APPENDIX B BLASTING PLAN

ALASKA LNG

BLASTING PLAN

USAI-P2-SPZZZ-00-000016-000

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1.0 PURPOSE

The Alaska LNG Project (Project) would involve installation of approximately 800 miles of 42-inch-outside-diameter natural gas pipeline and facilities in Alaska. Pipe installation would typically require trenching to a minimum depth of 8 feet below existing grade. Preliminary data review has identified several areas along the alignment where bedrock may be encountered at less than 8 feet below ground surface and rock removal techniques would be needed. Conventional excavation techniques would be used first, but in the event it becomes necessary to use blasting techniques to remove rock within the trench, all blasting and blasting-related activities would be performed in accordance with the guidelines presented in this *Blasting Plan*. Specific areas where blasting may be required would be determined during construction.

This *Blasting Plan* is intended to serve as an overall guidance document for all blasting on the Project; however, the blasting contractor would be responsible for generating an overall Contractor Blasting Plan (CBP) and a written Site-Specific Blasting Plan (SSBP) for the Project entity's approval for each individual area where blasting activities would take place. The Project entity would then submit the approved CBP to the Federal Energy Regulatory Commission (FERC) for approval in its Project Implementation Plan. The SSBP would be submitted to the Project entity for review and for final acceptance by the third-party FERC Monitor prior to the commencement of any blasting. Requirements and procedures may vary from one blasting work area to the next due to state or local requirements, or site conditions.

2.0 REGULATORY COMPLIANCE

2.1 FEDERAL REQUIREMENTS

All blasting shall comply with applicable federal regulations including:

- 29 Code of Federal Regulations (CFR) 1910.109 – Explosives and Blasting Agents (Occupational Health and Safety Administration {OSHA}).
- 29 CFR 1926.900 – Blasting and Use of Explosives.
- 27 CFR 181 – Commerce in Explosives (Bureau of Alcohol, Tobacco, Firearms and Explosives {ATF}).
- 49 CFR 177 – Carriage by Public Highway.
- 2006 International Fire Code.

2.2 ALASKA STATE REQUIREMENTS

All blasting should also comply with the State of Alaska's Explosive Handler Statutes and Regulations – February 2011, which include:

- 8 Alaska Administrative Code (AAC) 61.1020 – Additional explosive and blasting standards.
- 8 AAC 62.020 through 8 AAC 62.070 – Certificate of fitness for explosives handlers.
- Additional requirements for night blasting (in addition to requirements specified by 29 Code of Federal Regulations (CFR) 1910.109(e)(1)(v).

All blasting operations would be implemented in accordance with these federal, state, and local regulations using approved procedures for conducting safe blasting. A specialized blasting subcontractor would be responsible for obtaining the corresponding permits and implementing the *Blasting Plan* once approved. Only authorized and qualified personnel shall handle explosives and shall always be under the direct supervision of an Alaska-Certified Explosives Handler.

3.0 PRE-BLASTING IMPACT ASSESSMENT

3.1 BLASTING ABATEMENT

If feasible and practical, depending on rock characteristics, alternative bedrock trenching techniques such as ripping and cutting, hydraulic hoe-ramming, rock trenching equipment, or non-explosive demolition agents would be used. If blasting is deemed necessary, efforts would be made to avoid or minimize the following potential adverse impacts: ground vibration, air blast overpressure, generation of flyrock, generation of dust, generation of noxious gases, and chemical residue in the subsurface. Methods to prevent these adverse impacts include the design of the actual loads/charges, configuration, delays, and the use of blast mats, where necessary.

3.2 POTENTIAL IMPACT ASSESSMENT

Prior to initiating blasting operations, and as part of preparation of a CBP and SSBP, the contractor would assess the potential impacts from the proposed blasting operations on nearby residential or other structures, aboveground and belowground utilities, roadways, treed areas, waterbodies, and other sensitive environments or habitats. If federal, state, local, or OSHA regulations dictate minimum distances for assessing or protecting from blasting impacts, these distance thresholds would be followed. If no such regulations exist, the impacts would be assessed and monitored as set forth in the CBP and SSBP. Estimated charges to be used during blasting would be indicated in the CBP.

Pre-blast condition surveys would be performed on all structures within a prescribed distance from the blast zone. These surveys would include videotape or photographic documentation of structure conditions, and would include any observable cracks in foundation or structure walls, conditions of window glass, and other features as appropriate.

In addition, the locations of private or public water supply wells and springs within 150 feet of potential blasting sites would be identified and documented. Information regarding the well construction (e.g., well depth, casing type/diameter/depth, water depth, water-bearing formations and well yield) would be obtained and reviewed, if available. Well yield would be verified by the Project's Environmental Inspector before and after blasting activities to assure that no appreciable change has occurred as a result of blasting.

4.0 BLASTING DETAILED PLANS AND PROCEDURES

4.1 CONTRACTOR'S BLASTING PLAN

A qualified blasting engineer or consultant would oversee the preparation of the CBP, which would include blasting procedures and an engineering report showing recommended blasting charges and methods to be used at specific locations. The CBP would be approved by the Project entity or its consultant prior to any blasting activity.

The CBP would include, but not be limited to, procedures for:

- The names of blasting professionals along with copies of licenses and a statement of qualifications summarizing the experience of each professional.
- The names and credentials of all monitoring personnel.
- Typical blasting design criteria:
  - Description of blast products and their justification for selection.
  - Delay type and interval.
  - Maximum charge per hole and per delay.
  - Method for initiating explosives.
  - Stemming material and tamping method.
  - Hole diameter and pattern.
- A schedule identifying when blasting would occur within a waterbody greater than 10 feet wide, or within a designated cold-water fishery.
- Copies of all required federal, state, and local permits.
- Communication with authorities and landowners.
- Safety procedures (e.g., fire prevention, signs and flaggers, and warning signals).
- Magazine types and locations for storage of explosives and detonating caps.
- Mitigation of environmental impacts.
- Mitigation controls for flyrock, noise reduction, and misfires.
- A description of vibration monitoring equipment, including manufacturer and specifications.
- Test shot forms.
- Blasting log forms.
- Pre- and post-blast inspections.
- Disposal of waste blast material.

Procedures specified in the CBP would recognize that blasting may be required adjacent to existing overhead or underground utilities, roadways or trails, environmentally sensitive areas, farmland, or areas with potential geologic hazards.

4.2 SITE-SPECIFIC BLASTING PLANS

All blasting-related activities would be performed in accordance with an SSBP (prepared by the blasting subcontractor) and would include measures for avoiding, abating, or minimizing potential impacts at a unique location. The following is a list of minimum requirements that must be satisfied by the SSBP. It is possible that additional specific local requirements not listed herein may be required.

- Prior to blasting, the contractor would provide 48 hours advance notice to all applicable and potentially affected parties, including adjacent property owners, local municipalities, and other parties as may be required by the FERC Certificate conditions, Project permits, or applicable regulations. Locations of structures, utilities, wells, or wetlands within a minimum of 150 feet of the blasting location(s) (or other distance as may be required by regulations) would be inventoried and assessed.
- Controlled blasting techniques would be designed specifically to impact only near-surface materials (i.e., limited in intensity to fracture only shallow rock) to facilitate construction. Ditch blocks would be used during trench blasting.
- The SSBP would contain a Safety Plan that would include, at a minimum:
    - Measures that would be taken to execute the work in a manner that minimizes potential for injury to Project personnel, the public at large, and adjacent/nearby properties. This could include the use of blast mats if there is the potential for flyrock to damage nearby structures, etc. Blasting would be kept at a minimum distance of 200 feet from any aboveground or belowground structure, and all personnel would be cleared within 1,000 feet of the blasting area.
    - Contact information for all Project managerial and emergency personnel, including the local fire department, and any others as may be required by applicable permits.
    - Procedures to follow in the event of injury or other emergency.
    - Procedures for establishing sentries as needed to prevent access to the blast zone(s) by unauthorized personnel. Sentries would be deployed on all pathways (blocked access roads, closed roads, etc.) to the blasting area.
    - Procedures for fire safety in accordance with a Fire Prevention and Safety Plan, including restrictions on blasting in periods of high fire danger.
    - Procedures for explosive materials handling, storage, and use.
    - Proper safeguards for personnel in the event of a misfire and unburned detonation cable until the misfire can be reblasted or safely removed.
    - Communication protocol between vehicles and office facilities, including cease-use restrictions during blasting activities.
    - Personal protective equipment and tool restrictions to avoid sparking around explosives.
    - Measures to be implemented for prevention and suppression of wildfires.
- Primary rock type and geologic structures (e.g., competence, massive or fractured).
- Blast hole spacing, blast charge weight, delay type or configuration, and other design aspects to be used to minimize impact as depicted in the Blasting Procedures in the following section.
- Explosive material cut-sheets, including chemical content of the materials and potential by-products.
- Provisions for a system of signage and warning signals to warn of impending blasting activities and access limitations.
- Methodology (blasting mats or pads) for containing fly-rock, dust, fumes, and noise.
- Proposed vibration monitoring locations.
- Provisions for a monitored test blast to assess the effects of the blasting as proposed and the potential need for modifications to the blast methodologies.
- Proposed hours of drilling and blasting operations.

- Specific procedures for the transportation and storage of explosives and blasting materials.
- Other criteria as appropriate.

Magazines used for storage of explosives must be located on properties for use during the Project if explosives are stored on site. Explosives would not be stored on state or federal property without written permission from the agency affected by the storage.

4.3 GENERAL BLASTING PROCEDURES

The CBP would set forth procedures that would include, at a minimum, five test shots that are monitored with three channel seismographs. The contractor would use the data from the test shots to establish standard shot in terms of pounds of explosives per delay.

Production shot procedures and delays would be identical to test shot procedures and delays. Each major change in geology, change in explosive manufacturer, or change in explosive grade as determined by the Project entity would require new test shots.

In order to provide material suitable for use as backfill after the pipe has been installed, the drilling pattern would be designed to achieve smaller rock fragmentation (maximum 1 foot in diameter). All proposed drilling patterns would be submitted to the Project Team for approval prior to drilling. The following action items represent minimum requirements and are intended to only provide a general order to the blasting procedure:

- A health and safety tailgate meeting would be held prior to any blasting activities, and all personnel involved with any task associated with the blasting would attend. All safety rules and signaling would be covered during the meeting.
- Warning signs would be placed around the blasting area.
- Lightning detectors would be set up in the blasting area.
- All drilled holes would be measured for both depth and location.
- Seismic equipment would be set up to measure velocities near the pipeline and any structures 200 feet or less from the blast.
- Distances to any nearby structure (aboveground or belowground) suspected of being 200 feet or less from the blast would be measured.
- The blasting affected zone would be cleared.
- The warning signal would be sounded.
- The blast signal would be sounded.
- The blast would be detonated.
- Inspectors would inspect any aboveground or belowground facilities for damage after the blaster has checked for misfires and given the “ALL CLEAR” signal.
- The Blasting Log would be completed.

4.3.1 Types of Explosives

The CBP would specify the types of explosives that the Contractor intends to use. Some explosives and detonators can have an adverse impact on the subsurface in the form of environmentally harmful residue in soil, bedrock, or groundwater. Accordingly, to avoid potential adverse impacts, special trenching-type explosives that are designed specifically for trench blasting would be required for use on the Project.

4.3.2 Handling of Explosives

4.3.2.1 Ground Transportation

The CBP would include procedures that would be followed for safe transportation of blasting supplies. This plan would also specify how transportation would be done in compliance with 49 CFR 177 (Carriage by Public Highway) and other state and local regulations.

4.3.2.2 Storage Magazines

Magazines used for storage of explosives must be placed in pre-approved secure locations permitted for use during the Project. Explosives would not be stored on state or federal property without written permission from the agency affected by the storage. Magazine locations would be in accordance with local, state, and federal regulations, or in accordance with the 18th edition of the Blasters' Handbook and ATF P5400-7 Explosives Law and Regulations where no regulations apply.

Separate Class I and Class II magazines shall be used for storage of detonators and explosives. Magazines shall be kept locked except for removal of material for use. In addition, explosives would be transported directly to each shot point from the magazines on approved ground transportation equipment.

The following security measures would also be included in the CBP:

- Provisions to ensure proper separation of explosives and detonators.
- Inventory security: Explosives shall be accounted for at all times and if not in use shall be kept in locked, approved storage magazines.
- Accounting and Chain of Custody: A running inventory would be maintained at all times. No explosives shall be abandoned.
- Magazine Security Breach Contingency: Appropriate authorities shall be notified of any loss, theft, or unauthorized entry into a magazine.

4.3.2.3 Disposal

The CBP would identify all necessary precautions that would be taken to properly clean up and dispose of blasting supplies including:

- Abandoned Explosives.
- Packing Materials.
- Other Supplies.

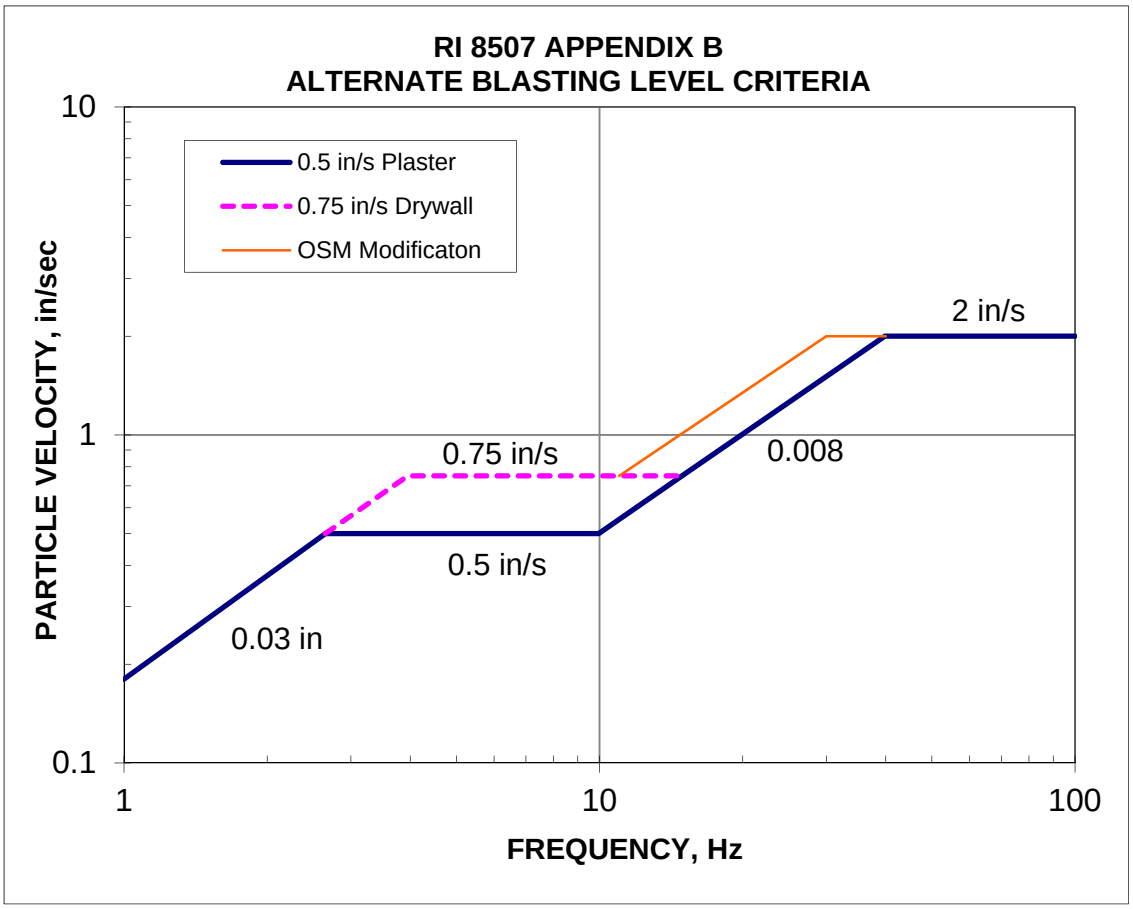
4.3.3 Vibration Monitoring

Blast vibration and airblast overpressure monitoring would be performed and reported for each round by an experienced, qualified firm. Appropriate documentation would be maintained and available for review by applicable agencies.

Unless otherwise approved, ground vibrations at adjacent and nearby structures would be kept below the safe limits recommended by the U.S. Bureau of Mines (USBM RI 8507, 1980), which are provided on **Error! Reference source not found.**Figure 1. These limits are based on the frequency and the peak particle velocity of the blast vibrations, and are generally accepted limits for preventing cosmetic damage to residential structures. These limits may vary in accordance with state-specific or local regulations or codes.

Unless otherwise approved, air blast overpressures would normally be kept below a limit of 133 decibels (dB) (Peak Impulsive), or 0.013 pounds per square inch (psi), which is the limit recommended by the U.S. Bureau of Mines to prevent damage to windows and minimize annoyance (**Error! Reference source not found.**). The maximum peak particle velocity allowed would take into consideration protection of the stability of natural slopes, and to minimize environmental impacts to wells, springs, waterbodies, wetlands, wildlife, and habitat.

Figure 1: Blasting Vibration Limit Criteria



4.3.4 Flyrock Control

All shots would be carefully designed by the Explosive Handler to control flyrock. A good-quality, non-bridging stemming material would also be used to reduce the amount of flyrock. Matting and/or padding would be utilized at the discretion of the Explosive Handler.

4.3.5 In-Stream Blasting

To date, there is no evidence of a requirement to implement a SSBP in a flowing stream bed. If rock is encountered, conventional excavation and hammer techniques would be used first. If these techniques are not successful then, in addition to the requirements identified in this document, the Contractor would incorporate the following measures when conducting blasting in streams.

- As required in the Alaska LNG Project Procedures, the Contractor would provide the Project entity with sufficient prior notice of in-stream blasting so that FERC (and any other applicable agency) may be apprised of the event at least 48 hours before blasting.
- For dam and pump crossings, blasting would only occur after installing dams upstream and downstream of the trench (blast) area.
- For flume crossings, flume pipes can be installed after blasting but prior to trenching.
- No blasting shall be done under water or within one-quarter mile of streams or lakes with identified sensitive wildlife habitat without the approval of the Environmental Inspector.
- If required by regulating agencies, a series of scare charges will be detonated immediately prior to trench blasting to disperse fish from the blast area.
- If required by regulating agencies, pre- and post-detonation monitoring would be conducted to determine the extent, if any, of fish mortality.
- Any flyrock in streams would be collected immediately and disposed of at an approved disposal site.
- Time allowed for completion of the crossing of a waterbody does not include blasting activities.

4.3.6 Lightning Hazards

Lightning strikes pose a serious risk of accidental detonation when thunderstorms or electrical storms are in the vicinity of a blasting site and there are loaded holes on site. All loading and blasting activities would cease immediately, and personnel would seek shelter a safe distance from the work area. If the Contractor determines that such a hazard exists, work would be discontinued for all operations and workers would retreat to a predetermined safe zone away from the loaded holes when an approaching storm front is within 5 miles. Work would continue only after the nearest lightning activity is at least 5 miles beyond the blasting area. The Project would have onsite approved lightning detectors that are capable of measuring the degree of electrical activity associated with an approaching storm, and the distance to the storm front from the instrument located on the construction right-of-way (ROW).

5.0 POST-BLAST ACTIVITIES

Upon completion of blasting in a given work area, the following post-blast activities would be implemented:

- Notifications of work completion would be made to the agencies or parties as required by the applicable permit.
- Post-blast surveys would be completed of those structures, if any, for which a pre-blast survey was performed.
- Documentation of the vibration monitoring, and pre- and post-blast survey results would be provided to applicable agencies as required by permit.
- Other permit-specified post-blast requirements, as necessary.

6.0 ENVIRONMENTAL RESOURCES

The CBP would specify measures that would be incorporated to avoid adverse impacts to fish and wildlife (including state and federally listed threatened and endangered species) and surface and groundwater resources. Potential impacts to archeological, paleontological, and air resources, as well as noise levels, would be specified, where applicable.

6.1 FISHERIES

The Alaska Department of Fish and Game (ADF&G) regulates blasting activities in and near[1] waterbodies. A Fish Habitat permit may be required for any blasting operation that occurs either in, or near the banks of, fish-bearing waterbodies and designated anadromous fish streams. These permits would be obtained from the ADF&G Division of Habitat prior to the proposed blasting operations.

In accordance with ADF&G regulations, SSBPs may include the following provisions for protection of fisheries resources:

- A blasting design that includes limiting the instantaneous pressure rise in the water column to no more than 7.3 psi where fish are present, and peak particle velocities in spawning gravels are limited to no more than 2 inches per second during the early stages of embryo incubation before epiboly is complete.
- Blast monitoring procedures including observed fish mortality.
- A schedule identifying when blasting would occur within any water body greater than 10 feet wide, or within a designated important fishery, or within a designated anadromous fish stream.
- Copies of approved Fish Habitat Permits provided by the Project entity.

ADF&G Blasting Standards and a Fish Habitat Permit Application are included in Appendices A and B respectively.

6.2 WILDLIFE

SSBPs shall include mitigation measures for conducting blasting in environmentally sensitive areas and during sensitive life stages of wildlife (e.g., Dall sheep lambing, bear denning, raptor nesting, etc.). Some measures that may be employed include:

- Avoidance of nesting/denning time periods when blasting.
- Monitoring of nests/denning locations during blasting operations.
- Procedures for minimizing vibration.
- Provisions for monitoring and recording vibration for each blast; and/or
- Post-blasting monitoring of nest/denning area.

[1] The distance from the waterbody where a permit would be required is dependent on the site conditions and resources. Blasting locations should be evaluated during the Pre-Blasting Impact Assessment (see Section 4.0).

6.3 GROUNDWATER RESOURCES

The CBP would include protection measures that would be implemented to avoid impact to surface and groundwater resources and water supply wells. The SSBPs may include the following aquifer protection measures that would be followed when blasting in the vicinity of water supply wells and springs:

- Notification of well owner prior to any drilling and blasting.
- Pre-blast testing of water quality and yield will be done prior to blasting within 300 feet of all known surface water intakes, water supply wells, and springs.
- Procedures for minimizing vibration.
- Provisions for monitoring and recording vibration for each blast;
- Post-blast testing of water quality and yield.
- Provisions for supplying fresh water supply in the event that water quality or well yield are adversely impacted.
- In addition, an environmental review and checklist would be included in the CBP, which will also address the following:
- Prior to blasting, the Environmental Inspector would survey the proposed blasting zone to ensure that areas with threatened or endangered species have been identified.
- Special procedures to minimize disturbance (e.g., noise, air blast effects) of environmentally sensitive areas such as streams, wetlands, and special habitats, and to mitigate the effects of blasting.
- Procedures to protect special status species or prevent the deterioration of existing habitat. Implementation of mitigation measures where blasting is required to excavate the trench and Endangered Species Act-listed wildlife species have a known presence or where survey data do not support a probable absence within 1 mile of the blasting site.
- During periods of wildlife breeding, nesting, lambing, or calving activity, and during major migrations of wildlife, blasting activities may be restricted by the Environmental Inspector with written notice.
- Compliance with site-specific requirements described in Section 5.3.5 when blasting near or within streams, including mitigation procedures to minimize the effect on aquatic ecosystems.
- Implementation of a dust control plan for drilling operations.
- Evaluation of the effect of blasting operations on ambient air quality.
- Acceptable noise levels and guidelines for limiting shot size and frequency of blasting to control noise levels.
- Prevention of unstable geological conditions that may result from blasting operations such as landslides, mudslides, or ground failure, which could result in hazards to people or property.
- Protection of water supply wells, springs, and seeps.
- Special procedures that will need to be implemented if in-water blasting is required for the Project, including the use of air bubble curtains or other protective equipment.

7.0 ANTICIPATED QUANTITIES AND LOCATIONS

7.1 LIQUEFACTION FACILITY

No blasting is anticipated for construction of the Liquefaction Facility.

7.2 MAINLINE

During pipeline construction, blasting may be required where hard bedrock or numerous boulders are encountered at or near the ground surface and in certain permafrost terrain conditions where mechanized fracturing and excavating are not suitable. Conventional excavation techniques may be used first, but in the event it becomes necessary to use blasting techniques to remove rock within the trench, all blasting and blasting-related activities would be performed in accordance with the guidelines presented in this Blasting Plan.

It is estimated that approximately 259 miles of trench would have to be blasted, and there are another 57.5 miles that are seen as potential for blasting. That many miles of blasted ditch would bulk up after blasting, becoming approximately 6.4 millions of cubic yards, as shown on Table 1. There are another 65.4 miles of ROW that may require blasting during grading and before any ditching is done.

Table 1: Ditch or Right-of-Way (ROW) that May Have to be Blasted

	Length (miles)	Volume (cubic yards)
Blasted Ditch	254.6 51%	5,219,000
Hoe or Blasted Ditch	203.0 40%	4,163,000
Total Blasted Ditch	**457.6**	**9,382,000**
Blasted ROW	44.3 9%	
Number of Miles to be Blasted	**501.9 100%**	

The preliminary blasting locations are listed on Appendix C. These locations shall be updated prior to and during construction.

Those areas where shallow or exposed bedrock is expected to be encountered along the Mainline facilities and would require blasting are listed as “Blasting” in Appendix C. The Appendix also includes certain soil conditions with boulders, cobbles, or gravel/granular materials in permafrost that may also require blasting depending on the proportion of coarse granular materials and the nature of the permafrost. These locations are labeled “Potential Blasting.”

7.3 PRUDHOE BAY GAS TRANSMISSION LINE

No blasting is anticipated for construction of the Prudhoe Bay Gas Transmission Line.

7.4 POINT THOMSON GAS TRANSMISSION LINE

No blasting is anticipated for construction of the Point Thomson Gas Transmission Line.

7.5 GAS TREATMENT PLANT

No blasting is anticipated for construction of the Gas Treatment Plant. However, work at material (borrow) sites would involve blasting.

8.0 ACRONYMS AND TERMS

Term	Definition
AAC	Alaska Administrative Code
ADF&G	Alaska Department of Fish & Game
CFR	Code of Federal Regulations
CBP	Contractor Blasting Plan
db	Decibels
FERC	Federal Energy Regulatory Commission
Plan	Blasting Plan
Project	Alaska LNG Project
psi	pounds per square inch
ROW	right-of-way
SSBP	Site-Specific Blasting Plan

9.0 REFERENCES

Alaska Department of Labor, 2012, Explosive Handler Statutes and Regulations http://labor.alaska.gov/lss/forms/explosive-handling-stats-regs.pdf

Alaska Department of Fish and Game, 2008, Fish Habitat Permit Application, http://www.adfg.alaska.gov/static/license/uselicense/pdfs/fhpermitapp.pdf

Alaska Department of Fish and Game, 2013, Technical Report No. 13-03 Alaska Blasting Standard for the Proper Protection of Fish, http://www.adfg.alaska.gov/static/home/library/pdfs/habitat/13_03.pdf

Federal Bureau of Alcohol, Tobacco, and Firearms (no date). ATF Explosives Laws and Regulations. ATF P5400.7, Washington, D.C.: Federal Bureau of Alcohol, Tobacco, and Firearms.

ISEE – Blasters' Handbook – 18th Edition – 2015.

Siskind, D.E. Stagg, M.S., et al 1980. United States Bureau of Mines Report of Investigators 8507: 'Structural response and damage produced by ground vibration from surface mine blasting'.

Appendix A

Alaska Department of Labor

Explosive Handler Statutes and Regulations – February 2012

Explosive Handler

Statutes and Regulations

February 2012

Labor Standards and Safety Division
Mechanical Inspection

ALASKA DEPARTMENT OF LABOR
& WORKFORCE DEVELOPMENT

Jobs are Alaska's Future

MECHANICAL INSPECTION
CUSTOMER COUNTER LOCATIONS

Main Office MI - Anchorage
3301 Eagle Street, Ste 302
Anchorage, AK 99503
Office (907) 269-4925
Fax (907) 269-4932
Hours -8:00am-4:30pm

MI - Fairbanks
675 7th Ave, Station H-2
Fairbanks, AK 99701
Office (907) 451-2887
Fax (907) 283-2967
Hours -8:00am-9:00am

MI - Juneau
1111 West 8th Street
Juneau, AK 99802
Office (907) 465-4871
Fax (907) 465-3584
Hours -8:00am-4:30pm

MI - Sitka
304 Lake Street
Sitka, AK 99835
Office (907) 747-6380
Fax (907) 747-6657
Hours - By Appointment

WEB ADDRESSES

Certificate of Fitness
www.labor.state.ak.us/lss/mihome.htm
Applications and Licensing Information

Contractor Information
www.commerce.state.ak.us/occ/pcon.htm

Electrical Administrator
www.commerce.state.ak.us/occ/pead.htm
Electrical CEU Provider List

Mechanical Administrator
www.commerce.state.ak.us/occ/pmec.htm
Plumbing CEU Provider List

For Questions and Inquiries Email Mechanical Inspection
Anchorage.LLS-MI@alaska.gov

Note to Readers: The statutes and administrative regulations listed in this publication were taken from the official codes, as of the effective date of the publication. However, there may be errors or omissions that have not been identified and changes that occurred after the publication was printed. **This publication is intended as an informational guide only and is not intended to serve as a precise statement of the statutes and regulations of the State of Alaska. To be certain of the current laws and regulations, please refer to the official codes.**

STATUTES
Chapter 08.52. EXPLOSIVES HANDLERS

Sec. 08.52.010. Power to adopt regulations.

The Department of Labor and Workforce Development may issue orders and adopt regulations relating to the storage and use of explosives necessary to carry out the purposes of this chapter.

Sec. 08.52.020. Certificate of fitness required.

In connection with an excavation, tunnel, quarry, earth removal, or construction carried on in this state, a person may not be employed without a certificate of fitness, while engaged in

(1) emplacing explosives for detonation;

(2) installing primers, fuses, wires, or other means of detonation; or

(3) detonating explosives.

Sec. 08.52.030. Application for and issuance of certificate.

The department shall issue certificates of fitness. A certificate may be issued only to an individual. An applicant for a certificate shall apply in writing, under oath, on a form prescribed by the department containing

(1) the name and address of the applicant;

(2) the applicant's age;

(3) the applicant's citizenship;

(4) the applicant's fingerprints and fees for a criminal background check conducted under AS 08.52.035; and

(5) other information that the department requires.

Sec. 08.52.035. Criminal justice information and records.

(a) An applicant for the issuance or renewal of a certificate of fitness under this chapter shall submit to the department, with the application, the applicant's fingerprints and the fees required by the Department of Public Safety under AS 12.62.160 for criminal justice information and a national criminal history record check. The department shall submit the fingerprints to the Department of Public Safety to obtain a report of criminal justice information under AS 12.62 and a national criminal history record check under AS 12.62.400. The Department of Public Safety may submit the fingerprints to the Federal Bureau of Investigation for a national criminal

history record check. The department shall use the information obtained under this section in its determination of an applicant's qualification for issuance or renewal of a certificate of fitness.

(b) In this section, "criminal justice information" has the meaning given in AS 12.62.900.

Sec. 08.52.040. Issuance and contents of certificate.

(a) If, upon investigation and examination by the department, the applicant is found competent by reason of training, experience, criminal history and background check, and physical fitness, the department shall issue a certificate of fitness. The certificate must set out the competency of the applicant and provide for positive identification of the applicant, and shall be carried on the person engaged in handling explosives.

(b) The department shall establish in regulation standards of competency based on training, experience, criminal history and background checks, and physical fitness for the issuance of a certificate of fitness.

Sec. 08.52.050. Fee.

An applicant for a certificate of fitness shall pay a fee at the time of application in the amount established by regulations adopted by the department.

Sec. 08.52.060. Duration of certificate.

A certificate of fitness is effective for three years from the date of issue. The department may cancel a certificate for cause.

Sec. 08.52.070. Persons exempt.

Persons employed in mining operations as defined in AS 27.20.061 are exempt from the provisions of this chapter.

Sec. 08.52.080. Violations and penalties.

An employer who violates a provision of this chapter or a regulation adopted or order made under authority of this chapter is punishable by a fine of not more than $1,000, or by imprisonment for not more than one year, or by both. Each day's continuance of a violation constitutes a separate offense.

Sec. 08.52.100. Definition.

In this chapter, "department" means the Department of Labor and Workforce Development.

REGULATIONS
Article 11
Occupational Safety and Health Standards

8 AAC 61.1020. Additional explosive and blasting standards

(a) In addition to the requirements set out in 29 C.F.R. 1910.109 (e), as amended, an employer shall ensure the following:

(1) all employees doing excavation, tunnel, quarry, earth removal, or construction work, and who are emplacing explosives for detonation, installing primers, fuses, wires, or other means of detonation, or detonating explosives, are required to obtain a certificate of fitness for explosive handlers issued by the department, the standards and application procedures for certificate of fitness for explosive handlers are contained in 8 AAC 62.020 - 8 AAC 62.070;

(2) an employee handling explosive materials shall be supervised by a holder of a certificate of fitness for explosive handlers and shall be at least 18 years of age.

(b) Notwithstanding 29 C.F.R. 1910.109(e)(1)(v), if fewer than six hours of daylight will occur in a 24-hour period, blasting operations may be performed at night if the employer ensures that the following additional safety requirements for employees are met:

(1) all affected employees must be notified before night-time blasting operations are begun; notification must be by verbal communication and by posting a notice in a place where notices to employees are usually posted by the employer;

(2) the department must be notified at least 72 hours before blasting work is begun, indicating the location where blasting will be done and the approximate length of time the blasting will be in progress; upon completion of the blasting operations, the department must be notified of completion;

(3) written procedures on how night blasting operations will be controlled must be made available upon request to the department when blasting is to be done within onehalf mile of populated areas; these procedures must show the specific precautions that will be taken to ensure control of the site where blasting will be done and must place an emphasis on the protection of employees;

(4) the blaster must have a current state certificate of fitness for explosive handling and must be designated in writing by the employer for each night-blasting project; the blaster shall be responsible for all activities of employees within the blasting area and within 100 feet of the blasting area; the blaster shall control access by employees to this area;

(5) a minimum of four mobile flood light complexes must be used to illuminate the

blasting area; each flood light complex must have its own generator plant, complete with four 1,000 watt flood lights, and must be capable of illuminating the blasting area so that there will be no shadows or darkened areas; additional flood light complexes must be brought into use if the blaster considers them necessary for safe operations to protect employees;

(6) the employer shall control access to the entire site to ensure that an employee does not enter unsafe areas during the blast;

(7) the blaster must be protected from flying rock by either adequate shelter or by keeping a safe distance from the blast; all other employees shall leave the blast site and keep a sufficient distance away from flying rock due to the blast;

(8) after the blast, and before any employees or equipment enter the blast site, the flood light complexes must be repositioned to illuminate the site as specified by the blaster; the blaster shall examine the area for misfires, loose explosives, or other hazards; handheld battery-powered lamps, approved by a nationally recognized testing laboratory as defined in 29 C.F.R. 19 for use in hazardous locations, may be used to supplement the flood light complexes during this examination; an employee may not enter the area until the blaster gives clearance to do so.

(c) In this section, "night" or "night time" means the hours from one-half hour after sunset to one-half hour before sunrise. (Eff. 12/6/95, Register 136)

Authority: AS 18.60.020 AS 18.60.030 AS 18.60.075

Chapter 62
Explosives Handlers

Section

8 AAC 62.010. Certificate of fitness required

Repealed 5/26/79.

8 AAC 62.020. Applications for certificates

(a) All persons handling explosives who are required by AS 08.52.020 to hold a certificate of fitness shall apply for a certificate in writing on a form prescribed by the department. The application must include the following information:

(1) applicant's name and address;

(2) applicant's age;

(3) applicant's citizenship;

(4) applicant's employment history;

(5) applicant's physical disabilities;

(6) whether applicant has ever been licensed as an explosive handler;

(7) whether applicant has ever been refused a license and the reason for the refusal;

(8) whether applicant's explosive handler's license was ever revoked;

(9) whether the applicant is under indictment for or has been convicted of a crime as described in 18 U.S.C. 842(i)(1) or 8 AAC 62.030(a) (6);

(10) documentation of completion of a training course that meets the requirements of 8 AAC 62.059;

(11) information related to any of the factors listed in 18 U.S.C. 842(i)(1) - (7).

(b) The application must include two copies of the applicant's fingerprints and fees as required under AS 08.52.035, except that an applicant may instead submit the applicant's original documentation issued by the United States Bureau of Alcohol, Tobacco, Firearms and Explosives (USATFE) showing the applicant's successful background check conducted within the 18 months preceding the date of application by USATFE for the purposes of obtaining a federal license for the transportation, shipping, receiving, or possession of explosive materials.

History: Eff. 1/2/71, Register 36; am 5/26/79, Register 70; am 9/27/2008, Register 187; am 2/ 23/2011, Register 197)

Authority: AS 08.52.010 AS 08.52.030 AS 08.52.035

Editor's note: With Register 179, October 2006 and under the authority of AS 44.62.125 , the regulations attorney changed obsolete terminology concerning persons with disabilities in conformity with ch. 25, SLA 2006.

8 AAC 62.030. General certificate of fitness

A certificate of fitness authorizes the holder to use explosives in connection with activities described in AS 08.52.020 , if the use of the explosives is not otherwise prohibited by law. A certificate of fitness, effective for three years after the date of issue, will be issued by the department if the applicant

(1) passes an examination provided by the department;

(2) has at least six months of documented, hands-on experience in this state as a chuck tender, driller, or helper of a holder of a certificate of fitness;

(3) is not afflicted with a mental or physical disability that could affect the applicant's safe handling and use of explosives;

(4) pays a $150 fee;

(5) is not under indictment for, and has not been convicted of, a crime as described in 18 U.S.C. 842(i)(1);

(6) is not under indictment for, and has not been convicted of, any of the following

crimes:

(A) a misdemeanor, including an attempted misdemeanor, under AS 11.41

(Offenses Against the Person), or an offense under a law or ordinance of another jurisdiction having elements similar to that offense;

(B) a misdemeanor, including an attempted misdemeanor, under AS 11.46 (Offenses Against Property), or an offense under a law or ordinance of another jurisdiction having elements similar to that offense;

(C) a misdemeanor involving domestic violence; in this subparagraph, "misdemeanor involving domestic violence" means a misdemeanor within the meaning of "crime involving domestic violence" in AS 18.66.990 ; and

(7) would not be prohibited from transporting, possessing, storing, or manufacturing explosives under 18 U.S.C. 842(i)(2) - (7).

History: Eff. 1/2/71, Register 36; am 5/26/79, Register 70; am 7/31/86, Register 99; am 11/7/93, Register 128; am 9/27/2008, Register 187

Authority: AS 08.52.010 AS 08.52.020 AS 08.52.030 AS 08.52.040 AS 08.52.050

Editor's note: With Register 179, October 2006 and under the authority of AS 44.62.125 , the regulations attorney changed obsolete terminology concerning persons with disabilities in conformity with ch. 25, SLA 2006.

8 AAC 62.035. Duplicate certificate of fitness

Upon losing a certificate of fitness identification card, the holder shall immediately notify the mechanical inspection section of the department. The cardholder may apply for a duplicate certificate of fitness by paying a $25 fee and providing a government-issued identification card containing the individual's photograph.

History: Eff. 6/14/2006, Register 178

Authority: AS 08.52.010 AS 08.52.020 AS 08.52.030 AS 08.52.040 AS 08.52.050

8 AAC 62.040. Special certificate of fitness

Repealed 5/26/79.

8 AAC 62.050. Examinations

If an applicant fails to pass the examination, another examination will be given at the request of the applicant, if at least 30 days have elapsed from the date of the first examination. Only two examinations will be given in a six-month period.

History: Eff. 1/2/71, Register 36; am 5/26/79, Register 70
Authority: AS 08.52.010 AS 08.52.040

8 AAC 62.055. Renewal of certificate of fitness

(a) A certificate of fitness is effective for three years after the date of issue, and may be renewed without reexamination if the certificate holder

(1) submits an updated application on a form prescribed by the department within 30 calendar days after the expiration date of the certificate; and

(2) pays a $150 fee; and

(3) provides proof of having completed, within 18 months before application for renewal,

(A) the 32-hour initial training course required under 8 AAC 62.059; or

(B) the eight-hour refresher course required under 8 AAC 62.059.

(b) In its discretion, the department will refuse to renew a certificate for cause.

(c) When the department refuses to renew a certificate, the applicant will be

(1) promptly notified in writing of the reason for the refusal; and

(2) advised in writing that the applicant has the right to appeal the refusal action to the commissioner.

(d) The application must include two copies of the applicant's fingerprints and fees as required under AS 08.52.035, except that an applicant may instead submit the applicant’s original documentation issued by the United States Bureau of Alcohol, Tobacco, Firearms and Explosives (USATFE) showing the applicant’s successful background check conducted within the 18 months preceding the date of application by USATFE for the purposes of obtaining a federal license for the transportation, shipping, receiving, or possession of explosive materials.

History: Eff. 5/26/79, Register 70; am 7/31/86, Register 99; am 11/7/93, Register 128; am 9/27/2008, Register 187

Authority: AS 08.52.010 AS 08.52.030 AS 08.52.035 AS 08.52.040 AS 08.52.050

8 AAC 62.056. Renewal of a lapsed certificate of fitness

(a) If a certificate of fitness is not renewed on or before its expiration date as established under AS 08.52.060 , the certificate of fitness lapses.

(b) If a certificate of fitness is lapsed no more than 12 months, the holder may apply for renewal under 8 AAC 62.055. An applicant for renewal under this subsection must meet the requirements of 8 AAC 62.055. The applicant is not required to pass an examination.

(c) If a certificate of fitness is lapsed more than 12 months and less than five years, the holder may apply for renewal under 8 AAC 62.055. In addition to meeting the requirements of 8 AAC 62.055, an applicant for renewal under this subsection must re-take and pass the examination required under 8 AAC 62.030(1) .

(d) A certificate of fitness may not be renewed if it has been lapsed for five years or more.

History: Eff. 9/27/2008, Register 187

Authority: AS 08.52.010 AS 08.52.030 AS 08.52.040 AS 08.52.060

8 AAC 62.059. Training requirements

(a) For an applicant for a certificate of fitness to satisfy the training course requirement in 8 AAC 62.020, or for an applicant for renewal of a certificate to meet the refresher course requirement in 8 AAC 62.055, the applicant must document that the course provides at least

(1) 32 hours of instruction in the subject areas listed in (b) of this section, if the course is an initial training course;

(2) eight hours of instruction in the subject areas listed in (b) of this section, if the course is a refresher course.

(b) An initial or refresher course must include instruction in each of the following subject areas:

(1) an introduction to being an explosives handler;

(2) federal statutes and regulations that pertain to explosives handlers;

(3) statutes and regulations of this state that pertain to explosives handlers;

(4) types and properties of explosives;

(5) initiation systems;

(6) blast design;

(7) environmental effects controlling blasting damage;

(8) priming and loading operations;

(9) blasting safety practices;

(10) transportation, recordkeeping, and cold weather operations;

(11) blasting calculations.

History: Eff. 9/27/2008, Register 187

Authority: AS 08.52.010 AS 08.52.030 AS 08.52.040

8 AAC 62.060. Revocation of certificate of fitness

(a) The department will, in its discretion, revoke a certificate of fitness for cause. The director will hold a hearing to take testimony and will consider the testimony before a decision is made whether to revoke the certificate.

(b) When the department revokes a certificate, the certificate holder will be

(1) promptly notified in writing of the reason for the revocation; and

(2) advised in writing of the right to appeal the revocation action to the commissioner.

(c) A person whose certificate is revoked under this section shall surrender the certificate to the department. A person is ineligible to obtain a new certificate for a period of at least 90 days, but not exceeding one year, after the date of revocation, as determined by the department.

History: Eff. 1/2/71, Register 36; am 5/26/79, Register 70; am 7/31/86, Register 99

Authority: AS 08.52.010 AS 08.52.060

8 AAC 62.065. Appeals

(a) A revocation under 8 AAC 62.060 or a refusal by the department to renew a certificate under 8 AAC 62.055 is final unless the person affected files an appeal with the commissioner within 30 calendar days after receipt of the notice of refusal or revocation. The appeal must be in writing and must include

(1) a specification of objections to the department's findings, and a concise summary of

Appendix B

Alaska Department of Fish and Game
Fish Habitat Permit Application

FH#_____
(Office Use Only)

ALASKA DEPARTMENT OF FISH AND GAME
FISH HABITAT PERMIT APPLICATION
SPECIFIC INSTRUCTIONS

NOTE: Provide as much information as possible. If you need assistance, please contact the nearest ADF&G Division of Habitat office. The ADF&G reserves the right to require additional information for the proper protection of fish and game.

Step A: Provide your name, address, and telephone number and the name, address, and telephone number of the contractor who will be doing the work, if known.

Step B: Describe the type of project (e.g., bridge, culvert, utility line placement, impoundment structure, bank stabilization, channelization, low water crossing, log removal, etc.) and the purpose of the project. A brief description of alternatives considered would be useful but is not required. Attach additional sheets as necessary. Back to Form

Step C: **1.** Name of the waterbody in or adjacent to which the project will occur.

2. For Anadromous Stream numbers, refer to the Atlas to the Catalog of Waters Important for Spawning, Rearing or Migration of Anadromous Fishes.

3. a. Provide plans (or field sketch) showing the following as a minimum: access to the site, plan view showing all project features and dimensions, or crossing/fording sites; material removal plans should also include, at a minimum, the following: 50' contour lines; nearby watercourses and lakes; location of facilities (i.e., screening, washing, and crushing plants, and commercial and private buildings); aliquot parts identified in order they are to be mined; site where fuel will be stored; a cross section view of the material site showing current land and water elevations and bank slopes and final excavation grades and slopes; and project expansion sites (scale no greater than 1 in. = 400 ft.)

b. Provide specifications, if available; and

c. Provide a current aerial photograph, if available. Back to Form

Step D: Indicate the time of year when project construction will occur. Is the project temporary or permanent?

Step E: 1. Provide information if applicable on how you will divert the stream.

2. Indicate if channelization will occur.

3. Provide information, if applicable, on how you will alter or modify the banks of the stream.

4. List all vehicles or equipment by type and size that will be used in the stream.

5. Provide information, if applicable, on what type and amount of material will be removed from the floodplain, bed, stream, or lake.

6. Provide information, if applicable, on any material you will deposit in the floodplain, stream, or lake.

7. Provide information, if applicable, on any blasting you intend to do in the floodplain, stream, or lake.

8. Indicate if temporary fills will be required.

9. Indicate if ice bridges will be required.

Step F: What precautions will be taken to insure that fish and other aquatic organisms are protected from adverse impacts? Outline plan for restoring, rehabilitating, or re-vegetating the site if channel or bank alterations occur. What precautions will be taken to maintain State Water Quality Standards? Back to Form

Step G: Provide the waterbody characteristics at the site of the project.

Step H: Provide available hydraulic information for the types of projects indicated. For information on selecting a culvert size that will ensure fish passage, consult ADF&G permitters or references available at Division of Habitat offices.

FH# _____
(Office Use Only)

GENERAL WATERWAY/WATERBODY APPLICATION
ALASKA DEPARTMENT OF FISH AND GAME
Division of Habitat
Office Locations

A. APPLICANT

1. Name: _____

2. Address (Mailing): _____

   Email Address: _____

   Telephone: _____ Fax: _____

3. Project Coordinator/Contractor:

   Name: _____

   Address: _____

   Email Address: _____

   Telephone: _____ Fax: _____

B. TYPE AND PURPOSE OF PROJECT: _____

_____

_____

_____

_____

_____

_____

C. LOCATION OF PROJECT SITE

1. Name of River, Stream, or Lake: _____

   or Anadromous Stream No: _____

2. Legal Description: Township _____ Range _____

   Meridian_____ Section _____ USGS Quad Map _____

3. Plans, Specifications, and Aerial Photograph. See specific instructions

D. **TIME FRAME FOR PROJECT**: _____ TO _____ (mm/dd/yy)

E. **CONSTRUCTION METHODS**:

1. Will the stream be diverted? ☐ Yes ☐ No

   How will the stream be diverted? _____

   How long? _____

2. Will stream channelization occur? ☐ Yes ☐ No

3. Will the banks of the stream be altered or modified? ☐ Yes ☐ No

   Describe: _____

4. List all tracked or wheeled equipment (type and size) that will be used in the stream (in the water, on ice, or in the floodplain): _____

   How long will equipment be in the stream? _____

5. a. Will material be removed from the floodplain, bed, stream, or lake? ☐ Yes ☐ No

      Type: _____

      Amount: _____

   b. Will material be removed from below the water table? ☐ Yes ☐ No

      If so, to what depth? _____

      Is a pumping operation planned? ☐ Yes ☐ No

6. Will material (including spoils, debris, or overburden) be deposited in the floodplain, stream, or lake? ☐ Yes ☐ No

   If so, what type? _____

   Amount: _____

   Disposal site location(s): _____

7. Will blasting be performed? ☐ Yes ☐ No

   Weight of charges: _____

   Type of substrate: _____

8. Will temporary fills in the stream or lake be required during construction (e.g., for construction traffic around construction site)? ☐ Yes ☐ No

9. Will ice bridges be required? ☐ Yes ☐ No

F. **SITE REHABILITATION/RESTORATION PLAN**: On a separate sheet present a site rehabilitation/restoration plan. See specific instructions

G. **WATERBODY CHARACTERISTICS**:

Width of stream: _____ Depth of stream or lake: _____

Type of stream or lake bottom (e.g., sand, gravel, mud): _____

Stream gradient: _____

H. **HYDRAULIC EVALUATION**:

1. Will a structure (e.g., culvert, bridge support, dike) be placed below ordinary high water of the stream? ☐ Yes ☐ No

   If yes, attach engineering drawings or a field sketch, as described in Step B.

   For culverts, attach stream discharge data for a mean annual flood (Q=2.3), if available.

   If applicable, describe potential for channel changes and/or increased bank erosion:

   _____

2. Will more than 25,000 cubic yards of material be removed? ☐ Yes ☐ No

   If yes, attach a written hydraulic evaluation including, at a minimum, the following: potential for channel changes, assessment of increased aufeis (glaciering) potential, assessment of potential for increased bank erosion.

I HEREBY CERTIFY THAT ALL INFORMATION PROVIDED ON OR IN CONNECTION WITH THIS APPLICATION IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

_____ _____

Signature of Applicant Date

facts in support of each objection; and

(2) a description of the relief which is sought.

(b) The commissioner's decision will be based upon the departmental record and will state the facts relied upon by the commissioner in deciding the matter.

(c) In his discretion, the commissioner will hold a hearing on the appeal to supplement the departmental record where clarification or additional facts are necessary for a proper resolution of the appeal.

(d) A copy of the commissioner's decision will be sent to the appellant by certified mail.

History: Eff. 5/26/79, Register 70

Authority: AS 08.52.010 AS 08.52.040

8 AAC 62.070. Definitions

In 8 AAC 62.010 - 8 AAC 62.065

(1) "cause" means

(A) providing false information on the application furnished by the applicant or certificate holder to the department;

(B) evidence of improper handling, transportation, use, or storage of explosives by the applicant or certificate holder;

(C) a mental or physical disability that, even with reasonable accommodation, would interfere with the applicant or certificate holder's safe handling of explosives;

(D) the applicant's or certificate holder's indictment for or conviction of a crime as described in 18 U.S.C. 842(i)(1) or 8 AAC 62.030(a) (6);

(E) prohibition of the applicant or certificate holder from transporting, possessing, storing, or manufacturing explosives under 18 U.S.C. 842(i)(2) - (7); or

(F) other conduct considered by the department to show the applicant not to be competent to hold a certificate of fitness as set out in 8 AAC 62.020(a) ;

(2) "commissioner" means the Commissioner of Labor and Workforce Development or his designee;

(3) "department" means the Department of Labor and Workforce Development;

(4) "director" means the director of the division of labor standards and safety, Department of Labor and Workforce Development, or a designee;

(5) "examination" means a series of prepared questions administered either in writing or orally;

(6) "convicted" or "conviction" means a judgment entered by a court of competent jurisdiction in this state or another jurisdiction, either upon the entry of a plea, including a plea of no contest or nolo contendre, or after a bench or jury trial; "convicted" or "conviction"

(A) includes a suspended imposition of sentence, even if the conviction is formally set aside under AS 12.55.085 ; and

(B) does not include an executive order of clemency, or a record that has been expunged by order of a court;

(7) "indictment" means one of the following, pending adjudication or dismissal of the matter, or a decision by the district attorney's office not to prosecute:

(A) an indictment by information or presentment for an offense;

(B) an arrest and provision of a uniform summons and complaint for an offense.

History: Eff. 1/2/71, Register 36; am 5/26/79, Register 70; am 10/2/83, Register 87; am 9/27/2008, Register 187

Authority: AS 08.52.010 AS 08.52.040

Editor's note: As of Register 151 (October 1999), the regulations attorney made technical revisions under AS 44.62.125 (b)(6) to reflect the name change of the Department of Labor to the Department of Labor and Workforce Development made by ch. 58, SLA 1999 and the corresponding title change of the commissioner of labor.

Appendix C
Preliminary Blasting Locations and Quantities

Alaska LNG Project
Blasted Ditch Length

Borough/Census Area	Physiographic Province	Start MP	End MP	Length of Blasted Ditch (miles)	Length of Blasted Ditch (%)
North Slope	Arctic Coastal Plain Province	0.000	61.811	28.063	45.4%
	Arctic Mountain Province	61.811	176.243	77.980	68.1%
Yukon-Koyukuk	Arctic Mountain Province	176.243	260.906	62.516	74.1%
	Northern Plateaus Province	260.906	421.784	78.552	48.8%
Fairbanks North Star	Northern Plateaus Province	421.784	424.304	0.000	0.0%
Yukon-Koyukuk	Northern Plateaus Province	424.304	429.937	0.000	0.0%
	Western Alaska Province	429.937	442.739	0.000	0.0%
	Northern Plateaus Province	442.739	443.577	0.000	0.0%
	Western Alaska Province	443.577	450.334	0.000	0.0%
	Northern Plateaus Province	450.334	450.484	0.000	0.0%
	Western Alaska Province	450.484	472.635	0.000	0.0%
	Northern Plateaus Province	472.635	473.057	0.000	0.0%
	Western Alaska Province	473.057	488.646	0.000	0.0%
Denali	Western Alaska Province	488.646	500.580	0.000	0.0%
	Alaska Range Province	500.580	576.378	7.245	9.6%
Matanuska-Susitna	Alaska Range Province	576.378	639.673	0.079	0.1%
	Cook Inlet - Susitna Lowland Province	639.673	754.211	1.807	1.6%
Kenai Peninsula	Cook Inlet - Susitna Lowland Province	754.211	804.025	0.000	0.0%

Alaska LNG Project
Hoe or Blasted Ditch

Borough/Census Area	Physiographic Province	Start MP	End MP	Length of Backhoe or Blasted Ditch (miles)	Backhoe or Blasted Ditch (%)
North Slope	Arctic Coastal Plain Province	0.000	61.811	0.000	0.0%
	Arctic Mountain Province	61.811	176.243	1.962	1.7%
Yukon-Koyukuk	Arctic Mountain Province	176.243	260.906	5.730	6.8%
	Northern Plateaus Province	260.906	421.784	2.476	1.5%
Fairbanks North Star	Northern Plateaus Province	421.784	424.304	1.091	43.3%
Yukon-Koyukuk	Northern Plateaus Province	424.304	429.937	0.465	8.3%
	Western Alaska Province	429.937	442.739	0.000	0.0%
	Northern Plateaus Province	442.739	443.577	0.000	0.0%
	Western Alaska Province	443.577	450.334	0.000	0.0%
	Northern Plateaus Province	450.334	450.484	0.000	0.0%
	Western Alaska Province	450.484	472.635	0.000	0.0%
	Northern Plateaus Province	472.635	473.057	0.000	0.0%
	Western Alaska Province	473.057	488.646	7.100	45.5%
Denali	Western Alaska Province	488.646	500.580	10.116	84.8%
	Alaska Range Province	500.580	576.378	13.981	18.4%
Matanuska-Susitna	Alaska Range Province	576.378	639.673	7.914	12.5%
	Cook Inlet - Susitna Lowland Province	639.673	754.211	6.680	5.8%
Kenai Peninsula	Cook Inlet - Susitna Lowland Province	754.211	804.025	0.000	0.0%

"Information provided in this table is based on preliminary geotechnical analysis completed with available route data, and is subject to change as further field work and analyses are completed. Information is intended for the sole purpose of creating rolled up summary tables for Resource Reports 6 and 7 and should not be released to Agencies or third parties without the consent and guidance of WorleyParsons Geotechnical team."

Alaska LNG Project
Appendic III.3
Right-of-Way Blasting

Borough/Census Area	Physiographic Province	Start MP	End MP	ROW Blasted Length (miles)	ROW Blasted Length (%)
North Slope	Arctic Coastal Plain Province	0.000	61.811	0.000	0.0%
North Slope	Arctic Mountain Province	61.811	176.243	0.847	0.7%
Yukon-Koyukuk	Arctic Mountain Province	176.243	260.906	4.574	5.4%
Yukon-Koyukuk	Northern Plateaus Province	260.906	421.784	56.892	35.4%
Fairbanks North Star	Northern Plateaus Province	421.784	424.304	0.000	0.0%
Yukon-Koyukuk	Northern Plateaus Province	424.304	429.937	0.000	0.0%
Yukon-Koyukuk	Western Alaska Province	429.937	442.739	0.000	0.0%
Yukon-Koyukuk	Northern Plateaus Province	442.739	443.577	0.040	4.7%
Yukon-Koyukuk	Western Alaska Province	443.577	450.334	0.051	0.8%
Yukon-Koyukuk	Northern Plateaus Province	450.334	450.484	0.006	3.8%
Yukon-Koyukuk	Western Alaska Province	450.484	472.635	0.000	0.0%
Yukon-Koyukuk	Northern Plateaus Province	472.635	473.057	0.000	0.0%
Yukon-Koyukuk	Western Alaska Province	473.057	488.646	0.000	0.0%
Denali	Western Alaska Province	488.646	500.580	0.000	0.0%
Denali	Alaska Range Province	500.580	576.378	1.972	2.6%
Matanuska-Susitna	Alaska Range Province	576.378	639.673	0.653	1.0%
Matanuska-Susitna	Cook Inlet - Susitna Lowland Province	639.673	754.211	0.318	0.3%
Kenai Peninsula	Cook Inlet - Susitna Lowland Province	754.211	804.025	0.000	0.0%

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