MEMORANDUM FOR RECORD

SUBJECT: Department of the Army Environmental Assessment and Statement of Findings for the Above-Referenced Standard Individual Permit Application

This document constitutes the Environmental Assessment, Section 404(b)(1) Guidelines Evaluation, Public Interest Review, and Statement of Findings for the subject application.

1.0 Introduction and Overview

Information about the proposal subject to one or more of the United States Army Corps of Engineers' (Corps') regulatory authorities is provided in Section 1, detailed evaluation of the activity is found in Sections 2 through 11 and findings are documented in Section 12 of this memorandum. Further, summary information about the activity including administrative history of actions taken during project evaluation is attached (ORM2 Summary) and incorporated in this memorandum.

1.1 Applicant name

Applicant: Mr. Beau Epstein, IPOP, LLC.

Agents: Mr. William (Bill) Burnett, Yukuskokon Professional Services, LLC and James Buchal, Murphy & Buchal LLP.

1.2 Activity location

The project site is located approximately 25 miles east of Nome, Alaska within the Bonanza Channel estuary and at approximately Mile Post 28.5 along the Nome-Council Road, between approximately Latitude 64.5044°N., Longitude 164.6169° W., on the western limit and Latitude 64.52866°N., and Longitude 164.5447°W. on the eastern limit within the following sections, townships, and ranges: Sections 24-26, T. 11 S., R. 30 W., Kateel Meridian; Sections 18-19, T. 11 S., R. 29 W., Kateel Meridian; US Geological Survey Solomon C-6 SE, AK 7.5-minute quadrangle map (1:25,000 scale). Bonanza Channel estuary consists of waters of the U.S. (WOUS) regulated under Section 404 of the Clean Water Act and navigable waters of the U.S. regulated under Section 10 of the Rivers and Harbors Act. The project site is located within ten mining claims purchased by the Applicant from the State of Alaska.

1.3 Description of activity requiring permit

The proposed project consists of a multi-year phased dredging project associated with a placer gold mining operation within Bonanza Channel estuary and is described in the Applicant's reports submitted for this project (Yukuskokon Professional Services, LLC. 2020a, 2020b, 2021, 2022a, and 2022b) and in a

subsequent amendment (J. Buchal, personal communication, March 8, 2024). The proposed project would be implemented over a five-year period and involves dredging approximately 4.5 million cubic yards (CY) (estimated bulked volume of 4.9 million CY) based on 24-hour operations, processing the materials for gold extraction, concurrently reclaiming the dredged channel to its original bathymetry, and disposing of the excess processed materials at locations adjacent to the dredged area. No chemical processing of dredged materials would occur.

The activities requiring a permit consist of the total area affected by the dredging activity, reclamation of dredged materials, and disposal of excess dredged materials within jurisdictional waters. The total maximum area of affected jurisdictional waters is 159.4 acres. However, the total area may be reduced by operating hours restrictions required by resource agencies and other factors.

The project includes establishment of a launch ramp, a man camp (temporary encampment for use by workers), and a staging area. The man camp and associated staging area would be sited in uplands above the High Tide Line (HTL).The launch ramp consists of a triangular-shaped area approximately 0.87 acre in area. The ramp extends from the upland area into jurisdictional waters and is part of the dredging footprint. The ramp would be maintained in place during the entire project. The man camp and staging area would not be located within jurisdictional waters.

Table A summarizes the quantities of materials to be dredged, reclaimed, and disposed of. The dredging/mining phase would consist of dredging and processing materials for gold extraction from within a trapezoidal cross-section dredged channel and concurrently reclaiming the dredged channel. Excess materials would be disposed of in areas adjacent to the dredged channel. The mining channel would be dredged in five approximately equal-sized stages over a five-year period.

Table A. Summary of Proposed IPOP, LLC Operations at Bonanza Channel

Item Description	**Acres**	**Storage Capacity (CY)**	**Dredged Volume (CY)**	**Bulked Dredged Volume* (CY)**
Access trench	4.2	0	33,200	35,690
Year 1	21.7	957,346	900,000	964,404
Year 2	21.7	957,346	900,000	964,404
Year 3	21.7	957,346	900,000	964,404
Year 4	21.7	957,346	900,000	964,404
Year 5	21.7	957,346	900,000	964,404
Dredge Disposal Site A	14.6	13,666		
Dredge Disposal Site B	7.1	7,019		
Dredge Disposal Site C	18.7	23,008		

Dredge Disposal Site Years 2-5	6.3	7,356		
Totals	**159.4**	**4,837,779**	**4,533,200**	**4,857,710**
* Bulked volume estimated based on bulking factor of 1.075 by the Applicant (Yukuskokon Professional Services, LLC 2020a)				

The project would be conducted during ice-free periods when the channel can be accessed by dredging equipment (approximately June 1st through November 1st depending on seasonal conditions each year). At the end of the operational season, the Applicant would cease operations and shut down and secure the man camp until the following operational season.

Two access channels would be constructed and maintained during dredging operations. One access channel would be constructed between the launch ramp and the edge of the full-scale mining channel to provide access for dredging equipment. The second access channel would be created along the south side of the full-scale mining channel to provide access for dredging equipment. The two access channels would connect at the edge of the full-scale mining footprint. The depth of the access channels would be ten feet. The two access channels would be backfilled to pre-project bathymetry by the end of project operations.

The access channel between the launch ramp and the full-scale mining area would be maintained at ten feet deep and would be approximately 2,200 feet long and 85 feet wide. The full-scale trapezoidal mining channel would be 31 feet deep with a top width of about 360 to 365 feet and a bottom width of about 200 feet. The total length of this mining channel is approximately 13,000 feet. The access channel along the entire length of the full-scale mining channel would be maintained after initial reclamation to allow for access to the full-scale mining channel by dredging equipment.

Equipment proposed for the project includes a single engine dredge vessel (dimensions: 50 feet long x 24 feet wide) with a 36-inch diameter Vosta cutterhead, a 10-inch diameter dredge nozzle, two small tender boats (dimensions: 25 feet long x 12 feet wide) and a processing barge (dimensions: 64 feet long x 40 feet wide). The dredge vessel would be connected to the processing barge by a 300 to 600-foot-long floating pipe.

By the time the mining operation is complete, the Applicant would fully reclaim the dredged areas with processed dredged materials (after gold extraction). Dredged materials would be placed within shallow water areas approximately adjacent to the dredged areas up to the mean lower low water (MLLW) line. Four DMDSs have been proposed by the Applicant. By placing appropriate dredged materials up to the MLLW, the DMDSs are expected to function as mudflats along the edges of the Bonanza Channel. The designated DMDSs will be used for temporary storage of dredged materials to be used in final reclamation activities and for permanent

storage of excess dredged materials.

The total surface area that would be affected by the placement of dredged material is 159.4 acres, occurring over a five-year period. Although the impact duration would occur over a limited period of time, because of the extended period of time expected for special aquatic sites to recover with regard to their respective functions and services (estimated to be as much as two or more years), the impact duration is considered permanent.[1] The project would not result in the permanent loss of acreage of jurisdictional waters. Rather, the impacts would occur in the form of type conversions between different types of WOUS/special aquatic sites, for example, conversion of vegetated shallows to mud flats from dredge disposal. The following four definitions apply to special aquatic sites located in and adjacent to the project footprint:

> Sanctuaries and refuges consist of areas designated under State and Federal laws or local ordinances to be managed principally for the preservation and use of fish and wildlife resources. (40 CFR 230.40) The Alaska Maritime National Wildlife Refuge (AMNWR) includes non-contiguous parcels in the form of islands that are adjacent to or in the vicinity of the project footprint.
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> Vegetated shallows are permanently inundated areas that under normal circumstances support communities of rooted aquatic vegetation, such as turtle grass and eelgrass in estuarine or marine systems as well as a number of freshwater species in rivers and lakes. (40 CFR 230.43) Most of the project footprint, about 91%, consists of vegetated shallows, though the coverage of aquatic vegetation varies greatly.
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> Mud flats are broad flat areas along the seacoast and in coastal rivers to the head of tidal influence and in inland lakes, ponds, and riverine systems. When mud flats are inundated, wind and wave action may resuspend bottom sediments. Coastal mud flats are exposed at extremely low tides and inundated at high tides with the water table at or near the surface of the substrate. The substrate of mud flats contains organic material and particles smaller in size than sand. They are either unvegetated or vegetated only by algal mats. (40 CFR 230.42) A much smaller portion of the site, about 9%, consists of mud flats with some minor open water areas.
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> Wetlands consist of areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. (40 CFR 230.41) The project

[1] Impacts are generally considered to be temporary if they only occur over a six-month period or less. Otherwise, they are considered permanent.

does not include any wetland areas; however, the project site is immediately adjacent to wetlands in the form of mid-channel islands and terrestrial areas that border the north side of the project site.

Some areas within the project site are either not vegetated or only have sparse vegetative cover and would not be considered either vegetated shallows or mud flats. These areas are not considered special aquatic sites but are still considered jurisdictional waters in the form of open water.

1.3.1 Proposed avoidance and minimization measures

The Applicant has provided avoidance and minimization measures (Yukuskokon Professional Services, LLC. 2020b)

1. IPOP has committed to avoiding any chemical processing that would contribute pollutants to jurisdictional waters.
2. IPOP will secure all gray water and sewage generated by project operations on land and remove it weekly.
3. IPOP will avoid any actual eelgrass beds (none have been identified in repeated surveys). IPOP does not propose to avoid all vegetated areas, because most of the vegetation is sparse, and is nearly eradicated every winter by ice scour and other factors.
4. IPOP's camp will avoid any use of or impact on adjacent wetlands.
5. The project will operate within a turbidity curtain, limiting water quality and other impacts to within the curtained area.
6. IPOP will be mining to a depth of approximately thirty feet, to reduce the overall footprint of the project as compared to mining to a shallower depth.
7. IPOP's mining with concurrent reclamation/improvements will decrease the amount of time jurisdictional waters are disturbed before restoration and improvement.
8. IPOP has identified its base camp location and access channel alignment between the launch ramp and the full-scale mining area to utilize the shortest available path to the full-scale mining area within State-owned land.
9. IPOP will actively seek to make the access channel to the full-scale mining area as narrow and shallow as it can be while allowing access, thereby minimizing impacts.
10. Most equipment will be removed from the water at the end of each summer mining season.
11. Real-time monitoring of water turbidity and fish and wildlife presence will assist in avoiding unplanned impacts.
12. Other best management practices will include safe fuel handling, strict speed limits for vessels, and advanced equipment that minimizes

sound and other impacts.

13. The dredging equipment has been designed to maximize efficiency. Cranes and airbags would be used to deploy equipment into the channel to minimize impacts to nearshore wetland areas.
14. An invasive species plan has been prepared to address resource agency concerns (Otero 2021).
15. Under the current proposal, the Applicant would reclaim the two access channels to their original pre-project bathymetry. This serves to reduce the surface area for DMDSs located within jurisdictional waters.

1.3.2 Proposed compensatory mitigation

The Applicant has proposed to compensate for unavoidable adverse impacts to WOUS within the proposed project footprint by restoring disturbed areas with respect to functions and services. The reclamation plan for this project indicates that dredged materials, after processing for gold extraction, would either be placed in shallow water areas with the intent of creating mud flats or replaced within the dredged footprint to reestablish vegetated shallows. The reclamation plan addresses monitoring of a range of environmental parameters each year and proposes adaptive management measures as needed based on monitoring results. Lastly, the Applicant has also proposed off-site mitigation consisting of replacing a culvert on Red Fox Road in Nome, Alaska to increase fish passage in this area.

1.4 Existing conditions and any applicable project history

General Setting

The project site is located in jurisdictional waters on the southern Seward Peninsula in Alaska, approximately 25 miles east of Nome. The proposed dredge and discharge site is located within a 2.7-mile reach of an area known as the Bonanza Channel, which is a part of an extensive estuary that ultimately extends along 28 miles of the coastline. The estuary is sheltered from the ocean (Norton Sound) by a barrier island that generally extends along the entire length of the estuary. Outlets through the barrier island allow tidal/freshwater connections with Norton Sound to the west of Bonanza Channel from Safety Sound and to the east of Bonanza Channel near the mouths of the Bonanza and Solomon Rivers.

The discussion below is based on the narrative report provided by the Applicant (Yukuskokon Professional Services, LLC. 2020a) and supplemented with other sources as noted.

Norton Sound

Norton Sound is part of the Bering Sea generally extending between the Seward Peninsula (north) and the Yukon River delta (south) and is the adjacent marine area to the barrier island that separates the estuary from the ocean. Norton Sound is generally navigable between May and October each year. The National Oceanic and Atmospheric Administration (NOAA) was used as a source for tidal data. The closest tidal data station for the project site is Nome, Norton Sound, AK (Station 9468756) which is about 30 miles to west of the project site. According to NOAA data, the MHW elevation (1.3 feet) for Nome is 1.34 feet above the MLLW and the mean tide range is 1.04 feet (National Oceanic and Atmospheric Administration 2023). The HTL for Nome is 1.7 feet (U.S. Army Corps of Engineers 2024). This is a relatively small range for tidal fluctuations.

Safety Sound/Bonanza Channel

For clarity, the Safety Sound placename is used in this document to identify the large tidal lagoon located at the west end of the regional estuary system. Bonanza Channel refers to the portion of the estuary that provides connection between the mouths of the Bonanza and Solomon Rivers and the Safety Sound lagoon.

Safety Sound is a shallow tidal lagoon approximately 7.5 miles long and almost 3 miles wide and oriented from southwest to northeast with an average depth of approximately 6 feet. The lagoon receives freshwater inputs from the Flambeau and El Dorado Rivers and smaller streams, direct runoff from adjacent lands, and partial inflow from the Bonanza River. Groundwater also likely contributes to freshwater inflow. Tidal inflows occur via an inlet channel with Norton Sound and also occur during strong storms that breach the barrier island. This area typically freezes solid during the winter and effects salinity seasonally as freshwater freezes and thaws. Salinity is also variable depending on proximity to the various freshwater inflows. Norton Sound contains nearshore sea ice during the winter months.

Bonanza Channel is a shallow estuary consisting of a network of wetland islands separated by interconnecting channels. The approximate measured water depth from field surveys averages about 2.3 feet with a maximum observed depth of 7.1 feet, which would vary about plus/minus one foot depending on the tidal stage. The uniformly shallow depths and limited inflow from the Bonanza River, estimated at approximately half of the total river flow, allows mid-summer water temperatures to average above 15 degrees (Celsius) (59 degrees Fahrenheit (F)) with a maximum temperature exceeding 22 degrees (Celsius) (72 degrees F). Flow rates through the channel are relatively low with an estimated average flow rate of 0.2 feet/second. Tidal cycles also provide limited flushing flows, though tidal fluctuations are relatively low. Shoals at both ends of the Bonanza Channel serve to regulate flows from either Safety Sound or from the Bonanza River outlet resulting in some degree of hydrologic isolation and limiting sediment transport through the channel creating a

depositional area. As with the rest of the larger estuary system, the area is subject to a complete freeze during winter months. The spring thaw and movement of ice in response to tides and meltwater from river inflows disturbs the substrate each season.

Based on bathymetry for this area and the location of the Bonanza Channel between Safety Sound and the mouths of the Bonanza and Solomon Rivers, a relict thalweg may exist through the project site that was once deep enough to convey greater flows from those rivers. However, considering the substantial historic placer dredging that has occurred in the Solomon River watershed, sedimentation from previous dredging work likely entrained large amounts of river sediments that altered hydrologic patterns at the mouths of the two rivers, creating shoals that limit through-flows to Safety Sound and may have contributed to the current overall shallowness of the Bonanza Channel.

Special Aquatic Sites

The project vicinity contains four classifications of special aquatic sites as described at 40 CFR Part 230 Subpart E (definitions provided above). These sites are described below:

- Sanctuaries and Refuges. The AMNWR includes several non-contiguous parcels that are located approximately adjacent to the project site. The refuge property is situated on portions of the barrier island and some wetland islands in the project area. No project activities would be sited on refuge lands.
- Wetlands. Some of the higher elevation areas within the estuary, such as those represented by the midchannel islands are considered wetlands. In this estuary system, these vegetated areas are regularly inundated, depending on tidal conditions. As noted for mud flats below, these areas provide a transitional area for terrestrial and aquatic species (see Submerged Aquatic Vegetation [SAV] discussion below). Although no wetlands are located within the project footprint, they are found immediately adjacent to the project footprint.
- Vegetated Shallows. The inundated portions of the estuary system support vegetated shallows where the water depths are shallow enough to support vegetation, including eelgrass, which is considered essential fish habitat (EFH) by NOAA. Vegetated shallows are important for providing habitat for fish and forage for other species. Based on surveys conducted by the Applicant, vegetated shallows extend across roughly 91% of the areas that would be affected by this project. See SAV discussion below.

- Mud flats. Mud flat areas exist in some parts of the estuary system, including within the Bonanza Channel project area. These areas are typically alternatively exposed during low tide conditions and inundated during high tides. Mud flats provide substantial ecological value for both terrestrial and aquatic species as a transitional zone in estuaries. Mud flats and some small open water areas extend across about 9% of the areas that would be directly affected by the proposed project.

The entire disturbance area associated with the proposed project consists of special aquatic sites in the form of vegetated shallows (primarily) and mudflats (to a much lesser degree). Some small unvegetated areas within the channel would be considered open water; however, seasonal variations in vegetative regrowth each year make this coverage difficult to quantify. For this decision document, the entire disturbance footprint of the project was presumed to consist of a combination of special aquatic sites.

Submerged Aquatic Vegetation (SAV)

The Applicant provided the results of SAV mapping work that was conducted in 2020 (Eilers 2020). The survey information was applied to the project footprint (access channels, five-year mining channel, and DMDS locations). The survey indicates the presence and approximate density of SAV in four categories: continuous, patchy, sparse, and absent. The dominant species found in the project footprint was sago pondweed (*Stuckenia pectinatus*). A small amount of horned pondweed (*Zannichellia palustris*) was also observed. No eelgrass (*Zostera marina*) was found within the project footprint, but a small patch (200 feet x 200 feet) was noted about 1,300 feet from the disturbance footprint.

The SAV density classifications were used to roughly characterize the distribution of special aquatic sites within the disturbance areas as a means of determining the extent of expected impacts by special aquatic site types. Areas classified as continuous or patchy were presumed to represent the approximate extent of vegetated shallows in the disturbance sites. Areas classified as sparse and absent were presumed to comprise mud flats or open water. The split between these two categories for the disturbance areas associated with the project is approximately 91% vegetated shallows compared to 9% mud flats/open water. Most of the mud flat/open water are likely mud flats combined with some smaller areas of unvegetated open water.

The distribution of SAV within the Bonanza Channel is strongly affected by a number of natural processes in this general area. The estuary undergoes an annual process that involves the complete freezing of the estuary to the substrate in a typical year

and the presence of sea ice from Norton Sound that covers the area. In the spring, the ice melts and breaks up and gouges the substrate. The melting ice is mobilized within the channel by high winds and storms, freshwater flows that enter the estuary from numerous rivers, and tidal inflows/outflows. As the days lengthen and the shallow water warms, SAV seeds, rhizomes, and turions regerminate and flush out across the channel bottoms. In the fall, the cycle repeats itself. These natural effects mobilize plant materials within the estuary, which then germinate in areas where conditions are suitable for the species present.

The salinity, depth, and water temperature in the channel also influence the growth extent and diversity of SAV in the channel. Conditions within the project footprint apparently are not ideal for eelgrass based on the minimal coverage in the channel found for this species; however, sago pondweed, which is the dominant species in the channel, can tolerate a wide range of substrate types, low flow rates (less than 1 meter/sec), and water depths less than 2.5 meters deep (Casey, P.A. 2010). These parameters are present in the Bonanza Channel, which is likely why this species is dominant each year.

Fish and Essential Fish Habitat (EFH)

Essential fish habitat (EFH) includes all types of aquatic habitat where fish spawn, breed, feed, or grow to maturity. The presence of EFH triggers consultation requirements under the Magnuson-Stevens Fishery Conservation and Management Act of 1996 (MSA). Three fish management plans (FMPs) have been developed that apply to the general project area: FMP for the Bering Sea/Aleutian Islands King/Tanner Crabs, FMP for Salmon in the Exclusive Economic Zone off Alaska, and the FMP for Groundfish of the Bering Sea and Aleutian Islands Management Area. Habitat Areas of Particular Concern (HAPCs) are smaller habitat areas within EFH designated based on the rarity of the habitat type along with other factors. No HAPCs have been identified in the project vicinity. The only species for which EFH has been designated within the project footprint is juvenile-stage chum salmon (*Oncorhynchus keta*).

The Safety Sound and Bonanza Channel support anadromous fisheries including Coho salmon (*Oncorhynchus kisutch*), Chum salmon, and Pink salmon (*Oncorhynchus gorbuscha*). Based on field studies conducted by the Applicant, a range of other species are found in these areas, including: sandlance, starry flounder, least cisco, sculpin, and potentially Dolly Varden. These two areas also provide EFH in the form of extensive areas of vegetated shallows occurring throughout the area (see SAV discussion above). The project footprint in Bonanza Channel provides SAV over about 91% of its area, and the entire footprint is considered EFH.

In April, Alaska District (POA) Civil Works Project Management Branch (Environmental Resources Section) completed a Planning Assistance to the States (PAS) environmental baseline study for the Village of Solomon in the vicinity of the project site (U.S. Army Corps of Engineers 2023). This study included data collection for eDNA, fish, and birds at data points in the Solomon River, freshwater streams and lakes near eastern Safety Sound, and nearshore locations within the Bonanza Channel. The Corps has reviewed this study to determine whether any specific survey information would be relevant in the evaluation of the proposed project. Three of five sampling points within the study area are in or near the project footprint; thus, data collected at these locations is relevant to the analysis in this decision document. Data were collected from eDNA sampling results, fish seining, and water quality measurements (salinity and water temperature). Data was collected at these locations at four times during the summer of 2022. Three-spined stickleback comprises the highest proportion of fish species found during sampling, with other species, such as capelin and humpback whitefish, and other species (including relatively small numbers of salmon) being found in varying proportions.

Birds

In addition to Spectacled and Steller's eiders (see discussion below), other migratory bird species are present within the general Safety Sound area in substantial quantities and species diversity. The region's migratory period occurs between late May and early June and by June, birds are fully engaged in nesting. By August, the season winds down and fall out-migration occurs. Tundra swans are among the last waterfowl to migrate; the juveniles are not capable of sustained flight before late September. The Applicant conducted bird surveys on June 4- 5, 2021 and August 18-19, 2021, as well as a swan behavior study from September 12-15, 2021. (IPOP, LLC., 2022b)

The Safety Sound and Bonanza Channel areas are popular areas for birdwatching because of the diversity and quantity of birds that can be viewed during spring, summer, and fall. The Audubon Alaska has designated these areas as an Important Bird Area (IBA) for these reasons (Alaska Audubon Society 2021).

Endangered and Threatened Species

Three federally listed terrestrial species have the potential to occur in the project area: polar bears (*Ursa maritimus*), spectacled eiders (*Somateria fisheri*), and Alaska-breeding Steller’s eiders (*Polysticta stelleri*). All three species are listed as threatened. Designated critical habitat for polar bears occurs within and adjacent to the project site and, for spectacled eiders, east of the project site. In addition, two federally listed marine mammals have the potential to occur in the project area: Arctic ringed seals (*Phoca hispida hispida*) and Beringia Distinct Population Segment bearded seals (*Erignathus barbatus nauticus*). Both seal species are listed

as threatened and have designated critical habitat offshore in Norton Sound but not within the estuary.

Benthic Macroinvertebrates

David Eilers, M.S. conducted a preliminary benthic macroinvertebrate study for the Applicant on October 10, 2020 (Yukuskokon Professional Services, LLC. 2021) and identified species from eight families: bivalves, *Ceratopogonidae, Chironomidae-green, Chironomidae-red, Elmidae, Hydrozetidae, Cycopidea,* and *Simuliidae*, in the upper six inches of sediment. Additional benthic surveying was conducted by the Applicant on August 8, 2021, and the Applicant identified species from the following families: *Chironomidae, Enchytraeidae; Tellinidae, Gammaridae, Anisogammaridae, Mysidae,* and *Ceratopogonidae*. Eilers also stated the sample analysis should be used as a baseline for the end of season of an undisturbed habitat.

Subsistence Uses

The regional estuary along the coastline provides opportunities for subsistence uses including fishing, hunting, and food gathering (e.g., egg and berry gathering). Subsistence uses of the land can provide an important source of food for the local population and resources would be somewhat variable depending on the specific location and the type/quality of ecological communities present. The regional estuary provides a transitional zone between oceanic and terrestrial areas and supports general subsistence use.

In the Safety Sound/Bonanza Channel area, subsistence resources are present in some forms at some locations. The expansive, mostly unpopulated, landscape provides opportunities for hunting and food gathering activities in the terrestrial areas, while fishing for salmon and other fish can be pursued in Safety Sound, nearby Norton Sound, and the Bonanza Channel. Based on limited historic data for substance-related permitting by the State of Alaska, Bonanza Channel itself does not appear to be a particularly productive area for fishing because of the shallow waters and higher, less-fish-friendly water temperatures. Better opportunities for fishing can be found nearby.

Government-to-government consultations with the Village of Solomon, a federally recognized Tribe traditionally associated with the project vicinity, confirmed the long-term subsistence activities conducted by the Tribe and others in this general area. The expansive estuary and adjacent terrestrial lands along with ready access to Norton Sound provide substantial subsistence opportunities. Although these opportunities are assumed to include the Bonanza Channel area, there do not appear to be any unique subsistence opportunities offered solely by the channel area that are not readily available elsewhere.

Application History

The Applicant has 32 mining claims, and originally (on March 16, 2018) requested an individual permit (IP) authorization to dredge an unspecified area of 100 acres during one year within their claims. In a response to the Corps' request for information regarding the IP (request dated April 25, 2019), the Applicant stated on May 24, 2019, that they intended to mine all 2,940 acres within their claims in the channel.

On November 8, 2019, the Applicant revised their IP request to include mining in only five of their mining claims with access in a sixth; however, they still maintained that they wanted permission to mine all 32 claims. On April 30, 2020, the Applicant further revised their permit request to include mining in eight of their mining claims with access in a ninth claim; however, "requested that the regulating agencies approve a permit that covers all thirty-two claims without regard to the order in which it mines the claims" (Yukuskokon Professional Services LLC., 2020). In a December 10, 2020, meeting and in a written submittal on February 1, 2021, the Applicant revised their request again to add a small-scale case study, with mining on a smaller footprint, as a preliminary effort for full-scale mining, to gather information that could inform an understanding of impacts from the full-scale mining effort. The Applicant stated on March 26, 2021, that the current request for authorization was not to mine in all 32 claims. The current proposed activity consists of operations on ten of the 32 claims held by the Applicant.

On September 8, 2022, the Alaska District Engineer denied issuance of a Department of the Army permit for the proposed project on the grounds that the proposed project is not in compliance with the Clean Water Act Section 404(b)(1) Guidelines and is contrary to the public interest with regards to recreation. Subsequently, the Applicant submitted a request for an appeal of the decision to the POD Commander.

A Review Officer reviewed the administrative record and conducted an appeal conference. Based on this review, the Division Commander found that additional review of the permit application was warranted, vacated the District Engineer’s decision, and elevated the decision to POD.

An interim decision document by POD was prepared using the administrative record (AR), including the decision document, developed by the POA for the District-level permitting decision that has since been vacated. The decision document incorporated by reference the technical documentation contained in the AR to avoid excessive repetition, and relevant information from the AR was summarized as necessary. Any exceptions, such as new information obtained since the District’s decision, are also noted.

The interim decision document indicated the Applicant's proposed project would not be the least environmentally damaging practicable alternative (LEDPA); however, another alternative (On-Site Alternative 2a), a variation of the Applicant's original proposal, was determined to be the LEDPA. After communications with the Applicant, they agreed to proceed with a proposal that matched the LEDPA determination. This final decision document by POD provides an analysis of the LEDPA as the Applicant's current proposal.

1.4.1 Jurisdictional Determination

Is this project supported by a jurisdictional determination? The Corps prepared a preliminary jurisdictional determination (PJD). A PJD is a written indication that waters on the property may be jurisdictional. PJDs are non-binding and advisory in nature. Such waters are treated as jurisdictional waters for purposes of evaluating project impacts.

1.5 Permit authority

Table 1 – Permit Authority	
Section 10 of the Rivers and Harbors Act (33 USC 403)	X
Section 404 of the Clean Water Act (33 USC 1344)	X
Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 USC 1413)	

2.0 Scope of review for National Environmental Policy Act (i.e., scope of analysis), Section 7 of the Endangered Species Act (i.e., action area), and Section 106 of the National Historic Preservation Act (i.e., permit area)

2.1 Determination of scope of analysis for National Environmental Policy Act (NEPA)

The scope of analysis always includes the specific activity requiring a Department of the Army permit that is located within the Corps' geographic jurisdiction. In addition, we have applied the four factors test found in 33 CFR Part 325, Appendix B to determine if there are portions of the larger project beyond the limits of the Corps' geographic jurisdiction where the federal involvement is sufficient to turn these portions of an essentially private action into a federal action.

The typical factors to be considered are:

(1) Whether or not the regulated activity comprises "merely a link" in a corridor type project
(2) Whether there are aspects of the upland facility in the immediate vicinity of the regulated activity which affect the location and configuration of the regulated activity
(3) The extent to which the entire project would be within Corps's jurisdiction
(4) The extent of cumulative federal control and responsibility

Our consideration of these four factors and our determined Scope of Analysis for NEPA purposes are as follows.

(1) The project is not a link in a corridor type project. Although the Applicant has discussed potential future mining activities on other claim groups in this area, this project only includes work on ten claims and is a separate and complete project.
(2) This project has a small upland component that must be located near jurisdictional waters because of the nature of the regulated activity and the boundaries of the Applicant's mining claims. The upland component includes a launch ramp that is partially in uplands and partially within jurisdictional waters to allow launching of dredging equipment each mining season. For these reasons the upland component is directly tied to the regulated activity with respect to location and configuration.
(3) Almost the entire project is located within the Corps' jurisdiction.
(4) Because most of the project is located within jurisdictional waters and also contains EFH and habitat for federally listed species, there is substantial cumulative federal control and responsibility for the project.

Based on our application of the guidance in Appendix B, we have determined that the scope of analysis for this review includes the Corps geographic jurisdiction and upland portions beyond the Corps geographic jurisdiction. These upland components include the man camp and staging area for operations. These components have been determined to be within our scope of analysis as the extent of federal involvement is sufficient to turn these portions of an essentially private action into a federal action with the resulting environmental consequences of the larger project essentially being products of the Corps' permit action.

Final description of scope of analysis: The NEPA scope includes all activities related to the dredging and dredged materials disposal footprints within jurisdictional waters and the man-camp, launch ramp, and staging areas located in upland areas. In addition, to address potential indirect project effects, the NEPA scope includes a buffer area around this area extending to the eastern edge of Safety Sound to the west of the project site, the mouth of the Bonanza River to the east, the edge of the Bonanza Channel to the north, and the HTL for Norton Sound to the south.

2.2 Determination of the Corps' action area for Section 7 of the Endangered Species Act (ESA)

The ESA action area consists of all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. For this project, the action area includes the extent of the NEPA scope of analysis (work within jurisdictional waters, associated upland areas, and a buffer).

2.3 Determination of Corps' permit area for Section 106 of the National Historic Preservation Act (NHPA)

The permit area includes those areas comprising waters of the United States that will be directly affected by the proposed work or structures, as well as activities outside of waters of the U.S. because all three tests identified in 33 CFR 325, Appendix C(g)(1) have been met.

Final description of the permit area: The permit area includes all areas comprising jurisdictional waters that would be impacted by the proposed project plus uplands associated with the man-camp, launch ramp, and staging area.

3.0 Purpose and Need for the Proposed Action (NEPA[2]) and the Basic and Overall Project Purposes (404(b)(1) Guidelines)

3.1 Project purpose and need

Project purpose and need for the project as provided by the applicant and reviewed by the Corps:

The Applicant's stated project purpose is to "to mine gold within the Nome-Solomon mining district".

According to the Alaska Department of Natural Resources (Alaska Department of Natural Resources 2023), the Nome Mining District is located just north of the project area and does not include this project site. The purpose statement for the purposes of the Corps' evaluation has been revised to read: "to mine gold from placer deposits within the Safety Sound-Frontal Norton Sound area (as defined by Hydrologic Unit Code [HUC] 1905010420).

The Applicant has provided the following need statement for the project:

1. The rural and remote community of Nome and other surrounding communities need additional socioeconomic benefits,
2. A significant economic revenue generator is needed for the State of Alaska in terms of rental and royalty payments, and
3. There is a current and future demand for gold.

3.2 Basic project purpose

[2] The revised NEPA regulations issued by CEQ apply to NEPA processes begun after September 14, 2020, but federal agencies have discretion to apply the new NEPA regulations to on-going NEPA processes or proceed to apply the prior CEQ regulations. The NEPA process in this instance started prior to September 14, 2020 (with the issuance of the first PN in July 2020), therefore, the prior CEQ regulations have been applied.

For activities requiring a permit under Section 404 of Clean Water Act, the Corps identifies a basis and overall project purpose for compliance with EPA's Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material (Corps' SOP and Section 404(b)(1) Guidelines: 40 CFR 230.10(a)). As explained in more detail below, the basic purpose helps determine whether a project is water dependent. In the event a project results in the discharge of dredged or fill material into special aquatic sites, a determination that a project is not water dependent triggers a set of rebuttable assumptions. For activities that would result in the discharge of dredged/or fill material into special aquatic sites (i.e., sanctuaries and refuges, wetlands, mud flats, vegetated shallows, coral reefs, and riffle and pool complexes), the basic project purpose is used to identify whether or not the activity is water dependent (i.e., requires access or proximity to or siting within the special aquatic site in question to fulfill its basic purpose (40 CFR 230.10(a)(3)). Per the Guidelines, no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic environment so long as the alternative does not have other significant adverse environmental consequences. In addition, for any activity that is not water dependent and would result in the discharge of dredged or fill material into special aquatic sites, the Corps presumes: (1) practicable alternatives that do not involve special aquatic sites are available, unless clearly demonstrated otherwise; and (2) practicable alternatives that do not involve special aquatic sites have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise (40 CFR 230.10(a)(3)).

Basic project purpose, as determined by the Corps: placer gold mining.
Water dependency determination
The project does not require siting with a special aquatic site to achieve its purpose, therefore the activity is not water dependent. Although the proposed activity is sited within an estuary containing special aquatic sites, placer gold mining does not need to occur within such sites. Although placer gold is typically found within areas associated with waterways that erode lode deposits, placer gold may be found in areas outside of the current active flow area for a waterway, such as a relict channel or oxbow area. In this case, the proposed action would result in the discharge of dredged material into special aquatic sites, and therefore, the presumptions identified above apply.

Overall project purpose
The overall project purpose is used to evaluate whether there are less environmentally damaging practicable alternatives (Corps SOP, Section 12 and 40 CFR 230.10(a)). The Overall project purpose, as determined by the Corps: to mine for gold from placer deposits within the Safety Sound-Frontal Norton Sound area (as defined by HUC 1905010420). As described above, reference to "Nome-Solomon Mining District" does not match with mining district information by the state of Alaska and the project site itself appears to be outside of the area mapped as the "Nome Mining District". For this reason, the geographic limits were adjusted to match the

HUC for this area (see Appendix 1).

4.0 Coordination

4.1 Public Notice Results

The results of coordinating the proposal on public notice are identified below, including a summary of issues raised, any applicant response and the Corps' evaluation of concerns.

POA issued public notices (PNs) on July 31, 2020, and April 16, 2021. The first PN was issued for the initial application submitted by the Applicant. The second PN was issued after POA received a revised application that added the case study phase to the project. Formal public hearings were requested in response to both PNs; however, the requests were denied by POA for a number of reasons including the extensive opportunities already provided for receiving information afforded by two public comment periods and a deferral of subsistence issues discussions to occur during tribal consultation activities. POA conducted an informal virtual public meeting on September 28, 2020, via WebEx (Applicant not in attendance). POA provided the Applicant with the comments received during the two public review periods and the Applicant responded to POA regarding these comments.

POD did not issue a public notice or conduct a public hearing/meeting because there were no substantial changes to the project as described in POA's second PN. This section summarizes the comments received during the two public review periods conducted by POA, the Applicant's subsequent response, and POD's independent evaluation of these comments. Some of the issues raised in these comments were subsequently addressed by supplemental information provided later in the process by the Applicant and this information is mentioned in this document where appropriate. References to a "case study" phase for the project are now outdated based on the LEDPA determination in Section 5.

Were comments received in response to the public notice? Yes

Were comments forwarded to the applicant for response? Yes

Was a public meeting and/or hearing requested, and if so, was one conducted? Yes, a public meeting/hearing was requested and conducted. Comments collected during the meeting(s)/hearing(s) are summarized below. POA's response to meeting requests is summarized above.

Comments received in response to public notice:

4.1.1 US Environmental Protection Agency (EPA) comments:

EPA1 (Recommend preparation of an EIS): EPA was concerned with the project's potential for significant environmental impacts from dredged material disposal, including the potential to cause or contribute to significant degradation, and requested that the Corps prepare an Environmental Impact Statement (EIS). EPA was concerned about the impacts due to mining and stated that the Bonanza Channel intertidal estuary was one of the highest functioning resources under Section 404 of the Clean Water Act. These concerns are reiterated in EPA's May 27, 2021, comments.

Applicant's Response: None provided.

POD's evaluation: After reviewing the project information, POD has determined that an EIS is not required based on the scope of analysis, the context and intensity of impacts considering available mitigation, and level of significance of project effects. Although the scope of analysis consists of the entire project footprint, the scope does not extend substantially beyond the project limits. The project site is located in a mostly unpopulated area and consists of a small portion of a very large estuary system. Impacts associated with the project are expected to be not significant and adverse and, thus, an EIS was not required.

EPA2 (Lack of project details and baseline conditions - e.g. fish, benthos, water quality, bathymetry, special aquatic sites, submerged aquatic vegetation, aquatic resource functions): EPA expressed concern with the lack of a complete and detailed project description within the Applicant's 32 mining claims, lack of information needed to evaluate the potential for adverse impacts, the lack of information on baseline conditions of the entire claims site (such as presence of fish - refer to EPA5, benthic communities and invertebrates - refer to EPA4, and the characterization of mud flats).

EPA noted the lack of detail on the proposed set up and take down of the turbidity curtain and the proposed on-board smelting operations. Further functions of the estuary included services as a carbon sink, providing fish habitat, use of the area by migratory birds (refer to EPA3) and federally listed species (refer to USFWS1).

EPA reiterated these concerns on May 27, 2021, further specifying that there was a lack of water quality characterization (e.g., pH, salinity, dissolved organics, metals) and little analysis regarding changes from pre-project to post-project conditions for SAV, benthic communities, aquatic habitat functions, fish habitat, bird habitat, water quality, etc. EPA raised concerns that the proposed case study lacked sufficient scientific design.

Applicant's Response: The Applicant declined to disclose project activities within all their 32 mining claims as the current permit request was specific to the identified areas for full scale mining and the case study. The Applicant described the independent viability of their five-year mining proposal and stated that the Corps should limit their analysis to the current proposal. Since the PNs were released, the Applicant has provided substantial new information for project operations and reclamation, including the case study phase that was added to the project and revisions to their reclamation plan. This information contained a range of baseline reports relevant to the project site. In addition, the Applicant proposed the case study in response to the comments regarding the lack of scientific information about the impacts of dredging activities specific to cold-climate estuaries and unknowns such as the bulking factor. The case study is intended to quantify the impacts from operations to factors such as SAV, benthos, flow regimes, bathymetry, and salinity, as well as to provide a model of sediment plumes for full-scale operations under diverse weather conditions. The case study would also demonstrate that impacts to EFH would be temporary due to actions proposed in the reclamation plan and that long-term spoil storage would not be needed. The case study is also intended to demonstrate the success of the Applicant's proposed reclamation plan.

POD's Evaluation: In response to comments from EPA, U.S. Fish and Wildlife Service (USFWS), and others regarding lack of information on impacts, IPOP collected substantial data for the ten western claims during the summers of 2020 and 2021 and in spring 2022. Baseline information IPOP provided is used to describe the project setting in Section 1.4 of this document and is used throughout this document where appropriate. No information is required for the remaining 23 claims in this area because they are not a part of the current project.

Because of the remote location of this project and the lack of any precedential projects in this area or elsewhere in Alaska, site-specific information for this project site is derived primarily from baseline studies conducted by the Applicant. Some other previous scientific studies have been cited for this area (e.g., for salmon), but in most cases have a somewhat tangential relationship to the Bonanza Channel site. POD considers the information provided to date, along with other information in the public domain, to be adequate to evaluate the permit application. Special conditions can be used to develop and use additional information during subsequent project phases to address potential resource impacts.

EPA3 (Impacts to birds): EPA described potential significant bird habitat present in the area using sources from Alaska Department of Fish & Game (ADF&G), USFWS, and the AMNWR and indicated concern that opportunities for recreational bird-viewing may be impacted by the project.

Applicant's Response: The Applicant provided information about noise levels associated with their equipment and a rationale for why those noise levels would have a minimal impact on birds in this area. The Applicant also discussed the relatively small size of the project footprint compared to the size of the estuary, the temporary nature of any impacts to birds, and the availability of multiple access points to the estuary by birders that don't conflict with the Applicant's dredging operations.

POD Evaluation: There is adequate information in the administrative record to address these issues and they have been addressed in this decision document. The Corps generally agrees with the Applicant's assertions regarding noise.

EPA4 (Benthic organism impacts): EPA expressed concern that the impacts from dredging and dredged material disposal could include losses of existing benthic communities and burial of nearby benthos. These impacts may have additional ecological consequences to all levels of the food web.

Applicant's Response: The Applicant stated that the benthic communities would quickly recover after the conclusion of their project activities due to the existing natural, extreme disruptions from storm events and ice that would lead to low diversity in the area. The Applicant stated that these conclusions are supported in the Otero 2020 small-scale test dredge study and as part of the case study, and they propose to set aside the surface layer to increase the rate of recolonization of the disturbed area. IPOP stated that their reclamation plan contains further details on the rapid recovery of the benthos.

POD Evaluation: There is adequate information in the record provided since the public notices were issued to evaluate impacts to benthic communities. This decision document evaluates those impacts.

EPA5 (Fish impacts): EPA described the lack of studies on fish populations within the general project area. EPA raised concerns with the conclusions made in the 2020 Narrative on impacts to fish, which were based on lack of data.

Applicant's Response: The Applicant reiterated their belief that the project footprint is small in comparison to the overall Safety Sound system and that they are exploring other methods to more effectively remove fry from within the turbidity curtain. For impacts to fish, IPOP referred to their EFH assessment and subsequent revisions to that assessment. The Applicant provided other information they felt had a bearing on this project including information from ADF&G regarding effects of dredging in coastal lagoons. The Applicant stated that Bonanza Channel does not contain desirable fish habitat and is not a reliable migratory corridor based on information they have presented.

The Applicant also provided data on fish sampling conducted July 29-30, 2021. Throughout the EFH process, the Applicant stated that Bonanza Channel is too warm to support fish, as they observed temperatures in excess of 15°C (59°F). Additional information was provided by the Applicant to support their understanding of water temperature effects on fish species in the project area.

POD Evaluation: Adequate information has been provided by the Applicant through the present to assess impacts to fish for this project.

EPA6 (Impacts to subsistence): EPA raised concerns on impacts to subsistence. This concern was reiterated on May 27, 2021, with a request for information on measures to minimize impacts to subsistence resources and users in the project area.

Applicant's Response: The Applicant referred to information previously provided to the Corps, including the EFH assessment, subsistence permit information from the State collected for this area, anecdotal accounts with local subsistence hunters that indicates the project site is not heavily used for subsistence activities, in part because of the availability of more suitable locations in the area. The Applicant also compared the relatively small project site with the much larger estuary and indicated any effects would be short-term in duration.

POD Evaluation: Adequate information exists in the administrative record to evaluate potential impacts to subsistence activities, and this is addressed in this decision document.

EPA7 (Dredged material disposal impacts): EPA initially raised concerns about the lack of information on the restoration of the temporary disposal areas, statements within the 2020 Narrative about disposal that were not supported by evidence or subject to uncertainty, and the lack of information about potential impacts from the disposal of the dredged material to

determine compliance with Subparts C-G of the 404(b)(1) Guidelines. EPA also raised concerns about the lack of detail of the characterization of the proposed disposal sites, including permanence of impacts, temporal loss timing prior to restoration, and baseline information about the disposal sites. These concerns were reiterated in 2021, stemming from lack of sufficient information on the resources to be impacted. Further concerns include methods for preventing erosion or slumping within the disposal sites.

Applicant's Response: The Applicant indicated the purpose for adding the case study phase was to address the information concerns expressed by resource agencies. The Applicant referred to their 2022 reclamation plan and other technical studies provided to the Corps for further characterization of the dredge disposal sites.

POD Evaluation: Although there is uncertainty with some aspects of this proposed project, the Applicant has provided considerable technical information in support of their project. The information provided by the Applicant is adequate for assessing disposal impacts and has been considered in this document.

EPA8 (Need for additional avoidance and minimization; Reclamation): EPA expressed concerns about the lack of details on the Applicant's reclamation proposal as well as questioned whether the application was proposing to correctly follow the mitigation sequence to first avoid, then minimize, then compensate for unavoidable losses. EPA did not believe that the Applicant's proposed avoidance and minimization measures were sufficient to comply with Subpart H of the 404(b)(1) Guidelines (40 CFR 230.70-230.77). This was reiterated on May 27, 2021, where EPA stated that the reclamation plan lacked detail on adaptive management, monitoring, and aquatic features proposed (e.g., the pool and riffle features) and expressed concerns about the Applicant's proposed culvert replacement for compensatory mitigation.

Applicant's Response: The Applicant stated that there are no avoidance alternatives for their proposal as minerals are only present where they are deposited and that the project footprint cannot be reduced due to the need to mine for gold using the maximum depth capability of the equipment. They stated that the economic benefit outweighs the temporary loss of the SAV beds during mining. IPOP also stated that the case study would help determine compliance with the Guidelines and identify minimization measures. The case study has been designed as the minimum necessary footprint to allow for maneuvering of the dredging and processing equipment plus disposal of dredged materials. The Applicant raised concerns that any other test smaller than full-scale operations would result in insufficient

information and result in the need for further testing.

The Applicant also responded that the purpose of the case study phase is to provide information related to reclamation that can be applied to the full-scale mining phase. In addition, they described some of the measures that would be implemented during reclamation, such as recreating the historic thalweg to improve fish habitat, and discussed compensatory mitigation issues as were presented in the most recent version of their reclamation plan.

POD Evaluation: As documented elsewhere in this decision document, alternative approaches to the Applicant's proposal have been considered to determine whether the Applicant has taken all steps to avoid and minimize adverse impacts to WOUS in accordance with the Corps' regulations at 33 CFR 332.1(c)(2) and the 404(b)(1) Guidelines at 40 CFR 230.91(c)(2).

EPA9 (Impacts to SAV): EPA expressed concerns about impacts to SAV, especially if dredging below the photic zone occurred, as SAV is the foundation of the food chain. Loss of SAV could result in a domino effect to fish, birds, and mammals, as well as subsistence users. Further concerns include timelines for recovery; guarantees on recovery rates as the project is unique in its estuarine location in Alaska; destruction of root masses during suction and cutterhead dredge activities; removal of SAV and substrate in the access channel; and consideration of how future mining (such as in the Eastern block) or maintenance of the access may affect restoration. EPA further described the functions and benefits of the different SAV species identified within the project area by the Applicant (Eilers 2020). EPA reiterated concerns on May 27, 2021, about the annual maintenance of the access channel resulting in long-lasting impacts to aquatic resources and concerns with the lack of avoidance and minimization measures for SAV and associated aquatic resources.

Applicant's Response: The Applicant acknowledged impacts on SAV from turbidity but maintained that the effects from turbidity would be managed by the silt curtains. Regarding SAV restoration, the Applicant stated that redepositing the spoils with harvested organics containing the seedbed would likely cause regrowth the following season and that this methodology is akin to what naturally occurs seasonally. The Applicant stated that there is a body of scientific evidence supporting the position that smaller-scale freshwater dredging results in no damage. The Applicant has reduced the depth of the access channel from 10 feet to seven feet below MLLW during reclamation of the full-scale mining channel and the case study area to allow for robust SAV

growth. The case study was proposed to address the concern of SAV regrowth rates. Changes in the SAV community would be monitored through combination of sonar data and manual quadrat sampling using reference sites as a comparison. The Applicant stated that a deeper channel would provide a wider and more diverse range of SAV species and that the proposed reclamation may lead to the development of a halocline environment with higher salinities at the bottom, which would be more favorable to eelgrass growth.

The Applicant maintains that their drone footage, surveys, and other data accurately report the destruction of SAV over the winter and the following annual regrowth. The Applicant stated that surveys were conducted in late July 2020, late August 2020, and August 2021.

POD Evaluation: The Applicant has provided a reasonable amount of information to date with respect to SAV within the project footprint and how it would respond to reclamation and disposal activities. As addressed elsewhere in this decision document, recovery of impacted SAV is a key factor in compensating for the aquatic resource functions that will be lost as a result of the project. The highly dynamic and cyclical nature of this estuary system combined with the observed rapid annual regrowth of SAV (primarily sago pondweed) under baseline conditions suggests this channel could recover quickly from project activities. There is some degree of unsupported speculation both in what EPA is suggesting may result from this project, and some speculation in what the Applicant suggests will occur. Special conditions can be used to monitor SAV regrowth each year and to implement adaptive management measures as needed. Issues raised with respect to other claim blocks in this area are not relevant to this situation as they are not a part of this project.

EPA10 (Substrate, hydrologic changes and associated water quality impacts): EPA expressed concerns about the lack of information on the bathymetry at the Applicant's other claim areas not currently proposed for mining (e.g., the central block and eastern blocks), the instability of the sediment if the layers were not placed back in the same layers from which they were dredged, loss and/or change of species habitat, increasing turbidity, alterations to water patterns and quality, salinity and tidal flushing, conversion of habitat, and alterations to the bottom elevation. They stated that water quality information would help understand the project's impacts on particle aggregation and aggradation rates and that use of the cutterhead would result in sediment suspension and deposition despite use of the silt curtains. They also raised the potential for erosion and slumping within the dredged areas and potential introduction of toxins.

Applicant's Response: The Applicant asserted that they do not anticipate long-term effects to the flow regime as the bathymetry would generally be restored to pre-project conditions except for the deeper access channel. Regarding hydrologic changes, the Applicant stated that the surrounding landscape is a mix of relatively flat coastal wetlands, grasslands, and tidal mud flats, influenced by the Solomon River and Bonanza River. In June 2020, the Applicant collected hydrologic flow measurements and found a flow maximum of 0.5 feet per second (ft/sec) with an average flow of 0.2-0.3 ft/sec. The Applicant maintained that there is low water circulation in the project area and that mitigative measures to maintain water current and circulation patterns during the proposed project would not be needed. The Applicant did not anticipate impacts to adjacent wetlands outside of the project footprint.

The Applicant confirmed that project operations would result in mixing of substrate layers, but that material would be discharged in an alluvial fan-type configuration coarser at depth with finer material on top. The Applicant does not anticipate any long-term physical impacts (including changes in oxygen) from the dredging after reclamation. The Applicant reported that measured salinity values were consistently uniform, ranging from 13-16 practical salinity units (PSU).

Regarding soil stability, the Applicant focused on porosity and grain size as the driver of soil instability. The Applicant estimated void ratios by assuming densely packed medium sand since their 13 drill holes averaged approximately 81% sand and then included a safety factor of 1.46 to end up with a critical slope of 3:1 (H:V). The case study would provide additional data on the stability of the slopes and the bulking factor, which would lead to more accurate storage space calculations. The Applicant anticipates that the access channel would quickly round to a stable depression profile from the wind, storm, and wave action. Further, the Applicant stated that exploratory drilling (evaluated separately by POA under a general permit) would provide further data on the layering of substrate, sediment types and geochemistry. In response to concerns of downstream turbidity effects, the Applicant stated that established estuaries like the Bonanza Channel revert to pre-project disturbance elevations through natural processes, which makes beach nourishment and similar endeavors pointless.

The Applicant estimated that the material would compact down to its pre-mining state within 2-3 years based on a literature review; however, they proposed to use the case study to further refine the

assumption of the settling rates. The case study, however, is proposed to be year 1, with the full-scale mining starting in year 2; settling rates would not be known when mining was initiated.

The Applicant noted that fall storms cause significant spikes in turbidity. IPOP provided descriptions of aerial drone observations after an October 7, 2020, storm, stating that on the following two days (on October 8th and 9th), the turbidity readings collected by personnel onsite had readings of 6.5 Nephelometric Turbidity Units; however, they estimate that during the actual storm turbidity could have been twice that or higher. The Applicant contended that due to the shallow nature of the system, wind generates turbidity within the waters.

The Applicant anticipates that there would be no permanent placement of dredged material above MLLW and therefore no erosion of spoils would occur. The Applicant is proposing to stabilize the launch area and access road with geotextile mats and place silt curtains downslope of active dredging areas. Moreover, the Applicant has proposed temporary disposal of excess dredged material above mean high water if bulking exceeds estimates.

The Applicant will operate within turbidity curtains to limit the spread of turbidity and particle aggregation. The curtain would be maintained in place until materials have resettled.

The Applicant provided 10,000+ water quality observations from their model dredging program in response to EPA's comment regarding the lack of water quality data. The Applicant also emphasized the additional data they have collected via high-resolution drone footage. The Applicant conducted water quality sampling during their small-scale test dredge and did not detect arsenic, lead, mercury, or tin at or above the Method Detection Limits.

POD evaluation: The Applicant provided sufficient information related to this comment to allow evaluation of the permit application. The Applicant has indicated that silt curtains would be maintained until such time SAV has recovered; however, they have indicated elsewhere in their documentation that curtains would be maintained until turbidity has been reduced to background levels. SAV recovery depends in part on mobilization of seeds, rhizomes, and turions from adjoining areas. For that reason, silt curtains should be removed as soon as turbidity levels have been fully mitigated.

The Applicant also mentions how natural processes will affect the

channel cross-sections after reclamation and disposal occurs. This can be seen as a beneficial effect. Natural systems tend to seek an equilibrium state. Channels and mud flats created in a natural estuary system will undoubtedly be altered over time with some created mud flats possibly reverting to vegetated shallows or wetlands and created channels potentially silting in. These kinds of processes are considered undesirable in a navigation channel where a stable channel bathymetry is needed for ships to safely pass. In a natural system without significant and regular manmade intervention, these processes create a sustainable ecosystem.

EPA11 (Alternatives Analysis): EPA questioned why some alternatives which appeared to be practicable were eliminated by the Applicant, specifically: offshore mining; other mining locations in Alaska; an alternate mining layout within the existing claims; a restricted mining size; a restricted mining depth; a larger mine layout which included discussion on the proposed reclamation; disposal of dredged material in uplands; alternate methods of mining; and no reclamation of the channel. These concerns were reiterated on May 27, 2021.

Applicant's Response: The Applicant provided a rebuttal on the inclusion of the range of alternatives suggested in the above comment during multiple exchanges between POA, the Applicant, and EPA.

POD Evaluation: EPA's initial pre-application comments commented on the alternatives analysis provided by the Applicant at the very beginning of the project. Further comments were received each time when the Applicant submitted their initial application and a subsequently revised application. Some of the comments regarding alternatives were submitted when the Applicant had not pared down their request from mining on 32 claims to mining on ten claims. The multiple versions of the Department of the Army permit application that were circulated along with separate multiple exploratory drilling permit requests contributed significant confusion to the review conducted previously by POA and overlaps into POD's evaluation.

Many of the alternatives discussed by the Applicant in their initial plan of operations simply do not warrant further consideration or further comment by the Corps, either because they are outdated, infeasible, obviously do not demonstrate any avoidance/minimization of impacts to jurisdictional waters or are not reasonable from a NEPA perspective.

The alternatives analysis conducted by POA to meet 404(b)(1) Guidelines and NEPA requirements includes alternatives mentioned in EPA's comment that evaluated offshore mining locations, alternative

mining locations, disposal in uplands, and alternative dredging methods. The alternatives analysis in this decision document also discusses why some of the aforementioned alternatives were screened from further consideration.

EPA12 (Reasonably foreseeable actions and cumulative effects): EPA raised concerns that without baseline information for IPOP's other claim blocks, it would be difficult to assess potential other LEDPAs and that additional mining is a reasonably foreseeable action if a permit were issued, based on information within the 2020 Narrative (e.g., Exhibit 4).

Applicant's Response: The Applicant stated that future mining is dependent on the issuance of permits by the Corps and because of that, is not reasonably foreseeable. They disagreed with the EPA's comments about which actions are reasonably foreseeable.

POD evaluation: The alternatives analysis in this decision document by POD includes an off-site alternative proposing mining in the central and eastern claim blocks. Detailed baseline information was not needed. A screening-level analysis of these areas found significant constraints at each location. The cumulative impacts analysis in this decision document discusses potential projects in the other 22 claims from the perspective of reasonably foreseeable projects and from both 404(b)(1) Guidelines and NEPA perspectives.

EPA13 (Sediment testing, hazardous materials): EPA raised concerns about the need for minimization of hazardous waste spills, identification of measures to address clean-up, and plans to address mercury recovery.

Applicant's Response: The Applicant stated that the only hazardous materials used in operations would be petroleum products, which would be delivered to the project site by local fuel delivery companies, and that two tanks would be stored on a 53-foot trailer in double-walled containers. The Applicant would develop a Spill Prevention, Control and Countermeasure (SPCC) Plan; a Tier 1 SPCC would be submitted once the personnel are chosen, which cannot happen until permit issuance and schedule confirmation, according to the Applicant. Further information on petroleum concerns is discussed in the EFH assessment and Biological Assessment (BA).

The Applicant does not expect to recover any mercury during operations based on sampling results, which indicated mercury, along with lead, arsenic, and tin, were not detected at or above Maximum Daily Loads (MDLs) but would dispose of any recovered mercury in

accordance with federal and state hazardous waste requirements. The Applicant proposed to implement a monitoring plan that would include sampling for metals of concern (including mercury) daily during the first week of operations and then weekly thereafter.

POD Evaluation: Although the Applicant did not initially list development of an SPCC as part of their avoidance/minimization measures, they subsequently have indicated their willingness to do so based on input from resource agencies. A special condition for the creation and approval of a SPCC plan would be added as condition of the permit, if issued, to further reduce adverse impacts. Additionally, a special condition would be added as a condition of the permit, if issued, to include sediment testing in annual reporting to the Corps and resource agencies.

EPA14 (Economic impacts): After the second public notice, EPA expressed concern that the mine would alter the region's economy and would have further negative economic impacts once the mine was closed.

Applicant's Response: The Applicant referred to economic data for the effects of their project on the local and state economies.

POD Evaluation: It has not been demonstrated that mining projects would have a negative economic effect. The local economy is based in Nome because there are no permanently populated areas near the project site. Nome is the center of numerous gold mining operations both in the offshore areas and in streams and rivers in the region. Placer mining projects differ greatly in scale, duration, and profitability and are inherently speculative with respect to any effects they individually may have on the local economy. The Nome area has a population level that varies seasonally and a mining season that varies similarly. The subject project would not have derogatory economic effects any greater than any other mining projects in this area.

4.1.2 Comments Received from USFWS:

USFWS1 (Threatened and endangered species): The USFWS expressed concern about the project's impacts to threatened and endangered species and their designated critical habitat listed under the federal ESA.

Applicant's Response: The Applicant has prepared a BA to address impacts to species listed under ESA.

POD Evaluation: All required consultations under the ESA were

completed by POA for this project. As documented later in this decision document, consultations were reviewed for adequacy by POD in consideration of the LEDPA, including subsequent review of newly designated critical habitat since POA's consultations occurred.

USFWS2 (Marine mammal impacts): The USFWS expressed concerns about impacts to listed marine mammals under the Marine Mammal Protection Act (MMPA) and recommended the development of a mitigation plan.

Applicant's Response: IPOP has stated that to prevent adverse effects to marine mammals, they will use a Marine Mammal Observer.

POD Evaluation: Section 7 consultation with NMFS addressed a range of marine mammals, with a focus on two listed seal species with potential to be found in the project area and marine mammals are addressed in this decision document. NMFS provided a list of suitable protective measures that should be put in place as special conditions for any permit issued for this project. These measures would be added as special conditions of the permit, if issued.

POA previously provided the Applicant with a list of contacts for MMPA consultation, if needed, but the Applicant has indicated their position is it is not needed because they won't be taking protected species. The required protective measures mentioned above are expected to minimize impacts on marine mammals.

USFWS3 (Turbidity curtain operations): The USFWS expressed concern with the lack of information on turbidity from operation of the silt curtain and the number of times it would need to be repositioned during operations. Repositioning of the silt curtain would have impacts to the aquatic resources from sedimentation. USFWS described potential impacts from repositioning the silt curtain during annual dredging operations and during access channel creation and maintenance. The concerns about how long the curtains would be maintained in place during operations were reiterated in follow-up comments in July 2021.

See EPA2 above.

USFWS4 (Mudflats and disposal locations): USFWS noted that they were unable to assess impacts to intertidal mud flats and wetlands as information was unavailable for acreage and volume to be disposed above MHW or above MLLW. The USFWS cautioned that dredged spoils cannot be placed on islands or uplands under their federal responsibility (e.g., the National Wildlife Refuge lands under the USFWS's control).

See EPA2 above.

USFWS5 (Baseline and operational information needs; benthic and other impacts): The USFWS expressed concern about the lack of baseline information regarding biological resources present, the lack of information on operations, and impacts from disposal of dredged materials into the proposed disposal sites.

The USFWS also raised concerns about slow benthic recovery times after a dredging and spoil disposal project, which is dependent on the sediment type, the dredging methods, the disposal methods, project geographic location, the original composition of species, and the larger ecosystem. The USFWS expressed concern with adverse impacts to the benthic community and the ripple effects these impacts would have throughout the ecosystem.

See EPA2 above for discussion on baseline information and EPA4 for further discussion on benthic communities and impacts.

USFWS6 (Avoidance and minimization): The USFWS raised concerns about the lack of information on the vertical and lateral distribution of mineral resource, which would help with avoidance and minimization of unnecessary impacts to their trust resources (e.g., federally listed species and their designated critical habitat, marine mammals, migratory birds, fish, wetland habitats used by these species, and lands managed by USFWS). The USFWS recommended the development of a robust exploration plan to provide further information. On July 1, 2021, the USFWS recommended reducing the size of the case study area to as small as necessary to demonstrate successful restoration.

Applicant's Response: The Applicant stated that they have developed a robust drilling plan totaling 502 test holes which will provide information to show the three-dimensional distribution of gold and the local geology. [Note: this drilling plan and other related drilling plans in this area were separately permitted under general permit verifications by POA.] The Applicant stated that they intend to conduct this drilling once the second set of cores are approved as this area includes the location of the case study and the location of proposed mining years 4 and 5.

POD Evaluation: The information provided by the Applicant is adequate for evaluating the proposed project. Avoidance/minimization measures are discussed in this decision document in terms of the Applicant's proposal and within the alternatives analysis.

USFWS7 (Turbidity concerns): The USFWS recommended the development and implementation of a silt-curtain failure and erosion response plan to protect water quality. The USFWS expressed concern about the potential for unconsolidated spoil to erode after removal of the silt curtain. The USFWS also provided feedback on information lacking from the 2020 Otero Small Scale Test Dredge Study, which included items such as lack of data on the impacts of short-term and long-term turbidity effects on any entrapped fry within the silt curtain after the curtain was removed; lack of data on impacts of turbidity to SAV within the curtain and the short-term and long-term effects; and lack of reporting the short-term and long-term turbidity levels after curtain removal.

Applicant's Response: The Applicant proposed to develop a Silt Curtain Failure and Response Plan and an SPCC Plan and submit the two to the agencies. The Applicant offered further information from the small-scale dredge test (Otero 2020), stating that no dead fry were observed within the curtain during test dredging or post-test monitoring. Further, the Applicant stated that there were no impacts to SAV observed in collected in drone imagery and visual observations from personnel on the canoes.

POD Evaluation: See POD response to EPA10.

USFWS8 (Invasive species): The USFWS raised concerns about invasive species being introduced to the project site, which may result in significant, long-term impacts to the Safety Sound ecosystem. USFWS recommended the development of an invasive species plan. The request was reiterated in July 2021 after the second PN.

Applicant's Response: An invasive species plan has been prepared for this project.

POD Evaluation: The Applicant has prepared an invasives species plan for this project (Otero 2021). The plan is considered adequate for this project.

USFWS9 (Hazardous materials): USFWS expressed concern about the unintentional release of hazardous materials, which would negatively impact their trust resources. The USFWS encouraged the preparation of an SPCC Plan.

Refer to EPA13.

USFWS10 (Reclamation plan and SAV concerns): The USFWS raised several concerns with regard to the Applicant's proposed reclamation plan, including that further details were needed to evaluate the success of the plan, such as the survivorship of planted SAV from the test dredge study, accurate mapping of bathymetry, the ability to obtain accurate final elevations by using appropriate equipment to collect bathymetry data in heavily-vegetated waters for all of the Applicant's claims, post-mining plans that consider spoil settling, and clarification of the benefits of leaving a deeper channel. The USFWS expressed concern that a deeper channel would not allow for SAV regrowth and may pose a hazard to those wading among the islands. USFWS detailed concerns with the success of the proposed reclamation and concerns with revegetating an Arctic area with a short growing season. They recommended the Applicant review the literature for restoration techniques that could be applied to the project site and to restore specific functions, to contact estuary restoration specialists, mapping above-MHW and above-MLLW elevations where disposal would occur and providing baseline information on these habitats and recommended restoring the access channel to pre-project bathymetry.

USFWS provided detailed information on how the species of SAV identified in the Bonanza Channel by the Applicant's summer 2020 study (Eilers 2020) are used in a broader ecological context. Further comments on July 1, 2021, indicated concern with lack of details on the reclamation plan for how successful restoration would be evaluated and reliance upon terrestrial methods of SAV restoration whereas the project is marine/estuarine; additional concerns included lack of a monitoring plan to determine success and concerns with the compensatory mitigation proposal as the USFWS believed there would be a permanent loss of aquatic functions.

Applicant's Response (Yukuskokon February 2021, comment response USFWS 11): The Applicant detailed the Hypac Software and Tremble GPS units onboard the dredges for collecting bathymetry data, as well as the plan to dredge early in the season to reduce interference from SAV. IPOP stated that planting intact plants will not be as successful as the harvesting and planting or natural recruitment of achenes, tubers, and turions.

IPOP stated that they plan to map areas above MLLW and above MHW and that additional benthic and fish sampling occurred in 2021.

The Applicant stated that the proposed case study is intended to demonstrate the project's ability to restore pre-project bathymetry with minimal time delay and to estimate the bulking of materials and volume of space required for disposal.

POD Evaluation: Since the public notices were issued by POA, the Applicant has provided additional iterations of their reclamation plan (Yukuskokon Professional Services, LLC. 2022) that address the issues raised by this USFWS comment. This plan was specifically written for the Applicant's preferred alternative, which contains the case study phase. The plan would need to be revised to match the LEDPA because the LEDPA does not include a case study phase. Implementation of this plan would be added as a special condition should a permit be issued.

USFWS11 (Permanent loss of functions, compensatory mitigation): USFWS offered suggestions for alternative compensatory mitigation opportunities and expressed concern about the severity and long-term nature of the impacts, specifically disruption of mud flats and vegetated shallow areas (e.g., special aquatic sites), risk of failed restoration and associated time lag with a successful restoration. The USFWS recommended compensatory mitigation for the permanent loss of aquatic functions after all avoidance and minimization measures have been used.

Applicant's Response: The Applicant did not specifically respond to this comment other than to prepare and subsequently revise the reclamation plan that addresses these issues.

POD evaluation: Avoidance, minimization, and compensatory measures are discussed in EPA8 and Section 8.0 of this decision document.

USFWS12 (Birds): USFWS described the importance of Safety Sound as a migratory bird stopover point: 17 birds of conservation concern have been documented near and within their Assessed Area of Potential Impacts, which is the Applicant's 32 mining claims; the area supports waterfowl, loons, tundra swans, terns and passerines, all with different behavior and nesting strategies. USFWS stated that dredging would occur immediately adjacent to lands managed by the Alaska Maritime National Wildlife Refuge, whose primary purpose is to conserve fish and wildlife populations and to provide continued subsistence opportunities by local residents. USFWS expressed concern that the proposed project could impact subsistence users by changing wildlife movement patterns. In their July 1, 2021, comments, the USFWS expressed concerns that the nest survey conducted by the Applicant August 21-22, 2020, was outside of the nesting seasons of May 10 - July 20 and was of low value to understanding the ecosystem.

Applicant's Response: The Applicant was provided an opportunity to

respond but declined to respond specifically to this comment.

POD Evaluation: Project details and baseline conditions are discussed in EPA2 and in Section 1.4 and 7.0 of this decision document. Bird issues are also discussed in EPA3. Subsistence is discussed in EPA6.

USFWS13 (EIS): The USFWS discussed similar functions and values of estuaries as EPA does (refer to EPA1). The USFWS further details the Alaska Department of Natural Resources (ADNR) designation of the area as habitat, as does EPA. The USFWS has substantial concerns with the proposed project on impacts to waters of the U.S., including special aquatic sites, due to extensive unknows and the risk of failure of restoration in this subarctic climate. USFWS recommended preparation of an EIS due to the significant loss of the physical, chemical, and biological functions of the special aquatic sites and the unknowns on restoration of these functions.

Applicant's Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.

POD Evaluation: Refer to EPA1 for further discussion.

USFWS14 (Specific Recommendations for Reclamation in Case Study): The USFWS has advised that the Corps should delay permit approval for dredging the full-scale operations so that the Applicant can demonstrate the success of the restoration with a pilot project. The USFWS stated that successful restoration would include the following:

1. The pilot restoration project should include all the various aquatic habitat types present in the Bonanza channel and have a footprint no larger than necessary to demonstrate the potential for successful restoration. The pilot restoration site(s) should be monitored for at least two growing seasons and should be designed to improve overall knowledge of the factors contributing to restoration success or failure. The USFWS suggests working with a cold water marine SAV restoration expert to assist with this process. SAV planting and transplanting projects should be designed and implemented to optimize the overall ecological value of the restored bed. A technical working group should be assembled to assist the Corps with an evaluation of the design, monitoring, and judging the success of the SAV restoration efforts.

2. Demonstrating salvaging, storing, and transplanting SAV success in the Bonanza Channel should focus on techniques with a history of success based on over 40 years of SAV restoration documented in the literature,

with special emphasis on subarctic and higher latitude restoration sites.

3. Restored SAV beds should persist over time and acquire as many of the functions of natural SAV beds as possible, including sustainability, plant density, species diversity, high quality bird, benthic, fish and shellfish habitats, reproduction and dispersal of SAV propagules, water quality improvement capacity and wave attenuation. In all cases, appropriate follow-up monitoring of both the SAV beds' health and the associated habitat functions should be conducted to enable assessment of the reasons for success or failure.

4. Restored mud flats should persist over time and acquire as many of the functions of natural mud flats as possible, including sustainability, species diversity (including burrowing invertebrates important for foraging shorebirds), and high-quality bird and shellfish habitats. In all cases, appropriate follow-up monitoring of both the mud flats' health and the associated habitat functions should be conducted to enable assessment of the reasons for success or failure.

Applicant's Response: The Applicant states that the USFWS did not identify any techniques or sites for the Applicant and that the Applicant has proposed the case study to experiment with using and not using the top layer of organic material in their restoration due to the lack of available literature relevant to their subarctic site. In response to suggestion 3 and 4, the Applicant states that their monitoring is appropriate and that the goal of their reclamation is to provide restored or improved SAV beds.

POD Evaluation: See response to USFWS10. The Applicant has provided subsequent revisions to their reclamation plan, which are considered adequate at this point. This plan was specifically written for the Applicant’s preferred alternative, which contains the case study phase. The plan would need to be revised to match the LEDPA because the LEDPA does not include a case study phase, should a permit be issued.

USFWS15 (Recommended Special Conditions for IP): The USFWS recommended that the Corps incorporate the following special conditions into the permit, if approved, after the successful demonstration of the SAV restoration and mud flat habitats and the potential permanent loss of aquatic functions have been determined and compensated for, as appropriate. The USFWS previously did not object to permit issuance if the following special conditions were included within the permit:

1. Commercial dredging shall not commence until the appropriate compensatory mitigation is secured and shown to be successful following the guidelines in 33 CFR Part 332, Compensatory Mitigation for Losses of Aquatic Resources.

2. Restoration efforts shall be conducted during optimal seasonal timing for successful establishment of SAV based on the pilot study.

3. Restoration shall be implemented as soon as practicable after dredging and mineral extraction is complete within a specific section.

4. Restoration shall be monitored for a minimum of 5 years, or until the aquatic functions have been restored. Adaptive remediation will be required when one or more aquatic functions fails to be restored.

5. Dredged spoils shall not be placed on existing SAV, mud flats, or other undisturbed WOTUS. Dredged channels shall be returned to stable baseline contours to restore the ecological functions of the SAV, mud flats, and other aquatic resources.

6. Dredging shall only occur within designated mapped channels as depicted on the IPOP LLC, POA-2018-00123, Safety Sound/Bonanza Channel April 2021, Sheet 4 of 29.

7. All activities, including foot traffic, within the Alaska Maritime NWR [are] not permitted without specific prior authorization from the Refuge.

Subsequently, on May 18, 2022, the USFWS submitted additional comments to the Corps outside of the public notice comment period recommending denial of the permit application. This letter responds to a draft reclamation plan for the project that was provided to them for review. These comments were provided ahead of the preparation of a decision document by POA and included a point-by-point criticism of the project using 40 CFR 230 as the basis.

> Applicant's Response: No specific comments were provided with respect to the eight recommended conditions. The Applicant responded on May 23, 2022, to the USFWS's May 2022 comments refuting the USFWS's concerns and emphasized that the agency's concerns had been resolved; the uplift from the proposed reclamation was reiterated. However, the Applicant also stated "[o]ver time, wind waves and storms may tend to restore a flatter topology, but that is no

reason to deny the permit. That would just leave IPOP back in the shoes of the typical suction dredge operation that leaves no visible traces." (Page 5). Additionally, the Applicant voluntarily provided a fish study on June 16, 2022, in response to the May 2022 USFWS comments.

POD Evaluation: The Applicant revised their reclamation plan several times to address comments received from resource agencies and POA with the March 2022 version being the most recent version. The most recent USFWS comment letter was received after this version was submitted. This decision document considers the comments provided by USFWS, including the criticisms of the Applicant's draft reclamation plan. The most recent version is considered acceptable by POD and implementation of the plan would be required as a special condition if a permit is issued, once it has been revised to match the LEDPA.

4.1.3 Comments Received from National Marine Fisheries Service (NMFS)

NMFS1 (EIS): NMFS expressed concern that the proposed mining activities have the potential for significant environmental impacts and requested that the Corps prepare an EIS.

Applicant's Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.

POD Evaluation: Refer to EPA1 for further discussion.

NMFS2 (Complete EFH Assessment): NMFS stated that the Draft EFH assessment included within IPOP's application materials was incomplete and did not address the full scope of the proposed action and the associated impacts. The EFH assessment must meet the requirements of 50 CFR 600.920(e) and accurately describe the proposed project including project timelines. NMFS also requested that the EFH assessment incorporate their June 16, 2020, early coordination comments to adequately assess the impacts from the proposed mining activities.

Applicant's Response: The Applicant subsequently updated and resubmitted the EFH Assessment.

POD Evaluation: The Applicant subsequently revised the EFH assessment, and that version was used for consultation with NMFS, which was originally completed by POA. POD has determined reinitiation of consultation per 50 CFR 600.920(l) is not required, as discussed later in this document.

NMFS3 (Red king crab information): NMFS requested that the EFH assessment analyze impacts to red king crab including impacts to nearshore crab habitat and crab abundance during and after the project, assess the presence or absence of red king crab with eDNA sampling, and survey the project area for baseline abundance of crabs. This sampling technique involves testing water sample for the presence of DNA to determine the use of the waterbody by specific fish and wildlife species.

Applicant's Response: The Applicant conducted eDNA sampling for red king crab in October 2021 and concluded red king crabs are not present within the sample area.

POD Evaluation: NMFS comment has been adequately addressed by the Applicant. In addition, eDNA conducted by POA under the PAS study conducted for the Village of Solomon (U.S. Army Corps of Engineers 2022) was negative for this species.

NMFS4 (SAV impacts): NMFS requested that the EFH assessment address impacts to SAV including the alteration, loss, or disruption due to the deposition of dredged material and the resuspension of sediments. The analysis would need to include a description and understanding of the existing species distribution, provide evidence on the reclamation process for SAV to root, and incorporate plans for annual monitoring and mapping.

Applicant’s Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.

POD Evaluation: The EFH assessment was revised to address impacts to SAV.

NMFS5 (Salmon migratory channels): NMFS requested that the EFH assessment address impacts to juvenile and adult salmon migratory corridors and salmon migration, develop a plan for nearshore fish passage, provide evidence that suction dredging enhances food supply and water oxygenation, and provide information on the proposed efficacy of the proposed turbidity curtain.

Applicant’s Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.

POD Evaluation: The EFH assessment was revised to address impacts to salmon migratory channels.

NMFS6 (Prey resource impacts): NMFS requested that the EFH assessment address disruption or removal of prey resources (including herring) in and adjacent to the project area. NMFS also requested the assessment address the potential physical impacts of the proposed project, such as the removal of substrates which would serve as habitat for fish and invertebrates, habitat creation or conversion, burial of productive habitats, release of toxic materials during dredging, turbidity impacts, adverse modification to the hydrology and behavior alteration of marine organisms because of the disposal of mining tailings in or adjacent to the nearshore.

Applicant's Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.

POD Evaluation: The EFH assessment was revised to address impacts to prey resources.

NMFS7 (Reclamation plan): NMFS requested that the EFH assessment provide additional information and analysis on the tailings and reclamation plan by clarifying how long the dredged material would remain in the temporary disposal sites, providing information that an estuary can be re-established to pre-mining conditions with the proposed reclamation methods, and developing a thorough reclamation plan. NMFS has raised concerns that the current reclamation plan would alter the bathymetry and hydrology.

Applicant's Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.

POD Evaluation: The EFH assessment was revised to address these issues and a revised reclamation plan was prepared that further addresses these issues. Implementation of this plan would be required as a special condition for a permit, if one is issued, with revisions to the plan to match the LEDPA.

NMFS8 (Benthic impacts): NMFS has expressed a general concern that the proposed project activities, including storage and reclamation, would result in adverse effects to benthic communities.

POD Evaluation: Impacts to benthic communities are discussed in EPA2 and EPA4 and in Section 6.0 of this decision document.

NMFS9 (Sedimentation and turbidity impacts): NMFS requested that the EFH assessment address impacts of dredged material/sedimentation as disposal material can remove important habitat, alter habitat in surrounding areas, and result in smothering of existing substrates and loss of habitat function. NMFS

also recommended the Applicant include a plan for the management of the disposal sites and the monitoring of disposal sites and for the Applicant to develop a model and description of the size and duration of sediment plumes caused by dredging activities and an estimate of the silt curtain's effectiveness in managing plumes.

Applicant's Response: The Applicant has prepared a Dredging and Environmental Management Plan (DEMP) (Yukuskokon Professional Services, LLC. 2022b) to address management and monitoring of disposal sites. The revised DEMP addressed the case study and describes the case study and commitments made by the Applicant including plans to monitor various site factors, discusses the bulking factor and sediment stability using information described from other reports, discusses the reclamation proposal, and describes a 5-foot-tall series of dikes within the mining trench. The DEMP also states that dredged material disposal sites will be maintained until they are reclaimed and stabilized, but that as the sediment consolidates, additional storage volume available may be used in subsequent years of operation. The DEMP also states that the bottom mounted turbidity curtains will be used to establish nearly 100% containment of the operation.

POD Evaluation: The revised EFH assessment addressed NMFS's concerns.

NMFS10 (Water quality, hydrology): NMFS raised concerns that the dredging and disposal operation would have adverse effects on the water column and reduce water quality. NMFS also expressed concern that the dredged material disposal sites would impact hydrology and salinity of the water body.

Applicant's Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.

POD Evaluation: Water quality is discussed in EPA2 and was evaluated by the Alaska Department of Environmental Conservation through the issuance of the 401 Water Quality Certification issued on April 6, 2022.

NMFS11 (Alternatives): NMFS requests that the Applicant assess alternate disposal site options which would minimize adverse impacts to EFH and consider beneficial uses of dredged materials such as beach replenishment and construction.

Applicant's Response: The Applicant was provided an opportunity to

respond but declined to respond specifically to this comment.

POD Evaluation: Refer to EPA11 and Section 5.0 of this document for further discussion on alternatives, including alternative disposal sites.

NMFS12 (Sediment testing plan, erosion control plan, silt curtain failure plan, oil spill plan, hazardous materials plan): NMFS recommended that the Applicant develop a sediment testing plan under EPA and Corps requirements for inshore and offshore unconfined disposal and recommended the Applicant develop an erosion control plan and a silt curtain failure and response plan. NMFS requested that the Applicant consider an oil spill prevention and response plan and a hazardous materials plan and develop response strategies and measures to respond to hazardous materials spills and oil spills, should they occur. NMFS states that the EFH assessment must include analysis on the potential for oil spills and the impact of spills to EFH.

Applicant's Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.

POD Evaluation: The sediment testing plan is discussed in EPA13; the erosion control plan is in the DEMP; the silt curtain failure plan is discussed in EPA2 and USFWS7; an oil spill plan and hazardous materials plan is addressed in EPA13 as part of the SPCC Plan. The Applicant has stated that they will prepare these plans (Sediment Testing Plan, Silt Curtain Failure and Response Plan, and SPCC Plan) to address concerns and the Corps has determined that development of these plans would be included as special conditions of the permit, if issued, as discussed in these referenced sections.

NMFS13 (Boat launch facility): NMFS requested that the EFH assessment provide detailed construction information on the boat launch and supporting facilities as described in the public notice. NMFS also requested that the Applicant consider use of existing boat ramps such as that at the Solomon River.

Applicant's Response: The Applicant clarified that the vessels consist of a cutterhead dredge with two parts (a 50-foot-long by 20-foot-wide section, plus a rear idler float section that is 40 feet long by 11 feet wide, and a processing barge that is 64 feet long by 40 feet wide). The Applicant stated that because neither vessel can float in waters that are less than 2 feet 9 inches deep that the launch ramp area must be excavated prior to launching either piece of equipment. The Applicant clarified that the launch ramp depicted on the public notice figures is an area deepened by dredging at the nearshore using a smaller gravel

suction dredge and not a permanent boat launch facility. This component would be utilized at the beginning and end of each season and equipment would be launched into the water with marine air bags and high-density polyethylene pipes as slides.

POD Evaluation: The requirements for floating the dredge equipment limits the location choices for a launch ramp. Accessing the area via the Solomon River ramp would require substantial more dredging activity to access the full-scale mining area and this approach was screened out from further consideration.

4.1.4 General Comments Received. The following are taken from the general public and Tribes/Tribal Corporations from the two public comment periods and the virtual public meeting.

General1 (Noise): Numerous commenters expressed concern that the noise from operations (including set up and take down at the beginning and end of each mining season) would impact adjacent property owners, aquatic species including marine mammals and fish, avian species (including migratory birds and ESA-listed species), subsistence users, and recreational users in the area. Commenters drew comparisons with the impact of vehicle noise and kayaking sounds to species displacement and were concerned that the mining operations would have greater disturbance impacts. Increased noise could have the potential to alter wildlife movements.

Applicant's Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment. Equipment noise information was previously provided in earlier submittals.

POD Evaluation: Refer to EPA3, EPA6, and USFWS2 for further discussion on impacts to birds, impacts to subsistence users and resources, and impacts to marine mammals, respectively. Impacts to adjacent property owners including noise impacts is discussed in Section 7.0 of this decision document. It should be noted there are no permanent residential properties in the general vicinity of the estuary.

General2 (Birds - migratory and other): Numerous commenters, including the Native Village of Koyuk and Nome Eskimo Community, expressed concern about project impacts to migratory birds due to noise, visual, human and equipment movement, which would then in turn impact birdwatching, eco-tourism, and subsistence. Commenters identified the location of the proposed man camp as one of the premier bird-watching locations in Alaska, with visitors from around the country and the world witnessing the confluence of

North American and Asian species. Further concerns included dredging and disposal impacts to staging, breeding, and nesting areas, lifecycle temporal impacts, and loss of shallow water feeding zones, including the benthic environment. Numerous commenters highlighted the Audubon Society's designation of Safety Sound as an IBA. Concerns were also raised that the proposed reclamation would not improve migratory bird habitat and that other bathymetric alterations of the project site would negatively impact waterfowl. Concerns were raised that the project would impact migratory patterns of birds, as Safety Sound is used as a stopover point or their final destination.

Applicant's Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.

POD Evaluation: Refer to EPA3, EPA8, and Section 7.0 of this decision document for further discussion on impacts to birds, the proposed reclamation, and economic impacts, respectively.

General3 (Aquatic resource impacts, reclamation): A number of commenters, including the Nome Eskimo Community, expressed concern that the proposal to leave the deeper channel (e.g., the access channel) would have a negative impact on fish and marine mammals and drain adjacent wetlands and submerged aquatic vegetation. They also questioned the benefit of the proposed increase in fish passage. Concerns were raised that with the proposed reclamation and the associated risks, that there would be long-term adverse impacts to wetlands. The proposed alteration of the bottom depth would open predator pathways to new areas, might be too deep to be used by foraging birds, and would be a fraction of the currently existing pristine habitat. Commenters were concerned that the proposed fill of the shallow littoral areas would reduce the area where birds forage and where salmon and saffron cod rear. Many commenters highlighted the fragile but pristine ecosystem as evidenced by the wildlife abundance and diversity and expressed concern with slow system recovery times. A few commenters were concerned that the mining proposal would further add stress to a region experiencing stress from factors such as increased predators, losses in cod and crab, industry, and climate change.

Applicant's Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.

POD Evaluation: Refer to EPA2, EPA8, EPA9, EPA10, and Sections 1.4 and 6.0 of this decision document for further discussion on project baseline information, the proposed reclamation, impacts to SAV, impacts to the substrate, and analysis on impacts to the physical/chemical/biological aspects of the aquatic resource.

General3 (Recreation): Commenters, including Bering Straits Native Corporation, expressed concern that operations (presence and noise) would limit recreational opportunities by impacting the ability of smaller subsistence and recreational boats to navigate within the channel, and create a disruption to the enjoyment of recreational activities. Other recreational uses of the area mentioned include canoers, kayakers, swimmers, campers, birdwatchers, and people observing other wildlife.

Applicant's Response: The Applicant stated that the project would not obstruct the channel at any one time and that they would allow for passage around their operations. The Applicant continued to emphasize the small footprint of their operations and stated that there would be other places in the vicinity from which to view wildlife and engage in recreational activities. The Applicant highlighted a public access area west of their proposed work area and the public boat launch areas at Safety Sound bridge and Solomon bridge. The Applicant additionally states that there are no birdwatching stations nor public boat launches where they are proposing to mine.

POD Evaluation: Noise impacts are discussed in EPA3. Recreation and navigation are addressed in Section 7.0 of this decision document.

General4 (Subsistence, cultural identity): Commenters, including representatives of the Village of Solomon, Bering Straits Native Corporation, the Native Village of Koyuk, Nome Eskimo Community, Solomon Native Corporation, and Kawerak Inc., raised concerns that the presence, noise, and visual disturbance of the dredge mine operations would negatively impact subsistence resources (saffron cod or tomcod, eiders, swans and other birds, etc.) and therefore subsistence users in the area, which is used year-round. Subsistence users hunt mammals and birds, fish, berry-pick, gather eggs and greens, gather salt for processing meats, and herd reindeer. The area of the proposed man camp and areas off the Nome-Council Road system are easily accessible and a short drive from Nome, Alaska. Commenters stated that these subsistence activities provide a means for food security in rural Alaska, where groceries can have a large markup as Nome is a fly-in only community. Subsistence is also a part of the cultural identity of the Native communities; this information and these practices have been passed down for generations since time immemorial and there are concerns that current community members would not be able to pass these traditions down to their children to pass onto their children if this mining operation were to move forward. Subsistence was described as also a form of self-employment. Kawerak, Inc., in their capacity as the Bureau of Indian Affairs land manager for Native Allotments, raised concerns that mining operations would negatively impact

the approximately 10 Native Allotments and the 100+ campsite owners along Bonanza Channel. These sites are located where they are due to their proximity to year-round subsistence resources; Kawerak Inc. further expressed concerns that the presence of the operations would alter wildlife movements.

> Applicant's Response: The Applicant has submitted for consideration records for subsistence permits by the State of Alaska demonstrating no permits have been issued for this area.
>
> POD Evaluation: Subsistence impacts are discussed in EPA6 and addressed in Section 7.0 of this decision document.

General5 (Impacts to adjacent property owners): Commenters with property in proximity of the proposed project location, along with Bering Straits Native Corporation and Solomon Native Corporation, were concerned that debris and trash generated by the man camp, potential oil/fuel spills, and noise from the diesel equipment, etc. would impact use of their property and their subsistence-type lifestyle. Concerns were also raised that operations would impact the owners' ability to sell their property and decrease property values due to the presence of the operations. Further concerns also included impacts from noise compared to existing noise levels.

> Applicant's Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.
>
> POD Evaluation: Noise impacts are discussed in EPA3 and impacts to property owners is discussed Section 7.0 of this decision document.

General6 (Negative economic concerns): Several commenters, including the Village of Solomon, were concerned that a mining operation would negatively impact birding tourism, which was described as a sustainable part of the local economy. Two commenters specifically mentioned that they run tourism companies that host birdwatching trips and wildlife trips. One of these commenters suggested reviewing how the COVID-19 pandemic has impacted tourism to gain an understanding of the importance of these businesses to the Nome economy. Commenters stated that birding requires a healthy ecosystem and are concerned that there would be no direct economic benefit to the Nome community, only the investors in the project. Several commenters questioned the economic benefit of the proposal and were concerned that the benefits to the local community were unsupported due to the unclear project lifespan stated within the 2020 Narrative; 10-year projections for economic calculations were used while the project has been described as a five-year plan.

Applicant's Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.

POD Evaluation: Economic issues are discussed in EPA14 and in Section 7.0 of this decision document, impacts to birds are discussed in EPA3, and economic impacts to the birding industry are discussed in Section 7.0 of this decision document.

General7 (Submerged aquatic vegetation): Concerns were raised by commenters, including Nome Eskimo Community, about the negative impact on SAV species (including eelgrass) from the proposed deeper channel, as well as the potential for the deep channel to drain other waters - thereby restricting the width of the channel in which SAV can grow. Concerns included that SAV surveys should be conducted later in the season for accurate data collection and if areas in the Bonanza Channel project area were filled to less than one foot, as the Applicant has proposed in their reclamation plan, then the new shallower waters would cause the channel to freeze solid which would then cause the SAV rhizomes to freeze and die.

Applicant's Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.

POD Evaluation: Impacts to SAV are discussed in EPA 9 and in Section 6.0 of this decision document.

General8 (Marine mammals): Commenters, including the Native Village of Koyuk and Bering Straits Native Corporation, expressed concerns that the mining project would impact seals, which is an important subsistence resource.

Applicant's Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.

POD Evaluation: Marine mammals are discussed in USFWS2 and are also addressed in Section 7 and Section 10.1 of this decision document.

General9 (Fish): Commenters, including Bering Straits Native Corporation, the Native Village of Koyuk, and Solomon Native Corporation, expressed concerns about the project's dredging and noise impacts to fish migration, which is tied to subsistence, as fish was one of the subsistence resources identified. Concerns were also raised with the validity of the proposed benefit to fish species from the deeper channel, which would remain after project

completion as reclamation. Some commenters expressed concerns for the potential for adverse impacts to fish species and essential fish habitat from the dredging operations.

Applicant’s Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.

POD Evaluation: Impacts to fish and the reclamation proposal's benefit to fish are discussed in EPA5 and EPA8, respectively and in Sections 6.4.1, 7, and 10 of this decision document.

General10 (Hydrology impacts): A few commenters, including Nome Eskimo Community and Kawerak Inc., raised concerns that the proposed dredge channel would impact underwater and nearshore profiles, impact water depths, change the local hydrology, and drain adjacent areas through the access channel.

Applicant’s Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.

POD Evaluation: Impacts to substrate and hydrology are discussed in EPA10 and Section 6.0 of this decision document.

General11 (Recommend EIS): A number of commenters, including Solomon Native Corporation, requested that the Corps prepare an EIS due to concerns with significant environmental impacts from the proposed project, specifically adverse effects to fish species and essential fish habitat, public health and safety, and water quality. Other reasons stated supporting an EIS include the ecological significance of the region, concerns with assessment of impacts presented in the Applicant's 2020 Narrative, and the unprecedented nature of this type of project in this type of aquatic resource.

Applicant’s Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.

POD Evaluation: Issues involving the EIS determination are discussed in EPA1.

General12 (Water Quality): Commenters, including Solomon Native Corporation and members of the Village of Solomon, expressed concern that the mining activities would negatively impact the water quality from the disturbance of the substrate and resuspension of toxic heavy metals into the water column and wanted further information on the presence of heavy metals. Concerns were raised about the lack of water chemistry data and the

potential for introduction of metals including arsenic, mercury, copper and lead.

Applicant's Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.

POD Evaluation: Baseline information is discussed in EPA2; testing for toxins is discussed in EPA13 and Section 6.5 of this decision document.

General13 (Navigation): A couple of commenters, including Nome Eskimo Community, raised concerns about the suitability of the proposed equipment (45-foot by 24-foot dredge and 70-foot by 40-foot processing barge) for navigating the shallow waters of Bonanza Channel and how smaller boats would navigate around the mining operation to access other areas of the channel.

Applicant's Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.

POD Evaluation: Navigation is discussed in NMFS13 in Section 7.0 of this decision document.

General14 (Lack of baseline information): Commenters local to Nome and the surrounding area questioned the Applicant's statements in their 2020 Narrative of the 'dying estuary'. Several commenters were concerned that baseline information was not collected nor used by the Applicant to document existing environmental conditions for factors such as vegetation, plant and animal species, wetlands and other special aquatic sites, and weather and storm conditions which could impact project operations and the Applicant's preparedness for any extreme weather events. Concerns were raised with the Applicant's data collection methods and that conclusions of 'no impacts' to resources were made from a lack of available data.

Applicant's Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.

POD Evaluation: Baseline information is discussed in EPA2 and in Section 1.4 of this decision document. As noted previously, substantial additional information regarding baseline conditions in the project area has been provided by the Applicant since the public notices were issued.

General15 (Disposal of dredged material): Commenters expressed concern

with the proposed disposal of dredged materials, specifically, the stability of the slopes and where the information was derived from, if operations exceeded storage capacity of identified sites, how restoration of disposal areas was to be achieved, compaction rates of dredged material, and statements from the Applicant on the benefits of the dredged material disposal sites as shallows and mud flats for different bird species. Other concerns were raised about the use of a bulking factor of 1.075 while measured averages were 1.16 in 2020 Narrative Table 5-2; commenters worried that not all spoils would fit into the proposed disposal areas.

Applicant's Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.

POD Evaluation: Dredged material and the substrate are discussed in EPA7, EPA8, EPA10, and Section 6.0 of this decision document.

General16 (Accurate project description): Several commenters, including Solomon Native Corporation and Norton Sound Economic Development Corporation, had concerns with the accuracy of information regarding the dredge channel design as well as the lifespan of the project, due to conflicting information within the 2020 Narrative.

Applicant's Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.

POD Evaluation: Substantial additional information regarding the project proposal has been provided by the Applicant since the public notices were issued.

General17 (Alternatives): Comments received in favor of the project stated that the case study was not necessary to collect certain information such as the channel slope angle, the noise level, or to demonstrate the success of the reclamation.

Applicant's Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.

POD Evaluation: Alternatives are discussed in EPA11 and Section 5.0 of this decision document. The Corps considered alternatives that did not include a case study.

General18 (Avoidance and Minimization measures): A few commenters were concerned with the lack of sufficient avoidance and minimization measures to reduce the degradation of ecological resources.

POD Evaluation: Avoidance and minimization measures are discussed in EPA8 and Sections 6.7 and 8.1 of this decision document.

General19 (Compensatory Mitigation): A few commenters stated that the existing culverts at Red Fox were intentionally designed to reduce the risk of creating plunge pools and were installed for easier passage of juvenile fish. If the culverts in this area were modified, there could be disruptions to the physical and biological features of Banner Creek.

Applicant's Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.

POD Evaluation: This issue is addressed in Section 8 of this decision document.

General20 (Case Study): Commenters, including Solomon Native Corporation, expressed concerns that the proposed case study would have similar impacts to the environment as the proposed full-scale mining, even though the purposes for the two are different (e.g., scientific information gathering and gold mining). Commenters were concerned that the addition of the case study expanded the project footprint in waters.

Applicant's Response: The Applicant was provided an opportunity to respond but declined to respond specifically to this comment.

POD Evaluation: The case study phase is discussed in EPA2. As discussed in Section 5.0 of this decision document, the Corps has considered alternatives that do not contain a case study phase.

General21 (Historic properties): During the virtual public meeting, concerns were raised that the proposed mining operation (specifically from mining equipment left during the winter) would negatively impact users of the historic Iditarod Trail, which is located generally along the Nome-Council Road. Concerns about potential other impacts to cultural resources or historic properties which may be present in and near the project area were also raised.

Applicant's Response: The Applicant clarified that they would demobilize their camp at the end of every season. The dredging equipment and other vessels would be removed from the water, and some equipment would be stored in the staging area during the winter, with the rest stored in Nome. Any equipment stored at the man camp would be inside shipping containers. Any cultural resources identified

during operations would be left undisturbed and reported to the State Historic Preservation Officer.

POD Evaluation: Refer to Section 7.0 of this decision document and the National Historic Preservation Act Section 106 discussion in Section 9.3 for discussion on impacts to the Iditarod Trail.

4.2 Additional issues raised by the Corps

None

4.3 Comments regarding activities and/or effects outside of the Corps' scope of review

Comments in Favor of Project

POA received several hundreds of comments on the July 2020 PN that were in favor of the project and included concerns about:

1. Perceived bias and ethical concerns leading to purposeful delay of permit issuance by the Corps based on issues raised by project opponents (e.g., subsistence),

2. Reference to Executive Order (E.O.) 13927 for expedited permitting during the COVID-19 pandemic to encourage economic growth,

3. Alleged Corps interference with the State of Alaska's constitutional right to mine. Project proponents also highlighted charitable donations from the Applicant to local organizations.

The POA administrative record contains a copy of all comments received. These concerns were evaluated by POA and determined to not be within POA's scope of review. POD concurs with that conclusion and evaluated these comments as part of the public interest review.

Comments Not in Favor of Project

The following comments were submitted by parties who are against the issuance of a permit to the Applicant:

1. Comments received against the project raised concerns about the Corps' treatment of the public's input in the process and voiced concerns about a perceived lack of meaningful engagement. POA followed the requirements

contained in the federal regulations regarding processing this permit application.

2. A large number of comments against the project raised concerns with the Applicant's conduct and alleged a lack of transparency with the local community about the proposal. This issue is outside POA’s scope of review.

3. A number of commenters expressed concern with the estimated economic viability of the proposed project and the lack of gold within the mining claims. The Applicant provided testing information for their project site, which was adequate for reviewing their permit application. Any requirement for an expanded economic assessment is beyond the scope of review by the Corps.

4. Comments during the July 2020 PN comment period recommended the Corps deny the permit based on land classifications and the intent of the 1979 Settlement Agreement between the State of Alaska and the Bering Straits Native Corporation, the Village of Solomon, and the Bureau of Indian Affairs. The implementation and enforcement of stipulations in the Settlement Agreement of which the Corps is not a participating party is outside of POA’s scope of review.

5. Concerns were raised that the proposed project would violate Alaska Statute 16.05.258 (Subsistence Priority) and Alaska Statute 116.05.790 (Hunter Harassment Law). As both are state laws, their implementation and enforcement are outside of the Corps' purview; however, impacts to subsistence and hunting are being addressed as appropriate.

6. Comments were received regarding how mineral closing orders for the area would impact the project moving forward. Concerns were raised that the State had designated the area as "habitat", yet also sold mining claims. This concern is outside of the Corps' purview. Mineral closing orders are also outside the purview of the Corps and are a legislative action stemming from the Alaska Department of Natural Resources.

7. Hundreds of comments were compiled and transmitted to the Corps after the close of the comment period. The substance of these comments was primarily a resubmittal of previous comments and were considered by POA as part of their review.

POD, as part of the independent review of this permit application, has also considered these comments and concurs that the above-listed issues are beyond the scope of review for this permit application or outside of the Corps’s authority.

5.0 Alternatives Analysis

(33 CFR Part 325 Appendix B, 40 CFR 230.5(c), 40 CFR 1501, and RGL 88-13). An evaluation of alternatives is required under NEPA for all jurisdictional activities. NEPA requires discussion of a reasonable range of alternatives, including the no action alternative, and the effects of those alternatives. An evaluation of alternatives is required under the Section 404(b)(1) Guidelines for projects that include the discharge of dredged or fill material to waters of the United States. Under the Section 404(b)(1) Guidelines, practicability of alternatives is taken into consideration and no alternative may be permitted if there is a less environmentally damaging practicable alternative.

This alternatives analysis by POD revisits the alternatives analysis previously performed by POA in the administrative record and reevaluates alternatives to the proposed activity based on adjustments to the project purpose, screening criteria, the screening process, and considers new alternatives not previously evaluated. In addition, this analysis screens the alternatives to determine whether they are reasonable alternatives for evaluation under NEPA. Reasonable alternatives would be those that meet the project purpose and need for the proposed project and that are technically and economically feasible. For this project, the overall project purpose for assessing alternatives under the 404(b)(1) Guidelines is the same as the project purpose used for determining whether an alternative is reasonable under NEPA.

The array of alternatives screened in this section are derived from multiple sources. The Applicant conducted an initial alternatives analysis in their 2020 plan of operations (Yukuskokon 2020a) that evaluated numerous alternative approaches to various aspects of their project. They also assessed additional alternatives during the course of the permit review process with POA. These alternatives were considered for this analysis if they addressed avoidance/minimization of impacts related to rebutting the presumptions described above and were considered reasonable for NEPA review.

As part of their comments on this project, EPA also provided recommended alternatives for evaluation. These recommendations were considered by POD for this analysis and either included in the alternatives array or removed from further consideration because they weren’t considered reasonable under NEPA. Some alternatives were excluded because they were no longer meaningful alternatives because of project changes since the first application was received.

5.1 Site selection/screening criteria

In order to be practicable, an alternative must be available, achieve the overall project purpose (as defined by the Corps) and be feasible when considering cost,

logistics and existing technology. If it is an otherwise practicable alternative, an area not presently owned by the Applicant, which could reasonably be obtained, used, expanded, or managed in order to fulfill the basic purpose of the proposed activity, may be considered (40 CFR 230.10(a)(2)).

Under NEPA, “reasonable” alternatives are those that are practical or feasible from a technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the Applicant (46 Fed. Reg. 18026, Question 2a). The range of potential reasonable alternatives may include alternative sites, project configurations, project sizes, and technologies. Reasonable alternatives do not include those that are remote or speculative or that do not achieve the project purpose and need or would cause unnecessary environmental harm. The “no action” alternative is No Federal Action (i.e., no activity requiring a Corps permit).

Criteria for evaluating alternatives as evaluated and determined by the Corps:

- Availability in terms of mining claims where the Applicant has or could reasonably obtain mineral rights, availability of dredge disposal sites, and availability of mining areas within the area under consideration that could be reasonably obtained by the Applicant.Costs: the cost to implement is substantially greater than the costs normally associated with the particular type of project.

- Existing technology: availability of existing mining and dredging technology to implement alternative.

- Logistics: can be implemented considering physical/geographic constraints, access to needed infrastructure, etc.

- Does it meet the purpose and need and overall project purpose.

- Does the alternative cause unnecessary harm.

5.2 Description of alternatives

Appendix 1 to this decision document provides figures that illustrates the geographic location of alternative features mentioned below.

5.2.1 No action alternative

Under the No-Action Alternative, no Department of the Army (DA) permit would be issued for this project and no impacts to jurisdictional waters would occur, including to special aquatic sites.

5.2.2 Off-site alternatives

- Off-Site Alternative 1 (Mine in areas not under claims by Applicant): This alternative involves placer gold mining at other locations within the Safety Sound-Frontal Norton Sound area within mining claims not currently owned by the Applicant.

- Off-Site Alternative 2 (Mine in Norton Sound): Under this alternative, the Applicant would conduct mining within the Norton Sound portion of the Applicant's existing claims (see Appendix 1).

- Off-Site Alternative 3 (Mining in central claims area): Conduct dredge mining within the central claim blocks in the same contiguous estuary (see Appendix 1).

- Off-Site Alternative 4 (Mine in eastern claims area): Conduct dredge mining within the eastern claim blocks in the same contiguous estuary (see Appendix 1).

5.2.3 On-site alternatives

- On-site alternative 1 (Case Study): This alternative proposes a multi-year phased plan for mining placer gold within the Bonanza Channel. Mining would occur by using a 36-inch diameter cutterhead dredge attached to a 10-inch diameter suction dredge. After processing for gold, dredged material would be used for reclamation within the dredged/mined areas with the excess material disposed of in shallow littoral areas within their claim areas. A seven-foot-deep channel would remain after the project is completed along the length of the full-scale mining channel and along the access channel between the full-scale mining channel and the man camp area. The rest of the dredged area would be reclaimed to its original bathymetry. The first year of operation would consist of implementing a case study that would create the access channel from the man camp to the full-scale mining phases and provide proof of concept for the dredging operation proposed for the five-year mining operation.
- On-Site Alternative 2 (No Case Study): This alternative generally consists of On-Site Alternative 1 but would not include the case study phase. Excluding the case study would reduce the number/extent of DMDSs. Four DMDSs totaling 64.3 acres would be needed to accommodate excess dredged materials that can't be reclaimed within the dredged channel for reclamation because of bulking considerations. The man camp would be established, and

the access channel would be created during Year 1 of full-scale mining. The full-scale mining channel would be dredged over a five-year period. The original bathymetry would be restored as part of concurrent reclamation within the full-scale mining channel except for a ten-foot-deep access channel in the full-scale mining channel and the ten-foot-deep access channel (between the man camp and the full-scale mining area).

- On-Site Alternative 2a (Applicant's Current Proposal) (Reclaim access channels): This alternative consists of the project elements described for On-Site Alternative 2 but includes reclamation of both access channels by the end of the full-scale mining phase. This additional reclamation is expected to reduce the capacity requirements for dredged materials disposal, resulting in a reduction of total impacts to jurisdictional waters.

- On-Site Alternative 3 (Other Dredging Technology): Project components would be the same as On-Site Alternative 1, except that this alternative considers the use of different dredging technology. This includes bucket-line dredges, clamshell/backhoe dredges, dragline dredges, and trailing suction dredges.

- On-Site Alternative 4 (Upland Disposal): Project components would be the same as On-Site Alternative 1, except that dredged materials would be disposed of at upland disposal sites within or outside of the Applicant's mining claims (see Appendix 1).

- On-Site Alternative 5 (Beach Tidal Zone Disposal): Project components would be the same as On-Site Alternative 1, except that dredged materials would be disposed of within the tidal zone for Norton Sound (see Appendix 1).

- On-Site Alternative 6 (Disposal Above HTL): Project components would be the same as On-Site Alternative 1, except that all dredged materials would be stored above the HTL adjacent to the mining channel (see Appendix 1).

5.3 Alternatives evaluation under the Section 404(b)(1) Guidelines and NEPA

POD evaluated each of the alternatives described above in consideration of the screening criteria noted above. For those alternatives that meet these requirements and are considered practicable, they are further assessed for their impacts to waters of the U.S., including special aquatic sites, and whether they would generate other significant environmental impacts. The alternatives were also reviewed to determine whether they are reasonable under NEPA. As described previously, this

alternatives analysis uses information available in the POA administrative record but is an independent evaluation of the alternatives listed.

Table B provides a summary of the different factors and determinations made for this alternatives analysis and determines the LEDPA. The narrative analysis for each alternative is provided below.

5.3.1 No-Action Alternative

Under the No-Action Alternative, no DA permit would be issued for this project and no impacts to jurisdictional waters would occur, including to special aquatic sites. However, this alternative does not meet the overall project purpose and NEPA purpose and need.

5.3.2 Off-Site Alternatives

- Off-Site Alternative 1 (Mine in areas not under claim by Applicant). Under this alternative, the Applicant would conduct placer gold mining in other mining claims (water- or land-based) within the Safety Sound-Frontal Norton Sound area. A previous review of this alternative by POA with the Applicant indicated that there are no other claims available to the Applicant in this geographic area that have not been previously mined or claimed or are available at a reasonable cost. This alternative is considered not available to the Applicant and therefore eliminated from further consideration.

Table B. Summary of Alternatives Analyses

Alternative	404(b)(1) Screening					NEPA Screening		Impacts to Jurisdictional Waters	
Alternative	**Meets Overall Project Purpose?**	**Available?**	**Screening Criteria (Practicable?)**			**Meets NEPA Purpose and Need?**	**Reasonable Alternative Under NEPA?**	**Permanent Loss of Jurisdictional Waters (acreage)?**	**Impacts to Jurisdictional Waters (functions and services)?**
			Cost	**Existing Technology**	**Logistics**				
No-Action (No Permit Issued)	No	No	NE	NE	NE	No	Yes, doesn't meet purpose and need, but must be analyzed	No	No
Off-Site Alternatives									
Off-site 1 (Mine in areas not under claim by Applicant)	Yes	No	NE	NE	NE	Yes	No, not practical or economically feasible	Unknown, depends on location	Unknown, depends on location
Off-Site 2 (Mine in Norton Sound)	No	Yes	No	Yes	No	No	No, not technically feasible and doesn't meet purpose and need	No	Yes, likely long-term temporary impacts
Off-Site 3 (Mine in central claim area)	Yes	Yes	Yes	Yes	Yes	Yes	No, generates greater environmental harm	Unknown, but probably not	Yes, long-term temporary impacts, and possibly permanent impacts
Off-Site 4 (mine in eastern claim area)	Yes	Yes	No	Yes	No	Yes	No, not technically feasible because of access issues	Unknown, but likely because of new construction needed for site access	Yes, dredging would have long-term temporary impacts, and possibly permanent impacts
On-site Alternatives									
(On-Site 1 (Case study)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes, long-term temporary impacts to 192.5 acres
On-Site 2 (No case study)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes, long-term temporary impacts to 176.9 acres
On-Site 2a (Reclaim Access Channels) (Applicant's Current Proposal)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes, long-term temporary impacts to approximately 159.4 acres
On-Site 3 (Other dredging technology)	Yes	Yes	Yes	Yes	No	Yes	No, not practical or technically feasible	No	Yes, long-term temporary impacts to 192.5 acres
On-Site 4 (Upland disposal)	Yes	No	NE	NE	NE	Yes	No, not technically or economically feasible	No	Yes, long-term temporary impacts
On-Site 5 (Beach tidal zone disposal)	Yes	No	NE	NE	NE	Yes	No, not economically or technically feasible	Yes, permanent impact to jurisdictional waters below HTL	Yes, long-term temporary impacts

Alternative	404(b)(1) Screening					NEPA Screening		Impacts to Jurisdictional Waters	
Alternative	**Meets Overall Project Purpose?**	**Available?**	**Screening Criteria (Practicable?)**			**Meets NEPA Purpose and Need?**	**Reasonable Alternative Under NEPA?**	**Permanent Loss of Jurisdictional Waters (acreage)?**	**Impacts to Jurisdictional Waters (functions and services)?**
			Cost	**Existing Technology**	**Logistics**				
On-Site 6 (Disposal above HTL)	Yes	Yes	Yes	Yes	Yes	Yes	No, causes unnecessary environmental harm	Yes, permanent loss of wetlands	Yes, long-term temporary impacts

NE- not evaluated
NA- not applicable
Practicable alternatives and reasonable NEPA alternatives, along with the No Federal Action alternative, are shaded.

- Off-Site Alternative 2 (Mine in Norton Sound): This alternative would entail conducting dredging operations in Norton Sound within the marine portions of the Applicant's claims. Within the Applicant's claims in this area (western and central claims groups), approximately 105 acres in eight separate parcels are in Norton Sound measured from the approximate beach line (Appendix 1). The practicability and reasonableness of this alternative is very questionable for several reasons.

    1. Although near-shore areas in Norton Sound are known to contain placer gold to varying degrees originating from upland lode deposits on the Seward Peninsula, higher concentrations are found near Nome with lesser concentrations found elsewhere (USGS 1972). There is also the possibility that previous mining activity may have occurred in these offshore areas, reducing the amount of gold present, because these areas have been easily accessible by other mining operators. The only way to confirm the presence of placer gold is to conduct an exploratory drilling/testing program within the marine claim areas and determine how much of these marine areas are shallow enough to conduct suction dredging. This makes placer dredge mining in this area a highly speculative alternative.

    2. Dredging in a marine environment is a very different kind of operation compared to inland dredging in a protected shallow water environment. Marine operations require considerably more equipment for safety and to conduct operations in potentially much rougher sea conditions. For these reasons, this alternative is considered speculative and logistically infeasible. Therefore, this alternative is not considered practicable or reasonable and has been eliminated from further consideration.

- Off-Site Alternative 3 (Mine in central claims area): This alternative considers conducting similar dredge mining in two other areas along this estuary where the Applicant has mining claims (refer to Yukuskokon 2020a). The Applicant has approximately 1,006 acres of mining claims in the vicinity of the confluence of the Bonanza River with the estuary known as the central claims. Because the claims are already possessed by the Applicant, these areas would be available for potential placer mining activities. This area is similar in some respects to the proposed project site. The entire area, except for the barrier island consists of navigable waters of the U.S. and WOUS, including special aquatic sites in the form of vegetated shallows, mud flats, and wetlands. Assuming the Applicant would have a

similar plan of operations for this area, impacts to jurisdictional waters would likely be of similar magnitude. However, there are some differences in this claim area that may be problematic for operations. The central claims are in an area that appears to be more hydrologically dynamic as a receiving water for the Bonanza River, introducing some uncertainty for dredging operations. The western area that is being proposed for dredging under Applicant's proposed project would take place in a shallow backwater area with low flow velocities while the central claims area around the mouth of the river would be substantially different with respect to its flow profile. In addition, because the Bonanza River provides habitat for anadromous fish, dredging in the vicinity of the river's mouth may introduce a substantial adverse effect on migrating fish and in turn, impacts to subsistence activities upriver. As such, this alternative would cause greater environmental impacts compared to the Applicant's proposed project. This alternative is considered not reasonable under NEPA because it will cause additional environmental harm.

- Off-Site Alternative 4 (Mine in eastern claims area): Alternative 4 would occur in an additional 314-acre area located to the east of the Solomon River confluence known as the eastern claims. This area also has similarities to the proposed project site in that the area contains navigable waters of the U.S. and WOUS, comprised almost entirely of special aquatic sites in some form. This alternative would meet the project purpose and overall project purpose and be available to the Applicant. However, the area presents logistical constraints, making this area more difficult to dredge/mine. There is currently no road access and minimal sea access to the claims. The ocean frontage for this area is mostly under claims by other claimholders except for a very small sliver of beach that is not large enough to be used for landing dredging equipment by sea. This lack of access makes this alternative not practicable and unreasonable for reasons of logistics.

5.3.3 On-Site Alternatives

- On-site alternative 1 (Case Study): This is a previous proposal by the Applicant that consists of a six-year project spit into a case study phase and a full-scale mining phase. It meets the project purpose and need and overall project purpose, is available to the Applicant and is considered practicable and reasonable.
- On-Site Alternative 2 (No case study): This alternative is similar to the original proposal submitted by the Applicant in that most of the project components, such as the man camp, access channel, and full-scale mining

area are the same. The primary difference is the area between the man camp/launch ramp and the full-scale mining channel and how it would be affected. The case study phase was originally proposed by the Applicant as a means of developing information about project operations and environmental resources prior to commencing the full-scale mining phase. Many questions about the project and its effects were raised by various parties during the initial review and the case study was meant to provide a means of answering those questions. However, implementing the case study under On-Site Alternative 1 generates increased impacts to special aquatic sites. The case study phase does potentially provide more operational and environmental information for the project prior to commencing full-scale mining but at the cost of additional impacts to jurisdictional waters. Sufficient monitoring and reporting can occur during the first year of the full-scale mining. In addition, since the project was originally proposed, substantial additional information about the dredging/mining operation has already been generated by the Applicant and through consultations with resource agencies.

This alternative meets the project purpose and need, overall project purpose, and is available to the Applicant. It is reasonable and practicable.

- On-Site Alternative 2a (Reclaim access channels): Project components would be the same as On-Site Alternative 2, except the two access channels would be returned to original bathymetry along with the full-scale mining channel. Portions of the access channel would need to stay in place until the end of the full-scale mining phase to allow seasonal access to the full-scale mining area by dredging equipment. The access channels would be fully reclaimed by the end of the fifth year of full-scale mining.

  The Applicant has designated 46.7 acres as DMDS locations to accommodate excess dredged materials. Some of this capacity is needed to accommodate temporary storage of dredged materials for reclamation while the remainder of storage capacity is needed to accommodate the dredged materials that would not be used in reclamation. Total disposal site requirements would be reduced by at least 17.6 acres compared to On-Site Alternative 1 for a total impact to jurisdictional waters of 159.4 acres.

  Reclaiming the channels as much as five years after initial disposal would require re-dredging materials from disposal sites to reclaim the channels, generating new impacts to special aquatic sites that will likely have re-established as vegetated shallows at least partially. New turbidity impacts

could also occur as these materials are moved. The access channel areas would also have to re-establish as vegetated shallows for the second time and the temporary disposal sites would also have to be restored after the materials are moved again. However, this would be an acceptable tradeoff for minimizing impacts to jurisdictional waters.

This alternative meets the project purpose need, overall project purpose, and is available to the Applicant. The alternative is considered practicable and reasonable.

- On-Site Alternative 3 (Other dredging technology): This alternative considers the use of different dredging technology than that proposed by the Applicant and applying it to the same dredging/reclamation/disposal operation as described for the Applicant's preferred alternative. This includes bucket-line dredges, clamshell/backhoe dredges, dragline dredges, and trailing suction dredges. Each of these dredging equipment options would meet the project purpose and need and overall project purpose and would be potentially available to the Applicant for use. However, each of these options have limitations that either preclude their use entirely in this specific situation, increase operating costs without any gain in efficiency, or induce greater noise, turbidity, and air quality impacts. These options would also affect the same acreage of jurisdictional waters. For these reasons, this alternative is not considered practicable due to logistical constraints or reasonable because it would cause unnecessary harm.

- On-Site Alternative 4 (Upland disposal): Under this alternative, the project components would be the same as On-Site Alternative 1, except that dredged materials would be disposed of at upland disposal sites within and outside of the Applicant's mining claims, including the Nome Municipal Waste site. Storage of materials in uplands on the barrier island side of the claims is simply not available to the Applicant. There is not ample storage area for the 228,263 CY of materials storage that would be required. In 2020, the municipal landfill status and capacity were assessed (City of Nome 2020). At that time, the landfill had a total remaining capacity of 387,700 CY with an expected remaining service life of 16 to 21 years. Assuming a dump truck capacity of 15 CY, 15,217 total truck trips (one-way trips) would be required to make the 30-mile trip to and from the landfill facility over the life of the project, presuming the landfill has adequate storage space for this quantity. Considering the quantities of excess materials that would be generated, approximately 2,940 truck trips would be required for the case study phase and about 2,455 trips per year on average

would be needed during the full-scale mining phase. Transporting even a small fraction of the materials would induce substantial new environmental effects involving noise, air quality, landfill capacity, and road wear to Nome-Council Road. Based on the above, this alternative is not practicable or reasonable.

- On-Site Alternative 5 (Beach tidal zone disposal): Under this alternative, the project components would be the same as On-Site Alternative 1, except that dredged materials would be disposed of within the supratidal and/or intertidal zones for Norton Sound. Under this alternative, excess dredged materials (228,263 CY) would be transported to the ocean side of the barrier island via pumping or by haul trucks and deposited in the tidal zone for Norton Sound. The goal of this alternative would be to reduce the use of DMDSs for disposal of excess materials.

  The dredge mining process involves dredging material from the channel bottom, processing the dredged material for gold content, and returning the processed dredged materials either to the dredging channel or to a disposal site. This alternative would be available for a dredging operation that does not have the processing step because materials can be dredged and transferred directly to a disposal location by pumping or hauling the materials in the form they are in when dredged. However, the processing step is a core requirement for this project that prevents this from happening. Materials suction-dredged from the channel bottom are pumped to the top end of a processing barge where materials are fed into machinery that uses a combination of flowing water, gravity, shaking, and sieves/filters. The single intake point sends the materials into the sorting process where gold is left behind and the water and processed materials exit the processing barge from one of three outfalls and into the reclamation or disposal site. The location of the production barge generally dictates the location of deposited materials. To transport processed dredge materials to an off-site location would require collecting materials from the three outfalls reconstituting the materials into a form where it can be pumped or hauled to a disposal site. Attempting to collect materials from the production barge is not a technically feasible approach for these reasons. Re-dredging the processed materials from the channel bottom is also not technically or economically feasible. This approach would require re-dredging 228,263 CY of material to be able to transport the excess materials to an off-site location. This is a substantial greater cost than a typical dredge mining because of the doubled dredging requirement, plus the added pumping or hauling costs associated with transporting the materials off-site. Based on the above, this alternative is

not considered practicable or reasonable.

- On-Site Alternative 6 (Disposal above HTL): For this alternative project components would be the same as On-Site Alternative 1, except excess dredged materials that aren't used for reclamation would be stored above the HTL adjacent to the mining channel. According to the National Wetlands Inventory, the land side areas are all classified as wetlands (PEM1/SS1B) and for this reason are considered special aquatic sites. Depositing dredged materials would convert these areas from special aquatic sites to uplands. Using these areas for dredged material disposal would also be problematic from a technical perspective. Depositing materials in large quantities in these areas requires substantial engineering planning and design work to be able to create stable storage impoundments for dredged materials. Moving materials to these areas would also require substantially more pumping infrastructure and power to move materials this distance.

  Other areas close to the project footprint consist of midchannel islands that comprise wetlands. Any placement of materials on those islands would result in the permanent loss of wetlands by converting them to dry land. To estimate the potential loss of wetlands under this alternative, the 228,263 CY of materials was assumed to be depositing to a three-foot depth. Under this scenario, the total loss of wetlands would be approximately 47 acres before making other considerations such as creating side slopes, etc. The amount of potential permanent loss of special aquatic sites would cause unnecessary harm and makes this alternative unreasonable from a NEPA perspective. This alternative meets the project purpose and overall project purpose, is available to the Applicant, and considered practicable but not reasonable.

5.4 Least environmentally damaging practicable alternative under the Section 404(b)(1) Guidelines

Table B summarizes the alternatives analysis. Five alternatives of the 12 evaluated would meet the overall project purpose, be available to the Applicant, and are feasible in consideration of cost, logistics and existing technology:

- Off-Site Alternative 3 (Mine in central claims area)
- On-Site Alternative 1 (Case study)
- On-Site Alternative 2 (No case study)
- On-Site Alternative 2a (Applicant's current proposal) (Reclaim Access Channels)

- On-Site Alternative 6 (Disposal above MLLW)

Each of the practicable alternatives were compared to determine the LEDPA. Off-Site Alternative 3, On-Site Alternative 1, On-Site Alternative 2, and On-Site Alternative 6 would have greater impacts to WOUS compared to On-Site Alternative 2a and, in some cases, adverse environmental effects would be greater. For these reasons, On-Site Alternative 2a is the LEDPA.

6.0 Evaluation for Compliance with the Section 404(b)(1) Guidelines

The following sequence of evaluation is consistent with 40 CFR 230.56.1
Practicable alternatives

Practicable alternatives to the proposed discharge consistent with 40 CFR 230.5(c) are evaluated in Section 5.

The statements below summarize the analysis of alternatives:

In summary, based on the analysis in Section 5 above, the no-action alternative, which would not involve discharge into waters of the United States, is not practicable.

For those projects that would discharge into a special aquatic site and are not water dependent, the applicant has demonstrated there are no practicable alternatives that do not involve special aquatic sites.

It has been determined that there are no alternatives to the proposed discharge that would be less environmentally damaging (Subpart B, 40 CFR 230.10(a)).

The evaluation below presents a discussion of compliance with the Section 404(b)(1) Guidelines for On-Site Alternative 2a, which is considered the LEDPA in Section 5.4 above and is evaluated below. On-Site Alternative 2a presents a plan of operations that is similar to the Applicant's proposed alternative (On-Site Alternative 1) but has specific differences that reduce impacts to WOUS and reduce the potential severity of some impacts. This evaluation considers these stated differences to determine whether On-Site Alternative 2a complies with the Section 404(b)(1) Guidelines.

6.2
Candidate disposal site delineation (Subpart B, 40 CFR 230.11(f))

Each disposal site shall be specified through the application of these Section 404(b)(1) Guidelines:

The Applicant would conduct concurrent reclamation within five dredged areas aligning with each phase of the 5-year mining process within the full-scale mining channel totaling 108.5 acres. Four DMDSs totaling about 46.7 acres would be used for disposing of excess materials that can't be used in reclamation. Three of these DMDSs are located along the access channel between the launch ramp and the full-scale mining channel. The fourth area is along the five full-scale mining blocks in the full-scale mining channel.

6.3 Potential impacts on physical and chemical characteristics of the aquatic ecosystem (Subpart C 40 CFR 230.20-40 CFR 230.25)

The following has been considered in evaluating the potential impacts on physical and chemical characteristics (see Table 2):

Table 2 – Potential Impacts on Physical and Chemical Characteristics

Physical and Chemical Characteristics	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Substrate						X
Suspended particulates/ turbidity				X		
Water				X		
Current patterns and water circulation				X		
Normal water fluctuations					X	
Salinity gradients			X			

Discussion:

Substrate: According to information provided by the Applicant (summarized in Yukuskokon Professional Services 2020a) the project site consists of an approximately 7-12 inches of organic muck layer underlain by a mix of primarily sand, followed by silt, then clay. Core sampling indicated an average of 81.62% sand (low of 74.59% and high of 94.58%), an average of 13.12% silt (low of 3.05% and high of 22.06%), and an average of 4.94% clay (low of 2.37% and high of 7.71%). The Applicant considers these ratios within the range of variability expected for tidal sedimentary sequences in high energy locations. The depth of cores taken range from 21.5 to 33.5 feet from the sediment

surface. The sieve analysis indicates 1-inch to 4-inch size material is anticipated to be less than 1% of the total solids volume, with the ¼-inch to 1-inch material approximately 9%, and the ¼-inch or less material approximately 90%.

Under On-Site Alternative 2a, the substrate would be dredged to a depth of 31 feet below the water surface, the substrate materials would be sorted through the processing barge for gold extraction, and the sorted materials returned to the mined channel to pre-project bathymetry or disposed in the DMDSs to MLLW. Portions of the access channels would need to stay in place until the end of the full-scale mining phase to allow seasonal access to the full-scale mining area by dredging equipment. The access channels would be fully reclaimed by the end of the fifth year of full-scale mining.

Reclaiming the channels as much as five years after initial disposal would require re-dredging materials from disposal sites to reclaim the access channels, generating new impacts to substrate and special aquatic sites that will likely have re-established as vegetated shallows at least partially. New turbidity impacts would also occur as these materials are moved. The access channel areas would also have to re-establish as vegetated shallows for the second time and the temporary disposal sites would also have to be restored after the materials are moved again. This dredging and reclamation will have three primary substrate effects: 1) within reclaimed areas, the dredging and concurrent reclamation of the substrate column, 2) within DMDS areas, the placement of dredged materials over the pre-existing substrates, and 3) redredging of materials from DMDSs to reclaim the access channels at the end of the project.

Resorting of the substrate during reclamation would substantially change its profile from pre-project conditions. As sorted materials drop from the processing barge, the materials would be redeposited on the channel bottom with a result that depends on the way sorted materials leave the processing barge, with heavier materials settling more quickly than fine materials. For the DMDSs, dredged materials would be placed on top of the existing substrate, which in many areas, supports SAV. These areas would be converted to mud flats with materials being deposited below MLLW. At the end of the project, some materials from DMDSs would be redredged and used for reclamation of the two access channels to their original bathymetry.

Because of this project's location between Safety Sound and the mouth of the Bonanza River, it is likely a combination of factors including flows from the river, tidal patterns, storm/wind events, and ice cycling would continue to generate dynamic natural processes that would restabilize and likely recontour the substrate over time. These natural processes and their effects on the estuary system are part of the baseline condition for this area. Sedimentation would continue to occur

as part of these cycles that would add to the substrate conditions. Natural processes would likely shape the reclaimed channels and DMDSs until a relatively stable condition is established in this area as the channel regains equilibrium. Although the project would have a major effect on the substrate, the effect would be temporary because it would restabilize over time following the completion of the project. Estimating the recovery time for the substrate is fairly speculative because of the wide range in variability of natural processes from year to year. The bathymetry for the affected area and configuration of mud flats would likely stabilize quickly by the end of the first season, while the substrate would likely mostly recover within two to five years. As discussed elsewhere, because of the nature of SAV species found in this area, including their demonstrated resilience in local conditions, the substrate would likely support full revegetation within this same period; again, depending on a number of natural variables. With the inclusion of special conditions to any permit, if issued, requiring the Applicant to monitor conditions and implement adaptive management measures to track recovery within the project footprint direct impacts to substrate would be minimized.

Based on the above information, the Corps has concluded that On-Site Alternative 2a would have minor short-term and long-term direct effects to the physical and chemical characteristics of the substrate.

Suspended Particulates/Turbidity: Mining activities have the potential to generate increased turbidity from mechanical disturbance of the substrate as the dredge equipment mines the channel bottom and disposes dredged material in either the mining channel or DMDS locations. Portions of the access channel would need to stay in place until the end of the full-scale mining phase to allow seasonal access to the full-scale mining area by dredging equipment. The access channels would be fully reclaimed by the end of the fifth year of full-scale mining. Reclaiming the channels as much as five years after initial disposal would require re-dredging materials from disposal sites to reclaim the channels, generating new turbidity impacts as these materials are moved. As noted for this area, the channel areas to be mined are generally shallow (average 4-foot depth), which makes turbidity control easier compared to a deeper water environment. Reclamation of the access channels would present a greater challenge because of the 10-foot depth of the channels but silt curtains should still be adequate for controlling turbidity. Silt curtains would be installed and maintained during dredging of the access channels, during full-scale mining, reclamation of the mining channels, placement of dredged material into the DMDSs, during re-dredging of the DMDSs, and during reclamation of the access channels to limit/ avoid increased turbidity outside the work area. Silt curtains would be removed as soon as turbidity has been fully mitigated. Implementation of standard best management practices
(BMPs) and monitor conditions during and after operations, would minimize direct and indirect effects to turbidity levels such that they are localized and temporary. Based on the above information, the Corps has concluded that activities

associated with On-Site Alternative 2a would have minor short-term and long-term direct effects due to sedimentation/turbidity in WOUS.

Water: The project would affect water conditions during operations in the vicinity of the project and potentially in adjacent waters. Effects related to turbidity from mechanical disturbance to the substrate are discussed above. Other water quality effects may occur during the mining season; however, the Applicant has proposed BMPs to reduce the potential for pollution from dredging equipment and other sources. In addition, the Applicant would implement water quality conditions included in the Clean Water Act Section 401 water quality certification issued by the state of Alaska, including obtaining permits under Section 402 of the Clean Water Act that govern discharges by this project. Any changes in water conditions are expected to be minor and temporary, with no long-term effects following project completion.

Current Patterns and Water Circulation: Bonanza Channel is in a dynamic geomorphological setting that is affected by substantial seasonal variations. The channel freezes solid during the winter months, followed by a period of ice melt and ice movement, increased spring runoff from the Bonanza and Solomon Rivers, overland direct runoff, winds and storms, and tidal patterns before the channel refreezes again. These factors have the highest influence on water circulation in the project area. The mining operations under On-Site Alternative 2a would have short-term temporary effects on water circulation as discreet sections of the project areal are compartmentalized for mining, reclamation, and disposal. Active operations would be segregated each season from the rest of the estuary channels, but there are other open channels that would serve to maintain stable through-flows during the mining season. Under this alternative, bathymetry for the full-scale mining channel would be fully restored to pre-project conditions during each mining season and the access channels would be fully restored to pre-project conditions at the end of the project; thus, any effects would be temporary, and circulation would be restored at the end of each mining season and at the end of the project. The DMDSs are oriented parallel to the flow direction in the channel and side channels and do not obstruct water circulation. The DMDSs will also be reduced in size when the access channels are reclaimed, further limiting any effects to current patterns and water circulation. Based on the above information, the Corps has concluded that the activities associated with On-Site Alternative 2a would have minor short-term and long-term direct effects on current patterns and water circulation within WOUS.

Normal Water Fluctuations: The primary change that would result with respect water fluctuations is the conversion of vegetated shallows and shallow open water to mud flats from the disposal of dredged materials. This change affects the area along one side of the access channel and the area between the

mining channel and the northern edge of the Bonanza Channel. The DMDSs that would be created along the edges of the estuary channels would have a minor and short-term effect on normal fluctuations by narrowing the channel cross-section; however, these channels have very small flow rates and would not be substantially affected. The DMDSs will be reduced in area and depth at the end of the project and would have any less of an effect post-project. Natural processes described above would also affect the post-project channel configuration. Based on the above information, the Corps has concluded that the activities associated with On-Site Alternative 2a would have minor short-term and long-term direct effects on normal water fluctuations within WOUS.

Salinity Gradients: Salinity in the project area is primarily influenced by tidal patterns, freshwater inflows from the rivers, and the ice freeze/melt cycle. The project would have very little effect on salinity in the project vicinity compared to these over-arching influences.

6.4 Potential impacts on the living communities or human uses (Subparts D, E and F)

6.4.1 Potential impacts on the biological characteristics of the aquatic ecosystem (Subpart D 40 CFR 230.30)

The following has been considered in evaluating the potential impacts on biological characteristics (see Table 3):

Table 3 – Potential Impacts on Biological Characteristics

Biological Characteristics	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Threatened and endangered species			X			
Fish, crustaceans, mollusks, and other aquatic organisms						X
Other wildlife					X	

Discussion:

Threatened and Endangered Species: Section 7 consultation has been completed with USFWS and NMFS and no adverse effects to listed species or designated or proposed critical habitat would occur with implementation of conservation measures.

Fish, crustaceans, mollusks, and other aquatic organisms: The project

would have a direct substantial effect on aquatic species and benthic communities during periods of dredging in the channel when large quantities of the substrate are excavated, screened and either placed back into the mined channel or into a DMDS or during redredging in the DMDs to reclaim the access channels. These species would likely be exposed to direct mortality from the dredging activities and disposal of dredged materials. In addition, inadvertent spills of petrochemicals or turbidity during dredging and disposal of dredged material, if they occur, may also affect aquatic and benthic species. These impacts are expected to be temporary in duration, lasting only during the operation of the mining project. The dynamic nature of this estuary, including tidal influences, sediment transport from the rivers, storm/wind events, and ice freeze/thaw regime provide a means for these communities to recover once these activities have ended.

Fish species in this area would also be impacted by the temporary loss of SAV that would result from dredging and disposal of dredged material. Because of the presence of vegetated shallows within the project footprint, the site provides EFH and NMFS believes the project will adversely affect this habitat. However, these impacts are expected to be temporary and disturbed SAV is expected to readily recover in reclaimed and DMDS areas. In addition, the habitat provided within the project footprint is a very small percentage of the total habitat available within the local coastal estuary system.

Other wildlife: Birds and other species would be affected during the project as they are displaced by project activities. There may be a lag in recovery of aquatic wildlife, vegetation, etc. following completion of the project activities at this location. However, the project site is a relatively small part of a much more expansive estuary system with a large ecosystem capacity and the project is not expected to adversely affect bird/terrestrial wildlife populations. Any effects would be temporary; mitigation measures are also available to reduce the magnitude of any impacts.

6.4.2 Potential impacts on special aquatic sites (Subpart E 40 CFR 230.40)

The following has been considered in evaluating the potential impacts on special aquatic sites (see Table 4):

Table 4 – Potential Impacts on Special Aquatic Sites

Special Aquatic Sites	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Sanctuaries and refuges					X	
Wetlands			X			
Mud flats			X			

Table 4 – Potential Impacts on Special Aquatic Sites						
Special Aquatic Sites	**N/A**	**No Effect**	**Negligible Effect**	**Minor Effect (Short Term)**	**Minor Effect (Long Term)**	**Major Effect**
Vegetated shallows						X
Coral reefs	X					
Riffle pool complexes	X					

Discussion:

Sanctuaries and Refuges: Non-contiguous portions of the AMNWR are located adjacent to the Applicant's mining claims and near the project footprint. The AMNWR lands are situated on three wetland islands in this estuary. Although dredging operations would occur near refuge lands, these activities would not directly affect them. As discussed previously, dredging operations would displace terrestrial wildlife because of the presence of humans, machinery, and associated noise but this would only occur during active operations and only during the five active mining seasons in locations that change each year. The effects would not be permanent.

Wetlands: Wetlands occur on the islands and shoreline areas and would not be affected by On-Site Alternative 2a to any extent.

Mudflats: A very small proportion of the project footprint contains mud flats, and those areas would be minimally affected by dredging operations. New mud flat areas would be created in DMDS areas where dredged materials are disposed of up to the MLLW. The DMDSs will be somewhat reduced in size at the end of the project because materials from the DMDSs will be used to reclaim the two access channels to their original pre-project bathymetry.

Vegetated Shallows: The four DMDSs (32 acres total) would involve placing materials on areas that contain SAV in a range of coverage densities. These areas are assumed to comprise vegetated shallows and would be converted to mud flats, resulting in the loss of one type of special aquatic site for another. In addition, the dredging and reclamation process would impact 108.5 acres of vegetated shallows. However, these areas would be restored to their original bathymetry each season with concurrent reclamation and the two access channels by the end of the project. As described above, the dredging and reclamation process would disturb the existing substrate; however, the substantial natural processes that cyclically affect this estuary and the tendency for the dominant aquatic plant (sago pondweed) to readily revegetate the channel bottoms make it

likely that these disturbed areas would recover quickly to their approximate original condition and density of vegetation. Inclusion of special conditions in the permit, if issued, would ensure this process occurs.

Coral Reefs/Riffle and Pool Complexes: These special aquatic site categories are not present in the project area.

6.4.3 Potential impacts on human use characteristics (Subpart F 40 CFR 230.50)

The following has been considered in evaluating the potential impacts on human use characteristics (see Table 5):

Table 5 – Potential Effects on Human Use Characteristics

Human Use Characteristics	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Municipal and private water supplies	X					
Recreational and commercial fisheries					X	
Water-related recreation					X	
Aesthetics					X	
Parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves					X	

Discussion:

Municipal and private water supplies: There are no municipal or private water supplies on the project site or within the vicinity of the project.

Recreational and commercial fisheries: The greater estuary system, including Bonanza Channel, provides opportunities for recreational fishing and, offshore in Norton Sound, opportunities for commercial fishing. However, Bonanza

Channel has limitations on fishing because of its shallow depths and tenuous connection to the Bonanza and Solomon River mouths. The project would affect local recreational fishing opportunities because sections of the channel would be closed off to fishing during active operations, but the effects during each mining year are limited in scope and do not extend much further than the immediate area of operations. The expansive nature of this estuary system provides substantial opportunities for recreational fishing that would be unaffected by the project operations. Once the mining operation is completed, the area could once again be fully accessible for fishing because the project effects would be temporary.

Water-related recreation: Water-based recreation would consist primarily of canoers/kayakers traveling the estuary channels. As described above for fishing, the project would restrict areas within Bonanza Channel from kayakers during active operations. The restricted area would change each year of operations as different areas are dredged, reclaimed, and disposed. Some through access may be unavailable during the course of the project. At the end of the mining project, the area would again become completely available.

Aesthetics: The mining operation would introduce the appearance of machinery along with the noise that comes with it. The Bonanza Channel is in a remote unpopulated area and the visual aesthetics of the area would be affected by project operations. However, project operations would occur with a defined area within a large estuary system, and the area would be returned to its original appearance upon completion of the project.

Parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves: The effects of this project on the AMNWR are discussed above.

6.5 Pre-testing evaluation (Subpart G, 40 CFR 230.60)

The following has been considered in evaluating the biological availability of possible contaminants in dredged or fill material (see Table 6):

Table 6 – Possible Contaminants in Dredged/Fill Material	
Physical substrate characteristics	X
Hydrography in relation to known or anticipated sources of contaminants	X
Results from previous testing of the material or similar material in the vicinity of the project	X
Known, significant sources of persistent pesticides from land runoff or percolation	
Spill records for petroleum products or designated hazardous substances (Section 311 of the Clean Water Act)	

Table 6 – Possible Contaminants in Dredged/Fill Material	
Other public records or significant introduction of contaminants from industries, municipalities, or other sources	X
Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge activities	

Discussion: Based on the results of test drilling within the project site, the substrate primarily consists of sand (81.62% of the samples) (Yukuskokon Professional Services, LLC. 2020a). The Applicant also analyzed the samples for the presence of hazardous, toxic, and radiological waste and no human-caused chemical contamination was detected.

Additional analysis of four other water quality constituents of concern was also performed. The sediment samples contained an average of 8.01 parts per million (ppm) of arsenic, 0.022 ppm of mercury, 16.83 ppm of copper, and 37.15 ppm of lead. According to the Applicant, the higher lead levels may be due to lead shot from bird hunting activities.

The likelihood of encountering pesticides in this area is considered very low. The adjoining lands are not used for agricultural production and traditional subsistence practices do not rely on pesticide use. No other activities in this area would require pesticide use.

The Solomon River, upstream from the estuary, has been the site of moderate-scale placer mining and has likely contributed high levels of sedimentation to the estuary and could be considered a potential source for contamination; however, most of the flows from this river comingle with flows from the Bonanza River and tides and testing within the Bonanza Channel has not indicated any contamination.

The project operation primarily involves dredging materials to be processed for gold and discharged back into the dredge site or adjacent DMDSs, and redredging within the DMDSs to reclaim the access channels at completion of the project. The dredged materials are expected to be of comparable content to the disposal area substrate. Because these work areas are within the same water body, the likelihood of contamination from dredging and disposal is considered low.

It has been determined that testing is not required because the discharge and extraction sites are adjacent, subject to the same sources of contaminants and have substantially similar materials. Although the discharge material may be a carrier of contaminants, it is not likely to degrade the disposal site.

Evaluation and testing (Subpart G, 40 CFR 230.61)

Discussion: Testing is not required because the source of the material and the destination for the dredged material are at the same location and the materials involved are the same. The Corps has determined that the dredged material is suitable for in-water disposal based on the discussion in Section 6.5 above.
Actions to minimize adverse impacts (Subpart H)

The following actions, as appropriate, have been taken through application of 40 CFR 230.70-230.77 to ensure no more than minimal adverse effects of the proposed discharge (see Table 7):

Table 7 – Actions to Minimize Adverse Effects	
Actions concerning the location of the discharge	X
Actions concerning the material to be discharged	X
Actions controlling the material after discharge	X
Actions affecting the method of dispersion	X
Actions related to technology	
Actions affecting plant and animal populations	X
Actions affecting human use	X
Other actions	

Discussion:

This description of actions is based on the plan of operations (Yukuskokon 2020a, 2020b, 2021, and 2022b) for On-Site Alternative 2a, and the consideration of that plan along with implementation of special conditions.

Actions concerning the location of the discharge: The location of the discharge would be limited to 159.4 acres placed below the MLLW within the Bonanza Channel. Wetlands impacts would be avoided. A special condition would be required to ensure appropriate dredged materials would be used to create mudflats.

Actions concerning the material to be discharged: With the incorporation of special conditions to maximize the likelihood of success in revegetating disturbed channels, functions and services will be restored that will minimize effects on jurisdictional waters. In addition, dredged materials would primarily be returned to their original location, restoring the original bathymetry, except in the DMDSs.

Actions controlling the material after discharge: Silt curtains would be installed and maintained to manage turbidity during project operations. Once the mining season has been completed and project operations halted, natural processes involving the freeze/thaw cycle for this estuary and other processes are expected to affect the newly reclaimed channel and DMDSs by scraping the substrate, which would help settle the materials, and redistribute plant materials

and benthic communities throughout the disturbed areas. The expectation is that sago pondweed, the dominant SAV species that grows/regrows readily each season, would revegetate the reclaimed areas. Adaptive management measures, including alternative revegetation methods, would be used as needed to maximize the rate of revegetation.

Actions controlling the method of dispersion: As described above, silt curtains would be used to control dispersion of the dredged material during project operations. Dredging equipment to be used by the dredging crew would control the reclamation/disposal operations with respect to depths of materials, etc. in reclaimed and DMDSs.

Actions related to technology: The Applicant would use dredging and processing equipment tailored to the specific conditions in Bonanza Channel. This channel has a relatively shallow depth and is somewhat confined, which limits the types of equipment and technology that can be used.

Actions affecting plant and animal populations: The project would affect SAV associated with vegetated shallows. There is a high likelihood (considering the current natural disturbance/re-establishment regime in Bonanza channel from ice freeze/thaw and the regular re-vegetation of the channel bottom after the spring thaw) that dredging, and reclamation of the channel bottom would have a similar effect on vegetation as the seasonal ice conditions. The DMDSs and newly created mudflats would also be affected by seasonal conditions, which are expected to recontour these areas to some degree. This an expected natural process. Other measures are available for implementation after evaluation of the reclaimed areas and DMDSs and the overall status of site recovery during the first spring following mining activities. Fish and wildlife may be affected by this project on an extended short-term basis each season while operations are ongoing, but the operations would not have a long-term negative effect. In addition, because of the large size of this estuary and the extensive terrestrial and riverine wetlands in this area, fish and wildlife can avoid the relatively small area of dredging operations.

Actions affecting human use: Considering that the summer period where human uses are most prevalent coincides with the required conditions/time for mining operations, there is the potential for conflict. However, as noted previously, the project affects a relatively small part of a very large estuary system and would only affect that area for the duration of the five-year mining period.

Other actions: The applicable discussion item in this case is whether a significant ecological change in the aquatic environment would occur and whether the ecosystem changes should be considered permanent. Although the dredging, gold extraction, and reclamation/disposal operations would induce a substantial

localized change to the vegetated shallows within the project footprint, there is a high likelihood the ecosystem may eventually recover without substantial intervention after mining is completed. Documentation from the Applicant suggests this recovery would likely occur within about a two-year timeframe; however, recovery rates are dependent on the specific conditions that occur in this area in a given year. As discussed elsewhere in this document, the Bonanza Channel is subject to an array of natural processes that make this channel area a very dynamic area ecologically and resilient to physical changes as a result of the project. The system receives freshwater inflows from the Bonanza and Solomon River deltas, including an inflow of transported sediments from these rivers. The channel receives saltwater and brackish water from Safety Sound in response to inflows from other rivers and from tidal inflows. Direct run-off from adjacent terrestrial lands feeds the channel area. Occasionally, large-scale storms breach the barrier island and substantially alter the channels and islands in the area. On a seasonal basis, the freeze/thaw cycle of ice, including sea ice from Norton Sound has a substantial effect on salinity and on the channel bottoms as the ice movement regularly scrapes the substrate, destroys vegetation, and changes some of the landforms. In the spring, when the ice melts again, the system is resilient enough to allow extensive coverage of the channel bottoms with SAV that has regrown from remnant plant materials from the previous growing season. Considering these processes are part of the baseline pre-project condition for this channel, they would have a very strong effect on the post-project recovery of the channel area. Incorporation of special conditions in any permit, if issued, to require the Applicant to monitor and implement adaptive management measures to track and enhance the recovery of the project area during each mining phase and for a two-year period following project completion would minimize potential impacts.

6.8 Factual Determinations (Subpart B, 40 CFR 230.11)

The following determinations are made based on the applicable information above, including actions to minimize effects and consideration for contaminants (see Table 8):

Table 8 – Factual Determinations of Potential Effects

Site	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Physical substrate					X	
Water circulation, fluctuation and salinity					X	
Suspended particulates/turbidity				X		
Contaminants			X			

Table 8 – Factual Determinations of Potential Effects						
Site	**N/A**	**No Effect**	**Negligible Effect**	**Minor Effect (Short Term)**	**Minor Effect (Long Term)**	**Major Effect**
Aquatic ecosystem and organisms						X
Proposed disposal site						X
Cumulative effects on the aquatic ecosystem					X	
Secondary effects on the aquatic ecosystem					X	

Discussion: The effects of this project and measures that have been incorporated to reduce these effects have been discussed in detail above. The five-year mining operation would affect the substrate that would be initially considerable as dredging under each mining phase removes a large quantity of materials and almost immediately places the materials back into the dredging site to the same approximate bathymetry after the materials have been processed for gold or into DMDSs. Portions of the access channel would stay in place until the end of the full-scale mining phase to allow seasonal access to the full-scale mining area by dredging equipment. The access channels would be fully restored to original bathymetry by the end of the fifth year of full-scale mining by re-dredging materials from disposal sites to reclaim the channels. However, the disturbance to the substrate is expected to be resolved after a temporary period of settlement and weathering from tidal and freshwater flows/sedimentation and seasonal ice freeze/thaw processes. Any effects to water circulation would also be temporary as sections of the channel are dredged/mined with dredged materials either being used for reclamation or placed in DMDSs and minimal water fluctuations and changes to salinity are expected. Measures would be implemented to maintain control of turbidity in the active work area. No contaminant issues have been identified for the dredged materials. In Yukuskokon 2020a, the contaminants found in drilling samples were contrasted with results found for other projects in the area and concluded to be background levels. In addition, because dredged materials would be concurrently reclaimed or disposed of in approximately the same place with minimal opportunities for weathering and exposure, any risks associated with the presence of these constituents is considered very low.

The project would have a substantial near-term effect on the aquatic ecosystem. Vegetated shallows would be dredged and reclaimed, and disposal sites would cause conversion of vegetated shallows to mud flats. These effects would be

offset somewhat by a combination of factors. Reclaimed areas are expected to revegetate over time and measures have been created that would monitor the status of the reclaimed areas with respect to revegetation and incorporate adaptive management measures if revegetation doesn't occur naturally. The extent of disposal sites has been substantially reduced under the LEDPA. Those areas that remain would convert vegetated shallows to mud flats, both of which are considered special aquatic sites and have considerable ecological value.

Cumulative Effects on the Aquatic Ecosystem
Cumulative impacts are the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material. 40 CFR 230.11(g)(1).

This project site is located in a remote part of Alaska with little development activity that requires permitting for impacts to jurisdictional waters. Most permitting activity has been and will continue to be in the developed areas such as in the vicinity of Nome. This project is expected to have impacts that are considered long term because of the impact timeframe, but the effects would not be permanent. The impacts would occur to the functions and services of special aquatic sites, but those impacts are expected to be resolved within a relatively short period of time because of the ecological setting and the natural processes that affect this area. Although incremental multi-year effects would occur, these effects would not be permanent as the impacted areas recover. This, combined with the low level of ongoing and expected future impacts to jurisdictional waters in this area makes any cumulative effects minor in scale.

Secondary Effects on the Aquatic Ecosystem
Secondary effects are the effects on the aquatic ecosystem from the discharge of dredged or fill material, but that do not occur from the actual placement of dredged or fill material. 40 CFR 230.11(h)(1).

Secondary effects on the aquatic ecosystem would involve connected effects related the temporary destruction of vegetation and the effects on fish that are dependent on vegetated shallows. These secondary effects would gradually be resolved as the dredged area revegetates. Because there is an abundance of vegetated shallows in the project vicinity, this effect is incremental and would not substantially affect fish permanently. Any increases in turbidity from the loss of vegetation would likely be within the normal fluctuations that occur in this estuary from the natural processes that have been discussed as existing in this area.
6.9 Findings of compliance or non-compliance with the restrictions on discharges (40 CFR 230.10(a-d) and 230.12)

Based on the information above, including the factual determinations, the proposed discharge has been evaluated to determine whether any of the restrictions on discharge would occur (see Table 9):

Table 9 – Compliance with Restrictions on Discharge

Subject	Yes	No
1. Is there a practicable alternative to the proposed discharge that would be less damaging to the environment (any alternative with less aquatic resource effects, or an alternative with more aquatic resource effects that avoids other significant adverse environmental consequences?)		X
2. Will the discharge cause or contribute to violations of any applicable water quality standards?		X
3. Will the discharge violate any toxic effluent standards (under Section 307 of the Clean Water Act)?		X
4. Will the discharge jeopardize the continued existence of endangered or threatened species or their critical habitat?		X
5. Will the discharge violate standards set by the Department of Commerce to protect marine sanctuaries?		X
6. Will the discharge cause or contribute to significant degradation of waters of the United States?		X
7. Have all appropriate and practicable steps (Subpart H, 40 CFR 230.70) been taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystem?	X	

Discussion: As discussed previously, although the project would have substantial temporary impacts to aquatic resources from dredging/reclamation/disposal activities, these impacts would be minimized through a combination of natural processes described above and monitoring and adaptive management measures by the Applicant.

7.0 General Public Interest Review (33 CFR 320.4 and Regulatory Guidance Letter 84-09)

The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest as stated at 33 CFR 320.4(a). To the extent appropriate, the public interest review below also includes consideration of additional policies as described in 33 CFR 320.4(b) through (r). The benefits which reasonably may be expected to accrue from the proposal are balanced against its reasonably foreseeable detriments.

This review is also serving as the comparative impacts analysis for purposes of NEPA.

7.1 Public interest factors review

All public interest factors have been reviewed and those that are relevant to the proposal are considered and discussed in additional detail (see Table 10):
In the table, the effects from the No Action Alternative (No Federal Action) are indicated with an “A”, Off-Site Alternative 3 by “B,” On-Site Alternative 1 with “B,” On-Site Alternative 2 with “C,” and On-Site Alternative 2a with “D”.

Table 10 – Public Interest Factors

Factor	None	Detrimental	Neutral (mitigated)	Negligible	Beneficial	Not Applicable
1. Conservation: See below for discussion.	A		BCD			
2. Economics:See below for discussion.	A				B C D	
3. Aesthetics: See below for discussion.	A			B C D		
4. General Environmental Concerns: See below for discussion.	A		BCD			
5. Wetlands: See below for discussion.	A			B C D		
6. Historic Properties: No historic properties are in the project vicinity that would be affected by the project.	A B C D					
7. Fish and Wildlife Values: See below for discussion.	A		BCD			
8. Flood Hazards: There are no flood hazard issues associated with this project or in the project vicinity.	A B C D					
9. Floodplain Values: There are no floodplains in the project vicinity that would be affected by this project.	A B C D					

Table 10 – Public Interest Factors						
Factor	**None**	**Detrimental**	**Neutral (mitigated)**	**Negligible**	**Beneficial**	**Not Applicable**
10. Land Use: See below for discussion.	A			B C D		
11. Navigation: See below for discussion.	A			B C D		
12. Shoreline Erosion and Accretion: see below for discussion.	A			B C D		
13. Recreation: See below for discussion.	A			B C D		
14. Water Supply and Conservation There are no water supply or water use concerns associated with this project.	A B C D					
15. Water Quality: See below for discussion.	A		BCD			
16. Energy Needs: There are no energy-related issues for this project.	A B C D					
17. Safety: See below for discussion.	A			B C D		
18. Food and Fiber Production: See below for discussion.	A			B C D		
19. Mineral Needs: See below for discussion.	A				B C D	
20. Consideration of Property Ownership: See below for discussion.	A		BCD			
21. Needs and Welfare of the People: See below for discussion.	A			B C D		

Additional discussion of effects on factors above:

Conservation:
The No Action Alternative would involve no federal permitting for work within jurisdictional waters; there would be no conservation impacts for this alternative.

Impacts related to conservation of resources would be induced by implementation of On-Site Alternatives 1 and 2, but these effects would likely not be permanent or extend beyond the project limits. The project would involve dredging large quantities of channel substrate to be processed for gold and then either returned to the dredged channel back to original bathymetry or placed in DMDSs (excess dredged material). Although this disruption to the channel would be substantial, it would also occur in a very dynamic estuary ecosystem subject to tidal actions, winds/storms, freshwater/sediment inflows, ice freeze/thaw cycles, etc. that dictate and dominate ecological conditions in the channel. The temporary disruptions caused by the dredging operation are expected to be minimized by these natural influences such that any effects, direct or indirect, would be temporary, short term, and not significant.

On-Site Alternative 2a has similar impacts to Alternatives 1 and 2 but would have less conservation-related impacts because it would disturb a substantially smaller project footprint within jurisdictional waters and impacts would not be significant. No impacts would occur relative to the uplands man camp area because of the disturbed condition of this uplands area and its small size.

Economics:
The No Action Alternative would have no effects on economics because the lack of a federal permit would prevent dredge mining, and associated economic benefits, from occurring.

Beneficial economic impacts would be derived from each of the remaining three alternatives because local economic activity would be stimulated by the direct and indirect economic benefits of a multi-year mining project, such as generation of tax revenues, jobs, and gold royalties to the State of Alaska.

Aesthetics:
The No Action Alternative would have no effect on aesthetics in the project vicinity because no dredging would occur.

Each of the three remaining alternatives would have similar impacts to the aesthetic setting for this area because each alternative involves a multi-year mining operation in a mostly natural area. The project area is an expansive estuary system set along a mostly unpopulated section of the Seward Peninsula. The area has an overwhelmingly natural wildlands aesthetic. An occasional factor

in this local aesthetic is roadway traffic on Nome-Council Road, kayakers and fishermen. During the operational period for this project, dredging activities in either the Bonanza Channel or the central claims area would be noticeable within the estuary (dredge and processing barge), but this activity would be limited to a discreet area each year. The man camp would have storage structures left on-site over the winter. Once the project is completed and the man camp vacated, there should be no noticeable signs of the dredging work. Direct and indirect impacts to aesthetics would be less than significant.

General Environmental Concerns:
The No Action Alternative would not have any associated environmental concerns because without a federal permit, no dredging operation would be conducted.

On-Site Alternatives 1, 2, and 2a would negatively affect a high functioning estuary by substantially disrupting progressive sections of the channel substrate, introducing dredging equipment and activity into the natural environment and generate noise that could disrupt wildlife. These effects would occur during the mining season and cease during the winter months. As described elsewhere in this decision document, most of the effects of this project on the environment would be temporary, lasting only over the summer months and not extending past the completion of the project. Impacts to the aquatic ecosystem itself are expected to recover, possibly without further human intervention, because of the significant natural processes/cycles that constantly affect this estuary. Adaptive measures would be implemented as needed to ensure the recovery of SAV in the vegetated shallows. The man camp area would have minimal effect on environmental concerns. Direct and indirect impacts from these alternatives are less than significant.

Wetlands:
No wetlands would be impacted under the No Action Alternative because no federal permit would be issued.

For the other three dredging alternatives, wetlands exist along the edges of the project footprint in the form of estuarine wetlands located on islands and terrestrial wetlands located on the landside of the channel. No wetlands would be directly or indirectly affected by these alternatives because the disturbance footprints are confined to the estuary channels.

Fish and Wildlife Values:
No impacts to fish and wildlife would result under the No Action Alternative because no dredging operation would occur.

The three dredge alternatives would impact fish and wildlife values to some degree but those impacts would be temporary in duration because SAV is expected to

recover after being disturbed. Adaptive measures by the Applicant would be implemented as needed to ensure SAV regrowth. The man camp would have no effect on fish and wildlife values. Direct and Indirect impacts would be less than significant degree.

Land Use:
The No Action Alternative would not affect land use issues because no dredging operations would be conducted without a federal permit.

Each of the three action alternatives would be executed on state-owned lands through sub-surface mining claims. The Applicant's mining claims are immediately adjacent to AMNWR parcels on mid-channel wetland islands and private lands, including individual Native American allotments. The Applicant has not proposed any activities, including the man camp area that would directly affect refuge lands or allotments and a special condition of the permit, if issued, would require clear demarcations be installed between the mining claims and the adjacent properties to prevent encroachment. Trespassing, whether deliberate or inadvertent, is a potential indirect impact that would be addressed by the special condition. Impacts to land use for these three alternatives is considered less than significant.

Navigation:
Because there would be no federal permit for work within navigable waters of the U.S. under the No Action Alternative, no impacts to navigation would occur.

The project site for On-Site Alternatives 1, 2, and 2a is located within navigable waters of the U.S. However, navigability is limited to smaller watercraft because of the shallow channel depths. Portions of the Bonanza Channel would be closed to through navigation during some active mining phases. Disposal of dredged materials along the edges of the Bonanza Channel would narrow the overall channel width, but this is not expected to affect navigation because of the small size of watercraft that use this area. Effects on navigation would be minor and temporary and less than significant.

Shoreline Erosion and Accretion:
The No Action Alternative would not affect shoreline accretion or erosion.

For the three dredging alternatives, impacts would be similar. Some movement of dredged materials from reclamation and disposal and may contribute to increased erosion/accretion following reclamation/disposal. Natural processes within the estuary would likely displace some of the deposited materials to create sustainable natural flow areas and channel configurations over time. Major storm events may speed up that process somewhat. The materials would likely become stable in time as natural weathering and geomorphic processes continue to shape this area,

including the effects of ice freeze/thaw cycles. This is a less than significant impact.

Recreation:
The No Action Alternative would not affect recreation because no dredging project would occur without a federal permit.

For the three dredging alternatives, recreational activities in the project area consist primarily of fishing, hunting, kayaking/boating, and birdwatching. The large coastal estuary provides substantial natural open space for such During dredging seasons, portions of the mining corridors would be mined and segregated from the natural channel by silt curtains, and DMDSs would also be within silt curtains. Recreationists would not be allowed in these areas during operations. However, there are other ample recreation opportunities in the project vicinity during active dredging operations.

Another potential conflict is during the winter months along the Iditarod Trail that follows the trace of Nome-Council Road through this area. The Bureau of Land Management (BLM) was consulted after the public comment periods regarding the possibility of drifting snow that could be exacerbated by the presence of storage buildings associated with the man camp, potentially affecting the safety of snowmobilers during a race through this area. The Applicant can mark their man camp location with flagging of suitable height to make snowmobilers aware of its existence and also coordinate with BLM regarding the location and types of materials left in place at the man camp during the winter season. Considering that snowmobiling in wildland areas inherently requires a traveler to be aware of conditions and obstacles, this measure should be adequate for safety purposes.

An additional issue for these alternatives is that Safety Sound/Bonanza Channel is considered an IBA by the Audubon Society. Portions of the AMNWR are also present nearby and contribute to these activities. Implementation of this project would affect recreation during the summer mining season for five operational years (six seasons in the case of Alternative 1). Although the active dredging areas would be excluded from recreational activities, the estuary and neighboring terrestrial lands to the north are expansive and provide for a wide range of boating and recreational opportunities around the project site. Opportunities in Safety Sound, and areas to the east of Bonanza Channel, would not be affected by the project. Within the state-owned parcels that include the Applicant’s mining claims, there is still ample space for off-highway parking near the man camp for birders. The Applicant can flag/mark their base camp area to ensure visitors to the area do not trespass into their operational areas. Direct and indirect impacts to recreation, including from the man camp for these alternatives is considered less than significant.

Water Quality:
Because no federal permit would be issued under the No Action Alternative, no water quality impacts would occur under this alternative.

Water quality considerations for the dredging alternatives consist primarily of the management of turbidity during dredging, reclamation, and disposal activities. Silt curtains are described in the Applicant's operations plan as a means to limit the effects of turbidity during dredging operations. Each of the dredging alternatives would be required via special conditions on the permit, if issued, to implement minimization measures to reduce water quality impacts.

There also exists the potential for contamination of the waterways from hazardous materials (oils, lubricants, fuels, etc.) from the equipment being used. A special condition of the permit, if issued, would require the Applicant to develop and implement a SPCC Plan to minimize the potential for a hazardous materials spill and provide actions to be implemented if a spill occurs.

For each of the three dredging alternatives, the Applicant will be required to obtain a Clean Water Act 401 water quality certification from the State of Alaska. The Applicant has already received an individual 401 Water Quality Certification for Alternative 1 with conditions from the State of Alaska to ensure that water quality standards are maintained. For Alternative 2a, this certification should remain valid because of the similarities of the project footprint and activity.

Direct and indirect impacts to water quality are less than significant.

Safety:
No safety issues would result from the No Action Alternative as no dredging activities would occur.

For each of the three dredging alternatives, safety issues would be similar. The alternatives would each have minimal safety-related issues assuming the Applicant's operators adhere to applicable safety requirements for their operations. During the winter months the Iditarod Trail follows the trace of Nome-Council Road through this area. BLM raised concerns regarding the possibility of drifting snow that could be exacerbated by the presence of storage buildings associated with the man camp, potentially affecting the safety of snowmobilers during a race through this area. The Applicant can mark their man camp location with flagging of suitable height to make snowmobilers aware of its existence and also coordinate with BLM regarding the location and types of materials left in place at the man camp during the winter season. Considering that snowmobiling in wildland areas inherently requires a traveler to be aware of conditions and obstacles, this measure should be adequate for safety purposes. In addition, marking their man camp site and

using signage should minimize intrusion by casual observers that could be unsafe for them. Safety impacts would be less than significant.

Food and Fiber Production:
The No Action Alternative would have no effect on food and fiber production.

For all three action alternatives, based on input from Tribes, this general area is known to support subsistence activities involving fishing, hunting, egg gathering, and gathering of other food items. On-Site Alternatives 1, 2, and 2a are located in the Bonanza Channel, which is presumed to provide a setting for some of these activities also. The mining operation would likely prevent subsistence-related activities in the area being actively mined and the immediately surrounding areas, but this involves a relatively small area compared to the 25-mile regional estuary system and the terrestrial areas to the north of estuary. Although the general project vicinity supports various subsistence activities, no unique subsistence opportunities are known to exist at Bonanza Channel that would be adversely affected. Impacts are considered less than significant.

Mineral Needs:
The No Action Alternative would have no effect on increasing or decreasing mineral needs.

Each of the three dredging alternatives involves the extraction of gold from the channel substrate and would increase the amount of this mineral within the regional economy. This is a beneficial impact.

Consideration of Property Ownership:
The No Action Alternative would not affect property ownership issues because no dredging would occur without a federal permit.

For Alternatives 1, 2, and 2a, the Applicant's mining claims on state lands are immediately adjacent to AMNWR wetland islands and to individual Native American allotments. This project would prevent other members of the public from using the lands under the Applicant's ten mining claims for other purposes for the duration of the project and the mining activity and associated noise may affect site users on state lands, AMNWR lands, and on nearby allotments. A special condition would be implemented requiring the Permittee to mark the boundaries (on land) between the mining claims and adjoining properties to minimize trespassing.

The Applicant maintains the dredging equipment (gravel suction dredge) would emit about 78 decibels (A-weighted) (dBA) of equipment noise assuming a muffler is installed on the equipment. Noise generally attenuates over distance at a rate of 6 dBA for each doubling of distance (California Department of Transportation

2013). Thus, noise levels can be estimated for this equipment at set distances from the equipment. Muffled operation of a gravel dredge would have an estimated noise level of 18 dBA at a distance of about 5,000 feet from the dredge. This noise level is comparable to a quiet nighttime rural setting. Noise levels at the east end of the mining channel near the edge of Safety Sound and at the Bonanza River outlet would be lower than 18 dBA, even when the dredger is working at the east and west ends of the channel respectively, because these areas are over 5,000 feet in distance from the closest dredger location along the mining channel. Although noise levels would probably be perceivable to some individuals near the project site, they would not be considered significant.

Direct and indirect impacts for each of these alternatives are considered less than significant.

Needs and Welfare of the People:
Under the No Action Alternative, there would no impacts involving the needs and welfare of people.

Specific topics for this public interest factor have been discussed previously for On-Site Alternatives 1, 2, and 2a. The project footprint for these alternatives is located in a sparsely populated estuary area most commonly frequented by recreationists (birdwatchers/fishermen/kayakers/hunters) primarily during the ice-free months when the mining operation is active and by people engaged in subsistence activities presumably throughout the year. This project would affect a small area in a very large estuary and is not located near any residences or population centers. Although there would be some additional traffic on the Nome-Council Road from this project, this is not expected to impact other roadway users. The isolated setting for this project combined with the defined time period for this project and the seasonal timing for activity at this site would limit any effects on the needs and welfare of others. Impacts for these alternatives are considered less than significant.

7.2 Public and private need

The relative extent of the public and private need for the proposed structure or work: There is an economic demand for gold in the regional and national economies and this project would contribute to meeting that need. The project would meet the Applicant’s private need as a money-making venture.

7.3 Resource use unresolved conflicts

If there are unresolved conflicts as to resource use, explain how the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work was considered.

Through the alternatives analysis process, impacts to jurisdictional waters were substantially reduced. On-Site Alternative 2a avoids and minimizes impacts to jurisdictional waters to the maximum extent practicable. With the inclusion of the proposed special conditions, the conflicts associated with On-Site Alternative 1 (proposed project) have been reduced. On-Site Alternative 2 would have similar or greater impacts than On-Site Alternative 1. As a result, these alternatives would have similar unresolved conflicts when compared to On-Site Alternative 1. Under the No Action Alternative, there would be no unresolved conflicts.

There are unresolved conflicts that affect some state-owned lands in this area related to issues arising from the 1979 Settlement Agreement between Native American Tribes and the State of Alaska. These long-standing issues do not directly involve the federal government or this permitting action and can only be resolved between the affected Tribes and the State of Alaska. For this permitting action, considering the mining claims possessed by the Applicant from the State of Alaska, the Corps presumes the Applicant has the legal right to conduct this project as proposed within the limits of their claims.

7.3 Beneficial and/or detrimental effects on the public and private use

The extent and permanence of the beneficial and/or detrimental effects that the proposed work is likely to have on the public and private use to which the area is suited is described below:

Detrimental effects are expected to be more than minimal and temporary. The dredging/mining of the Bonanza Channel would induce substantial impacts to SAV, the channel substrate, EFH, and other resources in the project area. However, these impacts are considered short-term in duration because of the dynamic nature of the estuary system at this location. Once the project has been completed, the impacted channel and associated resources are expected to return to their approximate baseline status.

Beneficial effects are expected to be more than minimal and permanent.

Beneficial effects are economic in nature for the Applicant and the profits associated with the gold extraction would be permanent benefits, though limited by the amount of gold present in the project footprint that can be extracted.

On-Site Alternatives 1 and 2 would have similar beneficial effects as On-Site Alternative 2a because the same area will be dredge mined under each alternative. Detrimental effects on the public and private use would be similar or greater than On-Site Alternative 2a.

The No Action Alternative would not result in any beneficial or detrimental effects on the public and private uses.

7.5 Climate Change

On January 9, 2023, the CEQ released *National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change*. This guidance provides details for how federal agencies can incorporate GHG and climate change considerations into the NEPA process, including assessing and reducing impacts from GHG emissions or incorporating climate resiliency considerations into alternatives. While the Climate Change Guidance is considered "interim," it is effective immediately, while CEQ seeks public comment on the guidance.

As discussed in this guidance, when conducting climate change analyses in NEPA reviews, agencies are recommended to consider the potential effects of a proposed action on climate change, including by assessing both direct and indirect GHG emissions and reductions from the proposed action, quantifying the baseline (no-action) emissions, and the effects of climate change on a proposed action and its environmental impacts. The guidance further recommends that greenhouse gas emissions should be quantified for the gross and net emissions for each chemical species (i.e., methane, nitrous oxide, etc.) and summarized as carbon dioxide equivalent (CO2e) and social cost of greenhouse gases. The guidance also emphasizes the "rule of reason" which states that the depth of the GHG analysis should be commensurate to the amount of greenhouse gases emitted.

The 2023 CEQ guidance recommends including calculation of social cost of greenhouse gas (SC-GHG) in NEPA documents in order to disclose the potential future costs to society stemming from the carbon emitted by a project. The EPA is currently considering a change to a lower discount rate from 3% to 1.5%, 2%, or 2.5% which is a method for deciding how much of a finite resource can be used each year to ensure it will not all get used at one time and would still remain available for future generations. As discount rates get applied to the social cost of greenhouse gas emissions, a lower discount rate would increase the social cost of near-term emissions and leverage less emissions reductions on future generations; with higher discount rates corresponding to lower costs for near-term emissions and leveraging greater emissions reductions to be carried out by future generations. The EPA has not made a determination on the discount rate that federal agencies should use, therefore per the recommendation to the Whitehouse by the Interagency Working Group, a 3% discount rate will be used corresponding to a social cost of $51 per metric ton of CO2e.

Gasses that contribute to climate change are CO2, N2O, and CH4. Emissions of these gasses were roughly estimated using EPA emission factors for GHG

inventories, commercial emissions and fuel use information for equipment described by the Applicant in their plan of operations. Their equipment was assumed to be operational about 50% of the time over a 150-day seasonal work period applied to five dredging seasons.

CO2 is the reference gas for climate change, as it is the GHG emitted in the highest volume. The effect of each GHG on global warming is the product of the mass of their emissions and their global warming potential (GWP). The GWP of a gas indicates how much the gas is predicted to contribute to global warming relative to the amount of warming that would be predicted to be caused by the same mass of CO2. For example, methane and nitrous oxide are substantially more potent GHGs than CO2, with GWPs of 25 and 298 times that of CO2 respectively, which has a GWP of 1. Total emissions of CO2-equivalent gasses and social costs of greenhouse gases are shown in Table 11. Some equipment use variability will occur each year and for each alternative, but because the three alternatives would have the same approximate work periods and equipment use during the dredging seasons, GHG emissions would be approximately the same.

The proposed activities within the Corps' federal control and responsibility likely will result in a negligible release of greenhouse gases into the atmosphere when compared to global greenhouse gas emissions. Greenhouse gas emissions have been shown to contribute to climate change. Aquatic resources can be sources and/or sinks of greenhouse gases. For instance, some aquatic resources sequester carbon dioxide whereas others release methane; therefore, authorized impacts to aquatic resources can result in either an increase or decrease in atmospheric greenhouse gas. These impacts are considered de minimis. Greenhouse gas emissions associated with the Corps' federal action may also occur from the combustion of fossil fuels associated with the operation of construction equipment, increases in traffic, etc. The Corps has no authority to regulate emissions that result from the combustion of fossil fuels. These are subject to federal regulations under the Clean Air Act and/or the Corporate Average Fuel Economy (CAFE) Program. Greenhouse gas emissions from the Corps' action have been weighed against national goals of energy independence, national security, and economic development and determined not contrary to the public interest.

On-Site Alternative 1, and On-Site Alternative 2 would have similar climate change effects as On-Site Alternative 2a.

The No Action Alternative would not affect climate change because no dredging would occur without a federal permit.

Table 11: Comparison of Greenhouse Gasses Emissions and Social Costs

	On-Site Alternative 2a
Estimated Total Emission of GHGs (CO_2e) (metric tons/year)	4166
Social Cost of GHG's[1]	$212,466

[1] Social Cost of GHG = CO_2e x $51

8.0 Mitigation

(33 CFR 320.4(r), 33 CFR Part 332, 40 CFR 230.70-77, and 40 CFR 1508)

8.1 Avoidance and minimization

Avoidance and Minimization: When evaluating a proposal including regulated activities in waters of the United States, consideration must be given to avoiding and minimizing effects to those waters. Avoidance and minimization are described in Section 1.3.1 above. The measures cited in 1.3.1 above were developed for On-Site Alternative 1 but are also applicable to On-Site Alternatives 2 and 2a. On-Site Alternative 1 would result in approximately 192.5 acres of impact to jurisdictional waters. On-Site Alternative 2a reduces impacts to approximately 159.4 acres. Additional avoidance and minimization measures are described in detail in Section 6.0 of this decision document. In addition, Section 5 above describes actions to minimize adverse impacts in the context of the 404(b)(1) guidelines.

Describe other mitigative actions including project modifications implemented to minimize adverse project impacts? (See 33 CFR 320.4(r)(1)(i))

On-Site Alternative 2a results in the avoidance of 33.1 acres of jurisdictional waters compared to On-Site Alternative 1. To minimize potential impacts to turbidity and water quality, standard BMPs, installation and maintenance of siltation curtains, development and implementation of numerous plans (invasive species plan, reclamation plan, SPCC plan, and sediment testing plan) would minimize impacts for this operation. Unplanned releases related to silt curtain failures have been addressed by the Applicant in Yukuskokon Professional Services, LLC. 2022c. Adaptive management measures, including alternative revegetation methods, would be used as needed to maximize the rate of revegetation. Appropriate materials (mud and fine materials) would be used for created mudflat areas. To ensure adjacent lands are not trespassed upon, a measure would be implemented to confirm and mark parcel boundaries in the vicinity of the project. The man camp area would be flagged/marked to ensure visitors to the area do not trespass into the Applicant's operational areas. Coordination with BLM would also occur with respect to potential conflicts with race events on the nearby Iditarod Trail. With the inclusion of the above measures, On-Site Alternative 2a would avoid and minimize impacts to waters of the U.S. to the maximum extent practicable.

8.2 Compensatory mitigation requirement

Is compensatory mitigation required to offset environmental losses resulting from proposed unavoidable impacts to waters of the United States? Yes

Provide rationale: Although there would be no permanent loss of acreage of jurisdictional waters, there would be degradation of functions and services associated with dredging activities on special aquatic sites (vegetated shallows). Some, if not all, functions and services may be restored by natural process restoration; however, this is not certain. For that reason, compensatory mitigation is required through implementation of a reclamation plan that requires post activity monitoring of impacted areas to track their recovery and implementation of adaptive measures in the event the recovery of functions and services lags behind expected levels. Implementation of these measures are expected to fully compensate for the degradation of functions and services associated with this project.

The Applicant has proposed compensatory mitigation for On-Site Alternative 1, consisting of replacing a culvert in a separate area not in the vicinity of this project to improve fish passage. This is not considered appropriate mitigation because it is not in the same area, and it would not result in local improvement to functions and values.

9.0 Consideration of Cumulative Effects

(40 CFR 1508 & RGL 84-9) Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor direct and indirect but collectively significant actions taking place over a period of time. A cumulative effects assessment should consider how the direct and indirect environmental effects caused by the proposed activity requiring DA authorization (i.e., the incremental impact of the action) contribute to the aggregate effects of past, present, and reasonably foreseeable future actions, and whether that incremental contribution is significant or not.

9.1 Identify/describe the direct and indirect effects which are caused by the proposed activity:

On-Site Alternative 2a would have a direct permanent impact to 159.4 acres of jurisdictional waters with no permanent loss of WOUS. The impacts would occur over a five-year period in five increments. The duration of effects is expected to extend for at least one year following the activity, but the estuary is expected to recover within approximately two to five years following the impact, depending on seasonal conditions. The impacts would be considered short-term for this reason,

but with effects of long enough duration they would not necessarily be considered temporary. Resources listed in Table 10 would be indirectly affected by mining operations; the range of indirect effects is provided in the table and are summarized in additional discussion provided in Section 7.1. Resources that would not be affected or would realize a beneficial effect are not future evaluated in the cumulative effects analysis.

Off-Site Alternative 3 and On-Site Alternatives 1 and 2 would have similar or greater direct and indirect/secondary impacts to jurisdictional waters. Some of the resources identified in Table 10 would be directly and indirectly affected by these alternatives; the range of direct and indirect effects is provided in the table and area summarized in additional discussion provided in Section 7.1. Resources that would not be affected our would realize a beneficial effect are not further evaluated in the cumulative effects analysis.

Under the No Action Alternative, the project would not occur, therefore, the No Action Alternative would not result in any incremental effects.

Impacts from Off-Site Alternative 3 and On-Site Alternatives 1, 2, and 2a to each of these resources are addressed in combination with those from past, present, and reasonably foreseeable future actions in the cumulative effects analysis provided below.

9.2 The geographic scope for the cumulative effects assessment is:

The geographic scope for this analysis is the Nome HUC-8 area (HUC 19050104), consisting of 3,645,625.34 acres.

9.3 The temporal scope of this assessment covers:

The temporal scope of this assessment considers the past and next 12 years to match with the cumulative project data time period of 12 years for ease of comparison.

1. Occurred on site historically.
According to Regulatory Program data from FY 2011 through the present, there were 187 regulatory actions completed within the Nome HUC. These actions authorized 276.24 acres of temporary fill (zero tidal wetlands) and 461.4 acres of permanent fill (zero tidal wetlands). In the vicinity of the project, the Applicant has engaged in exploratory drilling related to this project and will continue to execute that exploration plan, though it is within the project footprint for On-Site Alternative 2a.

2. Projects likely to occur in the foreseeable future. Projects proposed in the foreseeable future would include further dredge mining projects, both within the estuary and possibly offshore in Norton Sound. The Applicant has additional claim areas where similar projects would occur though these areas have significant constraints. The Applicant will likely continue with exploratory drilling consist with plans separately reviewed and permitted by the Corps.

9.4 Describe the affected environment:

The primary area of interest is the estuary complex extending across approximately 25 miles of the coastline and includes Bonanza Channel. This area consists generally of a series of estuary lagoons bounded by a barrier island to the south (between the estuary and Norton Sound) and non-tidal wetlands in the terrestrial areas generally to the north of the estuary. The interconnected lagoons collect runoff from numerous rivers and streams and have tidal outlets to Norton Sound. This area contains several categories of special aquatic sites (vegetated shallows, tidal and non-tidal wetlands, mudflats, and the AMNWR). The Applicant has 32 mining claims in this general area, ten of which are associated with this project. Other mining claims extend into other parts of the estuary and into Norton Sound.

9.5 Determine the environmental consequences:

The environmental effects of On-Site Alternative 1, 2, and 2a primarily include alterations to the existing estuary by converting vegetated shallows to mud flats, disturbing the substrate, impacting EFH, and impacting water quality to similar degrees. These impacts are generally of short-term duration and special conditions are available to reduce the magnitude of these impacts.

Considering the extent of other mining claims throughout this area on state-owned lands, it's likely that additional similar mining activities may take place during the next 12 years by the Applicant or others, especially if the Applicant's project is profitable. The impacts of these potential future projects are difficult to assess because of known constraints for mining these areas, such as land ownership patterns, fish and wildlife resources, accessibility to claims, etc. The Applicant has indicated their intent to further mine their claims in the central and western claim groups they currently possess. Mining in these areas was assessed in this document as potential project alternatives and their ability to mine these areas economically is somewhat speculative. Less speculative is the likelihood of other parties engaging in mining within Norton Sound, which is a different type of dredge mining and does not have some of the constraints associated with mining within the estuary.

9.6 Conclusions regarding cumulative impacts:

When considering the direct and indirect impacts that will result from the proposed activity, in relation to the overall direct and indirect impacts from past, present, and reasonably foreseeable future activities, the incremental contribution of the proposed activity to cumulative impacts in the area described in section 9.2, are not significant . Compensatory mitigation will be required to offset the impacts of the proposed activity to eliminate or minimize its incremental contribution to cumulative effects within the geographic area described in Section 9.2. Mitigation required for the proposed activity is discussed in Section 8.0.

On-Site Alternatives 1 and 2 result in increased impacts to jurisdictional waters. As a result, these alternatives would have greater mitigation requirements when compared to On-Site Alternative 2a.

Under the No Action Alternative, no dredging activities would occur. Due to the lack of direct impact to jurisdictional waters, the need for mitigation would be eliminated when compared to On-Site Alternative 2a.

10.0 Compliance with Other Laws, Policies and Requirements

10.1 Section 7(a)(2) of the Endangered Species Act (ESA)

Refer to Section 2.2 for description of the Corps' action area for Section 7 of the ESA.

10.1.1 Lead federal agency for Section 7 of the ESA

Has another federal agency been identified as the lead agency for complying with Section 7 of the ESA with the Corps designated as a cooperating agency and has that consultation been completed? No

10.1.2 Listed/proposed species and/or designated/proposed critical habitat

Are there listed or proposed species and/or designated critical habitat or proposed critical habitat that may be present or in the vicinity of the Corps' action area? Yes

Effect determination(s), including no effect, for all known species/habitat, and basis for determination(s): Section 7 consultation took place between POA and the USFWS and NMFS as part of the original permit review. POA determined that it's Federal action may affect, not likely to adversely affect, the following species (all listed as threatened) and designated critical habitat based on the biological assessment prepared by the Applicant:

- Spectacled eiders (*Somateria fischeri*) and its designated critical habitat

- Alaska-breeding Steller's eiders (*Polysticta stelleri*)
- Polar bears (*Ursus maritimus*) and its designated critical habitat
- Arctic ringed seals (*Phoca hispida hispida*)
- Beringia Distinct Population Segment (DPS) bearded seals (*Erignathus barbatus nauticus*)

On April 1, 2022, critical habitat was designated by NMFS for both seal species mentioned above. A review of the designated critical habitat boundaries indicates the action area for this project is outside these boundaries. Therefore, On-Site Alternative 2 would have no effect to designated critical habitat for Arctic ringed seals or Beringia bearded seals.

10.1.3 Section 7 ESA consultation

POA conducted informal consultation with USFWS and NMFS for the bulleted species and designated critical habitat listed above. Concurrence was received from USFWS on July 14, 2021, and from NMFS on October 21, 2021. After a review of On-Site Alternative 2a, POD concluded that new changes to the analysis area were warranted. In addition, after reviewing changes in designations since the consultations were conducted, POD concluded those changes (described above) would not warrant re-initiation.

10.2 Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), Essential Fish Habitat (EFH)

10.2.1 Lead federal agency for EFH provisions of the Magnuson-Stevens Act

Has another federal agency been identified as the lead agency for complying with the EFH provisions of the Magnuson-Stevens Act with the Corps designated as a cooperating agency and has that consultation been completed? No

10.2.2 Magnuson-Stevens Act

Did the proposed project require review under the Magnuson-Stevens Act? Yes

EFH species or complexes
Were EFH species or complexes considered? Yes.

The EFH assessment provided by the Applicant reviewed an area that included nearshore portions of Norton Sound, Safety Sound, and the Bonanza Channel. Sixteen managed fish species occur within this review area; however, when the nearshore area is excluded, the only managed fish species with potential EFH in the project site is juvenile chum salmon (*Onchorhynchus keta*). The EFH assessment also considered forage species and saffron cod (*Eleginus gracilis*), a

species of local importance. Lastly, the presence of vegetated shallows within the project area was evaluated as EFH because of the habitat value for fish associated with SAV.

Effect determination and basis for that determination: The original POA consultation concluded there would be an adverse effect on EFH; NMFS concurred with that determination.

10.2.3 National Marine Fisheries Service consultation

Consultation with the National Marine Fisheries Service was initiated and completed as required (see the attached ORM2 Summary sheet for begin date, end date and closure method of the consultation)

Because the LEDPA was determined to be a variation of the Applicant's preferred alternative, with no case study phase and reclamation of the access channels, POD reviewed the previous consultation with NMFS. Although POD concurs with the adverse effect determination because of the effects of siting DMDSs on vegetated shallows and converting them to mud flats, the dredging and reclamation process was determined by POD to only have a temporary adverse effect on SAV. Those areas would likely recover over time due to the resilience of the dominant vegetation types occurring within Bonanza Channel and the natural annual cycles described elsewhere in this document that likely have a much greater effect on the estuary system. The PAS study (U.S. Army Corps of Engineers 2023) conducted in 2022-2023 further supports data provided for Bonanza Channel by the Applicant regarding high summer water temperature in the channel and documents the relatively low numbers of salmon species encountered, chum salmon in particular. POD concluded that although some effects stated during POA's consultation were likely overstated, the LEDPA for this project has a smaller overall footprint compared to the Applicant's preferred alternative with less impacts to EFH, while the primary full-scale mining area phase remains unchanged. Because the action has not been substantially revised that affects the basis for NMFS's conservation recommendations, POD determined there is no need to reinitiate consultation in accordance with 50 CFR 600.920(l) and those conservation measures remain applicable.

10.3 Section 106 of the NHPA

Refer to Section 2.3 for permit area determination.

10.3.1 Lead federal agency for Section 106 of the NHPA

Has another federal agency been identified as the lead federal agency for complying with Section 106 of the NHPA with the Corps designated as a cooperating agency and has that consultation been completed? No

10.3.2 Historic properties

Known historic properties present? No

Effect determination and basis for that determination: The Corps determined that no historic properties are present in the permit area; thus, no effects would occur. The permit area for the LEDPA was reviewed and has not changed from the permit area used for the POA consultation.

10.3.3 Consultation with the appropriate agencies, tribes and/or other parties for effect determinations

Consultation was initiated and completed with the appropriate agencies, tribes and/or other parties for any determinations other than “no potential to cause effects.” (See the attached ORM2 Summary sheet for begin date, end date and closure method of the consultation)

POA consulted with the State Historic Preservation Office regarding the potential for resources in this area. POA also contacted the Bureau of Land Management’s Iditarod Trail National Historic Trails Administrator regarding potential impacts related to potential conflicts between the project and races that use the trail. Operational issues related to this trail are discussed in Section 7 of this decision document. No issues were raised concerning the integrity of the nearby trail from a historic property perspective. Tribal consultation is discussed below.

10.4 Tribal Trust Responsibilities

10.4.1 Tribal government-to-government consultation

Was government-to-government consultation conducted with federally-recognized tribe(s)? Yes
Provide a description of any consultation(s) conducted including results and how concerns were addressed.

POA consulted with Native American Tribes and Native Corporations as part of their review of the permit application. The Village of Solomon requested government-to-government consultation with POA, which was conducted on January 12, 2022. The Tribe expressed concerns about the permitting timeline, dissatisfaction with the Applicant and the way they engaged with the Tribe and local community, potential impacts to subsistence activities and cultural practices, concerns related to Missing and Murdered Indigenous Women and Girls, past and future potential for trespassing, safety, and concerns regarding how Applicant compliance with permit conditions would be confirmed at the remote project location.

On August 25, 2023, the Village of Solomon requested government-to-government consultation with POD. The POD Commander participated in this consultation with the Village of Solomon, in person, on January 12, 2024. Appendix 2 provides a summary of the POD-Village of Solomon consultation. The Tribe provided comment on a range of topics including tribal activities (including subsistence) in the project area, the results of an environmental baseline survey and report conducted in 2023 by POA under the PAS civil works authority, and their dissatisfaction with the Applicant and comments made related to the Tribe. A copy of the PAS was provided to POD staff as a potential data source for this decision document. This document was used in preparing this decision document**.**

10.4.2 Other Tribal consultation

Other Tribal consultation including any discussion of Tribal Treaty rights.

N/A

10.5 Section 401 of the Clean Water Act – Water Quality Certification (WQC)

10.5.1 Section 401 WQC requirement

Is an individual Section 401 WQC required, and if so, has the certification been issued or waived?

An individual WQC is required and has been granted. The Clean Water Act Section 401 WQC was issued by the Alaska Department of Environmental Conservation. On-Site Alternative 2a affects the same approximate footprint as previously assessed under this certification and this alternative does not conflict with the substance of the certification.

10.5.2 401(a)(2) Process

If the certifying authority granted an individual WQC, did the United States Environmental Protection Agency make a determination that the discharge ‘may affect’ water quality in a neighboring jurisdiction? No

Provide an explanation of the determination of the effect on neighboring jurisdiction.

POA consulted with the Environmental Protection Agency and did not receive a response within the coordination timeline, meaning that agency did not make a “may affect” determination.

10.6 Coastal Zone Management Act (CZMA)

10.6.1 CZMA consistency concurrence

Is a CZMA consistency concurrence required, and if so, has the concurrence been issued, objected to, or presumed?

N/A, a CZMA consistency concurrence is not required.

Under Alaska State law, the federally approved Alaska Coastal Management Program expired on July 1, 2011, resulting in a withdrawal from participation in the CZMA's National Coastal Management Program. The CZMA Federal consistency provision, section 307, no longer applies in Alaska.

10.7 Wild and Scenic Rivers Act

10.7.1 National Wild and Scenic River System

Is the project located in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system? NoEffects on Corps Civil Works Projects (33 USC 408)

10.8.1 Permission requirements under Section 14 of the Rivers and Harbors Act (33 USC 408)

Does the applicant also require permission under Section 14 of the Rivers and Harbors Act (33 USC 408) because the activity, in whole or in part, would alter, occupy, or use a Corps Civil Works project?

No, there are no federal projects in or near the vicinity of the proposal.

10.9 Corps Wetland Policy (33 CFR 320.4(b))

10.9.1 Wetland Impacts

Does the project propose to impact wetlands? No

10.10 Other (as needed)

N/A.

10.11 Compliance Statement

The Corps has determined that it has fulfilled its responsibilities under the following laws, regulations, policies, and guidance:

Table 13 – Compliance with Federal Laws and Responsibilities		
Laws, Regulations, Policies, and Guidance	**Yes**	**N/A**
Section 7(a)(2) of the ESA	X	
EFH provisions of the Magnuson-Stevens Act	X	
Section 106 of the NHPA	x	
Tribal Trust	x	
Section 401 of the Clean Water Act	x	
CZMA		x
Wild and Scenic Rivers Act		x
Section 408 - 33 USC 408		x
Corps Wetland Policy (33 CFR 320.4(b))	x	
Other: N/A		

11.0 Special Conditions

11.1 Special condition(s) requirement(s)

Are special conditions required to ensure minimal effects, ensure the authorized activity is not contrary to the public interest and/or ensure compliance of the activity with any of the laws above? Yes

11.2 Required special condition(s)

1. Within 60 days of permit issuance and prior to the start of the regulated activity, provide the Corps with a revised and updated Reclamation Plan that matches the On-Site Alternative 2a project description. This plan provides the basis for the monitoring and reporting activities that will be required of the Permittee. The revised Reclamation Plan will address completing harvesting, storage, and installment of SAV starting from Year One and continuing through Year 5 of full-scale mining.

   Rationale: Because POD selected a LEDPA that was not the Permittee's preferred alternative, the Applicant's reclamation plan needs to be updated to match the components contained in the permitted alternative.

2. The Permittee shall implement their April 18, 2022, narrative (previously provided to Alaska Department of Environmental Conservation) regarding prevention of unplanned releases in their work area to address contingent actions needed in the event of a silt curtain failure.

Rationale: The use of silt curtains is the primary means of minimizing turbidity during dredging operations and a plan is needed to address what would happen if a silt curtain failed to work properly.

3. The Permittee shall only use dredged materials to cover the surface areas of restored DMDSs that are appropriate for mudflat creation (organic muds and fine-grained materials).

   Rationale: This measure is needed to ensure that appropriate materials are used for creating mudflat areas.

4. The Permittee shall comply with such terms and conditions of the Clean Water Act Section 401 Water Quality Certification (WQC) dated April 6, 2022, issued by the Alaska Department of Environmental Conservation as remain in force.

   Rationale: This condition is required to ensure compliance with the WQC associated with this Section 404 permit.

5. The permittee shall ensure that both access channels are fully reclaimed to pre-project bathymetry prior to the final shutdown of the project.

   Rationale: This condition is a minimization measure for reducing impacts to jurisdictional waters.

6. The Permittee shall comply with the following measures required by the U.S. Fish and Wildlife Service (USFWS) to minimize impacts to listed species and their critical habitat:

   a. A type III Ruffwater Screen Turbidity Curtain, or its functional equivalent, shall be deployed at all times during dredging operations as described in the Permittee's Plan of Operations.

   b. The Permittee shall have fuel spill and oil spill emergency response kits on hand and a self-certified Tier 1 Spill Prevention Control and Countermeasure Plan (SPCC) as required by 40 CFR Section 112.6. in place at all times during operations to minimize risks of petroleum spills that may impact marine mammals.

   c. A Polar Bear Avoidance and Interaction Plan shall be available before project operations begin. The plan shall be followed by the Permittee and their contractors to protect workers from potentially dangerous wildlife that may be encountered in the Bonanza Channel area. The plan shall address applicable federal, state, and local regulations related to wildlife interactions associated the Endangered Species Act and the Marine Mammal Protection

Act. The plan shall include discussion of field training requirements for project workers and their contractors, food and waste management, regulatory requirements, and species-specific avoidance and reporting procedures.

d. The project shall not generate hazardous waste during operations. A Waste Management Plan shall be developed and implemented to manage domestic waste generated by camp operations to minimize the potential for attracting wildlife, including marine mammals.

Rationale: These measures were required by USFWS through the ESA Sec. 7 consultation biological assessment to minimize impacts to listed species.

7. The Permittee shall comply with the following measures required by the National Marine Fisheries Service (NMFS) to minimize impacts to listed species and their critical habitat:

General Mitigation Measures

a. The Permittee shall inform the Corps and NMFS of impending in-water activities a minimum of one week prior to the onset of those activities.

b. If construction activities shall occur outside of the June 1st to November 1st time window specified in this permit, the Permittee shall provide prior notification to the Corps and NMFS to allow for re-initiation of consultation, if required.

c. Project-associated staff shall cut all materials that form closed loops (e.g., plastic packing bands, rubber bands, and all other loops) prior to proper disposal in a closed and secured trash bin. Trash bins shall be properly secured with locked or secured lids that cannot blow open, preventing trash from entering the environment, thus reducing the risk of entanglement in the event that waste enters marine waters.

d. Project-associated staff shall properly secure all ropes, nets, and other materials that could blow or wash overboard.

e. All trash shall be immediately placed in trash bins and bins shall be properly secured with locked or secured lids that cannot blow open and disperse trash into the environment.

Protected Species Observer (PSO)-related Measures

f. One or more PSOs shall perform PSO duties onsite throughout dredging operations.

g. For all dredging activity, PSOs shall monitor all marine waters within a 300-meter shutdown zone radius.

h. PSOs shall be positioned such that they shall collectively be able to monitor the entirety of each activity's shutdown zone, along with adjacent waters. The Permittee shall coordinate with NMFS on the placement of PSOs prior to commencing in-water work.

i. Prior to commencing dredging, PSOs shall scan waters within the 300-meter shutdown zone and confirm no listed species are within the shutdown zone for at least 30 minutes immediately prior to initiation of the in-water activity. If one or more listed species are observed within the shutdown zone, the in-water activity shall not begin until the listed species exit the shutdown zone of their own accord, or the shutdown zone has remained clear of listed species for 30 minutes immediately prior to dredging.

j. The on-duty PSOs shall continuously monitor the shutdown zone and adjacent waters during dredging operations for the presence of listed species.

k. In-water activities shall take place only:

- between civil dawn and civil dusk when PSOs can effectively monitor for the presence of marine mammals.
- during conditions with a Beaufort Sea State of 4 or less within the Bonanza Channel, and
- when the entire shutdown zone and adjacent waters are visible (e.g., monitoring effectiveness is not reduced due to rain, fog, snow, volcanic ash).

l. If visibility degrades to where the PSO cannot ensure that the shutdown zone remains devoid of listed species during dredging, the crew shall cease in-water work until the entire shutdown zone is visible and the PSO has indicated that the zone has remained devoid of listed species for 30 minutes.

m. The PSO shall order the dredging activities to immediately cease if one or more listed species has entered, or appears likely to enter, the associated shutdown zone.

n. If dredging activities are shut down for less than 30 minutes due to the

presence of listed species in the shutdown zone, dredging may commence when the PSO provides assurance that listed species were observed exiting the shutdown zone. Otherwise, the activities may only commence after the PSO provides assurance that listed species have not been seen in the shutdown zone for 30 minutes.

o. Following a lapse of dredging activities of more than 30 minutes, the PSO shall authorize resumption of activities only after the PSO provides assurance that listed species have not been present in the shutdown zone for at least 30 minutes immediately prior to resumption of operations.

p. If a listed species is observed within a shutdown zone or is otherwise harassed, harmed, injured, or disturbed, PSOs shall immediately report that occurrence to NMFS.

Protected Species Observer Requirements

q. PSOs must be independent from dredging operations, have no other assigned tasks during monitoring periods, and meet the conditions listed below.

r. The Permittee shall provide resumes of PSO candidates to the NMFS consultation biologist or Section 7 coordinator for approval at least one week prior to in-water work. NMFS will provide a brief explanation of lack of approval in instances where an individual is not approved.

s. At least one PSO shall have prior experience performing the duties of a PSO during construction activity. Other PSOs may substitute other relevant experience, education (degree in biological science or related field), or training.

t. At least one PSO shall complete PSO training prior to deployment. The training shall include:

- field identification of marine mammals and marine mammal behavior,
- ecological information on Alaska's marine mammals and specifics on the ecology and management concerns of those marine mammals,
- ESA and MMPA regulations,
- mitigation measures outlined in the biological assessment and NMFS concurrence letter,
- proper equipment use,
- methodologies in marine mammal observation and data recording and proper reporting protocols, and

- an overview of PSO roles and responsibilities.

u. PSOs shall:

- have vision correctable to 20-20,
- have the ability to effectively communicate orally, by radio and in person, with project personnel,
- have prior experience collecting field observations and recording field data accurately and in accordance with project protocols,
- be able to identify to species all marine mammals that are endemic to the action area,
- be able to record marine mammal behavior, and
- have technical writing skills sufficient to create understandable reports of observations.

v. PSOs shall work in shifts lasting no longer than 4 hours with at least a 1-hour break from monitoring duties between shifts. PSOs shall not perform PSO duties for more than 12 hours in a 24-hour period.

w. PSOs shall have the ability to effectively communicate orally, by radio and in person, with project personnel to provide real-time information on listed species.

x. PSOs shall have the ability and authority to order appropriate mitigation response, including shutdowns, to avoid takes of all listed species.

y. The PSOs shall have the following equipment to address their duties:

a. tools which enable them to accurately determine the position of a marine mammal in relationship to the shutdown zone,
b. two-way radio communication, or equivalent, with onsite project manager,
c. tide tables for the project area,
d. watch or chronometer,
e. binoculars (7x50 or higher magnification) with built-in rangefinder or reticles (rangefinder may be provided separately),
f. global positioning system,
g. a legible copy of this DA permit and all appendices, and
h. legible and fillable observation record form allowing for required PSO data entry.

z. Prior to commencing in-water work or at changes in watch, PSOs shall establish a point of contact with the construction crew. The PSO shall brief the point of contact as to the shutdown procedures if listed species are

observed likely to enter or within the shutdown zone and shall request that the point of contact instruct the crew to notify the PSO when a marine mammal is observed. If the point of contact goes "off shift" and delegates his duties, the PSO must be informed and brief the new point of contact.

General Data Collection and Reporting

aa. PSOs shall record observations on data forms or into electronic data sheets.

bb. The Permittee shall ensure that PSO data will be submitted electronically in a format that can be queried such as a spreadsheet or database (i.e. digital images of data sheets are not sufficient).

cc. PSOs shall record the following:

- the date, shift start time, shift stop time, and PSO identifier,
- date and time of each reportable event (e.g., a marine mammal observation, operation shutdown, reason for operation shutdown, change in weather),
- weather parameters (e.g., percent cloud cover, percent glare, visibility) and sea state of the Bonanza Channel where the Beaufort Scale wave characteristics shall be used to determine sea-state (https://www.weather.gov/mfl/beaufort),
- species, numbers, and, if possible, sex and age class of observed marine mammals, along with the date, time, and location of the observation,
- the predominant sound-producing activities occurring during each marine mammal observation,
- marine mammal behavior patterns observed, including bearing and direction of travel,
- behavioral reactions of marine mammals just prior to, or during sound producing activities,
- initial, closest, and last location of marine mammals, including distance from observer to the marine mammal, and minimum distance from the predominant sound-producing activity or activities to marine mammals,
- whether the presence of marine mammals necessitated the implementation of mitigation measures to avoid acoustic impact, and the duration of time that normal operations were affected by the presence of marine mammals, and
- geographic coordinates for the observed animals, with the position recorded by using the most precise coordinates practicable (coordinates shall be recorded in decimal degrees, or similar standard and defined coordinate system).

Unauthorized Take

dd. If a listed marine mammal is determined by the PSO to have been disturbed, harassed, harmed, injured, or killed (e.g., a listed marine mammal(s) is observed entering a shutdown zone before operations can be shut down, or is injured or killed as a direct or indirect result of this action), the PSO shall report the incident to NMFS within one business day, with information submitted to (b) (6) @noaa.gov. These PSO records shall include all information to be provided in the final report (see measures under Final Report heading below):

- number of animals of each threatened and endangered species affected,
- the date, time, and location of each event (provide geographic coordinates),
- description of the event,
- the time the animal(s) was first observed or entered the shutdown zone, and, if known, the time the animal was last seen or exited the zone, and the fate of the animal,
- mitigation measures implemented prior to and after the animal was taken; and if a vessel struck a marine mammal, the contact information for the PSO on duty, or the contact information for the individual piloting the vessel if there was no PSO on duty, and
- Photographs or video footage of the animal(s) (if available).

Stranded, Injured, Sick or Dead Marine Mammal (not associated with the project)

ee. If PSOs observe an injured, sick, or dead marine mammal (i.e., stranded marine mammal), they shall notify the Alaska Marine Mammal Stranding Hotline at 877-925- 7773. The PSOs shall submit photos and available data to aid NMFS in determining how to respond to the stranded animal. If possible, data submitted to NMFS in response to stranded marine mammals shall include date/time, location of stranded marine mammal, species and number of stranded marine mammals, description of the stranded marine mammal's condition, event type (e.g., entanglement, dead, floating), and behavior of live- stranded marine mammals.

Illegal Activities

ff. If PSOs observe marine mammals being disturbed, harassed, harmed, injured, or killed (e.g., feeding or unauthorized harassment), these activities shall be reported to NMFS Alaska Region Office of Law Enforcement at (1-800-853-1964).

gg. Data submitted to NMFS shall include date/time, location, description of the event, and any photos or videos taken.

Monthly Report

hh. Submit interim monthly PSO monitoring reports, including data sheets. These reports shall include a summary of marine mammal species and behavioral observations, shutdowns or delays, and work completed.

ii. Monthly reports shall be submitted to (b) (6) @noaa.gov by the 15th day of the month following the reporting period. For example, the report for activities conducted in June 2023 shall be submitted by July 15th, 2023.

Final Report

jj. A final report shall be submitted to NMFS within 90 calendar days of the completion of the project summarizing the data recorded and submitted to (b) (6) @noaa.gov. The report shall summarize all in-water activities associated with the proposed action, and results of PSO monitoring conducted during the in-water project activities.

kk. The final report shall include:

- summaries of monitoring efforts including total hours, and marine mammal distribution through the study period, accounting for sea state and other factors that affect visibility and detectability of marine mammals;
- analyses on the effects from various factors that may have influenced detectability of marine mammals (e.g., sea state, number of observers, fog, glare, and other factors as determined by the PSOs);
- species composition, occurrence, and distribution of marine mammal observations, including date, water depth, numbers, age/size/gender categories (if determinable), group sizes, and ice cover;
- number of marine mammals observed (by species) during periods with and without project activities (and other variables that could affect detectability);
- initial, closest, and last marine mammal observation distances versus project activity at time of observation;
- observed marine mammal behaviors and movement types versus project activity at time of observation;
- numbers of marine mammal observations/individuals seen versus project activity at time of observation

- distribution of marine mammals around the action area versus project activity at time of observation.
- digital, query-able documents containing PSO observations and records, and digital, query-able reports.

Rationale: These measures were required by the NMFS ESA Sec. 7 under an informal consultation concurrence letter to minimize impacts to listed species.

8. To ensure safety for trail users along the Iditarod National Historic Trail, at the end of each mining season and prior to shutdown of the man camp for the winter, the Permittee shall contact the Iditarod National Historic Trail Coordinator ((b) (6) , BLM Anchorage Field Office,(b) (6) to provide location and overwintered equipment information for the man camp and coordinate on ways to maximize safety for trail users during the winter months.

   Rationale: This condition is needed to minimize safety issues for trail users near the man camp.

9. The Permittee shall comply with the following measures required by the National Marine Fisheries Service to minimize impacts to Essential Fish Habitat:

   a. Maintain drainage patterns of the surrounding wetlands and mud flats in their natural state.

   b. The dredge material should be graded each work shift to prevent the creation of pools on the fill surface that could trap out-migrating salmon and other marine fishes between high tides.

   c. Maintain the sediment curtains in place until the suspended sediment concentrations within the sediment curtain are within 5% or less of the suspended sediment outside of the sediment curtain.

   Rationale: The special condition is needed to address concerns by NMFS regarding EFH.

10. At the completion of the project, the Permittee shall restore the man camp area to its original condition. No unsecured trash or equipment shall be left onsite within the man camp or in any part of the project vicinity at the end of each mining season. No trash or equipment will be left on the site at the end of the final mining season. The permittee shall provide the Corps with notification in writing or via email when the project has been completed. Photo documentation of post-project site conditions shall be provided with this notification.

Rationale: This condition is needed to ensure the site is restored to its approximate original condition.

11. No trespassing is permitted on AMNWR lands, Indian allotments, private lands, or any other properties not included within the Permittee's mining claims. The boundaries of the State-owned parcel used for access by the Permittee shall be clearly marked to prevent accidental intrusion by the Permittee's personnel or equipment.

    Rationale: This condition is needed to identify project limits and minimize potential for trespassing.

12. The Permittee shall maintain a copy of the Department of the Army permit on-site at times.

    Rationale: This condition is needed to assure awareness of compliance responsibilities and as a ready reference.

13. Within 60 days from the end of each mining season, the Permittee shall submit an annual report to the Corps, with copies to NMFS, USFWS, Alaska Department of Environmental Conservation, and ADF&G that provides documentation of all dredging operations completed from the preceding mining season and all monitoring data collected under the Permittee's Reclamation Plan relevant to the dredged/mined areas. This includes the following components:

    a. Summary of dredging actions completed during the mining season just completed, including any variances from the operations plan and any noteworthy events or difficulties that occurred

    b. Confirmation of operations scheduled for the next mining season

    c. Bathymetric Surveying and Monitoring

    d. SAV and Benthic Macroinvertebrate Monitoring

    e. Water Quality, Meteorology, and Visual Monitoring

    f. Bird Monitoring

    g. Fish Monitoring

    h. Wildlife Monitoring

i. Sediment Testing

j. Recommended adaptive management measures to address any performance standards that indicate additional actions are needed.

A typical monitoring cycle each season shall consist of recording baseline conditions for referencing purposes prior to the start of dredging and collection of data during, and at the end of, the dredging season as appropriate for the mining footprint to be dredged. During successive mining seasons, the Permittee shall also review site conditions for the previously dredged operational footprint along with the footprint for the current season. Thus, each mining season will require monitoring on successively larger areas as the mined footprint cumulatively increases each year. The final monitoring report will be submitted in the Fall of Year seven, two years after the fifth mining season for the full-scale mining channel, to document conditions at the end of the second summer season after project completion.

Rationale: The purpose of this condition is to monitor the status of the project as mining progresses and provide a means of addressing project issues as they arise.

14. The Permittee shall contact the Village of Solomon Tribal Council prior to the start of dredging activities each year and provide them with a point of contact (name, email address, and phone number) that can be contacted as needed to resolve any issues affecting tribal activities that may occur during operations. The Permittee shall notify the Corps regarding any contacts with the Council.

Rationale: This condition provides a means for the Village of Solomon to contact the Permittee in the event an issue comes up that affects the Tribe.

15. To minimize noise levels from powered equipment used on-site, the Permittee shall ensure that all equipment that is designed for the use of a noise muffler by the equipment's manufacturer is equipped with a muffling device during use on-site.

Rationale: This condition is needed to minimize noise effects during equipment operation.

12.0 Findings and Determinations

12.1 Section 176(c) of the Clean Air Act General Conformity Rule Review

The proposed permit action has been analyzed for conformity applicability

pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined that the activities proposed under this permit will not exceed *de minimis* levels of direct or indirect emissions of a criteria pollutant or its precursors and are exempted by 40 CFR Part 93.153. Any later indirect emissions are generally not within the Corps' continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons a conformity determination is not required for this permit action.

12.2 Presidential Executive Orders (EO)

12.2.1 EO 11988, Floodplain Management

This action is not located in a floodplain.

12.2.2 EO 12898 and EO 14008, Environmental Justice and EO 14096

12.2.2.1 Provide details regarding screening and mapping tools and available information utilized during the review.

POD conducted an environmental justice analysis of the LEDPA, and the results are summarized below.

12.2.2.2 Have disadvantaged communities been identified within the vicinity of the proposed project? Yes

Per the EJScreen Report dated February 13, 2024 (Appendix 3), POD determined that minority and low-income populations are found in the general project area, which includes Nome, the nearest year-round community in the area, and the Village of Solomon, which has a seasonal population but currently does not have a year-round population. No year-round residents are known to be located near the project, though the EJScreen report indicates one person lives within 5 miles of the project site..

12.2.2.3 What meaningful involvement efforts did the Corps take for potentially affected disadvantaged communities and other interested individuals, communities, and organizations?

POD reviewed POA's consultation meetings with Tribes and Native Corporations during POA's review of the permit application. Input was also sought through public noticing and requests for public input. POD participated in a government-to-government consultation with the Village of Solomon to receive their input on the project.

12.2.2.4 Describe if resource impacts are adverse.

Potential adverse impacts related to subsistence activities, aesthetics, noise, and increased activity levels in the project area were identified. However, these impacts would be short-term in duration, generally lasting during a series of incremental summer operational periods within the channel. Terrestrial areas would not be directly affected. No activities would take place during winter sea ice conditions. Although some areas would not be accessible during dredging operations, the project site is in an expansive, mostly unpopulated area with widespread opportunities for fishing, hunting, and foraging activities in areas other than the project site.

Do the impacts fall disproportionately on disadvantaged communities? No

Any dredging activities such as this one, occurring along this regional-scale estuary, and regardless of the magnitude of the operation would affect minority populations because the local demographics are primarily non-white. However, there are no alternative locations where this project could be reasonably implemented that would not have an effect on minority populations.

12.2.2.5 Based upon the discussion and analysis in the preceding sections, the Corps has determined that portions of the proposed project within our federal control and responsibility would not result in have a disproportionately high and adverse human health or environmental effect on disadvantaged communities.

12.2.3 EO 13112, Invasive Species, as amended by EO 13751

The applicant has prepared an invasive species plan to minimize the potential for the introduction or spread of invasive species during implementation of this project.

12.2.4 EO 13212 and EO 13302, Energy Supply and Availability

The proposal is not one that will increase the production, transmission, or conservation of energy, or strengthen pipeline safety.

12.3 Findings of No Significant Impact

Having reviewed the information provided by the applicant and all interested parties and an assessment of the environmental impacts, I find that this permit action will not have a significant impact on the quality of the human environment. Therefore, an environmental impact statement will not be required.

12.4 Compliance with the Section 404(b)(1) Guidelines

The proposed discharge complies with the Guidelines, with the inclusion of the appropriate and practicable special conditions to minimize pollution or adverse effects to the affected ecosystem.

12.5 Public interest determination

Having reviewed and considered the information above, I find that the proposed project is not contrary to the public interest. The permit will be issued with appropriate conditions included to ensure minimal effects, ensure the authorized activity is not contrary to the public interest and/or ensure compliance of the activity with any of the authorities identified in Section 10.

PREPARED BY:

(b) (6)

Date: 14 March 2024

(b) (6)
Senior Project Manager, Pacific Ocean Division

APPROVED BY:

GIBBS.KIRK.ELLIS.1142352369 Digitally signed by GIBBS.KIRK.ELLIS.1142352369 Date: 2024.03.19 12:48:53 -10'00'

Date: 3/19/24

Kirk E. Gibbs
Brigadier General, USA
Commander, Pacific Ocean Division
U.S. Army Corps of Engineers

Appendices

1 – Alternatives Analysis Figures
2 – Government-to-Government Consultation by POD with Village of Solomon
3 – EJSCREEN Report

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Personal Communications

James Buchal, March 8, 2024. Email with attachments providing an amendment to IPOP's 2020 narrative to revise project data to match LEDPA description (On-Site Alternative 2a).

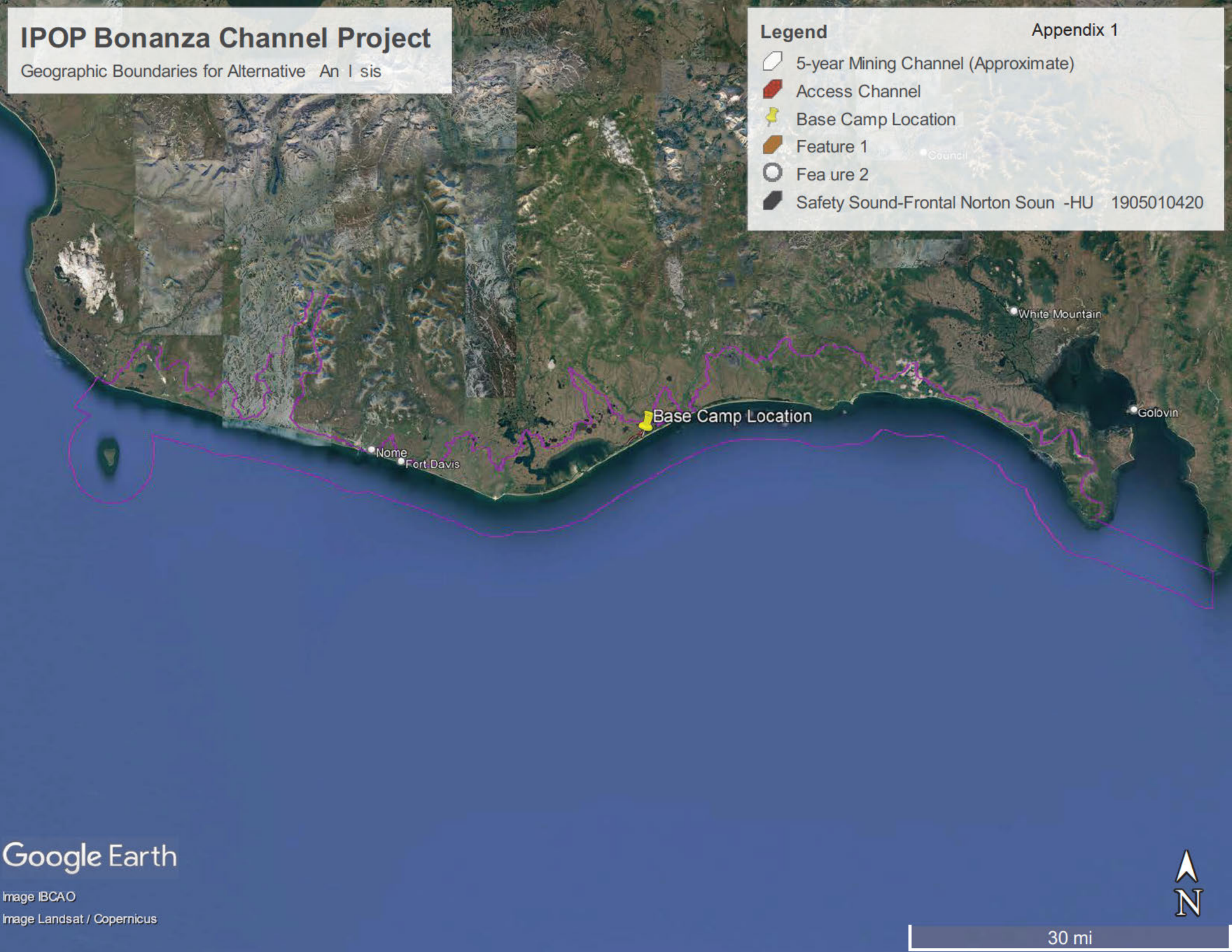
IPOP Bonanza Channel Project

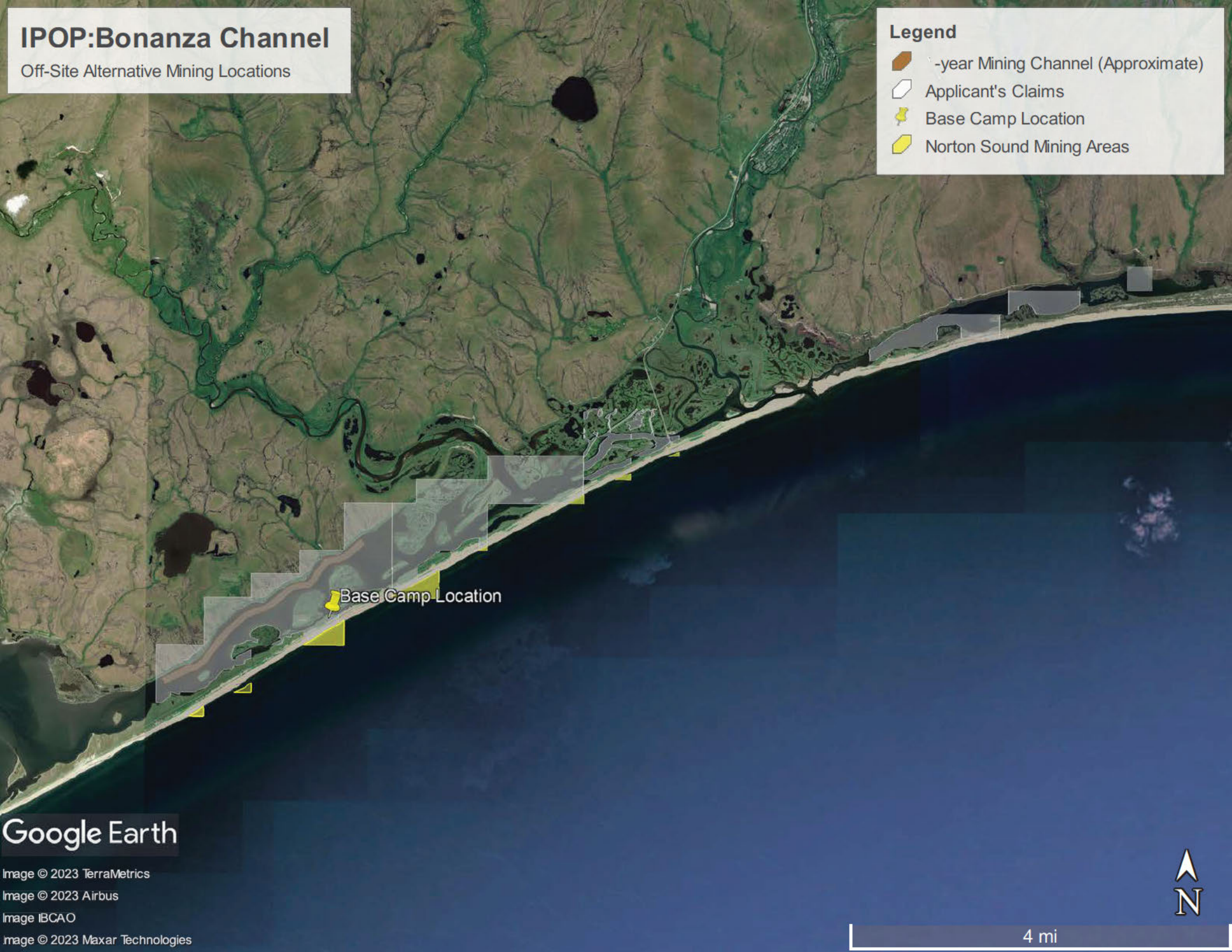
Geographic Boundaries for Alternative An l sis

Appendix 1

Legend

- 5-year Mining Channel (Approximate)
- Access Channel
- Base Camp Location
- Feature 1
- Fea ure 2
- Safety Sound-Frontal Norton Soun -HU 1905010420




IPOP:Bonanza Channel
Off-Site Alternative Mining Locations
Legend
-year Mining Channel (Approximate)
Applicant's Claims
Base Camp Location
Norton Sound Mining Areas
Base Camp Location
Google Earth
Image © 2023 TerraMetrics
Image © 2023 Airbus
Image IBCAO
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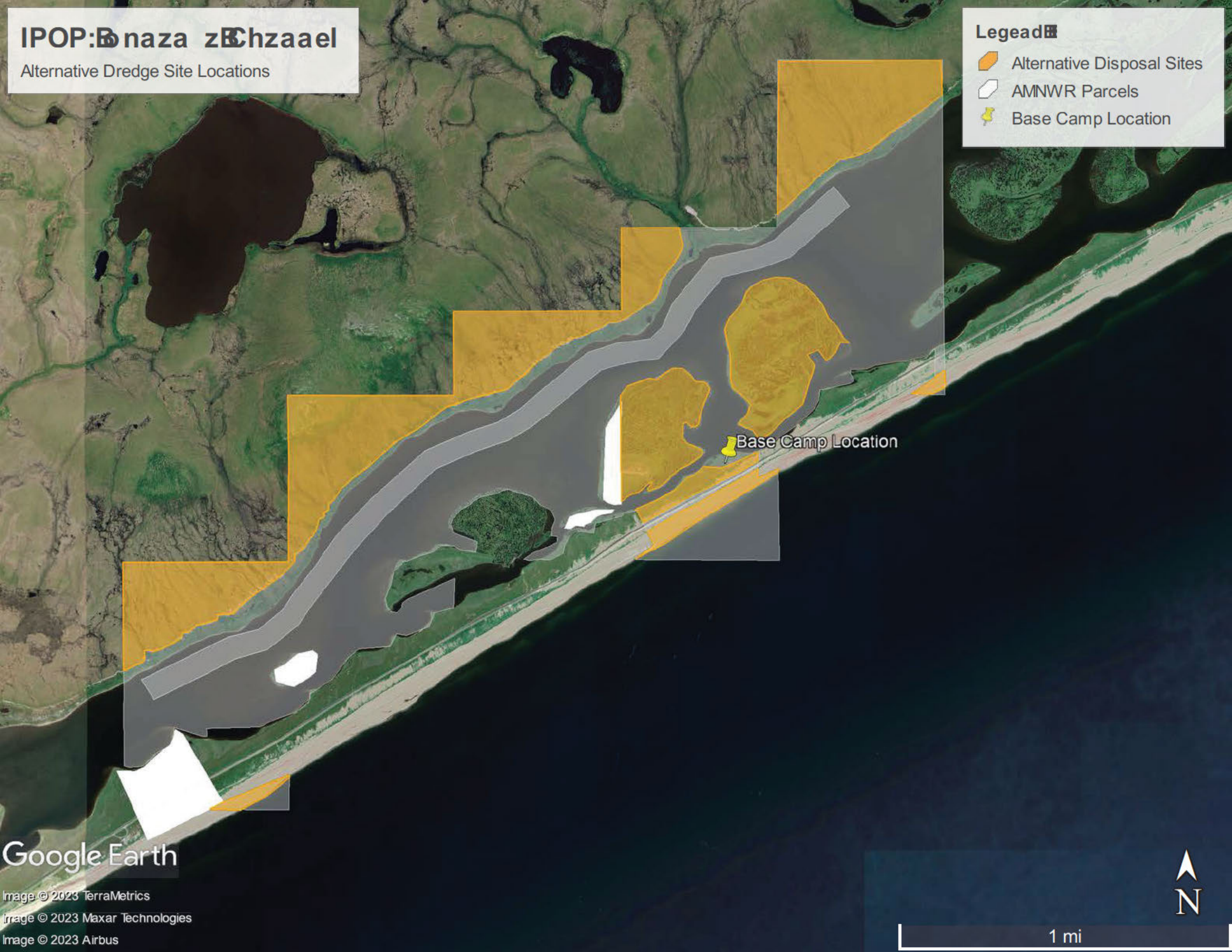
IPOP:Bonaza zBChzaael
Alternative Dredge Site Locations
Legead
Alternative Disposal Sites
AMNWR Parcels
Base Camp Location
Base Camp Location
Google Earth
Image © 2023 TerraMetrics
Image © 2023 Maxar Technologies
Image © 2023 Airbus
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Memorandum for Record

Date: 12 Jan 2024
Time: 1700 -1930
Location: Village of Solomon Tribal Office, Nome, AK
Subject: Government-to-government consultation meeting between the U.S. Army Corps of Engineers (USACE), Pacific Ocean Division (POD) and the Village of Solomon (VoS) regarding the Bonanza Channel Placer Project, Nome, Alaska.
Purpose: To consult on, and to take into consideration, the potential effects of the proposed project on protected Tribal resources, Tribal rights (including treaty rights) and lands, and cultural and natural resources important to the Tribe.

Background: The Village of Solomon, a federally recognized Tribe, formally requested government-to-government consultation with Brigadier General (BG) Kirk Gibbs, Commander of the USACE POD via email 25 Aug 2023, regarding the permit application for the Bonanza Channel Placer Mining Project requested by IPOP, Inc. BG Gibbs acknowledged receipt by email on 26 Aug 2023. USACE staff and VoS tribal officials attempted to hold a meeting on 14 Nov 2023, but due to inclement weather and poor runway conditions in Nome, Alaska USACE staff were unable to attend the scheduled meeting. A rescheduled, in-person meeting was held on 12 Jan 2024.

Attendees (* denotes virtual attendance):

USACE:

BG Kirk E. Gibbs, POD Commander
1LT (b) (6), Aid-de-Camp
(b) (6), Regulatory and Environmental Program Manager
(b) (6), Deputy Director Public Affairs
(b) (6), Sr. Regulatory Project Manager
(b) (6), Acting Director, Tribal Nations Technical Center of Expertise

VoS:

President (b) (6)
Vice President (b) (6)
Ms. (b) (6), Council Member
Mrs. (b) (6), Council Member
Ms. (b) (6), Council Member
Ms. (b) (6), Council Member
*Ms. (b) (6) Council Member
(b) (6), Native Village of Kawerak Staff Attorney

Meeting Summary:

The meeting opened with comments from President (b) (6) and with introductions. President (b) (6) thanked USACE attendees for being willing to meet in person to discuss the project and for their efforts to make the meeting despite the tough travel conditions. President (b) (6) requested that any information of a sensitive nature regarding critical cultural resources be exempt from FOIA and redacted from this MFR. BG Gibbs also provided opening remarks and thanked the VoS tribal officials for hosting the meeting. BG Gibbs emphasized the importance of the special nature of the government-to-government relationship between Federally recognized tribes and the Federal Government, and that USACE is committed to uphold its Federal Trust

responsibility. BG Gibbs also stated that POD has not made a decision on the permit yet and would not do so without taking into consideration the information gained in the meeting.

Ms. (b) (6), Council Member and VoS Environmental Department Coordinator also provided opening remarks and a PowerPoint presentation. Ms. (b) (6) explained that the Applicant, IPOP, Inc., had submitted FOIA requests to the Tribe's Environmental Department (ED) and that the VoS ED has been working to build baseline data to respond to requests for information related to potential mining operations. She noted that the Applicant stated that the Tribe doesn't have healthy enough habitat for subsistence activities. The Tribe has gathered information regarding this permit application to refute these claims. Ms. (b) (6) indicated that because it was difficult for the Tribe to gather enough data on their own to have a robust baseline dataset for the lands and resources on which they subsist, they partnered with USACE, Alaska District, for a study under the Planning Assistance to States (PAS) Program. Ms. (b) (6) stated that the Tribe is aware of the Applicant's claim of bias by USACE, Alaska District towards the VoS. She also stated that the Tribe believes the study was comprehensive and shows evidence that the area contains key subsistence species and resources.

The PowerPoint presented by Ms. (b) (6) provided information on VoS history, a summary of the public comments on the project, an explanation of the Tribe's views on their perception of the Applicant's opinions about them as an entity, and information on their uses of the landscape for subsistence purposes, youth camps, and teaching about cultural continuity. Below is a synopsis of key points from the presentation:

- The Tribe indicated they have never had a meeting with the Applicant and feels this failure by the Applicant to meet with them face-to-face is disrespectful.
    - Ms. (b) (6) stated that she had met with IPOP Inc.'s consultant and permit coordinator (b) (6) and his field staff but had never received a phone or email response from IPOP Inc. leadership to her requests for a meeting. She believes this is because the company was angry that the Tribe published a notice of their accusations of trespass.
- The Tribe expressed that they were upset with what they feel are attacks on their way of life by the Applicant and their stakeholders based on comments from the public review.
- The PowerPoint showed a list of the species found during the PAS study investigation. The Tribe indicated that many of these species are important for subsistence, and bring many birds to the area.
    - The Tribe noted that the birds bring birdwatchers that regularly rent their bed and breakfast property.
- The Tribe noted that the Applicant feels that meetings between the Alaska District and the Tribe show clear bias. USACE staff asked how many times they had met during the permit review and PAS study and they indicated they had had 3-4 formal meetings and a number of technical meetings during the development of the PAS study. The Tribe did not feel that these meetings were excessive.
- The Tribe expressed a belief that the Applicant claims the Tribe is focusing their efforts on shutting down mining in the region, but the Tribe explained that their data gathering

through various funding streams (EPA Grants, PAS, NOAA Grant) is being conducted with a goal of better understanding the baseline conditions of the watershed to be able to better inform habitat improvement and water quality projects. The Tribe also indicated they are working toward identifying cultural resources to better understand how to protect the landscape.

Following the presentation, VoS representatives asked for an explanation of the permit appeal process. BG Gibbs explained the process and the steps for an applicant to move through an appeal.

Mr. (b) (6) commented to the Tribe that the act of engaging in formal government-to-government consultation is not demonstrating a bias toward a Tribe, but rather is required as part of our Federal Indian Trust Responsibility to federally recognized Tribes. He also stated that the Corps recognizes its fiduciary relationship with Federally recognized Tribes, and its legal obligation to uphold this Trust Responsibility. He noted that if the Tribe desires consultation with the Federal Government, they have a right to request it.

USACE staff noted that the appeal process has been terminated and a new review of the permit application is currently being conducted by POD, but that new information can be submitted by the Tribe. There was discussion about what information was already included in the administrative record (AR), and what was not included to this point. The Corps indicated that the PAS study had not been completed when the original permit decision by Alaska District was made and was not included in the AR, but that it could be submitted by the Tribe. (b) (6) indicated that the Tribe planned to submit the study.

The Tribe expressed a concern for the safety of their people, particularly women, with the influx of miners into the area, and made mention of the Missing and Murdered Indigenous Women crisis.

The Tribe believes that the scale of this proposed mining operation is larger than the typical suction mining that occurs in the region. Currently there is suction dredging that occurs with divers with wet suits, but no large scale cutterhead dredging that is completely mechanical. They stated a concern that the mining will occur 24 hours a day and the noise will disturb wildlife and the people using the area.

VoS representatives engaged the Corps in a discussion of subsistence and other uses in the area. Key points are summarized here:

- During the April to November timeframe, the Tribe believes ~3000 people use the area for subsistence activities.
- Vice President (b) (6) noted that he can trace his lineage back seven generations in the area of the Village of Solomon and that they have a long connection to the land.
- In addition to people from the VoS, many other Alaska Natives from other Tribes utilize the area for subsistence, and the Tribe feels those uses are not being captured when considering the volume of subsistence activities on their lands.

    - The Tribe specifically allows these uses on the 67,000 acres owned by the Solomon Native Corporation because these other Alaska Natives would have nowhere else to forage/hunt/fish.
- Tribal representatives estimated that about 70% of their food is subsistence based.
- The Tribe is investing resources in subsistence including a grant for $650,000 to build a game processing facility in Nome, and another grant to build a small power grid to power facilities at the Village without need for a diesel generator. The stated goal of the Tribe is to return to the Village of Solomon, which is currently only seasonally occupied.
- The Tribe holds an annual youth subsistence camp at the village every year. They have 197 enrolled members and are very concerned about cultural loss. The camp focuses on youth to help with knowledge transmission and cultural continuity.
    - The campers swim and fish at a bridge where the barge from the proposed mining operation will travel and they are concerned about impacts to the camp and to recreation.

Following the discussion, BG Gibbs, Ms. (b) (6), Mrs. (b) (6), and President (b) (6) provided closing comments. (b) (6), reporter for the Nome Nugget, attended the closing comments.

BG Gibbs expressed his gratitude for the hospitality and for the opportunity to meet in person and learn about the culture of the VoS people. He relayed to the Tribe that he takes this consultation and the information the Tribe provided seriously, and that he will keep the Tribe updated on the process and any decisions made regarding the permit.

President (b) (6) thanked us for our willingness to consult and our commitment to government-to-government consultation. She also wanted to express that they are the Tribe that is consulting because the project will impact their subsistence lands, but that they are also preserving these uses for other Native Alaskans in the region.

Ms. (b) (6) noted that the process has been challenging. She expressed gratitude for the meeting and stated that the Tribe wants a seat at the table and to be heard. She was grateful to have the Corps in Nome to learn about the VoS and the potential impact of mining operations in the area.

Mrs. (b) (6) asked that we please think of the next generations (i.e my grandson, his child and his grandchildren and great grandchildren). We are preserving the land for them and teaching them the way our ancestors taught us.

Appendix 3

EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

Nome Census Area, AK

5 miles Ring around the Area
Population: 1
Area in square miles: 134.97

A3 Landscape

COMMUNITY INFORMATION

Low income: 65 percent	People of color: 93 percent	Less than high school education: 16 percent	Limited English households: 1 percent
Unemployment: 25 percent	Persons with disabilities: 11 percent	Male: 55 percent	Female: 45 percent
82 years Average life expectancy	$29,788 Per capita income	Number of households: 5	Owner occupied: 72 percent

BREAKDOWN BY RACE

White: 7%	Black: 0%	American Indian: 91%	Asian: 0%
Hawaiian/Pacific Islander: 0%	Other race: 0%	Two or more races: 2%	Hispanic: 0%

BREAKDOWN BY AGE

LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
No language data available.	

From Ages 1 to 4	10%
From Ages 1 to 18	37%
From Ages 18 and up	63%
From Ages 65 and up	8%

LIMITED ENGLISH SPEAKING BREAKDOWN

Speak Spanish	0%
Speak Other Indo-European Languages	0%
Speak Asian-Pacific Island Languages	0%
Speak Other Languages	100%

Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race.
Source: U.S. Census Bureau, American Community Survey (ACS) 2017-2021. Life expectancy data comes from the Centers for Disease Control.

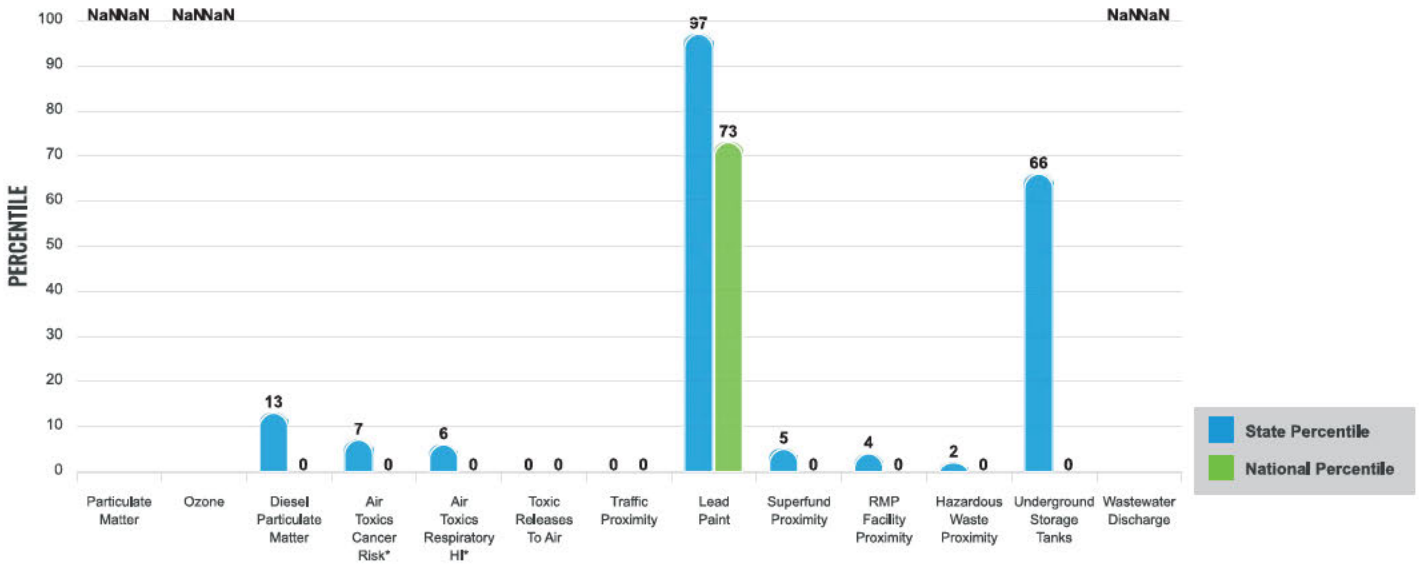
Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

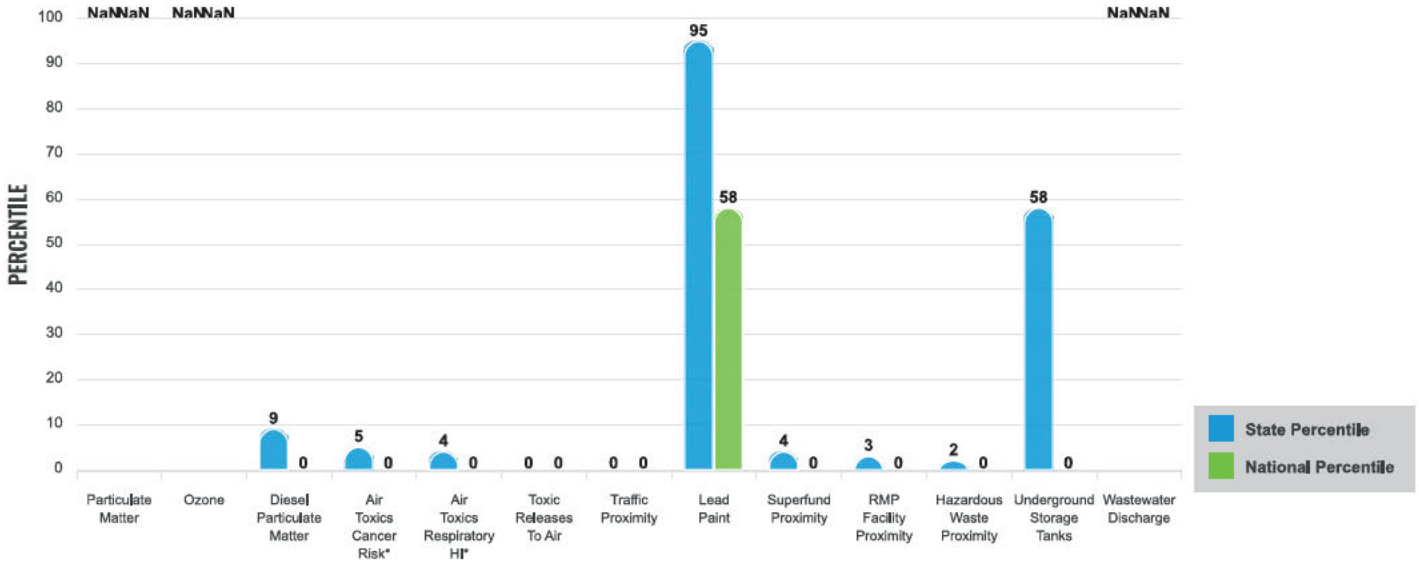
EJ INDEXES FOR THE SELECTED LOCATION



SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



These percentiles provide perspective on how the selected block group or buffer area compares to the entire state or nation.

Report for 5 miles Ring around the Area

EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
POLLUTION AND SOURCES					
Particulate Matter ($\mu g/m^3$)	N/A	N/A	N/A	8.08	N/A
Ozone (ppb)	N/A	N/A	N/A	61.6	N/A
Diesel Particulate Matter ($\mu g/m^3$)	0.000196	0.22	4	0.261	0
Air Toxics Cancer Risk* (lifetime risk per million)	6	25	2	25	0
Air Toxics Respiratory HI*	0.06	0.33	2	0.31	0
Toxic Releases to Air	0	76	0	4,600	0
Traffic Proximity (daily traffic count/distance to road)	0.001	100	0	210	0
Lead Paint (% Pre-1960 Housing)	0.073	0.087	65	0.3	30
Superfund Proximity (site count/km distance)	0.0013	0.075	2	0.13	0
RMP Facility Proximity (facility count/km distance)	0.0015	0.36	2	0.43	0
Hazardous Waste Proximity (facility count/km distance)	0.0014	0.18	1	1.9	0
Underground Storage Tanks (count/km^2)	0.00029	3	23	3.9	0
Wastewater Discharge (toxicity-weighted concentration/m distance)	N/A	N/A	N/A	22	N/A
SOCIOECONOMIC INDICATORS					
Demographic Index	79%	33%	97	35%	95
Supplemental Demographic Index	24%	12%	93	14%	87
People of Color	93%	42%	96	39%	91
Low Income	65%	25%	96	31%	91
Unemployment Rate	26%	7%	97	6%	97
Limited English Speaking Households	1%	2%	63	5%	57
Less Than High School Education	16%	7%	89	12%	74
Under Age 5	10%	6%	81	6%	84
Over Age 64	8%	14%	22	17%	18
Low Life Expectancy	13%	19%	3	20%	5

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

Sites reporting to EPA within defined area:

Superfund 0
Hazardous Waste, Treatment, Storage, and Disposal Facilities 0

Other community features within defined area:

Schools 0
Hospitals 0

Water Dischargers	11
Air Pollution	0
Brownfields	0
Toxic Release Inventory	0

Places of Worship	0

Other environmental data:

Air Non-attainment	No
Impaired Waters	No

Selected location contains American Indian Reservation Lands*	Yes
Selected location contains a "Justice40 (CEJST)" disadvantaged community	Yes
Selected location contains an EPA IRA disadvantaged community	Yes

Report for 5 miles Ring around the Area

EJScreen Environmental and Socioeconomic Indicators Data

HEALTH INDICATORS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Low Life Expectancy	13%	19%	3	20%	4
Heart Disease	8.2	5.1	96	6.1	86
Asthma	12.9	9.7	97	10	95
Cancer	4.4	5.3	16	6.1	16
Persons with Disabilities	10.3%	12.9%	28	13.4%	34

CLIMATE INDICATORS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Flood Risk	0%	18%	0	12%	0
Wildfire Risk	0%	0%	0	14%	0

CRITICAL SERVICE GAPS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Broadband Internet	28%	13%	88	14%	87
Lack of Health Insurance	18%	13%	85	9%	90
Housing Burden	No	N/A	N/A	N/A	N/A
Transportation Access	No	N/A	N/A	N/A	N/A
Food Desert	Yes	N/A	N/A	N/A	N/A

Report for 5 miles Ring around the Area

www.epa.gov/ejscreen