DONLIN GOLD PROJECT

Joint Record of Decision and Permit Evaluation

U.S. Army Corps of Engineers

Bureau of Land Management

Crooked Creek, AK

August 13, 2018

Joint Record of Decision and Permit Evaluation for the Donlin Gold Project

LEAD FEDERAL AGENCY:	U.S. Army Corps of Engineers
COOPERATING FEDERAL AGENCY:	Bureau of Land Management
APPLICANT:	Donlin Gold LLC
APPLICATION REFERENCE NUMBERS:	POA-1995-120 BLM Case file (2890) AA 92403
WATERWAY:	Crooked Creek
RESPONSIBLE OFFICIALS:	Colonel Michael Brooks District Commander PO Box 6898 JBER, AK 99506-0898 Joseph Balash Assistant Secretary – Land and Minerals Management Department of Interior 1849 C St NW Washington, DC 20240
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TABLE OF CONTENTS

LIST OF TABLES

ACRONYMS AND ABBREVIATIONS

AAC	Alaska Administrative Code
ABA	acid-base accounting
ACHP	Advisory Council on Historic Preservation
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
ADNR	Alaska Department of Natural Resources
ADNR-Water	Alaska Department of Natural Resources Division of Water
ANCSA	Alaska Native Claims Settlement Act
ANILCA	Alaska National Interest Lands Conservation Act
APDES	Alaska Pollutant Discharge Elimination System
APE	Area of Potential Effects
ARD	acid rock drainage
ARMP	Aquatic Resources Monitoring Plan
AWQS	Alaska Water Quality Standards
BLM	Bureau of Land Management
BMPs	Best Management Practices
BTC	Birch Tree Crossing
Calista	Calista Corporation
CAR	Comment Analysis Report
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CGP	Construction General Permit
CIRI	Cook Inlet Region, Incorporated
CMP	compensatory mitigation plan
COA	core operating area
Corps	U.S. Army Corps of Engineers
CR	conservation recommendation
CWA	Clean Water Act
CWD	contact water dam
CZMA	Coastal Zone Management Act
DA	Department of the Army

DATROC	Donlin Advisory Technical Review and Oversight Committee
DOI	Department of the Interior
Donlin Gold	Donlin Gold LLC
Draft EIS	Draft Environmental Impact Statement
DST	dry stack tailings
EIS	Environmental Impact Statement
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
Final EIS	Final Environmental Impact Statement
FLPMA	Federal Land Policy and Management Act
FMEA	Failure Modes and Effects Analysis
FOS	Factors of Safety
FRA	focused risk assessment
FWD	freshwater dam
FWDD	freshwater diversion dam
GHG	greenhouse gas
GLT	Great Land Trust
gpm	gallons per minute
HGM	hydrogeomorphic
HHRA	human health risk assessment
ISPMP	Invasive Species Prevention and Management Plan
JROD	Joint Record of Decision
HDD	horizontal directional drilling
HUC	Hydrologic Unit Code
INHT	Iditarod National Historic Trail
LEDPA	least environmentally damaging practicable alternative
LLDPE	linear low-density polyethylene
LNG	liquefied natural gas
LOM	life of mine
M	magnitude
mi2	square miles
MCE	maximum credible earthquake

MLA	Minerals Leasing Act
MMO	marine mammal monitor
MMT	million metric tons
MP	milepost
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MW	megawatts
MWMP	meteoric water mobility procedure
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NNIS	nonnative invasive species
NRHP	National Register of Historic Places
O&M	Operations and Maintenance
pga	peak ground acceleration
PHMSA	Pipeline and Hazardous Materials Safety Administration
PN	Public Notice
PRM	Permittee-Responsible Mitigation
Project	Donlin Gold Project
PSO	Protected Species Observer
RHA	Rivers and Harbors Act
ROW	right-of-way
RPM	revolutions per minute
SHPO	State Historic Preservation Office
SOC	Statement of Concern
SPN	Special Public Notice
SRS	seepage recovery system
SWPPP	Stormwater Pollution Prevention Plan
TKC	The Kuskokwim Corporation
tpy	tons per year
TSF	tailings storage facility
U.S.	United States
USC	United States Code
USFWS	U. S. Fish and Wildlife Service

WOUS	waters of the United States
WQS	water quality standards
WRF	waste rock facility
Y-K	Yukon-Kuskokwim

1 INTRODUCTION

This document constitutes the Joint Record of Decision (JROD) of the United States (U.S.) Department of the Army (DA) Corps of Engineers (Corps), and the Department of Interior, Bureau of Land Management (BLM), for the Donlin Gold Project (Project) proposed by Donlin Gold LLC (Donlin Gold, Applicant, or Permittee). The One Federal Decision policy mandated by Executive Order 13807 does not expressly apply to the Project, but the Corps and BLM are voluntarily issuing a JROD in the spirit of the Executive Order. This JROD outlines the Corps' and BLM's decision, under the National Environmental Policy Act (NEPA), to select Alternative 2 for the Donlin Gold Project, with incorporation of the North Route Pipeline option (herein referred to as the 'Alternative 2 North Option'); as detailed in the April 2018 Final Environmental Impact Statement [Final EIS] and subject to special conditions and the specified mitigation described below. The Corps authorities are specific to components of the Project proposed to be constructed within waters of the U.S. (WOUS). BLM's authorities are limited to the components of the Project that occur on BLM-managed federal lands.

The findings in the Final EIS are based on an open, collaborative, and robust process among the scientists, resource specialists, and regulatory staff of the Corps, BLM, all other cooperating agencies, the NEPA contractor, and the participating public. This process resulted in a Final EIS that—consistent with NEPA and Executive Order 13807—provides an adequately detailed analysis of the environmental impacts of the Applicant's proposal, and a reasonable range of alternatives, including the No Action alternative, to inform and support all federal reviews and authorizations of the Corps, BLM, and the other federal cooperating agencies, for the proposed Donlin Gold Project.

The U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA), participated as a cooperating agency during development of the Environmental Impact Statement (EIS); and on June 5, 2018, issued a Special Permit to allow Strain-Based Design of the Pipeline. PHMSA issued its own decision document and is not participating in this JROD.

This JROD is prepared in accordance with NEPA; U.S. Environmental Protection Agency's (EPA) Section 404(b)(1) Guidelines (40 Code of Federal Regulations [CFR] 230); and the public interest review (33 CFR 320.4), under the authority delegated to the District Commander by 33 CFR 325.8, pursuant to Section 404 of the Clean Water Act (CWA); and Section 10 of the Rivers and Harbors Act (RHA) of 1899.

This JROD is also prepared in accordance with the BLM's authority under Section 28 of the Mineral Leasing Act, 30 United States Code [USC] 185, Section 302 and Section 304 of the Federal Land Policy and Management Act (FLPMA) (43 USC 1732 and 43 USC 1734), Sections 810 and 906 of the Alaska National Interest Lands Conservation Act (ANILCA), Section 106 of the National Historic Preservation Act (NHPA), and the National Trails Systems Act of 1968 (16 USC 1241-1251).

1.1 BACKGROUND

In July 2012, the Corps – Alaska District, received a DA permit application from Donlin Gold requesting authorization for the placement of fill material into WOUS, including wetlands, in connection with the development of an open-pit, hard-rock gold mine in western Alaska.

The Corps, as the lead federal agency under NEPA, determined that preparation of an EIS was necessary to inform the permit decision on the Project. A Notice of Intent to prepare the Donlin Gold Project EIS was published in the Federal Register on December 14, 2012. Four agencies, the State of Alaska, and six Alaska Native tribal councils with federally recognized tribal government status participated as cooperating agencies during development of the EIS. Those with cooperating agency status included the BLM, PHMSA, EPA, U.S. Fish and Wildlife Service (USFWS), State of Alaska, Village of Crooked Creek, Native Village of Chuathbaluk, Knik Tribal Council, Native Village of Napaimute, Native Village of Aniak, and Native Village of Akiak.

The scoping period extended from December 14, 2012 to March 29, 2013. Following scoping, the Corps and cooperating agencies began developing a Draft Environmental Impact Statement (Draft EIS). Donlin Gold submitted revised DA permit applications in December 2014 and August 2015. In November 2015, the Corps released the Draft EIS and published a Public Notice (PN) advertising the Draft's availability for public comment. The comment period for the Draft EIS ran initially from November 25, 2015 to April 30, 2016, and was extended until May 31, 2016.

In December 2017, Donlin Gold submitted an updated DA permit application that superseded all previous applications—with revisions and refinements to the Project design and footprint—resulting, in part, from the comments received during the Draft EIS review period. No changes to the Project were made that resulted in significant new circumstances or information related to environmental concerns, and after evaluation of the changes, the Corps determined a Supplemental Draft EIS was not warranted.

A Notice of Availability for the Final EIS was published in the Federal Register on April 27, 2018. A Special Public Notice (SPN) for the Final EIS and the Applicant's updated compensatory mitigation plan (CMP) (included as Appendices J and M in the Final EIS) was also published on April 27, 2018 (SPN-1995-120). The public review period for the Final EIS and the updated CMP ran from April 27, 2018 through May 29, 2018.

1.2 AUTHORITIES

The Corps, in coordination with cooperating agencies, has prepared a single EIS that includes an adequate level of detail and a reasonable range of alternatives sufficient to inform decisions by all agencies with review or authorization decision authorities.

The BLM hereby adopts the Final EIS for the Donlin Gold Project (available at http://www.donlingoldeis.com/).

Additional supporting documents pertinent to this JROD are included as Attachment A.

1.2.1 CORPS' AUTHORITY

The Applicant proposes to discharge fill material into WOUS, including wetlands, and to construct structures in and under navigable waters, which require authorization from the Corps (see Tables 1 and 2 below).

This permit action is being undertaken through authority delegated to the District Engineer by 33 CFR 325.8, pursuant to Section 10 of the RHA of 1899 (33 USC 403, and Section 404 of the CWA (33 USC 1344).

- The Corps has authority through Section 404 of the CWA to regulate the discharge of dredged or fill material into WOUS.
- The Corps has authority through Section 10 of the RHA of 1899 to regulate all work or structures in or affecting the course, condition, location, or capacity of navigable waters.

Pursuant to Council on Environmental Quality regulations for implementing NEPA (404 CFR Parts 1500-1508), the Corps has responsibility as the lead federal agency for the EIS. The Corps has reviewed and evaluated the information in the Donlin Gold Final EIS, including all supplemental data subsequently provided, in accordance with 40 CFR 1506.3 and 40 CFR Part 230, and has found them to be sufficient and accurate assessments, and therefore appropriate for the purposes of the public interest review and alternatives analysis required by 33 CFR 320.4(b)(4) and 40 CFR 230.10.

1.2.2 BLM'S AUTHORITY

The BLM is responsible for land use authorizations on certain federal lands. The authority for management of the land and resource development options presented in the EIS comes from several statutes, including NEPA, the FLPMA, the Minerals Leasing Act (MLA), Title VIII of the ANILCA, the Materials Act, the Independent Offices Appropriation Act of 1952 (31 USC 9701), the National Trails System Act, and the Alaska Native Claims Settlement Act (ANSCA). The BLM authorities to implement the actions identified in this record of decision are found under the following regulatory frameworks:

- NEPA – The Council on Environmental Quality regulations (40 CFR 1508.15) provide for the BLM to be a cooperating agency because the BLM has "jurisdiction by law" as a land manager in the proposed area of effect. In addition, BLM has "special expertise" regarding environmental issues, specifically in the matter of subsistence issues as they relate to the Donlin Gold proposal.
- Section 302 of the FLPMA (43 USC 1732) provides the general authority for BLM to manage the use, occupancy, and development of federal public lands[1] under the principles of multiple use and sustained yield, in accordance with the land use plans that BLM develops under FLPMA. Under FLPMA, the Secretary of the Interior has broad authority to regulate the use, occupancy, and development of public lands, and to take whatever action is required to prevent unnecessary or undue degradation of public lands, and manage under the principles of multiple use and sustained yield in accordance with the land use plans that BLM develops under the FLPMA. In accordance with the FLPMA, the BLM manages its Alaska lands and their uses to ensure healthy and productive ecosystems.
- Pursuant to 43 CFR 3601.3, BLM's authority to dispose of sand, gravel, and other mineral and vegetative materials that are not subject to mineral leasing or location under the mining laws is the Act of July 31, 1947, as amended (30 USC 601 et seq.), commonly referred to as the Materials Act. This authority applies to sale and free use of these materials.

[1] Public lands means any lands and interest in lands owned by the United States and administered by the Secretary of the Interior through BLM without regard to how the United States acquired ownership, except lands held for the benefit of Indians, Aleuts, and Eskimos.

- Section 304 of FLPMA (43 USC 1734) and the Independent Offices Appropriation Act of 1952 (31 USC 9701) authorize the U.S. Government to collect fees and to require reimbursement of its costs.
- Under Section 28 of the MLA (30 USC 185), and 43 CFR 2881.11, the BLM has the authority to issue grants for oil or gas pipelines or related facilities to cross federal lands under BLM jurisdiction. Donlin Gold would need to obtain a Right-of-Way Grant and Temporary Use Permits from the BLM for crossing public lands managed by the BLM. Donlin Gold has submitted a Standard Form 299, Application for Transportation and Utility Systems and Facilities on Federal Lands. Pursuant to a ROW grant, BLM would attach appropriate requirements for the construction, operation, maintenance, and reclamation of the proposed Pipeline across BLM lands.
- BLM has reviewed the proposed Public Easement Plan (Final EIS Appendix N) pursuant to the ANCSA 17(b) Easement Management Handbook (IM AK 2007-037). BLM has considered the proposed ANCSA 17(b) easement actions, including five terminations, one relocation by donation, and one corrected quadrangle map, to address public safety and access to public land in the vicinity of the mine core operating area (COA).
- Section 810 of the ANILCA contains procedures for federal agencies to evaluate impacts on subsistence uses and needs, and means to reduce or eliminate such impacts (16 USC 3120). Pursuant to ANILCA Section 810 and BLM Instruction Memorandum 2011-008, BLM evaluated impacts to subsistence uses and resources based on the information provided in the Final EIS (Final EIS Appendix N). BLM determined that the 810 Analysis would address the portion of the Project requiring a BLM authorization (i.e., Pipeline ROW), and all aspects of the Project that are dependent on that authorization and the associated Pipeline, to include mine construction and operations, and river and road transportation aspects of the Project, because those components of the Project would not go forward if not for the Pipeline, and the Pipeline would not go forward if not for those other components. This is consistent with NEPA requirements for evaluation of connected actions.
- Section 906 (l) of the ANILCA (48 USC note prec. 21) established interim provisions for federal agencies to grant ROWs on lands selected by, or granted, or conveyed to the State of Alaska under Section 6 of the Alaska Statehood Act (Public Law 85-508, 72 Stat. 340-43). Because there are lands in the proposed ROW corridor that have been selected by the State of Alaska but have not yet been conveyed, BLM responds to ROW applications under the BLM federal regulatory guidance as other BLM-managed lands.
- Pursuant to the requirements of the National Trails Systems Act of 1968 (16 USC 1241-1251), BLM is the federal administrator for the entire 2,500-mile Iditarod National Historic Trail (INHT) System, and is the lead federal agency charged with facilitating the implementation of the interagency Comprehensive Management Plan for the Trail. The Comprehensive Management Plan was developed in cooperation with the State in the 1980s, and implementation has been guided by a Memorandum of Agreement between the State and BLM since 1988. Implementation of the Comprehensive Management Plan is based on landowner cooperation and collaboration. The BLM does not make land management decisions for the Trail for non-BLM lands.

- Regulatory authority for BLM management of nonnative invasive species (NNIS) is derived from:
    - Executive Order 13112, Invasive Species 1999 directs BLM to "…prevent the introduction of invasive species and provide for their control and to minimize economic, ecological and human health impacts that invasive species cause".
    - Federal Land Policy and Management Act of 1976 (FLPMA) directs BLM to take any action necessary to prevent unnecessary and/or undue degradation of public lands and authorizes the BLM to enter into cooperative agreements.
    - Federal Noxious Weed Act of 1974, as amended by Sec. 15, Management of Undesirable Plants on Federal Lands, 1990 (Public Law 93-629) authorizes the BLM to "…cooperate with other Federal and State agencies, and others in carrying out operations or measures to eradicate, suppress, control or prevent or retard the spread of any noxious weed."

2 SUMMARY OF DECISION

2.1 CORPS' DECISION SUMMARY

A DA permit pursuant to Section 10 of the RHA of 1899 (33 USC 403), and pursuant to Section 404 of the CWA (33 USC 1344), is being issued to Donlin Gold for the discharge of fill material into WOUS, including wetlands, and the construction of structures in and under navigable waters. The DA permit authorizes the Applicant's proposed action (Alternative 2 North Option), as described in Section 3.0, Proposed Project, and Section 4.0, Alternatives. The impacts as a result of the discharge of fill into WOUS and the construction of structures in and under navigable waters are described in the JROD and Attachment B. This alternative incorporates all practicable avoidance and minimization measures.

The production of gold from the Project requires construction of mine facilities (e.g., open pit, Waste Rock Facility [WRF], and Tailing Storage Facility [TSF], transportation facilities [e.g., port, airstrip, roads], and a natural gas pipeline). The construction of these facilities will require temporary or permanent terrain modifications, and placement of fill. This permit authorizes Project work involving the discharge of dredge and/or fill material in WOUS, including wetlands, and the placement of structures in or work affecting navigable WOUS.

A detailed description of proposed activities involving the discharge of fill in WOUS is included in Block 18 (Nature of Activity) in the December 2017 DA permit application. Affected waterbodies are listed in Tables 13-2 through 13-7 of the DA permit application. These activities include cut-and-fill for construction of roads, airstrips, port facilities, laydown and work areas, Mine Site facilities, material sites, and installation of culverts and bridges at stream crossings, power poles, and the natural gas pipeline. Principal impacts to WOUS resulting from construction of the Project include the placement of 4,368,300 cubic yards of fill in up to 3,416 acres and 226,190 linear feet of WOUS.

The Kuskokwim and Susitna Rivers are listed by the Corps as traditional navigable waterways. The Project would include a port at Jungjuk Creek, abutting and within the Kuskokwim River waterway; two barge landings at the Kuskokwim River; and a Pipeline crossing of Kuskokwim River (using horizontal directional drilling [HDD] methods). Impacts to navigable waters include up to 3 acres and 2,472 linear feet of WOUS.

This authorization requires compensatory mitigation for the direct impacts to WOUS, including wetlands. This authorization also includes special conditions to avoid and minimize potential adverse impacts; to compensate for unavoidable adverse impacts to the aquatic ecosystem; and to ensure that the Project would not be contrary to the public interest. The Corps' mitigation determination is included in Section 6.2 of this JROD.

All work will be performed in accordance with the attached project plan (Attachment A1), which is composed of the following engineering drawings, dated December 22, 2017:

- Engineering Drawing G001 – General Notes and Sheet Index
- Engineering Drawing G002 – Plan View Overall Project Vicinity Map
- Engineering Drawings MA-200G through MA-214T – Mine Area Drawings
- Engineering Drawings TA-300G through TA-316T – Transportation Area Drawings

- Engineering Drawings PA-100G through PA-177T – Pipeline Area Drawings

The Corps' supporting analysis for this JROD is included as Attachment B.

2.2 BLM'S DECISION SUMMARY

After an independent review of the Final EIS, the BLM has determined that the Final EIS includes an adequate level of detail and a reasonable range of alternatives sufficient to inform the agency's decisions regarding the elements of the Project proposed to occur on or impact BLM-managed lands. In addition, the BLM finds that its comments, concerns, and suggestions have been adequately addressed in the Final EIS and in this JROD.

This JROD approves the development of the Donlin Gold's Alternative 2 North Option on BLM-managed lands; as described in the Final EIS (April 2018), and as detailed in the attached engineering drawings (Attachment A1; see Engineering Drawing G002 for the overall Project vicinity map). The location of the Donlin Gold Natural Gas Pipeline and associated fiber optic cable, temporary access roads, airstrips, ancillary facilities, and material sites are described in the Final EIS Chapter 2, Section 2.3.2.4, and associated Figures and Tables. Approximately 97 miles and 2,329 acres (1,768 acres in ROW corridor, 561 acres for ancillary facilities) of BLM-managed public land would be affected by the natural gas and fiber optic pipeline development.

Actions covered by this Decision include:

- Issuance of a 30-year ROW grant for the construction, operations, maintenance, and termination of a 14-inch buried natural gas pipeline and associated fiber optic cable on BLM-managed lands (Final EIS Sections 2.3 and 3.15).
- Approval of temporary access roads, airstrips, and ancillary facilities necessary for construction of the natural gas pipeline and fiber optic cable on BLM-managed lands (Final EIS Section 2.3).
- Approval of material sales (gravel, rock, and soil) and removal from BLM-managed lands necessary for Pipeline access, construction, operations, and termination (Final EIS Section 2.3).
- Approval of timber sales (merchantable valued) and removal from BLM-managed lands necessary for Pipeline access, construction, operations, and termination (Final EIS Section 3.10).
- Implementation of the Invasive Species Prevention and Management Plan (ISPMP) on BLM-managed lands during Pipeline construction, operations, maintenance, and termination (Final EIS Appendix U).
- Implementation of ANCSA 17(b) easement actions necessary to maintain public access to public lands adjacent to the mine COA to address public safety. This includes five easement terminations (20 miles total), one donation (2 miles) and one corrected easement location map (0.4 mile) (Final EIS Appendix Z).
- Implementation of the approved and executed NHPA Section 106 Programmatic Agreement (Attachment A2).

The BLM has reviewed the Donlin Gold Project proposal, as described in the April 2018 Final EIS, for the natural gas pipeline, associated fiber optic cable, and ancillary facility construction, operation, maintenance, monitoring, and termination where BLM-managed land and resources are involved. The BLM has determined that the Donlin Gold Project proposal is consistent with the MLA direction, and the direction in BLM Policy Manual 2884 – Applying for an MLA Grant or Temporary Use Permit, and is consistent with the BLM Alaska Statewide Land Health Standards. BLM will make a ROW Grant offer to Donlin Gold for the natural gas pipeline and associated fiber optic cable. Upon Donlin Gold's written acceptance of the ROW Grant terms and conditions, and submittal of rental payment, BLM will issue a decision to grant the ROW. Detailed plans for all aspects of the Pipeline activities will be reviewed by the Authorized Officer prior to issuing a Notice to Proceed according to terms, conditions, and stipulations outlined in an ROW Grant issued to Donlin Gold LLC. The ROW Grant will also specify requirements for Bonding and Liability, reporting, public safety and access, protection of environmental and cultural resources, and the sale of material (gravel, rock, etc.) and merchantable timber necessary for all Pipeline activities on BLM-managed land. Donlin Gold will be required to comply with all of the mitigating measures selected from Final EIS Chapter 5, and identified in this JROD (see Attachment C1), and which are further clarified and defined in the ROW Grant stipulations.

In addition to the ROW Corridor, ancillary facilities will affect approximately 561 acres of BLM lands, including one new airstrip, 22 material sites, two large (300-person) civilian camps, as well as temporary access roads and work spaces. These ancillary facilities necessary to support construction will be decommissioned and the land reclaimed to a natural condition on completion of the construction phase. There is an existing airstrip of approximately 140 acres, the Farewell Airstrip, which would be improved for use during Project Construction but would not be maintained, reclaimed or decommissioned after the Construction Phase. The Pipeline and fiber optic cable will involve 69 stream/river crossings on BLM-managed land: 62 will be open-cut trench, and 7 will be HDD.

On completion of the mining activities, the Pipeline, associated fiber optic cable, and related ancillary facilities would no longer be needed, and would be decommissioned. Aboveground facilities would be removed, and the ROW corridor reclaimed to a natural condition.

The BLM has reviewed and approves the proposed Public Easement Plan (Final EIS Appendix Z) pursuant to the ANCSA 17(b) Easement Management Handbook (IM AK 2007-037). BLM has considered the ANCSA 17(b) easement actions—including five terminations, one relocation by donation, and one corrected quadrangle map—to address public safety and access to public land in the vicinity of the mine COA. Five easement terminations inside the mine COA will prevent public easement user conflict or safety concerns with mining operations in the mine COA; one easement donation outside the mine COA will provide public easement connectivity to other established public easements due to the termination of an easement inside the southwestern corner of the mine COA; and one corrected easement quadrangle map will provide for an identified location of an easement that was otherwise not fully described in detail in the easement legal description, where the Mine Access Road and Angyaruaq (Jungjuk) Port will be developed near the junction with Kuskokwim River. The combination of BLM ANCSA 17(b) easements, along with the proposed easement actions by the State of ADNR, The Kuskokwim Corporation (TKC), and Calista Corporation (Calista), as proposed in the Public Easement Plan, provide for continued public access to public lands around the mine COA, while providing a safe operational area for Donlin Gold mine activities, and avoiding conflict

with public easements otherwise going through the mine COA. The Public Easement Plan, pursuant to ANCSA provisions, incorporates the legal requirements of the BLM and State of Alaska, as well as the needs of the Native Corporations involved. The approved ANCSA 17(b) easement actions to be implemented are described in detail in the Final EIS (Appendix Z, Public Easement Plan). The 17(b) easements involved with this project are 25- and 50-foot wide trail corridors. BLM will enter into a Memorandum of Agreement with TKC, Calista, and ADNR to implement the Public Easement Plan (Final EIS Appendix Z). Implementing the Public Easement Plan involves administrative actions as well as on-the-ground Certificate of Inspection and Possession (CIP Process) of the donated easement. Implementing the Public Easement Plan will provide for public safety and continued access to public lands across State and private Native Corporation lands outside of the mine COA.

The BLM has reviewed and approves the ISPMP as described in the Final EIS Appendix U, pursuant to the BLM Alaska Invasive Species Management Policy (IM AK-2010-001). The ISPMP is adaptive by design to accommodate new information, such as new NNIS identification, treatment, monitoring tools, technology, and policy. BLM participated in and supports the landscape-management approach across landowner boundaries for addressing NNIS prevention and management in the natural gas pipeline ROW, and associated activities. The outreach, education, and training for Donlin Gold staff and contractors, the use of Early Detection and Rapid Response, Best Management Practices (BMPs), and Hazard Analysis Critical Control Point protocol in the approved ISPMP are consistent with BLM Alaska requirements for preventing the introduction and spread of NNIS.

This JROD documents the Department of the Interior's (DOI) decision regarding the Donlin Gold Project proposed by Donlin Gold LLC. The decision will allow development of an open-pit, hard-rock gold mine about 10 miles north of the community of Crooked Creek, in southwestern Alaska. This decision adopts Alternative 2 North Option, described in the April 2018 Final EIS for the Donlin Gold Project. The Final EIS analyzed Donlin Gold's proposal to develop the gold mine, as well as transportation infrastructure and the Pipeline. The BLM decisions in this JROD are limited to federal lands, and only address authorizations under the jurisdiction of the BLM. Access to non-federal lands is subject to landowner approval, and other federal and state agencies will process applications for authorizations under their respective jurisdictions.

The decision made in this JROD emphasizes balanced and environmentally responsible development, and includes protections for physical, cultural, and biological resources. In accordance with the requirements of ANILCA Section 810, the decision also addresses local residents' concerns regarding protection of their subsistence way of life and the subsistence resources on which they depend, through inclusion of new mitigation measures developed specifically for the Donlin Gold Project (Final EIS Appendix N). At the same time, the decision enables Donlin Gold to reasonably develop the mineral resources from Alaska Native Corporation–owned lands, providing an economic benefit through a subsurface mineral lease with Calista, an Alaska Native regional corporation, a surface use agreement with TKC, an Alaska village corporation, as well as a surface use agreement with Cook Inlet Region, Incorporated (CIRI), for a small portion of the Pipeline on the Cook Inlet side of the Project, while helping to meet America's mineral development needs. The Donlin Gold Project will also lead to increased revenues to the State of Alaska, resulting from shared royalties, State and local taxes, and other fees. Local residents and communities will benefit indirectly from revenues associated with the development on federal land that would accrue to the State of Alaska.

Royalties received by Calista, TKC, and CIRI will also result in revenues to Alaska Native corporations from shared royalties.

This JROD adopts design features and BMPs analyzed and considered in Chapter 5 of the Final EIS. BLM has selected mitigating measures from Chapter 5 of the Final EIS which are discussed in more detail in Attachment C, Table C1, of this JROD. None of these mitigation measures are compensatory mitigation. Design features, BMPs, and mitigating measures not selected by BLM for inclusion are either out of the BLM's jurisdiction, or would go beyond what BLM considers reasonable, practicable, and appropriate to prevent undue and unnecessary degradation to public lands.

This JROD completes the required EIS process and NEPA requirements for subsequent issuance of a BLM ROW grant and other authorizations necessary for development of the natural gas pipeline and fiber optic cable on federal lands managed by the BLM, as well as the ANCSA 17(b) easement actions necessary in support of the Donlin Gold mine development.

BLM's supporting analysis and documentation for this JROD is included as Attachment C.

2.2.1 ANILCA SECTION 810 SUMMARY

Attachment C to this JROD, BLM Supporting Analysis and Documentation, describes in detail the mitigating measures Donlin Gold will undertake to avoid, minimize, and mitigate impacts to resources and subsistence.

The ANILCA Section 810 analysis concluded a positive finding for Alternative 2 North Option of a significant restriction to subsistence for the communities of Bethel, Tuntutuliak Napakiak, Napaskiak, Oscarville, Kwethluk, Akiachak, Akiak, Tuluksak, Upper and Lower Kalskag, Aniak, Chuathbaluk, Napaimute, and Crooked Creek due to a substantial reduction in the opportunity to continue uses of subsistence resources on the Kuskokwim River. Barging on the Kuskokwim River during construction and operation of the mine may cause extensive interference with access to the Kuskokwim River by subsistence users from villages along the river. It may cause a major redistribution of salmon, rainbow smelt, and whitefish, which are important subsistence resources for those villages. The analysis also concluded a positive finding for Alternative 2 North Option of a significant restriction to subsistence use for the communities of McGrath, Takotna, and Nikolai due to a substantial increase in competition for subsistence resources along the natural gas pipeline at the Farewell Airstrip due to increased activity and access that may increase disturbance to important subsistence resources by recreational sport hunters and commercial outfitters.

BLM has determined the significant restriction of subsistence use is necessary, consistent with sound management principles for the utilization of public lands. The proposed activity will involve the minimum amount of public lands necessary to accomplish the purposes of such use, occupancy or other disposition. Reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions. Further discussion of the ANILCA 810 analysis findings is included in Attachment C2 of this JROD. The mitigating measures Donlin Gold has agreed to undertake to avoid and minimize impacts to subsistence are described in Table C2 of Attachment C2.

3 PROPOSED PROJECT

3.1 PROJECT DESCRIPTION

Donlin Gold proposes the development of an open-pit, hard-rock gold mine in the Kuskokwim River watershed, 277 miles west of Anchorage, 145 miles northeast of Bethel, and 10 miles north of the community of Crooked Creek. There is no existing overland year-round access to the site, or a utility service to supply the mine. Calista selected the mineral rights at the Donlin Gold site under the ANCSA because of the site's known gold potential. TKC owns the majority of the surface estate at the Donlin Gold site. Calista wishes to develop the mineral resources at Donlin Gold for the benefit of Calista's shareholders, and the shareholders of other Alaska Native corporations that benefit from natural resource development through ANCSA 7(i) and (j) revenue distribution requirements. Donlin Gold operates the Donlin Gold Project under a mineral lease with Calista and a surface use agreement with TKC.

The Project would have an average process throughput of 59,000 tons of ore per day, an estimated operational life of 27 years, and would produce approximately 30 million ounces of gold. Construction of the Project would take 3 to 4 years.

Major Project components include the proposed Mine Site, Transportation Corridor, and Pipeline. A brief summary of these Project components is provided in the sections below. See the Donlin Gold Final EIS Section 2.3.2, Alternative 2 – Donlin Gold's Proposed Action, for a detailed description of the Project.

Proposed Mine Site Facilities: The Mine Site would occupy a total area of approximately 14 square miles (9,000 acres). The primary Project subcomponents of the Mine Site include two open pits, a WRF, a TSF, water treatment plants, hydrologic control features (freshwater diversion dams, diversion trenches, settling ponds, contact water dams, and a freshwater reservoir), and other mining facilities. See Engineering Drawings MA-200G through MA-214T for plan views of the Mine Site area (Attachment A1).

Mine Site development in the COA would require the BLM to take actions relating to ANCSA 17(b)—public easements necessary to address public safety and maintain access to public land. These ANCSA 17(b) public easement actions include five terminations, one donation, and one corrected easement quadrangle map. The State of Alaska, in cooperation with Donlin Gold and the ANCSA Corporations, would provide for access to public lands west of the COA in lieu of the FAS (Federal-Aid Secondary) Route No. 231 prior to BLM terminating existing easements. The BLM would enter into a Memorandum of Agreement with Calista, TKC, and Alaska Department of Natural Resources (ADNR) to implement these actions to move existing public easements out of the COA, as well as defining the location of an easement at the proposed Angyaruaq (Jungjuk) Port, thereby avoiding coincidence with the port and mine access road.

Proposed Transportation Corridor Facilities: The proposed Transportation Corridor includes a port facility at Angyaruaq (Jungjuk), a 30-mile mine access road from the port, a 5,000 foot airstrip, and other transportation facilities to support movement of cargo to the mine. See Engineering Drawings TA-300G through TA-316T for plan views of the Transportation Corridor (Attachment A1).

Proposed Pipeline Facilities: Donlin Gold proposes to construct a 14-inch-diameter steel Pipeline to transport natural gas approximately 316 miles from an existing 20-inch gas pipeline

tie-in near Beluga, Alaska to the Mine Site power plant. Natural gas would be supplied to the Pipeline from existing Cook Inlet infrastructure. The Pipeline would require one compressor station at Milepost (MP) 0.4. See Engineering Drawings PA-100G through PA-177 for plan views of the Pipeline (Attachment A1). An associated fiber optic line has also been proposed in the ROW corridor parallel to the natural gas pipeline for operational needs and communications. At the Mine Site, natural gas would be used primarily as a fuel source for generating electricity and for space heating.

Based on comments on the Draft EIS from agencies and the public, one route option (Alternative 2 North Option) was included in the Pipeline component for the evaluation to address concerns due to Pipeline crossings of the INHT. The North Option realigns a segment of the natural gas pipeline crossing to the north of the INHT in the Happy River Valley. The North Option alignment is slightly shorter and reduces the number of INHT crossings and the length that the Pipeline would be physically collocated with the INHT historic route. Alternative 2 North Option was adopted by Donlin Gold as part of their proposed action, with submittal of their revised DA application in December 2017, and is incorporated into this Project description.

Summary of Impacts to WOUS: Construction of Project facilities would require temporary or permanent terrain modifications, and placement of fills in WOUS. Planned reclamation activities for temporary disturbance areas are fully described in the 2017 Plan of Operations Reclamation and Closure Plan: Volume 4 (SRK 2017B). For the purposes of this JROD, the duration of fill is defined using the terms below:

- **Temporary:** Project areas where fill is placed into wetlands for a brief period to facilitate construction activities, then removed concurrent with construction activities, or as soon as construction is complete. The fill may be in place for a matter of days; up to 3 years for the Pipeline; or up to 5 years for the Mine Site and Transportation Corridor construction period.
- **Permanent:** Project areas where fill is placed for the duration of the mine life (estimated to be between 27 and 30 years), and permanent fill to WOUS that remains after Project closure.

Direct impacts to WOUS from the discharge of dredged or fill material, along with fill volumes, are shown in the tables below. Table 1 presents impacts that fall under Section 10 jurisdiction. The impacts are broken down into major subcomponents of the Project; Table 2 presents impacts that fall under Section 404 jurisdiction.

Note: Information in the following tables is based on wetlands field survey data and calculations in the Preliminary Jurisdictional Determination (Michael Baker 2017a, 2017b, 2016). These data were used to develop impact summary tables in the Final EIS Section 3.11, Wetlands. Differences in numbers in the following tables compared to the Final EIS were due to:

- Reporting by Project phase in the Final EIS (Construction or Operations);
- Including non-fill–related impacts such as vegetation clearing in the Final EIS totals;
- Applying different duration (temporary or permanent) assessment criteria in the Final EIS; and
- Not separating Section 404 and Section 10 jurisdiction impacts in the Final EIS.

Table 1: Alternative 2 North Option – Proposed Structures and Fill in Section 10 Waters of the U.S.

Component	Navigable Waterbodies Impacted[1]				Type of Material
	Temporary		Permanent		
	Acres	Linear Feet	Acres	Linear Feet	
Transportation Corridor					
Angyaruaq (Jungjuk Port)[2]	0	0	3	1,109	Sheetpile, sand and gravel, shot rock and riprap
Pipeline					
HDD Crossing – South Fork Kuskokwim River[3]	0	0		1,363	Steel pipeline
Total for all Facilities	**0**	**0**	**3**	**2,472**	

Notes:

Numbers are rounded.

1. Includes direct impacts from fill and placement of structures in and under navigable WOUS.
2. Includes the amount of fill and linear feet of sheetrock placed below the ordinary high water mark of the Kuskokwim River.
3. Includes the linear feet of pipeline installed under the South Fork Kuskokwim River (within the bounds of ordinary high water mark of the river).

HDD = horizontal directional drilling

WOUS = waters of the U.S.

Source: Donlin Gold 2017e. Memorandum: Project Updates, Refinements, and Clarifications. March 31, 2017; Donlin Gold. 2017k. Proposed Modifications to the Donlin Gold Plan of Development for Proposed Natural Gas Pipeline Project. Letter Re: Supplemental Information for the Donlin Gold Natural Gas Pipeline State Pipeline Right-of-Way Lease Application (ADL 231908). Dan Graham, PE, Permit and Environmental Manager, Donlin Gold to Jason Walsh, State Pipeline Coordinator's Office. December 7, 2017; Michael Baker. 2017a. Wetland and Vegetation Maps, Donlin Gold Project, Southwest Alaska. Donlin_Wetland_Mapping_20170114.gdb, January 14, 2017, Prepared for Donlin Gold (as cited in the Donlin Gold Final EIS, April 2018).

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Table 2: Alternative 2 North Option – Proposed Fill for Waters of the U.S.

Component	Waters of the U.S. Impacted[1]						Fill Volume Cubic Yards	Type of Material
	Temporary		Permanent		Total			
	Acres	Linear Feet	Acres	Linear Feet	Acres	Linear Feet		
Mine Site								
Donlin-Jungjuk Road (East of Crooked Creek)	0	0	7	0	7	0	10,758	Shot rock, sand, and gravel
Laydown Areas	0	0	140	1,146	140	1,146	225,068	Shot rock or sand and gravel
Mine Internal Roads	0	0	119	4,444	119	4,444	192,100	Shot rock or sand and gravel
North Overburden Stockpile	0	0	209	3,876	209	3,876	337,657	Overburden
Open Pit	0	0	550	14,665	550	14,665	48,361	Waste rock, overburden for reclamation
Snow Gulch Freshwater Reservoir	0	0	42	6,363	42	6,363	8,571	Shot rock
South Overburden Stockpile	0	0	71	2,699	71	2,699	114,445	Overburden
Tailings Storage Facility	0	0	526	67,373	526	67,373	848,743	Shot rock
Treated Water Discharge Facility	0	0	2	0	2	0	3,604	Shot rock or sand and gravel
Material Sites & Stockpiles[2]	0	0	464	6,572	464	6,572	440,348	Overburden
Waste Rock Facility	0	0	442	63,862	442	63,862	713,350	Waste rock, overburden for reclamation
Total for Mine Site	**0**	**0**	**2,572**	**171,000**	**2,572**	**171,000**	**2,943,005**	
Transportation Corridor								
Airstrip	0	0	6	0	6	0	9,951	Shot rock, sand, and gravel
Airstrip Spur Road	0	0	<1	10	<1	10	482	Shot rock, sand, and gravel
Donlin-Jungjuk Road (West of Crooked Creek)	0	0	48	252	48	252	77,238	Shot rock, sand, and gravel
Angyaruaq (Jungjuk Port)[3]	0	0	11	0	11	0	21,774	Sand and gravel, shot rock and riprap
Material Sites[4]	0	0	40	1,582	40	1,582	46,835	Crushed road aggregate
Total for Transportation Corridor	**0**	**0**	**105**	**1,844**	**105**	**1,844**	**156,280**	

Table 2: Alternative 2 North Option – Proposed Fill for Waters of the U.S.

Component	Waters of the U.S. Impacted[1]						Fill Volume Cubic Yards	Type of Material
	Temporary		Permanent		Total			
	Acres	Linear Feet	Acres	Linear Feet	Acres	Linear Feet		
Pipeline								
Access Routes[5]	14	2,568	0	0	14	2,568	25,717	Shot rock or sand and gravel
Airstrips	12	2,065	0	0	12	2,065	18,561	Shot rock, sand, and gravel
Block Valves	0	0	<1	0	<1	0	27	Shot rock, sand, and gravel
Camps	<1	136	0	0	<1	136	441	Shot rock, sand, and gravel
HDD Workspace	4	898	0	0	4	898	6,459	Shot rock or sand and gravel
Material Sites	10	1,291	0	0	10	1,291	16,710	Shot rock or sand and gravel
Pipe Storage Yards	3	0	0	0	3	0	4,784	Shot rock or sand and gravel
Pipeline	494	46,326	200	0	694	46,326	1,194,894	Bedding material, Shot Rock, Sand and gravel, trench spoils. Rip rap at stream crossings.
Water Extraction Sites	1	62	0	0	1	62	1,370	Shot rock or sand and gravel
Work Pads	0	0	<1	0	<1	0	52	Shot rock or sand and gravel
Total for Pipeline	**538**	**53,346**	**200**	**0**	**738**	**53,346**	**1,269,015**	
Total for All Facilities	**538**	**53,346**	**2,877**	**172,844**	**3,415**	**226,190**	**4,368,300**	

Notes:

Numbers are rounded.

1. Includes direct impacts from cut/fill in WOUS. Impacts to wetlands are presented in acres. Impacts to streams/rivers are presented as linear feet.

2. Includes TSF Material Site-06/TSF Stockpile 2, TSF Material Site-07/TSF Stockpile 3, and TSF Stockpile 1.

3. Includes fill above the ordinary high water mark of Kuskokwim River.

4. Includes: MS-01, MS-05, MS-08, MS-10, MS-12, and MS-16. Discharge volume associated with MS-08, MS-10, and MS-16.

5. Includes: Cut/fill for construction access, shoofly access, and winter access routes.

HDD = horizontal directional drilling

WOUS = waters of the U.S.

Source: Donlin Gold 2017e. Memorandum: Project Updates, Refinements, and Clarifications. March 31, 2017; Donlin Gold. 2017k. Proposed Modifications to the Donlin Gold Plan of Development for Proposed Natural Gas Pipeline Project. Letter Re: Supplemental Information for the Donlin Gold Natural Gas Pipeline State Pipeline Right-of-Way Lease Application (ADL 231908). Dan Graham, PE, Permit and Environmental Manager, Donlin Gold to Jason Walsh, State Pipeline Coordinator's Office. December 7, 2017; Michael Baker. 2017a. Wetland and Vegetation Maps, Donlin Gold Project, Southwest Alaska. Donlin_Wetland_Mapping_20170114.gdb, January 14, 2017, Prepared for Donlin Gold (as cited in the Donlin Gold Final EIS, April 2018).

Summary of Impacts to BLM-Managed Lands: Of the 316-mile proposed Pipeline corridor, approximately 97 miles and 2,329 acres of largely remote and undisturbed BLM-managed public land are affected. The BLM would offer a ROW Grant to Donlin Gold LLC for the construction, operation, maintenance, and termination of the proposed 14-inch underground natural gas pipeline and associated fiber optic cable, and related ancillary facilities. There would be a 150 foot-wide temporary construction corridor, and a 51-foot-wide operational corridor for the Pipeline ROW. During the 3-year construction period, there would be ancillary facilities affecting approximately 561 acres, including one existing and one new airstrip, 22 material sites, two large (300-person) civilian camps, as well as temporary access roads and work spaces. These ancillary facilities, which are necessary to support construction, would be decommissioned (except for the existing Farewell Airstrip, which would be improved during Construction and not decommissioned); and the land reclaimed to a natural condition on completion of the construction phase. The Pipeline and fiber optic cable would involve 69 stream/river crossings on BLM-managed land: 62 would be open-cut trench, and 7 would be HDD. During the 27-year operations and maintenance period, the 51-foot-wide, 97-mile-long natural gas pipeline and fiber optic cable corridor would affect approximately 601 acres. During operations and maintenance, the Pipeline would be accessed via helicopter rather than via temporary construction-phase roads and airstrips. The ROW Grant term would be for 30 years. On completion of the mining activities, the Pipeline and associated fiber optic cable and related ancillary facilities would no longer be needed, and would be decommissioned. Aboveground facilities would be removed, and the ROW corridor reclaimed to a natural condition.

Table 3 presents the miles and acres of impacted BLM-managed lands for both the temporary construction and operational ROW. Acres shown vary from Table 2.3-14 of the Final EIS because those acreage figures represented a 300-foot-wide planning corridor instead of the 150-foot-wide construction corridor that will be part of the BLM ROW Grant. Post-construction, the operations corridor will be 51 feet wide on BLM-managed lands.

Table 3: Alternative 2 North Option – ROW and Ancillary Facilities on BLM-Managed Lands

	Construction Corridor and Ancillary Facilities (Acres)		Operations Corridor and Facilities (Acres)		Approximate Length (miles)
	Temporary 150-foot Construction ROW	Ancillary Facilities[1]	51-foot ROW	Ancillary Facilities	
Pipeline (Alternative 2 North Option)	1,768	561	601	0	97

Notes:

1. Includes access and shoofly roads, winter access routes, work pads, pipe storage yards, HDD workspace, water extraction sites, airstrips, material sites, and campsites. Includes entire footprint, including vegetation clearing areas on BLM-managed land. Estimated acres may be over-estimated due to overlapping components.

Source: Donlin Gold 2017g

3.2 PROJECT DESIGN REVISIONS

Changes since the Corps Public Notice: The 2017 permit application, which was updated after the Corps' PN (published in November 2015 with release of the Draft EIS), includes revisions and refinements to the Project design and footprint that resulted, in part, from the NEPA process review. Notable changes included in the updated application were:

- Modified natural gas pipeline alignment to include the "North Route" option through the Alaska Range, which was adopted as part of the Applicant's proposed Project to address concerns from agencies and the public regarding impacts to the INHT; resulting in:
    - Reduction of the overall construction impacts by about 65 acres; including about 6 acres less direct temporary impacts to wetlands and streams;
    - Reduction of the number of crossings (intersections) between the INHT historic route and the proposed Pipeline ROW(a reduction from 14 crossings to 5 crossings);
    - Reduction in the length that the Pipeline ROW would be collocated (within 100 feet) with the INHT historic route (from 2.5 miles to 0.2 miles);
    - Reduction in the length that the Pipeline ROW would be in proximity (within 1,000 feet) of the INHT historic route (from 14.3 miles to 5.3 miles);
    - Reduction in the overall length of shoofly roads (less than one mile difference);
    - Elimination of the HDD crossing of Happy River (note: while two unnamed tributaries of the Happy River would be crossed with HDD, the HDD crossing of Happy River itself would be eliminated);
- Updated calculations of the Project's impacts to WOUS using Corps' preliminary determined wetlands data; and
- Inclusion of an updated CMP.

In response to comments on the CMP, and through discussion with and feedback from the Corps, EPA, and USFWS regarding the CMP, Donlin Gold submitted a revised CMP in July 2018. See Section 6.0 of this JROD for a discussion of mitigation.

3.3 PROJECT PURPOSE AND NEED

Applicant's Stated Purpose and Need: Donlin Gold's stated purpose and need for the Project is (see Donlin Gold Final EIS Section 1.3.1) is to profitably produce gold from ore reserves owned by Calista, an ANCSA corporation, utilizing open-pit mining methods and proven ore processing methods suitable for application in remote western Alaska. The need for the proposed Project is to enable Calista and TKC to realize economic benefits for their shareholders and other ANCSA shareholders from lands with mineral potential selected and conveyed to them under ANCSA, by producing gold to meet worldwide demand. Gold is an established commodity with international markets.

The purpose of the Donlin Gold natural gas pipeline is to provide a long-term stable supply of natural gas to meet energy needs for the Project. The proposed Pipeline is designed as a

privately owned facility to support the proposed mine operation. Natural gas supplied by the Pipeline would be used to generate electricity for mine operations and heat for buildings. Donlin Gold has determined that the use of natural gas supplied via the proposed Pipeline is the most practicable, cost effective, and environmentally acceptable means of providing a reliable long-term energy source for the Project.

Donlin Gold's need for the Pipeline is driven by the remote location of the Mine Site. There are no existing or readily useable resources that can provide sufficient energy to power the development and operation of the mine within Donlin Gold's timeframe. The remote location does not have sufficient, naturally occurring gas resources, or other energy sources of the magnitude necessary to support mine development and operations. No existing transportation or utility infrastructure services are available to the proposed Mine Site or surrounding area. Access to the Mine Site is seasonal via the Kuskokwim River, or by aircraft, as weather conditions allow.

Corps' Determination of Basic Project Purpose: The Corps has determined that the basic Project purpose [40 CFR 230.10(a)(3)] is to extract and process gold. Extracting and processing gold is not a water-dependent activity. The Project is partially sited in a special aquatic site, jurisdictional wetlands; therefore, pursuant to 40 CFR 230.10(a)(3), practicable alternatives not involving special aquatic sites are presumed to be available, and are presumed to have less adverse impacts on the aquatic ecosystem, unless clearly demonstrated otherwise. Alternatives are discussed below in Section 4.0.

Corps' Determination of Overall Project Purpose: The overall Project purpose is used in the determination of practicable alternatives necessary to be evaluated under the CWA Section 404(b)(1) Guidelines. Practicable is defined as: "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purpose" [40 CFR 230.10(a)(2)]. Although the definition of overall project purpose is the Corps' responsibility, it must take into consideration the Applicant's stated need for the project and the type of project being proposed (July 1, 2009, Updated Standard Operating Procedures for the U.S. Army Corps of Engineers Regulatory Program, page 15). The overall project purpose should be specific enough to define the Applicant's needs, but not so restrictive as to constrain the range of alternatives that must be considered under the Guidelines.

The Corps has determined that the overall Project purpose is to produce gold from the Donlin deposit ore reserves using mining processes, infrastructure, logistics, and an energy supply(s) practicable for application in remote western Alaska.

BLM Purpose and Need for Action: The BLM actions under consideration is a 30-year ROW Grant for a natural gas pipeline and associated fiber optic cable, including related Temporary Use Permits, under the MLA, as amended (30 USC 185). The need to evaluate Donlin Gold's proposal is established by the BLM's responsibility under the MLA to respond to requests to transport oil or gas across public lands via pipeline. Consistent with 43 CFR 2881.2, the BLM's objective or purpose in considering this action is to provide legal access across public lands in a manner that protects the natural resources associated with federal and adjacent lands, whether private or administered by a government entity; prevents unnecessary and undue degradation to public lands; promotes the use of ROW in common (where applicable); and coordinates, to the fullest extent possible, with State and local governments, interested individuals, and appropriate quasi-public entities.

The BLM decision to be made is whether or not to authorize the requested 30-year ROW Grant and associated Temporary Use Permits; and if authorized, what terms and conditions would apply to the authorizations. BLM would decide whether or not to authorize material sales necessary to provide gravel resources necessary to support the construction of the Pipeline via the Materials Act; and if authorized, what terms and conditions would apply to the material sales.

The BLM's decision will also consider the proposed ANCSA 17(b) easement actions to address public safety concerns at the COA while providing public access to public lands in the vicinity of the mine COA (Final EIS Appendix Z).

Conformance with BLM Land Use Plans: In addition to the agency-specific guidance regarding purpose and need, the BLM has determined the Project is in conformance with two land use plans. The Ring of Fire Record of Decision and Approved Management Plan of March 2008, and the Southwest Planning Area, Management Framework Plan of November 1981 provide the overall long-term management direction for BLM-managed lands encompassed by the Donlin Gold Project.

3.4 SCOPE OF ANALYSIS

Scope of Analysis for Corps' Jurisdiction:

The Corps' federal involvement for a project proposed by a private actor is normally limited to a DA permit decision informed by an appropriate NEPA evaluation and public interest review, issued for activities and in areas over which the Corps has jurisdiction. However, the Corps is required to determine the scope of analysis for a NEPA document to address the impacts of both the specific activity over which the Corps has jurisdiction, and those portions of an entire project over which the Corps has sufficient control and responsibility to warrant federal review. In this instance, due to the configuration of streams and wetlands on the Project site, the regulated activities comprise a substantial portion of the Project so as to extend cumulative federal control and responsibility. Additional federal control and responsibility by the BLM and PHMSA extend to the Pipeline component. On these bases, the NEPA scope of analysis is the entire Project Area.

The substantive evaluation requirements of the CWA are outlined in guidelines developed by the Administrator of the EPA, in conjunction with the Secretary of the Army, and published in 40 CFR Part 230 (See Attachment B2). The fundamental precept of the Guidelines, which are binding regulations, is that discharges of dredged or fill material into WOUS, including wetlands, should not occur unless it can be demonstrated that such discharges, either individually or cumulatively, will not result in unacceptable adverse effects on the aquatic ecosystem. The Guidelines state that only the least environmentally damaging practicable alternative (LEDPA) can be permitted. Additional evaluation requirements are contained in the Corps' public interest review (33 CFR Part 320.4(a)).

The Corps' Section 404 jurisdiction for this Project is over the placement of fill into WOUS, including wetlands, for the proposed construction of the Mine Site components, Transportation Corridor components, and Pipeline components. The fill amount and surface area of impacts of each Project component are outlined in Tables 1 and 2 above.

Section 10 of the RHA of 1899 applies to the construction of any structure in, under, or over any navigable WOUS, the excavating from or depositing of material in such waters, or the accomplishment of any other work affecting the course, location, condition, or capacity of such waters. The substantive evaluation criteria for this authority is the Corps' public interest review (33 CFR Part 320.4(a)).

The Corps' Section 10 geographic jurisdiction for the Project is over all activities that occur in the Kuskokwim River. This work includes the sheet piles and fill associated with the Kuskokwim River Angyaruaq (Jungjuk) Port and the South Fork Kuskokwim River HDD Crossing.

Scope of Analysis for the BLM's Jurisdiction: The BLM scope of analysis describes which portions of the overall Project the BLM will evaluate, pursuant to NEPA, as the area under the BLM management control and responsibility.

The BLM's involvement for the Project involves three actions:

1) ANILCA 810 analysis

For any project requiring an authorization from BLM, pursuant to ANILCA Section 810, the BLM is responsible for conducting the ANILCA Section 810 analysis for the Project. Based on ANILCA Section 810 and BLM Instruction Memorandum 2011-008, BLM determined that the 810 Analysis will address the portion of the Project requiring a BLM authorization (i.e., Pipeline ROW and all aspects of the Project that are dependent on that authorization and the associated Pipeline, to include mine construction and operations and river and road transportation aspects of the Project, because those components of the Project would not go forward if not for the Pipeline; and the Pipeline would not go forward if not for those other components. This is consistent with NEPA requirements for evaluation of connected actions.

2) ROW Grant

The BLM is required to respond to the ROW Grant application from Donlin Gold, pursuant to Section 28 of the Mineral Leasing Act (30 USC 185), and 43 CFR 2881.11 for the natural gas pipelines and related fiber optic cable that would cross federal lands under BLM jurisdiction. The BLM jurisdiction for this Project is limited to BLM-managed lands in the proposed Pipeline ROW corridor and necessary ancillary facilities, involving 97 miles and 2,329 acres of BLM-managed lands.

The BLM has reviewed the proposed ROW action pursuant to NEPA and other applicable federal laws and regulations, including the Endangered Species Act (ESA) and the NHPA. The Pipeline ROW would not be necessary if the construction and development of the proposed open-pit gold mine were not to occur. Therefore, for the BLM, the Pipeline is an interdependent part of the proposed mine development—a larger action—and depends on that larger action for its justification. Therefore, the development of the proposed Mine Site and the requested Pipeline ROW are—by definition—connected actions; and therefore must be analyzed as such in the BLM's NEPA review and decision-making process (40 CFR 1508.25(a)(1).

3) ANCSA 17(b) public easements

ANCSA 17(b) public easements are rights reserved to the United States. They take the form of 60-food wide roads, 25- and 50-foot wide trails, and one-acre sites for short-term uses. These rights are reserved when the BLM conveys land to a Native corporation under the Alaska Native Claims Settlement Act (ANCSA).

BLM is responding to Donlin Gold's proposal (Final EIS Appendix Z) to relocate public access routes that currently go through the mine COA to access public land. Existing ANCSA 17(b) public easements inside the COA need to be moved and relocated outside the COA to avoid easement user conflict with mine development and operations. In addition, one easement quadrangle map needs to be corrected to clearly define a 17(b) easement route near the Jungjuk Port. This will avoid any potential public access conflicts with development of the mine access road leading from the Jungjuk Port area on the Kuskokwim River to the mine COA. These actions are pursuant to the ANCSA 17(b) Easement Management Handbook (IM AK 2007-037). BLM has reviewed the proposed ANCSA 17(b) easement actions, including five terminations, one relocation by donation, and one corrected quadrangle map, to address public safety and access to public land in the vicinity of the mine COA and the Angyaruaq (Jungjuk) Port. The ANCSA 17(b) actions are necessary because the mine development cannot move forward without the actions proposed in the Public Easement Plan.

Scope of Analysis for National Historic Preservation Act: Section 106 of the NHPA requires each federal agency, prior to any federal or federally assisted or funded undertaking, to take into account the effect of its proposed undertaking on any property included in or eligible for inclusion in the National Register of Historic Places (NRHP) (hereafter called historic properties).

The Corps, BLM, State Historic Preservation Officer (SHPO), and Advisory Council on Historic Preservation (ACHP) have determined that a Programmatic Agreement for the Project is appropriate, because the effects on historic properties cannot be fully identified and mitigated prior to agency permit decisions, and historic properties may be discovered during Project implementation; and to record the terms and conditions agreed on to resolve potential adverse effects of the Project on historic properties, pursuant to 36 CFR 800.14(b). The Programmatic Agreement is included as Attachment A2 of this JROD.

The Corps, as the lead federal agency for Section 106 obligations under the NHPA, and in consultation with the BLM, the SHPO, ADNR, the ACHP, and Donlin Gold, has established the undertaking's Area of Potential Effects (APE), as defined in 36 CFR 800.16(d), which encompasses direct and indirect effects on historic properties for alternatives carried forward for detailed analysis in the Final EIS. The APE applies to all lands, regardless of management status that may be affected by the Mine Site, Pipeline Corridor, transportation system, staging areas, access roads, borrow areas, or other related infrastructure to the Project undertaking. The APE is defined and documented in Appendix A of the Programmatic Agreement (see Attachment A2).

Section 106 consultation is further discussed in Attachment B3, Section B3.6 of this JROD.

Scope of Analysis for Endangered Species Act of 1973 (ESA): The ESA provides for conservation of fish, wildlife, and plant species considered to be at risk of extinction (threatened or endangered) in all or a substantial portion of their ranges, and to conserve ecosystems and habitats on which they depend. The USFWS and the National Marine Fisheries Service (NMFS) share regulatory authority for implementing ESA for the threatened and endangered species potentially affected by the Project.

Section 7 of the ESA requires all federal agencies to consult with the USFWS and/or NMFS when any action undertaken, funded, or permitted through the agency may affect an ESA-listed species or critical habitat. The determined scope for ESA is the Action Area, which means all

areas to be affected directly or indirectly by the federal action, and not merely the area that falls directly under the Corps' regulatory jurisdiction. The Action Area may be larger than the scope for NEPA, Section 404 and Section 10.

The Action Area established by the Corps in consultation with the USFWS and NMFS includes the following proposed Project components: Mine Site; natural gas pipeline; access road; Angyaruaq (Jungjuk) Port; river transportation route; and the marine barging routes in the Bering Sea and Cook Inlet. Only the marine barging routes are addressed, because they are the only Project component intersecting habitat used by species under the ESA. The Bering Sea marine barging routes extend from Unimak Pass to Bethel (supply), and Dutch Harbor to Bethel (fuel). The Cook Inlet marine barging route runs between Beluga and Anchorage, and/or Beluga and Nikiski.

Biological Assessments were developed and are included in Appendix O of the Final EIS. ESA Section 7 consultation conclusions are summarized in this JROD as Attachment B2, Section B2.3.1; and Attachment B4, Section B4.3.

Scope of Analysis for Magnuson-Stevens Fishery Conservation and Management Act: Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires federal agencies to consult with the NMFS on any action authorized, funded, or undertaken that may adversely affect Essential Fish Habitat (EFH).

The Donlin Gold Project includes three primary components: 1) Mine Site; 2) natural gas pipeline; and 3) transportation infrastructure to include an access road, the Jungjuk Port, river transportation route, and marine barging routes in the Bering Sea and Cook Inlet. The Bering Sea marine barging routes extend from Unimak Pass to Bethel (supply), and Dutch Harbor to Bethel (fuel). The Cook Inlet marine barging route (supply) runs between Beluga and Anchorage, and/or Beluga and Nikiski. These three components define the Project Area, potentially affecting EFH.

The Mine Site facilities would be within Crooked Creek drainage, which flows into the Kuskokwim River at the village of Crooked Creek. Major Project components would be constructed in American Creek, Anaconda Creek, and Snow Gulch Basin.

An EFH Assessment was developed for the Project and is included in Appendix Q of the Final EIS. EFH consultation conclusions are discussed in Attachment B2, Section B2.3.4 of this JROD.

4 ALTERNATIVES

4.1 ALTERNATIVES CONSIDERED AND CARRIED FORWARD FOR DETAILED ANALYSIS

As described in Chapter 2 of the Final EIS, the Corps completed a rigorous and comprehensive process to identify and evaluate alternatives to the Project, as proposed by Donlin Gold. After careful study, seven alternatives were evaluated in the Final EIS (see Table 4 below). The action alternatives carried forward for analysis in the EIS vary from the proposed action in key engineering design, siting, and operational features, which address concerns raised in scoping, and provide a reasonable range of alternatives for comparison. For example, in one alternative, the Mine Site and the Pipeline components remain the same as in the proposed action, but two variants (Alternative 3A and Alternative 3B) are evaluated to reduce the amount of barging on the Kuskokwim River. The following sections provide a brief summary of alternatives.

Table 4: Donlin Gold Project Alternatives

Alternative 1 – No Action
Alternative 2 – Donlin Gold's Proposed Action Includes One Option: • North Option (Alternative 2 North Option)
Alternative 3A – Reduced Diesel Barging: Liquefied Natural Gas Powered Haul Trucks
Alternative 3B – Reduced Diesel Barging: Diesel Pipeline Includes Two Options: • Port MacKenzie Option • Collocated Natural Gas and Diesel Pipeline Option (Collocated Pipeline Option)
Alternative 4 – Birch Tree Crossing Port
Alternative 5A – Dry Stack Tailings Includes Two Options: • Unlined Option • Lined Option
Alternative 6A – Modified Natural Gas Pipeline Alignment: Dalzell Gorge Route

No Action Alternative: The No Action Alternative would result from the Corps not issuing required permits under Section 404 of the CWA and Section 10 of the RHA; and the BLM not granting the requested MLA ROW permits. There would be no Mine Site development, no new transportation facilities, and no Pipeline or fiber optic cable in areas over which the Corps or BLM exercise jurisdiction. The future of the existing camp, airstrip, and related facilities would be decided at the discretion of the land owners: Calista and TKC. The No Action Alternative represents a baseline for comparison of effects between the Proposed Action (Alternative 2) and the other action alternatives. Current ocean and river barging traffic would be expected to continue at similar levels. The No Action Alternative does not meet the purpose and need of the Project.

Alternative 2 – Applicant's Proposed Action: Donlin Gold's proposed action would establish an open-pit, hard-rock gold mine in southwestern Alaska on land leased from Calista. TKC has granted surface use rights to Donlin Gold. Donlin Gold also has legal control of approximately 13 acres in the Snow Gulch area, per a lease agreement with Lyman Resources in Alaska, Inc. The three main Project components include (see Section 3.1 above for additional information on the proposed Project):

- **Mine Site.** This component would include the pits, processing facility, WRF, TSF, and power plant.
- **Transportation Corridor.** This component would include a third party to transport fuel and other supplies to the Project site from Dutch Harbor or other locations outside Alaska; a dedicated new fleet of river barges and tugs; the Angyaruaq (Jungjuk) Port; a 30-mile access road; and a 5,000-foot dedicated airstrip.
- **Pipeline.** This component would include an approximately 316-mile-long, 14-inch-diameter, buried natural gas pipeline to support power generation at the Mine Site, built from Cook Inlet to the Mine Site. Based on comments on the Draft EIS from agencies and the public, one route option (Alternative 2 North Option) was included in the Pipeline component for evaluation to address concerns due to Pipeline crossings of the INHT. The North Option realigns a segment of the natural gas pipeline crossing to the north of the INHT in the Happy River Valley. The North Option alignment is slightly shorter, and reduces the number of INHT crossings and the length that the Pipeline would be physically located in the INHT ROW. Alternative 2 North Option was adopted by Donlin Gold as part of their proposed action, with submittal of their revised DA application in December 2017.

Alternative 3A – Reduced Diesel Barging: LNG-Powered Haul Trucks: Alternative 3A would use primarily liquefied natural gas (LNG) to fuel the large (300-plus-ton payload) trucks that would move waste rock and ore from the open pits. These large trucks would account for approximately 75 percent of the total annual diesel consumption under Alternative 2. Trucks hauling cargo and fuel on the mine access road from Angyaruaq (Jungjuk) Port would not be converted to LNG.

The primary differences between Alternative 3A and Alternative 2 would be the addition of a 220,000-gallon-per-day LNG plant and storage tanks near the processing plant; reduced consumption of diesel; reduced barge trips; reduced on-site diesel storage; and increased natural gas consumption. Currently, LNG-powered haul trucks are not in full commercial production. The technology to use natural gas products (such as LNG or compressed natural gas) in other industrial applications is proven, and equipment manufacturers are actively developing dual-fuel (diesel and natural gas) options for the mining industry.

Alternative 3B – Reduced Diesel Barging: Diesel Pipeline: Under Alternative 3B, an 18-inch-diameter diesel pipeline would be constructed from Cook Inlet to the Mine Site to virtually eliminate the need for Project-related diesel barging on the Kuskokwim River during Operations, and reduce the overall number of barge trips. The natural gas pipeline proposed for Alternative 2 would not be constructed, and natural gas would not be used. The power plant would be fueled only with diesel.

The diesel pipeline would traverse 334 miles, and would be buried in the same corridor proposed for the natural gas pipeline described under Alternative 2. This design would require

an additional segment between the Tyonek North Foreland Facility and the natural gas pipeline corridor start. This additional segment would cross the Beluga River using HDD. There would be improvements to the existing Tyonek North Foreland Barge Facility and transportation of diesel fuel in Cook Inlet. The Pipeline alignment crossing the Castle Mountain and Denali-Farewell faults would be constructed above grade, similar to the natural gas pipeline in Alternative 2.

Two options to Alternative 3B were added based on Draft EIS comments from agencies and the public:

- Port MacKenzie Option – This option would use the existing Port MacKenzie facility to receive and unload diesel tankers, instead of the Tyonek facility considered under Alternative 3B. A pumping station and tank farm of similar size to the Tyonek conceptual design would be provided at Port MacKenzie. A Pipeline would extend northwest from Port MacKenzie, route around the Susitna Flats State Game Refuge, cross the Little Susitna and Susitna Rivers, and connect with the Alternative 3B alignment at approximately MP 28.
- Collocated Natural Gas and Diesel Pipeline Option – This option (Collocated Pipeline Option) would add the 14-inch-diameter natural gas pipeline proposed under Alternative 2 to Alternative 3B. Under this option, the power plant would operate primarily on natural gas instead of diesel, as proposed under Alternative 3B. The diesel pipeline would deliver the diesel that would be supplied using river barges under Alternative 2; and because it would not be supplying the power plant, could be reduced to an 8-inch-diameter Pipeline. The two pipelines would be constructed in a single trench that would be a slightly wider trench, work space, and permanent ROW than proposed under either Alternative 2 or Alternative 3B. This option could be configured with either the Tyonek or Port MacKenzie dock options.

Alternative 4 – Birch Tree Crossing Port: Alternative 4 would move the port site to Birch Tree Crossing (BTC), about 75 river miles below the Angyaruaq (Jungjuk) Port site, and 124 river miles upstream from Bethel, reducing the barge distance for freight and diesel to the Mine Site. The same volume of cargo and diesel fuel would be transported by barge as in Alternative 2, and there would be no other substantive changes to other Project components.

The 65-acre BTC Port site would be situated on the Kuskokwim River, and would consist of an onshore pad with areas for general storage, fuel storage, a warehouse truck shop, and living accommodations; and a filled area on the riverbank to allow container barges to dock. An approximately 76-mile-long, 30-foot-wide, all-season gravel access road (46 miles longer than the mine access road in Alternative 2) would link the BTC Port to the Mine Site to transport fuel and cargo.

Alternative 5A – Dry Stack Tailings: Alternative 5A would use the dry stack tailings (DST) method instead of the subaqueous tailings method that would be used under Alternative 2. This alternative was developed to avoid the potential for accidental releases from the tailings dam, proposed under Alternative 2.

Under Alternative 5A, tailings would be dewatered in a filter plant using specialized equipment to produce a partially saturated, compactable filter cake. This material would be delivered to the TSF by truck, then spread and compacted in thin layers using bulldozers. Residual process water removed from the tailings would be transported to an operating pond via pipeline, and

reclaimed water from the pond would be pumped back to the processing plant for reuse. The main dam, upper dams, and operating pond would be fully lined with a 60-milliliter (1.5-millimeter) linear low-density polyethylene (LLDPE) liner.

This alternative includes two options:

- **Unlined Option –** The TSF would not be lined with an LLDPE liner. The area would be cleared and grubbed, and an underdrain system placed in the major tributaries under the TSF and operating pond to intercept groundwater base flows and infiltration through the DST, and convey it to a Seepage Recovery System. Water collecting in the Seepage Recovery System would be pumped to the operating pond, lower contact water dam, or directly to the processing plant for use in process.
- **Lined Option –** The DST would be underlain by a pumped overdrain layer throughout the footprint, with an impermeable LLDPE liner below. The rock underdrain and foundation preparation would be completed in the same manner as the Unlined Option.

Alternative 6A – Modified Natural Gas Pipeline Alignment: Dalzell Gorge Route: Alternative 6A was the Applicant's original proposed pipeline alignment through the Alaska Range. In December 2013, Donlin Gold revised their Plan of Development in favor of the currently proposed alignment, which avoids Dalzell Gorge. Alternative 6A would realign the natural gas pipeline west between MP 106.5 to MP 152.7, traversing Dalzell Gorge. The route would deviate from the Alternative 2 alignment at approximately MP 106.5, trend west, and parallel the Happy River for approximately 5 miles before trending northwest at Pass Creek and through Rainy Pass and Dalzell Gorge.

The terrain through the gorge is steep; the route through Rainy Pass starts at an elevation of 2,500 feet above mean sea level, and climbs to 3,327 feet mean sea level over about 6 miles. Approximately 34 miles of this route would be in the immediate vicinity of, or cross, the INHT.

4.2 ALTERNATIVES ELIMINATED DURING THE EIS PROCESS

Alternative options eliminated from further analysis are presented in the Final EIS in Section 2.4, Alternatives Considered but Eliminated from Detailed Analysis. Appendix C of the Final EIS includes tables that explain in detail why each option was considered, and provides rationale for their elimination. Over 300 alternative options were evaluated in Appendix C, including alternative mining methods, alternative water management and treatment, alternative infrastructure, and alternative locations for Project component facilities.

Overall, few options were eliminated because they did not meet the screening test for Purpose and Need. The technical and economic feasibility (including logistics in some cases) were evaluated carefully, and these factors were more often the basis for eliminating options. Environmental impacts were assessed at a screening level; some options were eliminated because they would not reduce environmental impacts when compared with the corresponding components of the Applicant's proposed action. Others were not carried forward as options because they were more properly characterized as potential mitigating measures.

Other Location Alternatives: The Corps has determined that the overall Project purpose is to produce gold from the Donlin deposit ore reserves using mining processes, infrastructure, logistics, and an energy supply(s) practicable for application in remote western Alaska. Other

locations would not meet the overall purpose to produce gold from the Donlin deposit, and are not practicable.

4.3 CORPS' DETERMINATION OF THE LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE (LEDPA)

The DA permit application evaluation requires compliance with the 404(b)(1) Guidelines. Under Subpart B of the 404(b)(1) Guidelines, the Corps' evaluation of the proposed Project is required to address four tests that the Project must meet to receive a Section 404 permit. One of these tests results is the identification of the LEDPA. See Attachment B2 – Evaluation of The Discharge of Dredge and Fill Material in Accordance with 404(b)(1) Guidelines.

While making a compliance determination, the Corps may gather information sufficient to support and make its decisions by soliciting comments from other federal, tribal, state, and local resource agencies and the public. The Corps, however, is solely responsible for reaching a decision on the merits of the permit application, including determination of the Project purpose, the extent of the alternatives analysis, which alternatives are practicable, the LEDPA, the amount and type of mitigation that is to be required, and all other aspects of the decision making process.

With inclusion of the measures and special conditions discussed in Section 6.0, and based on the evaluation of the environmental impacts of the Applicant's proposed action (see Attachments B2 – B4), the Corps concludes that Alternative 2 North Option is the LEDPA. This alternative meets the overall Project purpose; is practicable in consideration of costs, logistics, and existing technology; and has the least total direct impacts (excavation, fill, and vegetation clearing) and potential indirect impacts (dust, dewatering) to WOUS of the practicable alternatives (see Final EIS Section 3.11, Wetlands). Table B2 in Attachment B2 summarizes the analysis for determining the LEDPA.

4.4 BLM'S RATIONALE FOR ADOPTING ALTERNATIVE 2 NORTH OPTION

Among the alternatives evaluated in the Final EIS, the Alternative 2 North Option will result in fewer overall environmental impacts than Action Alternatives 3A, 3B, 4, 5A and 6A, and therefore is considered by BLM to be the environmentally preferred alternative.

The Draft EIS included the Applicant's proposal, Alternative 2, to co-locate the natural gas pipeline with approximately 4 miles of the INHT, and involved 13 crossings, and was otherwise in 1,000-foot proximity of the INHT for 10.5 miles. The Final EIS (April 2018) includes a revised Applicant proposal, Alternative 2 North Option, to reduce the coincidence with the INHT to a total of just 4 crossings; and only 0.1 mile of Pipeline will be physically located in the 400-foot easement of the INHT. Overall construction impacts with Alternative 2 North Option will be about 65 acres less than construction of the originally proposed Alternative 2. The North Option segment of the Pipeline crosses only State lands along the INHT; no BLM-managed lands coincidental with the INHT will be impacted.

Alternative 2 North Option provides for less disturbance and less potential for environmental damage in the ROW corridor as compared to Alternative 3B co-located natural gas and diesel pipeline. Alternative 3B, co-located natural gas and diesel pipelines, would involve 19

additional miles in the length and 5 additional feet in the width of the ROW corridor to accommodate the diesel pipeline. This would increase the overall disturbance footprint on BLM-managed land. The diesel pipeline would increase potential for environmental damage in the case of a diesel pipeline rupture in the otherwise remote and undeveloped terrain. Alternative 3B would provide the need to retain new airstrips and gravel access roads during operations for diesel spill response capacity and would result in greater long-term ROW corridor and ancillary facilities footprint impacts to BLM-managed lands. The long-term need for the airstrips and gravel access roads in Alternative 3B would result in greater competition for subsistence resources due to increased access to the otherwise remote and undeveloped region. The increased helicopter surveillance of the diesel pipeline would also provide for greater disturbance to subsistence activities.

Alternative 2 North Option provides for less visual and direct physical disturbance to the INHT corridor as compared to Alternative 6A, Modified Natural Gas Pipeline Alignment: Dalzell Gorge Route. Alternative 6A involves the ROW corridor coincidence with the INHT in the Alaska Range through Rainy Pass and Dalzell Gorge, and the ROW corridor being closer to the BLM-managed Rohn Public Shelter Cabin. Alternative 2 involves the 'Jones alignment' which avoids the INHT in this area of the Alaska Range all together, as well as avoiding proximity to the Rohn Public Shelter Cabin.

5 PUBLIC INVOLVEMENT

Chapter 6 of the Final EIS describes consultation and coordination with agencies and public involvement opportunities for the EIS. A timeline and summary of milestones for the Project are included in the Section 1.1 (Background) of this document.

A public involvement plan was developed prior to scoping to provide the basis for the Corps and cooperating agencies to provide guidance for public outreach activities. The Project website (http://www.DonlinGoldEIS.com) was launched at the onset of the Project, and a Project newsletter was sent out that explained the NEPA/EIS process and how to participate. The Corps held numerous well-attended meetings, hearings, and public outreach presentations; and discussions with potentially affected tribal governments occurred throughout the NEPA process. Detailed information on public outreach activities, tribal coordination, and government-to-government consultation, including summary tables for meetings, are included in Chapter 6 of the Final EIS. The Corps' initiation of government-to-government consultation with federally recognized tribes is included in Appendix P of the Final EIS. Following public scoping, the Corps and cooperating agencies selected substantive impact issues identified during public and agency scoping for further analysis, and eliminated non-substantive issues from evaluation. Selected issues are listed in Table 2 of the Executive Summary of the Final EIS, and documented as Statements of Concern (SOCs) in the Scoping Report (Final EIS, Appendix B). SOCs are summary statements capturing a single substantive point that may have been expressed in a number of individual comments.

During the public comment period for the Draft EIS, the Corps received 529 unique submissions. Three form letters were received. Of these unique submissions, 17 were transcripts of the public meetings. Over 5,000 substantive comments were identified in submissions, which were then grouped into SOCs. A summary of the comment analysis process and tables addressing each SOC by resource area is included in the Comment Analysis Report (CAR), Appendix X of the Final EIS.

The Applicant's updated CMP (updated December 2017, included as Appendices J and M in the Final EIS) was open for public review and comment from April 27, 2018 through May 29, 2018 (SPN-1995-120). Comments on the Final EIS were received from the EPA, The Kuskokwim Corporation, Calista Corporation, Knik Tribal Council, Donlin Gold, the Center for Science in Public Participation (CSP2), and 13 members of the public. Many of the comments received were duplicative of comments previously received and addressed in the Final EIS, or Appendix X, the CAR. New substantive comments were received and responded to; see Attachment B1 for the Corps' analysis of these comments.

Additional BLM Public Involvement: The BLM considered public comment throughout the EIS process. BLM participated in public scoping and Draft EIS public meetings conducted by the Corps and Donlin Gold (listed in Chapter 6 of the Final EIS). The BLM also participated in agency scoping meetings that included Native Villages. It was through these public involvement opportunities that the BLM identified public issues of concern to incorporate into the EIS analysis and consequential outcome in the Final EIS.

Pursuant to ANILCA Section 810(a)(1) and (2), the BLM also conducted 12 hearings subsequent to many of the Draft EIS public meetings to hear and gather comments regarding potential impacts to subsistence use resulting from the alternatives considered in the Draft EIS. The ANILCA 810 hearings were conducted in the following communities: Aniak, Crooked Creek,

Anchorage, Bethel, Akiak, Quinhagak, McGrath, Nunapitchuk, Tyonek, Lower Kalskag, Holy Cross, and Chuathbaluk.

The BLM conducted a separate government-to-government inquiry regarding the Project. The BLM sent a letter of notification in August 2014 to the 66 tribes listed in Appendix P of the Final EIS, offering the tribes the opportunity to participate in formal government-to-government consultation with the BLM, apart from the Corps.

The BLM met with Calista and The Kuskokwim Corporation periodically throughout the development of the Donlin Gold Project EIS. The meetings involved consultation and updates on BLM involvement with the Project, and hearing issues or concerns regarding consequences of any potential BLM actions related to the proposal. Discussion topics included the various alternatives being considered, subsistence, the ANILCA 810 subsistence analysis, economics, ANCSA 17(b) public easements, NNIS, and public involvement, as well as our administrative protocol for necessary actions to implement the proposed Donlin Gold Project on BLM-managed lands.

6 MEANS TO MINIMIZE, AVOID, AND MITIGATE ADVERSE ENVIRONMENTAL IMPACT

6.1 APPLICANT'S PROPOSED MITIGATION (AVOIDANCE, MINIMIZATION, AND MITIGATION)

The Applicant provided a comprehensive statement of avoidance, minimization, and compensation in the CMP (revised Block 23, July 2018); included at Attachment B5 of this JROD. The Applicant has planned the proposed Project to avoid and minimize impacts to the WOUS during construction, operations, and closure phases of the Project. Due to the abundance of wetlands in the Project area, avoiding discharges into WOUS is not practicable. Donlin Gold has avoided or minimized fill impacts to wetlands and streams through facility design and optimization. A summary of the Applicant's measures to avoid and minimize impacts to WOUS is described below. The Applicant's proposed compensatory mitigation is discussed in Section 6.2.5.

6.1.1 AVOIDANCE AND MINIMIZATION

The following is a summary of the avoidance and minimization measures which are described fully in Block 23 of the final CMP:

6.1.1.1 MINE SITE

The 2017 PJD (Michael Baker 2016, 2017) for the Project shows that ridgetops and hillsides at higher elevations in watersheds are upland, while waters of the U.S. are more prevalent in valley bottoms and hillsides at lower elevations in watersheds. The Proposed Project infrastructure layout maximizes the use of uplands, while minimizing encroachment on WOUS to the extent practicable. Potential mine area impacts were reduced by placing facilities in fewer watersheds and WOUS. Facility placement and design are typically more efficient on flatter ground. However, to avoid WOUS, the facilities were placed on upland ridges as feasible.

The proposed locations of the WRF, TSF, mine facilities, Snow Gulch freshwater reservoir, material sites, and NOB and SOB stockpiles avoid anadromous fish habitat; however, while impacts to resident fish habitat (primarily Dolly Varden char) have been minimized, they could not be completely avoided. The location of the open pit is determined by the presence of ore and geotechnical constraints, which makes it immovable and irreplaceable in nature. Design criteria included access to the mineral resources; minimizing waste rock volumes; maintaining pit wall stability; and minimizing disturbance footprint. Studies were completed to determine the steepest practicable wall slopes to maintain stability, and consequently minimize the surface disturbance of the pit. The impacts to WOUS by the open pit would be unavoidable, and have been minimized to the extent practicable.

Potential locations for storage of waste rock considered placement of all waste rock in the American Creek valley, or splitting the waste rock storage between American Creek and Anaconda Creek or Snow Gulch. Siting the WRF within American Creek watershed provides the most practical option because of the proximity to the open pit to minimize transportation cost, and the ability to use the open pit to control runoff post mine closure. The WRF minimizes WOUS impacts with a compact footprint located in the upper watershed of American Creek.

General design criteria for the mine area facilities included sufficient space to accommodate mine facilities (e.g., crusher, processing facility, power plant, fuel storage, and laydown pads); proximity to the open pit, ore stockpile, and TSF to minimize ore and tailings transportation costs; geometrically designing pads with the lowest volumes of cut and fill; wetlands avoidance through strategic location of facilities; and factors such as hydrology, and soil stability. Locating the process facilities in the middle portion of the American ridge avoids all impacts to WOUS.

Material sites are necessary for the construction of mine facilities and roads. All material site locations were selected outside the floodplain of Crooked Creek to avoid impacts to anadromous fish. The sites identified provide high volume, high quality material, while minimizing access road distances. The amount of aggregate estimated to be required was minimized by designing facilities and roads that would need the least material to construct and maintain. The material site required to construct the Snow Gulch freshwater dam has been sited on a ridgetop where suitable material is present to avoid WOUS. In summary, although some material sites are located in WOUS, they were sited outside of the Crooked Creek floodplain and away from headwater streams.

6.1.1.2 TRANSPORTATION FACILITIES

Engineering design criteria for the mine access road specify a two-lane access road that minimized construction and maintenance costs; used the lowest volumes of fill; minimized drainage crossings and placed crossings perpendicular to flow; and located material sites close to the proposed road to reduce impacts of material site access roads.

Transportation facilities are located on upland ridgetops instead of wetter hillsides and valleys, as practicable, or sited away from WOUS. Examples of this are the Donlin-Jungjuk Road, camp, and airstrip. Transportation facilities require the development of 13 material sites, five of which would impact WOUS. Material site boundaries were adjusted to avoid and minimize impacts to WOUS, as practicable. The location of the transportation facilities limits the number of watersheds disturbed. The airstrip is sited on a ridgetop to minimize the amount of cut and fill in WOUS.

The port location selection criteria included distance to the mine to minimize road footprint and transportation costs; avoidance of WOUS.; adequate depth to dock and maneuver barges throughout the summer season without the need to dredge; avoidance of cultural resources; minimization of the amount of onshore grading; minimization of the probability of water or ice jams overtopping the wharf during the freshet; and sizing to fit 1,000 stackable containers. The DA permit application notes that the proposed Angyaruaq (Jungjuk) Port would impact 30.5 acres including 13.5 acres of unavoidable impacts to WOUS. The Angyaruaq (Jungjuk) Port footprint was reduced by planning to store cargo temporarily rather than permanently for transport to and from the mine; transporting cargo in stackable containers; and stacking loaded containers up to three high and empty containers up to six high. Following mine closure, the port will be reclaimed by removing the wharf fills, including sheet pile, and the area will be re-contoured leaving the access road and a "beach-type" landing in place.

Where practicable, facilities will share space or accommodate multiple uses to minimize the project ground disturbance footprint: the proposed camp facilities will be constructed within the disturbance footprint of Material Site-01; non-wetland material sites will be used for the temporary storage of construction equipment, refueling, and overburden storage during

construction; the airport is placed in the closest practicable location to the Donlin-Jungjuk Road and on a ridgeline in predominantly uplands. The Donlin-Jungjuk Road will be used to gain access to the airport with a short spur road. Transmission lines are designed parallel to roads to reduce access route footprints and the number of drainages disturbed.

The Donlin-Jungjuk Road is designed to minimize the number of stream and drainage crossings by following upland ridgelines to the extent practicable (Figure 4). Where stream crossings were unavoidable, the road approaches are designed to be perpendicular to the flow to minimize impacts to WOUS. Bridge structures and/or culverts will be installed at each stream and drainage crossing to facilitate vehicle passage and minimize impacts. Bridge structures will be installed at six major stream crossings where fish presence has been documented. Each bridge is designed to span the width of the creek, either as a steel span or steel span arch, and to account for high-water flow conditions. Riprap will be placed along the length of the arch or wall bases on both the upstream and downstream ends of the structure to protect the arch bases from erosion. Minor stream crossings and drainages will have appropriately sized culverts installed to ensure cross flow and maintain hydrologic connectivity.

6.1.1.3 NATURAL GAS PIPELINE FACILITIES

The proposed pipeline area facilities include a natural gas pipeline and fiber optic cable, compressor station, metering station, pig launcher/receiver site, check valves, and associated construction related support facilities such as construction camps and temporary airstrips, construction access roads, material sites, pipeline storage yards, shoofly roads, HDD workspaces, water extraction sites, work pads, and the pipeline construction ROW.

Design considerations for the proposed pipeline route include selection of the shortest pipeline length possible to minimize project footprint, while avoiding the following to the extent practicable: geotechnical hazards; hydrological hazards; known environmental and cultural sites; the INHT; and potential land use conflict areas. The pipeline route and ROW design also consider seasonal construction schedules; constructability; and avoidance and minimization of impacts to WOUS.

The pipeline has been designed to be installed primarily underground, eliminating the need for road access, which would create permanent roads and long-term impacts along the pipeline route.

All pipeline stream crossings were analyzed for flow, width, and characterization to determine crossing modes to avoid major diversions in rivers. HDD methods are proposed to install the pipeline underneath the Skwentna, Happy, Kuskokwim, George, East Fork George and the North Fork George rivers. Excavated cuttings from HDD sites will not be placed in waterbodies or in drainages. Without HDD crossings, the crossings would likely be aerial and require a larger disturbance footprint for gravel pads necessary for work areas, both of which would create additional potential impacts. Criteria for HDD stream crossing locations include 100-year flood recurrence interval, depth of cover, setbacks for pipe exposure, bank mitigation/restoration to prevent erosion, bank protection, fish habitat and recreation value, and adverse impacts to WOUS.

The pipeline area includes 69 material sites totaling 1,008-acres, of which six of the pipeline area material sites impact wetlands and WOUS (10.4 acres of wetland impacts). Donlin Gold developed a Transportation and Pipeline Area Wetland Impact Minimization Work Plan

detailing the restoration for these areas beyond the reclamation requirements established by the State of Alaska.

Work pads will be the minimum size necessary for equipment and construction activities and will be sited in uplands along the pipeline ROW. Temporary construction camps and airstrips are sited in uplands. Existing winter trails will be integrated into the winter ice routes for transportation of pipeline construction infrastructure. The timing of the construction and use of ice roads eliminates the need for permanent gravel access roads and construction pads. The pig launcher/receiver site is sited in uplands.

Many facilities along the pipeline will be multi-purpose to minimize the extent of the disturbance footprint. These co-located or progressively-located facilities include: material sites, laydown areas, equipment storage, staging areas, fueling areas, pipeline storage yards, material storage sites, camp units, and airstrips.

Erosion control and construction methods will be described in the SWPPP, and will comply with the State of Alaska 2016 Construction General Permit for Stormwater Discharges for Large and Small Construction Activities. BMPs for embankment stabilization, including contouring and seeding will be required project-wide to reduce embankment erosion and potential sediment runoff into WOUS. Construction methods in wetlands will minimize construction related effects on wetlands, including marking wetland boundaries and clearing limits, winter construction to the maximum extent practicable, confining activities to the construction zone to prevent disturbance of surrounding vegetation, maintaining slope stability, controlling erosion, using mats or other ground protection during non-winter months as practicable, maintaining existing wetland hydrology, and constraining permanent facilities to uplands.

Most areas underlain by permafrost will be crossed during winter to minimize disturbance from trenching. A seasonal construction timeline minimizes impacts to WOUS by timing construction activities in lowlands in the winter and in uplands during the summer. Approximately 60 percent of the total pipeline length will be constructed during frozen winter conditions to minimize wetland and soil disturbances from equipment. Snow and ice roads with frost packing will provide a stable surface for equipment to operate.

6.2 CORPS' MITIGATION DETERMINATION

6.2.1 COMPENSATORY MITIGATION REQUIRED

Is compensatory mitigation required? ☒ yes ☐ no

6.2.2 MITIGATION BANK

Is the impact in the service area of an approved mitigation bank? ☒ yes ☐ no

4.26 acres of wetland impacts would occur within the primary and secondary service area of an approved mitigation bank.

Does the mitigation bank have the appropriate number and resource type of credits available?

☒ yes ☐ no ☐ n/a

6.2.3 IN-LIEU FEE PROGRAM

Is the impact in the service area of an approved in-lieu fee program? ☒ yes ☐ no

4.91 acres of wetland impacts would occur within the service area of an approved in-lieu fee program. The 4.26 acres of wetland impacts identified above in Section 6.2.2 overlap with the 4.91-acre area of wetland impacts that would occur within the service area of an approved in-lieu fee program.

Does the in-lieu fee program have the appropriate number and resource type of credits available? ☒ yes ☐ no ☐ n/a

6.2.4 COMPENSATORY MITIGATION OPTIONS

Check the selected compensatory mitigation option(s):

☒ mitigation bank credits

☒ in-lieu fee program credits

☒ permittee-responsible mitigation under a watershed approach

☐ permittee-responsible mitigation, on-site and in-kind

☒ permittee-responsible mitigation, off-site and out-of-kind

6.2.5 PROPOSED COMPENSATORY MITIGATION

Donlin Gold submitted a Conceptual CMP in August 2015. A revised draft CMP was included in the December 2017 DA permit application (Block 23). In response to feedback from the Corps, EPA, and USFWS, Donlin Gold submitted a final CMP in July 2018 (Attachment B5 of this JROD).

The Corps is requiring compensatory mitigation for permanent loss of aquatic resources as a result of fill impacts from the proposed Project totaling 2,877 acres of wetlands, 3 acres of fill below the ordinary high water mark of the Kuskokwim River, and 175,316 linear feet of streams. Mine Site and Transportation Corridor components would permanently fill 2,677 wetland acres, 3 acres of fill below the ordinary high water mark of the Kuskokwim River, and 173,953 linear feet of streams, and the Pipeline would permanently fill 200 wetland acres and 1,363 linear feet of streams.

Pipeline facilities would temporarily impact 538 wetland acres and 53,346 linear feet of stream. These wetlands and steams would be restored prior to finalizing construction and are expected to return to their previous conditions shortly thereafter. Additionally, Pipeline construction would not impact more than 0.03 percent of any watershed it crosses. Therefore, the Corps is not requiring compensatory mitigation for the temporal loss of wetland and stream functions. Some project activities in wetland areas include vegetation clearing, winter roads, and work areas where no placement of fill would occur. For these activities, the Corps is not requiring compensatory mitigation.

All but 4.91 acres of the proposed Project impacts occur outside of the service areas of existing mitigation banks or In-Lieu fee service areas. Therefore, Donlin Gold researched permittee responsible options focusing first on the immediate watershed (HUC-10), and then systematically assessing larger hydrologic units for compensatory mitigation opportunities.

They evaluated six historical mining operations that remediation, restoration and preservation could feasibly be conducted. Donlin Gold considered the sites in terms of practicability including availability, feasibility and cost, land ownership and long term durability, and the potential for ecological enhancement to wetlands areas, streams and riparian areas. Efforts also considered out-of-kind and off-site reclamation and restoration of the Newtok village, community water and wastewater system improvements in the Yukon-Kuskokwim (Y-K) region, solid and hazardous waste management in the Y-K region, erosion control projects in the Kuskokwim River watershed, all-terrain vehicle trail hardening projects in the Y-K region and non-native species plant removal in the Crooked Creek watershed. Donlin Gold proposes two Permittee-Responsible Mitigation (PRM) projects. The proposed compensatory mitigation projects are summarized below.

6.2.5.1 CHUITNA PRM PLAN

The Chuitna PRM Plan would preserve 5,870 acres, of which 3,269 acres are wetlands and ponds, 418 acres of stream and river area (258,056 linear feet), and 2,183 acres of upland and riparian buffers in the Chuitna River watershed. The applicant proposes to protect this area long term through a deed restriction. See Tables 5 and 6 for a summary of acres and miles of proposed compensatory mitigation.

The Chuitna preservation area contains wetlands and aquatic resources that are unique to the area and provide valuable ecosystem functions at the watershed level. The preservation area includes headwater streams flowing through large bogs, connecting to intermediate streams with highly productive salmon and riparian habitat, into the Chuitna River, and to its outlet through an estuarine area into Cook Inlet.

Overall, 99 percent (5,852 acres) of the preservation area is located within the Chuitna River HUC-10 watershed, while less than 1 percent (18 acres), at the mouth of the Chuitna River, is located within the Old Tyonek Creek-Frontal Cook Inlet HUC-10 watershed. The most common wetland vegetation type in the two HUC-10 watersheds is freshwater forested/shrub followed by estuarine habitat, the majority of which is within the Old Tyonek Creek-Frontal Cook Inlet watershed. The most common wetland type in the preservation area is ericaceous shrub bog-string bog and low shrub bogs.

The wetland systems within the preservation area include large areas of slope hydrogeomorphic (HGM) wetlands including ericaceous shrub bog-string bog wetlands, riverine HGM riparian wetlands, estuarine fringe HGM wetlands, and a small number of depressional HGM wetlands.

- Slope HGM Wetlands – The largest HGM wetland type in the preservation area is slope HGM. This wetland type covers 2,661 acres, or about 45 percent of the area. Lone Creek, a tributary of the Chuitna River, flows through or near the majority of the slope HGM wetlands in the preservation area. These wetlands contribute to the stream base flow and nutrient outputs, which then flow to the Chuitna River.

  Ericaceous Shrub Bog-String Bog Wetlands – A type of slope HGM wetlands also known as patterned fens, these wetlands are a unique wetland type to the area, and only occur in a few very specific places worldwide. 802 acres of the slope HGM wetlands in the preservation area are ericaceous shrub bog-string bog wetlands.

- Riverine HGM Wetlands – Riverine HGM wetlands occur in floodplains and riparian areas. The dominant water sources are overbank flow from the channel or hyporheic flow between the stream and wetlands. The preservation area contains 500 acres of riverine wetlands.
- Estuarine Fringe HGM Wetlands – Estuarine fringe HGM wetlands occur along coastlines and are under the influence of sea water. The preservation area contains 29 acres of estuarine fringe HGM wetlands surrounding the outlet of the Chuitna River into Cook Inlet.
- Depressional HGM Wetlands – 79 acres of the preservation area as depressional HGM wetlands. These wetlands occur in topographic depressions.

The streams and rivers in the preservation area provide habitat for chinook, coho, chum, and pink salmon, as well as limited habitat for sockeye salmon, Dolly Varden, and rainbow trout. The mainstem of the Chuitna River includes Chinook, coho, chum, and pink salmon spawning habitat, and rearing habitat for all five Pacific salmon species. Tributaries to the Chuitna River within the Preservation Area also have documented use by all five Pacific salmon species. Chinook salmon was designated by the Alaska Department of Fish and Game (ADF&G) in 2010 as a stock of concern in the Chuitna River. Chinook salmon escapement in the Chuitna River had dropped to less than 600 fish. ADF&G manages the species to achieve an escapement goal range of 1200 to 2900 fish. In 2016, the escapement of Chinook salmon was documented by ADF&G at 1372 fish. The tributaries and main channel of the Chuitna River contain high-quality fish habitat including large woody debris, gravels, boulders, runs, riffles, and pools for adult salmon spawning and juvenile salmon foraging and resting. Acquisition of the Chuitna River drainage properties would preserve 148,632 linear feet (28.1 miles) of stream channel documented as Pacific salmon habitat including spawning, rearing, and migration habitats in five streams. An additional 47,660 linear feet of anadromous stream channel was identified by Donlin Gold consultants during the July 2018 field assessment of the preservation area. However, these field verified anadromous stream reaches have not been official documented in the ADF&G Anadromous Waters Catalog.

The preservation area includes 104,544 linear feet (19.80 miles) of the mainstem of the Chuitna River, within which, 49,262 linear feet (9.33 miles) of Chinook salmon spawning habitat, 69,115 linear feet (13.09 miles) of coho spawning habitat, 44,088 linear feet (8.35 miles) of chum spawning habitat, and 104,544 linear feet (19.80 miles) of pink spawning habitat are documented. The entire 104,544 linear feet (19.80 mile) reach contains documented rearing for Chinook and coho salmon juveniles. Some reaches of the mainstem are also documented as rearing habitats for other Pacific salmon, including 100,690 linear feet (19.07 miles) for sockeye, 12,514 linear feet (2.37 miles) for chum, and 13,253 linear feet (2.51 miles) for pink salmon.

In addition to the mainstem Chuitna River habitats, the preservation area includes important Pacific salmon habitats in Bass Creek, Middle Creek, Lone Creek and an unnamed anadromous stream (No. 247-20-10010-2020-3008).

While only 317 linear feet (0.06 miles) of Bass Creek fall within the preservation area, juvenile Chinook, sockeye, coho, and chum salmon use this reach for rearing.

The lower 1,426 linear feet (0.27 miles) of Middle Creek fall within the preservation area and are documented spawning habitat for Chinook, coho, and pink salmon, as well as rearing habitat for Chinook and coho. Unspecified pink salmon habitat is also documented in this reach.

Lone Creek has 26,928 linear feet (5.10 miles) and 15,418 linear feet (2.92 miles) of its downstream tributary stream within the preservation area. The entire 26,928 linear feet (5.10 mile) reach of Lone Creek is documented as important Chinook salmon spawning habitat and Chinook and coho rearing habitat. Sockeye, chum, and pink salmon are documented throughout the reach, but habitat uses have not been specified. The entire 15,418 linear feet (2.92 mile) reach of the Lone Creek tributary within the preservation area is documented as important coho salmon rearing habitat.

Salmon smolt populations were estimated for coho salmon in the Chuitna River watershed and specifically for Lone, Middle and Bass creeks in 2008 through 2011. Average Chuitna River populations ranged from 37,424 to 44,794 coho smolt, with Bass Creek accounting for 19 to 31 percent of production and Middle Creek accounting for 12 to 17 percent of total production.

The preservation area also protects buffers and riparian areas adjacent to wetlands and streams. These areas provide important ecosystem functions and values. Buffers and riparian areas can be important for groundwater recharge, sometimes exceeding adjacent wetlands due to more permeable soil. Areas directly adjacent to slope HGM wetlands support groundwater discharge functions, helping to maintain the downgradient wetlands. Upland buffers adjacent to wetlands also protect and maintain wetland function. They act to slow and stop sediment and pollutants entering wetlands, provide organic matter to wetlands, and maintain wildlife habitat and movement corridors.

Table 5: Compensatory Mitigation Proposed for Wetlands by HGM Class and Cowardin Group (Acres)

	Classification	Chuitna Preservation Area	Upper Crooked Creek Restoration	Upper Crooked Creek Preservation
Wetland HGM (Cowardin Classes)	Depressional (PAB, PEM, PFO, PSS, PUB)	79	0	1.6
	Estuarine Fringe (E2EM, E2US)	29	0	0
	Flat (PEM, PFO, PSS)	0	0	32.7
	Riverine Non-Anadromous (PEM, PFO, PSS, PUB)	76	92.95	0
	Riverine Anadromous (PEM, PFO, PSS, PUB)	424	0	17.9[1]
	Slope (PEM, PFO, PSS)	2,661	0	11.6
Group Totals	**Wetlands and Ponds**	3,269	92.95	63.8
	Stream and River Area	418	2.75	0.9
	Upland Riparian and Buffers	2,183	16.8	44.1
	Total of Parcel	**5,870**	**112.5**	**109**

Table 6: Compensatory Mitigation Proposed for Streams in Linear Feet (Miles)

HGM	Chuitna Preservation Area	Upper Crooked Creek Restoration	Upper Crooked Creek Preservation
Cataloged Anadromous Stream Channel	148,632 (28.1)	0	0
Field Reported Anadromous Stream Channel	47,660 (9.1)	0	0
Non-Anadromous Stream Channel	61,746 (11.7)	8,982 (1.7)[1]	4,036 (0.8)
Total	**258,056 (48.9)**	**8,982 (1.7)**	**4,036 (0.8)**

Notes:

1. The return of Anadromous salmon to restored streams cannot be accurately predicted. Post-restoration monitoring will verify presence or absence of anadromous fish.

Numbers are rounded.

6.2.5.2 UPPER CROOKED CREEK PRM PLAN

Donlin Gold proposes to restore historical gold placer mined areas in the upper Crooked Creek watershed. Placer tailings and overburden have been deposited in several locations within the various floodplains, causing adverse impacts to aquatic resources. Water diversion ditches were constructed, resulting in the channeling of surface and shallow groundwater flow from the original stream paths. An estimated 8,700 linear feet (1.64 miles) of stream channels have been mined and the abutting wetlands degraded.

The Upper Crooked Creek PRM plan would restore, enhance and preserve 92.95 acres of riverine wetlands and 2.75 acres of stream and river area (8,982 linear feet). This PRM plan would preserve an additional 63.8 acres of existing wetlands, 0.9 acre of existing stream and river area (4,036 linear feet), and 44.1 acres of upland riparian buffer. Combined this PRM plan would encompass a total area of 221.5 acres, which includes 156.8 acres of wetlands and 13,018 linear feet of streams. The applicant proposes to protect this area long term through deed restriction. This project would be initiated at the start of Mine Site construction.

Four distinct restoration projects are described within the 221.5-acre Upper Crooked Creek PRM Plan (Plan) boundary:

1. Restoration of lower Quartz Gulch: The proposed restoration activities include filling the diversion ditch features in Quartz Gulch and the Donlin Creek floodplain, directing the flows in the upper portion of Quartz Gulch to the secondary stream channel along the original stream path, and allowing the backwatered flows to return to Donlin Creek via the abandoned oxbow in the lower end of the system. Elimination of the mining ditch in the upper portion of the gulch will re-establish the historical channel along the valley floor. This movement of the main channel should return the stream to a more stable hydrologic regime and remove the hydraulically losing reach from the system. The removal of both ditch sections will result in expanded floodplain overbank flow function for the re-established stream sections in Quartz Gulch and Donlin Creek.

2. Restoration of lower Snow Gulch: To restore this stream system, a new channel will be constructed between the lower and middle ponds from the substrate materials that originally formed the historical channel. The new channel will exhibit scour and sediment transport properties consistent with the original sediments, geometry, gradients, and resultant flood flow velocities. The new channel will be designed to mimic the parameters of the pre-mining system based on calculations from undisturbed sections of Snow Gulch and from analysis of flood flow hydraulics. Portions of the regionally rare and productive habitat provided by the middle ponds will be retained.

In Snow Gulch, the upper and middle excavated ponds will be enhanced to create additional fish and quiescent water habitat. A portion of the northern end of the middle pond will be filled to gain additional length for the proposed re-constructed channel. Additional length is needed for the created channel to approach the gradient parameter of the original system in the sections that are now flat, open water ponds. A sinuous channel routing will be chosen to minimize cut and fill requirements, following a detailed survey of the area prior to construction. Stream channel substrate will be locally available fill materials with sufficient fines (greater than 20 percent) to sustain surface flows, and may be augmented with larger rock and woody debris features as needed to provide aquatic invertebrate substrate, hydraulic cover, low flow channelization for fish, and grade control to maintain channel stability.

A fish passage conveyance may be required on at least one access route linking the Lyman airstrip, which runs along the east side of Snow Gulch, with the facilities on the southwest side of the middle pond. If the structure is located in the backwater between the middle ponds, a simple, large diameter, round culvert will be sufficient. If this structure is located along the stream channel, the final design will contain provisions for a stream simulation designed conveyance with width equal to 120 percent of the stream bank full width.

The historical connection from Snow Gulch to Donlin Creek is currently blocked by a berm on the west side of the lower pond. To re-establish the connection with the Donlin Creek floodplain, the berm surrounding the west and north ends of the lowest pond will be removed and the current connection from the pond to Donlin Creek will be filled. Removal of the berm will funnel stream flow back into the historical channel west of the pond, and rewater off-channel habitat. The lower pond will be excavated and provide additional settlement area to improve downstream water quality.

3. Restoration of the wash plant tailings area along Crooked Creek, between Snow and Ruby Gulches: The Crooked Creek floodplain under the effluent discharge fan will be reshaped and re-contoured into a condition to restore wetlands back to the area. Materials will be removed down to the underlying organic layers that mark the original vertical extent of the floodplain. The berm along the settlement area will be left to maintain water levels in the restored areas. The coarse-grained tailings pile and other areas will be regraded and re-contoured for stability (minimum 2:1 slopes), and augmented with finer materials to promote vegetation growth. Disturbed areas will be revegetated.

4. Restoration of lower Ruby and Queen Gulches: Restoration activities for Ruby and Queen gulches will include restoring portions of the Ruby Gulch stream channel, removing overburden stockpiles in the Crooked Creek floodplain, filling the drainage ditch in upper Queen Gulch to reroute the stream to the valley floor, reshaping the ponds to provide increased shallow water and deep water habitats, removing constricted areas where beaver activity can easily block fish passage, restoring a floodplain elevation outlet from the ponded area through

abandoned oxbows into Crooked Creek, and filling in the long drainage ditch currently connecting the ponded area to Crooked Creek. Disturbed areas will be re-contoured into shallow slopes running down to the ponds, allowing re-establishment of the floodplain and diverse aquatic habitats. Disturbed areas will be revegetated.

Restoration of Ruby Gulch will be similar to that of Snow Gulch except on a smaller scale. Re-establishing the historical floodplain gradient will involve refilling the area with appropriate substrate, shaping an appropriately sized channel, adding habitat features and grade control, and revegetating disturbed areas. Fish passage structures may be required where Ruby and Queen Gulches are crossed by the existing mining access road.

Reconnection of Ruby and Queen Gulches to the Crooked Creek floodplain is more complex than at Snow Gulch. The pond system fed by the gulches is separated from the Crooked Creek floodplain by a steep-sided berm constructed from the overburden materials removed from placer mining operations. North of the dogleg at the north end of the berm is a large deposit of overburden tailings that will be left substantially intact to prevent the main Crooked Creek channel from shortcutting through the ponds. At the dogleg, additional water is added to the system from a shallow, surface water basin and the tailings deposit is reduced to a simple berm separating the ponds from the floodplain. This berm would be substantially removed south of the dogleg so the pond features would be joined hydraulically with the existing natural oxbows along Crooked Creek. The average elevation of these oxbows (382 feet) appears consistent with the proposed water level in the ponds.

Restoration of Queen Gulch has been developed while considering the predicted drawdown effects from the proposed open pit. Rerouting of flow in Queen Gulch will be similar to Quartz Gulch with available side cast used to refill the ditch, rerouting the flows to the old stream channel location and revegetation of disturbed areas. Expansion of two small ponded areas in the lower reach will enhance resident fisheries habitats. The flows from Queen Gulch will be re-directed into the square pond. A fish passage conveyance or low water ford will be provided at the road crossing. Berms around the south and west sides of the square pond will be removed to re-connect this pond with the floodplain and the pond margins will be regraded similar to the more northern ponds. An outfall will be established to an existing oxbow in the northwest corner of the square pond.

Finally, the ditches connecting the northern ponds to the square pond and the diversion ditch, which connects the pond system to Crooked Creek, will be refilled with the side-cast materials and revegetated.

These four restoration projects would increase the function and sustainability of the watershed and its fisheries because they:

- Re-establish and rehabilitate historical stream and wetland functions present prior to placer mining;
- Re-establish historical and establish new stream, pond, and off-channel anadromous and resident fish habitat; and
- Have a high likelihood of success to restore naturally occurring, self-sustaining systems within the Crooked Creek watershed because they are based on a stream functional framework.

All four restoration projects are located in the same 10-digit HUC watershed as the majority of the permanent aquatic resources impacts from the Project.

6.2.5.3 IN-LIEU FEE MITIGATION PLAN

A portion of the pipeline component of the Project would impact 4.91 acres of wetlands within the service area of the Great Land Trust (GLT) in-lieu fee program. Specifically, the project would impact 1.78 acres of riverine type wetlands and 2.76 acres of slope and depression type wetlands within the GLT service area. The applicant has proposed to offset these impacts at a 2:1 ratio by purchasing 9.8 credits from the GLT in-lieu fee program. The GLT does have the appropriate type and amount of released wetland credits for purchase. The applicant proposes to purchase these credits prior to construction.

6.2.6 MITIGATION SUMMARY

The Applicant has avoided and minimized to the maximum extent practicable; however, there would be unavoidable impacts to WOUS as a result of the Project, including:

- Permanent fill impacts to 2,877 acres of wetlands;
- Permanent fill impacts to 3 acres of the Kuskokwim River;
- Permanent fill impacts to 175,316 linear feet of streams; and
- Temporary impacts to 538 acres of wetlands; and
- Temporary fill impacts to 53,346 linear feet of streams.

In accordance with 2008 Mitigation Rule, compensatory mitigation is required to offset unavoidable Project impacts to WOUS. Compensatory mitigation is therefore required for the unavoidable permanent fill impacts listed above. The Corps has worked with Donlin Gold in the development of an appropriate CMP for compensation of unavoidable permanent impacts to WOUS.

Wetland minimization activities, discussed above, include restoring wetlands following placement of fill by removing the fill at the end of pipeline construction and at the end of the mine life, and returning the areas to functioning wetlands similar to pre-pipeline construction and pre-mining conditions. Additionally, no compensatory mitigation is being proposed for vegetation clearing, winter roads, and work areas where no placement of fill would occur in WOUS.

Donlin Gold has evaluated all available and practicable options to assure compliance with the provisions of the 2008 Mitigation Rule and the 1994 Alaska Wetland Initiative (EPA et al. 1994).

Donlin Gold evaluated both the Su-Knik Mitigation Bank and the GLT in-lieu fee program. The Pipeline component has higher impacts to wetlands within the GLT service area. In addition, the GLT has the appropriate types of released credits available for purchase. It is appropriate for Donlin Gold to purchase 9.8 released credits from the GLT in-lieu fee provider to offset 4.91 acres of impact as proposed.

As discussed above, the majority of the proposed project impacts occur outside of the service areas of existing mitigation banks and in-lieu fee service areas. Donlin Gold researched PRM alternatives, focusing first on the immediate watershed (HUC-10), and then systematically

assessing larger hydrologic units (e.g., HUC-08, HUC-06, HUC-04) for compensatory mitigation opportunities.

Donlin Gold identified the Upper Crooked Creek PRM Restoration project located in the same watershed of the proposed impact. Implementation is proposed to yield substantive, near-term benefits to aquatic resources resulting in restoration of 92.95 acres of wetland, 8,982 linear feet of stream, 16.8 acres of riparian buffer and would preserve an additional 63.8 acres of existing wetlands, 4,036 linear feet of stream, and 44.1 acres of riparian buffer.

The Chuitna PRM Preservation Plan was determined to yield the optimal ecological increase in functions and services resulting in the preservation of 5,870 acres, of which 3,269 acres are wetland and ponds, 258,056 linear feet of stream and 2,183 acres of riparian buffers.

Overall, the compensatory mitigation described herein would purchase 9.8 released credits from GLT In-Lieu fee provider, restore 92.95 acres of wetlands, 8,982 linear feet of streams, 16.8 acres of riparian buffer and preserve a total of 3,425.75 acres of wetlands and 271,074 linear feet of streams and 2,243.9 acres of riparian buffer. The proposed compensatory mitigation does not deviate from the order of the options presented in §332.3(b)(2)-(6) and is determined to be the environmentally preferable option. Based on the information contained above and evaluated throughout this JROD, the Corps concludes that the Applicant's proposed mitigation plan adequately compensates for the Projects' impacts on WOUS and the mitigation described above would be required as outlined in Section 6.2.8 below.

6.2.7 OTHER MITIGATIVE ACTIONS

Mitigation and monitoring measures listed in Sections 5.5 and 5.7 of the Final EIS were developed for consideration by the Corps, BLM, and cooperating agencies to further minimize Project impacts, as reasonable and practicable. However, as noted in Section 5.5 of the Final EIS, mitigation identified in the EIS does not necessarily have to be required by the federal agencies in their RODs. For example, Council on Environmental Quality (CEQ) guidance uses terms such as "reasonable, practicable, and appropriate" when considering potential mitigation and permit conditions. In addition, there may be potential mitigation measures identified in the EIS that are not within the federal agencies' authority to require as a condition to a permit or are otherwise not reasonably enforceable.

The Corps has reviewed the measures identified in the Final EIS (Table 5.5-1A and 5.7-1A) that were assessed as both effective and reasonable/practicable and that are within the Corps' authority to require. The Corps has determined that the special conditions identified in Section 6.2.8 below and the compensatory mitigation specified in Section 6.2.5 above are sufficient to avoid and minimize potential adverse impacts and to compensate for unavoidable adverse impacts to the aquatic ecosystem, and to ensure that the Project would not be contrary to the public interest. The intent of the mitigation measures, ascribed to the Corps, identified in Table 5.5-1A and 5.7-1A have been addressed through the Applicant's proposed CMP, including avoidance and minimization measures, by special conditions outlined below in Section 6.2.8, or adopted as conditions of other state and federal permitting requirements.

6.2.8 SPECIAL CONDITIONS OF THE CORPS PERMIT

In addition, in order to comply with the 404(b)(1) guidelines, and to ensure the Project is not contrary to the public interest, the following special conditions will be carried on in the DA permit:

1. The permittee agrees to provide all contractors associated with construction of the authorized activity a copy of the permit and drawings. A copy of the permit will be available at the construction site at all times.

Rationale: *This special condition is required to ensure compliance with the permit, and to minimize impacts to adjacent wetlands and other WOUS as a result of the permitted project (33 CFR 320.4(b) and 40 CFR 230.41).*

2. The permittee shall ensure that the project minimizes alterations to water circulation patterns to the extent practicable. If it is determined by the Corps that the project negatively impacts the hydrology within the wetland, the Permittee may be required to take additional measures (i.e. install additional depressed road beds, culvert(s), or a similar water conduit) beneath the road to re-establish the hydrology of the area to that of pre-construction conditions.

Rationale: *This condition is required to minimize impacts to adjacent wetlands and other WOUS as a result of the permitted project (33 CFR 320.4(b) and (l) and 40 CFR 230.41).*

3. Prior to commencement of construction activities within WOUS, the Permittee shall clearly identify the permitted limits of disturbance at the project site with highly visible markers (e.g., construction fencing, flagging, silt barriers). The permittee shall properly maintain such identification until construction is complete and the soils have been stabilized. The permittee is prohibited from conducting any unauthorized Corps-regulated activity outside of the permitted limits of disturbance (as shown on the permit drawings).

Rationale: *This condition is required to minimize impacts to adjacent wetlands and other WOUS as a result of the permitted project (33 CFR 320.4(b) and (l) and 40 CFR 230.41).*

4. The permittee shall submit a signed compliance certification to the Corps within 60 days following completion of the authorized work and any required mitigation. The certification will include: 1) A copy of this permit; 2) A statement that authorized work was done in accordance with the Corps authorization, including any general or specific conditions; 3) A statement that any required mitigation was completed in accordance with the permit conditions; 4) The signature of the Permittee certifying the completion of the work and mitigation.

Rationale: *This special condition is required to ensure compliance with the permit and special conditions and required mitigation is being accomplished.*

5. The permittee understands and agrees that the DA permit has been issued based upon the Permittee's intended purpose to produce gold from the Donlin deposit ore reserves using mining processes, infrastructure, logistics, and an energy supply(s) practicable for application in remote western Alaska in accordance with the permitted plans. The permittee recognizes that its commitment to construct and operate the mine pursuant to the Project details described in the DA permit application.

Rationale: *This special condition is required to ensure applicant understands the Corps permit decision was based on the information supplied by the Applicant for the Corps to evaluate.*

6. Prior to the initiation of any work authorized by this permit, the Permittee shall install erosion control measures along the perimeter of all work areas to prevent the displacement of fill material outside the authorized work areas into WOUS. Immediately after completion of the final grading of the land surface, all slopes, land surfaces, and filled areas shall be stabilized using sod, degradable mats, barriers, or a combination of similar stabilizing materials to prevent erosion. The erosion control measures shall remain in place and be maintained until all authorized work is completed and the work areas are stabilized.

Rationale: *This condition is required to prevent adverse impacts to wetlands and other WOUS outside of the permitted project area (33 CFR 320.4(b) and (d), 40 CFR 230.21(b), and 40 CFR 230.73(c)).*

7. No fill material, equipment or construction materials shall be stockpiled or stored on wetlands that do not have DA authorization for those activities, as shown on the project plans.

Rationale: *This condition is required to prevent the placement of fill, or anything that may have the effect of fill, outside the permitted area; thereby, minimizing the impacts to wetlands and preventing sedimentation outside of the permitted area [40 CFR PART 230.70 and 40 CFR PART 230.77(a)].*

8. The Permittee shall comply with the federal ESA, the Permittee must implement all of the mitigating measures identified in the enclosed USFWS letter of concurrence (FWS 2017-I-0343, dated November 2, 2017) and NMFS letter of concurrence (POA-1995-120, NMFS #AKR-2018-9745, dated March 29, 2018), including those ascribed to the Corps therein. If the Permittee is unable to implement any of these measures, the Permittee must immediately notify the Corps, the USFWS Office, and the NMFS so we may consult as appropriate, prior to initiating the work, in accordance with federal law.

Rationale: *This condition is required to reduce the likelihood of adverse impacts to species protected under the Endangered Species Act and to comply with the Act (Section 7 of the ESA and 40 CFR 230.30).*

9. The Permittee shall implement the attached Programmatic Agreement, entitled "Programmatic Agreement by and among the U.S. Army Corps of Engineers, U.S. Bureau of Land Management, Advisory Council on Historic Preservation, Alaska State Historic Preservation Officer, Alaska Department of Natural Resources, and Donlin Gold, LLC Regarding the Donlin Gold Project", dated June 28, 2018, in its entirety (see Attachment A2). The Corps has been designated the lead federal agency responsible for implementing and enforcing the Programmatic Agreement as signed. If the Permittee fails to comply with the implementation and associated enforcement of the Programmatic Agreement the Corps may determine that the Permittee is out of compliance with the conditions of the Department of the Army permit and suspend the permit. Suspension may result in modification or revocation of the authorized work.

Rationale: *This condition is required to avoid impacts to historic properties/cultural resources and comply with Section 106 of the National Historic Preservation Act. (Section 106 of NHPA, 33 CFR 320.4(e), and 33 CFR 325 Appendix C).*

10. Should any other agency require and/or approve changes to the work authorized or obligated by this permit, the Permittee is advised a modification to this permit may be required prior to initiation of those changes. It is the Permittee's responsibility to request a modification of this permit. The Corps reserves the right to fully evaluate, amend, and approve or deny the request for modification of this permit.

Rationale: *This special condition is required to ensure compliance with the permit, and to minimize impacts to adjacent wetlands and other WOUS as a result of the permitted project (33 CFR 320.4(b) and 40 CFR 230.41).*

Compensatory Mitigation

11. Mitigation Plan. Prior to initiation of construction activities within WOUS, Donlin Gold shall implement the mitigation plan "Compensatory Mitigation Plan", dated July 2018, a subpart of Block 23 of the DA application, proposed by Donlin Gold and which is incorporated herein by reference (also included as Attachment B5 of this JROD). The permittee must implement the mitigation in accordance with the plan and any permit conditions. If conflicts occur between this mitigation plan and any permit conditions, the permit conditions shall prevail.

Rationale: *This condition is required to compensate for resource losses important to the human and aquatic environment (33 CFR 320.4(r)(1), 33 CFR 332.1, 33 CFR 332.3(a)(1) and (b)(3), and 40 CFR 230.41).*

12. Performance Standards. Prior to initiation of construction activities within WOUS, the permittee shall submit for Corps review and approval a draft of the final performance standard parameters and values for restoration and preservation. The performance standards shall be in substantial compliance with 33 CFR 332.5 and the mitigation plan. Corps review and approval must be obtained prior to initiation of construction activities within WOUS.

Rationale: *This condition is required to ensure final performance standards are approved by the Corps (33 CFR 332.3(a)(1), 33 CFR 332.4(c)(9), and 33 CFR 332.5).*

13. In-Lieu Fee Program. Prior to initiation of construction activities within WOUS, the permittee shall purchase 3.6 Riverine released credits and 6.2 Slope wetland released credits from Great Land Trust In-Lieu Fee Program for the loss of 1.78 acres of Riverine and 2.76 acres of Slope wetlands. You must email the signed credit transaction form to mitigationmanager@usace.army.mil and to the Project Manager via Regulatory Pagemaster at: regpagemaster@usace.army.mil upon completion of credit transaction (see form attached). If the permittee is unable to complete this transaction, the permittee is required to obtain a permit modification prior to commencing the work authorized by this permit for approval of an alternate mitigation method.

Rationale: *This condition is required to compensate for resource losses important to the human and aquatic environment (33 CFR 320.4(r)(1), 33 CFR 332.1, 33 CFR 332.3(a)(1) and (b)(3), and 40 CFR 230.41).*

14. Site Protection. Prior to initiation of construction activities within WOUS, the permittee shall ensure all compensatory mitigation parcels are provided long-term protection through a restrictive covenant (deed restriction). This site protection instrument must be approved by the Corps prior to the recording of the restrictive covenant. To obtain this approval, the permittee shall submit a draft of the restrictive covenant, including all supporting documentation necessary for the review of the restrictive covenant, e.g. title reports, title insurance, any liens or other encumbrances/interests, surveys and legal descriptions, etc. The restrictive covenant shall be in substantial compliance with 33 CFR 332.7(a). After Corps review and approval, the permittee shall take actions required to record the deed restrictions with the Registrar of Deeds or other appropriate official charged with the responsibility for maintaining records of title to or interest in real property. The permittee shall provide a copy of the recorded document to the

Corps clearly showing a stamp from the appropriate official indicating the book, page and date prior to initiation of construction activities within WOUS.

Rationale*: This condition is required to compensate for resource losses important to the human and aquatic environment. (33 CFR 320.4(b), 33 CFR 320.4(r), and 40 CFR 230.41)*

15. Financial Assurances. Prior to initiation of construction activities within WOUS, the permittee shall ensure financial assurances are in place. The permittee shall:

(a) Prior to the establishment of the required financial assurances, the permittee shall submit for Corps review and approval detailed cost estimates that include, but are not limited to the cost of providing replacement mitigation, including costs for land acquisition, planning and engineering, legal fees, mobilization, construction, monitoring, and contingencies. These estimates shall be to a sufficient level of detail and take into account the replacement mitigation being conducted by a competent third-party.

(b) Submit for Corps review and approval a draft of the proposed financial assurance. The assurances shall be compliant with 33 CFR 332.3(n) and must be in a form that ensures that the District Engineer will receive notification at least 120 days in advance of any termination or revocation. For third-party assurance providers, this may take the form of a contractual requirement for the assurance provider to notify the district engineer at least 120 days before the assurance is revoked or terminated.

(c) Provide a plan for phasing out required financial assurances once the compensatory mitigation project has been determined by the district engineer to be successful in accordance with its performance standards. The permittee shall submit for Corps review and approval draft performance standards that shall clearly identify the conditions under which the financial assurances are to be released.

Rationale: *This condition is required to ensure a high level of confidence that the mitigation project will be successfully completed (33 CFR 332.3(a) and 332.7(c)).*

16. Long-Term Management Plan. Prior to initiation of construction activities within WOUS, the permittee shall ensure long-term management plans for all compensatory mitigation parcels are established. The permittee shall submit for Corps review and approval a draft of the proposed long-term management plans. These long-term management plans must describe how the compensatory mitigation project will be managed after performance standards have been achieved to ensure the long-term sustainability of the resource, including long-term financing mechanisms and the party responsible for long-term management. The long-term management plans shall be in substantial compliance with 33 CFR 332.7(d). The permittee may transfer the long-term management responsibilities of the compensatory mitigation project sites to a land stewardship entity, such as a public agency, non-governmental organization, or private land manager, after review and approval by the Corps.

Rationale: *This condition is required to ensure long term sustainability of the mitigation plan (33 CFR 332.3(a) and 33 CFR 332.7(d)).*

Section 10 Only

17. Your use of the permitted activity must not interfere with the public's right to free navigation on all navigable WOUS.

Rationale: *Protection of navigation and the general public's right of navigation on the water surface is a primary concern of the federal government. This condition is required by regulation (33 CFR 320.4(o)(3)).*

18. You must install and maintain, at the Permittee's expense, any safety lights and signals prescribed by the U.S. Coast Guard (USCG), through regulations or otherwise, on the Permittee's authorized facilities. The USCG may be reached at the following address and telephone number: Commander (oan), 17th Coast Guard District, P.O. Box 25517, Juneau, Alaska 99802, (907) 463-2272.

Rationale: *The facility must be lighted to prevent navigation hazards and this condition is required by regulation (33 CFR 320.4(o)(3)).*

19. The permittee understands and agrees that, if future operations by the U.S. require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the Permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the U.S. No claim shall be made against the U.S. on account of any such removal or alteration.

Rationale: *This condition is required by regulation to protect free navigation and the interests of the United States in existing or future federal projects (33 CFR 320.4(o)(3) and HQ memorandum).*

6.3 BLM'S MITIGATION DETERMINATION

Donlin Gold's proposed design features are listed in the Final EIS; Chapter 5, Section 5.2, Design Features Proposed by Donlin Gold. The BLM views these elements as part of the Project, and considers Donlin Gold's proposed design measures as inherent to the Donlin Gold proposed action. Additionally, Donlin Gold will follow BMPs and industry standards required to comply with regulations and standard permit requirements that are designed to reduce impacts to the environment (SRK 2016a, 2013b – as cited in Chapter 5 of the Final EIS). Section 5.3 of the Final EIS describes the robust permitting process and regulatory standards for large mine projects in Alaska, and summarizes some of the more prominent BMPs and standard permit conditions that would likely be required for the Donlin Gold Project.

As part of the decision to adopt Alternative 2 North Option in this JROD, the BLM is adopting Donlin Gold's proposed avoidance, design features, and BMPs from Chapter 5 of the Final EIS. BLM has also selected 41 of the 97 mitigation measures considered in Chapter 5, Table 5.5, and are included as Attachment C1 to this JROD. These mitigating measures avoid, minimize, or reduce impacts identified in the environmental analysis associated with Alternative 2 North Option. Mitigating measures not selected from Chapter 5 of the Final EIS are either not within BLM jurisdiction, not applicable to the Pipeline ROW, are not feasible, or are not practicable. The selected mitigation measures included in Attachment C1 will apply only to lands under BLM jurisdiction and authority (BLM-managed lands). Specific stipulations reflecting these measures will be included and further defined in the BLM ROW Grant Offer to Donlin Gold.

In developing this mitigation package, the BLM considered guidance in the 1981 Southwest Planning Area Management Framework Plan, Alaska Statewide Land Health Standards, BLM

standard ROW Grant stipulations, ANILCA 810 analysis (Final EIS Appendix N) and mitigations incorporated via Project design for Alternative 2 North Option.

In addition to reducing impacts to the Project area as a whole, the Project Design Features in Alternative 2 North Option will serve to avoid impacts to natural and cultural resources, subsistence uses, and resources to the maximum extent practicable. Impacts to historic and cultural resources are addressed in the NHPA Section 106 Programmatic Agreement executed on June 28, 2018 (Attachment A2). For administrative consistency across the mixed-land jurisdictions, the BLM has aligned the natural gas and fiber optic cable ROW Grant stipulations with the State of Alaska ROW Lease requirements along the 316-mile mixed-land jurisdiction Pipeline corridor.

6.4 MITIGATION MEASURES REQUIRED BY STATE AGENCIES

Many of the permits required for Project approval are under the jurisdiction of the State of Alaska. State agencies have clear compliance standards and requirements for monitoring of environmental conditions; future risks associated with unexpected conditions may also be addressed in specific permitting authorizations. Many of the State permits will not be issued until after this JROD is complete; however, it is anticipated that they would contain measures specific to their permit authorities to mitigate unavoidable impacts; and as appropriate, incorporate elements of adaptive management if monitoring results indicate a basis for changes. A list of State permits that have been issued for the Project at the time of this JROD is included in Attachment B4 (Section B4.18) of this JROD. The State water quality agency, Alaska Department of Environmental Conservation, issued their conditioned 401 Water Quality Certification titled "State of Alaska Certificate of Reasonable Assurance for the Donlin Gold Project," for the placement of the fill material for the Applicant's proposed Project (see Attachment B6).

Donlin Gold has engaged the appropriate State agencies to work within the State permit process to address concerns regarding predicted flow losses in Crooked Creek. The Alaska Department of Natural Resources Division of Water (ADNR-Water) is responsible for managing water in the State, and has the authority to render a decision on whether establishment of a minimum instream flow is necessary to comply with the Anadromous Fish Act (AS 16.05.871-.901) and the Fish Passage Act (AS 16.05.841). The ADF&G, under Alaska's fish protection statutes specified above, is responsible for protecting freshwater habitat for salmon and other anadromous fish, and for ensuring free passage for all fish in rivers, lakes, and streams throughout the State.

Donlin Gold has committed to specific programs to minimize impacts from the Project (see Final EIS Chapter 5, Section 5.2). Particular programs of note that minimize impacts to aquatic resources are summarized below. These programs were considered in the decision-making process for the JROD, and are expected to be further developed as part of the State permitting process.

Rainbow Smelt Monitoring Program – As specified in the Final EIS Section 5.2 (Design Feature T17), this program would establish additional baseline data for a better understanding of the species' occurrence, and the character, use, and distribution of spawning habitat along the Kuskokwim River. Survey methodology would likely include documenting sex ratio and age structure of the population; and if possible, fecundity of females. Initially, surveys would be conducted annually to document the age structure of the rainbow smelt population, and further

document spawning patterns. Once an adequate baseline is established, regular sampling would be used to monitor for changes to existing patterns. The frequency of surveys over the long-term would depend on previous results, and whether the data indicate a potential shift.

If rainbow smelt population changes are observed over a defined time period, additional work would need to be undertaken to investigate the reason for those changes. If observed changes were attributed to Project-related activities, Donlin Gold would implement an assessment of measures available to address or mitigate those activities (Donlin Gold 2018a – as cited in Chapter 5 of the Final EIS).

Aquatic Resources Monitoring Plan (ARMP) for Crooked Creek – To be developed under the provisions of Title 16 fish habitat permits administered by the ADF&G and water use permits administered by the ADNR. As specified in the Final EIS Section 5.2 (Design Feature A33), the objectives of the ARMP are to: 1) monitor for major changes to aquatic communities; 2) monitor for smaller-scale and incremental changes to aquatic communities; and 3) guide results-based refinement to the monitoring program. The plan would build on the existing baseline dataset, and include both biological and flow components, including fish presence/abundance, invertebrate and periphyton sampling, and fish metals analysis; flow monitoring and winter surface water sampling to characterize fish habitat/passage and freezedown patterns; sediment sampling; and collection of additional geology and hydrology data to refine understanding of dewatering and groundwater/surface water flow dynamics (Donlin Gold 2018a,b; Owl Ridge 2017c – as cited in Chapter 5 of the Final EIS).

The ongoing data collection would be used in an adaptive management approach to refine the understanding of the dynamics surrounding Crooked Creek flow in winter, as well as the open water seasons; and to identify the most effective measures that can be used to ensure that minimum flows in Crooked Creek are maintained. If the Project results in minimal losses to Crooked Creek flows, adaptive management measures may be unnecessary. If flow losses warrant a response, a range of measures could be considered that include, but would not be limited to, lining or relocating portions of the stream channel; augmenting flows from the Snow Gulch Reservoir; pumping water from the Kuskokwim River, or grouting areas of bedrock demonstrating high flow rates (Donlin Gold 2018a – as cited in Chapter 5 of the Final EIS).

In July 2018, the Applicant prepared a draft ARMP framework document as part of the Plan of Operations – Volume VIIC[2]. Donlin Gold is using this framework document as a basis for discussions with the State of Alaska (ADF&G and ADNR) to ensure that the ARMP addresses all aspects of monitoring to support fish habitat permits and water withdrawal authorizations. The plan briefly describes the extensive aquatic resources baseline sampling program conducted to date, including an inventory of sites previously sampled, the frequency and duration for which they were sampled historically, and their relevance in supporting future monitoring efforts in advancing the ARMP. Specific methodologies, sample locations, frequencies, analytical methods, and comparative methodologies will be determined in coordination with the ADF&G and ADNR subject matter experts.

The objectives of the draft ARMP framework adds to those specified in Design Feature A33 above; to:

[2] Donlin Gold. 2018. Aquatic Resources Monitoring Plan. Draft Framework. Plan of Operations – Volume VIIC. Prepared with support by Owl Ridge Natural Resources Consultants, Inc. July.

- Extend portions of the aquatic life and habitat monitoring initiated during baseline studies to subsequent phases of the Project.
- Collect data suitable for detecting changes to aquatic communities and habitat.
- Identify a range of conditions against which future monitoring results will be evaluated for shifts in species composition, populations, and habitat quality and function.
- Collect information to allow differentiating between naturally occurring changes and Project-related changes.

As stated in the draft ARMP framework document, the ARMP will implement adaptive management as an iterative multi-step process that allows for additional investigation, in response to observed changes from baseline conditions.

7 FINAL AGENCY DECISIONS

7.1 CORPS' DECISION

I find that the issuance of the Corps permit, as described by regulations published in 33 CFR Parts 320 through 332, with the scope of work as described in this document, is based on a thorough analysis and evaluation of all issues set forth in this JROD. There are no less-environmentally damaging, practicable alternatives available to Donlin Gold LLC to construct the Donlin Gold Project, Alternative 2 North Option. The issuance of this permit is consistent with National Policy, statutes, and administrative directives; and on balance, issuance of a Corps' permit to construct the Donlin Gold Project is not contrary to the public interest. As explained above, all practicable means to avoid and/or minimize environmental harm from the selected, permitted alternative have been adopted and required by terms and conditions of this permit.

Approving Official:

13AUG2018

Colonel Michael Brooks
District Commander

Date

7.2 BLM'S DECISION

7.2.1 ACTING ALASKA STATE DIRECTOR'S RECOMMENDATION

I recommend approval of this Record of Decision to authorize a 14-inch, underground natural gas pipeline and associated fiber optic cable Right-of-Way grant and associated Temporary Use Permits subject to terms, conditions, stipulations, and environmental protection measures developed by the U.S. Department of the Interior, and identified in this Record of Decision, including attachments, and the Plan of Development by Donlin Gold LLC.

Karen Mouritsen 8-13-18

Karen Mouritsen
Acting State Director, Bureau of Land Management, Alaska

Date

7.2.2 APPROVAL BY THE ASSISTANT SECRETARY

I hereby approve this Record of Decision to authorize a 14-inch, underground natural gas pipeline and associated fiber optic cable Right-of-Way grant and associated Temporary Use Permits subject to terms, conditions, stipulations, and environmental protection measures developed by the U.S. Department of the Interior, and identified in this Record of Decision, including attachments, and the Plan of Development by Donlin Gold LLC.

My approval of this decision constitutes the final decision of the Department of the Interior.

Joseph Balash
Assistant Secretary – Land and Minerals Management

8/13/18
Date

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