

Nanushuk Project Environmental Impact Statement  
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Topic	Comment
Air Quality	<p>Air Modeling Protocol</p> <p>In preparing the EIS, we recommend that the Corps document the approach used to analyze and predict air quality impacts. The approach should be developed in consultation with our Region 10 Office of Air, Waste, and Toxics and the appropriate ADEC air quality program. Such a protocol will provide a "roadmap" for how the air analysis will be conducted and the results be presented. The protocol should describe the model(s) that will be used for analysis, including model settings, modeling boundaries, and important model inputs such as meteorology, background data and emission inventories. The protocol should also generally describe the standards and thresholds to which the air impact results will be compared. EPA suggests that the Corps work with ADEC to obtain written concurrence on the protocol prior to proceeding with the air quality analysis.</p>
Air Quality	<p>ADEC is responsible for issuing any air quality permits directly associated with the Nanushuk project. This includes Prevention of Significant Deterioration Construction Permits or Title V Air Quality Operating Permits. We encourage the Corps to work closely with the ADEC on evaluating and disclosing potential impacts to air quality from this project. If a major source permit is anticipated in the future, a minimum of one-year of ambient data is generally required. The Draft EIS should clearly identify the air quality permits that will be required and the amount and type of data that will be needed for these permits.</p> <p>The EIS should provide a detailed discussion of ambient air conditions (baseline or existing conditions) in the project area and discuss the National Ambient Air Quality Standards. The EIS should estimate emissions of criteria pollutants for the project area and discuss the timeframe for release of these emissions over the lifespan of the project. Also, the document should include analysis of the potential impacts to air quality (including indirect and cumulative impacts) from the project, from all phases of the project. The EIS should specify emission sources and quantify these emissions. Such an evaluation is necessary to assure compliance with State and federal air quality regulations, and to disclose the potential impacts from temporary or cumulative degradation of air quality.</p>
Air Quality	<p>Impacts to air include release of both toxic and nontoxic pollutants during drilling, production and waste management. Toxic gases that occur in the producing formations, especially hydrogen sulfide and poly-aromatic hydrocarbons, may be emitted from active operations. In addition, criteria air pollutants, such as particulates, ozone, carbon monoxide, etc., associated with diesel engines that power the operation will be released. [...] It is emphasized that site-specific factors (e.g., activities, environmental setting, etc.) determine potential and actual impacts at individual sites. We believe that all potential direct, indirect and cumulative impacts to air quality need to be disclosed and evaluated in the EIS.</p>
Air Quality	<p>There is substantial concern for human health from projects that result in air toxics emissions and particulate matter from mobile sources, particularly diesel exhaust. The National Air Toxics Assessment asserts that a large number of human epidemiology studies show increased lung cancer associated with diesel exhaust and significant potential for non-cancer health effects. Also, the Control of Emissions of Hazardous Air Pollutants from Mobile Sources Final Rule lists 21 compounds emitted from motor vehicles that are known or suspect to cause cancer or other serious health effects.</p> <p>We recommend that the EIS disclose whether vehicular air toxics emissions would result from project construction and operations, discuss the cancer and non-cancer health effects associated with air toxics and diesel particulate matter, and identify sensitive receptor populations and individuals that are likely to be exposed to these emissions.</p>
Air Quality	<p>In addition, the road provides a constant source of downwind dust to the adjacent tundra. The USFWS believes a full analysis of the linear impacts associated with the road should be included in the EIS. These impacts include, but are not limited to , impoundment of water, dust impacts resulting in temporal changes in snowmelt and increased thermokarst, and habitat alteration.</p>
Air Quality	<p>With the addition of a mega-project such as Nanushuk, and by such a small company with more limited financial resources than CPAI which operates the Alpine Field, NVN cannot imagine that AOG would take the community's air quality concerns very seriously.</p>
Air Quality	<p>With the Nanushuk project we expect addition contributions during the construction, drilling, and production phases as follows: nitrogen oxides (NOX), sulfur dioxide (SO2), carbon monoxide (CO), particulate matter (PM, including both PM2.5 and PM10), volatile organic compounds (VOC), total reduced sulfides (TRS), hazardous air pollutants, and greenhouse gases (GHG) such as carbon dioxide, methane, and nitrous oxide.</p>
Air Quality	<p>Air quality monitors need to be away from the villages. These air quality monitors should be outside of our village, not inside the village where the development are going to be developed.</p>
Air Quality	<p>There's going to be air pollution. We know that for a fact. And like Dora said, it will be in the prevailing wind to this community.</p>
Air Quality	<p>one of the concerns out in Nuiqsut is air quality. So what are some of the -- what is your proposition as far as addressing air quality in this area?</p>
Air Quality	<p>I know Nuiqsut has voiced out a lot on possible contaminated air coming into Nuiqsut and people getting sick. On the air emissions, I was -- I'm kind of thinking about your flares that -- possible flares that are going to be going off, and just what kind of impact will Nuiqsut have on the air emissions if -- you know, because there was a blowout with Repsol. And, you know, they mentioned several meetings that they had health problems afterwards. And I'm just wondering about your air quality -- your air emissions where -- how are they going to be monitored? Daily? Are they going to be reported and stuff like that? I'm just kind of concerned for the comment I heard from Nuiqsut about their health issues.</p>

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Alternatives	<p>Alternatives Criteria Development</p> <p>The EIS should identify specific criteria that were used to (1) develop the range of reasonable alternatives, (2) eliminate alternatives considered, and (3) select the agency preferred alternative. These criteria should be based on factors such as conservation of important aquatic and terrestrial habitats, maintaining wildlife and fish passage, technical feasibility, economics, and public safety. The alternatives criteria should also incorporate substantive issues identified during the public scoping process and tribal consultations. Finally, the Corps' need to consider practicability in light of the 404(b)(1) evaluation under the Clean Water Act should be incorporated into the alternatives criteria. The EIS should discuss the rationale and basis for how these criteria were developed.</p> <p>Alternative evaluation criteria should be identified early in the alternatives development process and be developed in conjunction with agencies, affected communities, and other stakeholders. Once the full range of alternatives is developed, the alternatives should be screened using the previously established criteria to eliminate those that are not reasonable or would not meet the purpose and need. We recommend that the Corps consider a multi-step process that will reduce the initial list of alternatives to a final list that will undergo full evaluation in the Draft EIS. Alternatives should be evaluated on each level based on the evaluation criteria determined from the project purpose, need, goals, and objectives. This process could include an initial screening, comparative screening, detailed screening, and finally, alternatives refinement.</p>
Alternatives	<p>Range of Reasonable Alternatives</p> <p>The Draft EIS should include a range of reasonable alternatives that meet the stated purpose and need for the project and that are responsive to the issues identified during the scoping process and through tribal consultation. This will ensure that the Draft EIS provides the public and the decision-maker with information that sharply defines the issues and identifies a clear basis for choice among alternatives as required by NEPA. The Council on Environmental Quality recommends that all reasonable alternatives be considered, even if some of them are outside the capability or the jurisdiction of the agency preparing the EIS for the proposed action. For this project, the Corps should consider various component, alignment and design/engineering alternatives, including a roadless alternative.</p> <p>Also, the environmental impacts of the proposal and alternatives should be presented in comparative form such as a table, thus sharply defining the issues and providing a clear basis for choice among options by the decision-maker and the public. The potential impacts of each alternative should be quantified to the greatest extent possible. It would also be useful to list the impacts of each alternative action and corresponding mitigation measures. We strongly encourage the development, identification and selection of alternative(s) that will minimize environmental and resource degradation.</p>
Alternatives	<p>The US Fish and Wildlife Service (USFWS) suggests a thorough analysis of potential development alternatives for the Nanushuk project in the EIS. This analysis should include alternate road routes, pad locations, and use of existing infrastructure. A roadless design also should be included in the analyses. The USFWS considers the use of existing infrastructure as a potential practical alternative to minimize the overall footprint and associated impacts of the proposed development. For example, use of the existing Mustang access road would avoid approximately 4 miles of new road construction and thereby minimize hydrologic impacts (alteration of sheet flow, dust accumulation) and habitat loss associated with the spider-web effect of multiple roadways in close proximity. In addition, use of existing processing facilities in the Kuparuk area also would minimize impacts associated with project footprint, lighting, and noise.</p>
Alternatives	<p>Alternate drilling pad locations also should be fully analyzed to account for an increase in flooding and erosion potential of the Colville River as well as the Miluveach and Kachemack river basins due to climate change. These analyses should be based on forecasted models and should not rely solely on back-casted historic data.</p>
Alternatives	<p>A range of alternatives that achieve goals, while ensuring the health and safety of our people;</p>
Alternatives	<p>It seems like there's -- you got a short distance from Drill Site 3 or whatever that one is at the far southern portion. Only about five miles or less to the sales quality line where you could plug in sales quality line instead of building another, oh, what, about a 14-mile line -- sales-quality line. I mean, isn't that a -- to minimize this type of pipeline infrastructure where there's known large-scale movement of caribou? Just an observation</p>
Alternatives	<p>A roadless Nanushuk would cut the amount of fill substantially, and in fact would fill the fewest acres of wetlands of any of the Alternatives that Armstrong examines. So the stakes are high. With Alpine as a prime, nearby example of a successful roadless development, to fail to thoroughly analyze the roadless alternative throughout the EIS would be a major failing on multiple levels. There are also a number of reasons that a roadless Nanushuk may have fewer impacts than a roadless GMT1 or GMT2. For example, the noise from air traffic is an issue, but the air traffic for a GMT1 or a GMT2 all would fly over Nuiqsut or nearby, whereas air traffic for Nanushuk would stop some miles shot of Nuiqsut. Even Alpine air traffic passes closer to Nuiqsut than would Nanushuk traffic. The most problematic traffic is helicopters, not the airplanes that bring in supplies and personnel. GMT1 and GMT2 also would bring offsetting subsistence benefits that a Nanushuk road would not.</p>
Alternatives	<p>The alternatives very much need to include offsite processing at both Alpine and at Kuparuk, either of which would effect large reductions on acres filled and gravel quantities mined. Armstrong seeks non-standard 38 foot road widths both in the Nanushuk access road and also seeks to expand existing Kuparuk roads to 38 foot widths in order to enable a seven month time savings for a one-time move of sealift production modules during construction. Kuukpik thinks that extra fill for a one-time efficiency saving is not justifiable, but eliminating that extra width and fill also has a favorable effect on the impacts currently listed for offsite processing and thus on the viability of that alternative. Given the Charter for Development of the Alaskan North Slope that ConocoPhillips' predecessor signed in 2000 (following the sale of ARCO Alaska) to make its facilities available for commercially reasonable sharing, evaluating offsite processing and the elimination of the proposed central processing facility should be an alternative.</p>
Alternatives	<p>The close proximity of the pads to the Colville River and their location within its floodplain, particularly DS3, is likely to be a major issue in the 404 Clean Water Act permitting analysis and in Nuiqsut. NOx emissions, for example, were already approaching the legal limit under the previous production estimate. Doubling the production capacity will almost certainly push these emissions over the limit, and Nuiqsut is downwind. The alternatives examined should include pad locations further away from the Colville River, even if analysis of any resulting impacts on recovery of reserves has to be handled on a confidential basis by the Corps of Engineers as part of the 404 permitting process. With Nuiqsut pretty much directly downwind of the historically prevailing winds, such location shifts would reduce both air quality and noise impacts in Nuiqsut (particularly from the processing facilities).</p>

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Alternatives	Road alternatives are probably best examined as subparts of a single alternative. there are three main road route alternatives that need to be analyzed Starting the Nanushuk access road at the Mustang pad would eliminate 4 to 5 miles of road and fill and would stick to higher ground and less valuable wetlands. Starting the access road at the existing Nuna 1 pad would eliminate at least that much road and fill (and construction of the already permitted Nuna 2 road would eliminate even more). Following the route of CPAI's annual re-supply ice road is a third road alternative that deserves detailed analysis (and deserves detailed analysis even if CPAI is not viewed as a likely purchaser and future operator of the project). Nanushuk is in the heart of the caribou migration corridor for the Central Arctic Herd to the Colville River Delta and to some of the most heavily used subsistence areas near Nuiqsut. The EIS must therefore take a very hard look at the likely impacts to subsistence resources and users, such as impeding movement of caribou and Avoidance.
Alternatives	In case there is onsite processing, the EIS should examine potential siting of those processing facilities to the east of the Miluveach river, versus the present location which lies in between two rivers. The present location pose threats to two tributary rivers, whereas the alternative would risk one.
Alternatives	Given the obvious uncertainty about the amount of production capacity needed, the EIS should examine whether the facilities could be designed with a smaller capacity and footprint, with the option of upsizing or debottlenecking if production drilling justifies those changes.
Alternatives	NEPA, of course, is not about approving what has already been decided; it's about comparing the likely impacts of the proposal and various "reasonable alternatives". There are likely multiple alternative designs that could be used to access the oil underlying the proposed Nanushuk site. The EIS should not assume Armstrong's proposed 3.3 million CY and 291 acres of fill as a limiting baseline....The Corps should generate and analyze practicable alternatives that would achieve something much more like an Alpine-sized development, or insist on the applicant providing concrete data and analysis, not conclusory arguments, as to why such alternatives do not merit NEPA Analysis. A. Fundamental design changes are realistic and may be necessary in order to achieve real reductions. The Corps should start by going beyond the alternatives analysis provided by the applicant. Most of Armstrong's alternatives are simply minor variations of Armstrong's plan, not the "hard look" at the range of alternatives that NEPA contemplates. ...This approach would improperly narrow the scope of the NEPA analysis.
Alternatives	1. The Corps should look closely at the roadless alternative. .....Although we cannot say whether a roadless option would ultimately be preferable (that's what the EIS is for), it deserves in-depth NEPA analysis. Eliminating a 14 mile road from the critical caribou migration corridor would likely avoid one of this project's most serious impacts on caribou. the 404 process requires the Corps to take a hard look at other issues of critical importance to Nuiqsut and to evaluate whether the project provides a net benefit to the public interest, including impacts to subsistence.
Alternatives	Options that would eliminate this road need to be considered. Armstrong identifies one such option... and then point out - correctly - that a roadless alternative is likely to create problems of its own this is certainly true, but we won't know whether the impacts from a roadless development outweigh the impacts of a 14 miles road unless the Corps takes a hard look at he roadless alternative. Such a hard look is justified because Armstrong's analysis of this option is too superficial to justify rejecting it without any meaningful analysis. Unless Armstrong provides concrete and verifiable data showing that the roadless alternative is prohibitively expensive (as opposed to just "more expensive"), the Corps should analyze the full range of impacts likely to be caused and avoided by a roadless alternative and then compare that to the cost difference of constructing it. Only that comparative analysis will allow the Corps to determine whether decreased impacts resulting from the roadless alternative (if any) justifies increased cost (if any).
Alternatives	2. The EIS should evaluate the benefits of processing the Nanushuk resource off site. Another major design component that needs to be analyzed is the Nanushuk central processing facility (CPF). All the stakeholders would benefit if this project could be undertaken without constructing a new CPF. Such an alternative would likely be more economical for Armstrong and would reduce impacts as a result of the smaller footprint and lower emissions immediately upwind from Nuiqsut. Processing offsite is therefore worth exploring in depth because a practicable alternative that reduces both footprint and emissions could be the LEDPA. There are at least facilities in the immediate area that could potentially be used for processing. Alpine is about 5 miles away from the proposed Nanushuk site and is currently processing about 50-70,000 barrels/day. Its capacity, however is about 140,000 barrels/day. Thus Alpine's CPF might have sufficient excess capacity for Repsol's anticipated maximum production rate of 60,000 barrels per day, but probably does not have the capacity to accommodate Armstrong's updated expected maximum of 1120,000 barrels... Even then Alpine is a realistic option if it could be upgraded to accommodate additional flow. Peak production at Kuparuk, on the other hand, was 339,386 barrels per day... Kuparuk's current production is about 100,000 barrels per day. This data shows that Kuparuk facilities currently have about 240,000 barrels per day of underutilized capacity that could potentially handle all of Armstrong's claimed peak capacity of 130,000 barrels/day. Kuparuk is therefore a more easily available alternative than processing at Alpine.
Alternatives	Kuparuk is also potentially a better option from an environmental perspective. Processing at Kuparuk would avoid any major or technically difficult river crossings (unlike processing at Alpine, which would require crossing the Colville). In fact the pipeline route for this alternative would be the same as under the Project Concept: connecting Nanushuk to Kuparuk CPF2 via Mustang. ...If this option was carried out without a road paralleling the Nanushuk Pipeline the overall reduction of impacts could be dramatic. The Corps should therefore include this alternative in the EIS. It is therefore not reasonable to exclude off site processing as an alternative on the assumption that CPAI and Armstrong would not reach an agreement to use an existing facility for processing. ...the Corps should not assume that no agreement can ever be reached, as Armstrong does, if that assumption prevents even conducting the environmental analysis. Rather, the Corps should analyze whether processing at Kuparuk (or possibly Alpine) would cause fewer impacts than processing on site, and if so, allow Armstrong and CPAI time to negotiate whether such an arrangement is commercially feasible. In other words, financial and commercial concerns should come last in the analysis. not pre-supposed in order to bar a potentially attractive and lower impact alternative. ....processing offsite should result in substantially lower emissions in this are upwind of Nuiqsut. Reducing Nanushuk's impacts on air quality would be a large benefit even if gravel footprint is not reduced substantially. Whether this option would achieve either goal is currently unknown. The only way to find out is to take a hard look at this alternative.

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Alternatives	<p>3. The EIS should consider alternative locations or layouts for the drill pads.</p> <p>Alternatives relocating the three main pads should also be analyzed Nuiqsut residents have already expressed concerns regarding the location of the proposed drilling sites. drill sites 2 and 3 are located directly in the Colville River floodplain, and DS3 is actually in the ten year floodplain. Nuiqsut residents have pointed out that even if these sites are designed at a height of "one foot above the 200-year flood level or 3-feet above the 50-year flood level (PD 2) an ice jam anywhere downstream from the project would cause unpredictable and potentially higher flooding. The EIS should therefore closely consider this traditional knowledge and the scenarios and potential impacts such flooding could have. As with air quality issues, these concerns justify including an alternative that would locate some or all of the drill sites farther east, further away from the river. Relocating the sites away from the river would also likely reduce potential impacts on wetland during construction and normal operation and would also help limit the damage from a spill or other unforeseen release during all operations.</p>
Alternatives	<p>B. The Corps should prioritize alternatives that reduce the length and size of gravel roads.</p> <p>The roads built in support of the Nanushuk Development must be minimized. This includes both the length and width of the roads. ....It is therefore critical that the Corps not simply accept the assumption that these oversized roads are necessary.</p> <p>1. This project does not require 38 foot gravel roads.</p> <p>...It appears that the only reason for the larger road is to "accommodate sealift module transport." If the modules can be moved to Nanushuk without building such a large road, there is no reason to build the outsized road. And, of course, those modules can readily be moved by ice road with much less impact and with no permanent impact. Armstrong has not provided compelling reasons justifying the sealift-sized roads. .... Building a road at sealift-module width just to accommodate a one-time delivery is not a reasonable alternative</p> <p>The Corps should consider alternatives that do not assume that a 38 foot wide road is necessary. At the most basic level, reducing the crown from 38 to even a wider-than-conventional 34 feet should reduce the overall footprint of all roads associated with Nanushuk by at least 10%. In a project calling for 3.3m cubic yard of fill, a 10% reduction of road-related fill would be quite significant.</p>
Alternatives	<p>2. the EIS should carefully, correctly and fully analyze alternatives that rely on existing infrastructure.</p> <p>Eliminating this 38 foot road assumption results in more readily apparent and meaningful distinctions between other alternatives particularly among those that rely more on existing infrastructure. The 38 foot road assumption effectively negates or masks much of the benefit to be obtained by using existing infrastructure. ....</p> <p>...alternatives that would use portions of existing infrastructure much more attractive, including but not limited to the Nuna road (the Northern Access Alternative) or the Mustang Road (the Southern Access Alternative). Both of these options may be preferable over the Project Concept because they utilize existing infrastructure to avoid building the entirely new Nanushuk Access Road. Again, Kuukpik is not taking a position supporting the Northern Access alternative (or any other) at this point. What Kuukpik is stating is that the analysis and comparison needs to be fair and accurate in its comparison of reasonable alternatives and reasonably foreseeable cumulative impacts. .... Again, a comprehensive EIS and consultations with the local community are the best ways to answer that question.</p>
Alternatives	<p>3. A 3:1 side slope ration may not be necessary.</p> <p>...The majority of recent roads built in this area have been built with 2:1 slopes and are acceptable so long as the overall road height off the tundra is not too high or access ramps are built at key locations for crossings. In areas within a floodplain or crossing topographic depressions, where road heights may be significantly greater, a 3:1 ratio may be necessary. Kuukpik thinks that the difference in slope ratios should be part of the EIS analysis. both do hinder caribou movement, as explained above, but we are not aware of any studies addressing this issue. Community input should be gathered based on the side slope issue at projected road heights at the different locations.</p>
Alternatives	<p>...ASRC recommends potential alternatives to the proposed project which could reduce impacts without affecting the effectiveness of the project. ASRC looks forward to the alternatives outlines in the following section being thoroughly evaluated by Armstrong and USACE in the upcoming EIS.</p>
Alternatives	<p>The 38 ft. width of the proposed gravel roads. ASRC notes that this provision is designed for the transport of drilling equipment to the drilling pads. While safety and success of operations is a high priority for ASRC, this single use determination for the size of the gravel roads does not seem justifiable for the increased footprint and volume of gravel usage. Rather, ASRC recommends analyzing the alternative of reduced road size, supplemented by ice roads which are in line with many impact reducing measures from across the North Slope.</p>
Alternatives	<p>Road tie-in with Brooks range Petroleum's Mustang facility. As an alternative to a new road through to Kuparuk, ASRC recognizes the opportunity to tie-in to existing North Slope infrastructure at Mustang.</p>
Alternatives	<p>Evaluate a roadless alternative.</p>
Alternatives	<p>Moving the drilling pads further east of the Colville River.</p>
Alternatives	<p>Move the central processing facility to the east of the Miluveach River.</p>
Alternatives	<p>Reduced facility footprint.</p>
Alternatives	<p>maybe tie-in to the Alpine line or consolidating the pipeline and making a transportation corridor on the existing route, rather than a new route across that new, open area.</p>

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Alternatives	I'd like you to consider alternatives that have roadless alternative. The roadless alternative I saw in your materials still had roads in the pads nearest to the Colville River. And it seems to me that there may be the opportunity for greater extended-reach drilling from some of the pads so that you require less pads and roads for the project.
BMP/Mitigation Measures	<p>Monitoring and Mitigation</p> <p>As discussed above, the proposed project has the potential to impact fish, seabirds, terrestrial and marine mammals, and their habitat. Predicting the severity of these impacts and devising effective mitigation measures remains an imprecise science. Monitoring is a necessary and crucial element in identifying and understanding the consequences of actions. In this case, comprehensive monitoring is needed to evaluate population changes that may be occurring not only from the proposed project, but natural factors. We recommend that the Draft EIS describe a monitoring program designed to assess both impacts from the project and the effectiveness of measures utilized to mitigate such impacts.</p> <p>Clear monitoring goals and objectives should be identified such as what questions are to be answered; what parameters are to be monitored; where and when monitoring will take place; who will be responsible; how the information will be evaluated; what actions (contingencies, adaptive management, corrections to future actions) will be taken based on the information; and how the public can get information on mitigation effectiveness and monitoring results.</p>
BMP/Mitigation Measures	Infrastructure for this Project- roads, gravel pads, buildings- should not restrict access to subsistence resources.
BMP/Mitigation Measures	Aircraft/helicopter used in support of the Project should maintain an altitude sufficient to avoid harassing concentrations of 25 or more caribou. Except in the case of emergency, refueling of helicopters and aircraft on waterbodies is prohibited.
BMP/Mitigation Measures	All nonessential air and vessel traffic associated with the Project shall occur prior to or after the period of whale migration through the area. Essential traffic (traffic that could not reasonably occur prior to or after the period of whale migration through the area) shall avoid disrupting the whale migration and subsistence activities in accordance with a Conflict Avoidance Agreement developed between the project operator and the Alaska Eskimo Whaling Commission.
BMP/Mitigation Measures	Vessels and aircraft that are likely to cause significant disturbance must avoid areas where species that are sensitive to noise or movement are concentrated at times when such species are concentrated. Concentrations may be seasonal or year round and may be due to behavior (e.g., flocks or herds) or limited habitat (e.g., polar bear denning).
BMP/Mitigation Measures	The Corps must analyze the best way to mitigate the impacts to wetlands. The proposed mitigation statement focuses heavily on avoidance and minimization. However, in developing alternatives for analysis, minimizing impacts to wetlands should be considered to achieve a project that is workable with decreased impacts.
BMP/Mitigation Measures	To address impacts associated with public health, the Borough asks that the project proponents work with the NSB DHSS and other key agencies in the NSB to develop strategies that adequately monitor and mitigate negative health impacts and enhance positive health benefits. One action may be to provide real-time monitoring of air quality simultaneously at sites of development and at Nuiqsut, both of which would be available to residents. This would allow some measure of community-based monitoring.
BMP/Mitigation Measures	I've heard, in lieu of doing compensatory mitigation, that you can be more creative because of that program struggling. And things like repairing areas that could benefit in the wetlands, and I think some of our communities could benefit from some of these types of creative compensatory mitigation programs.
BMP/Mitigation Measures	I think for a project like this, 25 miles of roads, lot of acreage of land, that you'd be looking for a substantial offset in some -- to do some of this stuff. There's a trail here in our town; it's been there maybe 40 years. Goes about 20 miles up that way and it's heavily scarred, under damage from local use. Can that be a candidate for an offset to benefit a community to better that through some mechanism to make it a real trail instead of a tundra-scarred --
BMP/Mitigation Measures	the compensatory mitigation banks for the North Slope area are out of credits right now, and so it makes it very difficult for projects to move forward to meet their 404 requirements.
BMP/Mitigation Measures	To me, the way I see it, the ways to reduce and minimize the project is to go away.
BMP/Mitigation Measures	we need our locals to oversee these projects, subsistence representatives. Not just during exploration, but throughout the life of the fields, if it's going to be developed.
Climate Change	<p>Climate Change and Greenhouse Gas Emissions</p> <p>We believe the Council on Environmental Quality's December 2014 Revised Draft Guidance on the Consideration of Greenhouse Gas Emissions and the Effects of Climate Change outlines a reasonable approach, and we recommend that agencies use that draft guidance to outline the framework for its analysis of these issues. Accordingly, we recommend the Draft EIS include an estimate of the GHG emissions associated with the project, qualitatively describe relevant climate change impacts, and analyze reasonable alternatives and/or practicable mitigation measures to reduce project-related GHG emissions. More specifics on those elements are provided below. In addition, we recommend that the NEPA analysis address the appropriateness of considering changes to the design of the proposal to incorporate GHG reduction measures and resilience to foreseeable climate change. The Draft and Final EIS should make clear whether commitments have been made to ensure implementation of design or other measures to reduce GHG emissions or to adapt to climate change impacts.</p>
Climate Change	Potential impacts to the project associated with climate change, including the potential for increased rates of permafrost thawing, riverbank erosion, lake subsidence, and snowfall during the life of the project, with resulting effects to facility integrity, and challenges for facility maintenance and inspection;



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Cultural Resources	<p>Historical and Cultural Resources</p> <p>Section 106 of the National Historic Preservation Act of 1966 requires Federal agencies to take into account the effects of their undertakings on historic properties. Since the Arctic coast is recognized for frequent historical use by the Iñupiat, the State Historic Preservation Officer will need to be consulted. The Corps should also plan to involve the public and local governments, as well as identify other potential consulting parties.</p> <p>The 1992 amendments to NHPA also place major emphasis on consultation with tribal governments. Consultation must respect tribal sovereignty and the government-to-government relationship between the Federal and tribal governments, as discussed above. Consultation for tribal cultural resources is required under Section 106. Tribal governments must be consulted about actions on or affecting their lands or resources on the same basis and in addition to the SHPO even if not certified by National Park Service. The EIS should evaluate the historic extent and condition of the environment to adequately address impacts to cultural resources of concern to tribal governments. Potential impacts to resources of concern to the tribes may include (but are not limited to) impacts to cultural resource areas, archaeological sites, traditional cultural properties of landscapes, sacred sites, and environments with cultural resources significance. The EIS should disclose the Alaska Native historical and traditional significance of the project area, the importance of ethnobotanical, hunting, fishing, and gathering uses of the area by Alaska Natives, any long term traditional ecological management of the area, and any significant historical events that took place there. The tribal government(s) must be specifically engaged and consulted with in accordance with Section 106 of the NHPA.</p> <p>To determine whether the area of potential effect would be eligible for the National Register of Historic Places, the perspectives of the tribal government(s) should be considered. Such considerations should include the list above as well as significant events that may have taken place in the past (establishment of trade routes and gathering sites, etc.).</p> <p>We further recommend that a Record of Decision not be completed until the 106 consultation process is complete. If adverse effects to traditional cultural properties, sacred sites, or other areas of cultural resource concern are identified, any Memorandum of Agreement developed to resolve these concerns under Section 106 should be addressed in the ROD. Unless there is some compelling reason to do otherwise, the Section 106 MOA should be fully executed before the ROD is issued, and the ROD should provide for implementation of the terms of the MOA.</p>
Cumulative Effects	<p>Indirect and Cumulative Impacts</p> <p>The EIS should also identify and evaluate potential consequences of the proposed project that are reasonably foreseeable but later in time or farther removed in distance . Because the project will result in indirect impacts, the Draft EIS should evaluate impacts to air, water, and wildlife resources in other areas, as applicable.</p> <p>The EIS should clearly identify the resources that may be cumulatively impacted, the time over which impacts are going to occur, and the geographic area that will be impacted by the proposed project. The focus should be on resources of concern; those resources that are at risk and/or are significantly impacted by the proposed project before mitigation. In the introduction to the Cumulative Impacts Section, identify which resources are analyzed, which ones are not, and why. For each resource analyzed, the EIS should:</p> <ul style="list-style-type: none"> <li>• Identify the current condition of the resource as a measure of past impacts. For example, the percentage of species habitat lost to date.</li> <li>• Identify the trend in the condition of the resource as a measure of present impacts. For example, the health of the resource is improving, declining, or in stasis.</li> <li>• Identify the future condition of the resource based on an analysis of the cumulative impacts of reasonably foreseeable projects or actions added to existing conditions and current trends. For example, what will the future condition of the watershed be?</li> <li>• Assess the cumulative impacts contribution of the proposed alternatives to the long-term health of the resource, and provide a specific measure for the projected impact from the proposed alternatives.</li> </ul> <ul style="list-style-type: none"> <li>• Disclose the parties that would be responsible for avoiding, minimizing, and mitigating those adverse impacts.</li> <li>• Identify opportunities to avoid and minimize impacts, including working with other entities.</li> </ul>
Cumulative Effects	<p>Potential cumulative effects on all area resources and current uses, including those associated with other reasonably foreseeable exploration and development projects occurring during the construction and life of the project. Please include cumulative effects maps that show development over time in this area; In developing the proposal and analyzing the alternatives, the EIS should evaluate and describe cumulative effects within the region by illustrating and enumerating acreage of development, number of structures, number of changes (and size of changes) from in initial development plans to "final" (present) plans . . . One could do this at a regional level by way of Martha K. Reynolds, et al., Cumulative geocological effects of 62 years of infrastructure and climate change in ice-rich permafrost landscapes, Prudhoe Bay Oilfield, Alaska, in Global Change Biology. 2014. Volume 20, Issue 4, pp. 1211-1224.</p>
Cumulative Effects	<p>Cumulative effects of contemplated activities on subsistence and other uses of caribou. Placement of this project, any access roads and the drill pad should be carefully thought out and placed to avoid disrupting this species or its subsistence harvest;</p>
Cumulative Effects	<p>Ecosystem Change and Caution</p> <p>It is clear from increasing studies across a wide range of disciplines that the arctic marine and terrestrial ecosystems are undergoing rapid change. The short and long term implications of this change for the wildlife resources and arctic residents who had for centuries or longer depended upon a relatively stable ecosystem cannot be reliably predicted. This unsettling reality demands that extreme caution be exercised in considering proposals for new large-scale development. The EIS should include analysis of Permafrost, Soils, and Reclamation to understand the impacts of this Project and potential impacts to the Project overtime. In a recent cumulative impacts workshop (Department of Interior, Arctic Cumulative Impacts Workshop,12-13 April 2016) , before- and after- development images were presented that may indicate that as many as 25 to 30 years may pass before change is noted. This change may be associated with development and/or development and climate change; therefore, what previously may have been reasonably foreseeable future effects may have to be extended in order to capture alleged events such as these.</p>

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Cumulative Effects	there's an active drilling program adjacent to this one with a potential to be part of a development scenario. And I would hope that the applicant and the Corps look at the other projects that are right adjacent to this in -- instead of piecemealing a large review like this. In particular, placer.
Cumulative Effects	We have cumulative effects. we're surrounded even more now, and we're so focused on the subsistence that we fail to do the health portion of it.
Cumulative Effects	Because those operators right now, you know, their equipment or what have you, must be obsolete by now. They should get the top-of-the-grade, lowest emission, less pollution. I mean, we're facing a big impact to the right, to the north, to the left, cumulative. It's not one company; it's several. So you guys need to consider those.
Cumulative Effects	it's not only this development, but there's other development proposed adjacent to this that will also have impact
Cumulative Effects	is, how far is this project from the one that's operating right now, and maybe the impact that would have on both those?
Cumulative Effects	And I would just urge that this project not extend from your proposed pads, when you look at the cumulative impacts of the project, into the Colville delta and not cross the river, whether it's below or above the river channel.
Decommissioning/Reclamation	Issues associated with facility abandonment, dismantlement and removal of infrastructure, and subsequent site restoration, rehabilitation (DR&R) and reclamation;
Environmental Justice	Environmental Justice and Public Participation The Draft EIS should clearly disclose what efforts were taken to ensure effective public participation in the scoping process and throughout the development of the EIS. In addition, since low income, minority and/or Alaska Native communities could be impacted by the proposed project, the Draft EIS should disclose what efforts were taken to meet environmental justice requirements consistent with EO 12898 Federal Actions to Address Environmental Justice in Minority and Low-Income Populations.
Fish	We see a lot of our fish affected, a lot of parasites, more parasites, mold in the fish.
General Environmental Effects	These impacts include, but are not limited to, impundment of water, dust impacts resulting in temporal changes in snowmelt and increased thermokarst, and habitat alteration.
General Environmental Effects	It is important to note that Arctic river deltas represent the most fragile wetland environments in the Boreal polar region. Interactions between geologic, oceanographic, climatologic, biologic, and cryospheric systems and sub-systems here are not only very sensitive to changes in inputs and outputs to those systems, but the hydrologic and geomorphic subsystems are very complex, with global significance due to impacts on the Beaufort Sea and Arctic Ocean water temperatures and flow rates which impact the entire global climatic regime.
General Environmental Effects	ASRC looks forward to USACE's analysis of potential impacts to subsistence resources, particularly impacts which may affect the community of Nuiqsut and their hunters. A close analysis of noise expected from Nanushuk, emissions, gravel use, facility size, and a pipeline and road route will provide information key to determining appropriate alternatives and mitigation measures.
General Environmental Effects	Given the Nanushuk project is located near existing infrastructure, environmental impacts are likely to be minimal. With evolving improvements in technology, best practices, and oversight, the industry has demonstrated that North Slope energy development and environmental stewardship can and do coexist. In conclusion, RDC is confident this project can move forward in a way that protects the environment, wildlife, and the subsistence needs of local residents.
General Environmental Effects	* The Nanushuk project is located near existing industry infrastructure, minimizing potential environmental impact. * Thanks to continuing improvements in technology, practices, and oversight, the oil industry has demonstrated that North Slope energy development and environmental stewardship can and do coexist. * Industry has a proven track record of responsible development in environmentally-sensitive areas, protecting the environment, wildlife and subsistence needs of local residents.
General Environmental Effects	The proposed Nanushuk project is completely consistent with existing oil and gas facility development in the area. It is located near existing industry infrastructure, minimizing potential environmental impact from the need to remotely access or build standalone infrastructure. The North Slope Oil & Gas Industry has a proven track record of responsible development in environmentally-sensitive areas, protecting the environment, wildlife and subsistence needs of local residents.
General Environmental Effects	Given that Nanushuk is located near existing industry infrastructure, the potential environmental impact is minimized.
General Environmental Effects	<ul style="list-style-type: none"> <li>• The Nanushuk project is located near existing industry infrastructure, minimizing potential environmental impact.</li> <li>• Thanks to continuing improvements in technology, practices, and oversight, the oil industry has demonstrated that North Slope energy development and environmental stewardship can and do coexist.</li> <li>• Industry has a proven track record of responsible development in environmentally-sensitive areas, protecting the environment, wildlife and subsistence needs of local residents.</li> </ul>
General Environmental Effects	The Nanushuk project is located near existing industry infrastructure, minimizing potential environmental impact. Thanks to continuing improvements in technology, practices, and oversight, the oil industry has demonstrated that North Slope energy development and environmental stewardship can and do coexist.
General Environmental Effects	<ul style="list-style-type: none"> <li>* The Nanushuk project is located near existing industry infrastructure, minimizing potential environmental impact.</li> <li>* Thanks to continuing improvements in technology, practices, and oversight, the oil industry has demonstrated that North Slope energy development and environmental stewardship can and do coexist.</li> <li>* Industry has a proven track record of responsible development in environmentally-sensitive areas, protecting the environment, wildlife and subsistence needs of local residents.</li> </ul>

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General Environmental Effects	The Nanushuk project is located near existing industry infrastructure, minimizing potential environmental impact. Thanks to continuing improvements in technology, practices, and oversight, the oil industry has demonstrated that North Slope energy development and environmental stewardship can and do coexist.
General Environmental Effects	We need to keep the oil in the ground. We are adding too greatly to the pollution that causes global warming, of which Alaska will suffer greatly. We need to keep our eyes on the big picture, not just focus on the local economy at the expense of the environment.
General Environmental Effects	Locating the Nanushuk Project in the vicinity of other developments will minimize the potential environmental impacts, particularly on wetlands and wildlife habitat. This project has the advantage of being situated near a mature field, with existing infrastructure nearby. The project design even incorporates existing infrastructure to minimize the project footprint and includes steps to reduce impacts on nearby subsistence use. Comparable projects of recent memory do not fit the same mold as this project. Pt Thomson and CD-5 were pioneering efforts in scope, as both proposed infrastructure development in areas at, on, or near reserves that to that point did not have existing infrastructure.
General Environmental Effects	The Nanushuk project is located near existing industry infrastructure, minimizing potential environmental impact. Thanks to continuing improvements in technology, practices, and oversight, the oil industry has demonstrated that North Slope energy development and environmental stewardship can and do coexist. Industry has a proven track record of responsible development in environmentally-sensitive areas, protecting the environment, wildlife and subsistence needs of local residents.
General Environmental Effects	The Nanushuk project is located near existing industry infrastructure, minimizing potential environmental impact. Thanks to continuing improvements in technology, practices, and oversight, the oil industry has demonstrated that North Slope energy development and environmental stewardship can and do coexist.  Industry has a proven track record of responsible development in environmentally-sensitive areas, protecting the environment, wildlife and subsistence needs of local residents.
General Environmental Effects	The Nanushuk project is located near existing industry infrastructure, minimizing potential environmental impact. Thanks to continuing improvements in technology, practices, and oversight, the oil industry has demonstrated that North Slope energy development and environmental stewardship can and do coexist.
General Environmental Effects	As far as impact relating to the birds and other animals in Prudhoe, they are thriving. The caribou are thriving.
General Support	The Alaska Process Industry Careers Consortium (APICC) supports the Nanushuk Project. APICC strongly urges the US Army Corps of engineers to consider the economic benefits of the Nanushuk Project in the EIS. Please see additional support in the attached letter.
General Support	The Alaska State chamber of Commerce (Alaska Chamber) would like to express its support for the Nanushuk project by Armstrong and Repsol E&P USA, Inc.
General Support	Thank you for this opportunity to express our support for this important project.
General Support	we state strongly our support for this project
General Support	We without reservation recommend approval of this plan of development.
General Support	The \$5 billion Nanushuk project is a positive development for Alaska and could be one of the most significant discoveries on the North Slope since the discovery of the Alpine oil field. the Alaska Oil & Gas industry has a long and successful track record of responsible development while protecting wildlife, the environment and subsistence needs of local residents. On behalf of all who work in the Oil and Gas Industry, and in support of Armstrong and Repsol, we ask for your approval of this very important project.
General Support	We support Armstrong/Repsol's development of the Nanushuk project.
General Support	Please see this development as a benefit to all Americans
General Support	I have lived and worked in the Alaska petroleum industry for the past 17 years and am very familiar with responsible resource development. I appreciate this opportunity to express my support for Armstrong Oil and gas and Repsol USA, Inc. proposal for developing the Nanushuk project.
General Support	I fully support the development of the Nanushuk Project.
General Support	I support this project as industry has a proven track record of responsible development.
General Support	I strongly support this project and the potential uplift it can provide to Alaska's economy when it is developed. With the minimization of drilling pad footprint area, and today's stringent regulatory environment on the NS, the project will represent minimal risk to the environment.
General Support	I am writing in support of Repsol and Armstrong's development of the Nanushuk Project. Please allow and encourage the development of the Nanushuk Project by moving the permitting process along and not causing unnecessary delays.
General Support	Please consider my comments in support of the Nanushuk project. The \$5 billion Nanushuk prospect is an important and positive development for Alaska and could be one of the most significant discoveries on the North Slope since the discovery of the Alpine oil field.
General Support	I support the Nanushuk Project.  The \$5 billion Nanushuk prospect is an important and positive development for Alaska and could be one of the most significant discoveries on the North Slope since the discovery of the Alpine oil field.



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General Support	I am in support of this project, due to the state's economy and the low flow of oil in the pipeline. I am asking you to support this project also. The \$5 billion Nanushuk prospect is an important and positive development for Alaska and could be one of the most significant discoveries on the North Slope since the discovery of the Alpine oil field.
General Support	I am here in total support of this Nanushuk Project in the Colville River area of the North Slope.
General Support	I wanted to speak out in support of this project.
General Support	So we're really hoping this project is going to go through, and you've got 100 percent support from us.
General Support	on behalf of the North Slope Contractors, we're definitely in support of this project.
General Support	The Chamber of Commerce supports this project.
General Support	we're at the Fairbanks Pipeline Training Center here. We're in full support of this project.
General Support	we are strong supporters of this project.
Gravel Source	Alternate options for gravel source.
Human Health	<p>Health Risk or Impact Analysis</p> <p>Consistent with Sections 4321 and 4331 of NEPA, and the goals of Executive Orders 12898 and 13045, if human health could be impacted by the proposed project, we believe the Corps should undertake a screening process to determine which aspects of health (including, but not limited to public, environmental, mental, social, and cultural health) could be impacted. Depending on the results of the screening, an analysis of health effects, such as a health risk assessment or Health Impact Assessment, may need to be conducted in order to determine the direct, indirect and cumulative impacts to health. This analysis will likely need as much time to complete as the Draft EIS, so early screening is essential to ensuring a timely analysis. We recommend that the Corps partner directly with local, state, tribal and federal health officials to conduct the appropriate analysis, and to determine appropriate and effective mitigation of health impacts.</p>
Human Health	Potential impacts to the health of the people in Nuiqsut and other affected communities, including any associated with increased contact with outside project workers,' degradation of air and water quality, tainting or perceived tainting of fish or other resources resulting in decreased consumption, or decreased food security. For instance, the presence of mold on broad whitefish has led to a perceived tainting of fish. This specific example should be examined closely;
Human Health	<p>Human Health</p> <p>Lack of appropriate health data and project-specific health impact assessment has historically complicated efforts to understand how observed illness and other health trends in the NSB are influenced by ongoing development activities. NEPA was enacted in recognition of the fact that the environmental consequences of major federal actions come with interrelated social, economic, and health effects, and the consideration of these effects was central to the purpose of NEPA. NEPA's requirement to analyze and consider mitigation for health effects reflects not only an administrative requirement but an ethical imperative. NEPA regulations and Council on Environmental Quality (CEQ) Guidance instruct agencies to evaluate the direct, indirect and cumulative health effects of proposed federal actions.<sup>9</sup></p> <p>The EIS should include a thorough health impact assessment (HIA). HIA is an accepted tool used internationally in evaluating public health impacts from various policies, programs, projects, and proposals. The actions of the federal agencies with regard to oil &amp; gas development have a profound effect on our communities. To date, most NEPA analysis in the region has focused on identifying "upstream" factors such as pollution and economic change. These factors can exert a profound impact on public health (both positive and adverse), but they are not the only impacts to be considered. To protect our communities, the Corps must work with us toward the goal of recognizing and addressing any appropriate mitigation measures available to reduce potential health effects, and analyze cumulative impacts of oil &amp; gas development.</p> <p>The Borough expects the HIA to examine health impacts resulting from social, economic and cultural changes that may result from the proposed development, including: infectious disease, chronic disease, injuries, mental health and wellbeing, maternal and child health, exposure to hazardous substances, food security and nutrition, housing, employment and income, education, cultural wellbeing, and health care services. To examine health impacts in such a holistic way would meet the NEPA's intended meaning.</p>
Human Health	In addition NVN is extremely concerned about impacts on human health as a result of this project (air quality being a very serious concern – see in 3. Air Quality Impacts), about the hydrological impacts that support our subsistence ecosystem (see in 4. Hydrologic Impacts), and the ability of AOG to remediate these impacts (See 5. Remediation) post-production.
Human Health	While some air monitoring has been conducted voluntarily by the oil industry, there has been no independent assessment of the impact of oil drilling on the health of Nuiqsut residents.
Human Health	Flares are important safety and emission reduction devices used in the oil and natural gas industry. While flaring is generally preferable to the venting of un-combusted hydrocarbon gas streams to the atmosphere, it does result in emissions of NOX and CO, and has been shown to contribute to mercury contamination of the surrounding environment. We already suffer from mercury contamination of or fish and wildlife, and in fact there are consumptive limits paced on our local Burbot; a local subsistence staple.

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Human Health	The concerns of health issues at -- you know, the air emissions. And is it really possible that they all got sick from, you know, such a thing? But, you know, we don't know what -- that's what their -- they claimed is that people get sick at Nuiqsut from the fumes or whatever it is that's in the air in that area out of Nuiqsut, because of all this industrial work going on or it was the blowout itself at one time at Repsol.
Human Health	it's too close to our community, with the prevailing winds coming this way
Human Health	There's air quality that we need to consider because the prevailing winds are coming from that way. We're going to feel it. The health assessments that need to take place, we were just talking about it today. And yet, we continue to have funerals for cancer patients. Leukemia; kids with leukemia. How much more are we going to develop before we get our community even compensated for the social impacts that you all bring to our community?
Hydrology/Water Quality	<p>Wastewater Discharges</p> <p>Currently, the NOI does not identify project components, such as options for wastewater discharges, which may require EPA-issued permits or authorizations. This includes certain discharges from vessels, which are regulated by the EPA Vessel General Permit (please see <a href="http://www.epa.gov/npdes/vessels">www.epa.gov/npdes/vessels</a>). Should the project description be revised or further refined to include such activities, EPA may need to issue permits or grant authorizations for such activities. We recommend that the Draft EIS and the applicant's resource consultation documents include all information the EPA would require for possible EPA permitting decisions in order to avoid or minimize project delays. We intend to work with the Corps as a Cooperating Agency to identify specific data and analysis needs that we may have in order to expeditiously proceed with any applicable permits and/or authorizations. For additional information regarding EPA's CWA authority with respect to wastewater discharges from oil and gas activities, please contact Erin Seyfried at (206) 553-1448 or <a href="mailto:seyfried.erin@epa.gov">seyfried.erin@epa.gov</a>.</p>
Hydrology/Water Quality	<p>Safe Drinking Water Act-Underground Injection Control</p> <p>Lastly, EPA has the authority to regulate Class I Underground Injection Control wells under the Safe Drinking Water Act. If the project will require UIC wells (including Class II wells, which are regulated by the Alaska Oil and Gas Conservation Commission) we recommend that general information required for the UIC application and potential impacts associated with those wells be included in the EIS. For questions regarding EPA's UIC program please contact Tim Mayers at (907) 271-3410 or <a href="mailto:mayers.timothy@epa.gov">mayers.timothy@epa.gov</a> or Thor Cutler at (206) 553-1673 or <a href="mailto:cutler.thor@epa.gov">cutler.thor@epa.gov</a>.</p>
Hydrology/Water Quality	<p>Water Quality</p> <p>Water quality degradation is one of EPA's primary concerns. The proposed project should be evaluated for its potential to alter stream and wetlands discharge and degrade riparian habitat and water quality. The introduction of sediments to stream systems can alter thermal processes, consequently degrading water quality, and impacting fish and their habitat. Antidegradation provisions of the Clean Water Act apply to those waterbodies where water quality standards are currently being met. These provisions prohibit degrading the water quality unless an analysis shows that important economic and social development necessitates degrading water quality. Project evaluation should determine how the antidegradation provisions would be met. Section 303(d) of the CWA requires States to identify water bodies that do not meet water quality standards and to develop water quality restoration plans to meet established water quality criteria and associated beneficial uses. The EIS must disclose which waters may be impacted by the project, the nature of potential impacts, and specific pollutants likely to impact those waters. It should also report those waterbodies potentially affected by the project that are listed on the Alaska's most current EPA-approved 303(d) list, if applicable. The EIS document should describe existing restoration and enhancement efforts for those waters, how the proposed project will coordinate with on-going protection efforts, and any mitigation measures that will be implemented to avoid further degradation of impaired waters.</p>
Hydrology/Water Quality	<p>As proposed, project development and operation will require substantial infrastructure as well as machinery to transport materials and to construct roads, facilities and buildings. Road, pad and airstrip construction and operation often contribute more sediment to streams and wetlands than any other land use activities. Roads, pads and airstrips also contribute to habitat fragmentation, wildlife disturbance and the introduction or exacerbation of noxious weeds. The EIS should therefore include data about existing roads, pads and airstrips, and evaluate the change in earthworks areal extent and density that will occur as a result of the project and predicted impacts to water quality and flow from these groundworks. The EIS should note that, under Section 402 of the CWA, any construction project disturbing a land area of one or more acres requires a construction storm water discharge permit under the Alaska Pollutant Discharge Elimination System permit program. The EIS should document the project's consistency with applicable storm water permitting requirements and should discuss specific mitigation measures that may be necessary or beneficial in reducing adverse impacts to water quality. Additionally, if the discharge of pollutants from a point source into waters of the U.S. will be necessary, applicable APDES requirements should be discussed as well.</p> <p>Construction of facilities and access roads may also compact the soil, thus changing hydrology, runoff characteristics, and ecological function of the area, affecting flows and delivery of pollutants to waterbodies and wetlands. Therefore, the EIS should include a detailed discussion of the cumulative effects from this and other projects on the hydrologic conditions of the proposed project area. The document should clearly depict reasonably foreseeable direct, indirect and cumulative impacts to surface water resources.</p>
Hydrology/Water Quality	The proposed Nanushuk development includes the construction of 25 miles of roads in a previously undeveloped area. The road alignment for the project is southeast to northwest and potentially will bisect the prevailing sheet flow occurring during spring break-up. Although the Applicant proposes culverts in the roadway to prevent flooding and to protect the integrity of the road, the culverts will not mitigate the interruption and consolidation of sheet flow across the landscape.

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Hydrology/Water Quality	[With] the hydrologic and geomorphic complexities of the Colville River Delta system, and any anthropogenic perturbation to these naturally-operating, inter-linked and interacting systems and subsystems will result in feedbacks; in many cases the results of these feedbacks are unpredictable. It is NVN's position that small wildcat oil companies are not best suited to deal with unpredictable feedbacks that will likely result from the anthropogenic perturbations that will result to the Colville River Delta as a result of this project.
Hydrology/Water Quality	have you considered the fall, the spring breakup, and is this going to have any significant impact of water coming down the river from the overflows, and if there's a jam?
Hydrology/Water Quality	I'm most concerned about the pad that's located to the south. It appears from the material in your application that was posted on the website, at least, that it's in the flood plain. And with the state of affairs with climate change on the North Slope, it seems that definitely getting things outside this flood plain of major rivers would be a very wise idea for the long run.
Hydrology/Water Quality	flood plains, whether it's 100-year flood plain or more than 100-year, that we might be wanting to plan for in this time frame.
Invasive Species	Under the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990, as reauthorized and amended by the National Invasive Species Act of 1996, the U.S. Coast Guard and the State of Alaska must prevent the introduction of aquatic non-indigenous species from ballast water. Because the uptake and discharge of ballast water is one of the most substantial pathways for the introduction and spread of aquatic invasive species, we recommend that the EIS analysis include information about current aquatic invasive species presence and measures to be taken to prevent introduction and spread of non-indigenous species in the project area marine habitat via ballast water. The EIS should also describe measures that demonstrate the project's consistency with Executive Order 13112 Invasive Species. We suggest including any existing Corps direction for ballast water and noxious species management, a description of current conditions, and best management practices that will be utilized to address invasives. Of particular concern are potential impacts resulting from species adaptability, in light of changing temperatures and levels of carbon dioxide. We believe it is important to recognize the limitations of ballast water exchange as an invasive species control measure, and that ballast water discharge is not the only vector for introduction of aquatic organisms. Some species can travel on the infrastructure of the vessel or can be discharged from other waste streams. Due to rapid changes in the Arctic, the project area may be particularly vulnerable to colonization by exotic species. We recommend that a simple analysis of the physical environment (salinity, temperature) of the likely ports of origin be performed and a comparison provided between these data and similar data for the project area. If conditions are similar, the potential for impacts is greater. The EIS should also discuss measures that would be implemented to reduce the likelihood of introduction and spread of invasive species with the proposed activities.
Land Ownership/Use/Management	Land Use Impacts Land use impacts would include, but not be limited to, disturbance of existing land uses within construction work areas during construction and creation of permanent right-of-ways for construction, operations, and maintenance of the pipeline and aboveground facilities. The EIS should document all land cover and uses within the project area, impacts by the project to the land cover and uses, and mitigation measures that would be implemented to reduce the impacts. One of the primary, direct impacts of construction on open land use types would be the removal or alteration of vegetation. Although vegetation can be replanted, ecosystem restoration on the North Slope is often not successful and, when successful, can take up to 20 years or more, making the construction impacts to these resources long term and in some cases permanent. For example, the impact on land use, in the permanent right-of-way areas would be a permanent change to open land. The EIS should describe the impacts to open land use types, indicate if the impacts would be permanent or temporary, and state measures that would be taken to compensate for the loss of resources because of the project.
Land Ownership/Use/Management	Project Area Access We recognize that there will need to be restrictions or limitations imposed on residents that currently use the project area for recreation, subsistence, and travel to other areas. Such restrictions and possible mitigation of these impacts should be developed in close coordination with the users, and impacts should be thoroughly analyzed and reported in the EIS. We recommend the EIS disclose of all impacts associated with such activities and describe what actions will be taken to manage and maintain recreational and access opportunities in the project area.
Marine Resources	Marine and Nearshore Habitat The proposed project could have impacts on marine resources and habitat. The EIS should therefore describe the current quality and capacity of habitat, its use by organisms, particularly marine mammals and fish, and identify known migration routes and timing. If marine habitats will be impacted as a result of marine traffic associated with transport of the sealift modules and other project supplies, project construction/operation, or discharges (accidental and intentional), the EIS should disclose the impacts to marine and aquatic habitat and the mitigation measures that would be implemented to minimize such impacts. As an example, oil spills in sensitive coastal environments such as the Beaufort Sea can result in oil-covered coastlines and wildlife, requiring significant resources for containment of oil plumes and complete cleanup and restoration of impacted resources and sites. Since impacts may not be limited to onshore habitat, the EIS analysis should also consider marine and nearshore habitats.
Noise	the cumulative noise impact that these three sites will have
Oil Spills	Oil Management and Spill Analysis The storage and management of petroleum products is in part regulated by EPA under 40 CFR Part 112. Depending on the volumes of petroleum products stored onsite, the applicant may be required to develop Spill Prevention Control and Countermeasures plans and Facility Response Plans and submit these plans to EPA for review. A discussion of these requirements, facilities, plans and response capabilities should be included in the EIS. For more information regarding SPCC plans and FRPs, or the EPA's responsibilities in response to oil or hazardous material incidents, please contact Matt Carr at (907) 271-3616 or carr.matthew@epa.gov.

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Oil Spills	<p>As with all development on the North Slope, EPA has concerns regarding the potential for oil spills and well blowout, particularly if the reservoir pressures are higher than generally encountered. We recognize that spill response techniques and capabilities during the various seasons and conditions are vastly different. These differences must be identified when determining the most appropriate strategy for dealing with spills and releases in specific conditions and seasons, including freeze-up, the winter season, and break-up. Because of the different ice environments and oil-in-ice situations, over-reliance on a single type of response will likely result in inefficient, ineffective cleanup after an actual spill.</p> <p>Successful spill response hinges on more than the immediate availability of the best technology; it requires thoughtful and comprehensive planning, exercise and implementation. We believe it is critical that the EIS clearly identify and fully analyze the risks associated with potential spills and other emergency response scenarios. We also believe that impacts to area users need to be identified, as well as any strategies employed to communicate risks or actual emergencies to those users. The EPA continues to recommend a more rigorous analysis of the effects of oil spills, particularly at times of break-up, and the identification of additional, proven measures to prevent spill.</p> <p>Assessment of the environmental risk of a blowout or major oil spill should be described as distinct from evaluations of potential impacts to the inland and coastal environments should a blowout or major spill occur. Conclusions about impacts should be based on an analysis of potential impacts in the event of a significant blowout or spill, and the risk probability analyses should be evaluated separately.</p> <p>The EIS should include a detailed discussion of how potential adverse impacts from spills may be mitigated by effective containment and cleanup operations. The discussion should include how effective containment and cleanup operations would be affected by inland/coastal and meteorological conditions that occur in the project area and that are predicted to occur throughout the life of the project. These include but are not limited to wind speeds and directions, sea states, ice, temperatures and fog. This will be important information to describe and discuss, especially in light of demonstrated and anticipated climate change in the Arctic region, including the Beaufort Sea area.</p>
Oil Spills	Sufficient and realistic remediation plans must be developed and then employed to not only deal with real-time on-site spills and hazards, but also to formulate a long-term, post-production remediation plan and commitment of funding to that plan.
Project Facilities - Bridges	<p>Are you guys going to put the pipe over the bridge? Are you guys going to go under the bridge -- or under the river with that pipe or no? Is it going to be over?</p> <p>Because I was kind of thinking, you might go under the river and come back up.</p>
Project Facilities - Pads	How large is your proposed man camp?
Project Facilities - Pipelines	where is the pipeline? Like where is the oil going from --
Protected Species	<p>Protected Species</p> <p>The proposed project may impact protected species listed under the Endangered Species Act and the Marine Mammal Protection Act, their habitats, as well as State special status species. The EIS should identify the endangered, threatened, and candidate species under the Endangered Species Act and the Marine Mammal Protection Act, and other sensitive species within the project and surrounding areas. The EIS also should describe the critical habitat for the species; identify any impacts the project will have on the species and their critical habitats; and how the proposed project will meet all requirements under ESA and MMPA, including consultation with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. The EIS may need to include a biological assessment and a description of the outcome of consultation with the USFWS under Section 7 of the ESA and NMFS under the MMPA. The Corps' actions should promote the recovery of declining populations of species.</p> <p>For listed species like the bowhead whale, the EIS should insure that action alternatives would not threaten the viability of populations. ESA requires the lead agency to consult with the USFWS and the NMFS in cases where proposed projects could potentially impact listed species or critical habitat(s). We recommend that biological assessments be developed prior to the EIS and their results summarized and disclosed in the document . By doing this, the EIS would demonstrate that ESA and MMPA procedures are being followed and that listed species and their habitats are being protected.</p>
Public Involvement Process	<p>Consultation with Federally-Recognized Tribal Governments</p> <p>The proposed project has the potential to affect traditional subsistence and cultural practices and resources of certain tribal members living near and utilizing resources in the project area. Tribal governments whose members or traditional resources may be impacted, either directly and indirectly, by this action should be invited to consult on a government-to-government basis on this project, consistent with EO 13175 (Consultation and Coordination with Indian Tribal Governments). EO 13175 states that the U.S. government will continue "to work with Indian tribes on a government-to-government basis to address issues concerning Indian tribal self-government, trust resources, and Indian tribal treaty and other rights." Documentation of these consultations should be included in the Draft EIS, as should any activities to address any concerns identified by tribal governments.</p>
Public Involvement Process	It is important for the agency to ensure meaningful public participation in the process. The Borough appreciates the Corps' willingness and ability to host meetings about Scoping in the affected communities of the North Slope, including Nuiqsut and Barrow. The Borough hopes the Corps continues to incorporate this level of public participation into all activities that impact the North Slope communities. Only by going to the Villages can the agency truly understand the community needs and concerns.
Public Involvement Process	Please add my name to the mailing list
Public Involvement Process	Please add my name to the mailing list will appreciate updates

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Public Involvement Process	I don't know that it was very well advertised here in Fairbanks.
Public Involvement Process	I urge the Corps of Engineers to use a government building or a place that is commonly used for public hearings. I have been to two meetings this week at this facility. One was a senate -- but I don't think it's an important -- a neutral place to have public comment on a project. I believe it is a bias, an inherent bias having a site at a building that is jointly run by ConocoPhillips who is an applicant -- or by ConocoPhillips and I don't know about the other companies involved in this project. I think it was good to have unions come.
Public Involvement Process	there was not good public information. There's been no news articles in our local paper. I didn't see a public notice actually in the print part of the paper, not in the end. I don't know if there was a public notice, but this location is unfair to the general public. And I hope that the Corps of Engineers will not use it at the next phase of this project.
Public Involvement Process	For your hearings, definitely, I urge it to be in a neutral location.
Purpose and Need	While the Corps must consider the applicant's proposal in the EIS, we believe the Corps' purpose and need should also reflect the broader public purpose and need for the project, with a focus on the purpose and need for the Corps' action, decision(s) and analysis consistent with the implementing regulations for NEPA. We believe this approach is in compliance with the Corps' NEPA Implementation Procedures. Given the nature of this project (production of multiphase product from the three drill sites and transport to the Nanushuk Pad via multiphase pipelines for processing), a concise statement is of critical importance to setting up the analysis of alternatives, which could range from too tightly focused to too broad, depending on how the statement is written. In supporting the statement of purpose and need, the EIS should discuss the proposed project in the context of the broader energy market, including identification of existing hydrocarbon product providers and sources and proposed transportation systems, as well as clearly describe how the need for the proposed action has been determined.
Purpose and Need	The State continues to fully support increased exploration and production from the North Slope, which would help offset current declines in production and maintain efficiency of the Trans-Alaska Pipeline System (TAPS). Over the past twenty years, North Slope production has steadily declined and is now currently producing about 546,000 barrels per day. In the face of steadily declining production, it is imperative to bring new production online.
Purpose and Need	Given the current budget challenges we are facing in Alaska, bringing new resource development and energy production online is more critical now than ever.
Regulatory Reviews/Permits	EPA recognizes that under 33 CFR Part 325 Appendix B-NEPA Implementation Procedures for the Regulatory Program, the Corps is directed to limit the scope of analysis for an EIS to "address the impacts of the specific activity requiring DA permit and those portions of the entire project over which the district engineer has sufficient control and responsibility to warrant federal review." We believe that given the Corps' regulatory responsibilities relating to nearly all components of this project and additional, potential future development, the entire project is clearly under the Corps' control and responsibility. Therefore, we recommend that the scope of the EIS include the entire project and area of direct and indirect impact, including reasonably foreseeable future activities.
Regulatory Reviews/Permits	the North Slope Borough is a provider of utilities in the Service Area 10, which is between the Colville River and the Canning River, I believe, maybe 25 miles. There's a delineated map and the North Slope Borough provides the utilities services in these, which is solid waste, waste water treatment, potable water. And in order for companies wishing to create their own facility, you would have to get a waiver. There's a waiver process, and justify why you're not using the North Slope Borough services. I thought I'd just bring that up, because that is something to be aware of if you are planning on developing waste management stuff.
Regulatory Reviews/Permits	Kuukpik ... are also deeply troubled that the project Armstrong now plans to build is substantially different from the project described in all but one or two of the available public permit applications, documentation, and environmental analysis. The existing Project Description and analysis is based on a maximum expected production capacity of 60,000 barrels per day. Repsol's/Armstrong's existing EED is based on the 60,000 barrel facility design and layout that was included in the permit application, publicized in the project documents, show to everyone who attended scoping meetings, and which is still available to the public on the Nanushuk EIS website. Yet, just a few weeks ago, Armstrong finally acknowledged that the Project described in all these documents is not the project it plans to build. Rather, Armstrong has informed the Corps that its decision to increase its expected maximum rate of recovery from 60,000 barrels per day to 120,000 per day will result in significant design changes to the Project. Among these are moving an entire drilling pad approximately a mile and a half closer to Nuiqsut, doubling the well count (from a maximum of 76 to 150), increasing all drill site pads by up to 2.5 acres, and increased emissions.
Regulatory Reviews/Permits	Kuukpik is very concerned that the EIS process currently underway is not based on the new project proposal. Neither we nor anyone else should be expected to comment on a project that is not described in any of the documents that are publicly available. In fact, those who attended the scoping meeting but relied on their oral testimony will not have the opportunity to provide scoping comments on the actual project proposal at all because the project they heard about and commented on no longer exists. We don't even know the new footprint or gravel requirements (but we know it's not the amount stated in the applicant's permit applications.) At the very least, the total drill site footprints are 7.5 acres larger, roads will be an additional half mile or more long, and the nearest road and drill site will be a full mile and a half closer to Nuiqsut. Yet both the Corps and Armstrong refuse to wait for more complete plans before proceeding with the NEPA process on a project that is plainly not ready for it.  Proceeding to finish the scoping process without adequately informed public comments shows undue and legally questionable haste. It also shows a lack of concern for the seriousness of the recent changes, and a lack of respect for the process and for the Nuiqsut residents who will be more affected by the project. Experienced operators on the North slope would not try to ram a project through the NEPA process when the facility design isn't even complete or public yet. Nor would they wait so long to inform regulators and the public that the original proposal is no longer realistic or accurate.



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Regulatory Reviews/Permits	<p>The Corps's determination of the Least Environmentally Damaging Practicable Alternative "LEDPA" for the project is technically separate from the NEPA analysis and process, but the more the NEPA process is handicapped by starting with an incomplete project and an incomplete NEPA foundation, the more complex and time consuming the 404 permitting analysis will be after the NEPA process is done. In addition, this NEPA process provides all of the critical stakeholders one of the best opportunities to achieve the mutual goal of allowing only the most environmentally responsible development to occur. It is the best chance the agencies and stakeholders have to collectively improve the project - as opposed to the more fragmented individual permitting processes that will follow the EIS. what are the best alternatives to this proposal? How can the project be changed and improved? Not just tweaked, but analyzed from the ground up to design a project that avoids as many impacts as possible, minimizes those that cannot be eliminated, and then mitigates those that are unavoidable.</p> <p>The Corps can think outside the box to make the LEDPA determination; it is not constrained by the alternatives the applicant proposes. Rather the Corps is constrained only its own appraisal of whether an alternative is "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purpose." So the Corps should not waste time analyzing options in the NEPA process that genuinely are not technologically feasible, but the Corps also should not blindly accept the applicant's claims that certain alternatives that might significantly improve this project are not feasible.</p> <p>In order to determine what impacts are rally necessary to develop the Nanushuk resource, the Corps needs to examine the evolution of North Slope oil development and choose practicable, but less impacting alternatives. The existing proposal appears in may ways to be a throwback to the size and impacts of developments constructed at Prudhoe Bay and Kuparuk 30 and 40 years ago, rather than the smaller, less impacting developments of recent years such as Alpine. Consider Nanushuk's proposed size: up to 3.3 million cubic yards of gravel; a 291 acre footprint; 25 miles of roads; and 36 miles of pipelines. To put this in perspective, when ConocoPhillips constructed its Central Processing Facility (CP) at Alpine and two drilling pads, - the most significant development in the past 20 years in this area - the total footprint was about 97 acres, compared to Nanushuk's 291 acres. Considering the relative similarity between the processing needs of the two facilities (Alpine maximum production rate was about 130,000 barrels per day) and advances in technology just since Alpine was constructed, Kuukpik questions whether all this gravel and all the acres proposed to be filled are "unavoidable". Stakeholders and permitting agencies need to see alternatives that offer significant reductions in footprint and gravel discharged.</p>
Regulatory Reviews/Permits	<p>Two recent developments impact scoping and the integrity of the EIS process. ....a largely unknown company, 70 &amp; 148, LLC had taken over the operatorship of the proposed Nanushuk project from Repsol. second, an "update" was added around last October (but not publicized) to the lengthy online Nanushuk Project Description noting that the facilities at Nanushuk are now proposed to have the capacity to process 120,000 barrels of oil per dav. rather than 60.000.</p> <p>On the whole, the currently available Nanushuk documents do not meet even the basic requirement of identifying the proposed operator. ...</p> <p>The post-application changes in the amount of oil that Nanushuk would be designed for are even more problematic. Kuukpik doesn't expect to have perfect information going into an EIS process - 30 percent design completion is typical during the permitting phase in Kuukpik's experience - but Kuukpik expects and needs to know a lot more than we do now. ....</p> <p>Even more troubling than the lack of information is what is effectively wrong information. Almost all the documents currently available actively convey information to the public that is not accurate... At the very least, the analysis of air quality/emissions and site specific impacts from the now-relocated drilling pads are undisputedly and probably dramatically wrong.</p> <p>Likewise, readers can learn about the estimates of gravel required and acres likely to be impacted under the old plan, but they will not learn any of the information about the new plan...</p> <p>This matters, practically and legally. "The primary purpose of an [EIS] is to allow for informed public participation and informed decision making. One of NEPA's primary goals is to ensure that the public has access to information regarding potential agency projects and the opportunity to provide informed comments before a final decision is made. This purpose in not limited to post-scoping comment periods. Courts have indicated that the scoping process must "give the public adequate information to effectively participate in the decision -making process leading up to the final decision. The CEQ regulations likewise presuppose that the public has a reasonably accurate understanding of the proposed project prior to completing the scoping process. If the project changes such that the understanding the public had during scoping is no longer accurate, additional scoping and/or a Supplemental EIS is required.</p>
Regulatory Reviews/Permits	<p>No one wants to complete an EIS only to have a court later determine that the scoping process was flawed and needs to be redone, ... Kuukpik thinks Armstrong needs to submit a modified permit application project description , and EED to reflect the new operator and drilling plan and for the Corps to provide a additional public notice and scoping comment period. Additional scoping meetings may also be appropriate.</p>
Regulatory Reviews/Permits	<p>...Armstrong has doubled the expected barrels of oil per day (BOPD) from 60,000 BOPD to 120,000 BOPD .....ASRC is hesitant that the existing plan submitted for evaluation under the EIS process does not encompass these updates.</p>
Regulatory Reviews/Permits	<p>ASRC asks that USACE incorporate previous NEPA reviews by reference whenever possible, and continue the practice of tiering NEPA reviews. ASRC is confident that USACE, and the cooperating agencies, will utilize existing data and traditional knowledge whenever possible in their analysis.</p>

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Regulatory Reviews/Permits	I wanted clarification as to whether this was a full-blown EIS or a fast-track EIS. And you told me it was a full EIS. So if it's a full EIS, those normally take up to two years or even longer. And according to your schedule, you're trying to get it all done within a year, by 2017. ...that's not a full EIS to me.
Regulatory Reviews/Permits	One of the things I'd like to encourage, as the scoping and EIS goes on, is doing it in a timely fashion. You know, getting oil in the line sooner than later. Getting folks to work sooner than later is probably one of the most important things.
Safety	<p>Safety Hazards</p> <p>Residents of communities closest to the project area have identified safety as an issue of great concern for this project. The scope for the EIS should reflect concerns regarding safety given the remote location with dynamic characteristics and processes, and provide the foundation for substantive responses to the many questions and concerns raised associated not only with the citing and operation of the various facilities likely to be constructed, but also the capability to respond to events involving such facilities or associated structures or vessels. This should include analysis of the potential hazards associated with extreme, high-pressure wells and processing facilities.</p>
Seismic Hazards	In general, construction and operation of oil and gas development projects may cause or be affected by increased seismicity in tectonically active zones. Also, ground movement on nearby faults can cause pipelines to rupture, resulting in discharge of oil, condensates and gas. Therefore, we recommend that the EIS discuss the potential for seismic risk and how this risk will be evaluated, monitored, and managed. A seismic map should either be referenced or included in the EIS. The construction of the proposed project must use appropriate seismic design and construction standards and practices.
Socioeconomics	<p>Socioeconomic Impact</p> <p>We anticipate that the project will result in varying direct and indirect employment opportunities for North Slope residents. We also anticipate that there will be local and corporation revenues generated from this project. While employment opportunities and local revenues generally increase a community's standard of living (even temporarily), there can also be negative impacts to families, communities, and cultures, especially in areas where residents are participating in traditional cultural practices. These impacts associated with this project, as well as cumulative impacts, should be fully evaluated and disclosed in the EIS.</p>
Socioeconomics	timely development will significantly help address current state budget issues, while providing good paying jobs to Alaskans. With oil currently expected to flow in 2021, successful Nanushuk project development will provide increased economic and employment opportunities for Alaska.
Socioeconomics	NSB recommends that the EIS include analysis of both the potential positive and negative impacts to its residents from this project and the associated potential tax revenues and jobs created. In addition, the Borough generally requires that an Economic Opportunity Plan be developed prior to construction activities in consultation with the Borough, affected communities, tribal governments, and Native corporations. It would typically include a local hire manpower plan, local business contracting plan, training program, mentoring program, monitoring program, and socio-cultural value system component.
Socioeconomics	...ASRC notes the enormous investment potential of the project which should undergo similar rigorous review. In an environment of low oil prices, production decline of the North Slope, and the State of Alaska budget deficit, the Nanushuk Project signifies an investment in Alaska and the North Slope. ....This Project is expected to contribute a \$5 billion investment, which would provide a boon to the local and State economy. Tax revenues from Nanushuk have the potential to directly benefit the local communities by providing essential services provided by the North Slope Borough (NSB) where 90% of its budget is derived from taxation of oil infrastructure on the North Slope. Furthermore, ASRC appreciates Repsol's commitment to local hire - the construction phase of this project alone is expected to employ up to 600 employees. Additional employment opportunities are expected during the operations period on each of the drill sites, processing facility, and support operations across the State. ...Furthermore, through Section 7(i) revenue sharing, ... ASRC will distribute approximately 70% of its royalty revenue with the other ANCSA regional corporations who are obligated to share 50% of their receipts with village corporations within their respective regions.
Socioeconomics	The Alaska Process Industry Careers Consortium (APICC) supports the Nanushuk Project. APICC strongly urges the US Army Corps of engineers to consider the economic benefits of the Nanushuk Project in the EIS. Please see additional support in the attached letter.
Socioeconomics	This proposed project has the potential to add a substantial amount of new oil to TAPS. Up to an estimated 120,000 barrels/day would be a much-needed addition to keeping the pipeline operational far into the future. To go along with this increased oil production will come the increase in the workforce surrounding this project. Just during the construction phase there could be up to 600 employees working for four years. Overall the Nanushuk project could bring in \$5 billion in new investment activity over six years.
Socioeconomics	<p>New oil production from Nanushuk could add up to 120,000 barrels of oil per day into the Trans-Alaska Pipeline System, Alaska's economic life-line that is now running at three-quarters empty. TAPS and Alaska desperately need more oil production and Nanushuk has the potential to deliver significant new volumes.</p> <p>The \$5 billion project is vital to Alaska's depressed economy. Nanushuk could be one of the most significant discoveries on the North Slope since the discovery of Alpine.</p> <p>The project would generate significant long-term economic activity with up to 600 North Slope construction jobs and at least 60 direct jobs in Anchorage. For each direct oil industry job, 20 additional jobs are generated across the Alaska economy.</p>

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Socioeconomics	<p>* The \$5 billion Nanushuk prospect is an important and positive development for Alaska and could be one of the most significant discoveries on the North Slope since the discovery of the Alpine oil field.</p> <p>* Alaska's economic lifeline, the Trans-Alaska Pipeline System (TAPS), is now running at three-quarters empty. The Nanushuk project has the potential to produce up to 120,000 barrels of oil per day, significantly increasing TAPS throughput and revenues to the State of Alaska.</p> <p>* State and local spending of taxes and royalties paid by the oil and gas industry directly creates jobs in the public sector and indirectly creates jobs throughout the private sector.</p> <p>* The project would generate significant long-term business and economic activity and up to 600 North Slope construction jobs for Alaskans. In addition, 60 direct jobs would be created in Anchorage and two rigs supporting development for five years each would generate 120 to 150 jobs per rig, and more through fabrication, logistics, and indirect jobs.</p>
Socioeconomics	<p>When Alaska was granted Statehood, it was with the premise that Alaska would be able to develop its resources in order to support its economy. A strong resource industry is critical to maintaining a healthy state economy, which can provide services such as public education, fire departments, public safety, and many of the basic services afforded to its citizens. Many of the business members of the Fairbanks Chamber have supported the oil and gas industry, which has enabled them to provide good paying jobs in the community.</p>
Socioeconomics	<p>Construction of the reservoir is expected to take four years employing up to 600 people. Once in production, up to 120-150 workers would be employed per drill rig. These oil and gas industry jobs have been historically some of the highest paid in the state. Further, Nanushuk will offer economic opportunities throughout regions of Alaska by way of support with good and services. Our Fairbanks economy has benefited greatly over the years by oil and gas exploration and production activities throughout Alaska.</p> <p>With a distressed oil industry, rigs being idled and workers being laid off, the Nanushuk development can be looked upon as a silver lining in the current fiscal outlook illustrating that the North Slope of Alaska can continue to be a premier oil producing region. It is critical to the development of the project that there is a timely and efficient NEPA and EIS process.</p> <p>The Greater Fairbanks Chamber of Commerce supports Armstrong as they move forward in permitting process for the Nanushuk Project.</p>
Socioeconomics	<p>I am a business owner in Fairbanks, Alaska. Our company depends on oilfield support for a portion of our income. Responsible development of the Nanushuk Project will put more oil in the pipeline and allow our business to continue to employ Alaskans in the Interior.</p>
Socioeconomics	<p>As we all know, TAPS is running at 25% capacity. With Nanushuk's potential throughout of an additional 120,000 barrels per day, this would positively impact the operation of the pipeline and Alaska's economy. This project would generate stable, long-term jobs for Alaskans, creating up to 600 North Slope construction jobs and hundreds of additional jobs in Anchorage and throughout Alaska through fabrication, logistics and indirect jobs.</p>
Socioeconomics	<p>Economic Benefits Include:</p> <ul style="list-style-type: none"> <li>• The \$5 billion Nanushuk prospect is an important and positive development for Alaska and could be one of the most significant discoveries on the North Slope since the discovery of the Alpine oil field.</li> <li>• Alaska's economic lifeline, the Trans-Alaska Pipeline System (TAPS), is now running at three-quarters empty. The Nanushuk project has the potential to produce up to 120,000 barrels of oil per day, significantly increasing TAPS throughput and revenues to the State of Alaska.</li> <li>• State and local spending of taxes and royalties paid by the oil and gas industry directly creates jobs in the public sector and indirectly creates jobs throughout the private sector.</li> <li>• The project would generate significant long-term business and economic activity and up to 600 North Slope construction jobs for Alaskans. In addition, 60 direct jobs would be created in Anchorage and two rigs supporting development for five years each would generate 120 to 150 jobs per rig, and more through fabrication, logistics, and indirect jobs. For each direct oil industry job, 20 additional jobs are generated in the Alaska economy.</li> </ul>
Socioeconomics	<p>The \$5 billion Nanushuk prospect is an important and positive development for Alaska and could be one of the most significant discoveries on the North Slope since the discovery of the Alpine oil field. * Alaska's economic lifeline, the Trans-Alaska Pipeline System (TAPS), is now running at three-quarters empty. The Nanushuk project has the potential to produce up to 120,000 barrels of oil per day, significantly increasing TAPS throughput and revenues to the State of Alaska. * State and local spending of taxes and royalties paid by the oil and gas industry directly creates jobs in the public sector and indirectly creates jobs throughout the private sector. * The project would generate significant long-term business and economic activity and up to 600 North Slope construction jobs for Alaskans. In addition, 60 direct jobs would be created in Anchorage and two rigs supporting development for five years each would generate 120 to 150 jobs per rig, and more through fabrication, logistics, and indirect jobs. For each direct oil industry job, 20 additional jobs are generated in the Alaska economy.</p>
Socioeconomics	<p>It comes at a time crucial to our economy and for operational, economic continuation of the Alyeska Pipeline. It can potentially add an additional 120,000 barrels into the pipeline. Nanushuk is near to existing infrastructure, so that environmental impact will be minimal; yet it has the potential to generate up to 600 construction, 300 drilling jobs for 5 years, and 60 direct jobs indefinitely. These jobs and the tax revenue generated will fund up to 20 additional jobs in the public and private sectors. Air Liquide manufactures industrial gas and dry ice- these kinds of projects directly affect our workload and ability to meet payroll for our 74 employees in Anchorage, Wasilla. Palmer. Fairbanks. Kenai. and Homer.</p> <p>Without continued development of our resources, Alaska's economy will stagnate and continue to spiral into recession. I hope you will consider note as my positive support for this project.</p>

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Socioeconomics	The Nanushuk Project is very important to the economic viability of the oil & gas industry in Alaska, and industry that provides the highest economic benefit to the state. This project has the potential of providing hundreds of high paying long term jobs, and for each oil field job studies have shown this supports approximately 20 jobs total in state. Our oil pipeline is dwindling, and at some point it will stop being viable if we can't increase production. We need new development, and the Nanushuk project is close to existing infrastructure which will minimize potential impacts. What's more, the state stands to gain additional economic advantages from tax and royalty payments that will help support important services and programs for our people.
Socioeconomics	The Nanushuk project has the potential to produce up to 120,000 barrels of oil per day, significantly increasing TAPS throughput and revenues to the State of Alaska.
Socioeconomics	State and local spending of taxes and royalties paid by the oil and gas industry directly creates jobs in the public sector and indirectly creates jobs throughout the private sector. I've directly benefitted from the robust investment oil and gas companies make in Alaska, having worked as both an employee and contractor for several operators and support companies.
Socioeconomics	The project would generate significant long-term business and economic activity and up to 600 North Slope construction jobs for Alaskans. In addition, 60 direct jobs would be created in Anchorage and two rigs supporting development for five years each would generate 120 to 150 jobs per rig, and more through fabrication, logistics, and indirect jobs. For each direct oil industry job, 20 additional jobs are generated in the Alaska economy.
Socioeconomics	<p>The Nanushuk project will generate approximately \$5 billion in new Alaska investment over the 6 year course of development. Once in production an estimated 120,000 barrels of oil per day will be added to already declining oil production being realized and keep the TAPS current volume of production from diminishing to unacceptable rates. Please do not hesitate to approve the Nanushuk development proposal.</p> <p>Alaska's economic future is highly dependent on responsible extraction of its natural resources which creates infrastructure which in turns demands support and adds jobs. With this, I respectfully urge the Army Corps of Engineers and other State and Federal agencies to allow Armstrong Oil and Gas and Repsol USA to move forward with NEW Arctic Development for Alaskans for Alaska, and for the United States of America.</p>
Socioeconomics	It's not a secret that the state is facing a tough times in today's economy and that our trans-Alaska pipeline is running almost empty. The Nanushuk project has the potential to produce enough oil to significantly increase production thru our pipeline and therefore revenues to the State of Alaska.
Socioeconomics	This project, and its projected throughput through TAPS would benefit the state, the stakeholders, our members at Laborers' Local 942, and the countless indirect jobs that come as a result of oil & gas exploration and production. For example, one study found a major multiplier effect in the oil and gas industry. For every one direct job in the industry, 20 more indirect jobs are created. As a result of low oil prices, the number of our members out of work during this pipeline season was more than double that of the yearly average of the prior three years. Projects such as this provide good, well-paying jobs for the residents of the interior and the surrounding towns and villages, providing a much needed economic boost when it is needed the most.
Socioeconomics	The project would generate significant long-term business and economic activity and up to 600 North Slope construction jobs for Alaskans. In addition, 60 direct jobs would be created in Anchorage and two rigs supporting development for five years each would generate 120 to 150 jobs per rig, and more through fabrication, logistics, and indirect jobs. For each direct oil industry job, 20 additional jobs are generated in the Alaska economy. As an Alaskan who depends on oil and gas development for my income, this is extremely important to me. I've made Alaska my home for over 20 years, and intend to stay here. This project is important to continued development of Alaska.
Socioeconomics	<p>Alaska's economic lifeline, the Trans-Alaska Pipeline System (TAPS), is now running at three-quarters empty. The Nanushuk project has the potential to produce up to 120,000 barrels of oil per day, significantly increasing TAPS throughput and revenues to the State of Alaska.</p> <p>State and local spending of taxes and royalties paid by the oil and gas industry directly creates jobs in the public sector and indirectly creates jobs throughout the private sector.</p> <p>The project would generate significant long-term business and economic activity and up to 600 North Slope construction jobs for Alaskans. In addition, 60 direct jobs would be created in Anchorage and two rigs supporting development for five years each would generate 120 to 150 jobs per rig, and more through fabrication, logistics, and indirect jobs. For each direct oil industry job, 20 additional jobs are generated in the Alaska economy.</p>
Socioeconomics	Expanding is great for the economy. New jobs, new opportunities. Using Alaska Unions is a great source of quality workers. We live here and the money stays here and keeps Alaska strong. With local hire, the unemployment rate decreases. Alaska hirees practice a great safety record with projects completed on schedule. Alaska hirees work together well because we live here.
Socioeconomics	Please move this project forward. As you know Alaska's economic lifeline, the Trans-Alaska Pipeline System (TAPS), is now running at three-quarters empty. The Nanushuk project has the potential to produce up to 120,000 barrels of oil per day, significantly increasing TAPS throughout and revenues to the State of Alaska.
Socioeconomics	Not only will it create direct and in-direct jobs, but it will also help fill TAPS.
Socioeconomics	This project will create numerous jobs for Alaskan residents.
Socioeconomics	I know they'll need to hire people. Do you know if there's any stipulations about hiring people from the North Slope or anything like that been talked for hiring local people from the North Slope? For -- you know, there's a lot of unemployment in the villages, in Barrow, and all the other villages.

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Socioeconomics	You don't cover social impacts to this community. How many years we left our kids out there with nowhere to go, no -- we have a little teen center. What mitigations we get from subsistence is given out like a dividend. When the vouchers first came out, we fought over those; that turned into a social impact. Oil and gas has divided this community.
Socioeconomics	When we first came to Nuiqsut, we didn't envision any of this. When we came to Nuiqsut, we were a community that was close-knit. We got together all the time. We worked together. Ever since oil and gas and all the economics have come to us, we've been divided. And we're trying to get back together as Inupiaqs. We live off the land. We subsist. We go 90-some miles to harvest our whales. And all these infrastructures that are coming up, they impact us.
Socioeconomics	I need you guys to consider social impacts to our community, not just mitigating 50,000 a year; that's nothing to cover subsistence. Social impacts to our community, we've been impacted for so long. It's going to cost you to get back this community together.
Socioeconomics	the economic benefits are critical. The oil industry has been hurting lately and continues to hurt, and I encourage you to look carefully. And I want to promote this project. I encourage you to promote this project as an economic benefit to the state of Alaska.
Socioeconomics	I don't know if you've done the math, but if you just had 660 jobs associated with this project, and if they only paid \$50,000 each a year, that equates to about \$600,000 a week coming -- gross dollars -- coming back into this economy. I think that's important to note. In rural Alaska, that means more snow machines, more ammo, more hunting opportunities, more food, more fuel management for personal use. In the communities here in Alaska in the urban areas, that means more spendable income, more choices for education, more choices for what we do with our families, health and benefit. And I think all those are important aspects to a project like this.
Socioeconomics	My encouragement to you all, as you're scoping this, is to please consider the economic impacts to this project. In particular, Fairbanks, as many of you know, we're sort of a -- the hub for the North Slope with workforce, with fabrication, specialty contracting. It's a real part that's an important element of our community's economy. That has an impact on our tax base. It has an impact on the service industries, because people that -- you all that work here, you have families, you buy trucks here, you eat in restaurants, your kids go to schools. All that is very important for Fairbanks. And it's important to be considered in the EIS.
Socioeconomics	I just want to encourage local hire, Alaskans. We have way too many non-resident people working on the slope from the numbers that I've seen. And so in regards to your history of Armstrong, what percentage of local hire as far as Alaskans do you have on your projects?
Socioeconomics	So I think from the economic analysis, I urge you to very carefully look at the -- what contribution to the state budget this project will provide with the current subsidies that are in place. Right now, we may get no money or actually less than positive money with the subsidies to the company doing the project, and given that aspect of it, I think it's really important.
Socioeconomics	I really like the comment I heard by the person in front of me about local hire, Alaskans getting the jobs. I hope that we'll be able to get taxes for our state from all those workers. That's not beyond the scope of the document you're doing, probably.
Solid and Hazardous Waste	<p>Solid and Hazardous Wastes</p> <p>The management and disposal of solid and hazardous wastes are regulated under the Resource Conservation and Recovery Act. RCRA Subtitle D-Solid Waste is delegated to the State of Alaska. Subtitle C covers hazardous wastes, which are regulated by the EPA in Alaska. The Draft EIS should clearly identify any solid and hazardous wastes that are anticipated to be generated from the construction and operation of this project, as well as the anticipated management of these wastes. While certain oil and gas exploration and production wastes have been exempted from regulation as hazardous waste, this exemption does not cover all oil field hazardous wastes. The EIS should also include discussion regarding any reasonably anticipated releases and/or spills associated with these wastes, and potential impacts from such events. Finally, the EIS should include discussion about how the project will ensure compliance with applicable RCRA regulations and state requirements. For questions regarding EPA's RCRA authority involving oil and gas activities, please contact Roberta Hedeem at (206) 553-1448 or hedeem.roberta@epa.gov.</p>
Solid and Hazardous Waste	<p>Hazardous Materials and Wastes</p> <p>The EIS should address potential direct, indirect and cumulative impacts of hazardous materials management and storage from construction and operation of the project. For hydrocarbon products, the requirements should be consistent with those of the Pipeline and Hazardous Materials Safety Administration, and other applicable federal, state and local requirements. We recommend that the EIS also comprehensively address the issues of spill and leak detection, prevention, planning, and clean up. Although pipeline transport is generally safer transport than other modes, such as trucking, concerns remain about the possibility of accidents resulting in the release of hydrocarbon products to the environment. In addition, commercial materials will need to be utilized in project development and operation, some of which can be harmful to the area ecosystem if improperly released. Therefore the EIS should describe measures that will be taken to minimize the chances of such an event, and emergency measures that would be taken should such an event occur.</p>
Solid and Hazardous Waste	Finally, if any pesticides or biocides will be used during construction, operation, and maintenance of the project, the EIS should address any potential toxic hazards related to the use of such substances, and describe what actions will be taken to assure that impacts by toxic substances released to the environment will be minimized.



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Solid and Hazardous Waste	what are you going to do with water waste, water, and solid waste?
Subsistence	on subsistence -- more and more land is taken away to our -- from our subsistence users, our subsistence hunters.
Subsistence	In conducting a thorough analysis, the Borough suggests that the EIS must consider: The full range of potential impacts to subsistence, including those associated with construction and operation of project facilities, vessel, vehicle, and aircraft traffic, impediments to or deflection of caribou movement, whale or pinniped movement, fish movement, and waterfowl nesting and other habitat uses, displacement from harvest areas, and loss of potential harvest opportunities associated with project-related employment;
Subsistence	It worries me that these pads, locations, flow lines, they're right there with -- right where the caribou come through, like they said. Thousands of them. And ducks. And we got seals that even come up through the river right there. So you need to think about the subsistence.
Subsistence	With the cumulative impact of nearly continuous oil production infrastructure from Prudhoe Bay to what will now be areas to the west of Nuiqsut, the final 'gap' in wildlife migration pathways will be closed. As a result, NVN is extremely concerned with the impacts this project will have on the quantity and quality of our subsistence resources, and resulting impacts on our culture.
Subsistence	There's an old Cat train trail all the way to Umiat full of nothing but drums of diesel and gas, still unopened on the lakes. That is where it's killing our caribou, our fish. Our fish are totally being contaminated, white broad fish called aanaakliq. It's been four years since we haven't harvest fish during fall time under the ice. That's when they start coming out. Those are our prime fish. For past four years, we haven't harvest any of those. They're still coming out with sores and unusual. Those have been given to state, feds, local government, and none of them hasn't come back and tell us. This is what they say: It's water mold; it's a fungus. My God, water mold and fungus are so strong to kill thousands of our aanaakliqs coming out fall time.
Subsistence	Nanushuk is in the heart of the caribou migration corridor. As the Corps heard repeatedly at the Nuiqsut scoping meeting, many Nuiqsut residents use the proposed project area and the land on all sides of it to harvest caribou. The caribou's traditional east to west migration path brings the animals right through this area north and east of Nuiqsut. As currently proposed the road dis positioned in a way that would likely disrupt this migration. Caribou are know to avoid crossing roads. there is also evidence that o amount of industry convoying of vehicle traffic can cure this problem, and that calving caribou suffer greatly where roads deflect these animals away from their migratory or calving grounds. A gravel road running generally north to south from Nanushuk , and then turning to run directly east could leave many animals unable or unwilling to cross the road going south or west as they attempt to move from the calving grounds east of the proposed development to the western side of the Colville River Part of the likely impacts to subsistence users is only apparent by stepping back from the project and looking at the big picture of North Slope development. The "Project Overview" slide (number 8) from the Nuiqsut scoping meeting shows a snapshot of infrastructure spanning from Deadhorse to GMT1. ...that map shows why so many Nuiqsut residents already feel that they are "boxed in" on all sides.
Subsistence	Part of the likely impacts to subsistence users is only apparent by stepping back from the project and looking at the big picture of North Slope development. The "Project Overview" slide (number 8) from the Nuiqsut scoping meeting shows a snapshot of infrastructure spanning from Deadhorse to GMT1. That map shows why so many Nuiqsut residents already feel that they are "boxed in" on all sides. Further developments in Nuiqsut's traditional subsistence range are already planned. Offshore, Hilcorp is in the process of permitting the Liberty project, which is at the fringes of Nuiqsut's whaling grounds and would sit aside traditional whale migration routes as the whales enter Nuiqsut's whaling grounds. ENI plans additional gravel placement and infrastructure at the Nikaitchuq development, which lies between Oooguruk and Liberty, on the way to Nuiqsut's whaling grounds. Even the "roadless" Alpine included extensive in-field road systems that act as physical barriers to caribou migration and movement. If the network of roads and pipelines on the Nanushuk Project map and slide 8...is included in the overall picture, it is apparent that the barriers to the north of Nuiqsut will be largely complete: a road connecting Mustang to Nanushuk would leave only one small roadless passageway (running north to south) between Alpine on the west and Nanushuk on the east.
Subsistence	...The Avoidance effect has been documented by a number of scientists and researchers and has been widely accepted by federal agencies, where Native subsistence hunters harvest virtually no game within a roughly six mile radius of oil and gas facilities, and dramatically reduced amounts of game within a roughly sixteen mile radius. In analyzing a projects impacts on the community's subsistence resources, this is the area that is effectively eliminated from the community's available subsistence range, or at least made much less valuable than it historically had been.

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Subsistence	<p>Not only should the Corps use a more realistic and scientifically supported Avoidance calculation, it should use that data in a way that accurately depicts the severity of the impacts. Armstrong has determined whether impacts to subsistence are "minor", "moderate", or "major" in part by calculating the percentage of the "available use area" that will be impacted by Nanushuk. Kuukpik questions the value of this percentage-based overlap approach"...</p> <p>The other problem with this "overlap approach" is that it distorts the analysis suggesting that all subsistence lands are basically the same as long as they are "available." it assumes that it doesn't really matter what subsistence lands are impacted as long as the total acres impacted does not exceed a certain arbitrary percentage. It also assumes that subsistence uses that are prevented in one area can simply be made up on an equal basis elsewhere.</p> <p>These parts of the EED "analysis" seem more like advocacy and wishful thinking to minimize projections of impacts than science. they should be discarded and started from scratch using accepted and verifiable scientific data.</p>
Subsistence	<p>We're number one for subsistence. And we need to make sure it's in writing that we will have access.</p>
Subsistence	<p>And make sure our subsistence is in writing, that it can happen. And the caribou don't have a calendar. They 18 don't have a calendar. Just like the subsistence user, they could go in the middle of the night, during the day, in the morning. It all depends on the caribou. Now, if you're to be a good neighbor, I want to make sure that our subsistence users have the right-of-way. If the caribous are going, then you need to minimize your people out, so they can be successful in catching their food for the winter.</p>
Subsistence	<p>I want to make sure our subsistence users will have that right-of-way. And it needs to be in writing.</p>
Subsistence	<p>How many years we talk about subsistence? You guys did a lot of studies, whether it's BLM, Department of Natural Resources, other agencies that come and did a lot of studies. There's a lot of data out there.</p>
Traditional Knowledge	<p>Traditional Ecological Knowledge</p> <p>We acknowledge the need to provide meaningful public involvement in the preparation of an EIS and recommend the identification, inclusion and integration of traditional ecological knowledge into the EIS analysis, as appropriate. This should include a description of TEK efforts to date and how it can be used; the Inupiaq subsistence culture; and the meaning of the subsistence harvest, especially of caribou and whales. We recommend that in addition to reviewing currently available TEK, additional studies be conducted as necessary to clearly identify concerns and potential impacts, including cumulative impacts, from the proposed project and project alternatives. This information should be reviewed and included in the EIS to the extent possible and utilized in decision making regarding this project.</p>
Traditional Knowledge	<p>Traditional knowledge (TK) has sustained Arctic indigenous cultures for daily activities and during times of adversity for millennia. ... Throughout the development of the EIS, ASRC respectfully request that USACE consider the history of traditional knowledge which is based on generations of observations of the environment, ecosystem, and the animals which inhabit our lands. Traditional knowledge should e a key source of information in assessing impacts and also supporting appropriate mitigation to minimize potential impacts to the environmental and animals, especially those terrestrial animals and birds harvested for subsistence.</p>
Traditional Knowledge	<p>ASRC looks forward to the volume of traditional knowledge and western science being fully realized in the USACE review of this project as they analyze potential impacts and alternatives.</p>
Vegetation	<p>Vegetation and Habitat</p> <p>The proposed project will have impacts on terrestrial and aquatic habitat. The EIS should describe the current quality and capacity of habitat in the project area, its use by fish and other aquatic species, including marine mammals, birds, and terrestrial species, in and near the anticipated project area, and identify known corridors, migration routes, and areas of seasonal congregation. The EIS should evaluate impacts on wildlife habitat and habitat connectivity, such as impacts from habitat removal and alteration, aquatic and terrestrial habitat fragmentation caused by infrastructure (roads, pipelines and other infrastructure), land use changes, management activities, and other human activity. The EIS should also evaluate the impacts the project may have on plant species and plant habitats. The EIS should evaluate indirect effects on these species from activities proposed under each alternative. Additionally, if additional access is provided to workers and local residents, potential impacts due to use such as harvesting and hunting should be analyzed.</p>

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Wetlands	<p>Wetlands and Riparian Areas</p> <p>As mentioned above, the EIS should identify aquatic resources that would be potentially impacted by the proposed project and describe all waters of the U.S. that could be affected by the project alternatives. This discussion should include the use of maps that clearly identify all waters within the project area. The discussion should include acreages and channel lengths, habitat types, values, and functions of these waters.</p> <p>Since a CWA Section 404 permit is required for this project, EPA will review the project for compliance with Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials (40 CFR 230), promulgated pursuant to Section 404(b)(1) of the CWA ("404(b)(1) Guidelines"). Pursuant to 40 CFR 230, any permitted discharge into waters of the U.S. must be the least environmentally damaging practicable alternative available to achieve the project purpose. The EIS should include an evaluation of the project alternatives in this context in order to demonstrate the project's compliance with the 404(b)(1) Guidelines. Since the applicant's proposed project involves the discharge of dredged or fill material into waters of the U.S., the EIS should discuss alternatives to avoid those discharges. If unavoidable discharges to waters of the U.S. remain necessary, the EIS should discuss how impacts would be minimized, and discuss options for providing compensatory mitigation.</p> <p>We believe it is important the EIS discuss the need for preferred alternative to be able to meet the requirements of the CWA 404(b)(1) guidelines in order for the alternative to be considered the Least Environmentally Damaging Practicable Alternative. Often times when the Preferred/Selected Alternative is not determined to be the LEDPA, revisions to the project must be implemented, causing delays to the project schedule. Often, a reanalysis under NEPA must occur as well.</p> <p>EPA also encourages a clear evaluation and analysis of potential mitigation, following the mitigation sequence of avoid, minimize, compensate be included in the EIS. It is important to note that under the "Compensatory Mitigation for Losses of Aquatic Resources; Final Rule", commonly referred to as the Final Mitigation Rule, proposed impacts must be avoided to the maximum extent practicable; remaining unavoidable impacts must then be minimized, and finally compensated for to the extent appropriate and practicable. The final rule affirms the mitigation sequence and clarifies the criteria for appropriate measures to compensate for unavoidable losses. We recommend discussion regarding compliance with the current mitigation rule in the EIS.</p>
Wetlands	On the contour of the landscape, are you right on the wetlands where it's mushy or is that all high ground on the contour of the land itself?
Wildlife	Potential impacts to wildlife, including those associated with any likely increased human/bear (polar and grizzly) interactions, attraction and concentration of fox, raven, gull, and other predators, bird collisions with facilities, alteration of area hydrology affecting fish use of ephemeral streams, and alteration of wildlife movement patterns, including any associated with direct habitat loss, deflection or attraction due to aircraft, roads, pipelines, lighting, noise, smells, or waste handling;
Wildlife	<p>Have you guys also considered the caribou crossing impact area? Have you guys always considered the caribou crossing sections for caribou to go to and from like near Drill Site 3 to DS2M? I'm just kind of curious if you're addressing caribous for crossing.</p> <p>I know you need to elevate your pipes pretty high if you want the caribous to cross or you're going to have to let it go underground so the caribous could cross or the path on gravel and possibly under the pipeline. Just wondering if you could pinpoint if there's going to be any type of decision that has been made regarding caribou crossing.</p>
Wildlife	<p>you need to think about elevating or kind of making it even enough for the caribou to come up that are going straight up six feet on the gravel. You need to have a leeway for, you know, a slanted thing where -- I believe you guys understand what caribou crossing is.</p> <p>So, you know, that's just my question to -- for the caribous to cross, since they're trying to cross something that's going seven feet up in the air, and then you go, and you go seven feet back down. There should be areas where the caribous should be able to go through to cross.</p>
Wildlife	we've seen thousands of caribous right there last year, right where you're proposing.
Wildlife	The migratory fish are really important; the migratory birds and the Central Arctic caribou herd.