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OFFICE OF
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AND ASSESSMENT

Sandy P. Gibson, Project Manager
U.S. Army Corps of Engineers
P.O. Box 6898 (CEPOA-RD-S)
Elmendorf AFB, Alaska 99506-0898

Dear Ms. Gibson:

The U.S. Environmental Protection Agency has reviewed the Draft Supplemental Environmental Impact Statement (SEIS) prepared by the U.S. Army Corps of Engineers for the Alaska Stand Alone Pipeline (ASAP) Project (CEQ No. 20170000; EPA Project Number 09-054-DOD). Our review was conducted in accordance with the EPA's responsibilities under Section 102 of the National Environmental Policy Act and Section 309 of the Clean Air Act.

Alaska Gasline Development Corporation proposes to transport natural gas from the North Slope of Alaska to an existing natural gas distribution system that serves the southcentral portion of the state, using a 733-mile-long buried pipeline, and includes a lateral connecting line to Fairbanks. The Draft SEIS analyzes the proposed action; an action alternative with variations regarding elevation of a portion of the pipeline, alignment through Denali National Park and Preserve, barge access, and Yukon river crossing; and a no-action alternative.

Following the 2012 Final EIS, the applicant made changes to the project that were not evaluated in that document, including changes related to the location of material sites, access roads, and other project infrastructure; diameter of the pipeline; location of dredging and disposal work; and pipeline routing. These changes led to preparation of the 2017 Draft SEIS. The EPA is a cooperating agency with the Corps for development of the SEIS. Throughout the NEPA process, we have participated in agency work groups and have provided extensive comments on prior versions of the EIS. For the supplemental analysis, the EPA has participated in numerous cooperating agency meetings, provided scoping comments to the Corps on October 14, 2014, and reviewed and commented on several preliminary documents. Our comments reflect the EPA's ongoing experience with the ASAP project and the anticipated impacts.

The Draft SEIS contains an improved analysis relative to the 2012 EIS, and addresses many of the EPA's previous concerns. We commend the Corps for its efforts to work with the EPA and other cooperating agencies to revise the proposed action and alternatives to reduce certain environmental impacts, and to improve several aspects of the analysis. The EPA acknowledges that the Draft SEIS incorporates a new alignment for the Fairbanks Lateral Line that reduces impacts to Goldstream Creek, an impaired waterbody. It also includes improved discussion of potential impacts to the designated Fairbanks air quality non-attainment area as well as a more detailed analysis of potential impacts related to ancillary facilities. We are particularly encouraged to see that, by making natural gas available to Fairbanks, the proposed project has the potential to improve air quality in an existing $PM_{2.5}$ non-attainment area, by allowing a transition from wood stoves and coal generators for heat and electricity.

While we recognize the revisions and efforts to improve the analysis, the EPA continues to be concerned about the potential for significant impacts to wetlands and the lack of disclosure of measures to avoid, minimize and mitigate those impacts. According to the Draft SEIS, a total of approximately 8,907 acres of wetlands would be permanently or temporarily impacted by the pipeline, aboveground facilities, permanent access roads, and marine dredge fill. By comparison, the 2012 Final EIS projected approximately 5,400 acres of wetland impacts. The project also includes 312 stream crossings, including 64 crossings of anadromous waters, as well as impacts to the Yukon, Tanana, Nenana, and Susitna Rivers. Approximately 1,037 acres of wetlands underlain by permafrost would also be subject to degradation from the proposed project.

We recommend that the Corps and the applicant continue to identify opportunities to reduce and mitigate the project's impacts to aquatic resources between now and the Final SEIS. Notably, Council on Environmental Quality regulations implementing NEPA require a discussion of mitigation measures, including compensatory mitigation. Our enclosed detailed comments also identify additional aquatic resource and mitigation information that will be required by the Clean Water Act Section 404 permitting process, which is further discussed in the EPA's separate comments to the Corps on the Section 404 Public Notice. To ensure that the NEPA analysis sufficiently addresses measures to mitigate adverse environmental impacts from the proposed project, as well as to facilitate an efficient permitting process, we recommend that this information be included in the Final SEIS. Specifically, while the document makes general statements about alignment refinements that have reduced wetland impacts, additional information is needed to support these statements. In addition, to reduce wetland impacts in permafrost areas, we recommend increased consideration of vertical support members (VSMs) through the continuous permafrost region. Incorporating the use of VSMs appears to be environmentally preferable, and may be the Least Environmentally Damaging Practicable Alternative, as required by 40 C.F.R. § 230.10(a). Finally, we recommend that the Final SEIS include a revised revegetation plan to restore disturbed wetlands as well as a compensatory mitigation plan to compensate for unavoidable loss of wetlands.

Additionally, the EPA recommends that the Final SEIS include additional analysis of potential air quality impacts from the proposed Gas Conditioning Facility, a Title I major source. The EPA recommends that near-field air quality modeling be conducted for the proposed Gas Conditioning Facility to assess project impacts on local air quality and PSD increment consumption, and that mitigation measures be identified and discussed if adverse impacts are projected. Additional air quality comments related to background air pollutant concentrations and mitigation measures are provided in the enclosure to this letter.

The enclosed detailed comments also discuss our recommendations related to dredged material management, drinking water protection, and ensuring that an appropriate and consistent level of mitigation is applied along the full length of the pipeline right-of-way and associated disturbances.

Pursuant to Section 309 of the Clean Air Act, it is the EPA's responsibility to provide an independent review and evaluation of the potential environmental impacts of this project. Based on our review and evaluation of the adequacy of the information and the potential environmental impacts of the action alternatives, the EPA is rating the Draft SEIS as Environmental Objections – Insufficient Information (EO-2). The EO rating indicates that the EPA review has identified significant environmental impacts to wetlands that should be avoided, as well as a need to consider additional means to mitigate those impacts, in order to adequately protect the environment. The "2" rating indicates that the EPA has

identified additional information, data, analyses, or discussion as outlined in the enclosed comments that we recommend for inclusion in the Final SEIS. An explanation of the EPA's rating system is enclosed along with our detailed comments.

We appreciate the opportunity to review the Draft SEIS for the ASAP Project, and look forward to working with you as you prepare the Final SEIS. If you have questions concerning our comments, please contact Molly Vaughan of my staff in Anchorage, at (907) 271-1215 or vaughan.molly@epa.gov, or you may contact me at (206) 553-2581 or allnutt.david@epa.gov.

Sincerely,

R. David Allnutt, Director
Office of Environmental Review and Assessment

Enclosures:

1. U.S. Environmental Protection Agency Alaska Stand Alone Pipeline Project Draft SEIS Detailed Comments
2. U.S. Environmental Protection Agency Rating Sheet for Draft Environmental Impact Statements

cc: Colonel Michael Brooks
Alaska District Engineer, U.S. Army Corps of Engineers

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U.S. Environmental Protection Agency
Alaska Stand Alone Pipeline Project Draft SEIS
Detailed Comments

Wetlands

Wetlands Impacts:
The EPA recommends that the Final SEIS include an analysis of the change in the amount and associated type of wetland impacts that have resulted from changes made to the proposed project since publication of the Final EIS in 2012. For example, the proposed pipeline diameter has increased, and many refinements have been made to the proposed pipeline route. According to the Draft SEIS, the refinements were to accomplish a variety of goals including shifting away from populated areas, reducing visual impacts, reducing pipeline length, avoiding native allotments and private land, and reducing impacts to aquatic resources. The Draft SEIS states that the revised project proposal has reduced the overall wetland impacts, however, it does not include sufficient information to evaluate the full extent to which wetland impacts have been avoided and minimized.

Potential impacts to Minto Flats were identified as a key area of concern in the EPA's 2012 Draft EIS comments, because it is one of the highest quality waterfowl nesting, breeding and staging habitats in Alaska. The Draft SEIS states that the impacts to Minto Flats have been reduced due to realignment. However, the maps provided in Appendix E of the Draft SEIS generally show the alignment to have potentially shifted further into the Minto Flats State Game Refuge. We recommend that the Final SEIS include additional detail to support the conclusion that impacts to wetlands in the Minto Flats area have been reduced.

Permafrost issues:
The EPA is concerned about the potential impacts to wetlands underlain by permafrost, which comprise a large portion of the pipeline alignment as it passes through the interior of Alaska. Modeling included in the Draft SEIS disclosed potential thaw impacts in discontinuous permafrost, potentially leading to an expansion of the active layer extending out from the pipe centerline. This could potentially result in hundreds of miles of frost-heave displacement and soil subsidence associated with the pipeline, leading to hydrologic impacts in drainages crossed by the proposed project, altering of hydrologic regimes of the wetland complexes along the route, and changes to the functions and type of wetlands. While the modeling of permafrost thaw provided an important disclosure of potential impact in the Draft SEIS, the impacts were not accounted for in quantification of projected wetland impacts. The EPA recommends that these additional impacts be accounted for in the Final SEIS as permanent impacts to the wetland complexes along the alignment.

Revegetation Plan and Classification of Temporary vs. Permanent Impacts:
A key factor in minimizing the extent of permafrost thaw and minimizing overall project impacts to wetlands is the success of the revegetation plan. We are concerned that revegetation plans in the Draft SEIS do not appear to be as proactive as those proposed in the 2012 Final EIS, and recommend that the Final SEIS provide a more robust and detailed revegetation plan to ensure successful revegetation. In the 2012 FEIS, the applicant had proposed to separate the topsoil layer along the alignment and replace it when possible to promote revegetation and recovery of land disturbance. The Draft SEIS Revegetation Plan calls for separating the topsoil from subsoil or other spoil fill only within designated agricultural lands, which are a small percentage of the proposed project's footprint. For the majority of the pipeline, topsoil will be mixed with the subsoil and potentially the additional fill spoil sourced from material sites

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when backfilling the pipeline trench. The disturbed lands would then be left to naturally revegetate, rather than being re-seeded, except for sensitive areas which are not identified or defined. Additional measures will occur if a reclamation standard of 30% ground cover within three years is not met, in which case the applicant would then add fertilizer and/or seeds. This approach would potentially increase the impacts compared to the 2012 Final EIS, as the disturbed area would have less seed base and organic matter at the surface to revegetate as discussed below. This may further the development of thaw as the vegetative mat would no longer provide insulation to the permafrost.

It is unclear from the information presented in the Draft SEIS whether the impacts of pads used in the construction phase of the proposed project have been classified as permanent or temporary. The Revegetation Plan states the compacted area of the gravel work pad would be ripped to mitigate the compaction, graded for drainage, and scarified to allow for natural revegetation by native plants. These impacts appear to be permanent in that the fill is placed and not fully removed and restored. We recommend that these impacts be analyzed as permanent impacts in the Final SEIS, and that mitigation for these impacts be considered.

In addition, the Revegetation Plan proposes to spread excess ditch subsoil spoil across the construction corridor. It is not clear from the information provided whether or not these impacts are captured in either the temporary impacts or permanent impacts. If fill material is discharged to wetlands along the alignment, it should be considered as a permanent impact unless the fill will subsequently be removed and the impacted areas restored.

Alternatives Analysis and LEDPA:
The proposed project (Alternative 1) includes burial of the pipeline throughout its length. Typically, the pipeline would be with a minimum cover of 30 inches and a bottom depth of six to eight feet allowing for bedding, pipe installation, and overburden backfill. Alternative 2 contains the variation of elevating the pipeline on Vertical Support Members (VSMs) upon leaving the Gas Conditioning Facility through MP 62 in the Arctic Coastal Plain. Elevating the pipeline on VSMs would reduce organic layer removal from the pipeline corridor, reduce excavation of the pipeline route, reduce the acreage of land impacted by material sites, decrease the disposal of soil removed from the trenching, and reduce impacts to permafrost. Alternative 2 would significantly reduce the impacts to wetlands in the continuous permafrost of the Arctic Coastal Plain, which are difficult, if not impossible, to mitigate. Extending the VSMs to approximately MP 168, the end of the continuous permafrost region, could potentially further reduce the impacts to wetlands as identified in Table 2.4-1. Of total wetland resources proposed to be impacted in the right-of-away, over 44% are located within the continuous permafrost portion of the project. Elevating the pipeline could significantly reduce the overall impacts to aquatic resources resulting from the project. The EPA recommends that the Final SEIS analyze the impacts associated with extending the use of VSMs to MP 168. We further recommend that the Corps consider selecting an alternative that incorporates the use of VSMs in regions of continuous permafrost, as it appears to be an environmentally preferable alternative, and may be the least environmentally damaging practicable alternative (LEDPA) for purposes of the Clean Water Act Section 404 permitting.[1]

[1] The Clean Water Act Section 404(b)(1) Guidelines, the substantive environmental criteria for evaluating activities regulated under Section 404 of the Clean Water Act, require that "no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." 40 C.F.R. § 230.10(a).

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Compensatory Mitigation:
The Draft SEIS does not include a compensatory mitigation plan for unavoidable wetland impacts, although a draft compensatory mitigation plan is available on the applicant's webpage. In accordance with the joint EPA-Corps Compensatory Mitigation for Losses of Aquatic Resources; Final Rule, any final mitigation plan associated with a Section 404 permit, should a permit be issued, must include compensatory mitigation sufficient to replace lost aquatic resource functions and values, to the extent practicable.[2] Similarly, CEQ regulations implementing NEPA require that the alternatives and impacts analysis address mitigation measures, including measures that compensate for impacts.[3]

To ensure a complete NEPA analysis that sufficiently addresses direct, indirect, and cumulative impacts from the proposed project, the EPA recommends that the Final SEIS include a compensatory wetland and stream mitigation package, including the wetlands impacts characterized as temporary and the indirect impacts modeled from permafrost degradation. This should also include biological, chemical and physical success criteria of the stream channels and wetlands mitigation. Additionally, the mitigation package should include monitoring and an adaptive management plan containing corrective actions if the mitigation efforts are not meeting success criteria. If onsite mitigation is not practicable to fully replace the functions and values of the impacts, alternative site mitigation should be considered.

Dredged Material Management

The EPA recommends that the Final SEIS include an analysis of a sub-alternative that includes building a new Dock Head 4 at the seaward end of West Dock (instead of using existing Dock Head 3, dredging a navigation channel and disposing of the dredged material in Prudhoe Bay). This variation on the proposed action would minimize the need for dredging and disposal of dredged material. The EPA requested consideration of this alternative dock head previously and the Draft SEIS considers it briefly, but does not carry it forward for detailed analysis because:

> Using the existing STP as a makeshift dock is engineering prohibitive because it would require installing multiple large berths, new pilings, new bulkhead, new permanent bridge, and ocean fill to widen the road. This would likely also disrupt ongoing use of the facility by other entities.

However, the Alaska Liquefied Natural Gas Pipeline Project recently included this Dock Head 4 alternative as the proposed action in its application to the Federal Energy Regulatory Commission. Thus, a Dock Head 4 alternative appears to be both reasonable and practicable. Although a Dock Head 4 alternative would pose some environmental tradeoffs (i.e., less dredged material, but more fill material), the environmental review process is designed to weigh such tradeoffs. Please note that the EPA is not endorsing this alternative as environmentally preferable or as the least environmentally damaging practicable alternative at this time. Rather, we are recommending that it be included in the Final SEIS for detailed analysis as a reasonable alternative.

Drinking Water Protection

[2] 33 C.F.R. Parts 325 and 332; 40 C.F.R. Part 230, Subpart J).
[3] 40 C.F.R. §§ 1502.14, 1502.16, 1508.20.

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Construction of the proposed pipeline presents the potential for sediment mobilization or hydrological disturbances that could result in impacts to water quality or quantity. Because the proposed project will pass very near a large number of public and private drinking water sources, the EPA recommends the use of additional analysis and on-site mitigation in order to reduce potential impacts to drinking water along the proposed pipeline route. We appreciate the additional information that is presented in the Draft SEIS related to drinking water use and source water protection, which is responsive to the EPA's comments on the 2012 Draft EIS. Tables are included in the Draft SEIS showing public and private drinking water wells in proximity to the pipeline, as well as a large-scale map displaying public water systems along the pipeline route. We recommend that finer-scale maps be included in the Final SEIS to show areas in which designated Source Water Protection Areas, for groundwater or surface water intakes, are intersected by the proposed ROW. The EPA has previously noted the importance of ensuring that the applicant consults with the appropriate state and/or local authorities for public water systems before performing any construction activities within a Source Water Protection Area. Providing more detailed maps will assist AGDC in performing this consultation and complying with recommendations to avoid impacts to the quality or quantity of the water supply.

According to tables presented in Draft SEIS, many of the identified private drinking water wells in proximity to the proposed right-of-way are very shallow. Construction and operation of the pipeline could affect the quantity and/or quality of shallow drinking water sources by altering hydrology. We recommend that the applicant commit to avoiding construction in close proximity to private drinking water wells to the maximum extent practicable by making any available adjustments to trench location within the right-of-way. In addition, we recommend that AGDC compensate for any unavoidable impacts to quantity or quality of drinking water (e.g., drilling a new drinking water well if needed).

Air Quality

Analysis of Impacts from Gas Conditioning Facility:
As previously recommended in our comments on the 2012 Draft EIS, the EPA recommends that the Final SEIS include an air quality modeling analysis to assess possible air quality impacts from the proposed Gas Conditioning Facility. The Draft SEIS infers that the National Ambient Air Quality Standards and applicable prevention of significant deterioration (PSD) increments will be protected because an air quality analysis will be required in the future as part of the State of Alaska's air permitting process. However, including the modeling analysis results in the Final SEIS will provide important information that is needed to inform decision-making, as required by NEPA.

Background Air Quality:
Given that the project will involve construction of a new major source on the North Slope, a thorough evaluation of background air quality is very important to assess cumulative air quality impacts. The background design values provided for Prudhoe Bay are based on a single year (2010) of monitoring at a location very near to the proposed Gas Conditioning Facility. Although the location appears appropriate, the age of the dataset and length of record raises concerns that the dataset may not be representative. There may be more representative or more modern datasets publically available. Also, Table 3.18.6 contains blank entries for $PM_{2.5}$ and CO, and is missing background design values for 1-hour average NO_2 and 1-hour average SO_2. The EPA recommends re-evaluating background air quality to see if more recent and sizeable datasets are available, preferably a three-year dataset. For $PM_{2.5}$ and CO, a more distant dataset, such as the Nuiqsut 2012-2014 dataset, may be reasonable to use if no other dataset is available. If possible, a background design value should be reported for each of the criteria air pollutants. It would also be helpful to note where values listed in table 3.18-6 do not follow the same

calculation as the NAAQS. For example, the ozone value listed for Denali is based on one year of data rather than three years.

Air Quality Mitigation:
We recommend that the Final SEIS include additional discussion of mitigation measures that will be implemented to reduce air emissions from the proposed action. It is also important that mitigation commitments include all controls that were applied in developing the emissions inventory. For example, the emissions calculations to date assumed 50 percent control of fugitive dust. We recommend that the Final SEIS list specific fugitive dust control measures, such as speed limits and frequency of watering during non-winter months, that will be used to achieve this level of control.

Appendix U:
Appendix U provides the emissions inventories and emission factors upon which these inventories were based. Some of these emission factors were produced using models such as MOVES for mobile vehicle emissions. To assist in interpretation of the emissions data, we recommend that the Final SEIS include a list of inputs in Appendix U, such as RunSpec files from each MOVES run, to show what settings were used to produce the emission factors where models were used.

Mitigation

A large number of applicant-proposed design features, mitigation measures, best management practices, and project management plans listed in the Draft SEIS contain the language, "In areas where a lease is required from the SPCS or a federal grant of ROW is required from BLM…" These measures generally represent a best management approach that we recommend using to the maximum extent possible along the entire pipeline route, while acknowledging the outstanding need to complete coordination with private landowners.

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U.S. Environmental Protection Agency Rating System for
Draft Environmental Impact Statements
Definitions and Follow-Up Action*

Environmental Impact of the Action

LO – Lack of Objections

The U.S. Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC – Environmental Concerns

EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO – Environmental Objections

EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU – Environmentally Unsatisfactory

EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 – Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 – Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 – Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting The Environment _February, 1987

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