface Water	(A1) <u>Y</u>	Su	rface Soil Cracks (B6)	N		eaves (B9)	N	Plants (D1)
High Water Ta	blo (A2) Y	Inc	indation Visible on Aer	rial Ima	agery r	Trainage Patte	erns (B10)//	Geomorphic Position (D2)
nigh vvaler ra	bie (A2)	(D	1	_				Geomorphic February (B2)
Saturation (A3)	<u> </u>		arsely Vegetated ncave Surface (B8)					Shallow Aquitard (D3)
4.		-	in the latest terms of the	/ Directores of B				Microtopographiç
Water Marks (I	31)	Ma	Deposits (B15)			Presence of Reduced		Relief (D4)
Cadimant Dan	neite (DO)	Ну	drogen Sulfide			Salt Deposits	(CE)	FAC-Neutral Test (D5)
Sediment Depo	osits (BZ)	- 00	lor (C1)/				(C3)	TAG-Neutral Test (D3)
Drift Deposits (B3) J	Dr	y-Season		1	Notes:		
		VV	ater Table (C2)	_				
Algal Mat or Ci	rust (B4)	Ot	her (Explain in Notes):					
lass Donnell (DE)			-				
Iron Deposits (Do)(ca					Assessment .		
		11272		4-236	A STATE OF	The same of the last of		
Surface Water	Present (Y/N):		Depth (in): 6"	_		Aland Lluduct	ogy Present (Y/N	,. Y
Water Table P	resent (Y/N):		Depth (in):		vve	tiano Hydroi	ogy Present (17M)· <u></u>
Saturation Pre-	sent (Y/N): ary fringe)		Depth (in): 3		EC	: 24	_	p4 5.10
Notes:								,
			**					
1								

4

AQUATIC SITE ASSESSMENT DATA FORM

VEGE FATION VÌXRIABLES >= l'hot, M= Matrix
Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Forested-Evergreen-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent
Percent Cover (P): Tree (>5 dbh, >6m tall) Sapling (<5 dbh, <6m tall) 10 Tall shrub (2-6m) Short shrub (0.5-2m) 55 Dwarf shrub (<0.5m) 5 Tall herb (≥1m) 5 Short herb (<1m) 30 Moss-Lichen Floating Submerged
Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even
Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) 80%) Very High Density (80-100%) X
Interspersion of Cover & Open Water (P): 100% Cover or Open Water
Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)
Presence of Islands (M): Absent (none) X One or Few Several to Many N/A
Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered PatchesX Continuous Cover
Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)
Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)
HGM Class (P): Slope Flat_X_ Lacustrine Fringe Depressional Riverine Estaurine Fringe
SOIL VARIABLES
Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric
Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey
HYDROLOGIC VARIABLES
HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Pere
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/No Outlet Perennial
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Intermittent Inle
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermit
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Intermitte
Inlet/Outlet Class (P): No Inlet/Outlet
Inlet/Outlet Class (P): No Inlet/Outlet
Interviolate Class (P): No Inlet/Outlet
Intet/Outlet Class (P): No Inlet/Outlet

GPS Technician QA/QC check:

Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Featur	e ID: WIGGT1007 Field Target: 193 Date: 5.23.16
For all	items not checked, please provide detailed explanation in the notes section of data form.
1.	Site Description
	Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook?
2.	Vegetation
	At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
	Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct?
	All dominant species have been determined and recorded per strata? Indicator status is correct for each species?
	Dominance Test and Prevalence Index have been completed?
3.	Soil
٠.	Soil profile is complete? Appropriate hydric soil indicators are marked?
4.	Hydrology
	Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?
5.	Functions and Values
	Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?
6.	Field Logbook
	Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
	Each logbook page is initialed and dated?
7.	Maps
	Wetland boundaries have been corrected if necessary? Maps are initialed and dated?

8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

X Maley Valley 5-23-16
Wetland Scientist (print)
Signature / Date

X JBrownlee

Field Crew Chief (print)

Cionatius (Data

SITE DESCRIPTION	ale State State	Aller Sales Commence			
Survey Type: Centerline Acce	ss Road (explain) Other (explain) X Facil: Hy Field Tar		Map #: 114 Map Date: 5 : 20 16	
Date: 5-24-100	Project Name: Alaska LNG	4	Feature Id	:W10671008	
	mnlee, Kaler	n Volger		Team No.: W\O	
State: Alaska	Region: Alaska	Milepost: 721.8	}		
Latitude (p) 0 351 34 Col	69" N Longi	tude: 150° 31' 1.1	17" W	Datum: WGS84	
Logbook No.:	Logbook Page No.:	Picture No.: P_W	06710	08-001 thru-004	
SITE PARAMETERS	的 是 医含态 使感激器	罗州 (西) 古书包含在		學學的意思的學學學學	
Subregion: Cook Inlet Bas	Landform (hillslope, terrace, hummocks, etc.): Alle				
Slope (%): 5		Local relief (concave, convex, none): 3/ghty con caule			
Pre-mapped Alaska LNG/NWI classifica	ation:		Evidence of Wildlife Use: Monse Stoppings		
Are climatic/hydrologic conditions on the Yes No (if no exp	e site typical for this time of year?	Are "Normal Circul Yes X No		esent: ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '	
Are Vegetation, Soil, or Hyd		<u> </u>	plain in Notes		
Are Vegetation, Soil, or Hy		atic? No (If yes, ex	plain in Notes	s.)	
SUMMARY OF FINDINGS		Series Series	《 图》	共发性。以外一种间接数据	
Hydrophytic Vegetation Present? Yes_	No	Is the Sampled Area within	a Wetland?	Yes No	
Hydric Soil Present? Yes		Wetland Type: PFOI/S	51 B &B	PEMI/FOIB	
Wetland Hydrology Present? Yes_	No	Alaska Vegetation Classifica	tion (Viereck):	1-82, HBZ18	
Notes and Site Sketch: Please include to corridor. Bet Neo absoluted way and horse tal. Are expressing and to NE on grove Wost were ago use best available. West Lavallable	I trees 60 'w/ the ea is wetter than running down s & bar most s tured on map	I Alex "20". This Imaging work, stope, on transmit or map up	k undered umpli	to and from (2	
\	net de		lale		
	~ /	Î	wet sie		

W106 T1008

- 12 a 5 d 15			-	ATT AND TO SEE THE SECOND SECO
VEGETATION (use scientific names of plants	s)			
	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot sizes:/60)	% Cover	Species? (Y/N)	Status	No. of Dominant Species that are OBL, FACW, or FAC: 3 (A
1. Alaus tensifolia 20'	40	Y	FAC	Total Number of Dominant Species Across All Strata:
2. Betula Negalaskians	15	Y	FAC	- % Dominant Species that are OBL, FACW, or FAC: 60 (A/
3.	15	144		TOTAL STATE OF THE STATE OF THE STATE OF
4.				Prevalence Index worksheet:
Total Cover	55			Total % Cover of: Multiply by:
50% of total cover	21.500	% of total cov	ver:	OBL species: X1=
Sapling/Shrub Stratum (26)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	FACW species: $3 \times 2 = 6$ FAC species $3 \times 3 = 243$ FACU species $3 \times 4 = 220$
1. Ribes triste	13		FAC	UPL species
2. Alnus tenvitolia	10	Y	FAC	Column Totals: 39 (A) 4(09 (B)
3. Delvis club Oplopanax horr	dus/5	Y	FACIL	PI=B/A= 3.37
4. Samburus Cocemasa	3	- "	FACO	
5.				
6.				
7,				
8,				
9.				
Total Cover: 50% of total cover:	15.5 20	% of total cov	ver: 10.3	
VEGETATION (use scientific names of plants	STATE OF TAXABLE PARTY.			
Herb Stratum (26)	Absolute % Cover	Dominant Species? (Y/N)	Indicator Status	Hydrophytic Vegetation Indicators: Dominance Test is > 50%
1. Equiselum arvense	8	(4.17)	FAC	Prevalence Index is ≤ 3.0
2. Colamagnostis conadencis	5		FAL	Morphological Adaptations ¹ (Provide supporting data in Notes)
3. Streptoous amplexitations	7		FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
4				1 Indicators of hydric soil and wetland hydrology must be present unless
5. triental's europaea			FACU	disturbed or problematic.
6. Valeriana Sis	Ť			
7. Viala Palustris			FACIL	% Bare Ground
8. Drypter's exporsa	3.5	Y	FACU	Cover of Wetland Bryophytes
9.				Total Cover of Bryophytes
10.		9.14	T 30	% Cover of Water
Total Cover:	52	-		Hydrophytic Vegetation Present (Y/N):
50% of total cover:	2615 20	% of total cov	er: 10 0 4	Notes: (If observed, list morphological adaptations below):