# Alaska LNG

# DOCKET NO. PF14-21-000 DRAFT RESOURCE REPORT NO. 1 GENERAL PROJECT DESCRIPTION PUBLIC VERSION

Document Number: USAKE-PT-SRREG-00-0001

Alaska LNG Project	DOCKET NO. PF14-21-000	DOC NO: USAI-EX-SRREG-00-0001
	DRAFT RESOURCE REPORT NO. 1	DATE: FEBRUARY 2, 2015
	GENERAL PROJECT DESCRIPTION	REVISION: 0
	PUBLIC VERSION	

	RESOURCE REPORT NO. 1 SUMMARY OF FILING INFORMATION <sup>a</sup>			
	Filing Requirement	Found in Section		
1.	<ul> <li>Provide a detailed description and location map of the project facilities (§ 380.12(c)(1)):</li> <li>Include all pipeline and aboveground facilities.</li> <li>Include support areas for construction or operation.</li> <li>Identify facilities to be abandoned.</li> </ul>	1.1		
2.	<ul> <li>Describe any nonjurisdictional facilities that would be built in association with the project (§ 380.12(c)(2)):</li> <li>Include auxiliary facilities (See § 2.55(a)).</li> <li>Describe the relationship to the jurisdictional facilities.</li> <li>Include ownership, land requirements, gas consumption, megawatt size, construction status, and an update of the latest status of federal, state, and local permits/approvals.</li> <li>Include the length and diameter of any interconnecting pipeline.</li> <li>Apply the four-factor test to each facility (see § 380.12(c) (2) (ii)).</li> </ul>	1.3.3		
3.	<ul> <li>Provide current original U.S. Geological Survey (USGS) 7.5-minute-series topographic maps with mileposts showing the project facilities (§ 380.12(c)(3)):</li> <li>Maps of equivalent detail are acceptable if legible (check with staff)</li> <li>Show locations of all linear project elements, and label them.</li> <li>Show locations of all significant aboveground facilities, and label them.</li> </ul>	Appendix A		
4.	<ul> <li>Provide aerial images or photographs or alignment sheets based on these sources with mileposts showing the project facilities (§ 380.12(c)(3)):</li> <li>No more than 1-year old.</li> <li>Scale no smaller than 1:6,000.</li> </ul>	Appendix A		
5.	<ul> <li>Provide plot/site plans of compressor stations showing the location of the nearest noise-sensitive areas (NSA) within 1 mile (§ 380.12(c)(3,4)):</li> <li>Scale no smaller than 1:3,600.</li> <li>Show reference to topographic maps and aerial alignments provided above.</li> </ul>	Appendix B		
6.	<ul> <li>Describe construction and restoration methods (§ 380.12(c)(6)):</li> <li>Include this information by milepost.</li> <li>Make sure this is provided for offshore construction as well. For the offshore this information is needed on a mile-by-mile basis and will require completion of geophysical and other surveys before filing.</li> </ul>	1.5.2		
6.	<ul> <li>Identify the permits required for construction across surface waters (§ 380.12(c)(9)):</li> <li>Include the status of all permits.</li> <li>For construction in the Federal offshore area be sure to include consultation with the MMS.</li> <li>File with the MMS for rights-of-way grants at the same time or before you file with the FERC.</li> </ul>	Appendix C		
7.	<ul> <li>Provide the names and address of all affected landowners and certify that all affected landowners will be notified as required in § 157.6(d) (§ 380.12(c)(10)):</li> <li>Affected landowners are defined in § 157.6(d).</li> <li>Provide an electronic copy directly to the environmental staff.</li> </ul>	To be filed under separate cover		

<sup>&</sup>lt;sup>a</sup> Guidance Manual for Environmental Report Preparation (FERC, August 2002). Available online at <u>http://www.ferc.gov/industries/gas/enviro/erpman.pdf</u>.

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Alaska LNG Project	DOCKET NO. PF14-21-000 Draft Resource Report No. 1	DOC NO: USAI-EX-SRREG-00-0001 DATE: FEBRUARY 2, 2015
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	RESOURCE REPORT NO. 1 SUMMARY OF FILING INFORMATION <sup>a</sup>			
	Filing Requirement	Found in Section		
Addition	Additional Information Often Missing and Resulting in Data Requests			
1.	Describe all authorizations required to complete the proposed action and the status of applications for such authorizations.	1.8, Appendix C		
2.	Provide plot/site plans of all other aboveground facilities that are not completely within the right- of-way.	Appendix B		
3.	Provide detailed typical construction right-of-way cross-section diagrams showing information such as widths and relative locations of existing rights-of-way, new permanent right-of-way, and temporary construction right-of-way. See Resource Report 8.	1.4.2, Appendix E		
4.	Summarize the total acreage of land affected by construction and operation of the project.	1.4		
5.	If Resource Report 5, Socioeconomics is not provided, provide the start and end dates of construction, the number of pipeline spreads that would be used, and the workforce per spread.	1.5		
6.	Send two (2) additional copies of topographic maps and aerial images/photographs directly to the environmental staff of the Office of Energy Projects (OEP).	Filed under separate cover		

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#### ACRONYMS AND ABBREVIATIONS

ABBREVIATION	DEFINITION	
Abbreviations for Units of	Abbreviations for Units of Measurement	
°C	degrees Celsius	
°F	degrees Fahrenheit	
BSCF/D	billion standard cubic feet per day	
cfs	cubic feet per second	
cm	centimeters	
dB	decibels	
dBA	A-weighted decibels	
ft	feet	
g	grams	
gpm	gallons per minute	
ha	hectare	
hp	horsepower	
Hz	hertz	
in	inches	
kg	kilogram	
kHz	kilohertz	
kW	kilowatts	
L <sub>dn</sub>	day-night sound level	
L <sub>eq</sub>	equivalent sound level	
L <sub>max</sub>	maximum sound level	
m <sup>3</sup>	cubic meters	
Ма	mega-annum (millions of years)	
mg	milligrams	
mg/L	milligrams per liter	
mg/m <sup>3</sup>	milligrams per cubic meter	
MGD	million gallons per day	
mm	millimeters	
MMBtu/hr	million British thermal units per hour	
MMSCF/D	million standard cubic feet per day	
MPH	miles per hour	
MMTA	million metric tons per annum	
ng	nanograms	
ppb	parts per billion	
ppbv	parts per billion by volume	
ppm	parts per million	
ppmv	parts per million by volume	
Psig	pounds per square inch gauge	
rms	root mean square	
SPL	sound pressure level	

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ABBREVIATION	DEFINITION	
tpy	tons per year	
μg	microgram	
µg/kg	micrograms per kilogram	
μPa	micropascals	
Other Abbreviations		
§	section or paragraph	
AAAQS	Alaska Ambient Air Quality Standards	
AAC	Alaska Administrative Code	
ACC	Alaska Conservation Corps	
ACEC	Areas of Critical Environmental Concern	
ACP	Arctic Coastal Plain	
ACRC	Alaska Climate Research Center	
ACS	U.S. Census, American Community Survey	
AD	aggregate dock	
ADCCED	Alaska Department of Commerce, Community, and Economic Development	
ADEC	Alaska Department of Environmental Conservation	
ADF&G	Alaska Department of Fish and Game	
ADGGS	Alaska Division of Geological and Geophysical Surveys	
ADM	average daily membership	
ADNR	Alaska Department of Natural Resources	
ADOLWD	Alaska Department of Labor and Workforce Development	
ADOT&PF	Alaska Department of Transportation and Public Facilities	
AEIC	Alaska Earthquake Information Center	
AES	Arctic Slope Regional Corporation Energy Service	
AGDC	Alaska Gasline Development Corporation	
AGPPT	Alaska Gas Producers Pipeline Team	
AHPA	Alaska Historic Preservation Act	
AHRS	Alaska Heritage Resources Survey	
AIDEA	Alaska Industrial Development and Export Authority	
AKNHP	Alaska Natural Heritage Program	
AMP	approximate mile post	
ANCSA	Alaska Native Claims Settlement Act	
ANGPA	Alaska Natural Gas Pipeline Act	
ANGTS	Alaska Natural Gas Transportation System	
ANILCA	Alaska National Interest Lands Conservation Act	
ANIMIDA	Arctic Nearshore Impact Monitoring in the Development Area	
ANS Task Force	Aquatic Nuisance Species Task Force	
ANVSA	Alaska Native Village Statistical Area	
AOGCC	Alaska Oil and Gas Conservation Commission	
AOI	Area of Interest	
APCI	Air Products and Chemicals Inc.	
APDES	Alaska Pollutant Discharge Elimination System	
APE	Area of Potential Effect	

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ABBREVIATION	DEFINITION
API	American Petroleum Institute
APP	Alaska Pipeline Project
Applicants	ExxonMobil Alaska LNG LLC, ConocoPhillips Alaska LNG Company, BP Alaska LNG LLC, TransCanada Alaska Midstream LP, and Alaska Gasline Development Corporation
APSC	Alyeska Pipeline Service Company
AQRV	Air Quality Related Value
Arctic NWR	Arctic National Wildlife Refuge
ARD	acid rock drainage
ARDF	Alaska Resource Data File
ARPA	Archaeological Resources Protection Act of 1979
ARRC	Alaska Railroad Corporation
AS	Alaska Statute
ASAP	Alaska Stand Alone Pipeline
ASME	American Society of Mechanical Engineers
ASOS	Automated Surface Observation System
ASRC	Arctic Slope Regional Corporation
ATC	Allakaket Tribal Council
ATWS	additional temporary workspace
AWOS	Automated Weather Observing System
B.C.	British Columbia
BACT	Best Available Control Technology
BGEPA	Bald and Golden Eagle Protection Act
BIA	U.S. Department of the Interior, Bureau of Indian Affairs
BLM	U.S. Department of the Interior, Bureau of Land Management
BMP	best management practices
BOD <sub>5</sub>	biochemical oxygen demand
BOEM	U.S. Department of the Interior, Bureau of Ocean Energy Management
BOG	boil-off gas
BP	Before Present
C.F.R.	Code of Federal Regulations
CAA	Clean Air Act
CAMA	Central Arctic Management Area
CCP	Comprehensive Conservation Plans
CDP	Census Designated Place
CEA	Chugach Electric Association
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CGF	Central Gas Facility
CGP	Construction General Permit
CH <sub>4</sub>	methane
CHA	Critical Habitat Area
CIRCAC	Cook Inlet Regional Citizens Advisory Council

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ABBREVIATION	DEFINITION	
CIRI	Cook Inlet Region Inc.	
CLG	Certified Local Government	
CO	carbon monoxide	
CO <sub>2</sub>	carbon dioxide	
CO <sub>2</sub> e	total greenhouse gas emissions, in CO <sub>2</sub> -equivalent global warming potential	
COC	Certificate of Compliance	
CONUS	Continental U.S.	
COOP	National Weather Service, Cooperative Observer Program	
CPCN	Certificate of Public Convenience and Necessity	
CRA	Certificate of Reasonable Assurance	
CSD	Contaminated Sites Database	
CSP	Contaminated Sites Program	
CSU	conservation system units	
CV	coefficient of variation	
CWA	Clean Water Act	
DB	Denali Borough	
DEM	Digital Elevation Model	
DGGS	ADNR Division of Geological and Geophysical Surveys	
DH	dock head	
DHSS	Alaska Department of Health and Social Services	
DMLW	Alaska Department of Natural Resources, Division of Mining, Land, and Water	
DPS	Distinct Population Segment	
DWPP	Drinking Water Protection Program	
EDA	U.S. Department of Commerce, Economic Development Administration	
EEZ	Exclusive Economic Zone	
EFH	Essential Fish Habitat	
EIS	Environmental Impact Statement	
EO	Executive Order	
EPA	U.S. Environmental Protection Agency	
EPRP	Emergency Preparedness and Response Plan	
ERL	Environmental, Regulatory and Lands	
ERMA	Extended Recreation Management Areas	
ESA	Endangered Species Act	
ESD	Emergency Shut Down	
ESU	Evolutionary Significant Unit	
FAA	U.S. Department of Transportation, Federal Aviation Administration	
FCC	Federal Communications Commission	
FE	U.S. Department of Energy, Office of Fossil Energy	
FEED	front-end engineering design	
FEIS	Final Environmental Impact Statement	
FEMA	U.S. Department of Homeland Security, Federal Emergency Management Agency	
FERC	U.S. Department of Energy, Federal Energy Regulatory Commission	

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ABBREVIATION	DEFINITION	
FERC Plan	FERC Erosion Control, Revegetation, and Maintenance Plan	
FERC Procedures	FERC Wetland and Waterbody Construction and Mitigation Procedures	
FLPMA	Federal Land Policy and Management Act (of 1976) BLM	
FMP	Fisheries Management Plan	
FNSB	Fairbanks North Star Borough	
FR	Federal Regulation	
GDP	Gross Domestic Product	
GHG	greenhouse gases	
GIS	geographic information system	
GMU	Game Management Units	
GP	General Permit	
GRI	Gas Research Institute	
GTP	gas treatment plant	
GWP	Global Warming Potential	
H <sub>2</sub> S	hydrogen sulfide	
HABS	Historic American Building Survey	
HAER	Historic American Engineering Record	
HAP	Hazardous Air Pollutant	
HAPC	Habitat Areas of Particular Concern	
HCA	High Consequence Area	
HDD	horizontal directional drill	
HDMS	Hazard Detection and Mitigation System	
HGM	hydrogeomorphic	
HLV	heavy lift vessel	
HMR	Hazardous Materials Regulations	
HRS	Hazard Ranking System	
IBA	Important Bird Areas	
ICS	Incident Command System	
IHA	Incidental Harassment Authorization	
IHLC	Inupiat History, Language, and Culture	
ILI	In-line Inspection	
IMP	Integrity Management Plan	
IP	Individual Permit	
ISO	International Organization for Standardization	
JPO	State and Federal Joint Pipeline Office	
kbpd	thousand barrels per day	
КСС	Kuparuk Construction Camp	
KOP	key observation points	
KPB	Kenai Peninsula Borough	
KTC	Kuparuk Transportation Company	
	light detection and ranging	
Liquetaction Facility	natural gas liquefaction	

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ABBREVIATION	DEFINITION
LLC	Limited Liability Company
LNG	liquefied natural gas
LNGC	liquefied natural gas carrier
LOA	Letter of Authorization
LOD	Limits of Distribution
LP	Limited Partnership
LPG	liquefied petroleum gas
LUP	Land Use Permit
LUST	Leaking Underground Storage Tanks
MACT	maximum achievable control technology
Mainline	An approximately 800-mile-long, large-diameter gas pipeline
MAOP	maximum allowable operating pressure
MARPOL	Marine Pollution Protocol
MBTA	Migratory Bird Treaty Act
MCD	marine construction dock
MHHW	mean higher high water
MHW	mean high water
ML&P	Anchorage Municipal Light and Power
MLA	Mineral Leasing Act
MLBV	Mainline block valve
MLLW	mean lower low water
MLW	mean low water
MMPA	Marine Mammal Protection Act
MMS	Mainline Meter Station
MOE	margin of error
MOF	material offloading facility
MP	Mainline milepost
MPRSA	Marine Protection Research and Sanctuaries Act of 1972
MSB	Matanuska-Susitna Borough
MSCFD	Thousand standard cubic feet per day
N <sub>2</sub> O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAS	nonindigenous aquatic species
NCC	national certification corporation
NCDC	National Climatic Data Center
NDE	non-destructive examination
NEP	non-essential experimental population
NEPA	National Environmental Policy Act
NESHAPs	National Emission Standards for Hazardous Air Pollutants
NFIP	National Flood Insurance Program
NGA	Natural Gas Act
NHPA	National Historic Preservation Act of 1996, as amended

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ABBREVIATION	DEFINITION	
NID	Negligible Impact Determination	
NLURA	Northern Land Use Research Alaska, LLC	
NMFS	National Oceanic and Atmospheric Administration, National Marine Fisheries Service	
NO <sub>2</sub>	nitrogen dioxide	
NO <sub>X</sub>	nitrogen oxides	
NOAA	National Oceanographic and Atmospheric Administration	
NOI	Notice of Intent	
North Slope	Alaska North Slope	
NPDES	National Pollutant Discharge Elimination Systems	
NPL	National Priority List	
NPP	National Park and Preserve	
NPR-A	National Petroleum Reserve – Alaska	
NPS	National Park Service	
NRCS	Natural Resources Conservation Service	
NRHP	National Register of Historic Places	
NSA	Noise-Sensitive Areas	
NSB	North Slope Borough	
NSPS	New Source Performance Standards	
NTC	national training center	
NTP	Notice to Proceed	
NVIC	Navigation and Vessel Inspection Circular	
NWA	Northwest Alaska Pipeline	
NWI	National Wetland Inventory	
NWR	National Wildlife Refuge	
O <sub>3</sub>	Ozone	
00	open-cut	
OCS	Outer Continental Shelf	
OD	outside diameter	
OEP	FERC, Office of Energy Projects	
OHA	ADNR Division of Parks and Outdoor Recreation, Office of History and Archaeology	
ONA	Outstanding Natural Area	
OPMP	ADNR, Office of Project Management and Permitting	
OU	Operating unit	
PAC	potentially affected community	
Pb	the element lead	
PBTL	Prudhoe Bay Gas Transmission Line	
PBU	Prudhoe Bay Unit	
PCB	polychlorinated biphenyl	
PHMSA	Pipeline and Hazardous Materials Safety Administration	
PM <sub>2.5</sub>	particulate matter having an aerodynamic diameter of 2.5 microns or less	
PM <sub>10</sub>	particulate matter having an aerodynamic diameter of 10 microns or less	
PMP	Point Thomson Gas Transmission Line milepost	

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ABBREVIATION	DEFINITION
POC	Plan of Cooperation
POD	Plan of Development
Project	Alaska LNG Project
PRPA	Paleontological Resources Preservation Act
PSD	Prevention of Significant Deterioration
PTTL	Point Thomson Gas Transmission Line
PTU	Point Thomson Unit
PWS	public water supply
Q&A	question and answer
RCA	Regulatory Commission of Alaska
RCRA	Resource Conservation and Recovery Act
RNA	Research Natural Area
ROD	Record of Decision
ROE	right-of-entry
ROW	right-of-way
RR	Resource Report
SCC	Deadhorse Airport
SDWA	Safe Drinking Water Act
SEIS	Supplemental Environmental Impact Statement
SGR	State Game Refuge
SHPO	State Historic Preservation Office(r)
SIP	State Implementation Plan
SMA	Special Management Areas
SRMA	Special Recreation Management Areas
SO <sub>2</sub>	sulfur dioxide
SPCC	Spill Prevention, Control, and Countermeasure Plan
SPCO	State Pipeline Coordinator's Office
SPLASH	Structure of Populations, Levels of Abundance, and Status of Humpbacks
SPMT	self-propelled module transporters
SRA	State Recreation Area
SRR	State Recreation River
STATSGO	State Soil Geographic
STATSGO2	State Soil Geographic2 – General Soils Map of Alaska & Soils Data (2011)
SWAPA	Southwest Alaska Pilots Association
SWPPP	Stormwater Pollution Prevention Plan
ТАНС	total aliphatic hydrocarbons
TAPS	Trans-Alaska Pipeline System
TBD	To be determined
ТСС	Tanana Chiefs Conference
The Applicants' Plan	Applicants' Upland Erosion Control, Revegetation, and Maintenance Plan
The Applicants' Procedures	Applicants' Wetland and Waterbody Construction, and Mitigation Procedures
ТРАН	total polycyclic aromatic hydrocarbons

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ABBREVIATION	DEFINITION
TSA	Transportation Security Administration
TSCA	Toxic Substances Control Act
TSD	tug support dock
TSS	total suspended solids
UCIDA	United Cook Inlet Drift Association
UIC	Underground Injection Control
U.S.	United States
U.S.C.	U.S. Code
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USDA	U.S. Department of Agriculture
USDHHS	U.S. Department of Health and Human Services
USDOE	U.S. Department of Energy
USDOI	U.S. Department of the Interior
USDOT	U.S. Department of Transportation
USDW	underground sources of drinking water
USFS	U.S. Department of Agriculture, Forest Service
USFWS	U.S. Department of the Interior, Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	volatile organic compound
VPSO	Village Public Safety Officer
VRM	Visual Resource Management Methodology
VSM	Vertical Support Members
WELTS	Well Log Tracking System
WRCC	Western Regional Climate Center
WSA	Waterway Suitability Assessment
WSR	Wild and Scenic Rivers

Information in this draft Resource Report, including maps, is preliminary and may change during Project pre-filing. Updated information will be provided in the subsequent draft and final versions of the Resource Reports.

#### 1.0 RESOURCE REPORT NO. 1 – GENERAL PROJECT DESCRIPTION

#### **1.1 PROJECT DESCRIPTION**

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (Applicants) plan to construct one integrated LNG Project (Project) with interdependent facilities for the purpose of liquefying supplies of natural gas from Alaska, in particular the Point Thomson Unit (PTU) and Prudhoe Bay Unit (PBU) production fields on the Alaska North Slope (North Slope), for export in foreign commerce and opportunity for in-state deliveries of natural gas.

The Natural Gas Act (NGA), 15 U.S.C. § 717a(11) (2006), and FERC regulations, 18 C.F.R. § 153.2(d) (2014), define "LNG terminal" to include "all natural gas facilities located onshore or in State waters that are used to receive, unload, load, store, transport, gasify, liquefy, or process natural gas that is ... exported to a foreign country from the United States." With respect to this Project, the "LNG terminal" includes the following: a liquefaction facility (Liquefaction Facility) in Southcentral Alaska; an approximately 800-mile, large diameter gas pipeline (Mainline); a gas treatment plant (GTP) on the North Slope; a gas transmission line connecting the GTP to the PTU gas production facility (PTU Gas Transmission Line or PTTL); and a gas transmission line connecting the GTP to the PBU gas production facility (PBU Gas Transmission Line or PBTL). All of these facilities are essential to export natural gas in foreign commerce.

These components are shown in Figure 1.1-1 and their current basis for design is described below.

The new Liquefaction Facility will be constructed on the eastern shore of Cook Inlet in the Nikiski area of the Kenai Peninsula. The Liquefaction Facility will include the structures, equipment, underlying access rights and all other associated systems for pre-processing (other than that performed by the GTP) and liquefaction of natural gas, as well as storage and loading of LNG, including terminal facilities (dock) and auxiliary marine vessels used to support marine terminal operations (excluding LNG carriers). The Liquefaction Facility will include three liquefaction trains combining to process up to approximately 20 million metric tons per annum (MMTPA) of LNG. Three 160,000 cubic meter (m<sup>3</sup>) tanks will be constructed to store the LNG. The Liquefaction Facility will be capable of accommodating two LNG carriers. The size range of LNG carriers that the Liquefaction Facility will accommodate will be determined through further engineering study and consultation with the United States Coast Guard (USCG) as part of the Waterway Suitability Assessment (WSA) process.

In addition to the Liquefaction Facility, the LNG Terminal will include the following interdependent facilities:



- <u>Mainline</u>: A new large-diameter natural gas pipeline approximately 800 miles in length will extend from the Liquefaction Facility to the GTP on the North Slope, including the structures, equipment, and all other associated systems. The diameter of the pipeline has not been finalized but for the purpose of these Resource Reports a 42-inch diameter pipeline is assumed. The Mainline will include compressor stations, heater stations, meter stations, and various mainline block valves; pig launcher and receiver facilities; and associated ancillary and auxiliary facilities. Ancillary and auxiliary facilities will include additional temporary work spaces, access roads, helipads, construction camps, pipe storage areas, contractor yards, material extraction sites, and material disposal sites. Along the Mainline route, there will be at least five off-take interconnection points to allow for the opportunity for future in-state deliveries of natural gas. The size and location of such interconnection points are unknown at this time. None of the potential third-party facilities used to condition, if required, or move natural gas away from these off-take points will be part of the Project.
- <u>GTP</u>: A new GTP and associated facilities in the Prudhoe Bay area will receive natural gas from the PBU Gas Transmission Line and the PTU Gas Transmission Line. The GTP will treat/process the natural gas for delivery into the Mainline. The Project also includes a new pipeline that will deliver natural gas processing byproducts from the GTP to the PBU.
- <u>PBU Gas Transmission Line</u>: A new natural gas transmission line will extend approximately one mile from the inlet flange of the GTP to the outlet flange of the PBU gas production facility.
- <u>PTU Gas Transmission Line</u>: A new natural gas transmission line will extend approximately 60 miles from the inlet flange of the GTP to the outlet flange of the PTU gas production facility.
- <u>Ancillary Facilities</u>: Existing State of Alaska transportation infrastructure will be used during the construction of these new facilities including ports, airports, roads, and airstrips (potentially including previously abandoned airstrips). The potential need for new infrastructure and modifications or additions to these existing in-state facilities is under evaluation. The Liquefaction Facility, Mainline, and GTP will require the construction of material offloading facilities.

Draft Resource Report No. 1, Appendices A and B contain general maps of the Project footprint. Detailed plot plans will be developed during the pre-front-end engineering and design (Pre-FEED) process and will be provided to the Commission in a subsequent draft of Resource Report No. 1. An update to the current list of affected landowners is being filed under separate cover as privileged and confidential information.

Outside the scope of the Project, but in support of, or related to, the Project, additional facilities or expansion/modification of existing facilities will be needed or may be constructed. These other projects may include:

- Modifications/new facilities at the PTU;
- Modifications/new facilities at the PBU;

- Relocation of the Kenai Spur Highway; and •
- Third-party pipelines and associated infrastructure to transport natural gas from the off-take interconnection points to markets in Alaska.

#### 1.2 **PROJECT PURPOSE AND NEED**

The purpose of the Alaska LNG Project is to commercialize the vast natural gas resources<sup>b</sup> on Alaska's North Slope. There have been numerous previous efforts to bring this gas to market. Now the Applicants, supported by the State of Alaska, have aligned on a single development concept to commercialize this abundant natural resource: a new LNG terminal, including liquefaction, pipeline and treatment facilities, connecting North Slope natural gas resources to foreign LNG markets.

This integrated LNG terminal will be the largest LNG project constructed in the United States, with an estimated cost of \$45 to \$65 billion. Among others, the Project is intended to achieve the following objectives and benefits, all of which are consistent with the public interest:

- Bring Alaska LNG to global markets in a timely manner;<sup>c</sup>
- Provide at least five off-take points to allow for the opportunity of in-state gas deliveries, • benefiting in-state gas users and supporting long-term economic development;<sup>d</sup>
- Stimulate state, regional and national economies through job creation, an enhanced tax base, • increased economic activity, and improvement to the U.S.'s balance of trade, producing "unequivocally positive" economic impacts in Alaska and the United States as a whole;<sup>e</sup>
- Provide a long-term source of revenue to Alaska state and local governments, supporting • public services;
- Create up to 15,000 jobs during construction and approximately 1,000 jobs for operation of • the Project:
- Create numerous opportunities for Alaska businesses and contractors during construction and operation of the Project;
- Provide infrastructure that may provide opportunity for expansion and incentivize further investment, exploration and production, leading to more industry activity in the state;

<sup>&</sup>lt;sup>b</sup> See, i.e., DeGolyer and MacNaughton, "Report on a Study of Alaska Gas Reserves and Resources for Certain Gas Supply Scenarios as of December 31, 2012" at Figure 5 (April 2014).

<sup>&</sup>lt;sup>c</sup> NERA Economic Consulting, "Socio-Economic Impact Analysis of Alaska LNG Project" at Figure 3 (June 19, 2014) ("Socio-Economic Report") (estimating significant global demand for LNG exports from Alaska).

<sup>&</sup>lt;sup>d</sup> *Id.* (estimating demand for in-state use).

<sup>&</sup>lt;sup>e</sup> *Id.* at 4-5.

- Support the economic and national security interests of the United States by providing a • secure source of energy for its trading partners and contributing to the long-term stability of international energy supply;
- Produce regional and global environmental benefits by providing, through natural gas and LNG, a cleaner source of energy than many existing alternatives; and
- Leverage decades of operating experience from the North Slope to Southcentral Alaska, using proven technologies, to ensure safe operations in an environmentally responsible manner.

#### 1.3 LOCATION AND DESCRIPTION OF FACILITIES

An overview of the Project's planned facilities and locations is provided as Figure 1.1-1. The current design study corridor and preliminary locations of major facilities are depicted on aerial imagery and U.S. Geological Survey (USGS) maps provided in Appendix A. Preliminary facility location maps are provided in Appendix B.

Across the Project footprint, work is underway to define the facility locations. An approximately 2,000foot wide study corridor for the Mainline and PTTL has been identified and is presented in the appendices, including an alternate corridor across Cook Inlet. Within this study corridor, a preliminary route will be identified during Pre-FEED and refined during future Project phases based on data collected in subsequent field study seasons and stakeholder engagement. North of the community of Livengood, Alaska, the Project design will consider certain prior work related to commercializing North Slope natural gas.

#### 1.3.1 **Liquefaction Facility**

The Liquefaction Facility will be a new facility constructed on the eastern shore of Cook Inlet in the Nikiski area of the Kenai Peninsula, within the area depicted in the appendices. Factors contributing to the site selection of the Liquefaction Facility include, but are not limited to, access to deep water shipping channels close to shore; relatively level ground to facilitate construction; proximity to existing industrial facilities; and pre-existing oil and gas businesses and infrastructure in Nikiski and Kenai.

The LNG Plant includes liquefaction processing and storage facilities and necessary utilities and offsite systems, and the Marine Terminal includes the trestle(s), piping, and berthing facilities associated with LNG carrier loading and berthing. Together, the LNG Plant and Marine Terminal comprise the Liquefaction Facility.

#### **LNG Plant** 1.3.1.1

Natural gas treated by the GTP on the North Slope and delivered to Nikiski via the Mainline will flow from the LNG Plant receipt point (plant inlet flange) through a pressure letdown station and undergo flow control, separation, and filtration. Molecular sieve dehydration beds will remove water vapor, and mercury guard beds will reduce the naturally occurring mercury levels to meet the liquefaction system equipment specifications. The natural gas will be liquefied through a combination of heat exchange and pressure reduction using Air Products and Chemicals Inc. (APCI) patented technology. LNG will then be

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transferred to the LNG storage tanks for subsequent delivery to LNG carriers. Pre-FEED studies will refine the design of the LNG Plant including the size and number of LNG storage tanks as necessary.

#### **1.3.1.2** Marine Terminal

The Marine Terminal will be constructed adjacent to the LNG Plant in Cook Inlet and will allow LNG carriers to dock and load LNG. Marine facilities will be designed for two loading berths and will include the following:

- LNG trestle(s) to support two loading berths to accommodate LNG carriers;
- Cryogenic pipelines from the LNG tanks to the loading berths and vapor return lines;
- Aids to navigation;
- Tug and support vessel dock; and
- Material offloading facility (MOF).

The current design basis does not contemplate simultaneous loading of two ships berthed at the Liquefaction Facility. It is not currently envisioned that this facility will have bunkering or marine diesel refueling capability.

#### **1.3.1.3** Other Infrastructure

To operate the Liquefaction Facility, additional facilities will be built and maintained onsite. The current design basis will be studied and optimized during Pre-FEED but may include:

- Plant flares;
- Low pressure flare;
- Refrigerant storage;
- Miscellaneous storage (lube oil, chemical, low sulfur diesel, etc.);
- Condensate storage;
- Fuel gas system;
- Defrost gas system;
- LNG storage and loading system;
- Condensate truck loading facility;
- Boil-off gas (BOG) compression;

- Effluent and wastewater treatment;
- Potable water systems;
- Demineralized water;
- Seawater intake system;
- Power generation and power distribution;
- Cooling system;
- Steam system;
- Firewater systems;
- Plant/instrument air;
- Heating medium system;
- Waste heat recovery;
- Nitrogen system;
- Diesel fueling system;
- Telecommunications facilities;
- Liquefaction facility operations control building; and
- Loading operations control building.

In addition, the Project is examining the need for dredging for the operation of the Marine Terminal associated with the Liquefaction Facility. The location, amount of, and extent of dredging will be determined during Pre-FEED.

#### **1.3.1.4** Other Facilities Associated with the Construction of the Liquefaction Facility

In addition to the permanent facilities identified above, the Liquefaction Facility will require the following facilities during construction:

- Temporary construction camps and other infrastructure to support the large construction workforce;
- Temporary infrastructure to support construction (e.g., concrete batch plant(s), construction equipment storage, contractor and owner offices, and laydown areas);

- Disposal areas for construction debris and for blast rock (as necessary);
- MOF to facilitate handling of pre-fabricated modules transported from vessels and marine heavy lift vessels (HLVs);
- An aggregate dock (AD) to handle off-loading of bulk materials needed for the Liquefaction Facility; and
- A marine construction dock (MCD) to accommodate the needs during construction of the Marine Terminal.

#### **1.3.2** Interdependent Facilities

In addition to the Liquefaction Facility, Project facilities will include the Mainline, GTP, PBU Gas Transmission Line, and PTU Gas Transmission Line to move and process natural gas from the North Slope to the Liquefaction Facility. Preliminary pipeline corridor diagrams in Appendix A have placed mileposts on the pipeline according to convention to reflect natural gas flow (i.e., from north to south in the case of the Mainline and from east to west in the case of the PTTL).

#### 1.3.2.1 Pipelines

The Mainline will be a new large-diameter natural gas pipeline, approximately 800 miles in length, extending from the GTP on the North Slope to the Liquefaction Facility on the shore of Cook Inlet near Nikiski, including an offshore pipeline section crossing the Cook Inlet. As presented in Table 1.3.2-1, the Mainline will originate in the North Slope Borough, traverse the Yukon-Koyukuk Census Area, the Fairbanks North Star Borough, the Denali Borough, the Matanuska-Susitna Borough, and the Kenai Peninsula Borough, and terminate at the Liquefaction Facility. The Mainline's current design has a maximum allowable operating pressure (MAOP) of 2,075 pounds per square inch gauge (psig) and an annual average inlet design capacity of up to 3.1 BSCF/D, (excluding planned/unplanned downtime) and a 3.3 BSCF/D peak capacity, and will be able to accommodate varying compositions of natural gas received from the PBU and PTU. This design platform will be further validated through Pre-FEED studies.

The corridor for the Mainline begins at the GTP in the Prudhoe Bay area on the Alaska North Slope and will generally follow the Dalton Highway and Trans-Alaska Pipeline System (TAPS) southward from the Prudhoe Bay area to Livengood. From there, the corridor generally follows Parks Highway (Alaska Highway 3) southward to a point just past the town of Trapper Creek. From this point, the pipeline corridor will continue cross-country to the south and southwest following along the west side of the Susitna River to the Deshka River. From the Deshka River, the mainline corridor runs southwest to the north shore of Cook Inlet to the northeast of Viapan Lake which is between the towns of Beluga and Tyonek. The offshore portion of the Mainline corridor crosses Cook Inlet to the Kenai Peninsula at Boulder Point. From the south shore of Cook Inlet at Boulder Point, the Mainline corridor will cross the Beluga, Theodor, Lewis, Ivan, Yentna, Deshka, Tanana, Nenana (four crossings) and Yukon Rivers. The alternate pipeline corridor being considered by the engineering team diverts from the Mainline corridor just north of the Deshka River crossing and heads south and east across the Susitna River and Little Susitna River going toward the north shore of Cook Inlet near Point MacKenzie. The offshore portion of

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Miller Creek outflow on the Kenai Peninsula. The alternate route then continues southwest along the Kenai Peninsula coastline to where it re-intersects the Mainline corridor near Boulder Point.

North of the Brooks Range, the natural gas in the pipeline will be cooled to below freezing to maintain the stability of thaw-sensitive soils, thereby reducing thaw-related movement of the pipeline. South of the Brooks Range, seasonal variation in station discharge natural gas temperatures will range from below freezing in the winter to above freezing in the summer.

TABLE 1.3.2-1			
Pipeline Facilities			
Segment or Facility Name	Boroughs or Census Areas	Approximate Length (miles) <sup>a</sup>	
Mainline	North Slope Borough	~182	
	Yukon-Koyukuk Census Areas	~306	
	Fairbanks North Star Borough	~2	
	Denali Borough	~87	
	Matanuska-Susitna Borough	~180	
	Kenai Peninsula Borough	~49	
PBTL	North Slope Borough	TBD	
PTTL	North Slope Borough	~60	
	Total	~866	
<sup>a</sup> Mainline mileage numbers presented reflect the preferred corridor of approximately 800 miles.			

#### **Pipeline Aboveground Facilities**

The Mainline includes several aboveground pipeline facilities. The current design includes eight compressor stations; five off-take interconnection points; four meter stations, as specified below; and multiple pig launching/receiving stations, heater stations, and Mainline block valves (MLBV). This design platform will be further validated through Pre-FEED studies. While all aboveground stations will be constructed on gravel pads, buildings underlain by thaw sensitive permafrost may be elevated on piles or have thicker gravel pads to avoid heat transfer or constructed on engineered pads with thermal mitigation provided.

#### **Compressor Stations**

Compressor stations will be placed along the Mainline at intervals where natural gas pressure will need to increase to offset pressure losses caused by friction. The stations will be designed for remote operation and will normally be unmanned. The current design for each station includes a turbo-compressor package, which consists of one natural gas-fueled turbine rated at 30,000 horsepower (hp) driving a

centrifugal compressor. The turbo-compressor package will most likely include the following associated equipment:

- Self-cleaning intake air filter and silencer;
- Electric variable frequency drive starter motor;
- Gas turbine exhaust gas duct and silencing equipment;
- Lube oil systems and skids complete with lube oil cooling equipment; and
- Skid-mounted integral control panels.

The following auxiliary facilities will most likely be included at a compressor station:

- Compressor buildings;
- Gas cooling equipment to chill the natural gas leaving station;
- Station and unit control systems designed for remote monitoring and operation from a gas control center;
- Gas engine driven power generators, configured in a "two operating, plus one standby" arrangement;
- Fuel gas system to provide fuel gas, sourced from the pipeline, for the gas turbine;
- Utility and power gas systems to provide utility and power gas to auxiliary equipment;
- Glycol/hot water system to heat buildings, fuel, and utility natural gas;
- Instrument air and utility air systems to supply clean, dry, compressed air to control valves, pneumatic instrumentation, and maintenance stations;
- Living quarters to provide intermittent accommodation for four to six personnel;
- Potable water, wastewater, and solid waste systems;
- Other structural support facilities, such as a storage building for spare parts and equipment, fencing, and exterior lights;
- Helicopter landing pad; and
- Communication facilities to be determined during Pre-FEED engineering.

As noted above, the power source for the proposed compressor stations may be provided by gas engine driven generators located at the compressor station sites. Once the proposed compressor station sites have

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been identified during Pre-FEED, engineering teams will assess and propose the optimal power source for each location. This assessment will consider the presence of current power supply infrastructure, costs and other impacts associated with upgrading or providing new power supply infrastructure versus the installation of on-site power generation using pipeline gas supply. It is anticipated that these decisions will be made and the details provided in a subsequent draft of this Resource Report.

#### **Heater Stations**

The current design requires heater stations to maintain natural gas temperature above a minimum value in certain areas. Pipeline gas enters the heater station and flows through a number of identical heater trains configured in a parallel arrangement. The heater stations will only be designed to heat the natural gas and will be located along the Mainline as required to keep temperatures sufficiently high so as to reduce the permanent freezing of wet soils adjacent to the pipeline in non-permafrost areas and to keep the natural gas temperature above a minimum limit as the gas pressure decays at the southern end of the Mainline.

#### **Meter Stations**

The current design includes four meter stations associated with the delivery of natural gas to the Liquefaction Facility and operation of the GTP:

- Liquefaction Meter Station: collocated within the Liquefaction Facility to measure natural gas entering the Liquefaction Facility;
- Mainline Meter Station: collocated within the GTP to measure natural gas entering the Mainline from the GTP;
- Prudhoe Bay Meter Station: measures natural gas delivered from the Central Gas Facility (CGF) to the GTP through the PBTL; and
- Point Thomson Meter Station: measures natural gas delivered from the PTU to the GTP through the PTTL.

Other than pipe size, the meter stations will have consistent designs. Depending on the required accuracy of the measurement and the process needs, a meter station may include a gas scrubber/strainer, above-grade piping, instrument building, a meter-run building, flow-metering, and gas-quality monitoring equipment. Buildings may be elevated as required to mitigate heat transfer to the underlying permafrost.

#### Mainline Block Valves (MLBVs)

MLBVs are used to segment the pipeline for safety, operations, and maintenance purposes. MLBVs will be sited at locations to meet regulatory, operational, and engineering requirements. For the Mainline, one MLBV will be located at each compressor station, and heater station, and the remaining MLBVs will be standalone facilities along the Mainline. In addition to the block valve and operator, each MLBV site will typically include blow-down valves and a line break control system to close the valve upon detection of a low-pressure condition. A helipad will be located adjacent to MLBV sites.

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For the PTTL, MLBVs will be located with the facilities at the start and end of the pipeline, and the remaining MLBVs will be standalone facilities along the PTTL.

#### Launchers/Receivers

The Mainline and PTTL will be designed to allow passage of in-line inspection tools and cleaning pigs throughout their entire lengths. Launchers and receivers are planned for locations along the pipeline to facilitate cleaning and integrity management operations. For the Mainline, launcher/receiver sets are proposed at some of the compressor stations. The potential need to allow passage of in-line inspection tools and cleaning pigs along the PBTL is under evaluation.

#### **Off-Take Interconnection Points**

Installation of a tee with an isolation valve(s) will occur at several points along the Mainline to allow for the opportunity for future in-state deliveries. The size and location of such interconnection points are unknown at this time.

#### **Cathodic Protection Facilities**

A cathodic protection system for the pipeline facilities will be installed and maintained in accordance with applicable codes and regulations. The cathodic protection system test stations, positioned on aboveground posts, will be located at approximately two-mile intervals along both the Mainline and the PTTL. All cathodic protection system facilities (e.g., sacrificial metallic ribbons, ground beds and rectifiers) associated with the Mainline and PTTL will be located at selected compressor stations, meter stations, and MLBV sites to the extent practical. The potential need for cathodic protection system facilities along the PBTL is under evaluation.

#### **Aboveground Pipeline Construction**

Aboveground installation of sections of pipeline may be required at certain active fault crossings, areas of thaw sensitive permafrost and/or other terrain conditions, and river, stream, and certain pipeline crossings. For identified sections of the respective routes, the Mainline, PTTL, and PBTL will be installed aboveground using a combination of vertical support members and horizontal support members. Pre-FEED engineering studies will determine where the pipeline may need to be installed aboveground and the design necessary to address the constraints at each selected location.

#### **Temporary Pipeline Construction Infrastructure**

Construction of the pipeline will require the use of additional temporary facilities and other resources in the area of the permanent pipeline right-of-way (ROW). The associated infrastructure may include the following facilities, which are discussed in more detail below and in later sections of this report:

• Temporary workspace for construction activities (e.g., staging areas, truck turnarounds, and utility crossovers);

- Access roads and shoo-flies (temporary roads bypassing constrained sections of the construction ROW), to transport equipment, material, pipe, and personnel to the Project area, some of which may be maintained for permanent use during operations;
- Water sourcing facilities to support camp raw water supply, snow and ice road construction, hydrostatic testing activities, earthwork moisture conditioning, and dust control;
- Equipment fueling facilities;
- Helipads to transport personnel to remote locations;
- Airstrips for transporting personnel and freight to and from the Project area;
- Construction camps to house workers in remote areas;
- Pipe storage areas for stockpiling pipe prior to installation;
- Existing and new material sites to supply sand, gravel, and rock/stone for construction of the pipeline and related facilities;
- Disposal sites for excavated material, stumps, and slash removed from the permanent pipeline ROW;
- A to be determined number of pipe coating yards and concrete coating facilities; and
- Contractor yards for construction staging, material storage, and other contractor needs.

Potential infrastructure locations associated with construction support have been identified north of Livengood and will be re-examined during Pre-FEED, whereas the list of potential locations south of Livengood is under development. A list of proposed locations will be provided to the Commission in a subsequent draft of this Resource Report.

#### Additional Temporary Workspaces (ATWS)

In addition to the temporary workspace needed for construction of the pipeline, the Project will require additional temporary workspaces (ATWS) during construction for staging areas; truck turnarounds; utility crossovers; road, waterbody, and wetland crossings; areas of rocky soils, steep slopes, and rugged terrain; and at other site-specific locations. ATWS will be located in previously disturbed locations to the extent practical.

#### Access Roads

The Project will require access roads during construction to transport equipment, material, pipe, and personnel to the ROW, compressor stations, material sites, and other locations. These access roads include existing public roadways, existing public and non-public roads, and newly-built access roads, and shoo-flies.

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For public roads that will be used during construction of the Project, the potential need for roadway improvements will be evaluated. Many of the existing non-public roads, such as those within PBU or old TAPS access roads, including those that may not currently be used, may require modifications to accommodate large and heavy construction equipment and material. Modifications may include adding gravel and/or ice and snow to increase the road's load-bearing capacity, grading rough areas, filling in low spots and potholes, widening roadbeds and curves, brushing/grading of shoulders, and installing culverts or bridges. In locations where the soils are stable, driving directly on the ground is planned.

If existing roads are not readily available, or do not provide adequate access, the Project will require new temporary or permanent access roads using available native material, imported granular material, or temporary use of snow/ice depending on the intended traffic load, duration, and timing of use. Construction of new permanent roads to access compressor stations, heater stations and some MLBVs may be needed. Permanent and temporary bridges will be constructed, if needed, to cross waterbodies on such roads or the construction ROW. The material for building an access road will depend on a number of factors, including:

- Seasonality of required access;
- Durability or trafficability;
- Terrain contours; and
- Readily available native materials.

#### Helipads

A helipad will be installed at each compressor station site, at construction camps, and at MLBV sites.

#### Airstrips

Existing airports and airfields, collectively termed airstrips, will be used to transport personnel and freight to and from the Project area. There is no planned upgrade to any existing commercial airports for the Project, but minor upgrades to some existing non-commercial airstrips may be needed. Temporary upgrades may include installation of buildings, fuel storage, lighting, secondary containment structures, navigation aids, and powered traffic controls where practical.

#### **Material Sites**

Various materials (e.g., sand, gravel, and stone) will be required for Project activities, including base material for compressor station sites, temporary construction facilities, access roads and other uses. Material may also be used during construction for concrete production, temporary laydown, equipment staging, and other uses. The material required for these facilities will be obtained from material sites that are either existing or will be developed for the Project. At the conclusion of pipeline construction activities, material sites may either be used for other projects, such as for road construction administered by the Alaska Department of Transportation and Public Facilities (ADOT&PF), or closed as per land use agreements and regulatory requirements.

# 1.3.2.2 GTP

The GTP is designed to treat natural gas received from the PBU and the PTU. The GTP will be constructed on the North Slope near the Beaufort Sea coast (see Figure 1.1-1). The GTP facility will be located in the Prudhoe Bay area, which is located on State land within the North Slope Borough. According to the current design, the GTP will have an annual average inlet gas treating capacity of up to 3.7 BSCF/D (excluding planned/unplanned downtime) and a 3.9 BSCF/D peak capacity, and will be able to accommodate varying compositions of natural gas received from the PBU and PTU.

The current design for the GTP consists of three parallel treatment trains, each of which removes the majority of  $CO_2$  and  $H_2S$  to the specification of the Liquefaction Facility, and some of the water (to a dew point specification for the Mainline). The gas then will be compressed in stages and routed to a gas chilling unit. The chilling unit utilizes a refrigerant to cool the gas. Cooling the gas will help to maintain the stability of the thaw-sensitive soils within the section of the Mainline north of the Brooks Range. After refrigeration, the gas will be delivered to the Mainline at pressures up to 2,075 psig.

The GTP will include facilities to collect the  $CO_2$  and  $H_2S$  byproduct streams from each of the treatment units. These streams also will contain water and some hydrocarbons. The byproduct streams from each train will be compressed and treated to remove water. The gaseous byproduct streams then will be transported to the PBU via an approximately one mile pipeline, the diameter of which is under evaluation. The removed water will be injected at the GTP site itself through a Class 1 disposal well. Pre-FEED studies will also evaluate whether a number of utility interconnections (e.g., electricity, fuel gas) may be constructed between the GTP and the CGF.

#### Associated GTP Infrastructure

Development of the GTP will require the construction of infrastructure, including:

- Improvements to the existing PBU West Dock to expand loading/unloading facilities, dredging to facilitate delivery of modules by vessel, and widening of the access road from the West Dock;
- Temporary module staging area near the existing West Dock;
- Temporary ice roads for winter construction and permanent gravel roads for access from the West Dock area to the GTP;
- Temporary construction camp on the GTP site footprint to house workers;
- Temporary infrastructure to support construction (e.g., concrete batch plant(s), construction equipment storage, contractor and owner offices, and laydown areas);
- Use of existing and/or new material sites to supply sand and gravel for construction of the GTP and related facilities; and
- Water reservoir, pump facilities, and a transfer line to provide water for GTP construction and operation. The water reservoir may also serve as the gravel source for the GTP facility.

### **1.3.2.3 PBU Gas Transmission Line (PBTL)**

The GTP and associated facilities, located in the Prudhoe Bay area, will receive natural gas from the PBTL. According to the current design, the PBTL will be an approximately one-mile, 60-inch diameter aboveground pipeline to transport natural gas from the PBU CGF to the GTP, with a peak capacity of up to 3.9 BSCF/D and a MAOP of 790 psig (to be evaluated during Pre-FEED). The PBTL will be installed on vertical support members and will cross public lands managed by the State of Alaska.

#### **1.3.2.4 PTU Gas Transmission Line (PTTL)**

According to the current design, the PTTL will be an approximately 60-mile pipeline, with a diameter of 30-inches, to transport natural gas from the PTU to the GTP. The current design calls for an annual average inlet capacity of approximately 865 MMSCF/D (excluding planned/unplanned downtime) and a 920 MMSCF/D peak capacity, and a MAOP of 1,130 psig. This design platform will be further validated through the Pre-FEED studies.

The PTTL will be located entirely within the North Slope Borough and cross public lands managed by the State of Alaska. The PTTL will head east from the GTP, crossing the Putuligayuk, Sagavanirktok, Kadleroshilik, and Shaviovik Rivers before following east along the south side of the existing Badami pipeline, all the way to the PTU.

Pre-FEED studies will determine whether the PTTL should be an elevated or buried pipeline. No active faults are crossed by the current PTTL route. If the PTTL is buried, the natural gas from the PTU will be cooled to temperatures below freezing prior to delivery to the PTTL to maintain the stability of thaw-sensitive soils. Such cooling will be provided by the nonjurisdictional facilities planned for the PTU modification/new facilities.

Intermediate natural gas compression is not expected to be required on the PTTL.

#### **1.3.3** Nonjurisdictional Facilities

Outside the scope of the Project, but in support of, or related to, the Project, additional facilities or expansion/modification of existing facilities, which would be owned and operated by third parties, will be needed or may be constructed. These facilities are beyond FERC's jurisdiction under the NGA. These other projects may include:

- Modifications/new facilities at the PTU;
- Modifications/new facilities at the PBU;
- Relocation of the Kenai Spur Highway; and
- Third-party pipelines and associated infrastructure to transport natural gas from the off-take interconnection points to markets in Alaska.

Under National Environmental Policy Act (NEPA) (40 C.F.R. § 1508.25), "connected" actions must be analyzed under a single Environmental Impact Statement (EIS). Actions are connected if they:

(1) Automatically trigger other actions which may require environmental impact statements;

(2) Cannot or will not proceed unless other actions are taken previously or simultaneously; or

(3) Are interdependent parts of a larger action and depend on the larger action for their justification.

FERC has adopted a test for determining whether nonjurisdictional facilities are subject to FERC's environmental review. The Applicants and FERC determine whether they are "integrally-related" facilities over which "there is sufficient federal control and responsibility ... to warrant environmental analysis of portions of the project outside of [the Commission's] direct sphere of influence."f FERC utilizes a four-factor balancing test that considers the following:

- Whether or not the regulated activity comprises "merely a link" in a corridor type project (e.g., a transportation or utility transmission project);
- Whether there are aspects of the nonjurisdictional facility in the immediate vicinity of the regulated activity which uniquely determine the location and configuration of the regulated activity;
- The extent to which the entire project will be within the Commission's jurisdiction; and •
- The extent of cumulative federal control and responsibility.

For the three nonjurisdictional facilities discussed in more detail below - the PTU modification/new facilities, the PBU modifications/new facilities, and the Kenai Spur Highway relocation – application of the four factors supports FERC's authority to consider the potential environmental impacts of these nonjurisdictional facilities as part of this Project's EIS. First, the regulated Project facilities are not "merely a link" in a corridor type project. Thus, it would be a reasonable exercise of FERC's authority to address these supporting nonjurisdictional facilities, even though FERC does not have jurisdiction over them under the third factor.

Second, all three nonjurisdictional facilities are integral to the Project and will uniquely influence the location and configuration of the Project facilities. The PTU and PBU modifications/new facilities are necessary to provide the Project facilities with natural gas and support operation of the GTP. Existing facilities at the PTU and PBU also dictate, in part, location of the PTU and PBU Transmission Lines and GTP. With respect to the Kenai Spur Highway relocation, the current location of the highway directly impacts the potential location of the Liquefaction Facility, and without relocation, the Liquefaction Facility could not be located at the proposed location.

Third, although the PTU modification/new facilities, the PBU modifications/new facilities, and the Kenai Spur Highway relocation will be outside FERC's jurisdiction, the entire LNG terminal, consisting of the

<sup>&</sup>lt;sup>f</sup> Guidance Manual for Environmental Report Preparation (FERC 2002), citing Algonquin Gas Transmission Co., 59 FERC 61,255 at 61,934 (1992).

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Liquefaction Facility, the Mainline, the GTP, the PBTL and the PTTL, will be within the Commission's jurisdiction under NGA Section 3.

Applying the fourth factor, there will be other federal involvement in siting and approving the PTU modification/new facilities, the PBU modifications/new facilities, and the Kenai Spur Highway relocation, most notably, with respect to certain of these nonjurisdictional facilities, wetlands permitting by the U.S. Army Corps of Engineers (USACE). Considered along with the other factors, there is sufficient federal control and responsibility over the Project as a whole to justify FERC's consideration of these three nonjurisdictional facilities' environmental impacts as part of this Project's EIS.

With regard to the fourth category of nonjurisdictional facilities, the Project does not have detailed information about plans to build such facilities at this time. In any event, applying FERC's four-factor test indicates that such facilities need not be analyzed in detail in the EIS. Although the Project facilities are "not merely a link" under the first factor, the other factors weigh more heavily against the Commission's review of these potential nonjurisdictional third-party pipeline facilities in the EIS. Unlike the other three nonjurisdictional facilities, any third-party pipelines and associated infrastructure that would be built do not uniquely determine the location or configuration of any of the Project facilities. The third factor also strongly militates against the inclusion of these nonjurisdictional third-party pipeline facilities in the EIS as these potential facilities would be subject to state permitting requirements and regulation. While some federal approvals might potentially be required for nonjurisdictional third-party pipeline facilities, the extent to which such approvals are needed is unknown at this time, and it is expected that any third-party pipeline facilities, these factors weigh against FERC's exercise of NEPA authority over potential third-party pipeline facilities.

The three nonjurisdictional facilities discussed in more detail below – the PTU modification/new facilities, the PBU modifications/new facilities, and the Kenai Spur Highway relocation – will be addressed as necessary in the subsequent draft of this and other Resource Reports once additional information is available from third parties. All of these three nonjurisdictional facilities would be designed, permitted, constructed, and operated consistent with approvals by the appropriate regulatory agencies. The timing of any construction would be coordinated with the construction of the Project.

#### 1.3.3.1 Point Thomson Unit Modification/New Facilities

Approximately 25 percent of the natural gas that will supply the GTP will be sourced from the Thomson Sand gas condensate field located on the eastern Alaska North Slope about 60 miles east of the Prudhoe Bay fields. The Point Thomson Initial Production System (IPS) Project is currently under construction and is intended to produce approximately 10 thousand barrels per day (kbpd) of gas condensate while recycling much of the processed natural gas back into the reservoir. The proposed PTU modification/new facilities would integrate with the IPS facilities, drilling, and infrastructure to produce the natural gas instead of reinjecting it back into the reservoir.

The PTU modification/new facilities would be designed to provide natural gas to the GTP at a design inlet capacity of up to 920 MMSCF/D. Up to 13 additional wells would be drilled using directional drilling technology from multi-well drilling pads. The PTU modification/new facilities would include utilization and expansion of the existing central pad, utilization of the existing west pad, and development

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of a new gravel well pad (east pad) and connecting road. Larger capacity gathering lines would be installed to connect east and west pad to central pad.

Gas conditioning facilities would be installed to separate natural gas and natural gas condensate. Triethylene glycol (TEG) dehydration units and low temperature separation would remove water and hydrocarbon liquids from the gas. Condensate production facilities would be expanded to a capacity of approximately 58 kbpd, and condensate would be exported via the existing PTU export pipeline to the Badami line. Existing power generation, camp, maintenance, and diesel modules would be utilized to the extent practical. Booster compression is anticipated to be required at a future phase to offset declining reservoir pressure as the field matures. No sulfur removal facilities are currently planned as part of the PTU modification/new facilities.

During construction, natural gas and condensate production facilities would be modularized to the maximum extent practical for transport to Point Thomson via sealift. A barge bridge would allow offloading of modules from barges to the central pad for installation and commissioning. Construction equipment and supplies would be mobilized by ice road and support barges, and personnel would be mobilized by fixed and rotating wing aircraft using an existing airstrip. Gravel and freshwater would be obtained through permitted sites in proximity to construction.

The PTU modification/new facilities would be designed, permitted, constructed, and operated by the PTU operator. Additional information regarding the regulatory interface between the Project and the PTU modification/new facilities will be provided in a subsequent draft of Resource Report No. 1. The timing of construction would coincide with the construction of the PTTL.

#### 1.3.3.2 Prudhoe Bay Unit Modifications/New Facilities

Approximately 75% of the natural gas that will supply the Project will be sourced from the Prudhoe Bay field. The PBU has been a large oil producing and gas cycling operation since 1977. Reservoir fluids from approximately 900 producing wells located on 40 drilling pads are routed to a number of oil/water/gas separation facilities. The gas produced at each separation facility is dehydrated prior to being discharged into a pipeline network which ultimately delivers the gas to the CGF. The CGF is a propane refrigeration-based gas process plant which is designed to extract components in the natural gas that can be fractionated into natural gas liquids and miscible injectant products. The vast majority of the processed natural gas is then routed via various gas complex pipelines to gas injection compressors located at the Central Compressor Plant (CCP) and the CGF for injection into the reservoir gas cap.

Modifications/new facilities at the PBU would include:

- New tie-ins at the PBU CGF and a new metering module for natural gas delivery to the PBTL; and
- New byproduct gas stream receiving module, byproduct gas stream injection module, and associated facilities.

These modifications would be completed by the PBU operator in the same timeframe as GTP construction.

#### 1.3.3.3 Kenai Spur Highway Relocation

The planned Liquefaction Facility location would require that the existing Kenai Spur Highway be relocated to allow for site safety and security buffer zones. Project representatives will engage with ADOT&PF and other appropriate state and local agencies to determine how best to reroute the road.

#### **1.4 LAND REQUIREMENTS**

The Project's current design includes approximately 30,000 acres of land that will be temporarily affected by construction of the Project. Following completion of construction, approximately 15,000 of these acres will be permanently converted for operation of the Project facilities. Table 1.4-1 shows how the acreage affected during construction and operation of the Project facilities will be presented in this Resource Report. More specific acreages relating to the Project components will be provided in subsequent draft and final versions of this Resource Report.

	TABLE 1.4-1			
Preliminary Estimate of Land Required for Construction and Operation of the Project by Facility Type				
Facility Name	Land Affected During Construction (acres)	Land Affected During Operation (acres)		
	Liquefaction Facility	-		
LNG Plant Marine Terminal	400-800	400-800		
	Pipelines	·		
Mainline	17,100 <sup>a,b</sup>	9,800 <sup>a,b</sup>		
PBTL	TBD	TBD		
PTTL	1400 <sup>b</sup>	708 <sup>b</sup>		
P	ipeline Aboveground Facilities	•		
Compressor stations (assumes 8)	200 <sup>c</sup>	200 <sup>c</sup>		
Heater stations (assumes 2)	30 <sup>d</sup>	30 <sup>d</sup>		
Liquefaction Facility Meter Station	0.0 <sup>e</sup>	0.0 <sup>e</sup>		
Mainline Meter Station	0.0 <sup>e</sup>	0.0 <sup>e</sup>		
PBU Meter Station	0.0 <sup>e</sup>	0.0 <sup>e</sup>		
PTU Meter Station	0.0 <sup>e</sup>	0.0 <sup>e</sup>		
MLBVs (not on compressor sites)	0.0 <sup>e</sup>	0.0 <sup>e</sup>		
Pij	peline Associated Infrastructure			
Access roads	TBD	TBD		
ATWS	TBD	TBD		
Contractor yards	TBD	TBD		
Pipe yards	TBD	TBD		
Construction camps	TBD	TBD		
Disposal sites	TBD	TBD		
Material sites	TBD	TBD		
GTP				
GTP	1,000	200-300		

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TABLE 1.4-1 Preliminary Estimate of Land Required for Construction and Operation of the Project by Facility Type						
Facility Name	Land Affected During Construction (acres)	Land Affected During Operation (acres)				
Associated GTP Infrastructure						
Module staging area	TBD	TBD				
Access roads	TBD	TBD				
Construction camp <sup>f</sup>	TBD	TBD				
Material sites	TBD	TBD				
Water reservoir, pump facilities, transfer line	TBD	TBD				
TOTAL FOOTPRINT	TBD	TBD				
NT .						

Notes:

Preliminary estimate of Mainline Land Affected During Construction and Land Affected During Operation is for preferred southwest Cook Inlet crossing route. General ROW conservatively estimated at 200' across entire mileage for construction and 100' for operations. Additional acreage added for potential off-ROW work areas.

Right-of-way width excludes snow management areas.

Each compression station is approximately 25 acres. If heater stations are combined with compressor stations this number may increase to accommodate heater. These locations will be determined with future study.

Each standalone heater station is approximately 15 acres. If a heater station is combined with a compressor station this number may decrease. These locations will be determined with future study.

Acreage used for the construction and operation of a facility is 0.0 when it occurs within the construction or operation footprint of another facility of the construction or permanent right-of-way for the pipeline. Additional acreage is noted if the facility is placed outside of these areas.

Construction camp and flare pad are contained within the footprint for the GTP pad.

#### 1.4.1 Liquefaction Facility

The Project's current design anticipates that approximately 400–800 acres will be impacted during construction of the Liquefaction Facility. The acreage for the Liquefaction Facility will accommodate the associated infrastructure necessary to build the Facility as well as the operational facilities required to maintain safe operations. The Liquefaction Facility site is comprised of a mixture of commercial, Kenai Peninsula Borough, State of Alaska, and private land holdings. The Marine Terminal portion of the Liquefaction Facility will be located on State of Alaska land within the Cook Inlet.

#### **1.4.2 Pipeline Facilities**

The Project is currently evaluating construction and operation ROW widths for all pipelines. In general, the construction ROW width will vary depending on the conditions along the pipeline route and the construction season. Other factors influencing the construction workspace requirements include proximity to permanent access roads, cross and longitudinal slopes, bedrock, soils, ice, wetlands, and construction traffic volume on the ROW. Table 1.4.2-1 shows how the information will be presented in Resource Report No. 1.

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TABLE 1.4.2-1					
Typical Construction Right-of-Way Configurations					
Construction Area	Construction Season	Nominal Construction Right-of-Way Width (feet)	Right-of-Way Preparation		
Mainline					
North of the Brooks Range	Winter	~145 <sup>b</sup>	Ice pad, built-up granular material, or cut and fill work pad		
South of Brooks Range	Summer	~175	Conventional or cut and fill <sup>a</sup>		
South of Brooks Range	Winter	~160 <sup>b</sup>	Conventional or cut and fill		
Cook Inlet	Ice-free period		Direct lay from lay vessel		
PTTL	Winter	~145 <sup>b</sup>	Ice pad		
A Conventional and a section includes losse surface metanic//encollessection if actuined on environly under lossed					

<sup>a</sup> Conventional preparation includes loose surface material/topsoil separation if required on agricultural lands. <sup>b</sup> Right-of-way width excludes snow management areas.

The Mainline will be sited on land comprised of more than 85 percent Federal, State of Alaska, and Borough land of various holdings, with the remainder on privately owned land. The offshore portion of the Mainline will be laid on the seafloor across Cook Inlet on State submerged and submersible lands. The PBTL and PTTL will be located on State of Alaska land.

#### **1.4.2.1** Pipeline Aboveground Facilities

Land requirements for the Project's pipeline aboveground facilities are provided in Table 1.4-1 and are summarized below.

#### **Compressor Stations**

The Project's current design anticipates construction of typical compressor stations, including temporary construction camp and laydown areas. Each compressor station will require approximately 25 acres of land for construction.

#### **Heater Stations**

The footprint of a typical standalone heater station, including temporary construction camp and laydown areas, will be approximately 15 acres of land for construction. One heater station will most likely be collocated with a compressor station.

#### **Meter Stations**

The meter stations will be located within the footprint of the facilities (e.g., Liquefaction Facility and GTP) such that no additional land requirements will be necessary beyond that already associated with these facilities.
#### Mainline Block Valves (MLBVs)

Construction and operation of the MLBVs will take place within the pipeline ROW, compressor stations, and heater stations. Therefore, with the potential exception of access requirements, no additional land use will occur beyond that already associated with the construction of these facilities. Permanent access to MLBVs will become more defined through project development and may include new or improved access roads and/or helipads outside of a compressor station site.

#### Launchers and Receivers

Construction and operation of launchers and receivers generally will occur within a proposed aboveground facility site (e.g., compressor stations, GTP, and LNG Facility) such that no additional land use will occur beyond that already associated with these aboveground facilities. However, the need for additional land use associated with potentially installing launchers and receivers at the shore crossings of Cook Inlet is under evaluation.

#### **Off-Take Interconnection Points**

Construction of an off-take interconnection point will occur within the pipeline ROW. Therefore, no additional land use will occur beyond that already associated with these facilities.

#### **Cathodic Protection Facilities**

The land required for cathodic protection facilities will primarily be within the pipeline ROW or a compressor station site where practical. Test lead posts will also be located along the permanent ROW. The requirement for any additional land use associated with these facilities is under evaluation.

#### **Aboveground Pipeline Construction**

The support structures and permanent access roads for an aboveground pipeline will be constructed in and outside the permanent ROW for the pipeline. Pre-FEED studies are also considering where the pipeline may cross some waterbodies utilizing a bridge support structure.

#### **1.4.2.2** Pipeline Associated Infrastructure

#### Additional Temporary Workspace (ATWS)

ATWS will be located outside of, but adjacent to and contiguous with, the pipeline construction ROW where construction activities cannot be executed as safely within the ROW or where more equipment may be necessary (e.g., waterbody, road, utility, and other crossings; at bends and timber storage locations; and in other situations). Table 1.4.2-2 lists the typical sizes of ATWS that will be used for the Project. Each individual location requiring ATWS will be assessed and sized appropriately to account for terrain, soil conditions, site configuration, site-specific construction method, and construction season. Therefore, the exact dimensions of each ATWS may vary from those presented in Table 1.4.2-2. Typical ATWS that will be required for feature crossings are shown on typical drawings provided in Appendix E.

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	TABLE 1.4.2-2	2	
Typical Additional Temporary Work	space Dimension	s Associated v	vith the Pipeline Facilities
Segment/ Additional Temporary Workspace Location	Length (feet)	Width (feet)	Location
MAINLINE	TBD	TBD	TBD
Waterbody Crossings	TBD	TBD	TBD
1) Minor: Up to 20 feet wide (Summer and Winter)	160	35	Upstream/Workside
	160	35	Downstream/Workside
	110	40	Upstream/Spoilside
	110	40	Downstream/Spoilside
2) Intermediate: Up to 80 feet wide		ľ	
a) Summer	300	50	Upstream/Workside
	300	50	Downstream/Workside
	110	40	Upstream/Spoilside
	110	40	Downstream/Spoilside
b) Winter	300	40	Upstream/Workside
	300	40	Downstream/Workside
	110	40	Upstream/Spoilside
	110	40	Downstream/Spoilside
3) Major: Up to 150 feet wide			
a) Summer	400	50	Upstream/Workside
	400	50	Downstream/Workside
	200	50	Upstream/Spoilside
	500	90	Downstream/Spoilside
b) Winter	400	50	Upstream/Workside
	400	50	Downstream/Workside
	110	40	Upstream/Spoilside
	425	90	Downstream/Spoilside
Horizontal Directional Drill (HDD) entry and exit points	200	200	TBD
HDD pipeline drag section false right-of-way	length of crossing <sup>a</sup>	100	TBD
Road Crossing			
Highways (Summer and Winter)	180	50	Upstream/Workside
	500	50	Downstream/Workside
	180	50	Upstream/Spoilside
	350	50	Downstream/Spoilside
Primary-Secondary Road (Summer and Winter)	290	50	Upstream/Workside
	290	50	Downstream/Workside
	100	50	Upstream/Spoilside
	100	50	Downstream/Spoilside

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	TABLE 1.4.2-2	2	
Typical Additional Temporary Work	space Dimension	s Associated	I with the Pipeline Facilities
Segment/ Additional Temporary Workspace Location	Length (feet)	Width (feet)	Location
Winter Trails, Trails, Access Roads, Unknown (Summer and Winter)	80	35	Upstream/Workside
	360	35	Downstream/Workside
	80	35	Upstream/Spoilside
	80	35	Downstream/Spoilside
TAPS Crossing			
a) State Land Buried	320	15	Downstream/Workside
a) State Land Aerial	160	10	Downstream/Workside
	160	10	Upstream/Spoilside
	160	10	Downstream/Spoilside
c) Federal Land Buried	160	15	Downstream/Workside
c) Federal Land Aerial	160	10	Downstream/Workside
	160	10	Upstream/Spoilside
	160	10	Downstream/Spoilside
Existing Utility Crossings (Third-party Pipeline)	160	20	Downstream/Workside
	80	35	Upstream/Spoilside
	80	35	Downstream/Spoilside
Stringing Truck Turnaround Site	200	80	Workside
Steep Side Slope	length of slope <sup>a</sup>	65	
Beginning or End of Construction Spread	600	250	Workside
Timber Decks	150	65	Workside
Horizontal Bends			
Left			
2° - 12°	320	35	Spoilside
12° - 20°	210	35	Spoilside
20° - 30°	200	35	Spoilside
30° - 40°	190	35	Spoilside
40° - 50°	180	35	Spoilside
50° - 60°	160	35	Spoilside
60° - 70°	150	35	Spoilside
70° - 80°	140	35	Spoilside
80° - 90°	120	35	Spoilside
Right			
2° - 12°	340	35	Spoilside
12° - 20°	240	35	Spoilside
20° - 30°	250	35	Spoilside
30° - 40°	260	35	Spoilside
40° - 50°	280	35	Spoilside

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	TABLE 1.4.2-2	2	
Typical Additional Temporary Work	space Dimension	s Associated	d with the Pipeline Facilities
Segment/ Additional Temporary Workspace Location	Length (feet)	Width (feet)	Location
50° - 60°	290	35	Spoilside
60° - 70°	300	35	Spoilside
70° - 80°	320	35	Spoilside
80° - 90°	340	35	Spoilside
POINT THOMS	SON GAS TRANS	MISSION PIP	ELINE
Waterbody Crossing			
1) Minor: Up to 20 feet wide (Winter)	160	35	Upstream/Workside
	160	35	Downstream/Workside
	110	40	Upstream/Spoilside
	110	40	Downstream/Spoilside
2) Intermediate: Up to 80 feet wide (Winter)	300	40	Upstream/Workside
	300	40	Downstream/Workside
	110	40	Upstream/Spoilside
	110	40	Downstream/Spoilside
3) Major: Up to 150 feet wide (Winter)	400	50	Upstream/Workside
	400	50	Downstream/Workside
	110	40	Upstream/Spoilside
	425	90	Downstream/Spoilside
Road Crossing			·
Primary-Secondary Road (Winter)	290	50	Upstream/Workside
	290	50	Downstream/Workside
	100	50	Upstream/Spoilside
	100	50	Downstream/Spoilside
Winter Trails, Trails, Access Roads, Unknown (Winter)	80	35	Upstream/Workside
	360	35	Downstream/Workside
	80	35	Upstream/Spoilside
	80	35	Downstream/Spoilside
Existing Utility Crossings (Third-Party Pipeline)	160	20	Downstream/Workside
	80	35	Upstream/Spoilside
	80	35	Downstream/Spoilside
Stringing Truck Turnaround Site	200	80	Workside
Beginning or End of Construction Spreads	600	250	Workside
Horizontal Bends			
Left			
2° - 12°	320	35	Spoilside
12° - 20°	210	35	Spoilside
20° - 30°	200	35	Spoilside
30° - 40°	190	35	Spoilside

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Typical Additional Temporary Workspace Dimensions Associated with the Pipeline Facilities			
Segment/ Additional Temporary Workspace Location	Length (feet)	Width (feet)	Location
40° - 50°	180	35	Spoilside
50° - 60°	160	35	Spoilside
60° - 70°	150	35	Spoilside
70° - 80°	140	35	Spoilside
80° - 90°	120	35	Spoilside
Right			
2° - 12°	340	35	Spoilside
12° - 20°	240	35	Spoilside
20° - 30°	250	35	Spoilside
30° - 40°	260	35	Spoilside
40° - 50°	280	35	Spoilside
50° - 60°	290	35	Spoilside
60° - 70°	300	35	Spoilside
70° - 80°	320	35	Spoilside
80° - 90°	340	35	Spoilside

The Project's ATWS adjacent to the construction ROW (e.g., spoil storage areas, equipment travel lanes) will vary depending on site-specific conditions. An ATWS table will be provided in a subsequent draft of this Resource Report.

#### Access Roads

North of Livengood, construction crews and operations staff will utilize the gravel access roads that were built for TAPS and for the Dalton Highway, where appropriate. Additional access roads or upgrades may also be required north of Livengood. South of Livengood, the current design considers access approximately every five to ten miles of pipeline from the nearest existing public or private road to the construction ROW where possible. This access may include improvements to existing roads (e.g., widening, gravel fill, culverts, reduce curvature of the road) or construction of new roads. For winter construction, access roads may be made of an ice and gravel combination. The acreage affected from construction of new and modified access roads associated with pipeline facilities will be provided in a subsequent draft of this Resource Report.

Shoo-flies will also be required, and acreage associated with them will be provided in a subsequent draft of this Resource Report. Shoo-fly roads are required where traffic access is not possible along the ROW due to severe vertical slopes. The shoo-flies will allow traffic to detour around the severe vertical slope section and maintain access along the ROW.

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#### Helipads

Each helipad will be constructed with dimensions of approximately 100 feet by 100 feet. The affected land most likely will be within the construction camp site and/or the permanent operations ROW of the pipeline or a compressor station. In that case, no additional land use will be necessary beyond that already associated with these facilities. Details regarding helipad land use, including the number of potential temporary and permanent helipads required and the acreage affected by construction of helipads associated with pipeline facilities, will be presented in a subsequent draft of this Resource Report.

#### Airstrips

The potential need to upgrade any existing public airports and private airfields for the Project is under evaluation. Additional information regarding airstrips will be provided in a subsequent draft of this Resource Report.

# **Construction Camps, Pipe Storage Areas, and Contractor Yards**

Temporary construction camps, pipe storage yards, and contractor yards will be built at various locations to support pipeline construction. In general, construction camps will range in size from 10–40 acres, depending on the number of workers housed there. Pipe storage yards will range in size from 20–25 acres and be spaced about every 20 miles along or near the pipeline construction ROW. In some cases, a pipe yard and contractor yard (contractor yard sizes unknown at this time) may be collocated together and/or with a construction camp, depending on available acreage, access, and topography. To the extent practical, these sites will be located on previously disturbed areas. Construction camps will be located appropriately to consider travel distance from camp to construction site, duration the camp will remain in the same location, design occupancy, available water sources, and available pre-existing disturbed footprint.

Temporary construction camps will be self-contained and will be operated and maintained throughout the pipeline and facilities construction period. Some camps will be relocated as the construction work progresses. In addition to housing facilities, the camps will typically be equipped with appropriate emergency medical facilities, electrical power generation, fuel storage, facilities for sewage gathering and/or treatment, and waste incineration and management facilities. Depending on availability, potable water for the camps will be piped or trucked in or water wells may be drilled at the camp location.

Pioneer camps (50–125 personnel) will support development of Project infrastructure, clearing, and isolated construction operations (e.g., major river crossings and material site locations). Generally, these camps will be located at sites planned for other uses such as pipeline and facility camps, pipe storage areas, contractor yards, and the pipeline construction ROW.

Compressor and heater station camps (75–250 personnel) will support heater station and compressor station construction. Generally, these camps will be located on or adjacent to facility sites. Camps established for construction of compressor stations will be situated as near as practical to the station that the crews will be constructing. These camps will likely consist of approximately 20-50 portable modules that may be moved from location to location during the course of the construction period.

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Pipeline camps (750–1,600 personnel) will support pipeline and some of the aboveground facilities construction. These larger camps will generally be collocated next to contractor yards and some of the pipe storage areas. Each new camp will consist of approximately 250–500 portable modules and may be moved from spread to spread up to three times during the course of pipeline construction.

Pipe storage areas will temporarily stockpile the pipe to be installed. Pipe storage areas will be either standalone or located with camps and contractor yards. Contractor yards will be used for construction staging, storing materials, equipment rig-up, setting up temporary construction trailers, fabrication work, safety and environmental training, equipment repair, and contract administration.

During post-construction reclamation, temporary camps, pipe storage areas, and contractor yards will be disassembled and surface facilities removed unless other arrangements are made with the landowner or land managing agency. Gravel pads installed as part of camp or yard construction will be left in accordance with land use agreements.

# Docks

The potential need for construction of temporary or permanent dock facilities along the west shore of Cook Inlet is under evaluation. The dock facilities would support the transportation of pipe, construction equipment, and other materials to this remote section of the Mainline during the construction phase.

#### **Material Sites**

In general, a material site is required approximately every 20 miles of pipeline ROW to support construction. Acreage information will be provided in a subsequent draft of this Resource Report.

# 1.4.3 GTP

It is estimated that approximately 1,000 acres will be used for construction of the GTP and ancillary and associated facilities. Of the approximately 1,000 acres, operations will impact 200–300 acres. The GTP and associated facilities will be located in the Prudhoe Bay area on State of Alaska land on the North Slope.

#### **1.4.3.1 GTP Associated Infrastructure**

#### **Module Staging Area**

Land required for the module staging area will impact 20-40 acres during construction. Following construction, the module staging area will be maintained for additional equipment deliveries during operations.

#### Access Roads

Workers will use existing, modified, and new roads to access the GTP site from the West Dock. A total of 100–150 acres of land will be used during construction and operation of access roads associated with the GTP. This acreage includes two to five acres to widen the existing causeway road from the West

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Dock's Dock Head 2, 15–20 acres to widen an existing road in the PBU, and approximately 100 acres to construct new north and south roads.

# **Material Sites**

The sand and gravel required for construction of the GTP and related facilities will be obtained from existing and/or new material sites and/or the water reservoir location (see below). Acreage information will be provided in a subsequent draft of this Resource Report.

#### West Dock Modifications

Modifications to the West Dock's Dock Head 2 facilities will require gravel fill that will increase the dock head by approximately 25 acres. The existing channel from Dock Head 2 will need to be widened and deepened (to the 16-foot-depth contour) to accommodate the larger vessels for module offloading.

# Water Reservoir

A water reservoir used for the supply of firewater, potable water, and process makeup water will be constructed on the north side of the Putuligayuk River. Water will be withdrawn from the Putuligayuk during the spring break-up period and stored in the reservoir for use during later periods of the year.

# 1.5 CONSTRUCTION SCHEDULE, PROCEDURES, AND WORKFORCE

#### **1.5.1 Project Construction Schedule**

The Applicants will request that FERC issue authorization to site, construct, and operate the Project no later than July 2018, with construction to most likely commence between late 2018 and early 2019. It is anticipated that construction and commissioning of the facilities will take approximately seven years to complete. Construction activity will be divided into phases. The first phase is planned to last from 2018-2024 and will include construction related to the first LNG and GTP trains, Mainline, PBTL, and PTTL, resulting in first production. After 2024, the installation of the remaining Project facilities needed for full production will take place.

#### **1.5.1.1** Liquefaction Facility Construction Schedule

Liquefaction Facility site preparation will commence after acquisition of necessary property rights, permits and authorizations, and construction will generally proceed as follows:

- Site preparation activities and infrastructure development will begin in 2019 and are currently planned to occur over a two-year period.
- A significant number of the major facilities for the LNG Plant will be built as modules offsite and delivered by ship in a series of sealifts from 2022 through 2024. Other major facilities will be "stick-built" at the LNG Plant itself rather than built in a modularized fashion at an off-site fabricator and delivered to the site. Stick-built facilities, including the LNG storage tanks, will be erected at the site over the course of three to four years.

• Commissioning of the tanks and processing units will occur as natural gas is delivered to the site.

# **1.5.1.2** Mainline Construction Schedule

Mainline site preparation will commence after acquisition of necessary property rights, permits and authorizations. Pipeline work will be divided among a number of different construction spreads determined based on logistics, execution, and other planning considerations. Construction will generally proceed as follows:

- The Mainline infrastructure construction and logistical support is planned to begin during 2019. One to two years of infrastructure construction and ROW clearing will take place before primary pipeline construction activities begin. The construction of the Mainline is currently planned to occur over a two to three-year period using a number of different construction spreads in winter and summer seasons.
- The offshore portion of the Mainline across Cook Inlet will be laid in the ice free season. The Project will endeavour to avoid conflicts with commercial and set net fishing. Hydrostatic testing will occur shortly after installation.
- Compressor stations, meter stations, heater stations, and other associated pipeline infrastructure will also be constructed per below Figure 1.5.1-1.



Figure 1.5.1-1 Alaska LNG Project Preliminary Pipeline Construction Schedule

#### **1.5.1.3** GTP Construction Schedule

GTP site preparation will commence after acquisition of necessary property rights, permits and authorizations, and construction will generally proceed as follows:

- Infrastructure construction activities are currently planned to start in the winter of 2019/2020. The majority of this work will be associated with preparation of granular material and construction of dock modifications, gravel pads, and access roads to support the aboveground facility construction efforts.
- Major components of the GTP will be built as modules offsite and delivered in a series of sealifts. Four consecutive summer sealift seasons and corresponding construction periods are planned from 2021 through 2024. As installation of the modules is completed each year, the facilities will be released to the facility operations team for commissioning and start-up.
- Due to the size of the modules required for the GTP, large ocean going vessels will be utilized. Dredging of the shallow waters at Prudhoe Bay will be required to prepare a channel deep enough for the vessels. Both summer and winter dredging options are being evaluated at this time. Initial dredging will occur from one to two years before the first sealift, with annual maintenance dredging anticipated for the period of the sea lifts.

# **1.5.1.4** Other Pipeline Construction Schedule

Site preparation for the other Project pipelines will commence after acquisition of necessary property rights, permits and authorizations. Construction work on the PTTL is scheduled to commence in the 2021-2022 timeframe and take approximately one to two years to complete.

The PBTL will be constructed concurrent with the GTP construction and take approximately one year to complete.

# **1.5.1.5** Nonjurisdictional Facilities Construction

The timing, sequencing, and duration of construction activities for the potential construction of new and/or modified facilities at the PBU and relocation of the Kenai Spur Highway are not known at this time. The Applicants will consult with the proponents of these nonjurisdictional facilities as they are available and provide updated information in the subsequent draft of this Resource Report.

The site preparation for the PTU modification/new facilities will commence after acquisition of necessary property rights, permits and authorizations. Construction is anticipated to be conducted over four years beginning in 2020 with start-up timing to coincide with GTP start-up. Early activities will include mobilization of camp and other construction support equipment, as well as preparation of the site. Gathering lines will be installed. Once fabricated, modules will be mobilized to site via sealift and conveyed from barges to shore using a barge bridge concept. The modules will be installed and commissioned in subsequent seasons.

# **1.5.2 Project Construction Procedures**

Except where otherwise authorized, the proposed facilities will be designed and constructed in accordance with all applicable federal, state and local regulations, permits, and industry-recognized standards. Applicable federal regulations include 49 C.F.R. Part 193, *Liquefied Natural Gas Facilities: Federal Safety Standards*; 49 C.F.R. Part 192, *Transportation of Natural Gas and Other Gas by Pipeline: Minimum Federal Safety Standards*; 18 C.F.R. § 2.69, *Guidelines To Be Followed by Natural Gas* 

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Pipeline Companies in the Planning, Clearing and Maintenance of Rights-of Way and the Construction of Aboveground Facilities; 33 C.F.R Part 127, Waterfront Facilities handling Liquefied Natural Gas and Liquefied Hazardous Gases; and American Society of Mechanical Engineers (ASME B31.3). The onshore and offshore Mainline sections are to be designed in accordance with 49 C.F.R. Part 192, *Transportation of Natural Gas and Other Gas by Pipeline: Minimum Federal Safety Standards* and ASME B31.8. However, any modifications to the provisions of the 49 C.F.R. Part 192 regulations would be addressed through special permits in accordance with 49 C.F.R. Part 190.341, *Pipeline Safety Enforcement and Regulatory Procedures*.

Alaska presents unique arctic construction and operating conditions. As a result, modified procedures will be proposed where the measures contained in the FERC Erosion Control, Revegetation, and Maintenance Plan (FERC Plan) and Wetland and Waterbody Construction and Mitigation Procedures (FERC Procedures) are not considered applicable, are technically infeasible, or are unsuitable due to Alaska conditions. The Applicants will prepare and implement a Project-specific Erosion Control, Revegetation, and Maintenance Plan (the Applicants' Plan) and Wetland and Waterbody Construction and Mitigation Procedures (the Applicants' Plan) and Wetland and Waterbody Construction and Mitigation Procedures (the Applicants' Procedures). The Applicants' Plan and Applicants' Procedures are being developed using the 2013 versions of the FERC Plan and FERC Plan and FERC Procedures as a basis. The Applicants' Plan and Applicants' Procedures will build upon the FERC Plan and FERC Procedures are being developed using the 2013 versions of the FERC Plan and FERC Plan and FERC Plan and FERC Procedures as a basis. The Applicants' Plan and Applicants' Procedures will build upon the FERC Plan and FERC Procedures as a basis. The Applicants of the ferc Plan and FERC Plan and FERC Procedures and applicable permit conditions using a "toolbox" approach consistent with the FERC guidance. The toolbox will contain a set of best management practices (BMP).

# **1.5.2.1** Construction Logistics

Logistics activities include the transporting of personnel, equipment, construction materials, camps, and supplies to construction sites via sea, road, rail, and/or air transportation infrastructure. Although site preparation and construction will be phased to lessen impacts to local infrastructure and communities, the size of this Project and duration of construction will require detailed planning with state and local authorities to reduce impacts to existing infrastructure. Logistics activities will begin prior to Project infrastructure construction subject to necessary regulatory approvals.

# Logistics Timeline

Construction contractors are expected to mobilize and demobilize construction equipment to and from specific construction sites from late 2018/early 2019 through 2025. Stockpiling of material, seasoning of gravel, and staging of construction equipment is anticipated to begin approximately one to two years prior to construction.

# **Logistics Plans**

Outside of getting use agreements from current land owners, detailed logistics plans developed prior to construction will address the following activities:

- Plans for securing, transporting, lodging, and feeding the construction workforce;
- Transportation of material and equipment from marine facilities to the individual spread storage/laydown yards, including coordination through the various staging areas;

- Transportation of construction equipment and rolling stock from point of entry premises and initial contractor storage;
- Ground and air transportation of Liquefaction Facility, pipeline, and GTP crews and supervisors;
- Transportation of and coordination with camps and associated camp material and equipment provided by the camp suppliers;
- Transportation of Liquefaction Facility and GTP modules from modular fabrication sites to Cook Inlet and Prudhoe Bay, respectively;
- Transportation of supplies and consumables during construction, including fuel;
- Return of construction equipment, rolling stock, storage tanks, camp modules, surplus materials, and equipment for salvage at the completion of the Project;
- Location and development of material sites and the methods for transporting materials to processing and stockpiling areas and finally, to work sites;
- Customs clearance procedures;
- Execution of the approved Project Waste Management Plan for construction wastes (hazardous and non-hazardous);
- Seasonal ice-window open and close dates;
- Road traffic management; and
- Integrated transportation schedule for Project-wide marine transportation in U.S. waters.

# **1.5.2.2** Aboveground Facility Construction Procedures

# Liquefaction Facility

Initial construction activities will focus on the infrastructure required to support construction of the Liquefaction Facility. Such activities will include the following:

- Installation of a pioneer camp to support the early work;
- Excavation and stockpiling of gravel for the roads and pads;
- Building or relocating access roads to the site;
- Site clearing and topsoil removal;
- Grading of soil and leveling of work spaces to support the facility construction;

- Installation of a gravel pad and foundations for the main construction camp;
- Installation of underground and overhead utilities;
- Construction of a MOF, pioneer dock, and laydown areas;
- Construction of a marine channel to the MOF to permit barges and heavy lift vessels access for offloading;
- Construction of the AD and construction dock;
- Construction of an office, warehouses, and fabrication shops to support construction;
- Installation of the main construction camp; and
- Installation of security fencing and security systems required to support construction.

It is expected that the Liquefaction Facility will require fresh water during construction, as well as materials and disposal sites to handle construction debris. The Pre-FEED studies will examine the complete construction plan, logistics requirements, and infrastructure needs to support construction of the facilities.

#### LNG Plant

Major components of the liquefaction trains and ancillary infrastructure (e.g., power generation) will be delivered to the site as modules, with other infrastructure (e.g., LNG storage tanks) built on the site. Structural steel work and assembly of the liquefaction train modules will be followed by pipe work and installation of mechanical equipment, including gas turbines, electric motors, and compressors. Electrical and instrumentation will be the final major work scope installed before the Liquefaction Facility is commissioned.

The construction of the LNG storage tanks will be in parallel with the liquefaction train construction. The tanks will be built on a concrete foundation and floor. After the steel LNG storage tanks are built, reinforced concrete for the outer containment walls may be constructed on site using methods to ensure a leak-tight structure. Alternate construction methods will also be studied during the Pre-FEED effort. The LNG tank roof will be constructed at ground level and then lifted into position. Bridging sections will then be inserted between the main body of the roof and the outer cylindrical wall. Tank filling and equipment for LNG carrier loading systems will be installed on top of the tanks. The primary containment or membrane will undergo hydrostatic testing at the completion of construction. The primary containment or membrane will be cleaned and dried following hydrostatic testing and may be pre-cooled using a small amount of LNG.

#### Marine Terminal

The trestle(s) and berths will be supported on piles driven into the seafloor. The LNG export berths will be built at the seaward end of the trestle(s) after completion. Several methods of construction are currently being evaluated to place precast concrete or steel pile caps at the top of the piles, where they

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will be fixed and welded into place. The breasting and mooring dolphins will also be installed. The remainder of the catwalks, decking, and headstock systems will be installed, followed by the installation of the mechanical and electrical works and utilities and loading arms, which form the topsides of the Marine Terminal. The fabricated topside trestle and berth sections will be lifted into position.

The potential need to dredge the approach channel and terminal turning basin is under evaluation. A jackup vessel will drive piles for the berth and dolphin piles. Various types of construction methodology will be evaluated and confirmed in development of the execution strategy. Performance criteria, including lift capacity, payload, bearing pressure, and bulk product requirements, will be determined during Pre-FEED.

# **1.5.2.3** Onshore Pipeline Construction Procedures

The following provides a brief description of typical construction procedures that will be implemented. These procedures will be modified as necessary to comply with site-specific route characteristics including environmental considerations.

# Surveying

Limits of ROW boundaries and facilities will be staked, including construction and ATWS areas. This includes the staking and/or exclusion fencing of known archaeological sites, select wetland areas, and water crossing boundaries, as well as other areas (i.e., environmentally sensitive) requiring protection during the construction process. Existing underground utilities will be located and flagged prior to construction.

Surveying and staking activities will also be required during construction to mark the locations of utility crossings and facility placement within sites. During construction, surveys will be conducted to document as-built information.

# Clearing

Clearing activities will typically occur in the season prior to each scheduled construction season and will include removing trees and brush. Vegetation will be removed mainly using heavy equipment, including feller-bunchers, mulchers, de-limbers, hydro-axes, and cable and grapple skidders. Some handwork with power saws will also be required. Except for some sites with aboveground facilities where the cleared work space is to be grubbed, root structures will not be removed until the season of construction. At aboveground sites, a gravel pad is usually installed on a leveled area. The clearing activity for winter construction will also involve snow management.

Access to the ROW for personnel and equipment will be required for clearing. Winter access will include the installation of snow-fill and log-fill ramps, and bridges and culverts where required for crossing drainages and watercourses. Summer access may also include bridges and culverts and the use of mats, log corduroy, geotextile fabric, or combinations of these, and may be overlain with natural material on the work side and travel lane of the pipeline construction ROW to allow heavy construction equipment and support vehicles to cross subject to permit conditions.

Temporary erosion control mitigation measures will be installed in accordance with the Applicants' Plan. Timber may be used as one of the mitigation measures such as for rip-rap. Other merchantable timber

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may be stored on, or immediately adjacent to, the work area in authorized storage areas. The nonsalvaged vegetation may be used for rollback, erosion control, access control, or riprap. As appropriate, the burning or mulching of non-salvaged vegetation will be completed following clearing activities in accordance with agency criteria, permitting and timing constraints.

During winter construction, when little natural light is available for much of the day, artificial lighting, such as lighted equipment and portable light towers, may be used for clearing and subsequent construction activities.

# Grading

Work surface grading is necessary to level the work surface for the safe use of heavy equipment during construction. Grading is also necessary to level side slopes across the work surface and to reduce the angle of longitudinal slopes along the work surface.

Surface disturbance will be minimized where practical for erosion mitigation. For summer pipeline construction in actively cultivated or rotated crop lands, topsoil will be stripped from the width of the ROW and moved to one or both sides of the ROW, stored in windrows, and segregated from stockpiled mineral soils and trench spoil. Additional temporary environmental and erosion control mitigation measures will also be utilized as required in accordance with the Applicants' Plan.

Winter season grading activities can be enhanced by taking advantage of frozen soil conditions to support construction equipment and vehicles. For thaw-stable soils, ROW preparation activity will begin by driving frost into the ground so that heavy construction equipment will be supported. For thaw-sensitive soils, initial preparation activities may include installation of a gravel or snow/ice working surface. Snow/ice working surfaces are planned to be applied in thaw-sensitive tundra areas on the North Slope although work pads constructed from granular material may be used as conditions warrant. Grade cuts will be required on steeper slopes. During winter construction, snow and loose surface material may be windrowed over the trench line to reduce seasonal or mechanical penetration of frost. This material will be bladed away just prior to trenching activities.

For access roads, laydown yards, storage yards, the pipeline ROW, and other temporary work areas during winter seasons, wetlands or soils that are otherwise unstable due to high moisture content may be frost packed. Frost packing improves surface bearing capacity so that heavy equipment can be safely supported. In some instances, the use of construction mats, log corduroy, and/or geotextile fabric and fill may be required to bridge a wet or otherwise unstable area to ensure that heavy construction equipment and support vehicles can pass.

In areas where rock at grade is encountered, the surface will be ripped with ripper tractors if practical. If it cannot be ripped, it will be drilled and blasted after removal of any loose surface material – bucket-wheeled or chain trenchers may also be used. Blasting may also be necessary in permafrost soils. Grading of rock areas may be undertaken a season or more in advance of construction.

#### Ice and Snow Work Pads and Access Roads

In certain tundra and wetland areas, winter work pads will be required. Winter work pads and roads may be constructed of compacted snow, ice aggregate, granular material, mixtures of snow and water, manufactured snow, or ice created by flooding the tundra surface to achieve a design thickness and width.

Access roads will be developed for access to approved water sources to obtain water and ice for manufacturing ice roads, developing the winter work pad on the ROW, acquiring ice aggregate from the frozen surfaces of approved waterbodies, and filling depressions on the ROW and on more conventional winter access roads. Access roads to material sites will also be required. Once the winter work pads and access roads are in use, they will require maintenance to repair damage caused by tracked equipment. Maintenance will include adding snow, ice and water, granular material, grading, and in some cases, adding ice aggregate as fill.

Work crews will decommission winter snow and ice work pads and roads at the end of each winter season in accordance with land use permits.

#### **Erosion Control during Construction**

Work sites will be stabilized during construction to reduce surface erosion and siltation. Stabilization work will be done using BMPs that will be outlined in the Applicants' Plan, in which installation and maintenance of temporary and permanent environmental mitigation measures will depend on site-specific conditions and needs. For erosion control efforts, this may include installation of diversion berms, surface drainage ditches, French drains, silt fences, erosion-control matting, straw or synthetic bales, and other means that have traditionally been used to mitigate and control surface erosion.

Erosion control measures will be left in place and repaired, replaced, and supplemented as required through the end of the construction period to mitigate surface soil erosion that could occur as a result of the spring thaw and snow melt or summer precipitation events. Additional information regarding erosion and sediment control measures will be provided in the Applicants' Storm Water Pollution Prevention Plan (SWPPP).

#### Stringing

Hauling and stringing of individual pipe joints will take place as the ROW grading progresses. The joints will be laid next to the trench alignment. In certain trench soil conditions, such as those requiring drilling and blasting, stringing will take place after trenching. Individual pipe lengths will be nominally 40, 60, or 80 feet in length. Pipe will normally be transported for stringing by trucks with trailers. In some areas of challenging terrain, tracked pipe carriers or helicopters may be utilized.

#### Bending

Pipe bending operations will follow pipe stringing. The bending crew will bend the pipe to fit the vertical profile and horizontal alignment of the graded ROW. Typically, manufactured fittings or hot bends will be used where pipe cannot be cold-bent in the field to create the desired angle.

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Hydraulic pipe benders will be pulled along the ROW by a tow tractor and positioned at intervals along the ROW. At each location, individual pipe joints will be carried to the bending machine by a pipelayer, inserted into the pipe bender, and bent to the required angle as identified by the bending engineer.

# **Production Welding**

Pipe joints will be aligned and set up for field production welding. Generally, production welding will be performed to the requirements of qualified welding procedures using a mechanized welding system, however, manual ("SMAW" or "stick" welding) and semi-automatic welding may also be used. Qualified and certified non-destructive examination inspectors will perform non-destructive testing of all welds. Welds will meet specification and applicable code requirements prior to coating.

# Non-Destructive Testing

Each weld will be inspected to locate any flaws after pipe joints are welded together. The welds are inspected by means of Ultrasonic and/or Radiography Inspection. If the weld does not meet the minimum acceptance criteria it will be repaired or cut out and replaced.

# Joint Coating

Following welding and non-destructive testing, field or girth welds will be coated in accordance with field coating specifications. The field joint coating materials and application process will be appropriately matched to the pipe coating applied in coating mills and anticipated field conditions. The coating process will be performed in compliance with a Project-specific coating procedure and specification.

Each section of welded pipe will be inspected to locate any coating defects after field joint coating is complete and prior to lowering in. Pipe coating damage identified will be repaired in accordance with an approved Project-specific procedure and specification.

#### Trenching

The pipeline trenches will be excavated with bucket wheel or chain trenching machines, or track-mounted excavators. Track-mounted mechanical rippers, rock hammers, or rock trenchers will be used to fracture and excavate rock or frozen soil. Drilling and blasting could be required where other means of excavation are not practical.

In both summer and winter periods of construction, pipe will typically be welded and girth weld coated ahead of trenching, except where blasting is required. This sequence results in the trench remaining open for only a short time before the welded pipe sections are lowered in, making the trench less likely to fill with snow and less likely that the spoil material will freeze. During summer periods the trench will be less likely to fill with water if a rain storm event occurs. Blasting, if required, will normally take place prior to stringing and welding. It is planned that the pipe will be buried with depths of cover meeting the requirements of 49 C.F.R. Part 192.

# Lowering In, Tie-ins, and Backfilling

Before welded pipe sections are lowered into the trench, the trench will be inspected to ensure that it is free of rocks and other debris that could damage the pipe or its protective coating. Dewatering or removal of snow may be necessary to allow for inspection of the trench bottom. In rock trench conditions or where soils include the presence of frozen soil lumps, boulders, or cobbles; foam pillows or imported select fill bedding material (e.g., sand or trench spoil fines) will be placed on the trench bottom before the pipe sections are lowered in. Suitable bedding and padding material will be placed around the pipe to protect the pipe and coating from damage. Other pipe protection measures such as a rock-shield material may be installed before the lowering in of pipe strings.

After the pipe sections are lowered into the trench, tie-in welds will be performed to join together welded sections of pipe. Similar to production welding discussed above, tie-in welds will be performed in accordance with qualified weld procedures and non-destructively examined in accordance with qualified procedures.

#### **Testing and Final Tie-Ins**

After backfilling, the pipeline will be pressure tested. Sections of pipeline to be tested as single segments will be determined according to water availability, pipeline length, and terrain contours. Water for pressure testing will be obtained from approved water sources and may be treated with an appropriate biocide and/or corrosion inhibitor depending on hydrostatic test holding times.

During winter conditions, hydrostatic testing will likely be performed using heated water or water mixed with freeze-depressant additives. If additives are used, the hydrostatic test water will be processed or otherwise treated to separate the additives from the water prior to discharge or will be disposed using an approved disposal method. Sheltering and heating of exposed pipe and test heads during winter conditions may be required. Project is considering summer and winter hydrostatic testing.

After completion of the pressure test, the water will be discharged in accordance with applicable permits. Once the pipeline is dewatered, it will be cleaned and dried. After all testing is complete, the test heads will be removed and the final tie-ins completed.

#### **Cleanup and Stabilization**

In both summer and winter construction, initial cleanup will begin after backfilling of the trench is complete. Cleanup will continue as weather and ground surface conditions allow, in accordance with the Applicants' Plan and Applicants' Procedures, and will continue until all permit conditions have been met. Winter cleanup activities and stabilization work will be completed during subsequent winter seasons, as necessary; however, final cleanup may also occur during summer months if access roads and the ROW can be used. Summer remedial work may be required following winter construction to re-establish erosion control measures and address surface water drainage or final grade issues.

Construction debris will be disposed of at approved off-ROW disposal sites. Surface drainage patterns will be re-established. In most areas, a crown of trench backfill material will be centered over the trench to compensate for settling of the backfill material as it consolidates. Surface cross-drainage patterns will be re-established where the backfilled trench line has been crowned. This may involve remobilizing

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construction personnel and equipment the following practical construction season to specific areas to reestablish drainage patterns where grading of the initial backfill is required.

Segregated, loose surface materials, if removed during winter construction before grading operations, and stripped topsoil/loose surface material if set aside during summer pipeline construction may be spread over the surface of the ROW. Permanent erosion control devices appropriate for the application will be installed. Afterwards, disturbed and non-cultivated work areas may be seeded using approved seed mixes in accordance with Project-specific revegetation and reclamation plans.

Markers showing the location of the pipeline will be installed at fence and road crossings in order to identify the owner of the pipeline and convey emergency contact information in accordance with applicable governmental regulations and Project-specific specifications. Special markers providing information and guidance to aerial patrol pilots will also be installed.

# Landfalls

There are four landfalls associated with the crossing of Cook Inlet along the pipeline route being considered as part of the west (preferred) and east (alternative) routes south of Trapper Creek. Depending on which route is ultimately selected, there are two landfalls associated with the western side of Cook Inlet and two landfalls associated with the eastern side of Cook Inlet near Nikiski. Agency guidance to date has indicated that the pipeline should cross where there are bluffs along Cook Inlet and not across shallow mud flats. Current routing has incorporated these constraints into the design.

The primary method for installing the pipeline across the landfall is open-cut (OC) trenching. OC landfall involves the pipelay vessel positioning offshore and with the vessel stationary, pipe being pulled by linear winches typically located on the beach.

Horizontal directional drilling and micro-tunneling methods are also under consideration, but their practicality is highly dependent on subsurface conditions and offshore tie-ins. The methods will be discussed in more detail in a subsequent draft of this Resource Report.

#### Wetland Crossings

Because of the large expanses of wetlands in Alaska, it is not feasible for the Project to avoid crossing wetlands or to treat them as isolated features on a case-by-case basis. The construction techniques used in wetlands will, therefore, depend on site-specific conditions at the time of construction, including season and weather conditions, the degree of soil saturation, presence and extent of permafrost, soil stability, and wetland type. The Applicants' Procedures will identify where conventional upland cross-country construction will occur and where modifications to the conventional techniques will be needed.

#### Summer Conditions

Summer construction in wetlands where ROW grading (i.e., cuts and/or fills) is required, and where subsoils can support construction equipment, will proceed as described elsewhere in this section. For lowstrength soils that do not support construction equipment without adverse impacts such as deep rutting, alternative wetland crossing techniques will be considered. The Applicants' Procedures will provide

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further detail for the proposed summer construction and reclamation of wetlands as appropriate to for site conditions.

#### Winter Conditions

Winter construction in wetlands will proceed as described previously in this section. Even though sections of the pipeline will be constructed during winter months, it is expected that under certain conditions the subsoil or work surface will not be frozen or trafficable. If the subsoil cannot support construction equipment without adverse impacts, such as soil mixing or deep rutting, an alternate crossing method will be considered. The Applicants' Procedures will provide further detail for the proposed winter construction and reclamation of wetlands as appropriate for the site conditions.

#### Waterbody Crossings

Perennial waterbodies; seasonally intermittent watercourses; and other permanent waterbodies, such as ponds and lakes will be crossed. Waterbodies will be crossed using a number of different crossing methods described below, and will be described in more detail in the Applicants' Procedures. Crossing installations will be performed in accordance with construction specifications and all terms and conditions included in each crossing permit. For those waterbodies that are dry or frozen to the bottom when crossed, the Applicants propose to use conventional upland cross-country construction techniques and procedures.

Proposed crossing methods based on each waterbody's characteristics and site-specific conditions will be identified as detailed below:

- If the waterbody is dry or frozen to the bed, cross the waterbody using an OC crossing method;
- If the waterbody is flowing, assess the type of fish and fish habitat present within the affected reach and determine whether an OC timing window is available;
- If the potential fisheries impact is rated as acceptable, and if an OC timing window is available and the in-stream work can be completed within the timing window, proceed with the installation using the OC crossing method;
- If an OC timing window is not available or is too short to complete the in-stream work, consider the use of isolated (dry) crossing methods; and
- If the potential fisheries impact is rated as not acceptable and if isolated crossing methods are not feasible or appropriate, consider using a trenchless crossing method such as HDD (a minimum practical length of 1,700 to 1,900 feet on level terrain is required for using the HDD method with large diameter pipe), boring, or aerial crossing.

ATWS will typically be required on both sides of waterbodies to stage construction equipment and materials and to fabricate the crossing section. The ATWS will typically be located at least 50 feet from the water's edge, except in those cases where the adjacent upland areas are actively cultivated, are used as rotated cropland, other disturbed land, or where terrain precludes a set-back. Pre-FEED studies are

currently assessing where site-specific factors will preclude using the standard 50-foot setback between an ATWS and a waterbody's edge.

A number of bridging methods could be used for access during construction and operations to cross waterbodies, depending on season of use and waterbody flow and width, including the following:

- Single-span bridges;
- Multi-span bridges;
- Portable sectional bridges;
- Barges;
- Ice bridges;
- Ramp and culvert bridging structures; or
- Synthetic or wooden mats.

#### **Road and Highway Crossings**

Construction across paved roads and highways, and critical unpaved roads, will be in accordance with Project-specific specifications, and the requirements of road crossing permits and approvals. Some major paved roads and highways, as well as critical unpaved roads, will be crossed by conventional horizontal boring techniques. Other paved roads, smaller unpaved roads, and driveways will likely be crossed using the OC method, where permitted by local authorities.

Authorities that have jurisdiction over roads and highways to be crossed by the pipeline, including ADOT&PF, will be consulted to determine acceptable crossing methods and to obtain crossing permits and develop traffic management plans as necessary.

#### Trans-Alaska Pipeline System (TAPS) and Other Third-Party Utility Crossings

Crossings of the TAPS will be in accordance with procedures approved by the APSC. The Applicants will work closely with the Alaska Joint Pipeline Office (JPO) and APSC to develop site-specific drawings for crossings of TAPS. In Cook Inlet, existing utilities will be located during pre-construction surveys and crossing design will be determined through discussions with the applicable utility operator(s). In most cases, separation between the Mainline and the utility will be achieved with concrete pads or sacks.

Buried and overhead pipelines and utilities will be crossed during construction of the Project. Prior to the start of ROW grading and construction activities, crossings will be surveyed and the owner of the pipeline or utility will be notified. Crossing permits will be obtained prior to crossing installation. Crossing of existing facilities that have cathodic protection will be designed to ensure that the existing utilities' cathodic protection system and the Project's cathodic protection system are non-interfering.

# Longitudinal and Cross Slopes

Areas of steep terrain may require special construction techniques for pipeline installation. Such techniques may include:

- Constructing shoo-flies around the slope for use by pipeline equipment and traffic;
- Grading to a shallower slope angle to accommodate pipe bending limitations and to provide for safe operation of construction equipment; and/or
- Limiting grading of longitudinal and cross slopes in areas of thaw-sensitive permafrost and applying measures to address potential thermal degradation as required.

In areas where the pipeline route crosses laterally along the side of a slope, a built-up work pad may be required to create a safe, relatively flat terrace. Mitigation measures and techniques to reduce impacts when working on slopes will be outlined in the Applicants' Plan and Applicants' Procedures.

#### **Geologic Faults**

Pipeline crossings of potentially active fault zones will be designed to withstand anticipated horizontal and vertical movement within the stress limits associated with a seismic event. The Mainline will traverse areas of seismic activity and known, potentially active fault crossings along the pipeline. Neither the PBTL nor PTTL route alignments cross known, potentially active fault areas. Other aboveground facilities such as compressor stations will generally be located away from fault surface rupture zones, but the Project plans to design to accommodate strains associated with seismic induced movement, as needed, and the resulting environmental loading that may result.

#### Agricultural Land

Lands used for agricultural purposes are being identified. The Applicants' Plan will address relevant aspects of pipeline construction and reclamation as they relate to cultivated lands (e.g., topsoil segregation, depth of cover, importation of soils, compaction limits, rock removal, weed and pest control, and easement restrictions). Landowners will be consulted regarding final cleanup activities.

#### **Residential, Commercial, and Industrial Areas**

In residential, commercial, and industrial areas, construction activities will be completed in a manner that will reduce disturbance to residents and to daily commercial and industrial activities. If alternative access around the pipeline route is not available, there may be temporary bridging over the open portion of the pipeline trench for the duration of construction activities. If necessary, access mitigation plans will be developed for residences within 50 feet of the construction work area, and home and business owners will be notified in advance of any anticipated utility disruption.

The construction ROW will either be narrowed or adjusted to avoid occupied structures and temporary safety fences may be erected on both limits of the ROW extending for a minimum distance of 100 feet beyond any nearby residence.

#### **Construction in Permafrost**

Where permafrost is present, construction methods will address the likely thaw strain resulting from construction disturbance and in some cases of thaw-unstable permafrost, special techniques for grading, trenching, backfilling, and blasting may be required.

#### **Compressor Stations**

Compressor station facilities will be constructed on a gravel pad. The pad thickness will vary and depend on soil and permafrost conditions at the site. In thaw unstable permafrost areas where required, an airspace separation between the pad and the base of the facility's structure may be used. In nonpermafrost areas, the pad will be thinner and no airspace will be necessary.

After a compressor site has been prepared, piles will be installed to support buildings, equipment, and structures. Compressor buildings will be constructed on site by erecting steel frame structures followed by the installation of the roofing and walls. Pre-fabricated utility building skids will be installed along with major vessels and equipment. Piping will generally be welded, except where it is connected to flanged components. Welders and welding procedures will be qualified in accordance with API Standards or the ASME Boiler and Pressure Vessel code. Welds in natural gas piping systems will be examined using non-destructive testing or other approved examination procedures.

Water for the stations will be trucked in or sourced from an onsite well. Wastewater and other station wastes will be stored on site, trucked to an approved disposal site, disposed of onsite in an approved septic system, or injected in a Class I well to be built onsite as site conditions dictate. Debris and wastes generated from construction will be disposed of at an approved disposal site.

#### **Meter Stations**

Meter station facilities will be constructed on gravel pads developed as part of the Liquefaction Facility, GTP and PTU sites. Following the installation of piles, building skids will be installed along with a scrubber, meter runs, and aboveground piping.

#### Mainline Block Valves (MLBVs)

Information concerning the construction processes will be provided in a subsequent draft of this Resource Report.

#### **Off-Take Interconnection Points**

Information concerning the construction processes will be provided in a subsequent draft of this Resource Report.

#### Launchers and Receivers

Information concerning the construction processes will be provided in a subsequent draft of this Resource Report.

# **1.5.2.4** Offshore Pipeline Construction Procedures

# **Offshore Pipeline Surveying**

A pre-lay/pre-seabed preparation survey of the pipeline route will be conducted to determine the necessary seabed information required for engineering and planning work. A detailed seabed depth profile (longitudinal and cross) will be produced. The survey will provide the appropriate data of the seabed to support engineering design and installation. During construction, as-built surveys will be conducted to document the as-laid position of the pipeline and other necessary as-built information.

# **Offshore Pipeline Construction**

For crossing of Cook Inlet, offshore pipeline construction will use conventional industry procedures used throughout the world, and modified for site-specific conditions as needed. Pre-FEED studies will assess the environmental, regulatory, engineering, and construction considerations to determine the proper construction methods, timing, and equipment necessary to safely and efficiently install the pipeline across Cook Inlet.

The offshore portion of the Mainline may be laid on the seafloor across Cook Inlet by using a lay barge, tugs, and other support vessels. The pipeline may be buried in nearshore crossing locations and then laid on the seabed away from the shoreline. This offshore section of the Mainline will be concrete-coated to maintain on-bottom stability.

# 1.5.2.5 GTP

Due to the pervasiveness of wetlands and waterbodies across the tundra at the GTP site, installation of work pads and road construction to support the GTP will primarily be completed in winter to avoid tundra degradation. Summer construction will mainly occur on the roads and gravel pads that were constructed during the previous winter season.

GTP facilities will be constructed on a gravel pad designed to insulate the permafrost. After the site has been prepared, piles will be installed to support modules, buildings, equipment, and structures. The majority of the GTP facility will consist of modules transported to the site via sea-going vessel and Self-Propelled Module Transporters (SPMT). It is expected that the modules will be delivered during four summer sealift seasons. The remaining facility components will be constructed onsite.

The improvements at Dock Head 2 of West Dock will include expanding the dock head by installing sheet piling and fill material behind the sheet piling and dredging a wider, deeper, and longer channel from the dock head out to approximately the 16-foot contour.

Construction activities and storage of construction materials and equipment will require the use of the GTP site and other existing commercial storage areas on the North Slope. Water for the site will initially be trucked in from the existing water supply facilities or sourced from a nearby lake or river until the dedicated GTP reservoir is operational. Wastewater and other select liquid wastes will initially be disposed of at North Slope Borough facilities until onsite Class I disposal wells are completed. Debris and waste generated from construction will be disposed of at an approved disposal site.

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Initial construction and commissioning activities will involve operation of power generation facilities (mechanical drive using gas turbines) and will occur prior to start-up of the processing trains. This will require a tie into the PBU fuel gas system.

# **1.5.2.6** Infrastructure Construction

The following provides a brief description of typical infrastructure construction procedures that will be implemented. These procedures will be modified as necessary to comply with site-specific environmental considerations.

# Access Roads

To construct all-season access roads, an access road route will be surveyed, staked, cleared and graded as necessary. Compacted granular material and/or soil will then be placed directly over the surface organic layer to a specified thickness to create a trafficable surface. If leveling is required, low areas will be filled with granular material or thaw-stable material and high areas will be graded to establish a level surface. Temporary winter season ice roads will be constructed following standard construction techniques commonly used on the North Slope and in accordance with permit requirements.

# Helipads

Where helipad sites are required outside of the construction sites for the Liquefaction Facility, GTP, construction camps, contractor yards, or compressor station facilities, each site will be cleared and leveled. Where required, gravel pads will be constructed for stability. In some cases, the site may be sufficiently stable to allow helicopter operations without the use of a gravel pad.

# Airstrips

Where non-commercial airstrips will be used and require upgrades, the sites will be cleared, leveled, and stabilized with material such as gravel. Facilities needed for operation of the airstrips will then be installed in accordance with regulatory requirements.

#### **Construction Camps, Storage Areas, and Contractor Yards**

Camps, storage areas, and contractor yards will be established at previously disturbed sites to the extent practical or on the proposed Liquefaction Facility, GTP, or compressor station sites. Where new sites are established or existing sites will be expanded, the sites will be cleared of vegetation and then leveled and stabilized, as necessary, prior to installation of the site facilities.

#### **Material Sites**

New material sites will be surveyed and staked, any trees and brush will be cleared, and an access road into the site will be constructed, if necessary. The material sites will be developed in accordance with any permit requirements related to site preparation. Existing material sites may be expanded and/or improved to facilitate use for the Project in accordance with landowner agreements and any permit amendments.

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# **1.5.3** Construction Workforce

Based on the current design, preliminary estimates of the number of personnel required to construct each facility are outlined below.

#### **1.5.3.1** Liquefaction Facility

It is estimated that a total peak workforce of 3,000–5,000+ people will be needed during the seven-year construction of the LNG Plant and the Marine Terminal facilities.

# **1.5.3.2** Interdependent Facilities

#### Mainline

The Mainline will require a peak workforce of approximately 5,000–7,000 over several summer and winter construction seasons, with individual spreads using a peak workforce of approximately 1,400 (750 to 1,600).

#### **Compressor Stations, Meter Stations, and Heater Station**

The current design anticipates that an individual compressor station will be built in approximately one year and require approximately 150 (75 to 250) personnel to construct, inspect, and pre-commission the station. It is anticipated that an individual meter station will be constructed in approximately three to four months and will require approximately 100 personnel to construct, inspect, and pre-commission the station. An individual heater station is estimated to be built in approximately one year using a workforce of 150 personnel.

#### **GTP and PBTL**

The current design anticipates that construction of the GTP, including GTP infrastructure and dock modifications and pipelines between the GTP and PBU CGF, will require approximately 500–2,000 personnel at peak work.

#### **PTU Gas Transmission Line**

Workforce requirements are under development.

#### **1.6 OPERATION AND MAINTENANCE PROCEDURES**

The integrated Project operations will employ a core team of experienced workers from the Applicant companies, including experienced and trained existing local staff coupled with local hires.

#### **1.6.1** Liquefaction Facility

The Liquefaction Facility will be operated and maintained in accordance with applicable federal and state requirements. In particular, pursuant to the provisions of the Natural Gas Pipeline Safety Act (Public Law 112-90, 49 USC 60101) amended in 2011, the facilities will be operated and maintained in accordance with 49 C.F.R. 193, *Federal Safety Standards for Liquefied Natural Gas Facilities* (and as referenced in

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49 C.F.R. 193, the National Fire Protection Association 59A LNG Standards). The Marine Terminal will be operated and maintained in accordance with 33 C.F.R Part 127, *Waterfront Facilities handling Liquefied Natural Gas and Liquefied Hazardous Gases*. Safety for the overall Liquefaction Facility will be addressed in Resource Report Nos. 11 and 13.

Operation of the Liquefaction Facility will require approximately 350 personnel. This will include approximately 200 daytime-only staff and approximately 150 shift staff located at the Liquefaction Facility. Early staffing plans assume that Facility personnel will reside off site.

# 1.6.2 Pipeline

Pipeline and pipeline-related aboveground facilities will be operated and maintained to meet the requirements of the *Transportation of Natural and Other Gas By Pipeline: Minimum Federal Safety Standards* (49 C.F.R. Part 192) and other applicable federal and state requirements. Any special permits will follow 49 C.F.R. Part 190.341, *Pipeline Safety Enforcement and Regulatory Procedures*. Operation and maintenance of the pipelines, meter stations, and compressor stations are expected to require approximately 60–80 full-time workers, comprised of trade technicians, technical specialists, safety personnel, support staff, and management. Applicants' safety design and systems for the pipelines will be addressed in Resource Report No. 11.

# 1.6.3 GTP

The GTP will be monitored and controlled from a control center located on site. Natural gas detection and alarm systems will be installed throughout the facility and emergency de-pressuring and/or shutdown systems will be designed to be initiated automatically, locally (at the equipment module), or remotely (in the control room). In addition, an equipment health monitoring system will be installed to collect and trend data, monitor critical rotating equipment, and manage data so that it can be accessed both locally and remotely to enable troubleshooting, optimization, and predictive maintenance planning. Additional details concerning the GTP safety systems and requirements will be addressed in Resource Report No. 11.

Onsite operations staff will include approximately 200 workers. Another 200 workers will be on offrotation, and approximately 100 workers will comprise off-site support.

# 1.7 FUTURE PLANS AND ABANDONMENT

While the facilities will be constructed in a manner that will allow for expansion should additional natural gas supplies become available to the Project, there are no current or reasonably foreseeable (i.e., three to five years from construction start) plans for future expansion of the Project at this time. Provisions for the abandonment of Project facilities in the future will be considered in the Pre-FEED work underway.

# **1.8 PERMITS AND APPROVALS**

Appendix C includes tables that identify the federal, state, and local permits and authorizations that may be required to complete the Project.

# 1.9 AGENCY, PUBLIC, AND OTHER STAKEHOLDER COMMUNICATIONS

A summary of the agency, public and stakeholder meetings and correspondence is provided in Appendix D.

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# APPENDIX A AERIAL IMAGERY AND USGS MAPPING OF PRELIMINARY FACILITY LOCATIONS

# (PROVIDED UNDER SEPARATE COVER)

# APPENDIX B GENERAL MAPS OF PROPOSED ABOVEGROUND FACILITIES

# (PROVIDED UNDER SEPARATE COVER)

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Permit or Plan; Agency	Estimated Time for Permit Approval	Statute/Regulation	Definition	Why Permit is Required	U/S	M/S	D/S	Data Needs	Commentary
Order Granting Section 3 Authorization, Authorization to Construct, Operate or Modify Facilities Used for the Export or Import of Natural Gas; FERC	2-3 yr.	Section 3 of NGA of 1938, as amended; Executive Order (EO) 10485, as amended by EO 12038; 15 USC § 717; 18 CFR §157	Designates FERC as the National Environmental Policy Act (NEPA) lead federal agency and requires the applicant to be in compliance with all other federal requirements.	Applications for authorization to construct, operate, or modify facilities used for the export or import of natural gas. Includes the analysis by the Department of Energy for an LNG export license.	Ι	I	X	<ul> <li>Section 3(b) Application</li> <li>Sponsor Finances</li> <li>Financial and Corporate relationship</li> <li>Environmental Report</li> <li>Liquefaction Facility Map and Ownership</li> </ul>	<ul> <li>FERC dictates the scheduling requirements for the NEPA EIS.</li> <li>FERC will use the Resource Reports to develop the EIS.</li> <li>DOE will complete their analysis and provide to the FERC for inclusion in the Section 3 license.</li> <li>Related, nonjurisdictional facilities will be required to be addressed in the Section 3 application for completion of the cumulative impacts analysis of the entire project, not just the Liquefaction Facility. Each asset will be addressed to the same level of detail as the Liquefaction Facility in each Resource Report</li> </ul>
NEPA EIS; FERC Lead Federal Agency	2-3 yr.	Public Law 91-190, 42 USC §4321-4327, January 1, 1970, as amended; Council on Environmental Quality, 40 CFR §1502.9; 15 USC 719(h)(c)(3) Alaska Natural Gas Pipeline Act (ANGPA);	NEPA is a national mandate for the protection of the environment; requires full consideration of reasonable project alternatives to minimize potentially adverse impacts to the human and natural environment, and provides public disclosure of the environmental impacts associated with federal actions.	NEPA is triggered by a "major federal action" such as the need for federal permits and approvals. A detailed statement of environmental effects of the project, in this case an EIS, is prepared by FERC; U.S. Environmental Protection Agency (EPA) reviews and comments on the environmental document. Numerous	X	X	X	<ul> <li>Purpose and need</li> <li>Alternatives Description</li> <li>Information provided in the FERC Resource Reports used to develop Affected Environment and Environmental Consequences</li> <li>Evaluation of direct, indirect, and cumulative impacts. Upstream and midstream footprints and facility impacts will be addressed as cumulative impacts as nonjurisdictional related facilities.</li> </ul>	<ul> <li>FERC will be the lead federal agency.</li> <li>FERC will coordinate with other federal agencies that require NEPA documentation prior to issuance of their respective permits.</li> <li>Level of detail required for NEPA markedly differently than for permits and consultation required to schedule the work necessary</li> </ul>

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Permit or Plan; Agency	Estimated Time for Permit Approval	Statute/Regulation	Definition	Why Permit is Required	U/S	M/S	D/S	Data Needs	Commentary
		Alaska National Interest Land Conservation Act (ANILCA, P.L. 96- 487).		other federal agencies could be designated as "cooperating agencies" during the development of the EIS. At this time, ANGPA is only applicable for the Alberta option. ANGPA designates FERC as the lead federal agency for preparation of EIS for the entire project and requires all other federal agencies to coordinate their environmental analysis with FERC. ANILCA not applicable unless USFWS Refuge, National Park, or wilderness area crossed or impacted by the Project.					<ul> <li>to support the NEPA analysis separate from the detailed permitting.</li> <li>FERC has indicated the need for detailed, location specific subsistence, HIA, Traditional Knowledge, and other socioeconomic data.</li> <li>G&amp;PA to monitor Congressional activities surrounding expanding ANGPA to address Alaska LNG export project.</li> </ul>
U.S. Department of Transportation (USDOT), Pipeline and Hazardous Materials Safety Administration (PHMSA) Special Permit	2-3 yr.	Hazardous Materials Safety and Security Reauthorization Act of 2005, 49 USC 5101 et seq. Pipeline Safety Regulations, 49 CFR 105-107, 171-180 49 CFR 190.341	Special Permits and Approvals to the Hazardous Materials regs. are issued by PHMSA, and can modify compliance with existing regs. for certain activities as long as safety is maintained. The PHSMA Special Permit process runs concurrently with the overall NEPA process and can take over a year to complete. New Special Permits are granted for two years, and renewals are granted for four years.	Special Permits are required for any actions that vary from what existing PHSMA regulations allow.		X		<ul> <li>Special Permit Enclosure A requires information on manufacturing quality controls, material specifications, engineering design factors, identification of hazards and demonstration the pipeline is capable of withstanding the stresses, operational conditions, and future maintenance, including in-line inspection.</li> <li>Special Permit Enclosure B requires a focused Environmental Assessment and a Risk Analysis</li> <li>Cost and safety justification</li> </ul>	The APP special permit application is on hold at PHMSA and would need to be closed and a new application filed for the new project.

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Permit or Plan; Agency	Estimated Time for Permit Approval	Statute/Regulation	Definition	Why Permit is Required	U/S	M/S	D/S	Data Needs	Commentary
Section 404 Wetlands Dredge or Fill Permit, Section 10 Navigable Waters Permit, and Section 103 Ocean Disposal Permit; U.S. Army Corps of Engineers (USACE)	1-2 yr.	Rivers and Harbors Act of 1899, § 10, 33 USC § 40; Clean Water Act (CWA), Section 404, 33 USC §1344; 33 CFR 320-330; Marine Protection Research and Sanctuaries Act (MPRSA) §103 (16 USC §1431 et seq.); 33 USC 1271	Prevents unauthorized obstruction or alteration of U.S. navigable waters (Section 10); authorizes USACE to issue permits (Section 404) for the discharge of dredge or fill material into federally designated wetlands and waters and for the discharge of dredge material into territorial seas (Section 103).	Section 404 permit is necessary for placement of fill of wetlands; Section 10 permit is necessary for dock improvements and dredging at West Dock and Nikiski, possibly major river crossings (e.g., Yukon River, Tanana River, etc.), Cook Inlet crossing and construction in navigable waters; Section 103 permit is necessary for transport and disposal of dredge material in marine waters; USACE adheres to NEPA guidelines for all permits.	X	X	X	<ul> <li>Description of project activity</li> <li>Location information</li> <li>Requires identification of quantity and footprint of fill material for the pad, roads, and pipeline support</li> <li>Requires identification of quantity of dredge material, dredge, and disposal sites</li> <li>In a tiered fashion, requires testing of sediments and water prior to dredging, sampling to describe the biological communities at the dredge location and disposal locations, and if contamination found in the sediments, elutriate testing.</li> <li>Requires completion of the EIS process and a signed ROD.</li> <li>Requires selection of the Least Environmentally Damaging Practicable Alternative</li> <li>Section 103 authorization requires applicant to evaluate alternatives for marine disposal</li> </ul>	<ul> <li>Dredged material in marine waters must be placed nearby the project footprint or in an ocean disposal site.</li> <li>BP Exploration Alaska (BPXA) holds a 10-year permit for maintenance dredging at West Dock.</li> <li>USACE can issue multiple permits for the same activity in the same area as long as one NEPA document covers all the permitted activities.</li> </ul>
Ocean Disposal Site Designation; EPA	Same as 404/10 (processed simultaneously.	MPRSA § 103 or § 102 (40 CFR § 220- 228) Note: Section 103 is the intended use and is the preferred citation for a project- specific disposal activity and site designation. § 102 may apply	Designates a site for use as an ocean dumping site for disposal of dredged material.	Designation of an ocean dump site of necessary for disposal of dredge material from turning basin and Marine Terminal.	X		X	<ul> <li>Requires baseline studies of ocean dump area including aqueous and sediment samples, benthic invertebrate and fish studies, tissue samples, and hydrographic and bathymetry studies</li> <li>Requires completion of the EIS process</li> </ul>	<ul> <li>Requires consideration of the need for and environmental effects of the proposed dumping.</li> <li>USACE is permitting authority for dredged material disposal; EPA establishes dumping criteria and designates ocean dump sites (permanent sites).</li> </ul>

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		depending on the longevity required for maintenance dredging.							
Waterway Suitability Analysis; USCG	9-12 month lead time in conjunction with FERC pre-filing process; Letter of Recommendation (LOR) issued prior to DEIS; Per NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 05- 05	33 CFR Part 104; 33 CFR Part 105; U.S. Department of Homeland Security 33 CFR 127, Waterfront Facilities Handling LNG and Liquefied Hazardous Gas (Liquefaction Facility) U.S. Coast Guard 33 CFR 127, Letter of Intent (Liquefaction Facility) Permission to Establish Aids to Navigation (Marine Terminal) Waterway Suitability Assessments - NVIC 05-05	The US Coast Guard will perform a significant review of the Liquefaction Facility and marine transportation component, the waterway suitability analysis of the LNG carriers.	The International Ship and Port Facility Security Code (ISPS Code) is a comprehensive set of measures to enhance the security of ships and port facilities, developed in response to the perceived threats to ships and port facilities in the wake of the 9/11 attacks in the United States.			x	<ul> <li>Per the following guidance documents:</li> <li>National Environmental Policy Act Implementing Procedures and Policy for Considering Environmental Impacts, COMDTINST M16475.ID (series)</li> <li>Environmental Considerations for Decision Making, COMDTPUB P16475.6</li> <li>Nav. and Vessel Inspection Circ. No. 10-04, Guidelines for Handling of Sensitive Security Information (SSI), COMDTPUB P16700.4</li> <li>Sandia National Laboratories Report SAND2004-6258, "Guidance on Risk Analysis and Safety Implications of a Large Liquefied Natural Gas (LNG) Spill Over Water," dated December 2004</li> <li>LNG and LPG - Views and Practices, Policy and Safety, COMDTINST M16616.4 (old CG- 478)</li> <li>33 CFR 127: "Waterfront Facilities Handling Liquefied Natural Gas and Liquefied Hazardous Gas"</li> <li>Navigation and Vessel Inspection Circular No. 9-02, Ch-I, Guidelines for Development of Area Maritime Security Committees and Area Maritime Security Plans for U.S. Ports, COMDTPUB P16700.1</li> <li>Risk-Based Decision-Making,</li> </ul>	<ul> <li>Complete WSA so that Letter of Recommendation (LOR) issued prior to DEIS;</li> <li>Alaska LNG prepares Preliminary Waterway Suitability Assessment (WSA) for the proposed LNG marine traffic (2013) and a follow-on WSA for inclusion with the FERC filing (2015);</li> <li>USCG issues LOR (prior to DEIS)</li> </ul>

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								COMDTINST M16010.3 (series), and Risk-Based Decision-Making Guidelines, 3rd edition	
Bridge Permit; USCG, Bridge Administration	Processed simultaneously with EIS process, issued 3-6 months after FEIS is issued.	General Bridge Act of 1946; 33 CFR parts 114, 115; 33 USC 525; Section 9 of the Rivers and Harbors Act of 1899	For the construction of a new bridge or causeway or for the reconstruction or modification of an existing bridge or causeway across the navigable waters of the U.S.	Bridges over navigable waters of the U.S. (temporary and permanent).		X		<ul> <li>Applicant information</li> <li>Consultant information</li> <li>Project information</li> <li>Authority information</li> <li>Authority information</li> <li>Proposed clearances and elevations</li> <li>Existing bridge structure at bridge site</li> <li>Bridge removal</li> <li>Construction activity</li> <li>Environmental effects</li> <li>Required authorizations</li> <li>Other federal agencies with jurisdiction</li> <li>Fill</li> <li>Adjacent property owners</li> <li>Underlying studies, reports, and other information</li> <li>Project drawings</li> </ul>	<ul> <li>Necessary for pipeline or vehicle-bridge crossing over navigable waters.</li> <li>Early coordination with USCG recommended.</li> <li>Once pipeline route established, provide USCG with GIS shapefiles for them to conduct their navigability determination.</li> </ul>
Underground Injection Control (UIC) Program; EPA	Class I - 3 -6 months - application at a " <i>reasonable</i> " time before construction,	40 CFR 144. AOGCC administers the Class II well program per 40 CFR § 147.100	The UIC program in the State of Alaska for Class I, III, IV, and V wells, and for all classes of wells on Indian lands, is administered by the EPA. The EPA has direct implementation responsibility in Alaska for the regulation of Class I injection wells through the UIC program, which is authorized by Part C of the Safe Drinking Water Act	EPA-issued Class I UIC permit covers the construction, operation and closure requirements for a Class I injection well.	X	X	X	<ul> <li>Owner information and SIC code</li> <li>Legal information</li> <li>Well status and type of permit</li> <li>Class and type of well</li> <li>Location of wells</li> <li>Maps of well / area of review</li> <li>Corrective action plan and well data</li> <li>Maps and cross section of underground sources of drinking</li> </ul>	<ul> <li>Class I injection wells are used for the deep disposal of industrial waste into naturally saline groundwater, beneath any aquifers, which could serve as current or future USDWs.</li> </ul>
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			(SDWA).					<ul> <li>water (USDWs)</li> <li>Name and depth of USDWs</li> <li>Maps and cross sections of geologic structure of area</li> <li>Geological data of inject. and confining zones</li> <li>Operating data</li> <li>Formation testing program</li> <li>Stimulation program</li> <li>Injection procedures</li> <li>Construction procedures and details</li> <li>Changes in injected fluid</li> <li>Plan for well failures</li> <li>Monitoring program</li> <li>Plugging and abandonment plan</li> <li>Aquifer exemptions</li> </ul>	
Hazardous Waste Management Facility Permit; EPA	6-9 mo.	Resource Conservation and Recovery Act (RCRA); 42 USC 6901 et seq.; 40 CFR 124; 40 CFR 260-271	Applicable to generation, transport, treatment, storage, and disposal of hazardous wastes. May not be applicable depending upon specific wastes generated.	Applicable to the generation, transport, treatment, storage, and disposal of hazardous wastes.	×	(X)	X	<ul> <li>RCRA Hazardous Waste Part A Permit Application (EPA Form 8700-23) and RCRA Part B:</li> <li>Site name, location, land type, EPA Identification Number, and North American Classification System Code(s)</li> <li>Facility existence dates, other environmental permits and permit numbers, nature of business</li> <li>Description of hazardous waste and regulated waste activities</li> <li>A Hazardous Waste Report, if site was a treatment, storage, or disposal facility or meets other specific criteria</li> </ul>	There are no designated RCRA hazardous waste disposal sites in Alaska.

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								<ul> <li>Topographic maps of the area extending to at least 1 mile beyond property boundaries of the facility and showing the legal boundaries of the facility, location, and serial number of each existing and proposed intake and discharge structures, all hazardous waste management facilities, location of all processes by process code, each well where fluids would be injected underground, all springs and surface water bodies in the area, and all drinking water wells within ¼ mile of the facility which are identified in the public record or otherwise known</li> <li>Facility drawing showing the property boundaries, areas occupied by all storage, treatment, or disposal</li> </ul>	
								<ul> <li>operations that will be used during interim status, name of each operations (e.g., drum storage area, etc.), areas of past storage, treatment, or disposal operations, areas of future storage, treatment, or disposal operations, and the approximate dimensions of the property boundaries and all storage, treatment, and disposal areas</li> <li>Waste Analysis Plan</li> </ul>	
								<ul> <li>Chemical and physical analysis of the hazardous waste and hazardous debris to be handled at the facility</li> </ul>	
								<ul><li>Description of security procedures and equipment</li><li>General inspection schedule</li></ul>	

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								<ul> <li>Contingency Plan</li> <li>Description of procedures, structures or equipment to be used at the facility to prevent hazards, prevent flooding, prevent contamination of water supplies, mitigate effects of equipment failure or power outages, prevent undue exposure of personnel to hazardous waste, and prevent releases to the atmosphere</li> </ul>	
								<ul> <li>Description of the precautions to prevent accidental ignition or reaction of ignitable, reactive, or incompatible wastes</li> </ul>	
								<ul> <li>Traffic pattern, estimated volume (number, types) of vehicles, and control</li> </ul>	
								<ul> <li>Facility location information relative to faults and floodplains</li> </ul>	
								• An outline of both the introductory and continuing training programs to prepare persons to operate and maintain the facility in a safe manner and a brief description of how training will be designed to meet actual job tasks	
								Closure Plan, where applicable, and Post-closure Plan	
								Cost estimate for facility	
Federal Temporary Use Permits, ROW Grant and Notice to Proceed (NTP); USDOI, BLM	Issued within 90 days of FEIS, processed simultaneously with EIS.	Mineral Leasing Act of 1920, Section 28(e); 30 USC 185; 43 CFR 2880 Federal Land Policy	Authorization to use a specific piece of public land for certain project and authorizes rights and privileges for a specific use of the land for a specific period of time.	Relevant for pipeline and compressor stations, material sites; access roads; and communication sites.		X		<ul> <li>Project purpose</li> <li>Description of activities, including dimensions and area of site to be occupied</li> <li>Timing and duration of activities</li> </ul>	• A new SF299 application was filed in Q2 2014 to initiate a new cost recovery agreement and facilitate access permits for 2014 field programs. It will need to be updated each year

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		and Management Act; USC 1761-1771;						<ul> <li>Location of all work areas including legal description, maps, and land ownership and status</li> <li>Summary of environmental effects including socio-economic, air, visual, surface and groundwater quality, streams or other water bodies, noise, soil, permafrost vegetation and plant life, fish, wildlife, marine life, threatened and endangered species, and marine mammals</li> <li>Description of the use, production, transportation, or storage of any hazardous materials</li> <li>Status of other required state or local approvals</li> <li>Non-returnable application fee</li> <li>Bonding and Insurance</li> <li>Rental fee for land use</li> </ul>	<ul> <li>the project footprint changes.</li> <li>Plan of Development (POD) is part of the Federal ROW Grant process. POD will contain site-specific construction, operation, restoration, and maintenance plans for work on federal lands.</li> <li>Federal ROW Grant will likely provide for issuance of temporary use permits, which may contain site-specific terms and conditions.</li> </ul>
Purchase of Mineral Material/Mineral Sales Contract; U.S. Department of the Interior (USDOI), Bureau of Land Management (BLM)	6-12 mo.	Mineral Management Act, 30 USC Sections 601, 602, 604; 43 CFR parts 3600, 3610, 3620, 23, and 5400	There is no specific application form for requesting removal of mineral material from public lands.	Contract required for material sites on federal land. Removal of rock, crushed rock, or gravel will include a cost per cubic yard fee.		X	(X)	<ul> <li>Contact is the BLM District or Resource Area office closest to the area of need or closest to the public land where the desired material is found</li> <li>Compliance with applicable laws, including the Environmental Protection Act</li> <li>May require duplicative permit with the State if related to a disputed Navigable waterway</li> </ul>	<ul> <li>A new SF299 application was filed in Q1 2014 to initiate a new cost recovery agreement and facilitate access permits for 2014 field programs. It will need to be updated each year the project footprint changes.</li> <li>Construction sites requiring gravel or rock; pipeline and compressor station, material sites; access roads; communication sites.</li> <li>Fees are discussed in Stipulation 2.6 of the BLM right-of-way (ROW) Grant.</li> </ul>

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Native Allotment Grant ROW; USDOI Bureau of Indian Affairs (BIA)	3-5 yr.	25 USC Chapter 8, Section 323; 25 CFR 169,	BIA concurrence needed if ROW crosses Alaska Native allotments.	BIA concurrence needed if ROW crosses Alaska Native allotments.		X		Consultation with BIA	•	Requires agreement / settlement with Native Allotment owners
U.S. Air Force (USAF) ROW; Department of Defense (DOD)	Tied to BLM ROW Grant (see above)		Access to USAF lands (e.g., Eielson Air Force Base, Clear Air Station/AFB).	ROW across USAF lands for project facilities.		X		<ul> <li>Description of facilities</li> <li>Location of facilities</li> <li>Access route(s) and mode(s) of transportation</li> </ul>	•	Interface is needed to begin negotiations for letters of non- objection for collocation of the gas pipeline and ancillary facilities within existing federal and state ROWs, and on military land.
U.S. Army ROW; DOD	Tied to BLM ROW Grant (see above)		Access to U.S. Army Alaska (USAA) lands (e.g., Fort Wainwright and Fort Greely) to conduct specified field activities.	ROW across USAA lands for project facilities		x		<ul> <li>Description of facilities</li> <li>Location of facilities</li> <li>Access route(s) and mode(s) of transportation</li> </ul>	•	Interface is needed to begin negotiations for letters of non- objection for collocation of the gas pipeline and ancillary facilities within existing federal and state ROWs, and on military land.
Civil Works License / ROW (IF APPLICABLE): DOD	Tied to BLM ROW Grant (see above)		Access to Chena River Lakes Flood Control Project area and to the Tanana River Flood Control Levee controlled by the USACE.	ROW across USACE- controlled lands for project facilities.		X		<ul> <li>Description of facilities</li> <li>Location of facilities</li> <li>Access route(s) and mode(s) of transportation</li> </ul>	•	Interface is needed to begin negotiations for letters of non- objection for collocation of the gas pipeline and ancillary facilities within existing federal and state ROWs, and on military land.
Special-Use Authorization; U.S. Forest Service (USFS) (IF APPLICABLE—at this time no USFS lands are impacted)	Tied to BLM ROW Grant (see above)	36 CFR 251.50- 251.65;	Allows occupancy, use, rights, or privileges on USFS land. The authorization is granted for a specific use of the land for a specific period of time. Large diameter lines require Congressional and Presidential approval.	ROW across to USFS lands (option 2d).		x		<ul> <li>Special-Use Authorization Application:</li> <li>Description of proposed activities</li> <li>Location, including access routes (coordinates, township, range, section, meridian)</li> <li>General vicinity and detailed site maps</li> <li>Environmental Protection Plan</li> </ul>	•	Currently, a section of USFS land is crossed by the Valdez case south of Port Valdez within Chugach National Forest.

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Endangered Species Act (ESA) Section 7 Consultation; U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS)	Consultation — simultaneous with EIS	ESA, § 7(a)(2); 16 USC § 1531-1544	Federal agencies that permit, license, fund, or otherwise authorize activities must ensure their actions will not jeopardize the continued existence of any listed species.	Section 7 Consultation will occur in conjunction with the EIS process and USACE Section 404/10/103 permitting.	x	x	x	<ul> <li>Statement of technical and financial capabilities</li> <li>Description of alternatives to use non-federal land</li> <li>Cost recovery fee</li> <li>Land use fee</li> <li>Potentially information and reports necessary to determine the feasibility and environmental impacts of the proposal; compliance with applicable laws and regulations; and terms and conditions to be included in the authorization</li> <li>Consultation with USFWS and NMFS</li> <li>Preparation of Biological Assessment to accompany the FERC application</li> <li>Also required on individual permits for field studies and access. Section 7 review can take 2 months</li> </ul>	<ul> <li>FERC as lead federal agency for the EIS process will initiate Section 7 consultation.</li> <li>Construction timing windows will likely be imposed to avoid nesting eiders, Beluga whales, Bowhead whales (North Slope).</li> <li>The project area is located within the newly designated critical habitat area for the polar bear (October 2009).</li> <li>Beluga whale critical habitat crossed in Cook Inlet.</li> </ul>
Migratory Bird Treaty Act (MBTA); USFWS	Consultation — simultaneous with EIS	MBTA 16 USC § 703- 712	Prohibits taking of migratory birds unless specifically exempt or authorized.	Must be addressed as part of the EIS process and USACE Section 404/10/103 permitting.	X	X	X	<ul> <li>Consultation with USFWS</li> <li>Complete Avian Protection Plan with FERC application</li> <li>Undertake permitting under Special Purpose permit provisions of MBTA (50 CFR 21.27)</li> </ul>	<ul> <li>Early coordination with USFWS regarding data collection requirements and timing windows for construction activities is recommended.</li> <li>Based on other projects in the</li> </ul>

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									<ul> <li>Prudhoe Bay area, gravel placement will need to occur prior to June 2 or after August 2.</li> <li>Timing windows for new locations (interior AK; Cook Inlet) will need to be determined through consultation.</li> </ul>
Bald and Golden Eagle Take Permit pursuant to Bald and Golden Eagle Protection Act (BGEPA); USFWS	Consultation — simultaneous with EIS; 60 days	BGEPA 16 USC 668- 668d, as amended;, 50 CFR 22.25; 50 CFR 13	Provides protection to the bald eagle and golden eagle.	Prohibiting, except under specified conditions, the taking, possession, and commerce of eagles. Take includes nests, parts, or eggs.	x	x	x	<ul> <li>Consultation with USFWS</li> <li>Conduct studies as recommended by the USFWS including eagle and raptor nest surveys</li> </ul>	Early coordination with USFWS regarding data collection requirements and timing windows for construction activities is recommended.
Essential Fish Habitat (EFH) Consultation; NMFS	Consultation — simultaneous with EIS.	Magnuson-Stevens Fishery Conservation and Management Act / Sustainable Fisheries Act, 16 USC § 1801 et seq.	Establishes national standards for fisheries conservation and management. EFH is defined as, "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity"	Federal agencies must consult with NMFS and assess the effects of their actions on EFH; EFH must be addressed as part of the EIS process.	x	X	x	<ul> <li>Consultation with NMFS</li> <li>Preparation of EFH Assessment with FERC application</li> <li>Required for APDES and NPDES permits for waste water treatment and disposal</li> </ul>	<ul> <li>Focus is on anadromous fish species which spend a portion of their life history activities in marine waters.</li> <li>Marine waters surrounding West Dock in the Prudhoe Bay Unit (PBU) and in Cook Inlet are designated as EFH.</li> <li>Water source selected for use during pipeline construction and GTP operations will be scrutinized for EFH.</li> </ul>
Marine Mammal Protection Act (MMPA) Incidental Take Authorization or Letter of Authorization (LOA)	Consultation — simultaneous with EIS; LOA 3 to 6 months; ITA 6-12 months	MMPA, Title 1, 16 USC §1371 Sec. 101(a)(5); Section 101 (a) 5 of the MMPA, 16 U.S.C. § 1371.101 (a) (5),	MMPA prohibits take of any marine mammal species in U.S. waters except under specific authorization such as a Letter of Authorization (LOA).	Required for dredging and dock improvement activities and impacts to marine mammals in Cook Inlet and on the North Slope, and activities on land located in designated	X	X	X	<ul> <li>Detailed description of activity that could result in take of marine mammals</li> <li>Dates and duration of activities</li> <li>Species and number of marine mammals likely to be found in activity</li> </ul>	<ul> <li>LOA:</li> <li>LOA for multiple years of similar activities.</li> <li>LOA requires a longer lead time and is required if the potential for serious injury or</li> </ul>

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Agency NMFS and USFWS	Permit Approval	Statute/Regulation and 50 C.F.R. § 216, 50 CFR §18 50 C.F.R. Part 216, Subpart I (216.101 – 216.106). Section 216 Subpart R (216.200 – 216.210) describes the specific regulations for operation of oil and gas facilities in the U.S. Beaufort Sea. Section 216.207 references the 14 requirements in section 216.104 in order to apply for a new LOA	Definition LOAs are for projects found to take small numbers of marine mammals and which have no more than a negligible impact on marine mammal species not listed as depleted under the MMPA (i.e., listed under the ESA) and not having an immitigable effect on subsistence harvests of these species.	Why Permit is Required polar bear habitat.	U/S	M/S	D/S	Data Needs         area         Description of the status, distribution, and seasonal distribution of affected species or stocks of marine mammals         Type of incidental taking auth. requested         Number of marine mammals by age, sex, and reproductive condition         Anticipated impact of the activity upon the species or stock         Anticipated impact of the activity on the availability of the species or stock of marine mammals for subsistence use         Anticipated impact of the activity on the habitat of marine mammal populations         Anticipated impact of the loss or modification of the habitat on the marine mammal populations         Availability and feasibility of equipment, methods, and manner of conducting such an activity         Plan of cooperation         Means of learning of, encouraging, and coordinating research opportunities, plans, and activities	Commentary         mortality cannot be mitigated.         • Requires two public notice periods.         • There is an existing five-year rulemaking for USFWS (polar bear and walrus) in place that covers a gas pipeline from the North Slope.         • No Impact Determination (NID) required for authorization.         • Preparation of Biological Opinion for LOA.
APDES Permit ; ADEC	1-2 years	Section 402 of the Clean Water Act; 40 CFR 125 (specifically	Permit for the discharge of non- hazardous waste to surface waters; requires establishment	The Alaska Department of Environmental Conservation issues all			x	<ul> <li>DEC may consider a mixing zone on a case-by-case. Baseline studies of receiving water biological, chemical,</li> </ul>	Dependent upon final LNG     facility design as to whether a     cooling water discharge

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Noncontact Cooling NPDES Permit**		40 CFR.80– 125.89)	of mixing zone criteria for thermal plume dispersion and	APDES permits in Alaska except Denali National				thermal characteristics.	permit would be required (in lieu of injection well)—NOT
**Since the project is currently proposing a design that includes air cooling rather than water		18 AAC 83.010; 18 AAC 83.380.	salinity	Park and Preserve, Metlakatla, and for 301(h) facilities.				description and scaled drawings showing the physical configuration of all source water bodies used by the facility	PART OF DESIGN BASIS.
(groundwater or seawater) cooling at								Extensive modeling of proposed discharges to predict impacts.	
the LNG facility, the ADEC NPDES Permit data needs are included here only in the event that the project design changes in the future.								<ul> <li>A statement that the thermal component of the discharge is subject to effluent limitations under 33 USC 1311 and 1316, and a brief description, including a quantitative statement, of the thermal effluent limitations proposed under 33 USC 1311 and 33 USC 1316;</li> </ul>	
								• Source water body's hydrological and geomorphological features, as well as the methods used to conduct any physical studies to determine the intake's area of influence within the water body and the results of the studies	
								Description of the cooling water intake structure(s), including	
								<ul> <li>the configuration of each cooling water intake structure and its location in the water body and in the water column;</li> </ul>	
								<ul> <li>latitude and longitude in degrees, minutes, and seconds for each cooling water intake structure;</li> </ul>	
								<ul> <li>the operation of each cooling water intake structure, including design intake flows, daily hours of operation, number of days of the</li> </ul>	

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								<ul> <li>year in operation, and seasonal changes, if applicable;</li> <li>a flow distribution and water balance diagram that includes all sources of water to the facility, recirculating flows, and discharges; and</li> <li>Engineering drawings of each cooling water intake structure.</li> </ul>	
Spill Prevention, Control, and Countermeasure (SPCC) Plan; EPA	Reviewed prior to construction; draft in EIS.	SPCC Rule Section 311 (j)(1)(C). of the CWA, as amended by the Oil Pollution Act of 1990; Oil Pollution Prevention and Response Regulation; 40 CFR 112 (Subparats A though C); Executive Order 12777.	Plan to help prevent the discharge of oil into navigable waters or adjoining shorelines. Emphasis on prevention rather than mitigation measures provided in contingency plans. EPA - regulatory and enforcement role for oil spill prevention activities under CWA section 311 for onshore and near shore non- transportation related facilities landward of the coastline.	Required for project facilities with petroleum storage of an aggregate capacity greater than 1,320 gallons or completely buried with a capacity greater than 42,000 gallons; and, due to facility location, could reasonably be expected to discharge oil in quantities that may be harmful, as described in 40 C.F.R. part 110, into or upon navigable waters of the US or adjoining shorelines.	X	x	x	Identify all individual storage tanks with a capacity greater than 660 gallons, or multiple tank or drum fuel storage with a combined capacity greater than 1,320 gallons	<ul> <li>SPCC Plans must be certified by a registered professional engineer.</li> <li>Applicable for construction and operations activities</li> <li>Review and approval required by the USCG for facilities with threat of petroleum spill to navigable waters of the U.S.</li> <li>Review and approval required by EPA for facilities with threat of petroleum spill into all other waters of the U.S.</li> </ul>
Determination of No Hazard to Air Navigation; Federal Aviation Administration (FAA)	1-3 mo.	14 CFR § 77	Obstruction Evaluation and Airport Airspace Analysis is required for all project features including construction cranes extending 200-feet above ground level.	Early evaluation of project facilities allows the FAA to minimize the effect on aviation by publishing a "Notice to Airmen" to alert pilots of airspace changes, recommend appropriate markings and lighting, and to depict obstacles on aeronautical charts.	Х	x	X	<ul> <li>Description of project activity</li> <li>Location of activity</li> <li>FAA may conduct a site visit/survey in order to make the determination</li> <li>Applicable to the transport of tall structures on roadways</li> </ul>	<ul> <li>Application must be received a minimum of 30-days prior to start of construction; early coordination with FAA recommended.</li> <li>FAA may conduct a site visit/survey in order to make the determination</li> <li>Applicable to the transport of</li> </ul>

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									tall structures on roadways
Notice of Landing Area Proposal; FAA	3-4 mo.	14 CFR 157	Needed for establishing airport landing-areas.	Potentially required for construction camp locations.	x	x	x	<ul> <li>Location of landing area</li> <li>Purpose</li> <li>Landing area data</li> <li>Obstructions</li> <li>Operational data</li> <li>Application for airport licensing</li> </ul>	
Notice of Proposed Construction Areas or Alteration; FAA	2-3 mo.	14 CFR 77.13	For structures interfering with flight paths during reactivation or construction of airstrip or helipads.	Potentially required for construction camp locations.	X	X	X	<ul> <li>Contact information</li> <li>Description of new construction or alteration</li> <li>Permanency</li> <li>Type of structure</li> <li>Construction dates</li> <li>Geographic coordinates</li> <li>Relationship of road to other existing structures</li> </ul>	
Airport Operating Certificate; FAA	2-3 mo.	14 CFR Part 139	May be necessary if airport serves planes having a seating capacity of greater than 30 people.	Potentially required for construction camp locations.	x	x	×	<ul> <li>Location of airport</li> <li>Ownership</li> <li>Operative data</li> <li>Emergency Response Plan</li> </ul>	
Radio and Wire Communications Permits and Licenses; Federal Communications Commission (FCC)	0-2 mo. Depending on Type	47 USC 151 et seq.; 47 CFR 100 et seq.	For project activities requiring communication (including frequencies).	Project activities or facilities that require radio and wire communications and frequencies.	x	x	x	Complete the appropriate form found on the FCC web site: http://www.fcc.gov/formpage.html	Required for construction and operations
				STATE APPROVALS					
Permit to	2-4 mo.	Alaska Water Use	Water is a common property	For constructing works for	Х	Х	Х	As stated in the instructions on each	The temporary water use

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Appropriate Water, Water Right Certificate of Appropriation for permanent water uses; Temporary Water Use Authorization for non-permanent water use ; Alaska Department of Natural Resources (ADNR), Division of Mining, Land and Water (DMLW)	(Note: Issuance time for a Permit to Appropriate Water can be longer depending on outcome of the public notice process)	Act, Alaska Statute (AS) 46.15 / 11 AAC 93.035130 and 11 AAC 93.210220	resource in Alaska; application for water right over 5,000 gallons per day is subject to public notice process.	an appropriation, or diverting, impounding, withdrawing, or using a significant amount of water from any source (the term significant amount of water is defined in 11 AAC 93.035).				<ul> <li>application form.</li> <li>Temporary Water Use Authorization requires: Map showing withdrawal, use, and discharge points; water system plan and project description; DNR fish habitat permit; driller's well log for drilled wells; method and details of taking water (pump intake/output, hours per day, etc.); amount of water taken (per day; duration; max rate); potential impacts descriptions.</li> <li>Permit to Appropriate Water requires: Property Description (location of water use, location of water source, location of water return flow or discharge); water source; method of taking water (pump, gravity, ditch, etc.); amount of water and type of use. An application must include: evidence that the applicant has a present possessory interest in the property where the water is to be beneficially used; a map; evidence that the applicant has obtained or is in the process of obtaining a right of access to the property; a legal description of the point of withdrawal, diversion, or impoundment; the point of water use; and, if water is to be returned to a stream or water body, the point of return flow; a description of the source; a description of any impoundment, diversion, or withdrawal structures, a description of the nature of the water use and times of the year during which water is to be used; a statement of the</li> </ul>	authorization can be issued for up to five years per authorization.

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								dates water use is expected to begin and when the maximum amount will be beneficially used; a statement of beneficial use; an application for a right-of-way, filed in accordance with AS 38.05.850, if access to or across state land is needed; a statement of the quantity of water requested, with documentation and calculations justifying the request if either the use or quantity is different from those listed in (d) of this section; for a water use of more than 100,000 gpd (0.15 cfs) from a stream, a description of the mean annual flow, or mean monthly flow if available.	
Section 401 Certification – Certificate of Reasonable Assurance; ADEC Division of Water Quality	Simultaneous with USACE permitting.	CWA, Section 401; 33 USC § 1344; 18 AAC 15	Authorizes the state to grant, deny, or condition certification of CWA Section 404 permits, Rivers and Harbors Act Section 10 permits, and MPRSA Section 103 permits.	Must accompany Sections 10/404/103 permits.	x	x	x	USACE will notify ADEC automatically when Section 404/10/103 permit application is received	<ul> <li>Coordination with EPA and USACE is necessary.</li> <li>Short-term variance required for open cut crossings of streams and water bodies. See 18 AAC 70.200</li> <li>Requires an Antidegradation Analysis. See 18 AAC 70.015</li> </ul>
APDES General Permit (GP) for Stormwater Associated with Large and Small Construction Activities for Alaska Construction General Permit (CGP); ADEC, Division of Water	2-4 wk.	CWA § 402; 33 USC §1342; 40 CFR §122 18 AAC 83	Allows for discharge of stormwater / surface water runoff from soil disturbing construction activities exposing one or more acres of cleared land to potential erosion and runoff to nearby surface waters. Developed as part of the APDES CGP for stormwater and as required by the EPA, the SWPPP is intended to prevent and minimize releases	Project disturbs greater than 1-acre and therefore requires a permit.	X	X	X	<ul> <li>Stormwater Pollution Prevention Plan (SWPPP)         <ul> <li>Site description</li> <li>Site map</li> <li>Summary of potential pollutant sources</li> <li>Spill prevention and response procedures</li> <li>Maintenance</li> <li>Management and Physical</li> </ul> </li> </ul>	<ul> <li>ADEC through the APDES program assumed primacy for the stormwater Permitting Program on October 31, 2009; ADEC has stated the process will remain similar as the one currently used by EPA.</li> <li>Generally submitted immediately before construction activities commence.</li> </ul>

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			of storm water into waters of the U.S.					<ul> <li>Controls Best Management Practices (BMPs)</li> <li>Erosion and sediment controls</li> <li>Management of runoff</li> <li>Employee training</li> <li>Control measures</li> <li>Monitoring</li> <li>Inspections and documentation</li> <li>An applicant is required to submit a Notice of Intent (NOI) to gain coverage under the GP</li> </ul>	<ul> <li>The SWPP prior to filin the CGP.</li> <li>Coverage r available u Linewide G</li> </ul>	P is developed g the NOI under may also be nder the Statewide P.
Prevention of Significant Deterioration (PSD); ADEC Division of Air Quality; Construction Permit for a Major Source of Hazardous Air Pollutant (HAP); ADEC, Division of Air Quality	1.5-2 yr.; 3 years if site in or near non- attainment or Class I airshed.	18 AAC 50.306; 18 AAC 50.316; 42 USC 7401 et seq.; AS 46.14	PSD permits apply to new major stationary sources and major modifications; HAP permits apply to major sources of HAPs subject to a standard under 40 CFR 63.	Must comply with the requirements of 40 CFR 52.21. Permit issued following the procedures and other requirements of 40 CFR 52.166(f) and (q)(2) and 40 CFR 52.21; application must be prepared and submitted per 40 CFR 63.5(d); dept. will issue permit only if the criteria of 40 CFR 63.5(e)(1) are met.	X	X	X	<ul> <li>ADEC approval of a modeling protocol is necessary</li> <li>PSD permits require significantly more analyses than Title V permits</li> <li>Typically, a long-range transport model is used to assess potential visibility issues</li> <li>An air quality related value (AQRV) analysis is usually required to address sulfate and nitrate deposition, visibility, and potential growth impacts</li> </ul>	<ul> <li>Must be ob beginning of</li> <li>A preconst plan may b ADEC and collecting of ambient da</li> <li>One-year of meteorolog also may b</li> <li>ADEC will public com will hold a p</li> <li>Payment of administrat required (the listed in 18</li> <li>All construct be filed und application</li> <li>Major sourd single permised</li> </ul>	tained before construction. ruction monitoring e required by may require one year of on-site ita. of on-site gical data collection e required. provide a 30-day ment period and public hearing. f various permit tive fees are ne fee structure is AAC 50.400). ction permits may der a single ree will be issued a nit incorporating all

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									construction permit requirements.
Title V Air Permit			Operations Permit		x	x	x		<ul> <li>This is the operations permit that is applied for after startup of operations).</li> <li>Corresponds to every PSD Permit secured for construction.</li> </ul>
General Conformity Determination						x			<ul> <li>FERC issues final GC Determination.</li> <li>Requires cooperation with ADEC on developing mitigation measures.</li> <li>FERC must issue prior to start of any project construction.</li> </ul>
Approval to Construct and Operate a Public Water Supply System; ADEC, Division of Environmental Health	6-9 mo.	18 AAC 80.200-235 Safe Drinking Water Act of 1974; Amended 1996; 42 U.S.C. § 300f	ADEC must approve construction and operations of water treatment systems.	Prior to construction, ADEC must approve detailed engineering reports, plans, and specifications for construction of a public water system.	X	X	X	<ul> <li>Purpose and type of construction</li> <li>Facility Information Form</li> <li>Drinking Water Program – Project Information Form</li> <li>Engineering Plan Review Checklists</li> <li>Construction and Operations Plan required</li> </ul>	
Domestic and Non- Domestic Wastewater Disposal System Plan Review; ADEC, Division of Water	Reviewed prior to construction; draft in EIS.	18 AAC 72.200 18 AAC 72.600 (Non- Domestic) ADEC approval under CWA Section 401	ADEC Plan Review and Approval is required for Domestic and Non-Domestic Wastewater Systems by State Wastewater Disposal Regulations.	Review of disposal plans needed to insure compliance with minimum standards of performance.	X	X	x	<ul> <li>Legal information</li> <li>Proposed project type</li> <li>Plan review</li> <li>Reports, drawings, and / or specifications</li> </ul>	<ul> <li>Approved in conjunction with Wastewater Disposal Permit and APDES Permit.</li> <li>Detailed engineering reports, plans and specifications must be signed and sealed by an Alaskan registered professional engineer.</li> </ul>
Domestic and Non- Domestic	1-2 mo.	18 AAC 72;	To protect the water quality of state land and water. ADEC	For disposal of wastewater from construction sites,	x	х	x	Coverage for Domestic and Non- Domestic Wastewater may be	The Statewide Pipeline GP proposes to include coverage

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Wastewater Disposal State Permits (18 AAC 72) and Alaska Pollutant Elimination Discharge (APDES) Permits (18 AAC 83); ADEC, Division of Water		AS 46.03.100; 18 ACC 15.120(c); 18 AAC 70 – Alaska Water Quality Standards; 18 AAC 83 – APDES Program	authorizes discharge of wastewater into and upon all waters and land surfaces. ADEC authorizes discharge of non-domestic and domestic wastewater (APDES permit).	waste water treatment facilities, underground injection, ballast water treatment facilities, etc. Domestic wastewater treatment facility (WWTF) required for any system that treats wastewater for disposal of water-borne human wastes or graywater from dwellings, commercial buildings, institutions, or similar structures.				<ul> <li>obtained through various General Permits or through the Statewide Pipeline GP.</li> <li>The Temporary Camp Practice Permit will NOT apply to camps described in RR1. To qualify for coverage under this permit, camps must be: Remote; Small (≤24 average persons/ 7day period); Temporary (&lt;14 Days); Only use pit privies, incinerating toilets, or composting toilets; and generate &lt;1,000GPD of Graywater.</li> <li>Because the Temporary Camp Practice Permit would not apply; camps may also need to seek separate coverage's for Solid Waste, Drinking Water, and Food Service through the Department's Environmental Health Division.</li> <li>Data needs address the application process prior to obtaining authorization. Whereas, BMPs are requirements under the permit after the authorization.</li> <li>Mixing Zone Analysis (if Applicable)</li> <li>Anti-degradation Policy analysis</li> <li>Wastewater Characterization</li> <li>Environmental Mapping of Discharge Locations</li> </ul>	for certain Non-Domestic and Domestic Wastewater Discharges. Coverage for Non-Domestic and Domestic Wastewater Discharges may also be possible under various other State Permits or APDES General Permits.
ADEC UIC Waste Water Disposal	Before injection activities	AS 46.03.100; AAC 72.010(a), 18 AAC 70, 18 AAC 72.215, and 18 AAC 72.500(a)	ADEC permits Class I wells under a waste water disposal permit <i>after</i> EPA issues the Class I permit requirements.	Compliance with Waste Disposal under AS 46.03.100 and 18 AAC 72."	X		X	<ul> <li>ADEC General Permit Notice of Intent (GP 2010DB0001) to ADEC</li> <li>Copy of the EPA UIC authorization.</li> <li>Description of project</li> </ul>	<ul> <li>Alaska Department of Environmental Conservation (ADEC) requires a Notice of Disposal with proposed flow- rates of maximum and</li> </ul>

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			Permit for disposal of domestic or Non-domestic wastewater.					•	Injection flow rates and volume Location of well and information on receiving area	•	average gallons per day and total injection volume in gallons in accordance with 18 Alaska Administrative Code (AAC) 72. ADEC Wastewater Disposal General Permit (2005DB0001) is available for use by owners/operators who have been issued a Class I injection well permit by the EPA.
Solid Waste Disposal Permits; ADEC, Division of Environmental Health	4-8 mo.	18 AAC 60; AS 46.03	The general permit (GP) for Const. and Ops. of a Monofill for the Storage of Oil and Gas Exploration and Production Waste and RCRA Non-Exempt Non-Hazardous Waste Generated on the North Slope is specific for storage of drilling waste generated on the ANS. Non-Municipal Landfill Permit Appl. are available for asbestos, drilling waste, wood waste, inert waste, and sewage solids.	Required for project activities that require disposal of solid wastes on state land or the handling and temporary storage of solid wastes (e.g., drilling).	X	X	X	•	Complete appropriate application from ADEC, Division of Environmental Health, Solid Waste Program General needs include description of the proposed facility, general topography and site conditions, applicable local ordinances, contact information, waste handling and processing information, location information, and facility design Operations Plan Monitoring Plan Closure Plan and cost estimate	•	Permitted Oxbow landfill and incinerator will be used to dispose of project construction and operation waste in PBU. GTP project is not proposing to develop additional landfill space in the Prudhoe Bay area. The Alaska LNG project should perform due diligence on determining long-term liability of using Oxbow landfill. Early years of Oxbow landfill use were very marginally controlled, making content of landfill and long- term liability a risk.
Oil Discharge Prevention and Contingency Plan; ADEC, Division of Spill Prevention and	Reviewed prior to construction; draft in EIS.	18 AAC 75.400495; 18 AAC 75.005090; AS 46.04.030	Approval of the plan is required prior to commencement of operation of vessels and oil barges on state waters or for facilities capable of storing more than 1,320 gallons above	Defines how state lands and waters will be protected from spill incidents.	X	X	X	•	Prevention Requirements for secondary containment, oil pipelines, oil storage and fueling operations Emergency actions Strategies and Scenarios are	•	Plans are reviewed every three years.

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Response			ground or more than 42,000 gallons underground.					<ul> <li>required to demonstrate ability to comply with State requirements</li> <li>Notifications in event of oil spill</li> <li>Chain-of-command</li> <li>Facility or tank vessel information</li> <li>Response planning standards</li> <li>Training</li> <li>Staff and equipment</li> </ul>	
Cultural, Historical, and Archeological Resources Consultation (Section 106 Review); ADNR, Office of History & Archaeology (OHA), and State Historic Preservation Office (SHPO)	Consultation— simultaneous with EIS; Programmatic Agreement (PA) covers review during construction. 30 days for Cultural Clearances	National Historic Preservation Act (NHPA), § 106, 16 USC § 470 et seq.; EO 11593, Protection and Enhancement of the Cultural Environment; Alaska Historic Preservation Act, AS 41.35.010- 240	Provides for the identification and protection of historic, archeological, and cultural properties; requires federal agencies to avoid and minimize impacts to properties on or eligible for the National Register of Historic Places (NRHP).	Must be addressed as part of the EIS process and USACE Section 404/10/203 permitting. A cultural clearance by SHPO is required for all state permits including some permits needed for field studies	X	X	x	<ul> <li>Consultation with FERC, ADNR, OHA, SHPO, and other federal agency cultural resource staff for NEPA Section 106 consultation.</li> </ul>	<ul> <li>North Slope Borough (NSB) Traditional Land Use Inventory should also be searched (see NSB IHLC Clearance)</li> <li>Must search the Alaska Heritage Resource Survey (AHRS) database.</li> <li>Alaska Cultural Resource Permit for investigation and collection permit (prior to geotechnical investigation at the GTP site and along proposed access road and pipeline corridors).</li> </ul>
Food Sanitation Permit and Food Service Permit; ADEC, Division of Environmental Health	1-2 mo.	18 AAC 31.020; AS 03.05.011 and .020; AS 44.46.020	Requires a permit for construction and operation of permanent, temporary, or mobile food-services, regardless of whether there is a charge for food.	Permit necessary to serve food at permanent camps or facilities; governed by Alaska Eating and Drinking Establishment Regulations.	х	X	x	<ul> <li>Application for Food Establishment Permit Form 18-31-APP.01</li> <li>Food Establishment Plan Review Supplement required</li> </ul>	Consolidated application for drinking water, food service, solid waste disposal, and domestic wastewater treatment and disposal for temporary camps.

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Open Burning Permit; ADEC	2-4 mo.	18 AAC 15.020; 18 AAC 50.065	Open-burning of woody debris material by developers if the intent is to clear and burn 40 acres or more per year.	Potentially needed to dispose of woody debris during clearing and grubbing.	x	X	X	<ul> <li>Develop an Open Burn Plan:</li> <li>Location, duration, and inclusive dates considered for the burn</li> <li>Location of all sensitive features</li> <li>How public will be informed</li> <li>Indicate coordination with concerned agencies</li> <li>Obtain weather forecasts and monitor changes</li> <li>Predicted smoke dispersion</li> <li>Enhancement of active fire phase and reduce the smoldering phase</li> <li>How to contact sensitive features</li> <li>Alternative disposal options</li> <li>Coordination with air quality authorities</li> </ul>	•	Permitted Oxbow landfill and incinerator will be used to dispose of project construction and operation waste. Refer to ADEC Open Burning Policy and Guidelines, 2006.
Open Burn Permits; ADNR, Division of Forestry	30 day notice	11 AAC 95.400-495; AS 41.15.010-41.15- 170	Burn permits required during the fire season for all burning, with few exceptions.	Required for the open- burning of materials (such as slash trees, shrubs or other organic material or other waste materials) on site.	×	×	x	<ul> <li>Burn permits are required for some Division of Forestry offices – applications must be submitted for those units that require burn permits within the established fire seasons.</li> <li>Check Alaska Wildland Fire Organization Administrative Units and Operational Centers status</li> </ul>	•	Permitted Oxbow landfill and incinerator will be used to dispose of project construction and operation waste. Check Alaska Wildland Fire Organization Administrative Units and Operational Centers status.
Permit to Drill; Alaska Oil and Gas Conservation Commission (AOGCC)	Varies by well class and complexity.	40 CFR 147-Subpart C; 20 AAC 25.002- 005; AS 31.05.090 – 31.05.120; 20 AAC 25.005080; 20 AAC 25.200 –.290	The UIC program for Class II injection wells in Alaska, other than those on Indian lands, is the program administered by the AOGCC, approved by EPA pursuant to Section 1425 of the SDWA, implemented June	A Permit to Drill (Form 10- 401) from AOGCC is required in order to drill a well for oil or gas in Alaska. This requirement applies not only to exploratory, stratigraphic tests, and development	x	(X)	x	• Operator must fill out Form 10-401 and provide accompanying information as required by regulation 20 AAC 25.002 for the Permit to Drill	•	Class II wells inject fluids which are brought to the surface in connection with natural gas storage operations, or conventional oil or natural gas production and may be commingled with waste waters from gas plants

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			1986.	wells, but also to injection and other service wells related to oil and gas activities.					<ul> <li>which are an integral part production operations, unl those fluids are classified hazardous waste at the tir of injection.</li> <li>If CoP provides CO<sub>2</sub> to the Operator to inject, it would under an approved area injection order.</li> </ul>
Title 16 Fish Habitat Permit; Alaska Department of Fish and Game (ADF&G)	15 days - 2 mo.	Alaska Fishway Act, AS 16.05.841 and Anadromous Fish Act AS 16.05.871	Project must notify and obtain authorization and approval for all activities within the limits of ordinary high water of any streams with fish presence. Required for water withdrawal from anadromous and resident fish streams.	Advice should be sought on ways to protect the anadromous fish stream's populations from the effects of withdrawing water. Gravel removal activities may require a Fish Habitat Permit if the mining site is located within or affects a designated anadromous fish stream.	X	X	X	<ul> <li>Title 16 Fish Habitat Permit to Conduct In-Water Activities Affecting Anadromous Fish Streams:</li> <li>Type and purpose of project</li> <li>Location and type of crossing (including legal description)</li> <li>Name of river, stream, or lake, and water body characteristics, including anadromous stream number, if applicable</li> <li>Plans, specifications, and aerial photos</li> <li>Project timeframe</li> <li>Description of any alteration, modification, bed, bank, or floodplain (including temporary or material deposited or removed), stream diversion, etc.</li> <li>Time of year when crossing would occur</li> <li>Description of precautions to minimize adverse impacts to fish and other aquatic organisms</li> <li>Hydraulic evaluation, if applicable</li> </ul>	<ul> <li>Advance consultation with ADF&amp;G should occur alon with NMFS EFH consultat</li> <li>ADF&amp;G Technical Report 93-9 provides guidelines f gravel pit siting and performance.</li> <li>Fish habitat permits may b required if ponds greater t 6-feet-deep support fish.</li> <li>Required for alteration or motorized crossing of fish- bearing streams.</li> </ul>

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Special Area Permit Application; ADF&G, Division of Habitat	1-2 mo.	AS 38.05.027; AS 16.20; 5 AAC 95.420-440; 5 AAC 95.700-770	Required for any disturbance- producing or habitat-altering activity that will occur in a designated state refuge, critical habitat area, or game sanctuary. May not be applicable.	Required for off-road travel and other field activities on State critical habitat areas (CHA) or game refuges (SGR). Required for Minto Flats SGR and Susitna Flats SGR.		x		<ul> <li>Special Area Permit Application:</li> <li>Applicant information</li> <li>Location of project site</li> <li>Description of the project or activity</li> <li>Plans and specifications of the scope of the proposed project or activity</li> <li>Purpose of the project or activity</li> <li>Timeframe</li> <li>Description of methods</li> <li>Access to project area</li> <li>Detailed map of project dimensions</li> <li>Current aerial photograph</li> <li>List of other required federal or state permits and authorizations</li> <li>Mitigation measures</li> </ul>	•	May require extensive environmental studies and public reviews. For project facilities that cross or use regulated lands. Coordination with ADF&G to develop site-specific plans and protocols, locations, and timing.
Material Sales Permit; ADNR, DMLW	12-18 mo., tied to SPCO Pipeline ROW Easement (see Item 54)	AS 38.05.110133; 11 AAC 71.005 et seq.; AS 27.19	Authority to govern sales of materials (sand, gravel, stone, and timber) by State of Alaska.	Gravel may be purchased from state lands as a negotiated or competitive bid; if opening a new site, mining and restoration plans must be approved; regs. govern sales, bids, pricing, bonding, and insurance	x	x	(X)	<ul> <li>Negotiated material sale application</li> <li>Environmental risk questionnaire</li> <li>Development Plan</li> <li>Reclamation Plan</li> <li>Bonding deposit and insurance</li> <li>More-involved public interest process for new undeveloped sites</li> </ul>	•	Large volume, competitive sale contracts from a new, undeveloped site begin with agency review. Preliminary and final findings must be written and public notice given. As per AS 27.19.030, the State of Alaska, ADNR is responsible for approving material site reclamation plans for all gravel mining operations located within the state. Regardless of the location/land ownership of the mining operation. Authorization may be required

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									jointly from the SPCO and DMLW if new material sites will be open to public sales following approval. Under AS 38.05.550 designated material sites are multi-user sites.
Oversize and Overweight Permit; Alaska Department of Transportation and Public Facilities (ADOT&PF), Division of Measurement Standards & Commercial Vehicle Enforcement	2-4 wk.	17 AAC 25.310-380; AS 44.33.020; 03 AAC 35.120	Required for project activities that require the use of oversize / overweight vehicles on public roads and highways.	May be necessary for transport of oversize / overweight construction materials on ADOT&PF- owned roads.	×	X	x	<ul> <li>Origin and exact route</li> <li>Overall length, overhangs, overall width, overall height</li> <li>Conditions</li> <li>Bridge condition attachment</li> </ul>	
State Temporary Land Use Permit (Uplands and Non- Marine Waters, Off Road Travel, and Tidal and Submerged Lands); ADNR, DMLW	Processed simultaneously with EIS process, 3-6 months after DEIS permit is issued.	AS 38.05.850; 11 AAC 96; 11 AAC 58.210	Temporary activities occurring on state lands, including activities in non-marine waters, uplands, off-road travel, and tidal and submerged lands.	For temporary project activities including access roads, camps, staging, and construction areas.	X	X	X	<ul> <li>Land Use Permit Application (102-1084A) including Supplemental Questionnaires for Use of Uplands and Non-Marine Waters, for Off-Road Travel, and Tide and Submerged Lands, if applicable:</li> <li>Project Description</li> <li>General vicinity and site maps (1:250,000 or 1:63,60) and CPQ</li> <li>Duration and season</li> <li>Specific location, including proposed access routes (GPS coordinates, township, range, section, meridian, and size of area)</li> <li>Boundaries and dimensions of the proposed area and relation to geographic features</li> <li>Site description (condition.</li> </ul>	<ul> <li>Geotechnical drilling would require a Temporary Land Use Permit.</li> <li>Individual LUPs can be issued during construction activities within 30 days</li> </ul>

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								improvements, use, materials present, noting any trash, garbage, debris, or signs of possible contamination)	
								<ul> <li>Description of toxic and haz. materials, and hydrocarbons, types, volumes, storage location, and desc. of spill plan and methods</li> </ul>	
								<ul> <li>Locations and dimensions of structures and storage areas</li> </ul>	
								<ul> <li>Site access including mode of transportation (including, if applicable, type and size of any aircraft), terrain, number, kind, and weight of vehicles, mileage, number of trips, season, water crossings</li> </ul>	
								Number of people	
								Non-refundable filing fee of \$100	
								<ul> <li>Use fees, certificate of insurance, and potentially performance guaranty (bond)</li> </ul>	
								<ul> <li>For off-road travel, include description of vehicles and weights to be used, terrain, mileage, stream and water body crossings, proposed travel dates, and volume of fuel and hazardous substances to be used</li> </ul>	
								<ul> <li>For uplands and non-marine waters, include description of temporary structures, harvest of non-timber related products, motorized equipment, storage and parking areas, water and wastewater, commercial recreation camps, and restoration plan if applicable</li> </ul>	

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								For marine waters (tide and submerged lands), indicate property owners and adjacent property owners, type of use, activity or development, description of structures, dredging of placement of fill activities, and restoration plan, if applicable	
Driveway/Approach Road Permit; ADOT&PF, Design and Engineering Services, ROW	2-3 mo.	AS 19.05.20; 17 AAC 10.020 - 17 AAC 10.095)	For access roads intersecting with a state road.	Needed if construction- access roads intersect a state highway.	(X)	X	X	<ul> <li>Recorded subdivision plat</li> <li>Engineered drawings for approach road</li> <li>Site plan of subject property indicating location of proposed driveway, related parking arrangements and location of improvements</li> <li>Proof of ownership or lease agreement</li> <li>Traffic Impact Analysis</li> <li>Traffic Control Plan</li> <li>Lane Closure Permit</li> <li>Schedule of Operations</li> <li>Retainer fee</li> </ul>	
Lane Closure Permit; ADOT&PF, Design and Engineering Services, ROW	1-2 mo.	17 AAC 20.017	Required for project activities that require the use of a highway ROW for access to or construction and maintenance of a utility facility. <i>May not be</i> <i>applicable</i>	Lane closures may be necessary during construction activities.		X	X	<ul> <li>Applicant information</li> <li>Activity location</li> <li>Purpose of closure</li> <li>Start and end dates</li> <li>Schedule details</li> <li>Traffic Control Plan</li> <li>Proof of insurance</li> <li>\$100 nonrefundable application fee</li> </ul>	A Lane Closure Permit should be anticipated for work done under a Utility Permit.

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Building Plan Review; Fire System Permit Alaska Division of Fire and Life Safety (State Fire Marshall's Office)	2-4 mo.	AS 18.70.080; 13 AAC 50.027; 13 AAC 50.035; 13 AAC 50.060	Required for the construction, repair, remodel, addition, or change of occupancy of any buildings or structures, or installation or change of fuel tanks. Must be approved before work is started. Fire System Permit is required for the design, installation, testing, or maintenance of fire alarm signaling systems or automatic fire suppression systems, and for the ability to provide direct oversight and supervision of work being performed on the fire systems.	For project facilities and potentially for some construction campsites and any permanent camps or operations centers. To ensure fire systems meet state standards	X	X	X	<ul> <li>Plan Review application</li> <li>Plans and specifications of occupied facilities including electrical systems, mechanical systems, fuel storage tanks and their appurtenances, automatic fire-extinguishing systems, and fire alarm systems must be submitted to the State Fire Marshal for examination and issuance of an approval certificate</li> <li>Compliance with applicable fire and building codes (13 AAC 50.020 Building Code; 13 AAC 50.025(30) <i>Fire Code</i>)</li> </ul>	
Airport Building Permit; ADOT&PF, Airport Leasing Office	6 mo.	17 AAC 42.280	Construction on a state airport requires written state- authorization.	Improvements to state airports for construction or operation will require state authorization.	X	X	X	<ul> <li>Applicant information</li> <li>Construction dates</li> <li>Site description</li> <li>List of proposed improvements</li> <li>Contractor name</li> <li>Construction plan drawings</li> <li>Site plan</li> <li>APDES NOI and SWPPP</li> <li>ADEC approval</li> <li>FAA approval (Form 7460-1)</li> <li>Drainage plan</li> <li>State Fire Marshall approval</li> </ul>	
Air Carrier Agreement or Terminal Lease or Land Lease;	6 mo.	AS 02.15; 17 AAC 42	Lease agreements on state- operated airports; could include air carrier agreements, terminal leases, or land leases of airport	Transportation of construction crews, ROW through airport property.	Х	X	X	<ul> <li>Lease application and site plan</li> <li>\$100 nonrefundable fee</li> </ul>	<ul> <li>30-day public notice is issued.</li> <li>Parcel can be offered through competitive process.</li> </ul>

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ADOT&PF, Airport Leasing Office			property.						
Pipeline ROW easement, Lease of State Land; ADNR, State Pipeline Coordinator's Office (SPCO), ROW and Permits Section	12-18 mo.	AS 38.05.075; AS 38.35.010-260 (specifically AS 38.05.850); 11 AAC 83.158(a); 11 AAC 80.005-055; 11 AAC 96.010; ( <u>11 AAC 58.200 - 11</u> <u>AAC 58.220</u> )	ROW lease required for roads and pipeline transportation of crude oil, seawater or freshwater and natural gas on state lands and submerged lands roads	State of Alaska owns the tidelands up to mean high water. Tideland and submerged land easements authorize use of state land for commercial and non- commercial purposes. Applicable to State lands above high tidewater for utility easements, roads, etc. that are not within the PL ROW.	×	X	(X)	<ul> <li>Land Use Permit Application (LUP)         <ul> <li>Environmental Risk Questionnaire</li> <li>LUP Supplemental Questionnaire for: Use of Marine Waters (Tide &amp; Submerged Lands)</li> <li>LUP Supplemental Questionnaire for: Use of Uplands and Non Marine Waters</li> <li>LUP Supplemental Questionnaire for: Off Road Travel</li> </ul> </li> <li>Plan of Operations (for activities on lands under an oil and gas lease. Requires lease mitigation measures analysis)</li> <li>Guaranty, bonding</li> <li>Reclamation and Closure Plan</li> </ul>	<ul> <li>Projects crossing state land require a ROW for infrastructure such as roads, pipelines, and power lines.</li> <li>Use of existing ROWs requires a Letter of Non- objection from current ROW holders prior to application submittal and from other adjacent landowners.</li> <li>Prior to granting the lease, agency staff must prepare a Best Interest Finding demonstrating the decision to grant the lease is in the state's best interest.</li> <li>ADNR leases are non- exclusive, and the State reserves the right to grant other leases within the same area.</li> <li>BPXA holds a tidelands lease for West Dock and existing roads.</li> <li>Pipeline and access route lease-holders will be identified.</li> <li>Does not apply to state parks, University of Alaska lands, or Alaska Mental Health Trust lands</li> <li>AS 38.05.075 leases and AS 38.05.850 easements or ROWs</li> </ul>

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									for pipelines and other facilities that are outside of the oil & gas lease or unit.
Special Use Permi DNR Division of Parks & Outdoor Recreation Park Use Permit	: 2-3 months	AS 38.05; AS 38.35, AS 38.05.1274, AS 1.21.010; AS 41.21.010 Denali State Park - 41.21.151; Captain Cook State Recreation Area – AS 41.21.415; Nancy Lake State Recreation Area – AS 41.21.455; Willow Creek State Recreation Area – AS 41.21.491; 11 AAC 12.010250 Land Use regulations	Alaska State Parks and Recreation Areas – Legislative designated areas (LDA) set aside for public use. Each recreation area or park have a management plan used for surface use permitting. Recreational Areas are established with the main goal of recreation purposes. State Parks are established for conservation, recreation, and fish and game management.	Required for all development activities on State Park Lands and Recreation Areas		X		Generally same information as submitted for Land Use Permits and Easements with some additional information specific to each park or recreation area and designated in park/recreational area management plan	Requires a higher level of analysis and scrutiny that a State Lease. Project routing needs to be justified as no other alternatives and that is consistent with the management requirements of the LDA. Meetings with ADNR and management unit needed early in the process to verify routing is in the least obtrusive location for their management goals and that all restrictions and conditions can be assessed against the planned construction plan.
Recreation Rivers Special Use Permit; DNR DMLW ( <b>IF</b> <b>APPLICBLE</b> )	Same as for other DNR Land Use Permits	Recreation Rivers Act (AS 41.23. 41.23.400 - 510 AS 38.05.035(e); 11 AAC 09.030; 11 AAC 09.005; 11 AAC 09.200; 11 AAC 09.200	LDA- Recreational Use Rivers Permit is issued for activities in legislatively designated recreational river areas.	Permit is needed for activities not listed as a "Generally Allowed use". Needed for non-recreation activities within the Recreation Rivers Management Area (Deshka River, Alexander Creek, Yentna)		x		<ul> <li>Susitna Basin Recreation Rivers Management Plan area — management guidelines for development and use</li> <li>Development May require a "Best Interest of the State" Finding</li> </ul>	Requires a higher level of analysis and scrutiny that a State Lease. Project routing needs to be justified as no other alternatives and that is consistent with the management requirements of the LDA. Meetings with ADNR and management unit needed early in the process to verify routing is in the least obtrusive location for their management goals and that all restrictions and conditions can be assessed against the planned construction plan.
ROW Lease;	12-18 mo., tied to SPCO Pipeline ROW	AS 38.05, AS 38.35, 11 AAC 54.030. 11	To access University of Alaska	Project activities that require use of University		X		Description of proposed activity, including access and any vehicles	Coordination with University     of Alaska to develop site-

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University of Alaska	Easement Lease (see Item 54)	AAC 58.120	lands	of Alaska lands.				<ul> <li>and equipment that would be used</li> <li>Duration, start date and end date</li> <li>General vicinity and detailed site maps</li> <li>Location and description of the property and access routes (coordinates, township, range, section, meridian, and size of area)</li> <li>Description of site development considerations (e.g., sensitive habitats, physical hazards)</li> </ul>	specific plans and protocols, locations, and timing.
ROW Lease; Alaska Mental Health Trust Authority	12-18 mo., tied to SPCO Pipeline ROW Easement (see Item 54)	AS 44.37.050(a) AS 38.05.801; 11 AAC 99; 11 AAC 51.085; AS 38.05.801	To access Alaska Mental Health Trust Authority lands.	Project activities that require use of Alaska Mental Health Trust Authority lands.		X		<ul> <li>Description of proposed activity, including access and any vehicles and equipment that would be used</li> <li>Duration, start date and end date</li> <li>General vicinity and detailed site maps</li> <li>Location and description of the property and access routes (coordinates, township, range, section, meridian, and size of area)</li> <li>Description of site development considerations (e.g., sensitive habitats, physical hazards)</li> <li>Known encumbrances on the property (e.g., ROW, leases, etc.) or other property conflicts</li> <li>Proof of commercial, general, and business auto liability insurance</li> <li>Non-refundable application fee</li> </ul>	Coordination with Alaska Mental Health Trust Authority to develop site-specific plans and protocols, locations, and timing.
Utility Permits ROW; ADOT&PF	3 mo.	17 AAC 15.	A Utility Permit will be required for any location where the pipeline occupies the highway	For facilities crossing utility ROWs.	(X)	Х	х	<ul> <li>Type of facility</li> <li>Location of facility</li> <li>Location and extent of required</li> </ul>	ADOT&PF has its own Environmental Program. 17 AAC 12.040 identifies its

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			right of way (crossings or longitudinal). This would also apply to permanent pipeline infrastructure – such has block valves or compressor stations, etc.					<ul> <li>clearing</li> <li>Joint use (if applicable)</li> <li>Facility construction plans and specifications (detailed)</li> <li>A diagram or drawing showing the location of all known overhead, surface, and underground facilities existing in the vicinity of the proposed facility</li> <li>Permit applications for pipeline installations must describe the nature of the substance to be transmitted; the maximum working, test, and design pressures; and the design standards for the pipe</li> <li>Approval from applicable land owners/managers</li> <li>Construction period</li> </ul>	<ul> <li>partial adoption of federal NEPA requirements</li> <li>Additional requirements for section line utilities and encroachments</li> <li>May require additional permits for work in ROW</li> </ul>
Encroachment Permit; ADOT&PF	6 mo,	17 AAC 10.010 - 17 AAC 10.015, AS 19.05.010.	Required for temporary use of the ROW, such as for construction staging areas. It is issued for up to a 5 year term.	For crossing ADOT&PF highway ROW.	(X)	X	X	<ul> <li>Applicant information</li> <li>Proposed use of ROW</li> <li>Property appraisal</li> <li>Description of structure</li> <li>Size of proposed permit area</li> <li>Detailed site layout / site plan</li> <li>Required photographs</li> <li>Fee negotiation</li> </ul>	Public notice is required.
				LOCAL APPROVALS					
Surface Use Permits, Leases; LNOs; Native Corporation and Village Corporation lands			Surface Use of Lands	Construction, gravel use, surveys - any use of Native lands	x	X	X	Each Regional or Village Corporation will have its own requirements. Engage Stakeholder Relations group in identifying and negotiating lands use agreements.	

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Administrative Approvals and Development Permits; NSB Permitting and Zoning Division	6 mo.	NSB Municipal Code; 19.50 and 19.60 and 18.54.060 for zoning permits	Development projects, environmental and engineering surveys, off-road travel, solid waste disposal, and gravel extraction requires a Development Permit from the NSB.	Permit(s) and administrative approvals are necessary for any construction, operation, or studies conducted in the NSB.	X	X		<ul> <li>General Development Permit</li> <li>Road Plan</li> <li>Utilities</li> <li>Zoning</li> <li>Land Use Permit</li> <li>Building Permit</li> <li>Landfill Use Permission</li> <li>Air and noise</li> <li>Wetlands</li> <li>Habitat</li> <li>Subsistence</li> <li>Wildlife</li> </ul>	•	NSB provides comments to DCOM regarding projects within the coastal zone. NSB primarily comments on USACE Section 404/10/103 permits through the ACMP process. Project stipulations for marine dredging will require Conflict Avoidance Agreements with Alaska Eskimo Whaling Commission (AEWC) and the Whaling Captains of Nuiqsut. Public notice is required and the permit goes before the Planning Commission for Administrative Approval. Haul Road Corridor Plan necessary for the administrative review.
Construction in ROW; Fairbanks North Star Borough (FNSB)	6 mo.	Service Areas Title FNSBC 14.03.050	Excavation and Construction on Public Roads within Road Service Areas Permit application.	Pipeline construction and access may require FNSB roads within their road service areas.		X		<ul> <li>Project Description</li> <li>Plans or diagrams</li> <li>Borough computes allowable time for completion of roadway restoration and appropriate security</li> <li>Permit fee</li> </ul>		
Floodplain Permit; FNSB Department of Community Planning	6 mo.	Buildings & Construction Title 15.04.040050; FNSBC 21.40.010- .030	Construction within a flood hazard area requires a floodplain permit from the Department of Community Planning.	If pipeline construction occurs within a FNSB floodplain, a permit would be required.		X		<ul> <li>Floodplain Permit Application</li> <li>Certified report from an engineer within one year of the application</li> <li>Construction Site Storm Water Runoff Control</li> </ul>		
Zoning Permit;	6 mo.	Zoning Title FNSBC	No building, structure or land shall be erected or altered	If the project construction occurs in a zoning district		Х		Investigate zoning district definitions		

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FNSB		18.04.030; 18.54.060	unless in conformity with the regulation specific from the zone in which it is located.	that does not allow gas pipeline as a use, a zoning variance would be required.				along pipeline route	
Temporary Land Use Permit; FNSB	6 mo.		Development projects, environmental and engineering surveys, off-road travel, solid waste disposal, and gravel extraction requires a Development Permit from the FNSB.	A Temporary Land Use Permit is required for activities on FNSB lands. Some uses are considered casual use and would not require a permit. If long-term land use is required (five years or longer) an easement would be required from the FNSB.		x		<ul> <li>Temporary Land Use Permit application process:</li> <li>Project purpose</li> <li>Description of activities including offroad travel, camps, and water use</li> <li>Field study locations, timing, and protocols from the field teams</li> <li>General vicinity and specific location maps, including nearby existing development and natural features</li> <li>Start-up and completion dates</li> <li>Mode of transportation (including aircraft) to access site including equipment</li> <li>If off-road travel necessary, include all vehicles and equipment, and period of travel</li> <li>Identification of fuel / hazardous materials, solid waste treatment / management, snow removal, air emissions, noise / vibration, and sensitive habitats involved</li> <li>List of other required federal and state permits</li> <li>\$100 application fee</li> </ul>	<ul> <li>A long-term easement (five years or more) would be heard by the zoning board and would require a minimum of three months from completion of process to determination.</li> </ul>
IHLC Clearance, The North Slope Borough's (NSB) Inupiat History,	30 days for IHLC clearance, form 600 IHLC resource information can take	NSBMC §19.50.030(F) and §19.60.040(K)	A Certificate of IHLC/TLUI Clearance is a formal approval process developed by the NSB Department of Planning and	A cultural clearance is required before any land use or development permit can be issued in the NSB. Requires a request under	Х	X		<ul> <li>Application Forms and fees</li> <li>Description of activity</li> <li>Record of Consultation with the nearest affected Village Tribal</li> </ul>	• The NSB will not issue a LUP or Development Permit approval unless an IHLC clearance is completed.

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Language, and Culture (IHLC) Division of the Planning Department	60 days		Community Services (DPCS), IHLC Division to ensure that those sites listed in NSB's TLUI are protected.	form 600 for IHLC Resource information, Form 500 request for a cultural Resource clearance.				<ul> <li>President(s) and City Mayors, preapp with IHLC</li> <li>A study of the proposed development site by a professional trained to identify and document any possible Critical Sites within the vicinity of the proposed development site. This study must include: (a) field survey, (b) literature review, and (c) record of consultation with the nearest affected Village Tribal President(s) and City Mayor(s) to ensure all sites are included in the study.</li> <li>For all new sites identified during study work, GPS coordinates and GIS data is to be provided</li> <li>Any previous permits for the site</li> <li>SHPO clearance</li> </ul>	<ul> <li>Once Form 600 is complete, it will not need to be repeated.</li> </ul>
Kenai Peninsula Borough Code of Ordinances Permits	6 mo.	<ul> <li>Title 10 – Health and Safety</li> <li>Chapter 10.04 - Solid Waste Disposal</li> <li>Chapter 10.20 - Hazardous Materials Reporting and Placarding</li> <li>Title 21 – Zoning</li> <li>KPB 21.18.081 Conditional Land Use Permit; KPB</li> <li>21.06 Floodplain Management:</li> <li>KPB 21.18 -</li> </ul>	Regulations for site development, construction, operation, land use, and use of gravel or timber.	Facility construction regulations affecting floodplains, anadromous fish streams, material extraction, solid waste handling and disposal; temporary use of municipal lands and special protections for anadromous streams and floodplains		X	X	<ul> <li>Maps, drawings and project plans to support permit applications.</li> <li>Management plans for gravel pit and timber clearing</li> <li>Kenai River Center Permit Form</li> <li>For Lease —development plan and development and construction time table.</li> </ul>	<ul> <li>Coordination with the KPB Planning Commission to develop site-specific plans and protocols, locations.</li> </ul>

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Permit or Plan; Agency	Estimated Time for Permit Approval	Statute/Regulation	Definition	Why Permit is Required	U/S	M/S	D/S	Data Needs	Commentary
		Anadromous Streams Habitat Protection • KPB 21.29 - Material Site Permits; • Material (Gravel) and Forest Resources KPB 17.10.200210 • Temporary Land Use (up to 4 years) KPB 17.10.180							
KPB Land Use - Easement	3-6 months	KPB 17.10.140 - 17.10.160;	Granting rights-of-way and easements	Use of Borough lands for greater than 5 years		X	X	Development plan which shall disclose the use, nature of improvements, estimate of value of the improvements, and a development and construction time table.	
KPB Right-of-way construction permits		КРВ 14.40	Construction and use of rights of way	<ul> <li>Right-of-way use permits:</li> <li>Construction;</li> <li>Closing rights-of-way;</li> <li>Traffic routing; and</li> <li>Oversize and overweight permits.</li> </ul>		X	X	<ul> <li>Statement of the length and width of right-of-way to be constructed, the proposed uses after construction, and a drawing on the plat of the location and proposed design and method of the construction;</li> <li>Approximate locations of flood plain, floodways, wetlands, streams, lakes, or other water bodies adjacent to or within 50 feet of the outer boundaries of the right-of-way;</li> <li>Approximate grades of the natural terrain and final grade of the proposed road;</li> <li>Soil conditions of the area subject to</li> </ul>	

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Permit or Plan; Agency	Estimated Time for Permit Approval	Statute/Regulation	Definition	Why Permit is Required	U/S	M/S	D/S	Data Needs		Commentary
								<ul> <li>construction;</li> <li>Identification of all properties to be served or accessed by the proposed construction;</li> <li>Amount, type and placement of materials used in construction; and</li> <li>Where information provided by existing topographic maps, aerial photography, and photographs is inadequate to accurately reflect conditions of the right-of-way or potential problems created or exacerbated by construction, additional information, surveys, or engineering analysis may be required prior to issuance of a permit.</li> </ul>		
Matanuska-Susitna Borough Permits	6 mo.	<ul> <li>8.30.155 Air</li> <li>Operation Permit</li> <li>11.10.020 -</li> <li>Encroachment</li> <li>permits</li> <li>11.30.030- Utility</li> <li>permit</li> <li>17.30 Conditional</li> <li>Use Permit (CUP)</li> <li>earth material</li> <li>extraction</li> <li>17.02.020 Land Use</li> <li>Permit – placement of</li> <li>building within 75 feet</li> <li>of waterway</li> <li>17.64 CUP -waste</li> <li>incineration</li> <li>17.04.120130 Nancy</li> </ul>	Regulations for construction within a flood hazard area, gravel extraction, and use borough lands including indoor facilities and outdoor storage areas at Port MacKenzie.	To access and use borough lands during construction if necessary including material extraction. Includes use of Point MacKenzie dock, transfer of goods to rail/truck, etc.		X		Completed forms and fees for designated permits. Negotiated lease, public notification, and borough assembly approval are required for some permits.	•	Depending on project logistical needs Environmental Standards and Compliance requirements for: CHAPTER 8.05: Solid Waste Chapter 8.25: Water Pollution Control CHAPTER 8.30: Environmental Protection CHAPTER 8.45: Building and Construction Codes (mechanical, building, plumbing, electrical, fire, design and construction) 11.30.060 Utility Standards 17.55 Land use – setbacks and screening for easements

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		Lake State Recreational Area Special Land Use District – Land Use Permit 17.17.150 Denali State Park CUP MacKenzie Special Use District Development Permit - 17.23.150220 17.29.100 – Flood Hazard Dev't Permit Dev. Permit 17.60.030 -CUP material extraction( Title 18 Port Title 23 Real Property Management Title 28 Natural Resource Utilization 28.60.080 Timber Transport Permit							17.25.150 Flood Damage Prevention and Coastal Management Plan CHAPTER 17.55: Setbacks and Screening Easements 17.61.100 Hazardous Materials Standards
Denali Borough Permits (Temporary Use and Lease)	3-6 mo.	Title 4 Real Property Acquisition, Management, and Disposal 4.10.050 Leasing borough land. 4.10.070 Temporary Use of Borough Lands	Regulations for borrow material extraction and sales; Temporary use of borough land; and lease of borough land.	To access and use borough lands during construction if necessary including material extraction.		x		Completed application. Management Plan for project. Public notification and approval from borough assembly required for some permits.	•
			OTHER	APPROVALS AND REVIEW	IS				

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Permit or Plan; Agency	Estimated Time for Permit Approval	Statute/Regulation	Definition	Why Permit is Required	U/S	M/S	D/S	Data Needs		Commentary
Letter of Non- Objection; BPXA and SPCO	3-6 mo.		Access to BPXA-leased lands.	To access lands previously leased by BPXA.	x	x		<ul> <li>Description of activities</li> <li>Field study protocols, timing, and locations from field team</li> <li>Air monitoring locations and protocols by air permitting team</li> <li>Invasive field study protocols, timing, and locations, and GTP and pipeline route locations from engineering teams</li> <li>Access route(s) and mode(s) of transportation</li> <li>Personnel</li> </ul>	•	Early coordination with BPXA is critical to the successful permitting and planning for ROW and land leases and to receive right-of-entry (ROE) letters. Interface is needed to begin negotiations for letters of non- objection for collocation of the gas pipeline and ancillary facilities within existing BPXA ROWs on state land.
Letter of Non- Objection; Alyeska Pipeline Service Company (APSC), SPCO, BLM Authorized Officer, and Joint Pipeline Office (JPO)	3-6 mo.		For access through or activities on any portions of Trans- Alaska Pipeline System (TAPS) facilities, fuel gas line, access roads, work pads, and / or pipeline.	To access lands previously leased by ASPC.		x		<ul> <li>Start and end dates</li> <li>Description of proposed access and purpose, including details of vehicles, equipment, communication system(s), mitigation, security measures, lodging, meals, and waste disposal</li> <li>Number and names of all personnel, including subcontractors</li> <li>Each location by TAPS mile point or other facility ID (e.g., pump station)</li> <li>Land ownership</li> <li>Training, field coordination, and proof of commercial, general, and business auto liability insurance required</li> </ul>	•	Early coordination with APSC is critical to the successful permitting and planning for ROW and land leases and to receive ROE letters. Interface is needed to begin negotiations for letters of non- objection for collocation of the gas pipeline and ancillary facilities within existing APSC ROWs on federal and state, and military land.
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Permit or Plan; Agency	Estimated Time for Permit Approval	Statute/Regulation	Definition	Why Permit is Required	U/S	M/S	D/S	Data Needs	Commentary
Response Plans, Safety and Operations Documentation; USDOT, PHMSA	3-6 mo.	Pipeline Safety Regulations, 49 CFR 190-199 Pipeline Inspection, Protection, Enforcement, and Safety Act of 2006, Public Law 109-468, 49 USC 60101 Pipeline Safety Statues, 49 USC 60101-60301	PHMSA is the primary federal regulatory agency responsible for protecting people and the environment from the risks associated with transporting hazardous materials, via pipeline and other modes of transportation. Their goals are to ensure that pipelines are safe, reliable, and environmentally sound, and to be prepared for spill response in order to minimize harmful consequences. PHMSA also works to standardize requirements for pipelines that cross international borders.	Pipeline design must conform to the Pipeline Safety Regulations and Safety Statutes established by law and enforced by PHMSA.		X		<ul> <li>Response Plans</li> <li>Annual Accident, and Safety-Related Condition Reporting</li> <li>Incident Reports</li> <li>Procedural Manual for operations, maintenance, and emergencies</li> <li>Records</li> <li>Pipeline personnel Qualification Program and documentation</li> <li>Integrity Management – Pipeline Integrity Management Plan</li> </ul>	<ul> <li>The Office of Pipeline Safety, within the USDOT PHMSA, inspects, regulates, and enforces interstate and intrastate gas and liquid pipeline safety requirements in Alaska.</li> <li>The Pipeline Safety Enforcement Program enforces compliance with pipeline safety regulations and confirms operators are meeting PHMSA expectations for safe, reliable, and environmentally sound operation of their facilities.</li> </ul>
Response Plans, Safety and Operations Documentation; USDOT, PHMSA	3-6 mo.	Hazardous Materials Regulations (HMR), 49 CFR 100-185 Federal Hazardous Materials Transportation Law of 2005, 49 USC 5101-5128	The HMR are issued by PHMSA and govern the transportation of hazardous materials by highway, rail, vessel, and air.	Transportation of hazardous material by highway, rail, vessel, and air to and from project facilities are regulated by the HMR.	(X)	X	(X)	<ul> <li>Oil Spill Prevention and Response Plans</li> <li>Security Plans</li> <li>Hazardous Materials Communications</li> <li>Emergency Response Information</li> <li>Training Requirements</li> <li>Shipment Requirements and Documentation</li> </ul>	The Hazmat Enforcement Office conducts compliance, incident and accident inspections and investigations; performs safety, performance and regulatory adequacy and fitness determinations; executes outreach, education, and training activities; and provides feedback, information, and intelligence.
Operations Manual and Emergency Manual; USCG	1 mo.	Executive Order 10173; Magnuson Act (50 U.S.C. § 191); the Ports and Waterways Safety Act of 1972, as amended (33 U.S.C. § 1221, et seq.); the	The Coast Guard exercises regulatory authority over waterfront LNG facilities and the associated LNG vessel traffic, which affect the safety and security of port	Required by 33 CFR 127.019 to be approved by the local Captain of the Port (COTP) prior to the transfer of LNG.			X	<ul> <li>Operations Manual:</li> <li>Description of the transfer system</li> <li>Duties of each person assigned for transfer operations</li> <li>Maximum relief valve setting or maximum allowable working</li> </ul>	

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		Maritime	areas and navigable waterways					pressure of the transfer system	
		Transportation						Facility contact information	
		(46 U.S.C. § 701), the Safety and						• A description of the security systems for the marine transfer area for LNG;	
		Accountability For Every Port Act (46 U.S.C. § 70101), and 33 CFR 127						<ul> <li>Procedures for transfer operations including gauging, cool down, pumping, venting, shutdown, start- up, security incidents, and communications systems</li> </ul>	
								Training programs	
								Emergency Manual:	
								LNG release response procedures	
								Emergency shutdown procedures	
								<ul> <li>A description of the fire equipment and systems and their operating procedures;</li> </ul>	
								<ul> <li>A description of the emergency lighting and emergency power systems;</li> </ul>	
								Emergency response contact information	
								Shelter description	
								First aid procedures and locations	
								Emergency procedures for mooring and unmooring a vessel.	
Facility Security Plan; USCG	2 mo.	Executive Order 10173; Magnuson Act (50 U.S.C. § 191); the Ports and Waterways Safety Act of 1972, as amondod (32 U.S.C.	The Coast Guard exercises regulatory authority over waterfront LNG facilities and the associated LNG vessel traffic, which affect the safety and security of port aroas and	Required by 33 CFR 105.410 to be approved by the local Captain of the Port (COTP) prior to the transfer of LNG.			(X)	<ul> <li>Facility Security Plan:</li> <li>Security administration and organization</li> <li>Personnel training</li> <li>Drillo and oversions</li> </ul>	
		§ 1221, et seq.); the Maritime	navigable waterways					<ul> <li>Records and documentation</li> </ul>	

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Permit or Plan; Agency	Estimated Time for Permit Approval	Statute/Regulation	Definition	Why Permit is Required	U/S	M/S	D/S	Data Needs	Commentary
		Transportation Security Act of 2002						Response to change in MARSEC     Level	
		(46 U.S.C. § 701), the Safety and						<ul> <li>Procedures for interfacing with vessels</li> </ul>	
		Accountability For						Declaration of Security	
		U.S.C. § 70101), and						Communications;	
		33 CFR 105						<ul> <li>Security systems and equipment maintenance</li> </ul>	
								<ul> <li>Security measures for access control, including designated public access areas</li> </ul>	
								<ul> <li>Security measures for restricted areas</li> </ul>	
								<ul> <li>Security measures for handling cargo</li> </ul>	
								<ul> <li>Security measures for delivery of vessel stores and bunkers</li> </ul>	
								Security measures for monitoring	
								Security incident procedures	
								<ul> <li>Audits and security plan amendments</li> </ul>	
								<ul> <li>Facility Security Assessment (FSA) report</li> </ul>	
								<ul> <li>Facility Vulnerability and Security Measures Summary (Form CG– 6025)</li> </ul>	
Facility Response	6 to 12 months if fuel	Facility Response	Facilities that store and use oil	Facilities that could	(X)	(X)	(X)	Emergency Response Action Plan	EPA Facility Response Plans
Plan;	storage exceeds	Plan Rule;	are required to prepare and	reasonably be expected to				Facility information	are usually addressed by
EPA Section 311 of the CWA, as amended by the Oil Pollution Act of 1990; Section Act of 1990; Section 311 of the CWA, as amended by the Oil Pollution Act of a worst-case oil discharge. If applicable based navigal	the environment by discharging oil into or on navigable waters are				Emergency notification, equipment, personnel, and evacuation information	the State's Oil Discharge Prevention and Contingency Plan.			
			on volume of fuels to be stored.	required to prepare and			1	<ul> <li>Identification and analysis of</li> </ul>	

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Agency	Permit Approval	Statute/Regulation	Definition	why Permit is Required	0/5	11/3	0/5	Data Needs	Commentary
		Oil Pollution Provention and		submit a Facility				potential spill hazards and previous	
		Response Regulation;		Response i lan.				- Discussion of discharge detection	
		33 USC 123(j)(5);						procedures and equipment	
		40 CFR 112.20 and 112.21						Detailed implementation plan for response, containment, and disposal	
								<ul> <li>Description and records of self- inspections, drills, and exercises, and response training</li> </ul>	
								<ul> <li>Diagrams of Facility Site Plan, drainage, and Evacuation Plan</li> </ul>	
								Security	
								Response Plan coversheet	
Key:									
U/S = Upstream									
M/S = Midstream									
D/S = Downstream									
X = Applicable									
(X) = Potentially appl	icable, dependent on f	inal siting and design							
I = Interdependent F	acilities								

## APPENDIX D SUMMARY OF PUBLIC, AGENCY, AND STAKEHOLDER ENGAGEMENT

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## Table D-1. External Correspondence

Correspondence Date	External Group/Agency	Type of Correspondence	Торіс
6/27/2013	Bureau of Land Management (BLM)	Letter	Request for 2002 Cultural Resources GIS Data
7/1/2013	Bureau of Land Management (BLM)	Letter	Description of Work Activities for Next Fiscal Year
7/1/2013	Alaska Department of Natural Resources (ADNR)	Letter	Description of Work Activities for Next Fiscal Year
10/14/2013	Alaska Native Tribes / Stakeholder Update Mailing	Letter	Notification of Nikiski as lead site location
12/9/2013	Bureau of Land Management (BLM)	Letter	Description of Work Activities for Fiscal Year 2014
2/25/2014	Alaska Department of Environmental Conservation (ADEC)	Letter	Meteorological and Ambient Air Monitoring Program Site Approval Request, Nikiski
4/29/2014	Alaska Department of Natural Resources (ADNR)	Letter	Amended work plan for fiscal year 2014
5/28/2014	U.S. Army Corps of Engineers (USACE)	Letter	Wetlands Determination Protocol
6/30/2014	Alaska Department of Environmental Conservation (ADEC)	Letter	Quality Assurance Project Plan for Air Quality and Meteorological Monitoring Program – Nikiski
8/13/2014	Alaska Department of Fish and Game (ADF&G)	Letter	Review of Fish Studies Data Gathered by the Alaska Pipeline Project and the Alaska LNG Project

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Correspondence Date	External Group/Agency	Type of Correspondence	Торіс
8/13/2014	Alaska Department of Natural Resources (ADNR)	Letter	Review of Cultural Resources Reports Submitted by the Alaska Pipeline Project and the Alaska LNG Project
8/13/2014	Bureau of Land Management (BLM)	Letter	Review of Cultural Resources Reports Submitted by the Alaska Pipeline Project and the Alaska LNG Project
8/13/2014	U.S. Army Corps of Engineers (USACE)	Letter	Review of Wetland Studies Data Gathered by the Alaska Pipeline Project and the Alaska LNG Project
9/26/2014	Stakeholder Update Mailings	Letter	Project & FERC pre-filing process overview
10/23/2014	Alaska Native Tribes	Letter	Request your assistance in the identification of archaeological sites or Traditional Cultural Properties – generic letter
10/27/2014	National Marine Fisheries Service (NMFS)	Letter	Requests for information regarding federally threatened or endangered species or critical habitat that may occur in the vicinity of the Project
10/27/2014	U.S. Fish and Wildlife Service (USFWS)	Letter	Requests for information regarding federally threatened or endangered species or critical habitat that may occur in the vicinity of the Project
10/27/2014	Bureau of Land Management (BLM)	Letter	Request for Informal Consultation under Section 106 of the National Historic Preservation Act
10/27/2014	Alaska Department of Natural Resources (ADNR)	Letter	Request for Informal Consultation under Section 106 of the National Historic Preservation Act
10/30/2014	Alyeska Pipeline Service Company (APSC)	Letter	Letter from APSC regarding analysis of TAPS operation and/or integrity concerns with Proposed Project route

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Correspondence Date	External Group/Agency	Type of Correspondence	Торіс
11/11/2014	Alaska Department of Natural Resources (ADNR)	Letter	Cultural Resources Evaluation, Alaska LNG Project – Proposed 2014 Ambient Air Quality Station, Alaska LNG Project, Nikiski, Alaska

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## Table D-2. External Meetings and Engagements

Meeting Date	External Group/Agency	Meeting Objective	Primary Contact
5/14/2013	Alyeska Pipeline Service Co. (APSC)	Project Introduction	Peter Nagel, APSC Senior Landowner Rel. Spec. P.O. Box 196660, MS 569 Anchorage, AK 99519-6660 907-787-8170 nagelpc@alyeska-pipeline.com
5/15/2013	State Pipeline Coordinator's Office (SPCO)	Discuss 2013 field studies scope and reimbursable services agreement	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov
5/16/2013	Bureau of Land Management (BLM)	Discuss 2013 field studies scope, submit draft SF299 form, and discuss reimbursable services agreement	Robert Lloyd, BLM Program Mgr. – Alaska Land Transfer 222 W. 7th Avenue #13 Anchorage, AK 99513 907-271-4682 rlloyd@blm.gov
5/20/2013	Federal Energy Regulatory Commission (FERC)	Discussion regarding the project and the pre-filing process	Rich McGuire, FERC Acting Dir., Div. of Gas – Env.& Eng. 888 First Street NE, Room 62-15 Washington, D.C. 20426 202-502-6177 rich.mcguire@ferc.gov
5/29/2013	Bureau of Land Management (BLM)	Delivery and review of draft SF299 application	Robert Lloyd, BLM Program Mgr. – Alaska Land Transfer 222 W. 7th Avenue #13 Anchorage, AK 99513 907-271-4682 rlloyd@blm.gov

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Meeting Date	External Group/Agency	Meeting Objective	Primary Contact
6/4/2013	State Pipeline Coordinator's Office (SPCO)	Delivery and review of General Use Notification	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov
6/4/2013	Bureau of Land Management (BLM)	Delivery and review of Casual Use Notification	Robert Lloyd, BLM Program Mgr. – Alaska Land Transfer 222 W. 7th Avenue #13 Anchorage, AK 99513 907-271-4682 rlloyd@blm.gov
6/5/2013	Alyeska Pipeline Service Company (APSC)	Delivery and review of access request forms	Peter Nagel, APSC Senior Landowner Rel. Spec. P.O. Box 196660, MS 569 Anchorage, AK 99519-6660 907-787-8170 nagelpc@alyeska-pipeline.com
6/10/2013	North Slope Borough (NSB)	Discussion regarding permit application	Rhoda Ahmaogak, NSB Planning & Community Services Dir. 1274 Agvik St. Barrow, AK 99723 907-852-0320 rhoda.ahmaogak@north-slope.org
6/14/2013	Bureau of Land Management (BLM)	Discussion regarding status of Archaeological Resources Protection Act (ARPA) permit application	Robert Lloyd, BLM Program Mgr. – Alaska Land Transfer 222 W. 7th Avenue #13 Anchorage, AK 99513 907-271-4682 rlloyd@blm.gov
6/21/2013	Bureau of Land Management (BLM)	Discussion regarding Archaeological Collection Permit	Robert Lloyd, BLM Program Mgr. – Alaska Land Transfer 222 W. 7th Avenue #13 Anchorage, AK 99513 907-271-4682 rlloyd@blm.gov

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Meeting Date	External Group/Agency	Meeting Objective	Primary Contact
6/28/2013	Bureau of Land Management (BLM)	Delivery and review of cost reimbursement agreement	Robert Lloyd, BLM Program Mgr. – Alaska Land Transfer 222 W. 7th Avenue #13 Anchorage, AK 99513 907-271-4682 rlloyd@blm.gov
8/15/2013	Alaska State Legislators	Field trip to view 2013 summer field season studies	Hans Neidig, ExxonMobil Public and Government Affairs 3301 C Street, Suite 400 Anchorage, AK 99503 907-564-3734 hans.neidig@exxonmobil.com
9/19/2013	Kenai LNG Plant	Meeting with facility superintendent and tour	Peter Micciche, ConocoPhillips Superintendent, Kenai LNG Facility Conoco Phillips Alaska Natural Gas 48237 Kenai Spur Hwy. P.O. Box 66 Kenai, AK 99669 907-776-2046 peter.a.micciche@conocophillips.com
9/24/2013	State Pipeline Coordinator's Office (SPCO)	Socioeconomic Team meeting with SPCO to discuss Alaska LNG and state support with subsistence and Health Impact Assessment (HIA) surveys	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov Randy Bates, ADF&G Division Director P.O. Box 115526 Juneau, AK 99811 907-465-3176 randy.bates@alaska.gov
10/14/2013	Cook Inlet Citizens Advisory Council	Nikiski Lead Site Location Announcement	N/A
10/14/2013	Kenai Peninsula College	Nikiski Lead Site Location Announcement	N/A

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10/16/2013	State Pipeline Coordinator's Office (SPCO)	Review Cook Inlet metocean data gathering program and necessary approvals	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov
10/17/2013	U.S. Army Corps of Engineers (USACE)	Discussion regarding Cook Inlet metocean data gathering program and necessary approvals	Janet Post, USACE Regulatory Division, Regulatory Specialist P.O. Box 6898 2204 3rd St. JBER, AK 99506-0898 907-753-2831 janet.l.post®usace.army.mil
10/17/2013	State Pipeline Coordinator's Office (SPCO)	Discussion regarding LNG site air monitoring and MET station placement and authorization	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov <u>Gary Mendivil</u> , ADEC Environmental Program Specialist P.O. Box 11180 Juneau, AK 99811 907-465-5061 gary.mendivil@alaska.gov
10/18/2013	U.S. Coast Guard (USCG)	Discussion regarding Cook Inlet metocean data gathering program and necessary approvals	MST1 Rob Davis, USCG Asst. Chief, Inspections Division Sector Anchorage, Prevent. Dept. G-Wing Bldg. 49000 Army Guard Road JBER, AK 99505-0727 907-428-4198 robert.I.davis1@uscg.mil

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10/22/2014	National Marine Fisheries Service (NMFS)	Discuss notification letter to NOAA for USACE NWP5, POA-2013-610	Brad Smith, NMFS Field Office Supervisor 222 W. 7th Ave. #43 Anchorage, AK 99513-7577 907-271-3023 brad.smith@noaa.gov
10/23/2013	State Pipeline Coordinator's Office (SPCO) Alaska Department of Fish and Game (ADF&G) Department of Health & Social Services (DHSS)	Discussion regarding work scope for subsistence and health impact studies	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov Randy Bates, ADF&G Division Director P.O. Box 115526 Juneau, AK 99811 907-465-3176 randy.bates@alaska.gov Sarah Yoder, DHSS HIA Project Manager 3601 C Street, Suite 540 Anchorage, AK 99503 907-269-8054 sarah.yoder@alaska.gov
10/24/2013	Nikiski Community Council	Nikiski Lead Site Announcement	<u>Fred Miller</u> , NCC President P.O. Box 7011 Nikiski, AK 99611 907-776-8555 familler_99611@yahoo.com

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10/24/2013	National Marine Fisheries Service (NMFS)	Discussion regarding Cook Inlet metocean data gathering program and necessary approvals	Brad Smith, NMFS Field Office Supervisor 222 W. 7th Ave. #43 Anchorage, AK 99513-7577 907-271-3023 brad.smith@noaa.gov
10/28/2013	State Pipeline Coordinator's Office (SPCO)	Submittal and review of letter regarding reimbursable service agreement work scope amendment	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov
10/28/2013	Nikiski Community Council (NCC)	Project presentation	Fred Miller, NCC President P.O. Box 7011 Nikiski, AK 99611 907-776-8555 familler_99611@yahoo.com
11/5/2013	Kenai Peninsula Borough (KPB)	Socioeconomic Team attended Kenai Peninsula Borough Assembly Meeting – no presentation	<u>Mike Navarre</u> , KPB Mayor 144 N. Binkley Soldotna, AK 99669 907-714-2150 mnavarre@borough.kenai.ak.us
11/13/2013	Alaska Gasline Development Corporation (AGDC)	Discussion regarding Alaska LNG's and AGDC's environmental GIS data	Mike Thompson, AGDC ERL Manager 3201 C Street, Suite 200 Anchorage, AK 99503 907-330-6315 mthompson@agdc.us

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11/21/2013	U.S. Army Corps of Engineers (USACE) U.S. Coast Guard (USCG)	Discussion regarding pipeline routing sensitivities in the Cook Inlet	Janet Post, USACE Regulatory Division, Regulatory Specialist P.O. Box 6898 2204 3rd St. JBER, AK 99506-0898 907-753-2831 janet.I.post®usace.army.mil <u>MST1 Rob Davis</u> , USCG Asst. Chief, Inspections Division Sector Anchorage, Prevent. Dept. G-Wing Bldg. 49000 Army Guard Road JBER, AK 99505-0727 907-428-4198 robert.I.davis1@uscg.mil
11/21/2013	Alyeska Pipeline Service Company (APSC)	Discussion regarding crossing requirements for the Trans-Alaska Pipeline System (TAPS)	Peter Nagel, APSC Senior Landowner Rel Spec P.O. Box 196660, MS 569 Anchorage, AK 99519-6660 907-787-8170 nagelpc@alyeska-pipeline.com
11/25/2013	City of Kenai	Project presentation	Pat Porter, City of Kenai Mayor 210 Fidalgo Avenue Kenai, AK 99611-7794 907-283-8245 kenaimayor10@msn.com

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11/26/2013	Mat-Su Borough (MSB)	Project presentation and Q&A session with the mayor and staff	Larry DeVilbiss, Mat-Su Borough Borough Mayor 350 E. Dahlia Avenue Palmer, AK 99645-6488 907-745-9682 Idevilbiss@matsugov.us James Wilson, Mat-Su Borough Borough Manager's Office 350 E. Dahlia Ave. Palmer, AK 99645 907-861-8452 james.wilson@matsugov.us
12/3/2013	Kenai Peninsula Borough (KPB)	Project presentation to the KPB Lands Committee	Mike Navarre, KPB Mayor 907-714-2150 144 N. Binkley Soldotna, AK 99669 mnavarre@borough.kenai.ak.us <u>Max Best</u> , KPB Planning Director 144 N. Binkley Soldotna, AK 99669 907-714-2200 mbest@borough.kenai.ak.us
12/6/2013	Cook Inlet Region Citizens Advisory Council (CIRCAC)	Project presentation and Q&A session	Michael Munger, CIRCAC Executive Director 8195 Kenai Spur Hwy. Kenai, AK 99611 800-652-7222 mikemunger@circac.org

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12/10/2013	Fairbanks North Star Borough (FNSB)	Project presentation and Q&A session for the FNSB Mayor and the mayors of Fairbanks and North Pole	Jeff Jacobson, FNSB Chief of Staff, Mayor's Office P.O. Box 71267 Fairbanks, Alaska 99707-1267 907-459-1375 jjacobson@fnsb.us Luke Hopkins, FNSB Mayor P.O. Box 71267 Fairbanks, AK 99707 907-459-1304 mayor@fnsb.us John Eberhart, City of Fairbanks Mayor 800 Cushman Street Fairbanks, AK 99701 907 459-6793 mayor.ci.fairbanks.ak.us
12/10/2013	Bureau of Land Management (BLM) State Pipeline Coordinator's Office (SPCO)	Discussion regarding 2014 field study scope and submittal of reimbursable services agreement amendment letter	Robert Lloyd, BLM Program Mgr. – Alaska Land Transfer 222 W. 7th Avenue #13 Anchorage, AK 99513 907-271-4682 rlloyd@blm.gov <u>Shannon Miller</u> , SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov

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1/9/2014	Alaska Department of Natural Resources (ADNR)	Discussion regarding GTP siting	Shannon Miller, ADNR/SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov
1/17/2014	Tyonek Native Corporation (TNC)	Project presentation and Q&A session for the TNC leadership	Bart Garber, TNC Chief Executive Officer 1689 C Street, Suite 219 Anchorage, AK 99501 907-272-0707 bgarber@tyonek.com
1/21/2014	Southwest Alaska Pilots Association (SWAP)	Discussion regarding navigation in the Cook Inlet	<u>Jeff Pierce</u> , SWAP 907-235-8783
1/21/2014	GCI	Discussion regarding installation and operation of a natural gas pipeline in relation to fiber optic cables in Upper Cook Inlet	<u>Jeff Rice</u> , GCI <u>Gary Haynes</u> , GCI <u>David Blehm</u> , GCI 2550 Denali Street, Suite 1000 Anchorage, AK 99503 907-265-5600
1/22/2014	Alyeska Pipeline Service Co (APSC)	Discussion regarding construction and operation issues in relation to the existing Trans-Alaska Pipeline System (TAPS) and review of proximity criteria	Peter Nagel, APSC Senior Landowner Rel Spec P.O. Box 196660, MS 569 Anchorage, AK 99519-6660 907-787-8170 nagelpc@alyeska-pipeline.com
1/29/2014	Kenai Chamber of Commerce (KCC)	Project presentation and Q&A session	Johna Beech, KCC President/COO Kenai Chamber of Commerce & Visitor Center 11471 Kenai Spur Hwy. Kenai, AK 99611 907-283-3127 johna@kenaichamber.org

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1/30/2014	State Pipeline Coordinator's Office (SPCO)	Discussion regarding Health Impact Assessment (HIA)	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov
2/12/2014	Alaska Gasline Development Corporation (AGDC)/ASAP	ASAP and Alaska LNG environmental GIS data review	Mike Thompson, AGDC ERL Manager 3201 C Street, Suite 200 Anchorage, AK 99503 907-330-6315 mthompson@agdc.us
2/13/2014	Alaska Gasline Development Corporation (AGDC)/ASAP	NEPA Discussion	Mike Thompson, AGDC ERL Manager 3201 C Street, Suite 200 Anchorage, AK 99503 907-330-6315 mthompson@agdc.us
2/18/2014	Alaska Department of Environmental Conservation (ADEC)	Discussion regarding Nikiski air monitoring station placement	Gary Mendivil, ADEC Environmental Program Specialist P.O. Box 11180 Juneau, AK 99811 907-465-5061 gary.mendivil@alaska.gov
2/20/2014	Pipeline and Hazardous Materials Safety Admin. (PHMSA)	General project overview discussion	Jeffery Gilliam, PHMSA Operations Supervisor, Alaska office 188 W. Northern Lights Blvd., Ste. 520 Anchorage, AK 99503 907-271-6517 or 720-963-3194 jeffery.gilliam@dot.gov
2/21/2014	Federal Energy Regulatory Commission (FERC)	Discussion regarding pre-filing process	Rich McGuire, FERC Acting Dir., Div. of Gas – Env.& Eng. 888 First Street NE, Room 62-15 Washington, D.C. 20426 202-502-6177 rich.mcguire@ferc.gov

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2/25/2014	Alaska Department of Environmental Conservation (ADEC) State Pipeline Coordinator's Office (SPCO)	Discussion regarding 2014 summer field season activities	Gary Mendivil, ADEC Environmental Program Specialist P.O. Box 11180 Juneau, AK 99811 907-465-5061 gary.mendivil@alaska.gov Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov

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2/26/2014	U.S. Army Corps of Engineers (USACE) U.S. Coast Guard (USCG) Bureau of Land Management (BLM) National Park Service (NPS) U.S. Environmental Protection Agency (EPA) U.S. Fish and Wildlife Service (USFWS)	Summer field season kickoff presentation	Janet Post, USACE Regulatory Division, Regulatory Specialist P.O. Box 6898 2204 3rd St. JBER, AK 99506-0898 907-753-2831 janet.l.post®usace.army.mil <u>MST1 Rob Davis</u> , USCG Asst. Chief, Inspections Division Sector Anchorage, Prevent. Dept. G-Wing Bldg. 49000 Army Guard Road JBER, AK 99505-0727 907-428-4198 robert.l.davis1@uscg.mil <u>Robert Lloyd</u> , BLM Program Mgr. – Alaska Land Transfer 222 W. 7th Avenue #13 Anchorage, AK 99513 907-271-4682 rlloyd@blm.gov <u>Joan Darnell</u> , NPS Alaska Regional Office 240 W. 5th Ave. Anchorage, AK 99501 <u>Mark Jen</u> , EPA Project Manager 222 W. 7th Avenue, # 19 Anchorage, AK 99501 907-271-3411 jen.mark@epa.gov <u>Jewel Bennett</u> , USFWS Branch Chief Conserv. Planning Assist. Fairbanks FWS Field Office 101 12th Ave., Room 110 Fairbanks, AK 99701 907-456-0324 jewel_bennett@fws.gov

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2/27/2014	State Pipeline Coordinator's Office (SPCO) U.S. Coast Guard (USCG) Alaska Department of Natural Resources (ADNR) Bureau of Land Management (BLM) National Park Service (NPS) Alaska Railroad Corporation (ARRC) U.S. Fish and Wildlife Service (USFWS) Alaska Department of Fish and Game (ADF&G)	Pipeline right-of-way workshop with state and federal regulators	Shannon Miller, ADNR/SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov <u>MST1 Rob Davis</u> , USCG Asst. Chief, Inspections Division Sector Anchorage, Prevent. Dept. G-Wing Bldg. 49000 Army Guard Road JBER, AK 99505-0727 907-428-4198 robert.l.davis1@uscg.mil <u>Robert Lloyd</u> , BLM Program Mgr. – Alaska Land Transfer 222 W. 7th Avenue #13 Anchorage, AK 99513 907-271-4682 rlloyd@blm.gov <u>Joan Darnell</u> , NPS Alaska Regional Office 240 W. 5th Ave. Anchorage, AK 99501 <u>Jewel Bennett</u> , USFWS Branch Chief Conserv. Planning Assist. Fairbanks FWS Field Office 101 12th Ave., Room 110 Fairbanks, AK 99701 907-456-0324 jewel_bennett@fws.gov <u>Randy Bates</u> , ADF&G Division Director P.O. Box 115526 Juneau, AK 99811 907-465-3176 randy.bates@alaska.gov
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2/28/2014	Alaska Railroad Corporation (ARRC)	Introduce ARRC to the project	Douglas Stephens, ARRC Land Use and Utility Specialist stephensd@akrr.com 907-265-2469
3/3/2014	Seattle Chamber of Commerce (SCC)	Project presentation and Q&A session	Eric Schinfeld, SCC Chief of Staff 206-389-7273 erics@seattlechamber.com
3/3/2014	Chugach Electric	Discussion regarding potential crossing of tidal lease and availability of power	Brad Evans, Chugach Electric Assoc. CEO 5601 Electron Drive P.O. Box 196300 Anchorage, AK 99519-6300 907-563-7494

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3/4/2014	Alaska Department of Environmental Conservation (ADEC) State Pipeline Coordinator's Office (SPCO) Alaska Department of Fish & Game (ADF&G) Alaska Department of Transportation and Public Facilities (ADOT&PF)	Discussion regarding 2014 summer field season activities	Gary Mendivil, ADEC Environmental Program Specialist P.O. Box 11180 Juneau, AK 99811 907-465-5061 gary.mendivil@alaska.gov Shannon Miller, ADNR/SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov Randy Bates, ADF&G Division Director P.O. Box 115526 Juneau, AK 99811 907-465-3176 randy.bates@alaska.gov David Bloom, DOT&PF Gasline Liaison 2301 Peger Rd. Fairbanks, AK. 99709 907-451-5497 david.bloom@alaska.gov

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3/4/2014	U.S. Fish and Wildlife Service (USFWS) Bureau of Land Management (BLM)	Discussion regarding 2014 summer field season activities	Jewel Bennett, USFWS Branch Chief Conserv. Planning Assist. Fairbanks FWS Field Office 101 12th Ave., Room 110 Fairbanks, AK 99701 907-456-0324 jewel_bennett@fws.gov <u>Robert Lloyd</u> , BLM Program Mgr. – Alaska Land Transfer 222 W. 7th Avenue #13 Anchorage, AK 99513 907-271-4682 rlloyd@blm.gov
3/6/2014	Susitna-Watana Hydro Project	Discussion regarding publicly available environmental information for the Susitna drainage	Wayne Dyok, Susitna-Watana Hydro Project Lead Project Manager 813 W. Northern Lights Blvd. Anchorage, AK 99503 907-771-3955 wdyok@aidea.org
3/12/2014	Federal Energy Regulatory Commission (FERC)	Discussion regarding engineering strategy	Rich McGuire, FERC Acting Dir., Div. of Gas – Env.& Eng. 888 First Street NE, Room 62-15 Washington, D.C. 20426 202-502-6177 rich.mcguire@ferc.gov
3/12/2014	Alaska Department of Natural Resources (ADNR)	Discuss data from previous cultural resource services	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov

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3/25/2014	State Pipeline Coordinator's Office (SPCO) Alaska Department of Natural Resources Division of Parks and Outdoor Recreation	Discussion regarding field season permit application development for the Denali State Park and potential future legislative needs	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov
3/26/2014	State Pipeline Coordinator's Office (SPCO)	Letter submittal and review regarding land access	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov
4/3/2014	State Pipeline Coordinator's Office (SPCO)	Project overview presentation for new State Pipeline Coordinator	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov
4/8/2014	Alaska Railroad Corporation (ARRC)	Site visits to Seward and Whittier ports managed by ARRC	Douglas Stephens, ARRC Land Use and Utility Specialist stephensd@akrr.com 907-265-2469
4/9/2014	Alaska Department of Geology and Geophysical Survey (ADGGS) State Pipeline Coordinator's Office (SPCO)	Discussion regarding fault survey plans and potential sharing of information	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov

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4/9/2014	National Marine Fisheries Service (NMFS) U.S. Army Corps of Engineers (USACE)	Discussion regarding further metocean studies and geotechnical and geophysical studies permitting	Brad Smith, NMFS Field Office Supervisor 222 W. 7th Ave. #43 Anchorage, AK 99513-7577 907-271-3023 brad.smith@noaa.gov Janet Post, USACE Regulatory Division, Regulatory Specialist P.O. Box 6898 2204 3rd St. JBER, AK 99506-0898 907-753-2831 janet.l.post®usace.army.mil
4/9/2014	U.S. Army Corps of Engineers (USACE)	Discussion regarding GTP fieldwork	Janet Post, USACE Regulatory Division, Regulatory Specialist P.O. Box 6898 2204 3rd St. JBER, AK 99506-0898 907-753-2831 janet.l.post®usace.army.mil
4/10/2014	State Pipeline Coordinator's Office (SPCO)	Discussion regarding possible support framework	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov
4/10/2014	Mat-Su Borough (MSB) Port Authority	Discussion regarding planned capabilities and limitations	James Wilson, Mat-Su Borough Borough Manager's Office 350 E. Dahlia Ave. Palmer, AK 99645 907-861-8452 James.Wilson@matsugov.us

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4/10/2014	Alaska Gasline Development Corporation (AGDC)	DASAP and Alaska LNG 2014 2014 Survey Comparison	Mike Thompson, AGDC ERL Manager 3201 C Street, Suite 200 Anchorage, AK 99503 907-330-6315 mthompson@agdc.us
4/15/2014	U.S. Coast Guard (USCG)	Discussion regarding Preliminary Waterway Suitability Assessment process	MST1 Rob Davis, USCG Asst. Chief, Inspections Division Sector Anchorage, Prevent. Dept. G-Wing Bldg. 49000 Army Guard Road JBER, AK 99505-0727 907-428-4198 robert.l.davis1@uscg.mil
4/15/2014	Alaska Department of Natural Resources (ADNR)	SHPO review of ADNR Temporary Land Use Permit	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov
4/22/2014	Alaska Gasline Development Corporation (AGDC)/ASAP	AGDC ASAP and Alaska LNG 2014 Cultural Survey Comparison	Mike Thompson, AGDC ERL Manager 3201 C Street, Suite 200 Anchorage, AK 99503 907-330-6315 mthompson@agdc.us
4/24/2014	State Pipeline Coordinator's Office (SPCO)	Discussion regarding further metocean studies and geotechnical and geophysical studies permitting	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov

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4/25/2014	Office of Project Management and Permitting (OPMP)	Discussion regarding agency support capabilities	Mark Morones, OPMP Large Project Coordinator 550 W. 7th Ave., Ste. 1430 Anchorage, AK 99501-3577 907-269-8729 mark.morones@alaska.gov
5/5/2014	Valdez City Council	Project presentation and Q&A session	Sheri Pierce, City of Valdez City Clerk 212 Chenega Ave. P.O. Box 307 Valdez, AK 99686 907-834-3408 spierce@ci.valdez.ak.us
5/7/2014	City of Seward	Project presentation and Q&A session	Jean Bardarson, City of Seward Mayor P.O. Box 167 Seward, AK 99664 907-362-1409 jbardarson@cityofseward.net
5/12/2014	Salamatof Native Association	Socioeconomic Team meeting	Penny L. Carty, Salamatof Native Assoc. President/CEO P.O. Box 2682 Kenai, AK 99611 907-283-7864 snainc@alaska.net
5/12/2014	Nikiski Community Council	Socioeconomic Team meeting	Fred Miller, NCC President P.O. Box 7011 Nikiski, AK 99611 907-776-8555 familler 99611@yahoo.com

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5/13/2014	Department of Health and Social Services (DHSS)	Discussion regarding scope and schedule of Health Impact Assessment (HIA)	Sarah Yoder, DHSS HIA Project Manager 3601 C Street, Suite 540 Anchorage AK 99503 907-269-8054 sarah.yoder@alaska.gov
5/14/2014	Denali Borough Assembly	Project presentation	<u>Clay Walker</u> , Denali Borough Mayor P.O. Box 480 Healy, AK 99743 907-683-1330 clay_walker@denaliborough.com
5/15/2014	Office of History and Archaeology (OHA)	Discuss 2014 Cultural Resource survey program with OHA	Don Perrin, ADNR North Slope Gas Comm. Permitting Coord. 550 W 7th Ave., Ste. 1400 Anchorage, AK 99501-3561 907-269-8431 don.perrin@alaska.gov
5/15/2014	Alaska Gasline Development Corp. (AGDC)	Socioeconomic Team meeting with AGDC and Community Advisory Council to coordinate public engagement activities	Mike Thompson, AGDC ERL Manager 3201 C Street, Suite 200 Anchorage, AK 99503 907-330-6315 mthompson@agdc.us
5/15/2014	McKinley Park Village	Socioeconomic Team meeting with McKinley Park Village community	<u>Kris Fister</u> , National Park Service McKinley Park Village P.O. Box 9 Denali Park, AK 99755-0009 907-683-9583 kris_fister@nps.gov

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5/19/2014	Allakaket Tribal Council (ATC) Allakaket Community Council (ACC)	Presentation for Allakaket joint leadership	Gordon Bergman, Allakaket Village First Chief P.O. Box 50 Allakaket, AK 99720 907 968-2237 allakaketepa@yahoo.com <u>Steven Bergman</u> , City of Allakaket Mayor P.O. Box 30 Allakaket AK 99720 907-968-2424 aet99720@gmail.com
5/19/2014	Alatna and Allakaket Communities	Socioeconomic Team meeting	Steven Bergman, City of Allakaket Mayor P.O. Box 30 Allakaket AK 99720 cityofallakaket@gmail.com 907-968-2424 aet99720@gmail.com Peter David, Alatna Village Council First Chief P.O. Box 70 Alatna, AK 99720 907 968-2261 alatnatribe@yahoo.com
5/21/2014	Anderson and Clear Communities	Socioeconomic Team meeting	Paul Dempster, Mayor, Anderson Dorothy Leake, City Clerk P.O. Box 3100 Anderson, AK 99744 907 582-2500 coaclerk@mtaonline.com

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5/22/2014	Nenana Community	Socioeconomic Team meeting	Robin Campbell, Nenana Native Assoc. Tribal Admin 806 G Street P.O. Box 369 Nenana, AK 99760 907-832-5461 Ext. 222 Jason Mayrand, Mayor, City of Nenana Suzanne Hill, Admin P.O. Box 70 Nenana, AK 99760 907 832-5441 infor@nenana.org
5/27/2014	West Dock Users Group	Discussion regarding authorizations required or contract(s) needed from the West Dock Users Group to enable preliminary studies to support the GTP	N/A
5/28/2014	U.S. Fish and Wildlife Service (USFWS)	Discussion regarding authorizations required for preliminary studies to support the GTP	Jewel Bennett, USFWS Branch Chief Conserv. Planning Assist. Fairbanks FWS Field Office 101 12th Ave., Room 110 Fairbanks, AK 99701 907-456-0324 jewel_bennett@fws.gov
5/28/2014	Houston and Big Lake Communities	Socioeconomic Team meeting	<u>Virgie Thompson</u> , Houston Mayor P.O. Box 940027 Houston, AK 99694 907-892-6869 vthompson@houston-ak.gov

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5/28/2014	Senator Lisa Murkowski	Project update	Lisa Murkowski, United States Senator 510 L Street, Suite 600 Anchorage, AK 99501 907-271-3735
5/28/2014	Alaska Native Corporation CEOs	Project update	Kim Reitmeier, Alaska Native Corp. Regional Association Executive Director P.O. Box 240766 Anchorage, AK 99524 907-339-6052 kim@ancsaceos.org
5/29/2014	Trapper Creek Community	Socioeconomic Team meeting	Paula Glenka, Trapper Creek Council Chairperson P.O. Box 13021 Trapper Creek, AK 99683-0321 907-733-6506 trappercreek2010@gmail.com
5/29/2014	U.S. Army Corps of Engineers (USACE) U.S. Environmental Protection Agency (EPA)	Discussion regarding authorizations required for preliminary studies to support the GTP	Janet Post, USACE Regulatory Division, Regulatory Specialist P.O. Box 6898 2204 3rd St. JBER, AK 99506-0898 907-753-2831 janet.l.post®usace.army.mil Mark Jen, EPA Project Manager 222 W. 7th Avenue, # 19 Anchorage, AK 99501 907-271-3411 jen.mark@epa.gov

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5/29/2014	State Pipeline Coordinators Office (SPCO) Office of Project Management and Permitting (OPMP) Alaska Department of Fish and Game (ADF&G) Alaska Department of Transportation and Public Facilities (DOT&PF) Alaska Department of Environmental Conservation (ADEC)	Discussion regarding authorizations necessary for 2014 summer field season activities	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov <u>Mark Morones</u> , OPMP Large Project Coordinator 550 W. 7th Ave, Ste. 1430 Anchorage, AK 99501-3577 907-269-8729 mark.morones@alaska.gov <u>Randy Bates</u> , ADF&G Division Director P.O. Box 115526 Juneau, AK 99811 907-465-3176 randy.bates@alaska.gov <u>David Bloom</u> , DOT&PF Gasline Liaison 2301 Peger Rd. Fairbanks, AK 99709 907-451-5497 david.bloom@alaska.gov <u>Gary Mendivil</u> , ADEC Environmental Program Specialist P.O. Box 11180 Juneau, AK 99811 907-465-5061 gary.mendivil@alaska.gov

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5/30/2014	National Marine Fisheries Service (NMFS)	Discussion regarding authorizations required for preliminary studies to support the GTP	Brad Smith, NMFS Field Office Supervisor 222 W. 7th Ave. #43 Anchorage, AK 99513-7577 907-271-3023 brad.smith@noaa.gov
6/2/2014	Talkeetna Community Council (TCC)	Project presentation	Whitney Wolff, TCC Chairman P.O. Box 608 Talkeetna, AK 99676 907-733-2673 tccsecretary@yahoo.com
6/3/2014	Talkeetna Community	Socioeconomic Team meeting	Whitney Wolff, TCC Chairman P.O. Box 608 Talkeetna, AK 99676 907-733-2673 tccsecretary@yahoo.com
6/4/2014	Willow Community	Socioeconomic Team meeting	Shane Starrett, Willow Area Comm. Org Chair 23625 W Willow Community Center Circle Willow, AK 99688 907-495-6633 starrett.shane@gmail.com

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6/4/2014	Alaska Department of Natural Resources (ADNR) Kenai Peninsula Borough River Center US Army Corps of Engineers (USACE) Alaska Department of Fish & Game (ADF&G) US Fish & Wildlife Service (USFWS)	KPB Pre-application Meeting	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov <u>Max Best</u> , KPB Planning Director 144 N. Binkley Soldotna, AK 99669 907-714-2200 mbest@borough.kenai.ak.us <u>Janet Post</u> , USACE Regulatory Division, Regulatory Specialist P.O. Box 6898 2204 3rd St. JBER, AK 99506-0898 907-753-2831 janet.l.post®usace.army.mil <u>Randy Bates</u> , ADF&G Division Director P.O. Box 115526 Juneau, AK 99811 907-465-3176 randy.bates@alaska.gov <u>Jewel Bennett</u> , USFWS Branch Chief Conserv. Planning Assist. Fairbanks FWS Field Office 101 12th Ave., Room 110 Fairbanks, AK 99701 907-456-0324 jewel bennett@fws.gov
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6/4/2014	Kenai Peninsula Borough (KPB)	Discussion regarding 2014 field activities	Max Best, KPB Planning Director 144 N. Binkley Soldotna, AK 99669 907-714-2200 mbest@borough.kenai.ak.us
6/5/2014	Wasilla Community	Socioeconomic Team meeting	Verne Rupright, Wasilla Mayor 290 E Herning Avenue Wasilla, AK 99654 907-373-9050 cityofwasilla@ci,wasilla.ak.us
6/5/2014	Wiseman Community	Socioeconomic Team meeting	Jack Reakoff, Wiseman Community Assoc. President Wiseman, AK 99790 907-678-9001
6/5/2014	U.S. Department of Energy Office of Fossil Energy (DOE/FE)	Discuss export application	John Anderson, DOE/FE Manager, Natural Gas Reg. Affairs 1000 Independence Avenue, SW Washington, D.C. 20585 202-586-0521 john.anderson@hq.doe.gov
6/9/2014	North Slope Borough (NSB)	Discuss bathymetry survey and required NSB permitting	Rhoda Ahmaogak, NSB Planning & Community Services Director 1274 Agvik St. Barrow, AK 99723 907-852-0320 rhoda.ahmaogak@north-slope.org

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6/9/2014	Bureau of Land Management (BLM) Office of History and Archaeology (OHA) Alaska Department of Fish and Game (ADF&G) U.S. Army Corps of Engineers	Discussion regarding historical field survey data and protocols	<u>Randy Bates</u> , ADF&G Division Director P.O. Box 115526 Juneau, AK 99811 907-465-3176 randy.bates@alaska.gov
6/10/2014	(USACE) State Pipeline Coordinator's Office (SPCO) Office of History and Archaeology (OHA) Office of Project Management and Permitting (OPMP)	Discussion regarding cultural resources survey protocols and data	Mark Morones, OPMP Large Project Coordinator 550 W. 7th Ave, Ste. 1430 Anchorage, AK 99501-3577 907-269-8729 mark.morones@alaska.gov Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov
6/11/2014	Bureau of Land Management (BLM)	Discussion regarding cultural resources survey protocols and data	Robert Lloyd, BLM Program Mgr. – Alaska Land Transfer 222 W. 7th Avenue #13 Anchorage, AK 99513 907-271-4682 rlloyd@blm.gov

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6/11/2014	Alaska Department of Fish and Game (ADF&G) Office of Project Management and Permitting (OPMP) State Pipeline Coordinator's Office (SPCO)	Discussion regarding fish stream and lakes investigation survey protocols and data	Randy Bates, ADF&G Division Director P.O. Box 115526 Juneau, AK 99811 907-465-3176 randy.bates@alaska.gov <u>Mark Morones</u> , OPMP Large Project Coordinator 550 W. 7th Ave, Ste. 1430 Anchorage, AK 99501-3577 907-269-8729 mark.morones@alaska.gov <u>Shannon Miller</u> , SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov
6/12/2014	U.S. Army Corps of Engineers (USACE)	Discussion regarding Wetlands Assessment Protocol and data discussion	Janet Post, USACE Regulatory Division, Regulatory Specialist P.O. Box 6898 2204 3rd St. JBER, AK 99506-0898 907-753-2831 janet.l.post®usace.army.mil

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6/12/2014	State Pipeline Coordinator's Office (SPCO) Office of Project Management and Permitting (OPMP)	Discussion regarding regulatory limitations and proposed routing	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov <u>Mark Morones.</u> OPMP Large Project Coordinator 550 W. 7th Ave, Ste. 1430 Anchorage, AK 99501-3577 907-269-8729 mark.morones@alaska.gov
6/12/2014	State Pipeline Coordinator's Office (SPCO) Alaska Gasline Development Corporation (AGDC)	Joint discussion regarding state park lands permitting	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov Mike Thompson, AGDC ERL Manager 3201 C Street, Suite 200 Anchorage, AK 99503 907-330-6315 mthompson@agdc.us
6/12/2014	Healy Community	Socioeconomic Team meeting	<u>Clay Walker</u> , Denali Borough Mayor P.O. Box 480 Healy, AK 99743 907-683-1330 clay_walker@denaliborough.com

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6/12/2014	U.S. Army Corps of Engineers (USACE)	Discussion regarding wetlands assessment protocols and data	Janet Post, USACE Regulatory Division, Regulatory Specialist P.O. Box 6898 2204 3rd St. JBER, AK 99506-0898 907-753-2831 janet.l.post®usace.army.mil
6/13/2014	Knik Tribal Council (KTC)	Socioeconomic Team meeting	Richard Porter, KTC Executive Director P.O. Box 871565 Wasilla, AK 99687 907-373-7991 rporter@kniktribe.org
6/19/2014	Ahtna, Inc. Alaska Gas Development Company (AGDC)/ASAP	Discuss permit application for ASAP's G&G program on Ahtna lands	Michelle Anderson, Ahtna, Inc. President Manderson@ahtna.net <u>Mike Thompson</u> , AGDC ERL Manager 3201 C Street, Suite 200 Anchorage, AK 99503 907-330-6315 mthompson@agdc.us
6/20/2014	Ninilchik Traditional Council (NTC)	Socioeconomic Team meeting	Ivan Encelewski, NTC Executive Director 15910 Sterling Hwy. P.O. Box 39070 Ninilchik, AK 99639 907 567-3313 ext. 2106 ntc@ninilchiktribe-nsn.gov
6/21/2014	Nikiski Fun in the Sun Fair/Solstice	Project booth for public event	Rachel Parra, North Peninsula Recreation Serv. Area P.O. Box 7116 Nikiski, AK 99635 907-776-8800 rparra@borough.kenai.ak.us

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6/24/2014	Eklutna, Inc.	Project presentation	<u>Curtis McQueen</u> , Eklutna Inc. CEO 16515 Centerfield Dr. Eagle River, AK 99577 907-696-2828
6/27/2014	Alaska Department of Natural Resources (ADNR)	Pre-application meeting	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov
6/28/2014	United Cook Inlet Drift Association (UCIDA)	Project presentation	Audry Salmon, UCIDA Office Manager 43961 Kalifornsky Beach Road, Suite E Soldotna, AK 99669 907-260-9436 info@ucida.org
6/30/2014	Alaska Department of Transportation and Public Facilities (ADOT&PF)	Discussion regarding permit requirements for geotechnical and geophysical studies	David Bloom, DOT&PF Gasline Liaison 2301 Peger Rd. Fairbanks, AK. 99709 907-451-5497 david.bloom@alaska.gov
7/8/2014	Cantwell Community	Project presentation	Rene Nicklie, Native Village of Cantwell President P.O. Box 94 Cantwell, AK 99729 907 768-2591
7/9/2014	North Slope Borough (NSB)	NSB IHLC permitting requirements	Rhoda Ahmaogak, NSB Planning & Community Services Director 1274 Agvik St. Barrow, AK 99723 907-852-0320 rhoda.ahmaogak@north-slope.org

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7/10/2014	Alaska Department of Environmental Conservation (ADEC)	Discussion regarding strategy and approach to using data from the proposed ambient air monitoring and meteorological data gathering program near Nikiski	Gary Mendivil, ADEC Environmental Program Specialist P.O. Box 11180 Juneau, AK 99811 907-465-5061 gary.mendivil@alaska.gov
7/14/2014	Alaska State Legislators	Field trip to view 2014 summer field season studies	Hans Neidig, ExxonMobil Public and Government Affairs 3301 C Street, Suite 400 Anchorage, AK 99503 907-564-3734 hans.neidig@exxonmobil.com
7/15/2014	Anchorage Community	Socioeconomic Team meeting	Dan Sullivan, Mayor Municipality of Anchorage 632 W. 6th Avenue, Suite 840 Anchorage, AK 99501 907-343-7100 mayor@minu.gov

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7/17/2014	Fairbanks Community	Socioeconomic Team meeting	Luke Hopkins, FNSB Mayor P.O. Box 71267 Fairbanks, AK 99707 907-459-1304 mayor@fnsb.us John Eberhart, Mayor City of Fairbanks 800 Cushman Street Fairbanks, AK 99701 907-549-6715 mayor@ci.fairbanks.ak.us Bryce Ward, Mayor City of North Pole 125 Snowman Lane North Pole, AK 99705 907-488-8584 mayor@northpolealaska.com
7/29/2014	Federal Energy Regulatory Commission (FERC)	Discussion regarding Natural Gas Act (NGA) Section 3	Susie Holmes, FERC Associate General Counsel 888 First Street NE, Room 10P-11 Washington, D.C. 20426 202-502-8198 jacqueline.holmes@ferc.gov <u>Rich Foley</u> , FERC Certificate Branch Chief 1 888 First Street NE, Room 61-63 Washington, D.C. 20426 202-502-8955 richard.foley@ferc.gov

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7/31/2014	Federal Energy Regulatory Commission (FERC)	Discussion regarding pre-filing process	Rich McGuire, FERC Acting Dir., Div. of Gas – Env.& Eng. 888 First Street NE, Room 62-15 Washington, D.C. 20426 202-502-6177 rich.mcguire@ferc.gov
8/4/2014	Office of Project Management and Permitting (OPMP) State Pipeline Coordinator's Office (SPCO) Alaska Department of Transportation and Public Facilities (DOT&PF)	Pre-application meeting regarding Downstream geotechnical and geophysical survey program	Mark Morones, OPMP Large Project Coordinator 550 W. 7th Ave, Ste. 1430 Anchorage, AK 99501-3577 907-269-8729 mark.morones@alaska.gov Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov David Bloom, DOT&PF Gasline Liaison 2301 Peger Rd. Fairbanks, AK 99709 907-451-5497 david.bloom@alaska.gov
8/9/2014	Tanana Valley State Fair	Project booth for public event	N/A

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8/13/2014	Kenai Peninsula Economic Development District U.S. Economic Development Administration (USEDA)	Discussion about project economic development impacts to communities on the Kenai Peninsula	Rick Roeske, Kenai PeninsulaEconomic Dev. DistrictExecutive Director14896 Kenai Spur Highway, Suite103AKenai, AK 99611907-283-3335 ext. 1rroeske@kpedd.orgShirley Kelly, USEDA510 L Street, Suite 444Anchorage, AK 99501907-271-2272Skelly2@eda.gov
8/14/2014	State Pipeline Coordinator's Office (SPCO) Alaska Department of Transportation and Public Facilities (DOT&PF) Office of Project Management and Permitting (OPMP)	Pre-application meeting regarding pipeline geotechnical and geophysical survey program	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov David Bloom, DOT&PF Gasline Liaison 2301 Peger Rd. Fairbanks, AK 99709 907-451-5497 david.bloom@alaska.gov Mark Morones, OPMP Large Project Coordinator 550 W. 7th Ave, Ste. 1430 Anchorage, AK 99501-3577 907-269-8729 mark.morones@alaska.gov

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8/16/2014	Kenai Peninsula State Fair	Project booth for public event	N/A
8/21/2014	Alaska State Fair	Project booth for public event	N/A
8/21/2014	Trapper Creek Community Council	Socioeconomic Team meeting	Paula Glenka, Trapper Creek Community Council Chairperson P.O. Box 13021 Trapper Creek, AK 99683-0321 907-733-6506 Trappercreek2010@gmail.com
8/22/2014	Tikahtnu Forum	Socioeconomic Team meeting	<u>Justina Meyer</u> , Cook Inlet Region, Inc. Executive Assistant Tikahtnu Forum P.O. Box 93330 Anchorage, AK 99509 -907-263-5101 jmeyer@ciri.com
8/23/2014	Kenai Peninsula Industry Appreciation Day	Project booth for public event	N/A

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8/26/2014	Office of Project Management and Permitting (OPMP) State Pipeline Coordinator's Office (SPCO)	Project update for Alaska Department of Natural Resources representative	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov <u>Mark Morones.</u> OPMP Large Project Coordinator 550 W. 7th Ave, Ste. 1430 Anchorage, AK 99501-3577 907-269-8729 mark.morones@alaska.gov
8/27/2014	State Pipeline Coordinator's Office (SPCO) Office of History and Archaeology (OHA)	Discussion regarding cultural resource data	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov
8/28/2014	Bureau of Land Management (BLM)	Discussion regarding cultural resource data	Robert Lloyd, BLM Program Mgr. – Alaska Land Transfer 222 W. 7th Avenue #13 Anchorage, AK 99513 907-271-4682 rlloyd@blm.gov
8/28/2014	Alaska Department of Fish and Game (ADF&G)	Discussion regarding fisheries data	Randy Bates, ADF&G Division Director P.O. Box 115526 Juneau, AK 99811 907-465-3176 randy.bates@alaska.gov

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9/2/2014	U.S. Army Corps of Engineers (USACE)	Discussion of previously submitted wetlands data	Janet Post, USACE Regulatory Division, Regulatory Specialist P.O. Box 6898 2204 3rd St. JBER, AK 99506-0898 907-753-2831 janet.l.post®usace.army.mil
9/8/2014	Alaska Oil & Gas Conservation Committee (AOGCC)	Project presentation	Dave Roby, AOGCC Senior Reservoir Engineer 333 West 7th Ave., Ste. 100 Anchorage, AK 99501 907-793-1232 dave.roby@alaska.gov
9/9/2014	U.S. Army Corps of Engineers (USACE) U.S. Environmental Protection Agency (EPA)	Discussion of sediment sampling locations	Janet Post, USACE Regulatory Division, Regulatory Specialist P.O. Box 6898 2204 3rd St. JBER, AK 99506-0898 907-753-2831 janet.I.post®usace.army.mil Mark Jen, EPA Project Manager 222 W. 7th Avenue, # 19 Anchorage, AK 99501 907-271-3411 jen.mark@epa.gov
9/10/2014	Alaska Federation of Natives (AFN) representatives	Socioeconomic Team Meeting	Julie Kitka, AFN President 1577 C St., Ste. 300 Anchorage, AK 99501 907-274-3611 nevakitka@aol.com

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Meeting Date	External Group/Agency	Meeting Objective	Primary Contact
9/16/2014	Cook Inlet Tribal Council (CITC)	Socioeconomic Team meeting	Kelly Hurd, CITC Director of Development 3600 San Jeronimo Drive Anchorage, AK 99508 907-793-3272 khurd@citci.org
9/18/2014	Federal Energy Regulatory Commission (FERC)	Technical consultation with FERC regarding public and agency meetings	Rich McGuire, FERC Acting Dir., Div. of Gas – Env.& Eng. 888 First Street NE, Room 62-15 Washington, D.C. 20426 202-502-6177 rich.mcguire@ferc.gov
9/24/2014	City of Soldotna	Socioeconomic Team meeting	<u>Nels Anderson</u> , City of Soldotna Mayor 177 North Birch St. Soldotna, AK 99669 907-262-9107
9/24/2014	Kenaitze Indian Tribe	Socioeconomic Team meeting	Jaylene Peterson-Nyren, Kenaitze Indian Tr. Executive Director P.O. Box 988 Kenai, AK 99611 907-335-7200 jaylene@kenaitze.org
9/24/2014	Native Village of Barrow Inupiat Traditional Government	Socioeconomic Team meeting	Thomas Olemaun, Native Village of Barrow President P.O. Box 1130 Barrow, AK 99723 907-852-4411 tolemaun@nvbarrow.net
9/24/2014	North Slope Borough staff	Socioeconomic Team meeting	<u>Charlotte E. Brower</u> , North Slope Borough Mayor P.O. Box 69 Barrow, AK 99723 907-852-0200

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9/25/2014	Ukpeagvik Inupiat Corporation	Socioeconomic Team meeting	Anthony Edwardsen, Ukpeagvik Inupiat Cor. President and CEO P.O. Box 890 Barrow, AK 99723 907-852-4460 Anthony.edwardsen@ukpik.com
9/25/2014	Barrow community	Community meeting	N/A
9/29/2014	Joint State of Alaska Senate / House Resource Committee	Project presentation	N/A
9/30/2014	Office of Project Management and Permitting (OPMP) State Pipeline Coordinator's Office (SPCO)	Project presentation	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov <u>Mark Morones,</u> OPMP Large Project Coordinator 550 W. 7th Ave, Ste. 1430 Anchorage, AK 99501-3577 907-269-8729 mark.morones@alaska.gov
9/30/2014	Municipal Advisory Group (MAG)	Project presentation	N/A

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Meeting Date	External Group/Agency	Meeting Objective	Primary Contact
9/30/2014	AHTNA	Project presentation	Michelle Anderson, AHTNA President and CEO P.O. Box 649 Glennallen, AK 99588 907-868-8250 manderson@ahtna.net
10/1/2014	Minto community	Community meeting	Lori Baker, Minto Village Council P.O. Box 58026 Minto, AK 99758 907-798-7112
10/1/2014	U.S. Army Corps of Engineers (USACE)	Discussion regarding permitting and Pre-File activities	Janet Post, USACE Regulatory Division, Regulatory Specialist P.O. Box 6898 2204 3rd St. JBER, AK 99506-0898 907-753-2831 janet.l.post®usace.army.mil
10/1/2014	U.S. Fish and Wildlife Service (USFWS)	Discussion regarding permitting and Pre-File activities	Jewel Bennett, USFWS Branch Chief Conserv. Planning Assist. Fairbanks FWS Field Office 101 12th Ave., Room 110 Fairbanks, AK 99701 907-456-0324 jewel_bennett@fws.gov
10/1/2014	Alaska Department of Environmental Conservation (ADEC)	Discussion regarding permitting and Pre-File activities	Gary Mendivil, ADEC Environmental Program Specialist P.O. Box 11180 Juneau, AK 99811 907-465-5061 gary.mendivil@alaska.gov

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10/1/2014	National Marine Fisheries Service (NMFS)	Discussion regarding permitting and Pre-File activities	Brad Smith, NMFS Field Office Supervisor 222 W. 7th Ave. #43 Anchorage, AK 99513-7577 907-271-3023 brad.smith@noaa.gov
10/3/2014	Office of History and Archaeology (OHA) Bureau of Land Management (BLM) Office of Project Management and Permitting (OPMP) State Pipeline Coordinator's Office (SPCO)	Discussion regarding permitting and Pre-File activities	Shina DuVall, OHA Archaeologist 550 W 7th Ave, Ste. 1310 Anchorage, AK 99501-3565 907-269-8720 shina.duvall@alaska.gov Robert Lloyd, BLM Program Mgr. – Alaska Land Transfer 222 W. 7th Avenue #13 Anchorage, AK 99513 907-271-4682 rlloyd@blm.gov Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov Mark Morones, OPMP Large Project Coordinator 550 W. 7th Ave, Ste. 1430 Anchorage, AK 99501-3577 907-269-8729 mark.morones@alaska.gov

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10/3/2014	U.S. Coast Guard (USCG)	Discussion regarding permitting and Pre-File activities	MST1 Rob Davis, USCG Asst. Chief, Inspections Division Sector Anchorage, Prevent. Dept. G-Wing Bldg. 49000 Army Guard Road JBER, AK 99505-0727 907-428-4198 robert.l.davis1@uscg.mil
10/6/2014	Big Lake Chamber of Commerce	Project presentation	Nancie Linley, Big Lake Chamber of Comm. President PO Box 520067 Big Lake, Alaska 99652 907-892-6109 biglake@mtaonline.net
10/7/2014	U.S. Coast Guard (USCG)	Discuss regarding permitting and Pre-File activities	Jim Helfinstine, USCG Bridge Permit Administrator PO Box 25517 Juneau, AK 99802-5517 907-463-2268 james.n.helfinstine@uscg.mil
10/7/2014	Federal Energy Regulatory Commission (FERC)	Follow-up discussion with FERC on public meetings	Rich McGuire, FERC Acting Dir., Div. of Gas – Env.& Eng. 888 First Street NE, Room 62-15 Washington, D.C. 20426 202-502-6177 rich.mcguire@ferc.gov
10/8/2014	National Marine Fisheries Service (NMFS)	Discussion regarding permitting and Pre-File activities	Brad Smith, NMFS Field Office Supervisor 222 W. 7th Ave. #43 Anchorage, AK 99513-7577 907-271-3023 brad.smith@noaa.gov
10/8/2014	Alaska Inter-Agency Working Group Meeting	Project presentation	N/A

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Meeting Date	External Group/Agency	Meeting Objective	Primary Contact
10/9/2014	Kenai community	Community meeting	N/A
10/9/2014	Various media outlets	Project update and tour of field study activities in the Kenai area	N/A
10/9/2014	Kenai Peninsula Community College (KPCC)	Project presentation	Sandie Gilliland, KPCC Process Technology Program Coordinator 156 College Rd. Soldotna, AK 99669 907-262-0296 slgilliland@kpc.alaska.edu
10/15/2014	Natural Resources Group (NRG)	Bi-weekly pre-filing discussion	Jennifer Lee, NRG Project Manager 503-525-5152 jennifer.lee@nrg-llc.com
10/16/2014	Alaska Department of Transportation and Public Facilities (ADOT&PF)	Discussion regarding the potential relocation of the Kenai Spur Highway and other project logistics and infrastructure considerations	David Bloom, DOT&PF Gasline Liaison 2301 Peger Rd. Fairbanks, AK. 99709 907-451-5497 david.bloom@alaska.gov
10/17/2014	U.S. Coast Guard (USCG)	Discussion regarding the Waterway Suitability Assessment (WSA) process	MST1 Rob Davis, USCG Asst. Chief, Inspections Division Sector Anchorage, Prevent. Dept. G-Wing Bldg. 49000 Army Guard Road JBER, AK 99505-0727 907-428-4198 robert.l.davis1@uscg.mil

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Meeting Date	External Group/Agency	Meeting Objective	Primary Contact
10/17/2014	Alliance – Fairbanks forum	Project presentation	N/A
10/21/2014	State Pipeline Coordinator's Office (SPCO) Office of Project Management and Permitting (OPMP)	Discussion regarding North Slope winter 2015 field programs	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov <u>Mark Morones.</u> OPMP Large Project Coordinator 550 W. 7th Ave, Ste. 1430 Anchorage, AK 99501-3577 907-269-8729 mark.morones@alaska.gov
10/22/2014	Alaska Department of Fish and Game (ADF&G) State Pipeline Coordinator's Office (SPCO)	Discussion regarding GTP water reservoir design	Randy Bates, ADF&G Division Director P.O. Box 115526 Juneau, AK 99811 907-465-3176 randy.bates@alaska.gov Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov

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Meeting Date	External Group/Agency	Meeting Objective	Primary Contact
10/22/2014	U.S. Army Corps of Engineers (USACE) U.S. Environmental Protection Agency (EPA) Alaska Department of Environmental Conservation (ADEC) National Marine Fisheries Service (NMFS) Alaska Department of Natural Resources (ADNR)	Discussion regarding North Slope Test Trench permitting	Janet Post, USACE Regulatory Division, Regulatory Specialist P.O. Box 6898 2204 3rd St. JBER, AK 99506-0898 907-753-2831 janet.I.post®usace.army.mil Mark Jen, EPA Project Manager 222 W. 7th Avenue, # 19 Anchorage, AK 99501 907-271-3411 jen.mark@epa.gov Gary Mendivil, ADEC Environmental Program Specialist P.O. Box 11180 Juneau, AK 99811 907-465-5061 gary.mendivil@alaska.gov Brad Smith, NMFS Field Office Supervisor 222 W. 7th Ave. #43 Anchorage, AK 99513-7577 907-271-3023 brad.smith@noaa.gov Don Perrin, ADNR North Slope Gas Comm. Permitting Coord. 550 W 7th Ave., Ste. 1400 Anchorage, AK 99501-3561 907-269-8431 don.perrin@alaska.gov

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10/23/2014	North Slope Borough (NSB) Planning Department Office of Project Management and Permitting (OPMP) State Pipeline Coordinator's Office (SPCO)	Discussion regarding North Slope winter 2015 field programs	Rhoda Ahmaogak, NSB Planning & Community Services Director 1274 Agvik St. Barrow, AK 99723 907-852-0320 rhoda.ahmaogak@north-slope.org Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov Mark Morones, OPMP Large Project Coordinator 550 W. 7th Ave, Ste. 1430 Anchorage, AK 99501-3577 907-269-8729 mark.morones@alaska.gov
10/28/2014	Nikiski, Kenai, and Soldotna communities	Open house	N/A

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10/28/2014	Alaska Department of Transportation and Public Facilities (DOT&PF) Office of Project Management and Permitting (OPMP) State Pipeline Coordinator's Office (SPCO)	Discussion regarding geotechnical studies along the Mainline corridor	David Bloom, DOT&PF Gasline Liaison 2301 Peger Rd. Fairbanks, AK 99709 907-451-5497 david.bloom@alaska.gov Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov <u>Mark Morones, OPMP</u> Large Project Coordinator 550 W. 7th Ave, Ste. 1430 Anchorage, AK 99501-3577 907-269-8729 mark.morones@alaska.gov
10/29/2014	Tyonek community	Open house	N/A
10/30/2014	Anchorage community	Open house	N/A
10/31/2014	Southwest Alaska Pilots Association (SWAPA)	Discussion regarding local marine traffic concerns and the WSA process	<u>Jeff Pierce</u> , SWAPA 907-235-8783

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Meeting Date	External Group/Agency	Meeting Objective	Primary Contact
11/2/2014	Nikiski Community Council (NCC)	Project presentation	Fred Miller, NCC President P.O. Box 7011 Nikiski, AK 99611 907-776-8555 familler_99611@yahoo.com
11/5/2014	Mechanical Contractors of Fairbanks	Project presentation	N/A
11/5/2014	Nenana and Anderson communities	Open house	N/A
11/6/2014	Healy, Cantwell, and McKinley Park Village communities	Open house	N/A
11/10/2014	Minto community	Open house	N/A
11/12/2014	Alaska Process Industry Careers Consortium (APICC)	Project presentation	N/A
11/12/2014	Fairbanks and North Pole communities	Open house	N/A
11/12/2014	Barrow community	Open house	N/A

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Meeting Date	External Group/Agency	Meeting Objective	Primary Contact
11/12/2014	Natural Resources Group (NRG)	Bi-weekly pre-filing discussion	<u>Jennifer Lee</u> , NRG Project Manager 503-525-5152 jennifer.lee@nrg-llc.com
11/12/2014	Cook Inlet Harbor Safety Committee	Discussion regarding the Waterway Suitability Assessment (WSA) process	N/A
11/13/2014	U.S. Fish and Wildlife Service (USFWS)	Participated in industry collaboration meeting to discuss polar bear den surveys on the North Slope	Jewel Bennett, USFWS Branch Chief Conserv. Planning Assist. Fairbanks FWS Field Office 101 12th Ave., Room 110 Fairbanks, AK 99701 907-456-0324 jewel_bennett@fws.gov
11/13/2014	Alaska Department of Environmental Conservation (ADEC)	Discuss APDES General Discharge Permit	Gary Mendivil, ADEC Environmental Program Specialist P.O. Box 11180 Juneau, AK 99811 907-465-5061 gary.mendivil@alaska.gov
11/13/2014	Alaska Department of Environmental Conservation (ADEC)	Midstream facilities minor air permit approach	Gary Mendivil, ADEC Environmental Program Specialist P.O. Box 11180 Juneau, AK 99811 907-465-5061 gary.mendivil@alaska.gov
11/13/14	Southwest Alaska Pilots Association (SWAPA)	Discussion regarding local marine traffic concerns and the WSA process	<u>Capt Eric Eliassen,</u> SWAPA

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Meeting Date	External Group/Agency	Meeting Objective	Primary Contact
11/14/2014	U.S. Coast Guard (USCG)	Discussion regarding project logistics and planning	MST1 Rob Davis, USCG Asst. Chief, Inspections Division Sector Anchorage, Prevent. Dept. G-Wing Bldg. 49000 Army Guard Road JBER, AK 99505-0727 907-428-4198 robert.l.davis1@uscg.mil
11/18/2014	Trapper Creek and Wasilla communities	Open house	N/A
11/19/2014	Wasilla and Palmer communities	Open house	N/A
11/20/2014	Houston, Big Lake, and Willow communities	Open house	N/A
11/20/2014	Resource Development Council for Alaska	Project presentation	N/A
11/20/2014	Alaska Department of Environmental Conservation (ADEC)	Discussion of APDES General Discharge Permit Program	Gary Mendivil, ADEC Environmental Program Specialist P.O. Box 11180 Juneau, AK 99811 907-465-5061 gary.mendivil@alaska.gov

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Meeting Date	External Group/Agency	Meeting Objective	Primary Contact
11/25/2014	Alaska Department of Environmental Conservation (ADEC) Office of Project Management and Permitting (OPMP) State Pipeline Coordinator's Office (SPCO)	Discuss Nikiski meteorological tower	Gary Mendivil, ADEC Environmental Program Specialist P.O. Box 11180 Juneau, AK 99811 907-465-5061 gary.mendivil@alaska.gov Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov Mark Morones, OPMP Large Project Coordinator 550 W. 7th Ave, Ste. 1430 Anchorage, AK 99501-3577 907-269-8729 mark.morones@alaska.gov
12/3/2014	Natural Resources Group (NRG)	Bi-weekly pre-filing discussion	Jennifer Lee, NRG Project Manager 503-525-5152 jennifer.lee@nrg-llc.com

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Meeting Date	External Group/Agency	Meeting Objective	Primary Contact
12/5/2014	Alaska Department of Environmental Conservation (ADEC) Office of Project Management and Permitting (OPMP) State Pipeline Coordinator's Office (SPCO)	Discuss 2015 Cook Inlet geotechnical and geophysical survey program	Gary Mendivil, ADEC Environmental Program Specialist P.O. Box 11180 Juneau, AK 99811 907-465-5061 gary.mendivil@alaska.gov Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov Mark Morones, OPMP Large Project Coordinator 550 W. 7th Ave, Ste. 1430 Anchorage, AK 99501-3577 907-269-8729 mark.morones@alaska.gov
12/8/2014	Law Seminars International Anchorage Conference	Project presentation	N/A
12/10/2014	Inter-Agency Working Group	Project presentation	N/A
12/10/2014	U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (USDOT- PHMSA)	Project presentation	Jeffery Gilliam, USDOT-PHMSA Operations Supervisor, Alaska office 188 W. Northern Lights Blvd., Ste. 520 Anchorage, AK 99503 907-271-6517 or 720-963-3194 jeffery.gilliam@dot.gov

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12/12/2014	U.S. Army Corps of Engineers (USACE)	Discussion regarding Cook Inlet dredging	Janet Post, USACE Regulatory Division, Regulatory Specialist P.O. Box 6898 2204 3rd St. JBER, AK 99506-0898 907-753-2831 janet.l.post®usace.army.mil
12/16/2014	Bureau of Land Management (BLM) Office of Project Management and Permitting (OPMP)	Discussion regarding agency's feedback on prior submitted field data	Robert Lloyd, BLM Program Mgr. – Alaska Land Transfer 222 W. 7th Avenue #13 Anchorage, AK 99513 907-271-4682 rlloyd@blm.gov <u>Mark Morones,</u> OPMP Large Project Coordinator 550 W. 7th Ave, Ste. 1430 Anchorage, AK 99501-3577 907-269-8729 mark.morones@alaska.gov

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Meeting Date	External Group/Agency	Meeting Objective	Primary Contact
12/17/2014	State Pipeline Coordinator's Office (SPCO) Office of History and Archaeology (OHA) Office of Project Management and Permitting (OPMP)	Discussion regarding agency's feedback on prior submitted field data	Shannon Miller, SPCO Natural Resource Specialist 411 W. 4th Ave., Suite 2 Anchorage, AK 99501 907-269-6410 shannon.miller@alaska.gov Shina DuVall, OHA Archaeologist 550 W 7th Ave, Ste. 1310 Anchorage, AK 99501-3565 907-269-8720 shina.duvall@alaska.gov Mark Morones, OPMP Large Project Coordinator 550 W. 7th Ave, Ste. 1430 Anchorage, AK 99501-3577 907-269-8729 mark.morones@alaska.gov

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# Alaska Department of Environmental Conservation (ADEC)



2600 Cordova St, Ste 211 Anchorage, AK 99503, USA T: 907.868.1103 • www.exp.com

June 30, 2014

Elizabeth Nakanishi Alaska Department of Environmental Conservation Air Permits Program 619 E. Ship Creek Ave., Suite 249 Anchorage, AK 99501-1677

Project No.: TAL-00219236-06

## **Subject:** Quality Assurance Project Plan for the Alaska LNG Project Air Quality and Meteorological Monitoring Program—Nikiski

Dear Ms. Nakanishi:

Exp Energy Services, Inc. (exp) is submitting the enclosed Quality Assurance Project Plan (QAPP) for the Alaska LNG Project Air Quality and Meteorological Monitoring Program—Nikiski. As you are aware, on March 13, 2014, the Alaska Department of Conservation (ADEC) reviewed and conditionally approved the Nikiski Meteorological Monitoring site location and approved the Ambient Monitoring site as described in the ExxonMobil request letter sent on behalf of the Alaska LNG Project, dated February 25, 2014. Subsequently on June 6, 2014, ExxonMobil requested a modification to the conditionally approved Nikiski Meteorological Monitoring site location, which was approved by ADEC on June 13, 2014.

On behalf of the Alaska LNG Project, Exp requests ADEC review and determination whether the described monitoring program satisfies Prevention of Significant Deterioration (PSD) monitoring quality assurance requirements.

Please direct all correspondence or questions regarding this submittal to Aurora Courtney (exp Energy Services, Inc.) at (907) 868-1185, extension 4107 and Brad Broker (SLR International Corporation) at (907) 264-6974.

Sincerely,

Chris L. Humphrey, PE Vice President, Arctic Region

cc Aurora Courtney, exp Energy Services, Inc. Brad Broker, SLR International Corporation Jeff Raun, Alaska LNG Bart Leininger, Alaska LNG ExxonMobil Development Company 16945 Northchase Drive, DEV-GP4-498 Houston, Texas 77060 832-624-2816 281-654-3212 Fax Charlie Kominas Alaska LNG Project Environmental, Regulatory and Land Manager



February 25, 2014

Ms. Elizabeth Nakanishi ADEC Air Monitoring Program 619 E. Ship Creek Avenue, Suite 249 Anchorage, AK 99501

Subject: Meteorological and Ambient Air Monitoring Program Site Approval Request, Nikiski

Dear Ms. Nakanishi:

BP, ConocoPhillips, ExxonMobil and TransCanada are currently working together to progress an Alaska LNG project and are developing a multi-year data gathering strategy in order to obtain meteorological and ambient air quality information near the Nikiski industrial area. This prevention of significant deterioration (PSD) quality data collection effort will play a critical role in LNG liquefaction facility siting and design.

The Alaska LNG project requests ADEC concurrence on siting approval for a meteorological tower site as well as an ambient air monitoring station site in Nikiski, Alaska. As confirmed with ADEC Air Monitoring Program staff in a meeting on February 18<sup>th</sup>, the Alaska LNG project requests ADEC site approval on or before March 15<sup>th</sup>. The locations described herein are proposed. If parcel locations change significantly from those proposed in this letter, the project will submit an amended site approval request. Final locations will be provided to ADEC.

### **Meteorological Tower Site Approval**

The Alaska LNG project proposes to install a 60 meter meteorological tower with a proposed location identified in Figure 1 (See Appendix A). The project proposes to collect the following meteorological data at this location:

- Horizontal wind speed at 10, 30, and 60 meters
- Vertical wind speed at 30 meters
- Wind direction at 10, 30, and 60 meters
- Temperature at 2, 10, 30, and 60 meters
- Solar Radiation at 2 meters
- Sigma A at 10, 30, and 60 meters
- Sigma W at 30 meters

In identifying the proposed meteorological tower location, the Alaska LNG Team applied guidance provided in the February 2000 EPA publication Meteorological Monitoring Guidance for Regulatory Modeling Applications (EPA-454/R-99-005) with efforts made to maximize representativeness, including the following factors:

- Proximity of the meteorological site to the area of interest for the Alaska LNG project
- Consideration of distance between potential sources and receptors
- Consideration of atmospheric dispersion potential
- Placement of equipment at representative heights, focusing on boundary layer profiling and three dimensional meteorological fields
- Evaluation of terrain effects on meteorological conditions

Terrain relief in Nikiski is minimal, and the project team anticipates that terrain effects on meteorological measurements at the proposed site will be non-significant. While terrain heights are below potential stack-tops, there are vertical obstructions in the vicinity. Figure 2 shows the proposed tower location in relation to nearby obstructions, with polygons indicating estimated 10:1 stand-off distances. Based on an estimated height of 230 feet for the Agrium North "Prill Tower," the proposed Alaska LNG meteorological tower site falls within the EPA recommended distance of at least ten times the height of nearby obstructions. The potential aerodynamic effects due to the Agrium tower are mitigated by three key factors: The tower is well outside the predominant wind direction (See wind rose in Figure 3); the proposed meteorological site is outside the total depth of the building wake, estimated as approximately 2.5 times the height of the obstruction; and, with a separation distance of about 1,800 feet from our proposed meteorological tower location, the Prill Tower's thin character precludes it from having any measurable impact on wind speed or direction. The proposed tower location is also further away from the Agrium tower than an existing ADEC-approved meteorological tower. A representative photograph is shown in Appendix B, Photograph 1.

Information on stand-off distances from the proposed tower site and nearby obstructions is listed in Table 1.

ID	Obstruction Name	Estimated	Is Met Tower
		Obstruction	Site Outside
		Height	10:1
		(feet)	Standoff?
1	Tank 1: Cook Inlet Pipeline	80	Yes
2	Tank 2: Kenai LNG	110	Yes
3	Tank 3: Tesoro Refinery North	80	Yes
4	Tank 4: Tesoro Refinery South	80	Yes
5	Homer Electric Association	90	Yes
6	Kenai LNG	90	Yes
7	Agrium South	200	Yes
8	Agrium North (Prill Tower)	230	No

### Table 1: Evaluation of Obstructions

### **Ambient Monitoring Station Site Approval**

The Alaska LNG project also proposes to install an ambient air monitoring station with co-located, non-PSD quality wind speed and direction equipment approximately 6,500 feet from the meteorological tower site described previously (See Figures 1 and 4). The project will collect data for the following parameters at this proposed monitoring site location:

- Ozone
- NO<sub>2</sub>
- SO<sub>2</sub>
- CO
- PM-10
- PM-2.5 (co-located)
- Wind speed and direction

In proposing the ambient station location, the project team has taken into consideration the requirements of 40 CFR Part 58, Appendix E. During a meeting with ADEC Air Monitoring Program staff on February 18<sup>th</sup>, the existing tree line near the proposed ambient station site was questioned. A representative photograph of the tree line southwest of the proposed station site is included in Appendix B. The project proposes to maintain a separation distance of at least 10 meters from the drip line of nearby trees that could otherwise act as obstructions to air flow.

In conclusion, thank you for consideration of this siting approval request. If you have any questions or need additional information regarding this request before March 15<sup>th</sup>, please contact me at 832-624-2816 or our Environmental, Regulatory, and Land Advisor, Jeff Raun, at 907-929-4105 or jeff.raun@exxxonmobil.com.

Sincerely,

Clerke Konin

Charlie Kominas Alaska LNG Environmental, Regulatory and Land Manager For and on behalf of ExxonMobil Alaska Production Inc.

Enclosures Appendix A: Figures Appendix B: Representative Photographs

cc: Alan Schuler, ADEC Barbara Trost, ADEC Brad Thomas, ConocoPhillips Project File Appendix A: Figures


Figure 1: Overview Map

Figure 2: Proposed Meteorological Tower Site "3A" with Stand-Off Distances





Figure 3: Tesoro Meteorological Station Windrose



#### Figure 4: Proposed Ambient Station Site

#### Appendix B: Representative Photographs



#### Photo 1: Southwest of Proposed Met Tower Location (Tesoro Met Tower in Foreground with Agrium Obstruction in Background)

Photo 2: Tree Line Southwest of Proposed Ambient Station Site



Alaska LNG Project	DOCKET NO. PF14-21-000	Doc No: USAI-EX-SRREG-00-0001
	DRAFT RESOURCE REPORT NO. 1	DATE: FEBRUARY 2, 2015
	GENERAL PROJECT DESCRIPTION	REVISION: 0
	PUBLIC VERSION	

# Alaska Department of Fish & Game (ADF&G)



Alaska LNG Project 16945 Northchase Drive, DEV-GP4 Houston, Texas 77060

Ref No.: USAKE-EX-SRZZZ-00-0002

August 13, 2014

Randy Bates Division Director Alaska Department of Fish and Game Post Office Box 115526 Juneau, Alaska 99811

## Re: Review of Fish Studies Data Gathered by the Alaska Pipeline Project and the Alaska LNG Project

Dear Mr. Bates:

On behalf of the Alaska LNG Project (Project), this letter and its attachments seek your concurrence regarding data to be used in the regulatory approval process for the Project. As discussed in previous meetings with the Alaska Department of Fish and Game (ADF&G), a considerable body of work has been compiled for portions of the Project footprint north of Livengood, Alaska, including data that is common to a previous gas project (Alaska Pipeline Project). The available body of work includes information gathered by the previous project, as well as information gathered during supplemental surveys conducted by the Project in 2013.

Some of the previously gathered data are no longer applicable or within the proposed Alaska LNG Project footprint; therefore the Project has developed and enclosed the following: an overview of the Stream Fish Survey Program to explain program objectives and summarize study results (Attachment A); a table summarizing potential stream crossings by the current preferred Alaska LNG Mainline Pipeline Route and the Point Thomson Pipeline Route and associated data for each crossing (Attachment B); and two mapbooks (one for the Mainline Pipeline and one for the Point Thomson Pipeline) illustrating the locations of all potential stream crossings (Attachment C).

The Project requests ADF&G's review and endorsement of this data set so that it may be used in the upcoming Federal Energy Regulatory Commission application and resulting Enivronmental Impact Statement. If you have any questions or require further information, please contact Adrienne Rosecrans at (832) 624-2722.

Sincerely,

Brech

Ruben Medrano Alaska LNG Regulatory Lead For and on behalf of ExxonMobil Alaska LNG LLC

Enclosures

Attachment A: Stream Fish Survey Program Overview Attachment B: Stream Table Attachment C: Alaska LNG Mainline Fish Stream Mapbook, Point Thomson Pipeline Fish Stream Mapbook

cc: Project files SPCO – Shannon Miller

Alaska LNG Project	DOCKET NO. PF14-21-000	Doc No: USAI-EX-SRREG-00-0001
	DRAFT RESOURCE REPORT NO. 1	DATE: FEBRUARY 2, 2015
	GENERAL PROJECT DESCRIPTION	REVISION: 0
	PUBLIC VERSION	

# Alaska Department of Natural Resources (ADNR)

11-12.14



Alaska LNG

Alaska LNG Project

16945 Northchase Drive, DEV-GP4 Houston, Texas 77060

Ref No.: USAI-PE-SALTR-00-0001

November 11, 2014

Ms. Judith Bittner Division of Parks and Recreation Office of History and Archaeology 550 W. 7th Avenue, Suite 1310 Anchorage, AK 99501-3565

**Re:** Cultural Resources Evaluation, Alaska LNG Project – Proposed 2014 Ambient Air Quality Station, Alaska LNG Project, Nikiski, Alaska

Dear Ms. Bittner:

ExxonMobil Alaska LNG LLC (EMALL), ConocoPhillips Alaska LNG Company, BP Alaska LNG LLC, TransCanada Alaska Midstream LP, and Alaska Gasline Development Corporation (the "Alaska Parties") are currently working together to progress the Alaska LNG Project ("Project"). The Alaska Parties will be installing an ambient air quality monitoring station to collect necessary information for siting and design of the proposed liquefaction facilities. This station will be located on a privately owned land parcel within the Nikiski area on the Kenai Peninsula. Since the installation of the air quality station includes ground-disturbing activities, EMALL has conducted a cultural resources evaluation for the Area of Potential Effect (APE), consisting of a single 2-acre parcel. Although there is no federal nexus or state permit required to install this station on private land, the Project team is voluntarily conducting an analysis of potential effects to historic resources consistent with cultural surveys performed to support other Alaska LNG project activities in the area.

The air monitoring station installation activities are planned to begin mid-November 2014. EMALL, via our consultant URS, has conducted both desktop and field based cultural resource analysis to determine if any historic properties would be affected in the APE. That evaluation was conducted using the same protocols outlined in the August 22, 2014 letter for Alaska LNG Project Geophysical and Geotechnical Site Investigations. This letter and attached memorandum provides the results and recommendation from that analysis.

The desktop review and on-the-ground reconnaissance of the proposed ambient air monitoring station location examined during the course of the current inventory did not result in the identification of cultural resources. In addition, the study confirmed that no previously documented cultural resources were present within this area. Therefore, EMALL does not anticipate that adverse impacts will occur to cultural resources during construction and operation of this facility. We request concurrence with the finding of "No Historic Properties Affected" from the Alaska State Historic Preservation Office.

We appreciate and thank you for your cooperation. If you have any questions about the proposed field studies and the enclosed technical memo, please feel free to contact Mr. Jeff Raun at (907) 929-4105 or jeff.raun@exxonmobil.com.

Sincerely,

Charlie Kominas Alaska LNG Safety, Security, Health and Environment Manager For and on behalf of ExxonMobil Alaska LNG LLC MSJ No Historic Properties Affected Alaska State Historic Preservation Officer Date: ||.|2.14 File No.: 3BO-IR FERC Please review; 36 CFR 800.137 A.S. 41.35.070(d)

#### Enclosure(s)

URS Memorandum Subject: Desktop and Survey of Proposed 2014 Ambient Air Quality Station, Alaska LNG Project, Nikiski, Alaska dated October 15, 2014



Ref No.: LT-AKE-PT-0104-001

October 27, 2014

Judith E. Bittner State Historic Preservation Officer Alaska Office of History and Archaeology 550 West 7<sup>th</sup> Avenue, Suite 1310 Anchorage, AK 99501-3565

Subject: Request for Informal Consultation under Section 106 of the National Historic Preservation Act FERC Docket No.: PF14-21-000

Dear Ms. Bittner:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (together, Project Participants) have initiated the Federal Energy Regulatory Commission's ("FERC" or "Commission") pre-filing review process for the Alaska LNG Project (Project) under 18 C.F.R. Section 157.21 of the FERC regulations. On September 12, 2014, the Director of the Office of Energy Projects ("OEP") issued a letter order granting the Project Participants' pre-filing request and assigning the Project FERC Docket No. PF14-21-000. Project Participants plan to prepare and file an application for authorization under Section 3 of the Natural Gas Act to site, construct and operate the Project.

#### Alaska LNG Project Overview

The Alaska LNG Project Participants are proposing to construct one integrated liquefied natural gas (LNG) project with interdependent facilities for the purpose of liquefying supplies of natural gas from Alaska, in particular the Point Thomson Unit and Prudhoe Bay Unit production fields on the Alaska North Slope for export in foreign commerce. The proposed project includes the construction of a liquefaction facility in south central Alaska, an approximately 800-mile mainline gas pipeline, a gas treatment plant on the North Slope, and gas transmission lines connecting the gas treatment plant to the Point Thomson Unit and Prudhoe Bay Unit fields. The mainline gas pipeline will include at least five off-take points to allow for the opportunity for future in-state deliveries of natural gas.

Enclosed with this letter are a general project map and a project overview diagram reflecting the proposed facilities and their planned locations. Additional information on the project can be found at <u>www.ak-Ing.com</u>.

FERC authorizations are required to construct and operate these facilities. The Alaska LNG Project Participants are targeting to file a formal application for the Alaska LNG Project with the FERC in September 2016. FERC authorizations for the project and commencement of construction are anticipated in the 2018 – 2019 timeframe. Pursuant to this schedule, facilities would begin operating in the 2024 – 2025 timeframe.

Proposed facilities will be located in the North Slope Borough, Yukon-Koyukuk Census Area, Fairbanks North Star Borough, southeast Fairbanks Census Area, and the Kenai Peninsula Borough.

#### FERC Pre-filing Process

The FERC will be the lead federal agency responsible for implementation of the National Environmental Policy Act (NEPA), and the National Historic Preservation Act (NHPA; 16 USC § 470 as amended). Pursuant to 36 CFR 800; and at 18 CFR Parts 380.12, 380.14, and Appendix A to Part 380; and pursuant to the FERC's *Guidelines for Reporting on Cultural Resources Investigations for Pipelines* (December 2002), Project Participants are asked to consult with the State Historic Preservation Office, Alaska Native Organizations, and/or land-managing agencies as early as possible in the project planning.

Project Participants do not represent the FERC in terms of government-to-government consultations with Alaska Native Tribes. The FERC has an established policy for consulting with Native American tribes, articulated in Order 635, *Policy Statement on Consultations with Indian Tribes in Commission Proceedings* issued July 23, 2003. The FERC will initiate direct consultations with Tribes when it issues its Notice of Intent to Prepare an Environmental Impact Statement (NOI). For all major projects, after the NOI is issued, the FERC will also write letters to Alaska Native Tribes that may attach religious or cultural importance to historic properties in the area of potential effect, and follow up Tribal contacts with emails, telephone calls, or meetings. Feel free to discuss any concerns directly with the FERC archaeological staff by emailing or calling Lori Boros, FERC Archaeologist, at 202-502-8046 (email: Lori.boros@ferc.gov).

Project Participants have met numerous times with you and your staff to discuss field survey methodologies for the 2013 and 2014 field seasons, a process for review and acceptance of prior project data, and the Section 106 process in general. However, no formal consultation has been initiated with the OHA regarding the project; therefore, with this letter Project Participants, acting as the FERC's designated non-federal representative for purposes of complying with Section 106 of the NHPA, respectfully requests your input regarding compliance with the relevant historic preservation laws.

On behalf of the Project Participants, we appreciate your assistance with this request. If you have any questions, please contact me at 832-624-2816 or by email at Charlie.kominas@exxonmobil.com.

Sincerely,

Clarke Konto

Charlie Kominas On Behalf of Alaska LNG Project Participants

cc: Lori Boros, FERC Jim Martin, FERC Dr. Robert King, BLM State Archaeologist Project File

## Alaska LNG

Alaska LNG Project 16945 Northchase Drive, DEV-GP4 Houston, Texas 77060

Ref No.: USAKE-EX-SRZZZ-00-0005

August 13, 2014

Judith Bittner State Historic Preservation Officer Alaska Department of Natural Resources Office of History and Archaeology 550 W. 7th Avenue, Suite 1310 Anchorage, Alaska 99501-3565

## Re: Review of Cultural Resources Reports Submitted by the Alaska Pipeline Project and the Alaska LNG Project

Dear Ms Bittner:

On behalf of the Alaska LNG Project (Project), this letter and its attachments seek your concurrence regarding data to be used in the regulatory approval process for the Project. As discussed in previous meetings with the Alaska Department of Natural Resources, Office of History and Archaeology (OHA) a considerable body of work has been compiled for portions of the Project footprint north of Livengood, Alaska, including data that is common to a previous gas project (Alaska Pipeline Project). The available body of work includes information gathered by the previous project as well as information gathered during supplemental surveys conducted by the Project in 2013. To date you have received the following reports for the Project footprint north of Livengood:

Reference No.	Title	Year
USAKE-UR-SRZZZ-00-0020_B 2013 Report	2013 Phase I Cultural Resource Report, Archaeological Survey and Documentation	2013
USAG-UR-SRZZZ-000030	Phase I Cultural Resources Overview and Survey Report for the Alaska Pipeline Project, Prudhoe Bay, to the Alaska, United States-Canada Border, 2010-2011	2012
USAG-UR-SRZZZ-000010	2010 Cultural Resource Field Study Results, Phase I: Identification Cultural Resource Survey of the Alaska Pipeline Project. Supplemental Report to OHA Permit No. 2010-17	2011

Some of the previously gathered data are no longer applicable or within the proposed Alaska LNG Project footprint; therefore the Project has developed and enclosed the following: an overview of the Cultural Resources Program to explain program objectives and summarize

study results (Attachment A); a site tracking table summarizing the cultural resource sites located within a 300-foot-wide corridor centered on the potential Alaska LNG Mainline Pipeline centerline and the Point Thomson Pipeline centerline (Attachment B); and two mapbooks (one for the Mainline Pipeline and one for the Point Thomson Pipeline) illustrating the locations of the cultural resource sites listed in the summary table. These mapbooks also include sites outside of the study corridor (Attachment C).

The Project requests OHA's review and endorsement of this data set so that it may be used in the upcoming Federal Energy Regulatory Commission application and resulting Enivronmental Impact Statement. If you have any questions or require further information, please contact Adrienne Rosecrans at (832) 624-2722.

Sincerely,

Lub Medu

Ruben Medrano Alaska LNG Regulatory Lead For and on behalf of ExxonMobil Alaska LNG LLC

Enclosures Attachment A: Cultural Resources Program Overview Attachment B: Site Tracking Table Attachment C: Alaska LNG Mainline Cultural Resources Mapbook, Point Thomson Pipeline Cultural Resources Mapbook

cc: Project files State Pipeline Coordinator's Office ExxonMobil Development Company 16945 Northchase Drive, DEV-GP4-498 Houston, Texas 77060 281-654-3289 281-654-3212 Fax Charlie Kominas Alaska LNG Project Environmental, Regulatory and Land Manager



USAKE-PT-SGPER-00-0008-008

April 29, 2014

Mr. David de Gruyter State Pipeline Coordinator 411 West 4<sup>th</sup> Ave, Suite 2 Anchorage, Alaska 99501

RE: Alaska LNG - FY 2014 Reimbursable Services Agreement Work Scope

Dear Mr. de Gruyter,

The purpose of this letter is to address Section I.2 of the Reimbursable Services Agreement between ExxonMobil Alaska Production Inc. and the Alaska Department of Natural Resources (ADNR) by amending the work plan for fiscal year 2014 (July 1, 2014 through June 30, 2015). As discussed with the State Pipeline Coordinator's Office (SPCO) in recent planning meetings, the Alaska LNG Project is planning 2014 field season activities that will continue through this calendar year. Additional potential work scopes extending beyond this summer season are also included; however, the schedules and activity details are less defined. The intent of this letter is to identify our planned work activities that will likely require input and coordination with state agencies this fall and continue into the first half of 2015. Should activities change or additional activities be considered, we will communicate with your office and update the Work Plan as needed.

Scope of Work/Services - Amendment 1

No.	FY2014 Activity	State Agencies	Work Services Requested	Estimated Schedule
1.	Marine metocean permitting activities [midstream, downstream]	SPCO, DNR/ML&W, DNR/ SHPO, ADF&G	<ul> <li>In 2013, the Alaska LNG project (Project) installed three seabed frame-mounted ADCP units to collect data on current profile and ice. Units are self-contained and will be serviced twice per year. In 2014, additional units will be installed to gather data within potential pipeline crossing areas.</li> <li>A Horizontal Acoustic Doppler Current Profiler (H-ADCP) and a Wave, Sea Level, &amp; Air Gap Sensor will be installed at the existing Kenai LNG facility dock (operated by ConocoPhillips) to measure current and ice properties of the offshore area.</li> <li>Agency interaction required: SPCO to coordinate with DNR divisions and other state agencies for land use permit requirements for installation of marine survey equipment.</li> </ul>	4/15/14 - 6/30/15 (ongoing)

2.	Cook Inlet	SPCO,	Onshore LNG facility vicinity:	5/1/14 -
	Geophysical	DNR/ML&W,	Geophysical - shallow seismic refraction, EM survey, and deep	6/30/15
	surveys	DNR/SHPO	seismic reflection, seismograph	
	-			(ongoing)
	[midstream,	ADFaG	Marine (LNG Facility and Pipeline) - vessel based shoreline LiDAR,	
	downstream]		magnetometer, and sub-bottom profiling, bathymetric survey	
	-		(multibeam & side scan)	
			Agency interaction required:	
			SPCO to coordinate with DNR divisions and other state agencies	
			for land use permit requirements for implementation of marine	
			survey scopes.	
3.	Onshore LNG	SPCO,	Geotechnical – land	5/1/14 -
	site	DNR/ML&W,	borings, sediment/biological sampling, monitoring wells, and	6/30/15
	Geotechnical	DNR/SHPO,	downhole Geophysics	
		ADF&G		(ongoing)
	[downstream]		Agency interaction required:	
			SPCO to coordinate with DNR divisions and other state agencies	
			for land use and environmental permit for implementation of	
			onshore geotechnical scopes.	
4.	Cook Inlet	SPCO,	Geotechnical – marine	7/1/14 -
	Geotechnical	DNR/ML&W,	The marine geotechnical program will include drilling geotechnical	6/30/15
		DNR/SHPO,	boreholes below the sea bottom at various locations in Cook Inlet	
	[downstream,	ADF&G,	to evaluate subsurface conditions and material properties. All	(ongoing)
	midstream]	ADEC/DW and	geotechnical boreholes are planned to be drilled in state waters.	
		ADEC/other		
			Agency interaction required:	
			SPCO to coordinate with DNR divisions and other state agencies	
			for land use and environmental permits for geotechnical	
			operations. Permit application development will begin in 2014 for	
			likely 2015 operations.	
5.	2014/2015	SPCO,	Summer field season environmental surveys	5/1/14 -
	Summer Field	DNR/SHPO,	Permit applications are in the process of being submitted for:	6/30/15
	Season -	DNR/DPOR,DN	1. Cultural resource surveys	
	environmental	R/MLW, and	2. Wetland and vegetation surveys	(ongoing)
	surveys	ADF&G. ADEC	3. Fish surveys	
	for ide to a set		Characterize fish distribution and habitat for streams and	
	[midstream]		rivers along the pipeline route, including:	
			<ul> <li>Specimen collection using approved methods (e.g., minnow</li> </ul>	
			trapping, seining, tyke nets)	
			Water quality parameters (e.g., temperature, pH, oxidation	
			reduction potential)	
			Streambed and stream channel morphology	
			4. Stream and lake hydrology and lish studies. The field season	
			Surveys may require the need for a neid camp.	
			Agency interaction required:	
			SPCO to coordinate with other state agencies as needed for	
			access and siting permits and scientific study permits. Completion	
			reports and field follow-up may require state agency input	
6	2014/2015	SPCO ADF&G	Civil surveys	5/1/14 -
0.	Summer Field		Civil surveys will be conducted within the potential nipeline right-of-	6/30/15
	Season -	DINK/DPUK	way corridor to recover and confirm establish survey monuments	0/00/10
	corridor civil		correct GIS project locations, set controls for route and location	(ongoing)
	surveys		identification and to confirm GPS positions.	(ongoing)
	[midstream]		Surveys may require land access permits in certain areas. In many	
			areas survey activities are expected to fall under generally allowed	
			use of state land but some permits may be required.	
			Agency interaction required:	
			SPCO to coordinate with state agencies as needed for access.	

7.	2014/2015 Field Season helicopter	SPCO, ADF&G, DNR/DPOR	Environmental surveys: Helicopter access for remote targets off the road network for survey crew drop offs. No current plans for pad clearing. Potentially in 2015, raptor surveys will be conducted	5/1/14 - 6/30/15
	activities		along the potential pipeline corridor requiring helicopter use.	(ongoing)
	[midstream]		<ul> <li>Pipeline Corridor analysis (LiDAR, aerial imagery, helicopter and ground based reconnaissance) of:</li> <li>Special route study areas</li> </ul>	
			<ul> <li>Site selection for preferred and alternate compressor station and mainline valve (MLV) sites</li> </ul>	
			<ul> <li>Off ROW infrastructure footprint (camp sites, access road, etc.)</li> <li>Material sources (granular and water/ice pad)</li> </ul>	
			Agency interaction required: SPCO to coordinate with other state agencies as needed for access and siting related to drop off points.	
8.	Phase I environmental site	SPCO, DNR/MLW, DNR/DPOR,	Conduct non-invasive Phase I assessments across 300' corridor along the pipeline ROW and in the Nikiski area as needed	5/1/14 - 6/30/15
	assessments (Phase II as needed)	ADEC	Agency interaction required: SPCO to coordinate with other state agencies as needed for access and siting permits.	(ongoing)
	[midstream, downstream]			
9.	GTP Geotechnical Evaluation	SPCO, DNR/MLW, DNR/DO&G,SH	<ul><li>GTP North Slope area support studies</li><li>1. Geotechnical cores of the gravel mine/GTP water reservoir sites</li></ul>	5/1/14 - 6/30/15
	[upstream]	PO, ADEC, ADF&G	<ul> <li>Winter boring program at proposed and alternate reservoir locations (seasonal pumping from Put River)</li> <li>Geotechnical cores at the Put 23 mine site</li> <li>Confirm remaining gravel availability</li> <li>Geotechnical cores at GTP Infrastructure sites</li> <li>Potential supplemental boring program for other GTP infrastructure pads, roads, laydown areas</li> </ul>	(ongoing)
			Agency interaction required: SPCO to coordinate with DNR divisions and other state agencies for land use and environmental permits for implementation of onshore geotechnical scopes.	
10.	GTP Hydrology	SPCO, DNR/MLW,	GTP North Slope Hydrology Studies Monitoring field work will focus on hydrology, water supply and	5/1/14 - 6/30/15
	[upstream]	DNR/DO&G,SH PO, ADEC, and ADF&G	<ul> <li>assessing impacts to drainages:</li> <li>Assess freshwater lakes for winter ice pad construction - volume, depth, fish presence, and lake water quality, and assess existing temporary water uses and water rights <ul> <li>Determine culvert requirements in GTP activity area – assess natural drainage pathways intersected by gravel pads/roads and ice pads, fish presence and drainage structure requirements</li> </ul> </li> <li>GTP water reservoir and intake structure siting <ul> <li>Put River water source for pumped storage reservoir (potable and GTP process water)</li> <li>Summer season Put River water quality analysis</li> <li>Put River water intake preliminary design</li> </ul> </li> <li>Stream monitoring</li> </ul>	(ongoing)
			SPCO to coordinate with DNR divisions and other state agencies for land use and environmental permits for implementation of onshore hydrology studies.	

11.	North Slope Marine bathymetry	SPCO, DNR/ML&W, DNR/DO&G,	Conduct a high quality bathymetric survey near West Dock to refine the dredge quantity and confirm the schedule and equipment needed to conduct future dredging and disposal activities.	6/1/14 – 6/30/15
	[upstream]		Agency interaction required: SPCO to coordinate with state permitting agencies and DNR divisions for the state agency review process land use permit requirements.	
12.	Marine test trench	SPCO, DNR/ML&W,	Dredge and test trench program at Dockhead 2 at Prudhoe Bay.	1/1/15 – 6/30/15
	[upstream]	DNR/DO&G, ADEC/DOW, ADF&G	Agency interaction required: SPCO to coordinate with state permitting agencies and DNR divisions for the state agency review process land use permit requirements.	(ongoing)
13.	PL Corridor Geotechnical	SPCO, DNR/MLW.	<ul> <li>Borehole drilling/ sampling:</li> <li>Borehole sampling will be conducted to test soils for</li> </ul>	6/1/14 - 6/30/15
	program	DNR/DO&G,SH PO,	characterization in different terrain classifications, to test for frost heaves and develop information for potential river crossings and	(ongoing)
	[midstream]	ADEC, ADF&G ADGGS	<ul> <li>backhoe excavations at potential material sites will be conducted to characterize materials in gravelly terrain units.</li> <li>Pick and shovel test pits will be along route to confirm soil characteristics and depths to shallow bedrock.</li> </ul>	
			<ul> <li>Target trenches will delineate active fault crossing All sites accessible from highway or public roadway.</li> </ul>	
			Agency interaction required: SPCO to coordinate with other state agencies as needed for access and geotechnical evaluation permits.	
14.	Ambient noise surveys	SPCO, DNR/MLW, DNR/DO&G.SH	Potential installation of noise monitors in the Nikiski terminal area and along the pipeline corridor.	1/1/15 - 6/30/15
	[midstream, downstream]	PO, ADEC, ADOT&PF ADF&G	Agency interaction required: SPCO to coordinate with other state agencies as needed for access and siting permits.	(ongoing)
15.	Air quality monitoring and	SPCO, DNR/DO&G.	Ambient air quality and meteorological monitoring station siting analysis and permitting for installation	10/17/13 - 6/30/15
	analysis	ADEC/AQ	Quality Assurance Program Plan review and coordination	(ongoing)
	[upstream, midstream, downstream]		Agency interaction required: SPCO to coordinate with other state agencies as needed for siting permits related to the air quality monitoring station installation along the pipeline corridor, on the North Slope and in the Nikiski area. ADEC/AQ to provide technical assistance in reviewing monitoring station facility locations and QAPP plan development and review.	
16.	2014/2015 Subsistence	SPCO, ADF&G	ADF&G will identify for subsistence analysis the communities and census designated places whose primary subsistence harvest	10/1/13 - 6/30/15
	Harvest Surveys		areas lie within portions of the Alaska LNG Project. Subsistence analysis requires the following steps:	(ongoing)
			<ul> <li>Identify subsistence analysis locations and conduct subsistence harvest surveys in designated locations/communities (ADF&amp;G)</li> <li>Write Subsistence Analysis Report by conducting literature review of existing data to document the baseline subsistence resource conditions and initial impact assessment (Consultant)</li> <li>Compile and analyze the wildlife harvest data collected by ADF&amp;G during the subsistence harvest surveys (Consultant)</li> </ul>	

			<ul> <li>Analyze and compare the historical data with the new data to assess any evidence of trends or pattern (Consultant)</li> <li>Update existing maps of subsistence data to include the Alaska LNG Project route and facilities, and prepare new maps for the ADF&amp;G subsistence data from the surveyed communities (Consultant)</li> <li>Prepare the subsistence impacts and mitigation sections for RR5 (Consultant)</li> <li>Agency interaction required: Stephen R. Braund and Associates (SRBA) has been contracted to research and document all existing subsistence baseline data available and provide mapping support to ADF&amp;G. SRBA will also write the existing conditions, impacts, and mitigation sections for RR5.</li> </ul>	
17.	2014/2015 Health Impact	SPCO, DHSS	DHSS will utilize a contractor (NewFields) to conduct an HIA to identify the potential human health and safety impacts of the	10/1/13 - 6/30/15
	baseline studies and village field surveys		proposed Alaska LNG Project, during all project phases, on people living, working and traveling near the proposed facilities and along the pipeline route. The overall goal of a HIA is to minimize negative health effects while maximizing the health benefits of the proposed action.	(ongoing)
			The HIA scope of work consists of the following:	
			<ul> <li>Comprehensive assessment/baseline data collection</li> <li>Nutritional surveys and other field reviews</li> <li>Review project plans and schedule</li> </ul>	
			<ul> <li>Impact assessment and development of a health management plan</li> </ul>	
			Agency interaction required: DHSS approved contractor NewFields will conduct the health impact assessment. HIA community surveys can be coordinated closely with ADF&G subsistence surveys so as to minimize survey fatigue in communities.	
18.	Workshops & Regulatory	SPCO, DNR agency divisions	Anticipated pipeline routing workshops to support a future pipeline ROW lease application.	10/1/14 - 6/30/15
	Planning in support of pipeline ROW lease application	(I.e. ML&W, SHPO, DGGS, etc.), ADEC, ADF&G, DOLWD, AOGCC, ADOT&PF, DPS/SFMO, DHSS	Agency interaction required: SPCO to coordinate with DNR divisions and other state agencies for workshop participation and state agency permit planning in support of a future pipeline ROW lease application.	(ongoing)
19.	NEPA process	SPCO, DNR agency divisions	The Alaska LNG Project plans to continue preparation for the federal NEPA process.	TBD - 6/30/15
		(I.E. INLAW), SHPO, DGGS, etc.), ADEC, ADF&G, DOLWD, AOGCC, ADOT&PF, DPS/SFMO, DHSS	Agency interaction required: SPCO to coordinate with other state agencies to support the federal NEPA process.	(ongoing)

We appreciate the coordination role that the SPCO provides. Should you have any questions or require further information, please feel free to contact me at (832) 624-2816 or Adrienne Rosecrans at (832) 624-2722.

Sincerely,

Clerk Konto

Charlie Kominas Alaska LNG Project Environmental, Regulatory and Land Manager For and on behalf of ExxonMobil Alaska Production Inc.

ExxonMobil Development Company 16945 Northchase Drive, DEV-GP4-498 Houston, Texas 77060 281-654-3289 281-654-3212 Fax Charlie Kominas Alaska South Central LNG Project Environmental, Regulatory and Land Manager



July 1, 2013

Doc. No. L-AKE-EDHO-NRAK-13-0013

Mr. Mike Thompson State Pipeline Coordinator 411 West 4<sup>th</sup> Avenue, Suite 2 Anchorage, Alaska 99501

RE: Alaska South Central LNG Project Description of Work Activities for Next Fiscal Year

Dear Mr. Thompson:

This letter addresses the "Agreements" Section I.1 of the Reimbursement Services Agreement Between ExxonMobil Alaska Production Inc. and the Alaska Department of Natural Resources for the Alaska South Central LNG (SCLNG) Project to advise the State Pipeline Coordinators (SPCO) of any work planned during the next fiscal year (July 1, 2013 to June 30, 2014). At this time, the SCLNG Project plans to complete the various reports required by SPCO and other agencies following the 2013 summer field studies program and begin planning for potential future field studies. The SCLNG Project will inform the SPCO as soon as additional work scope is confirmed for the next fiscal year so that the agency may further enhance its Initial Work Plan and budget estimate as described in the Agreement.

If there are any questions or you require further information, please feel free to call me at (281) 654-3289 or Molly Birnbaum at (907) 929-4107.

Sincerely,

Clerk Kon

Charlie Kominas Alaska South Central LNG Project Environmental, Regulatory and Land Manager For and on behalf of ExxonMobil Alaska Production Inc.

CC: Chris Grundman (SPCO)

Alaska LNG Project	DOCKET NO. PF14-21-000	Doc No: USAI-EX-SRREG-00-0001
	DRAFT RESOURCE REPORT NO. 1	DATE: FEBRUARY 2, 2015
	GENERAL PROJECT DESCRIPTION	REVISION: 0
	PUBLIC VERSION	

# **Alaska Native Tribes**



Ref No.: LT-AKE-PT-14-0101-001

October 23, 2014

Isaac Akootchook, President Kaktovik Village PO Box 130 Kaktovik, AK 99747

RE: Alaska LNG Project FERC Docket No.: PF14-21-000

Dear Isaac Akootchook:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (together, Project Participants) have initiated the Federal Energy Regulatory Commission's ("FERC" or "Commission") pre-filing review process for the Alaska LNG Project (Project) under 18 C.F.R. Section 157.21 of the FERC regulations. On September 12, 2014, the Director of the Office of Energy Projects ("OEP") issued a letter order granting the Project Participants' pre-filing request and assigning the Project FERC Docket No. PF14-21-000. Project Participants plan to prepare and file an application for authorization under Section 3 of the Natural Gas Act to site, construct and operate the Project.

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Project Participants are currently gathering information about cultural resources in preparation for submitting an application to the FERC, pursuant to the Commission's regulations at 18 Code of Federal Regulations (CFR) Part 380.12(f) and recommendations in the FERC's Office of Energy Projects' *Guidelines for Reporting on Cultural Resources Investigations for Pipeline Projects*. In accordance with the Advisory Council on Historic Preservation (ACHP) regulations for implementing Section 106 of the National Historic Preservation Act (NHPA; 16 USC § 470 as amended), provided in 36 CFR Part 800.2(a)(3), applicants and their consultants may prepare information, analyses, and recommendations for use by the agency. However, the agency remains responsible for making final determinations.

Project Participants do not represent the FERC in terms of government-to-government consultations with Alaska Native Tribes. The FERC has an established policy for consulting with Alaska Native Tribes, articulated in Order 635, *Policy Statement on Consultations with Indian Tribes in Commission Proceedings* issued July 23, 2003. The FERC will initiate direct consultations with Tribes when it issues its Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS). If you would like to communicate directly with the FERC natural gas archaeological staff to discuss its cultural resource review and consultation processes, please feel free to contact Paul Friedman, Senior Technical Expert in Cultural Resources, at 202-502-8059 (email: paul.friedman@ferc.gov).

The purpose of this letter is to request your assistance in the identification of archaeological sites or Traditional Cultural Properties important to the Tribe that may be affected by the proposed Project. Cultural resources data will be included in Resource Report 4 of the overall Environmental Report that would form part of the application. By including information provided by the tribes in our application, FERC can better evaluate any potential impacts on known sites and propose avoidance or mitigation measures during its review. Any information you provide about potential sites would be treated in a confidential manner, as FERC's regulations and guidelines require that cultural resources data be filed as Privileged.

If you have any questions, please contact me at 832-624-2816 or by email at Charlie.kominas@exxonmobil.com. Thank you in advance for your response to this letter.

Sincerely,

Clerk Kon

Charlie Kominas On Behalf of Alaska LNG Project Participants



Ref No.: LT-AKE-PT-14-0101-006

October 23, 2014

Lori Baker, First Chief Native Village of Minto PO Box 58026 Minto, AK 99758

RE: Alaska LNG Project FERC Docket No.: PF14-21-000

Dear Lori Baker:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (together, Project Participants) have initiated the Federal Energy Regulatory Commission's ("FERC" or "Commission") pre-filing review process for the Alaska LNG Project (Project) under 18 C.F.R. Section 157.21 of the FERC regulations. On September 12, 2014, the Director of the Office of Energy Projects ("OEP") issued a letter order granting the Project Participants' pre-filing request and assigning the Project FERC Docket No. PF14-21-000. Project Participants plan to prepare and file an application for authorization under Section 3 of the Natural Gas Act to site, construct and operate the Project.

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If you have any questions, please contact me at 832-624-2816 or by email at Charlie.kominas@exxonmobil.com. Thank you in advance for your response to this letter.

Sincerely,

Clerk Kon

Charlie Kominas On Behalf of Alaska LNG Project Participants



Ref No.: LT-AKE-PT-14-0101-008

October 23, 2014

Gordon Bergman, First Chief Allakaket Village PO Box 50 Allakaket, AK 99720

RE: Alaska LNG Project FERC Docket No.: PF14-21-000

Dear Gordon Bergman:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (together, Project Participants) have initiated the Federal Energy Regulatory Commission's ("FERC" or "Commission") pre-filing review process for the Alaska LNG Project (Project) under 18 C.F.R. Section 157.21 of the FERC regulations. On September 12, 2014, the Director of the Office of Energy Projects ("OEP") issued a letter order granting the Project Participants' pre-filing request and assigning the Project FERC Docket No. PF14-21-000. Project Participants plan to prepare and file an application for authorization under Section 3 of the Natural Gas Act to site, construct and operate the Project.

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If you have any questions, please contact me at 832-624-2816 or by email at Charlie.kominas@exxonmobil.com. Thank you in advance for your response to this letter.

Sincerely,

Clerk Kon

Charlie Kominas On Behalf of Alaska LNG Project Participants



Ref No.: LT-AKE-PT-14-0101-010

October 23, 2014

Penny Carty, President Village of Salamatoff PO Box 2682 Kenai, AK 99611

RE: Alaska LNG Project FERC Docket No.: PF14-21-000

Dear Penny Carty:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (together, Project Participants) have initiated the Federal Energy Regulatory Commission's ("FERC" or "Commission") pre-filing review process for the Alaska LNG Project (Project) under 18 C.F.R. Section 157.21 of the FERC regulations. On September 12, 2014, the Director of the Office of Energy Projects ("OEP") issued a letter order granting the Project Participants' pre-filing request and assigning the Project FERC Docket No. PF14-21-000. Project Participants plan to prepare and file an application for authorization under Section 3 of the Natural Gas Act to site, construct and operate the Project.

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If you have any questions, please contact me at 832-624-2816 or by email at Charlie.kominas@exxonmobil.com. Thank you in advance for your response to this letter.

Sincerely,

Clerk Konto

Charlie Kominas On Behalf of Alaska LNG Project Participants



Ref No.: LT-AKE-PT-14-0101-013

October 23, 2014

Peter David, First Chief Alatna Village PO Box 70 Alatna, AK 99720

RE: Alaska LNG Project FERC Docket No.: PF14-21-000

Dear Peter David:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (together, Project Participants) have initiated the Federal Energy Regulatory Commission's ("FERC" or "Commission") pre-filing review process for the Alaska LNG Project (Project) under 18 C.F.R. Section 157.21 of the FERC regulations. On September 12, 2014, the Director of the Office of Energy Projects ("OEP") issued a letter order granting the Project Participants' pre-filing request and assigning the Project FERC Docket No. PF14-21-000. Project Participants plan to prepare and file an application for authorization under Section 3 of the Natural Gas Act to site, construct and operate the Project.

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Sincerely,

Clerk Konto

Charlie Kominas On Behalf of Alaska LNG Project Participants



Ref No.: LT-AKE-PT-14-0101-017

October 23, 2014

Greg Encelewski, President Ninilchik Traditional Council PO Box 39070 Ninilchik, AK 99639

RE: Alaska LNG Project FERC Docket No.: PF14-21-000

Dear Greg Encelewski:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (together, Project Participants) have initiated the Federal Energy Regulatory Commission's ("FERC" or "Commission") pre-filing review process for the Alaska LNG Project (Project) under 18 C.F.R. Section 157.21 of the FERC regulations. On September 12, 2014, the Director of the Office of Energy Projects ("OEP") issued a letter order granting the Project Participants' pre-filing request and assigning the Project FERC Docket No. PF14-21-000. Project Participants plan to prepare and file an application for authorization under Section 3 of the Natural Gas Act to site, construct and operate the Project.

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Sincerely,

Clerk Konto

Charlie Kominas On Behalf of Alaska LNG Project Participants


Ref No.: LT-AKE-PT-14-0101-018

October 23, 2014

Alfred Goozmer, President Native Village of Tyonek PO Box 82009 Tyonek, AK 99682

RE: Alaska LNG Project FERC Docket No.: PF14-21-000

Dear Alfred Goozmer:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (together, Project Participants) have initiated the Federal Energy Regulatory Commission's ("FERC" or "Commission") pre-filing review process for the Alaska LNG Project (Project) under 18 C.F.R. Section 157.21 of the FERC regulations. On September 12, 2014, the Director of the Office of Energy Projects ("OEP") issued a letter order granting the Project Participants' pre-filing request and assigning the Project FERC Docket No. PF14-21-000. Project Participants plan to prepare and file an application for authorization under Section 3 of the Natural Gas Act to site, construct and operate the Project.

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The purpose of this letter is to request your assistance in the identification of archaeological sites or Traditional Cultural Properties important to the Tribe that may be affected by the proposed Project. Cultural resources data will be included in Resource Report 4 of the overall Environmental Report that would form part of the application. By including information provided by the tribes in our application, FERC can better evaluate any potential impacts on known sites and propose avoidance or mitigation measures during its review. Any information you provide about potential sites would be treated in a confidential manner, as FERC's regulations and guidelines require that cultural resources data be filed as Privileged.

If you have any questions, please contact me at 832-624-2816 or by email at Charlie.kominas@exxonmobil.com. Thank you in advance for your response to this letter.

Sincerely,

Clerk Konto

Charlie Kominas On Behalf of Alaska LNG Project Participants



Ref No.: LT-AKE-PT-14-0101-020

October 23, 2014

Bernice Kaigelak, President Native Village of Nuiqsut PO Box 89169 Nuiqsut, AK 99789

RE: Alaska LNG Project FERC Docket No.: PF14-21-000

Dear Bernice Kaigelak:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (together, Project Participants) have initiated the Federal Energy Regulatory Commission's ("FERC" or "Commission") pre-filing review process for the Alaska LNG Project (Project) under 18 C.F.R. Section 157.21 of the FERC regulations. On September 12, 2014, the Director of the Office of Energy Projects ("OEP") issued a letter order granting the Project Participants' pre-filing request and assigning the Project FERC Docket No. PF14-21-000. Project Participants plan to prepare and file an application for authorization under Section 3 of the Natural Gas Act to site, construct and operate the Project.

#### Alaska LNG Project Overview

The Alaska LNG Project Participants are proposing to construct one integrated liquefied natural gas (LNG) project with interdependent facilities for the purpose of liquefying supplies of natural gas from Alaska, in particular the Point Thomson Unit and Prudhoe Bay Unit production fields on the Alaska North Slope for export in foreign commerce. The proposed project includes the construction of a liquefaction facility in south central Alaska, an approximately 800-mile mainline gas pipeline, a gas treatment plant on the North Slope, and gas transmission lines connecting the gas treatment plant to the Point Thomson Unit and Prudhoe Bay Unit fields. The mainline gas pipeline will include at least five off-take points to allow for the opportunity for future in-state deliveries of natural gas.

Enclosed with this letter are a general project map and a project overview diagram reflecting the proposed facilities and their planned locations. Additional information on the project can be found at <u>www.ak-Ing.com</u>.

Proposed facilities will be located in the North Slope Borough, Yukon-Koyukuk Census Area, Fairbanks North Star Borough, southeast Fairbanks Census Area, and the Kenai Peninsula Borough.

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The purpose of this letter is to request your assistance in the identification of archaeological sites or Traditional Cultural Properties important to the Tribe that may be affected by the proposed Project. Cultural resources data will be included in Resource Report 4 of the overall Environmental Report that would form part of the application. By including information provided by the tribes in our application, FERC can better evaluate any potential impacts on known sites and propose avoidance or mitigation measures during its review. Any information you provide about potential sites would be treated in a confidential manner, as FERC's regulations and guidelines require that cultural resources data be filed as Privileged.

If you have any questions, please contact me at 832-624-2816 or by email at Charlie.kominas@exxonmobil.com. Thank you in advance for your response to this letter.

Sincerely,

Clerk Konto

Charlie Kominas On Behalf of Alaska LNG Project Participants



Ref No.: LT-AKE-PT-14-0101-022

October 23, 2014

Paul Moses, First Chief Nenana Native Association PO Box 356 Nenana, AK 99760

RE: Alaska LNG Project FERC Docket No.: PF14-21-000

Dear Paul Moses:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (together, Project Participants) have initiated the Federal Energy Regulatory Commission's ("FERC" or "Commission") pre-filing review process for the Alaska LNG Project (Project) under 18 C.F.R. Section 157.21 of the FERC regulations. On September 12, 2014, the Director of the Office of Energy Projects ("OEP") issued a letter order granting the Project Participants' pre-filing request and assigning the Project FERC Docket No. PF14-21-000. Project Participants plan to prepare and file an application for authorization under Section 3 of the Natural Gas Act to site, construct and operate the Project.

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If you have any questions, please contact me at 832-624-2816 or by email at Charlie.kominas@exxonmobil.com. Thank you in advance for your response to this letter.

Sincerely,

Clerk Konto

Charlie Kominas On Behalf of Alaska LNG Project Participants



Ref No.: LT-AKE-PT-14-0101-024

October 23, 2014

Rene Nicklie, President Native Village of Cantwell PO Box 94 Cantwell, AK 99729

RE: Alaska LNG Project FERC Docket No.: PF14-21-000

Dear Rene Nicklie:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (together, Project Participants) have initiated the Federal Energy Regulatory Commission's ("FERC" or "Commission") pre-filing review process for the Alaska LNG Project (Project) under 18 C.F.R. Section 157.21 of the FERC regulations. On September 12, 2014, the Director of the Office of Energy Projects ("OEP") issued a letter order granting the Project Participants' pre-filing request and assigning the Project FERC Docket No. PF14-21-000. Project Participants plan to prepare and file an application for authorization under Section 3 of the Natural Gas Act to site, construct and operate the Project.

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If you have any questions, please contact me at 832-624-2816 or by email at Charlie.kominas@exxonmobil.com. Thank you in advance for your response to this letter.

Sincerely,

Clerk Konto

Charlie Kominas On Behalf of Alaska LNG Project Participants



Ref No.: LT-AKE-PT-14-0101-025

October 23, 2014

George Olemaun, President Inupiat Community of the Arctic Slope PO Box 278 Barrow, AK 99723

RE: Alaska LNG Project FERC Docket No.: PF14-21-000

Dear George Olemaun:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (together, Project Participants) have initiated the Federal Energy Regulatory Commission's ("FERC" or "Commission") pre-filing review process for the Alaska LNG Project (Project) under 18 C.F.R. Section 157.21 of the FERC regulations. On September 12, 2014, the Director of the Office of Energy Projects ("OEP") issued a letter order granting the Project Participants' pre-filing request and assigning the Project FERC Docket No. PF14-21-000. Project Participants plan to prepare and file an application for authorization under Section 3 of the Natural Gas Act to site, construct and operate the Project.

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If you have any questions, please contact me at 832-624-2816 or by email at Charlie.kominas@exxonmobil.com. Thank you in advance for your response to this letter.

Sincerely,

Clerk Konto

Charlie Kominas On Behalf of Alaska LNG Project Participants



Ref No.: LT-AKE-PT-14-0101-026

October 23, 2014

Thomas Olemaun, President Native Village of Barrow Inupiat Traditional Government PO Box 1130 Barrow, AK 99723

RE: Alaska LNG Project FERC Docket No.: PF14-21-000

Dear Thomas Olemaun:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (together, Project Participants) have initiated the Federal Energy Regulatory Commission's ("FERC" or "Commission") pre-filing review process for the Alaska LNG Project (Project) under 18 C.F.R. Section 157.21 of the FERC regulations. On September 12, 2014, the Director of the Office of Energy Projects ("OEP") issued a letter order granting the Project Participants' pre-filing request and assigning the Project FERC Docket No. PF14-21-000. Project Participants plan to prepare and file an application for authorization under Section 3 of the Natural Gas Act to site, construct and operate the Project.

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Sincerely,

Clerk Konto

Charlie Kominas On Behalf of Alaska LNG Project Participants



Ref No.: LT-AKE-PT-14-0101-029

October 23, 2014

Harold W. Simon, President Native Village of Stevens PO Box 74016 Stevens Village, AK 99774

RE: Alaska LNG Project FERC Docket No.: PF14-21-000

Dear Harold Simon:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (together, Project Participants) have initiated the Federal Energy Regulatory Commission's ("FERC" or "Commission") pre-filing review process for the Alaska LNG Project (Project) under 18 C.F.R. Section 157.21 of the FERC regulations. On September 12, 2014, the Director of the Office of Energy Projects ("OEP") issued a letter order granting the Project Participants' pre-filing request and assigning the Project FERC Docket No. PF14-21-000. Project Participants plan to prepare and file an application for authorization under Section 3 of the Natural Gas Act to site, construct and operate the Project.

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Sincerely,

Clerk Konto

Charlie Kominas On Behalf of Alaska LNG Project Participants



Ref No.: LT-AKE-PT-14-0101-030

October 23, 2014

Lee Stephan, President & First Chief Eklutna Native Village 26339 Eklutna Village Rd. Chugiak, AK 99567

RE: Alaska LNG Project FERC Docket No.: PF14-21-000

Dear Lee Stephan:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (together, Project Participants) have initiated the Federal Energy Regulatory Commission's ("FERC" or "Commission") pre-filing review process for the Alaska LNG Project (Project) under 18 C.F.R. Section 157.21 of the FERC regulations. On September 12, 2014, the Director of the Office of Energy Projects ("OEP") issued a letter order granting the Project Participants' pre-filing request and assigning the Project FERC Docket No. PF14-21-000. Project Participants plan to prepare and file an application for authorization under Section 3 of the Natural Gas Act to site, construct and operate the Project.

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Sincerely,

Clerk Konto

Charlie Kominas On Behalf of Alaska LNG Project Participants



Ref No.: LT-AKE-PT-14-0101-031

October 23, 2014

Lillian Stone, President Nagsragmuit Traditional Council PO Box 21170 Anaktuvuk Pass, AK 99721

RE: Alaska LNG Project FERC Docket No.: PF14-21-000

Dear Lillian Stone:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (together, Project Participants) have initiated the Federal Energy Regulatory Commission's ("FERC" or "Commission") pre-filing review process for the Alaska LNG Project (Project) under 18 C.F.R. Section 157.21 of the FERC regulations. On September 12, 2014, the Director of the Office of Energy Projects ("OEP") issued a letter order granting the Project Participants' pre-filing request and assigning the Project FERC Docket No. PF14-21-000. Project Participants plan to prepare and file an application for authorization under Section 3 of the Natural Gas Act to site, construct and operate the Project.

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Proposed facilities will be located in the North Slope Borough, Yukon-Koyukuk Census Area, Fairbanks North Star Borough, southeast Fairbanks Census Area, and the Kenai Peninsula Borough.

#### FERC Pre-filing Process

Project Participants are currently gathering information about cultural resources in preparation for submitting an application to the FERC, pursuant to the Commission's regulations at 18 Code of Federal Regulations (CFR) Part 380.12(f) and recommendations in the FERC's Office of Energy Projects' *Guidelines for Reporting on Cultural Resources Investigations for Pipeline Projects*. In accordance with the Advisory Council on Historic Preservation (ACHP) regulations for implementing Section 106 of the National Historic Preservation Act (NHPA; 16 USC § 470 as amended), provided in 36 CFR Part 800.2(a)(3), applicants and their consultants may prepare information, analyses, and recommendations for use by the agency. However, the agency remains responsible for making final determinations.

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The purpose of this letter is to request your assistance in the identification of archaeological sites or Traditional Cultural Properties important to the Tribe that may be affected by the proposed Project. Cultural resources data will be included in Resource Report 4 of the overall Environmental Report that would form part of the application. By including information provided by the tribes in our application, FERC can better evaluate any potential impacts on known sites and propose avoidance or mitigation measures during its review. Any information you provide about potential sites would be treated in a confidential manner, as FERC's regulations and guidelines require that cultural resources data be filed as Privileged.

If you have any questions, please contact me at 832-624-2816 or by email at Charlie.kominas@exxonmobil.com. Thank you in advance for your response to this letter.

Sincerely,

Clerk Konto

Charlie Kominas On Behalf of Alaska LNG Project Participants



Ref No.: LT-AKE-PT-14-0101-033

October 23, 2014

Rose Tepp, Chairperson Kenaitze Indian Tribe PO Box 988 Kenai, AK 99611

RE: Alaska LNG Project FERC Docket No.: PF14-21-000

Dear Rose Tepp:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (together, Project Participants) have initiated the Federal Energy Regulatory Commission's ("FERC" or "Commission") pre-filing review process for the Alaska LNG Project (Project) under 18 C.F.R. Section 157.21 of the FERC regulations. On September 12, 2014, the Director of the Office of Energy Projects ("OEP") issued a letter order granting the Project Participants' pre-filing request and assigning the Project FERC Docket No. PF14-21-000. Project Participants plan to prepare and file an application for authorization under Section 3 of the Natural Gas Act to site, construct and operate the Project.

#### Alaska LNG Project Overview

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Proposed facilities will be located in the North Slope Borough, Yukon-Koyukuk Census Area, Fairbanks North Star Borough, southeast Fairbanks Census Area, and the Kenai Peninsula Borough.

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The purpose of this letter is to request your assistance in the identification of archaeological sites or Traditional Cultural Properties important to the Tribe that may be affected by the proposed Project. Cultural resources data will be included in Resource Report 4 of the overall Environmental Report that would form part of the application. By including information provided by the tribes in our application, FERC can better evaluate any potential impacts on known sites and propose avoidance or mitigation measures during its review. Any information you provide about potential sites would be treated in a confidential manner, as FERC's regulations and guidelines require that cultural resources data be filed as Privileged.

If you have any questions, please contact me at 832-624-2816 or by email at Charlie.kominas@exxonmobil.com. Thank you in advance for your response to this letter.

Sincerely,

Clerk Konto

Charlie Kominas On Behalf of Alaska LNG Project Participants



Ref No.: LT-AKE-PT-14-0101-034

October 23, 2014

Frank Thompson, First Chief Evansville Tribal Council PO Box 26087 Bettles Field, AK 99726

RE: Alaska LNG Project FERC Docket No.: PF14-21-000

Dear Frank Thompson:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (together, Project Participants) have initiated the Federal Energy Regulatory Commission's ("FERC" or "Commission") pre-filing review process for the Alaska LNG Project (Project) under 18 C.F.R. Section 157.21 of the FERC regulations. On September 12, 2014, the Director of the Office of Energy Projects ("OEP") issued a letter order granting the Project Participants' pre-filing request and assigning the Project FERC Docket No. PF14-21-000. Project Participants plan to prepare and file an application for authorization under Section 3 of the Natural Gas Act to site, construct and operate the Project.

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Enclosed with this letter are a general project map and a project overview diagram reflecting the proposed facilities and their planned locations. Additional information on the project can be found at <u>www.ak-Ing.com</u>.

Proposed facilities will be located in the North Slope Borough, Yukon-Koyukuk Census Area, Fairbanks North Star Borough, southeast Fairbanks Census Area, and the Kenai Peninsula Borough.

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The purpose of this letter is to request your assistance in the identification of archaeological sites or Traditional Cultural Properties important to the Tribe that may be affected by the proposed Project. Cultural resources data will be included in Resource Report 4 of the overall Environmental Report that would form part of the application. By including information provided by the tribes in our application, FERC can better evaluate any potential impacts on known sites and propose avoidance or mitigation measures during its review. Any information you provide about potential sites would be treated in a confidential manner, as FERC's regulations and guidelines require that cultural resources data be filed as Privileged.

If you have any questions, please contact me at 832-624-2816 or by email at Charlie.kominas@exxonmobil.com. Thank you in advance for your response to this letter.

Sincerely,

Clerk Konto

Charlie Kominas On Behalf of Alaska LNG Project Participants



Ref No.: LT-AKE-PT-14-0101-035

October 23, 2014

Michael Tucker, President Knik Tribe 951 E. Bogard Rd., Ste. 101 Wasilla, AK 99564

RE: Alaska LNG Project FERC Docket No.: PF14-21-000

Dear Michael Tucker:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (together, Project Participants) have initiated the Federal Energy Regulatory Commission's ("FERC" or "Commission") pre-filing review process for the Alaska LNG Project (Project) under 18 C.F.R. Section 157.21 of the FERC regulations. On September 12, 2014, the Director of the Office of Energy Projects ("OEP") issued a letter order granting the Project Participants' pre-filing request and assigning the Project FERC Docket No. PF14-21-000. Project Participants plan to prepare and file an application for authorization under Section 3 of the Natural Gas Act to site, construct and operate the Project.

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If you have any questions, please contact me at 832-624-2816 or by email at Charlie.kominas@exxonmobil.com. Thank you in advance for your response to this letter.

Sincerely,

Clerk Konto

Charlie Kominas On Behalf of Alaska LNG Project Participants



Ref No.: LT-AKE-PT-14-0101-036

October 23, 2014

Tom Wiehl, President Rampart Traditional Council PO Box 67029 Rampart, AK 99767

RE: Alaska LNG Project FERC Docket No.: PF14-21-000

Dear Tom Wiehl:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (together, Project Participants) have initiated the Federal Energy Regulatory Commission's ("FERC" or "Commission") pre-filing review process for the Alaska LNG Project (Project) under 18 C.F.R. Section 157.21 of the FERC regulations. On September 12, 2014, the Director of the Office of Energy Projects ("OEP") issued a letter order granting the Project Participants' pre-filing request and assigning the Project FERC Docket No. PF14-21-000. Project Participants plan to prepare and file an application for authorization under Section 3 of the Natural Gas Act to site, construct and operate the Project.

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If you have any questions, please contact me at 832-624-2816 or by email at Charlie.kominas@exxonmobil.com. Thank you in advance for your response to this letter.

Sincerely,

Clerk Kon

Charlie Kominas On Behalf of Alaska LNG Project Participants







Ref. No.: L-AKE-PT-13-0004

October 14, 2013

Ms. Penny Carty, President Salamatof Native Association 100 N WILLOW ST Kenai, Alaska 99611

#### Re: Alaska LNG Project Selects Lead Terminal Location

Dear Ms. Carty,

Over the past year our four companies, ExxonMobil, ConocoPhillips, BP and TransCanada, have worked diligently to advance our understanding of what is required to make an LNG export project possible in Alaska. From production and gas treatment to the pipeline and the liquefaction and storage facilities, this undertaking represents a world-class project with unprecedented challenges. Earlier this year we completed our concept selection process, during which time we reviewed technical work and agreed on a project concept.

Currently, the companies are continuing to refine the agreed project concept that includes a gas treatment plant located on the North Slope, an 800-mile, 42-inch diameter pipeline with up to eight compression stations and at least five off-take points for in-state gas delivery, and a liquefaction plant and terminal. The Alaska LNG project team is preparing for more detailed engineering and design work, consistent with previously released plan phases.

After evaluating more than 20 locations, the Alaska LNG Project team has identified a primarily industrial area near Nikiski as the lead site for the liquefaction plant and marine terminal. We continue to consider secondary sites in Southcentral Alaska. The Nikiski site results in a pipeline route that provides an access opportunity to North Slope natural gas by the major population centers in Fairbanks, Mat-Su Valley, Anchorage and Kenai.

Please find attached a courtesy copy of a press release that was recently issued. We will continue to provide updates to you as our efforts progress. In the meantime if you have questions or concerns about the project, please contact me at (907) 564-3622 or Michael Nelson at (907) 929-4116.

Best regards,

Lisa L. Gray Senior Stakeholder Engagement Advisor Alaska LNG Project

Cc: File PGA







Ref. No.: L-AKE-PT-13-0004

October 14, 2013

Ms. Elizabeth Standifer, Chair Native Village of Tyonek 100 A Street Tyonek, AK 99682

#### Re: Alaska LNG Project Selects Lead Terminal Location

Dear Ms. Standifer,

Over the past year our four companies, ExxonMobil, ConocoPhillips, BP and TransCanada, have worked diligently to advance our understanding of what is required to make an LNG export project possible in Alaska. From production and gas treatment to the pipeline and the liquefaction and storage facilities, this undertaking represents a world-class project with unprecedented challenges. Earlier this year we completed our concept selection process, during which time we reviewed technical work and agreed on a project concept.

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Best regards,

Aisa

Lisa L. Gray Senior Stakeholder Engagement Advisor Alaska LNG Project

Cc: File PGA







Ref. No.: L-AKE-PT-13-0004

October 14, 2013

Mr. Bart Garber, CEO Tyonek Native Corporation 75161 A Street Tyonek, AK 99682

#### Re: Alaska LNG Project Selects Lead Terminal Location

Dear Mr. Garber,

Over the past year our four companies, ExxonMobil, ConocoPhillips, BP and TransCanada, have worked diligently to advance our understanding of what is required to make an LNG export project possible in Alaska. From production and gas treatment to the pipeline and the liquefaction and storage facilities, this undertaking represents a world-class project with unprecedented challenges. Earlier this year we completed our concept selection process, during which time we reviewed technical work and agreed on a project concept.

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Best regards,

Lisa L. Gray Senior Stakeholder Engagement Advisor Alaska LNG Project

Cc: File PGA

Alaska LNG Project	DOCKET NO. PF14-21-000	DOC NO: USAI-EX-SRREG-00-0001
	DRAFT RESOURCE REPORT NO. 1	DATE: FEBRUARY 2, 2015
	GENERAL PROJECT DESCRIPTION	REVISION: 0
	PUBLIC VERSION	

# Alyeska Pipeline Service Company (APSC)



P.O Box 196660

ANCHORAGE, ALASKA 99519-6660TELEPHONE (907) 787-8700

October 30, 2014

Charlie Kominas Alaska LNG Project 3201 C Street, Suite 506 Anchorage, Alaska 99503

Dear Mr. Kominas:

Thank you for the Alaska LNG Project introductory letter received September 29, 2014 regarding the FERC Pre-Filing process (Ref No.: USAI-PE-SGEIS-00-0004-0713). As you know, Alyeska Pipeline Service Company is the agent for the Trans Alaska Pipeline System owners who hold properties and rights-of-way along the first 400 miles of the Alaska LNG Project area. Also, in 2013 Alyeska entered into a Master Coordination and Reimbursement Agreement with ExxonMobil Alaska Production, Inc. about the Alaska LNG Project, which agreement will expire April 30, 2015.

Please note that Alyeska has not reviewed the proposed alignment depicted on the route maps and therefore does not endorse any specific, proposed Alaska LNG alignment where it is in the TAPS area. It may be time, however, during the FERC pre-filing period, to commission an analysis of TAPS operation and/or integrity concerns with the proposed Alaska LNG Project route. If you agree, we request your consideration of funding an Alyeska engineering study of the route from Deadhorse to the Manley Hot Springs Road crossing at Livengood. With your concurrence, we will prepare an estimate of cost and notify you in accordance with the Master Coordination and Reimbursement Agreement.

I can be reached at (907)787-8170 to discuss this matter further.

Sincerely,

Peter C. Nagel, SR/WA Land and Right-of-Way

	DOCKET NO. PF14-21-000	Doc No: USAI-EX-SRREG-00-0001
Alaska LNG Project	DRAFT RESOURCE REPORT NO. 1	DATE: FEBRUARY 2, 2015
	GENERAL PROJECT DESCRIPTION	REVISION: 0
	PUBLIC VERSION	

# Bureau of Land Management (BLM)



Ref No.: Ref No.: LT-AKE-PT-0104-002

October 27, 2014

Dr. Robert King, BLM State Archaeologist U.S. Department of the Interior, Bureau of Land Management, Alaska State Office 222 West 7<sup>th</sup> Ave., #13 Anchorage, AK 99513-7504

Subject: Request for Informal Consultation under Section 106 of the National Historic Preservation Act FERC Docket No.: PF14-21-000

Dear Dr. King:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (together, Project Participants) have initiated the Federal Energy Regulatory Commission's ("FERC" or "Commission") pre-filing review process for the Alaska LNG Project (Project) under 18 C.F.R. Section 157.21 of the FERC regulations. On September 12, 2014, the Director of the Office of Energy Projects ("OEP") issued a letter order granting the Project Participants' pre-filing request and assigning the Project FERC Docket No. PF14-21-000. Project Participants plan to prepare and file an application for authorization under Section 3 of the Natural Gas Act to site, construct and operate the Alaska LNG Project.

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Enclosed with this letter are a general project map and a project overview diagram reflecting the proposed facilities and their planned locations. Additional information on the project can be found at <u>www.ak-Ing.com</u>.

FERC authorizations are required to construct and operate these facilities. The Project Participants are targeting to file a formal application with the FERC in September 2016. FERC authorizations for the project and commencement of construction are anticipated in the 2018 – 2019 timeframe. Pursuant to this schedule, facilities would begin operating in the 2024 – 2025 timeframe.

Proposed facilities will be located in the North Slope Borough, Yukon-Koyukuk Census Area, Fairbanks North Star Borough, southeast Fairbanks Census Area, and the Kenai Peninsula Borough.

#### FERC Pre-filing Process

The FERC will be the lead federal agency responsible for implementation of the National Environmental Policy Act (NEPA), and the National Historic Preservation Act (NHPA; 16 USC § 470 as amended). Pursuant to 36 CFR 800; and at 18 CFR Parts 380.12, 380.14, and Appendix A to Part 380; and pursuant to the FERC's *Guidelines for Reporting on Cultural Resources Investigations for Pipelines* (December 2002), Project Participants are asked to consult with the State Historic Preservation Office, Alaska Native Organizations, and/or land-managing agencies as early as possible in the project planning.

Project Participants do not represent the FERC in terms of government-to-government consultations with Alaska Native Tribes. The FERC has an established policy for consulting with Native American Tribes, articulated in Order 635, *Policy Statement on Consultations with Indian Tribes in Commission Proceedings* issued July 23, 2003. The FERC will initiate direct consultations with Tribes when it issues its Notice of Intent to Prepare an Environmental Impact Statement (NOI). For all major projects, after the NOI is issued, the FERC will also write letters to Alaska Native Tribes that may attach religious or cultural importance to historic properties in the area of potential effect, and follow up Tribal contacts with emails, telephone calls, or meetings. Feel free to discuss any concerns directly with the FERC archaeological staff by emailing or calling Lori Boros, FERC Archaeologist at 202-502-8046 (email: Lori.boros@ferc.gov).

Project Participants have met numerous times with you and your staff to discuss field survey methodologies for the 2013 and 2014 field seasons, a process for review and acceptance of prior project data, and the Section 106 process in general. However, no formal consultation has been initiated with the BLM regarding the project; therefore, with this letter Project Participants, acting as the FERC's designated non-federal representative for purposes of complying with Section 106 of the NHPA, respectfully requests your input regarding compliance with the relevant historic preservation laws. Project Participants understand that the BLM is the lead federal agency responsible for issuing the Right-of-Way Grant for the Project and will coordinate that process with the other federal land managing agencies affected by the Project.

On behalf of the Project Participants we appreciate your assistance with this request. If you have any questions, please contact me at 832-624-2816 or by email at Charlie.kominas@exxonmobil.com.

Sincerely,

Clarke Konins

Charlie Kominas On Behalf of Alaska LNG Project Participants

cc: Lori Boros, FERC Jim Martin, FERC Judith E. Bittner, Alaska Office of History and Archaeology Project File

### Alaska LNG

Alaska LNG Project 16945 Northchase Drive, DEV-GP4 Houston, Texas 77060

Ref No.: USAKE-EX-SRZZZ-00-0003

August 13, 2014

Robert LLoyd Bureau of Land Management Program Manager – Alaska Land Transfer 222 W. 7th Avenue #13 Anchorage, Alaska 99513

### Re: Review of Cultural Resources Reports Submitted by the Alaska Pipeline Project and the Alaska LNG Project

Dear Mr. Lloyd:

On behalf of the Alaska LNG Project (Project), this letter and its attachments seek your concurrence regarding data to be used in the regulatory approval process for the Project. As discussed in previous meetings with the Bureau of Land Management (BLM), a considerable body of work has been compiled for portions of the proposed Project footprint north of Livengood, Alaska, including data that is common to a previous gas project (Alaska Pipeline Project). The available body of work includes information gathered by the previous project as well as information gathered during supplemental surveys conducted by the Project in 2013. To date you have received the following reports for the proposed Project footprint north of Livengood:

Reference No.	Title	Year
USAKE-UR-SRZZZ-00-0020_B 2013 Report	2013 Phase I Cultural Resource Report, Archaeological Survey and Documentation	2013
USAG-UR-SRZZZ-000030	Phase I Cultural Resources Overview and Survey Report for the Alaska Pipeline Project, Prudhoe Bay, to the Alaska, United States-Canada Border, 2010-2011	2012
USAG-UR-SRZZZ-000010	2010 Cultural Resource Field Study Results, Phase I: Identification Cultural Resource Survey of the Alaska Pipeline Project. Supplemental Report to OHA Permit No. 2010-17	2011

Some of the previously gathered data are no longer applicable or within the proposed Alaska LNG Project footprint; therefore the Project has developed and enclosed the following: an overview of the Cultural Resources Program to explain program objectives and summarize study results (Attachment A); a site tracking table summarizing the cultural resource sites located within a 300-foot-wide corridor centered on the potential Alaska LNG Mainline Pipeline
centerline and the Point Thomson Pipeline centerline (Attachment B); and two mapbooks (one for the Mainline Pipeline and one for the Point Thomson Pipeline) illustrating the locations of the cultural resource sites listed in the summary table. These mapbooks also include sites outside of the study corridor (Attachment C).

The Project requests BLM's review and endorsement of this data set so that it may be used in the upcoming Federal Energy Regulatory Commission application and resulting Enivronmental Impact Statement. If you have any questions or require further information, please contact Adrienne Rosecrans at (832) 624-2722.

Sincerely,

Medle

Ruben Medrano Alaska LNG Regulatory Lead For and on behalf of ExxonMobil Alaska LNG LLC

Enclosures Attachment A: Cultural Resources Program Overview Attachment B: Site Tracking Table Attachment C: Alaska LNG Mainline Cultural Resources Mapbook, Point Thomson Pipeline Cultural Resources Mapbook

cc: Project files

ExxonMobil Development Company 16945 Northchase Drive, DEV-GP4-498 Houston, Texas 77060 832-624-2816 281-654-3212 Fax Charlie Kominas Alaska LNG Project Environmental, Regulatory and Land Manager



December 9, 2013

L-AKE-EDHO-BLAK-0017

Mr. Robert Lloyd Chief, Branch of Lands and Realty Bureau of Land Management 222 West 7<sup>th</sup> Ave Anchorage, Alaska 99513-7504

5ubject: Alaska LNG Project Description of Work Activities for Fiscal Year 2014 BLM Application Serial No. AA-93952

Dear Mr. Lloyd:

This letter addresses the requirement in Section 4.1 of the Cost Reimbursement Agreement between ExxonMobil Alaska Production Inc. and Bureau of Land Management Alaska State Office, for the Alaska LNG Project, to advise the Bureau of Land Management (BLM) of any work planned during the next fiscal year (October 1, 2013 to September 30, 2014).

In October, the Alaska LNG Project selected a site in the Nikiski area on the Kenai Peninsula as the lead site for the proposed natural gas liquefaction plant and terminal. Pipeline routing definition work is ongoing. A revised *Application for Transportation and Utility Systems and Facilities on Federal Lands* will be submitted in the second quarter of 2014 following finalization of the pipeline route.

In addition, the Alaska LNG Project plans to conduct a 2014 Field Study Program during the period between approximately April 1 and October 31, 2014. The primary objective is to collect the data necessary to support environmental reporting and permitting for the Project. The focus of the studies will be along the pipeline route from Livengood to the Nikiski LNG plant site. These studies may include the following disciplines: Cultural Resources; Stream Fish; Hydrology ; Raptors; Ambient Noise Monitoring; Contaminated Sites; Wetlands (mapping and field verification); Vegetation (mapping and field verification); Sediment Sampling; and Air Quality.

An ExxonMobil Subsidiary

The majority of the 2014 Field Study program will be conducted on State- and privately-owned lands. However, there may be activities on BLM lands. Thus, we anticipate a level of support from the BLM similar to 2013 which included the processing of Temporary Use Permits and a Permit for Archaeological Investigations on federal lands. In the event the Project initiates the Federal Energy Regulatory Commission (FERC) pre-file process, coordination activities with FERC and federal and state agencies may be needed in support of required pre-filing documents.

If there are any questions or you require further information, please feel free to contact me at (832) 624-2816 or Ben Wood at (907) 929-4113.

Sincerely,

Charlie Kominas Alaska LNG Environmental, Regulatory and Land Manager For and on behalf of ExxonMobil Alaska Production Inc.

cc: Steve Butt

An ExxonNovil Subsidiary

ExxonMobil Development Company 16945 Northchase Drive, DEV-GP4-498 Houston, Texas 77060 281-654-3289 281-654-3212 Fax Charlie Kominas Alaska South Central LNG Project Environmental, Regulatory and Land Manager



July 1, 2013

Doc. No. L-AKE-EDHO-BLAK-13-0014

Mr. Robert Lloyd Bureau of Land Management 222 W. 7<sup>th</sup> Avenue Anchorage, Alaska 99513-7504

RE: Alaska South Central LNG Project Description of Work Activities for Next Fiscal Year BLM Serial No. AA-93952

Dear Mr. Lloyd:

This letter addresses Section 4.1 of the Cost Reimbursement Agreement Between ExxonMobil Alaska Production Inc. and Bureau of Land Management Alaska State Office ("Agreement") for the Alaska South Central LNG (SCLNG) Project to advise the Bureau of Land Management (BLM) of any work planned during the next fiscal year (October 1, 2013 to September 30, 2014). At this time, the SCLNG Project plans to complete the various reports required by BLM and other agencies following the 2013 summer field studies program and begin planning for potential future field studies. The SCLNG Project will inform the BLM as soon as additional work scope is confirmed for the next fiscal year so that the agency may further enhance its Initial Work Plan and budget estimate as described in the Agreement.

If there are any questions or you require further information, please feel free to call me at (281) 654-3289 or Ben Wood at (907) 929-4113.

Sincerely,

Clerke Konins

Charlie Kominas Alaska South Central LNG Project Environmental, Regulatory and Land Manager For and on behalf of ExxonMobil Alaska Production Inc.

CC: Stephen L. Fusilier (BLM)

ExxonMobil Development Company 16945 Northchase Drive, DEV-GP4-498 Houston, Texas 77060 281-654-3289 281-654-3212 Fax Charlie Kominas Alaska South Central LNG Project Environmental, Regulatory and Land Manager



June 27, 2013

Ms. Nichelle W. Jacobson, Manager U.S. Bureau of Land Management Central Yukon Field Office 1150 University Avenue Fairbanks, Alaska 99709-3844

RE: SCLNG 2013 Summer Field Studies – BLM Request for 2002 Cultural Resources GIS Data AA-093595 8151 (931); AA-093592 2801 (941)

Dear Ms. Jacobson:

The Alaska South Central Liquefied Natural Gas (SCLNG) Project Team appreciatedmeeting with staff from Bureau of Land Management's (BLM) Central Yukon Field Office on June 21, 2013. It was a very productive meeting. As you know, the purpose of the meeting was to discuss the request described in a June 18, 2013 BLM letter regarding our Cultural Resources Use Permit application for SCLNG's 2013 summer field studies cultural resource survey.

The intent of this letter is to provide the BLM requested digital GIS data supporting the report entitled "Results of the Phase I Cultural Resources Survey of the proposed Alaska Gas Pipeline Project Area, Southern Route" submitted to BLM in 2002 by URS Corporation and its contractor Northern Land Use Research-Alaska in support of the Alaska Gas Pipeline Project Team (AGPPT) proposal. This digital data includes pedestrian survey polygons and areas of previous shovel testing and surface collection and will be used to assist the BLM review of SCLNG's 2013 survey proposal.

We are pleased to inform you that the AGPPT Project has agreed to release the heritage archeology electronic GIS data as a courtesy and in the spirit of good faith assistance to accelerate BLM's issuance of the archaeological survey permit for SCLNG's summer field studies work. Please note, however, that these files are considered to be business confidential and we request that BLM maintain them as such.

Should you have any questions regarding this data, please do not hesitate to call me at (985) 259-0036 or Ben Wood at (907) 929-4113 to discuss. I am greatly appreciative of the assistance that BLM staff has provided on behalf of the SCLNG Project.

Sincerely,

Charlie Kominas Alaska South Central LNG Project Environmental, Regulatory and Land Manager For and on behalf of ExxonMobil Alaska Production Inc.

cc: Stephen Fusilier (BLM)

Alaska LNG Project	DOCKET NO. PF14-21-000	Doc No: USAI-EX-SRREG-00-0001
	DRAFT RESOURCE REPORT NO. 1	DATE: FEBRUARY 2, 2015
	GENERAL PROJECT DESCRIPTION	REVISION: 0
	PUBLIC VERSION	

# National Marine Fisheries Service (NMFS)



Alaska LNG Project 3201 C Street Suite 506 Anchorage, AK 99503

Ref No.: LT-AKE-PT-14-0102-001

October 27, 2014

Mr. Greg Balogh Field Office Supervisor National Marine Fisheries Service, Protected Resources Division 222 W. 7<sup>th</sup> Ave. Box 43 Anchorage, AK 99513-7577 <u>Greg.balogh@noaa.gov</u>

RE: Alaska LNG Export Project FERC Docket No.: PF14-21-000

Dear Mr. Balogh:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (together, Project Participants) have initiated the Federal Energy Regulatory Commission's ("FERC" or "Commission") pre-filing review process for the Alaska LNG Project (Project) under 18 C.F.R. Section 157.21 of the FERC regulations. On September 12, 2014, the Director of the Office of Energy Projects ("OEP") issued a letter order granting the Project Participants' pre-filing request and assigning the Project FERC Docket No. PF14-21-000. Project Participants plan to prepare and file an application for authorization under Section 3 of the Natural Gas Act to site, construct and operate the Alaska LNG Project.

In accordance with provisions of the NEPA (83 Stat. 852; 42 U.S.C. 4321 *et seq.*), federal laws governing the protection of Federally listed endangered and threatened species (listed species) including the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 153 I *et seq.*), the Marine Mammal Protection Act (MMPA) (86 Stat. 1027; 16 U.S.C. 1361 *et seq.*) and Essential Fish Habitat Consultation (EFH) ( 50 CFR Part 600; 16 U.S.C. 1801 *et seq.*) apply to the review and approval of this Project. This letter is a request to initiate informal consultation with the National Marine Fisheries Service ("NMFS") for the proposed Project pursuant to Section 7(a)(2) of the ESA. The Project Participants are the Commission's designated non-Federal representative under 18 C.F.R. Section 380.13(b)(1) for purpose of informal consultation with the NMFS under the ESA.

Project Participants are in the early stages of planning for the proposed Project. Project Participants have established a preliminary study corridor for the Mainline and study areas for the facilities of the Project. A route within the study corridor will be finalized with stakeholder input during the pre-filing process. A general project overview map depicting the study areas/corridor for the Project is attached for your review, along with GIS shapefiles.

On behalf of the Project Participants, this letter requests any information (including but not limited to a list of species) you may have regarding federally threatened or endangered species or critical habitat that may occur in the vicinity of the Project. Protected species information provided by the FWS will be included in an applicant-prepared Biological Assessment (BA) that will be included as an appendix to Resource Report No. 3 of the Environmental Report (ER) that would form part of our application. It is expected that this BA will be developed over the next two draft submittals of the ER to result in a complete BAE for the final FERC application. FERC and NMFS can then properly consider any effects on known listed species and propose avoidance or mitigation measures during their review. Concurrent consultation with United States Fish and Wildlife Service, Anchorage, Alaska Office will also occur.

We look forward to your participation in the evaluation of this project. If you have any questions, please contact me at 832-624-2816 or by email at Charlie.kominas@exxonmobil.com.

Sincerely,

Center Konton

Charlie Kominas On Behalf of Alaska LNG Project Participants

cc: Jim Martin, FERC Sarah Conn, Supervisor, Fairbanks Fish and Wildlife Field Office Socheata Lor, Supervisor, Anchorage Fish and Wildlife Field Office Doug Limpinsel, Marine Biologist, National Marine Fisheries Service Office

# Alaska LNG

Alaska LNG Project 3201 C Street Suite 506 Anchorage, AK 99503

October 27, 2014

Ref No.: LT-AKE-PT-14-0102-002

Mr. Doug Limpinsel Marine Fisheries Biologist National Marine Fisheries Service, Habitat Conservation Division 222 W. 7<sup>th</sup> Ave. #43 Anchorage, AK 99513-7577 Doug.limpinsel@noaa.gov

RE: Alaska LNG Export Project FERC Docket No.: PF14-21-000

Dear Mr. Limpinsel:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (together, Project Participants) have initiated the Federal Energy Regulatory Commission's ("FERC" or "Commission") pre-filing review process for the Alaska LNG Project (Project) under 18 C.F.R. Section 157.21 of the FERC regulations. On September 12, 2014, the Director of the Office of Energy Projects ("OEP") issued a letter order granting the Project Participants' pre-filing request and assigning the Project FERC Docket No. PF14-21-000. Project Participants plan to prepare and file an application for authorization under Section 3 of the Natural Gas Act to site, construct and operate the Alaska LNG Project.

In accordance with provisions of the NEPA (83 Stat. 852; 42 U.S.C. 4321 *et seq.*), federal laws governing the protection of Federally listed endangered and threatened species (listed species) including the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 153 I *et seq.*), the Marine Mammal Protection Act (MMPA) (86 Stat. 1027; 16 U.S.C. 1361 *et seq.*) and Essential Fish Habitat Consultation (EFH) ( 50 CFR Part 600; 16 U.S.C. 1801 *et seq.*) apply to the review and approval of this Project. This letter is a request to initiate informal consultation with the National Marine Fisheries Service ("NMFS") for the proposed Project pursuant to Section 7(a)(2) of the ESA. The Project Participants are the Commission's designated non-Federal representative under 18 C.F.R. Section 380.13(b)(1) for purpose of informal consultation with the NMFS under the ESA.

Project Participants are in the early stages of planning for the proposed Project. Project Participants have established a preliminary study corridor for the Mainline and study areas for the facilities of the Project. A route within the study corridor will be finalized with stakeholder input during the pre-filing process. A general project overview map depicting the study areas/corridor for the Project is attached for your review, along with GIS shapefiles.

On behalf of the Project Participants, this letter requests any information (including but not limited to a list of species) you may have regarding federally threatened or endangered species or critical habitat that may occur in the vicinity of the Project. Protected species information provided by the FWS will be included in an applicant-prepared Biological Assessment (BA) that will be included as an appendix to Resource Report No. 3 of the Environmental Report (ER) that would form part of our application. It is expected that this BA will be developed over the next two draft submittals of the ER to result in a complete BAE for the final FERC application. FERC and NMFS can then properly consider any effects on known listed species and propose avoidance or mitigation measures during their review. Concurrent consultation with United States Fish and Wildlife Service, Anchorage, Alaska Office will also occur.

We look forward to your participation in the evaluation of this project. If you have any questions, please contact me at 832-624-2816 or by email at Charlie.kominas@exxonmobil.com.

Sincerely,

leader Konino

Charlie Kominas On Behalf of Alaska LNG Project Participants

cc: Jim Martin, FERC Sarah Conn, Supervisor, Fairbanks Fish and Wildlife Field Office Socheata Lor, Supervisor, Anchorage Fish and Wildlife Field Office Greg Balogh, Supervisor, Anchorage National Marine Fisheries Service Office

Alaska LNG Project	DOCKET NO. PF14-21-000	Doc No: USAI-EX-SRREG-00-0001
	DRAFT RESOURCE REPORT NO. 1	DATE: FEBRUARY 2, 2015
	GENERAL PROJECT DESCRIPTION	REVISION: 0
	PUBLIC VERSION	

# **Stakeholder Update Mailings**



Alaska LNG Project 3201 C Street Suite 506 Anchorage, AK 99503

Ref No.: USAI-PE-SGEIS-00-0004

September 26, 2014

«To Whom» «Company/Agency» «AddressBlock» «City, State Zip»

### Re: Alaska LNG Project

Dear «To Whom»:

The Alaska Gasline Development Corporation (AGDC) and affiliates of BP, ConocoPhillips, ExxonMobil, and TransCanada (together, Alaska LNG Project Participants) have commenced the Federal Energy Regulatory Commission's (FERC) pre-filing process for authorization to construct and operate the Alaska LNG Project. As part of this process, you are receiving information about the Alaska LNG Project because you either own land within or near proposed or alternative locations of new facilities, or have otherwise expressed interest in receiving information about this project. The purpose of this letter is to provide you with information on the Alaska LNG Project, the FERC pre-filing process, procedures for participating in that process, and contact information should you have additional questions.

### Alaska LNG Project Overview

The Alaska LNG Project Participants are proposing to construct one integrated liquefied natural gas (LNG) project with interdependent facilities for the purpose of liquefying supplies of natural gas from Alaska, in particular the Point Thomson Unit and Prudhoe Bay Unit production fields on the Alaska North Slope for export in foreign commerce. The proposed project includes the construction of a liquefaction facility in south central Alaska, an approximately 800-mile mainline gas pipeline, a gas treatment plant on the North Slope, and gas transmission lines connecting the gas treatment plant to the Point Thomson Unit and Prudhoe Bay Unit fields. The mainline gas pipeline will include at least five off-take points to allow for the opportunity for future in-state deliveries of natural gas.

Enclosed with this letter are a general project map and a project overview diagram reflecting the proposed facilities and their planned locations. Additional information on the project can be found at <u>www.ak-lng.com</u>.

FERC authorizations are required to construct and operate these facilities. The Alaska LNG Project Participants are targeting to file a formal application for the Alaska LNG Project with the FERC in September 2016. FERC authorizations for the project and commencement of construction are anticipated in the 2018 – 2019 timeframe. Pursuant to this schedule, facilities would begin operating in the 2024 – 2025 timeframe.

### FERC Pre-filing Process

The FERC requires a collaborative pre-filing process to identify and resolve significant issues prior to applicants filing a formal application with the agency. A significant portion of the environmental review of the Alaska LNG Project will be completed as part of this pre-filing process. The FERC has accepted the request to initiate the pre-filing review process for the Alaska LNG Project under Docket No. PF14-21-000. Links to the Alaska LNG Project's current future pre-filing materials be found FERC's website and can on at http://elibrary.ferc.gov/idmws/docket\_search.asp (search "PF14-21" in the Docket Search field).

### Find Out More

The Alaska LNG Project Participants will hold public meetings regarding the Alaska LNG Project during October and November 2014 at a number of different locations in the vicinity of the proposed project facilities. Details about the community meetings will be provided through publication in local newspapers, the project website at <u>www.ak-Ing.com</u>, and other communication channels where necessary.

The FERC's website provides information about the agency's pre-filing procedures, citizen involvement, and basic landowner questions and answers, and can be accessed at <u>http://www.ferc.gov/for-citizens/citizen-guides.asp</u>. The FERC Office of External Affairs can be contacted at 866-208-3372 or 202-502-8004 to answer any additional questions about the procedures involved.

Thank you for taking the time to review this information and we look forward to communicating with you soon. For immediate questions, please contact Michael Nelson at 855-550-5445 or via email at <u>info@ak-lng.com</u>.

Sincerely,

K-Clark

Charlie Kominas On Behalf of Alaska LNG Project Participants

### Enclosures

Attachment A - General Project Map Attachment B - Project Overview Diagram



## Attachment B

## **Project Overview**

### Alaska LNG Project

## One integrated LNG Project with interdependent facilities, dedicated to the export of natural gas in foreign commerce





### **Liquefaction Facility** Including Storage/Loading

- Capacity:
- Up to 20 million tonnes per annum (MTPA) (approx. 2.5 - 3 billion cubic feet per day), 3 trains
- Site: Nikiski selected from over 22 sites assessed in the southcentral area
- Footprint: 400 - 800 acres
- Peak Workforce: 3,500 5,000 people
- Required Steel: 100,000-150,000 tons
- 3 LNG Storage Tanks, Terminal
- LNG loading facilities
- Design based on 15-20 tankers/month



### Pipeline

- •Large diameter: 42" operating at >2,000 psi 3 - 3.5 billion cubic feet per day
- •Capacity:
- •Length:
- ~800 miles (similar to TAPS) • Peak Workforce: 3,500 - 5,000 people
- •Required Steel: 600,000 1,200,000 tons
- State off-take: ~5 points, 250-500 million
- cubic feet per day, based on

demand

## Estimated Total Cost: \$45 - \$65+ Billion

Peak Construction Workforce: 9,000 – 15,000 jobs **Operations Workforce:** ~1000 jobs in Alaska

Descriptions and costs are preliminary in nature and subject to change. Cost range excludes inflation.

## **Transmission Lines from Producing Fields**

•Two transmission lines from the producing fields' facilities to the GTP



## **Gas Treating / Processing**

- Located at North Slope
- Remove CO<sub>2</sub> and other impurities
- Footprint: 150 - 250 acres
- Peak Workforce: 500 2,000 people
- Required Steel: 250,000 300,000 tons
- Among largest in world









Alaska LNG Project 3201 C Street, Suite 505 Anchorage, Alaska 99503

Ref. No.: L-AKE-PT-13-0004

October 14, 2013

Mr. Robert Williams, President Kenai Peninsula Fisherman's Association 43961 Kalifornsky Beach Road, Suite F Soldotna, AK 99669-8273

#### Re: Alaska LNG Project Selects Lead Terminal Location

Dear Mr. Williams,

Over the past year our four companies, ExxonMobil, ConocoPhillips, BP and TransCanada, have worked diligently to advance our understanding of what is required to make an LNG export project possible in Alaska. From production and gas treatment to the pipeline and the liquefaction and storage facilities, this undertaking represents a world-class project with unprecedented challenges. Earlier this year we completed our concept selection process, during which time we reviewed technical work and agreed on a project concept.

Currently, the companies are continuing to refine the agreed project concept that includes a gas treatment plant located on the North Slope, an 800-mile, 42-inch diameter pipeline with up to eight compression stations and at least five off-take points for in-state gas delivery, and a liquefaction plant and terminal. The Alaska LNG project team is preparing for more detailed engineering and design work, consistent with previously released plan phases.

After evaluating more than 20 locations, the Alaska LNG Project team has identified a primarily industrial area near Nikiski as the lead site for the liquefaction plant and marine terminal. We continue to consider secondary sites in Southcentral Alaska. The Nikiski site results in a pipeline route that provides an access opportunity to North Slope natural gas by the major population centers in Fairbanks, Mat-Su Valley, Anchorage and Kenai.

Please find attached a courtesy copy of a press release that was recently issued. We will continue to provide updates to you as our efforts progress. In the meantime if you have questions or concerns about the project, please contact me at (907) 564-3622 or Michael Nelson at (907) 929-4116.

Best regards,

Lisa L. Gray Senior Stakeholder Engagement Advisor Alaska LNG Project

Cc: File PGA







Alaska LNG Project 3201 C Street, Suite 505 Anchorage, Alaska 99503

Ref. No.: L-AKE-PT-13-0004

October 14, 2013

Mr. Roland Maw, Executive Director United Cook Inlet Drift Association 43961 Kalifornsky Beach Road Soldotna, AK 99669-8273

### Re: Alaska LNG Project Selects Lead Terminal Location

Dear Mr. Maw,

Over the past year our four companies, ExxonMobil, ConocoPhillips, BP and TransCanada, have worked diligently to advance our understanding of what is required to make an LNG export project possible in Alaska. From production and gas treatment to the pipeline and the liquefaction and storage facilities, this undertaking represents a world-class project with unprecedented challenges. Earlier this year we completed our concept selection process, during which time we reviewed technical work and agreed on a project concept.

Currently, the companies are continuing to refine the agreed project concept that includes a gas treatment plant located on the North Slope, an 800-mile, 42-inch diameter pipeline with up to eight compression stations and at least five off-take points for in-state gas delivery, and a liquefaction plant and terminal. The Alaska LNG project team is preparing for more detailed engineering and design work, consistent with previously released plan phases.

After evaluating more than 20 locations, the Alaska LNG Project team has identified a primarily industrial area near Nikiski as the lead site for the liquefaction plant and marine terminal. We continue to consider secondary sites in Southcentral Alaska. The Nikiski site results in a pipeline route that provides an access opportunity to North Slope natural gas by the major population centers in Fairbanks, Mat-Su Valley, Anchorage and Kenai.

Please find attached a courtesy copy of a press release that was recently issued. We will continue to provide updates to you as our efforts progress. In the meantime if you have questions or concerns about the project, please contact me at (907) 564-3622 or Michael Nelson at (907) 929-4116.

Best regards,

ALSA

Lisa L. Gray Senior Stakeholder Engagement Advisor Alaska LNG Project

Cc: File

Alaska LNG Project	DOCKET NO. PF14-21-000	Doc No: USAI-EX-SRREG-00-0001
	DRAFT RESOURCE REPORT NO. 1	DATE: FEBRUARY 2, 2015
	GENERAL PROJECT DESCRIPTION	REVISION: 0
	PUBLIC VERSION	

# U.S. Army Corps of Engineers (USACE)

# Alaska LNG

Alaska LNG Project 16945 Northchase Drive, DEV-GP4 Houston, Texas 77060

Ref No.: USAKE-EX-SRZZZ-00-0004

August 13, 2014

Mike Holley North Section Chief Regulatory Division US Army Corps of Engineers Post Office Box 6898 2204 3rd St. JBER, Alaska 99506-0898

# **Re:** Review of Wetland Studies Data Gathered by the Alaska Pipeline Project and the Alaska LNG Project

Dear Mr. Holley:

On behalf of the Alaska LNG Project (Project), this letter and its attachments seek your concurrence regarding data to be used in the regulatory approval process for the Project. As discussed in previous meetings with the US Army Corps of Engineers (USACE), a considerable body of work has been compiled for portions of the Project footprint north of Livengood, Alaska, including data that is common to a previous gas project (Alaska Pipeline Project). The available body of work includes information gathered by the previous project as well as information gathered during supplemental surveys conducted by the Project in 2013.

Some of the previously gathered data are no longer applicable or within the proposed Alaska LNG Project footprint; therefore the Project has developed and enclosed the following: an overview of the Wetlands Program to explain program objectives and summarize study results (Attachment A); two tables, one which presents all wetlands that intersect watersheds crossed by the potential Project footprint north of Livengood and another that summarizes wetland types by watershed north of Livengood (Attachment B); and two mapbooks (one for the Mainline Pipeline and one for the Point Thomson Pipeline) illustrating the locations of all wetlands listed in the tables (Attachment C).

The Project requests USACE's review and endorsement of this data set so that it may be used in the upcoming Federal Energy Regulatory Commission application and resulting Enivronmental Impact Statement. If you have any questions or require further information, please contact Adrienne Rosecrans at (832) 624-2722.

Sincerely,

ub Media

Ruben Medrano Alaska LNG Regulatory Lead For and on behalf of ExxonMobil Alaska LNG LLC

#### Enclosures

Attachment A: Wetlands Program Overview Attachment B: Table of All Wetlands that Intersect Watersheds North of Livengood and Summary Table of Wetland Types by Watershed North of Livengood Attachment C: Alaska LNG Mainline Wetland Mapbook, Point Thomson Pipeline Wetland Mapbook

cc: Project files

16945 Northchase Drive, DEV-GP4-498 Houston, Texas 77060 832-624-2816 281-654-3212 Fax Alaska LNG Project Environmental, Regulatory and Land Manager



May 28, 2014

Doc. No.: LT-AKE-EDHO-ACAK-14-0001

Mr. Mike Holley U.S. Army Corps of Engineers Regulatory Branch P.O. Box 898 Anchorage, AK 99506-0898

### Re: ALASKA LNG FIELD STUDIES PROGRAM – Wetlands Determination Protocol

Dear Mr. Holley,

BP, ConocoPhillips, ExxonMobil, and TransCanada are currently developing a potential project, known as the Alaska LNG Project, to treat, transport, and deliver natural gas from the Alaska's North Slope to a new liquefied natural gas (LNG) plant and marine terminal on Cook Inlet (the "Project"). The proposed Project includes the following major components in Alaska: an LNG Plant, a Gas Pipeline, a Gas Treatment Plant (GTP), a Prudhoe Bay Unit (PBU) Gas Transmission Line, and a Point Thomson Unit (PTU) Gas Transmission Line. In October 2013, the Project selected a site in the Nikiski area on the Kenai Peninsula as the preferred location for a proposed natural gas liquefaction plant and marine terminal. Pipeline routing definition from the Prudhoe Bay Unit to the plant location is ongoing.

The Project is planning summer field studies to analyze existing environmental conditions along the proposed project footprint and gather information to aid in facility location. Summer field studies will include wetlands mapping and field data collection and verification. The intent is to utilize this wetlands data for the applicable Section 404/10 permits and in the NEPA process, which the USACE will be party to. We submit the attached Wetlands Determination Protocol for your review and endorsement.

We appreciate and thank you for your cooperation. If you have any comments, questions or information requests, please contact Adrienne Rosecrans at (832) 624-2722.

Sincerely,

Charlie Kominas

Alaska LNG Project	DOCKET NO. PF14-21-000	DOC NO: USAI-EX-SRREG-00-0001
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	GENERAL PROJECT DESCRIPTION	REVISION: 0
	PUBLIC VERSION	

# U.S. Fish & Wildlife Service (USFWS)



Alaska LNG Project 3201 C Street Suite 506 Anchorage, AK 99503

Ref No.: LT-AKE-PT-14-0103-001

October 27, 2014

Sarah Conn, Supervisor Fairbanks Fish and Wildlife Field Office U. S. Fish and Wildlife Service 101 12<sup>th</sup> Ave., Room 110 Fairbanks, AK 99701 Sarah Conn@fws.gov

RE: Alaska LNG Project FERC Docket No.: PF14-21-000

Dear Ms. Conn:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LP (together, Project Participants) have initiated the Federal Energy Regulatory Commission's ("FERC" or "Commission") pre-filing review process for the Alaska LNG Project (Project) under 18 C.F.R. Section 157.21 of the FERC regulations. On September 12, 2014, the Director of the Office of Energy Projects ("OEP") issued a letter order granting the Project Participants' pre-filing request and assigning the Project FERC Docket No. PF14-21-000. Project Participants plan to prepare and file an application for authorization under Section 3 of the Natural Gas Act to site, construct and operate the Project.

In accordance with provisions of the NEPA (83 Stat. 852; 42 U.S.C. 4321 *et seq.)*, federal laws governing the protection of Federally listed endangered and threatened species (listed species) including the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 153 I *et seq.)*, the Bald and Golden Eagle Protection Act (54 Stat. 250, as amended, 16 U.S.C. 668a-d), the Migratory Bird Treaty Act (40 Stat. 755, as amended; 16 U.S.C. 703 et seq.) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) apply to the review and approval of this Project. This letter is a request to initiate informal consultation with the U.S. Fish and Wildlife Service ("FWS") for the proposed Project pursuant to Section 7(a)(2) of the ESA. The Project Participants are the Commission's designated non-Federal representative under 18 C.F.R. Section 380.13(b)(1) for purposes of informal consultation with the FWS under the ESA.

Project Participants are in the early stages of planning for the proposed Project. Project Participants have established a preliminary study corridor for the Mainline and study areas for the facilities of the Project. A route within the study corridor will be finalized with stakeholder input during the pre-filing process. A general project overview map depicting the study areas/corridor for the Project is attached for your review, along with GIS shapefiles.

On behalf of the Project Participants, this letter requests any information (including but not limited to a list of species) you may have regarding federally threatened or endangered species or critical habitat that may occur in the vicinity of the Alaska LNG Project. Protected species information provided by the FWS will be included in an applicant-prepared Biological Assessment (BA) that will be included as an appendix to Resource Report No. 3 of the Environmental Report (ER) that would form part of our application. It is expected that this BA will be developed over the next two draft submittals of the ER to result in a complete BA for the final FERC application. FERC and FWS can then properly consider any effects on known listed species and propose avoidance or mitigation measures during their review. Concurrent consultation with the National Marine Fisheries Service will occur.

We look forward to your participation in the evaluation of this project. If you have any questions, please contact me at 832-624-2816 or by email at Charlie.kominas@exxonmobil.com.

Sincerely,

Kon Charlie Kominas

On Behalf of Alaska LNG Project Participants

cc: Jim Martin, FERC Greg Balogh, Supervisor, Anchorage National Marine Fisheries Service Office Doug Limpinsel, Marine Biologist, Anchorage National Marine Fisheries Service Office Socheata Lor, Supervisor Anchorage US Fish and Wildlife Service Office



Alaska LNG Project 3201 C Street Suite 506 Anchorage, AK 99503

Ref No.: LT-AKE-PT-14-0103-002

October 27, 2014

Socheata Lor, Supervisor Anchorage Fish and Wildlife Field Office U.S. Fish and Wildlife Service 605 West 4<sup>th</sup> Avenue, Rm G-61 Anchorage, AK 99501 <u>Socheata Lor@fws.gov</u>

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We look forward to your participation in the evaluation of this project. If you have any questions, please contact me at 832-624-2816 or by email at Charlie.kominas@exxonmobil.com.

Sincerely,

Clarke Konins Charlie Kominas

On Behalf of Alaska LNG Project Participants

cc: Jim Martin, FERC Greg Balogh, Supervisor, Anchorage National Marie Fisheries Service Office Doug Limpinsel, Marine Biologist, Anchorage National Marine Fisheries Service Office Sara Conn, Supervisor, Fairbanks U.S. Fish and Wildlife Service Office

### APPENDIX E TYPICAL DRAWINGS

	DOCKET NO. PF14-21-000	DOC NO: USAI-EX-SRREG-00-0001
Alaska LNG Project	DRAFT RESOURCE REPORT NO. 1	DATE: FEBRUARY 2, 2015
	GENERAL PROJECT DESCRIPTION	REVISION: 0
	PUBLIC VERSION	

TYPICAL DRAWING NUMBER	REV.	DRAWING CATEGORY	DRAWING DESCRIPTION
TRENCH-01	0	TYPICAL TRENCH MODES	BURIED PIPE IN EXCAVATOR TRENCH
TRENCH-03	0	TYPICAL TRENCH MODES	BURIED PIPE IN ROCK TRENCH
ROW-01	0	TYPICAL RIGHT-OF-WAY MODES	NORTH SLOPE (WINTER)
ROW-02	0	TYPICAL RIGHT-OF-WAY MODES	WINTER
ROW-03	0	TYPICAL RIGHT-OF-WAY MODES	SUMMER
ROW-04	0	TYPICAL RIGHT-OF-WAY MODES	CROSS SLOPES -NORTH SLOPE (WINTER)
ROW-05A	0	TYPICAL RIGHT-OF-WAY MODES	CROSS SLOPES (WINTER)
ROW-05B	0	TYPICAL RIGHT-OF-WAY MODES	CROSS SLOPES (SUMMER)
ROW-06	0	TYPICAL RIGHT-OF-WAY MODES	POINT THOMSON GAS TRANSMISSION PIPELINE (WINTER)
ROW-21	0	TYPICAL RIGHT-OF-WAY MODES	ADDITIONAL TEMPORARY WORKSPACE 1/2
ROW-22	0	TYPICAL RIGHT-OF-WAY MODES	ADDITIONAL TEMPORARY WORKSPACE 2/2
ROAD-01	0	TYPICAL ROAD CROSSINGS	ROAD CROSSINGS -ARTERIAL/COLLECTOR ROADS
FP-01	0	TYPICAL FOREIGN PIPELINE AND UTILITY CROSSINGS	FOREIGN PIPELINES
UT-01	0	TYPICAL FOREIGN PIPELINE AND UTILITY CROSSINGS	BURIED UTILITY
WB-01	0	TYPICAL WATERBODY CROSSINGS	MAJOR/INTERMEDIATE -TRENCHED
WB-02	0	TYPICAL WATERBODY CROSSINGS	MAJOR/INTERMEDIATE -HDD
WB-03A	0	TYPICAL WATERBODY CROSSINGS	MAJOR/INTERMEDIATE -UNSUPPORTED PIPE BRIDGE
WB-03C	0	TYPICAL WATERBODY CROSSINGS	MAJOR/INTERMEDIATE -CABLE SUPPORTED SPAN
BC-01	0	BUOYANCY CONTROL	CONCRETE COATING
BC-02	0	TYPICAL BUOYANCY CONTROL	SADDLE BAGS
BC-03	0	TYPICAL BUOYANCY CONTROL	BOLT ON RIVER WEIGHTS
BC-04	0	TYPICAL BUOYANCY CONTROL	SCREW ANCHORS
BC-05	0	TYPICAL BUOYANCY CONTROL	CONCRETE SET ON WEIGHTS
CC-01	0	TYPICAL CORROSION CONTROL	COATINGS
CC-02	0	TYPICAL CATHODIC PROTECTION	DEEP VERTICAL ANODE BED
CC-03	0	TYPICAL CATHODIC PROTECTION	HORIZONTAL ANODE BED
FC-01	0	TYPICAL FRACTURE CONTROL	FRACTURE CONTROL METHOD
ACC-01	0	TYPICAL ACCESS ROADS	PERMANENT ACCESS ROAD SECTION
ACC-03	0	TYPICAL ACCESS ROADS	ICE/SNOW ACCESS ROAD SECTION
ACC-05	0	TYPICAL ACCESS ROADS	TEMPORARY SHOOFLY ROADS PLAN/SECTION
ACC-06	0	TYPICAL ACCESS ROADS	TEMPORARY GRANULAR ACCESS ROAD OFF HIGHWAY
FAC-05	0	TYPICAL PIPELINE FACILITIES	MAINLINE BLOCK VALVE PLOT PLAN
FAC-08A	0	TYPICAL PIPELINE FACILITIES	DELIVERY POINT TAKE-OFF PLOT PLAN
CONST-02	0	CONSTRUCTION TYPICALS	HORIZONTAL BORING/DRILLING ROADS
CONST-03	0	CONSTRUCTION TYPICALS	OPEN-CUT ROADS

Alaska LNG Project	DOCKET NO. PF14-21-000	DOC NO: USAI-EX-SRREG-00-0001
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	GENERAL PROJECT DESCRIPTION	REVISION: 0
	PUBLIC VERSION	

TYPICAL DRAWING NUMBER	REV.	DRAWING CATEGORY	DRAWING DESCRIPTION
CONST-04	0	CONSTRUCTION TYPICALS	WATERBODIES - MAJOR/INTERMEDIATE -OPEN- CUT
CONST-05	0	CONSTRUCTION TYPICALS	WATERBODIES - MINOR -OPEN-CUT
CONST-06	0	CONSTRUCTION TYPICALS	WATERBODIES - ISOLATED OPEN CUT -DAM AND PUMP
CONST-07	0	CONSTRUCTION TYPICALS	WATERBODIES - ISOLATED OPEN CUT -DAM AND FLUME
CONST-08	0	CONSTRUCTION TYPICALS	WATERBODIES - ISOLATED OPEN CUT -DAM AND DIVERT
CONST-09	0	CONSTRUCTION TYPICALS	WATERBODIES - HORIZONTAL DIRECTIONAL DRILL
CONST-11	0	CONSTRUCTION TYPICALS	EQUIPMENT CROSSING - FORD
CONST-12	0	CONSTRUCTION TYPICALS	EQUIPMENT CROSSING - MAT BRIDGE
CONST-13	0	CONSTRUCTION TYPICALS	EQUIPMENT CROSSING - MAT ROCK/CULVERT BRIDGE
CONST-14	0	CONSTRUCTION TYPICALS	EQUIPMENT CROSSING -TYPICAL ROCK/CULVERT BRIDGE
CONST-15	0	CONSTRUCTION TYPICALS	EQUIPMENT CROSSING - ICE BRIDGE
FAULT-01	0	CONCEPTUAL "ZEE" FAULT CROSSING DESIGN	STRIKE-SLIP FAULTS
FAULT-02	0	CONCEPTUAL "U" FAULT CROSSING DESING	STRIKE-SLIP FAULTS
FAULT 03	0	CONCEPTUAL "ZEE" FAULT CROSSING DESIGN	REVERSE OR THRUST FAULTS









OW MANAGEMENT	
NOW/ICE PAD	
FROM ROW AND EXISTING SNOW	
ter)	Rev.












SNOW MANAGEMENT	
EXISTING SNOW	
Pipeline (Winter)	Rev.














































































































