DEPARTMENT OF THE ARMY
ALASKA DISTRICT, U.S. ARMY CORPS OF ENGINEERS
REGULATORY DIVISION
2175 UNIVERSITY AVENUE SOUTH, SUITE 201E
FAIRBANKS, ALASKA 99709

GENERAL PERMIT AGENCY COORDINATION (GPAC)

We are requesting your comments on the proposed project within ten (10) calendar days from the date of this notification. If additional time is needed to provide substantive, site-specific comments, contact us and we will wait an additional 15 calendar days before making a permit decision. Further information concerning the general permit can be found at our web site: www.poa.usace.army.mil/Missions/Regulatory.

Comments on the proposal may be emailed to Tiffany.D.Kwakwa@usace.army.mil, mailed to the address above, or you may call us at (907) 474-2167.

RELEASER'S SIGNATURE: _____

Tiffany Kwakwa
Project Manager

Corps of Engineers Identification: POA-2018-00123, Safety Sound/Bonanza Channel; APMA 2875

General Permit: Nationwide Permit (NWP) #6 – Survey Activities

Date of GPAC: July 19, 2021

Comment Period Closing Date: July 29, 2021

Project Location: The project site is located within Section 24, T. 11 S., R. 30 W., Kateel River Meridian (DKSN 32 and 34); and within Sections 18 and 19, T. 11 S., R. 29 W, Kateel River Meridian (DKSN 39; DKSN 36, 37, and 35); generally between approximately Latitude 64.521014º N., Longitude 164.573856º W. and approximately Latitude 64.524006º N., Longitude 164.53425º W.; approximately 30 miles east of Nome, Alaska.

The location is the same as the verification for NWP #6 issued on May 3, 2021 (POA-2018-00123), enclosed.

Project Description: The proposed activities consist of changes to previously authorized surveying activities under Nationwide Permit #6 (issued May 3, 2021); the changes require a new verification. The primary changes are to the core diameter and to conduct work year-round, resulting in effects not previously assessed.

The applicant is proposing to conduct work in Section 10 waters (the Bonanza Channel), below the Mean High Water Line, consisting of drilling a total of 502 core samples, with up to a 4.5-inch diameter and to a depth of 31 feet or refusal, for the purpose of further confirming the extent of the mineral resources in the claim area to inform operations sequencing and minimize

impacts to special aquatic resources. The total impact from survey activities would be up to 55.43 square feet of wetland waters of the U.S. (0.00127 acre). The applicant is proposing to work 12-24 hours per day and for up to six 30-day work periods year-round. It is anticipated that up to six cores would be drilled per day.

The holes are configured on a grid with surveying anticipated to start in DKSN 35 and 36. Production rate would depend upon weather conditions and ice conditions. All drill holes would eventually be drilled. The actual locations of core samples in the field would be selected to be as close as possible to locations proposed in the plans. Given GPS error, visual monitoring may be used to adjust the location of the drill sites as practicable. Depending on results, multiple cores (cluster sampling) may be collected; borings would be spaced as closely as possible given conditions and access. Cluster sample sites would not exceed 10 feet in diameter.

The winter access for the project would remain the same as in the May 2021 verification – i.e. traveling along the Nome-Council Highway and utilizing the location of the proposed Individual Permit access channel in DKSN 35, at approximately Mile Post 28.5. The mobilization equipment would consist of a Hagglund BV206 for site access, and a pontoon sled for transporting the GeoProbe or other drilling machinery with up a 4.5-inch diameter, and snow machines.

The summer/fall access for the project is located at the public boat ramp at the mouth of Safety Sound. For the summer/fall drilling, the drilling equipment would be mounted on the same pontoon boat planned to be used for winter operations and maneuvered by push boat, winches, or personnel. The push boat would be powered by a single Suzuki DF350A outboard engine equipped with an intake air resonator to suppress sound (idle 58 dBA, cruise 37.0 mph/4000 rpm/83 dBA). The boat is approximately 10 feet by 11 feet. The summer/fall drilling would be conducted as follows:

> Pontoon boat and drill would be maneuvered into place and anchored on all four corners; the anchors would be driven by hand, e.g. fence post driver. A temporary PVC or steel casing slightly larger than the drill pipe would be driven to refusal into the soft sediment of the lagoon by hand, e.g. fence post driver. Drilling would commence within the established temporary drill casing. Turbidity would be monitored around the temporary casing during installation (driving) and removal and during drilling and activity from boats using a YSI turbidity meter. The core samples would be collected in tubes extracted from the drilling location. The tubes would be crated and sent for analysis. Once drilling is complete, the drill casing would be removed by hand and/or by winch on the push boat. The pontoon boat with drill would be moved to the next location.

The applicant has proposed the following avoidance and minimization measures:

- Drilling is expected to produce underwater noise at 120 dB out to 100 meters from the drill unit and the project has established an exclusion zone. All activities would be halted if a marine mammal enters the established 100-meter exclusion zone.
- A protected species observer (PSO) would conduct observations per the marine mammal monitoring and mitigation plan and maintain a wildlife observation log
- Night vision technology would be used for monitoring species during low-light and dark conditions
- Drilling would be conducted from a floating platform and enclosed casing and would not block fish passage.
- The drill pontoon is analog to stationary facilities producing continuous noise levels which will be attenuated to background ambient noise. Birds may initially avoid the

source noise, but evidence suggests that they could become habituated over time due to the lack of visual threats. If birds are displaced, there is abundant habitat adjacent to the project footprint that provides similar ecosystem services.

- Drilling may result in temporary habitat alteration from turbidity as drill casing is driven in by hand. The generation of turbidity may temporarily alter movement of fish species however, the turbidity plume generated during drilling would be local and ephemeral with little impacts to fish, wildlife or benthic habitats anticipated. Turbidity would be monitored for all substrate-disturbing activities.
    - Turbidity from the following activities would be monitored: boats, driving casing, drilling, and removal of casing. Turbidity is not anticipated to extend far beyond the drilling site and the applicant would monitor out to a distance to document the extent of any plume(s) created
- Drilling in summer/fall would allow for positioning of the drill to avoid or minimize impacts to submerged aquatic vegetation
- The drill barge would be maneuvered in shallow areas with winch lines and cables, so no disturbance to submerged aquatic vegetation from that activity is expected to occur

No compensatory mitigation has been proposed as the impacts are minor and anticipated to be temporary in nature.

All work would be performed in accordance with the attached project plans, sheets 1 – 12, dated July 19, 2021.

National Historic Preservation Act

The latest published version of the Alaska Heritage Resources Survey (AHRS) has been consulted for the presence or absence of historic properties, including those listed in or eligible for inclusion in the National Register of Historic Places. There are cultural resources within the vicinity of the permit area. The permit area has been determined to be only the footprint within waters of the U.S. impacted by the proposed work in Section 10 waters (the undertaking). Consultation of the AHRS constitutes the extent of cultural resource investigations by the Corps of Engineers (Corps) at this time, and we are otherwise unaware of the presence of such resources. The Corps has made a No Historic Properties Affected (No Effect) determination for the proposed project. This application is being coordinated with the State Historic Preservation Office (SHPO). Any comments SHPO may have concerning presently unknown archeological or historic data that may be lost or destroyed by work under the requested permit will be considered in our final assessment of the described work. The Corps is requesting the SHPO's concurrence with this determination.

Essential Fish Habitat

The proposed project is located within the anadromous stream, Bonanza Channel, Anadromous Catalogue Number (ANC) 333-10-11650-2001 and within the vicinity of the following anadromous streams – the Bonanza River, AWC 333-10-11650; the Solomon River, AWC 333-10-11700 – and the anadromous lake, Safety Sound, AWC 333-10-11500-0010.

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996, requires all Federal agencies to consult with the NMFS on all actions, or proposed actions, permitted, funded, or undertaken by the agency, that may adversely affect Essential Fish Habitat (EFH).

The project area is within the known range of the Chinook salmon (*Oncorhynchus tshawytshca*), Coho salmon (*Oncorhynchus kisutch*), Chum salmon (*Oncorhynchus keta*), Sockeye salmon

(*Oncorhynchus nerka*), Pink salmon (*Oncorhynchus gorbuscha*), Dolly Varden (*Salvelinus malma*), and Humpback Whitefish (*Coregonus pidschian*). Additionally, the project site supports submerged aquatic vegetation, including eelgrass (*zostera marina).*

We are currently gathering information regarding these species and have yet to make a determination of effect. Should we find that the described activity may affect the species listed above, we will follow the appropriate course of action under Section 305(b)(2) of the Magnuson-Stevens Act. Any comments the National Marine Fisheries Service may have concerning essential fish habitat will be considered in our final assessment of the described work.

We acknowledge that we do have the following information regarding the activities: work conducted during the winter in ice-bound conditions would result in no to negligible impact to EFH; the footprint is minimal when purely assessed in acreage impacted to acreage of system (approximately 0.00127 acres impacted within approximately 823 acres wetland waters); the maximum drilling diameter would be up to 4.5 inches; an updated EFH assessment was received on June 28, 2021, covering summer and winter coring, the case study, and mining activities; the drill barge would be maneuvered into place with winch lines and cables within shallow areas to avoid and minimize impact to SAV; and an estimate per the applicant – as the drill holes are small (less than 4.5-inch diameter), only a small amount of settling (subsidence) approximately two times the overall diameter of the drill hole and less than six inches depth is expected. Other avoidance and minimization measures are described in the Project Description section above.

Endangered Species

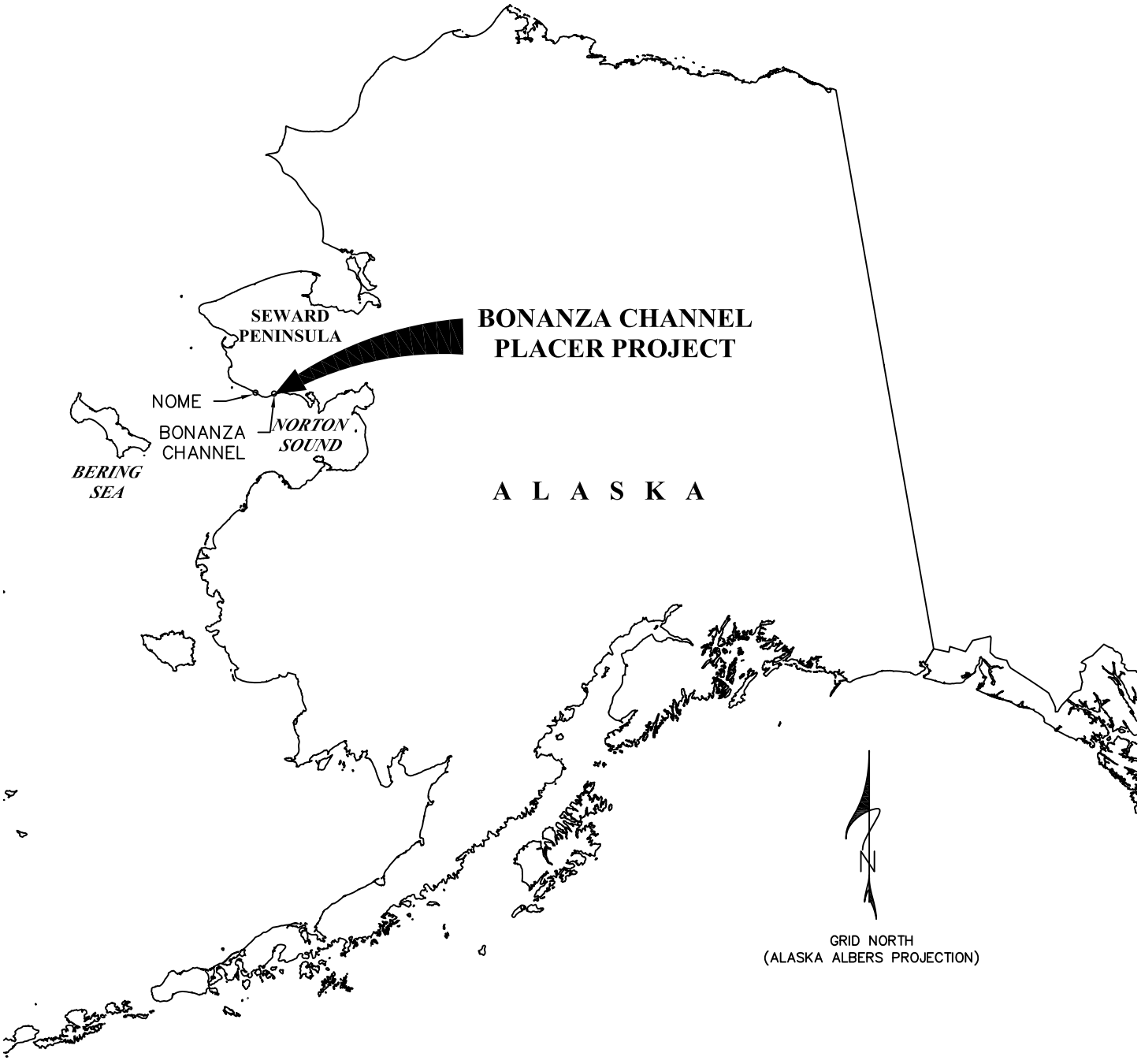
Consultation for potential impacts to federally listed species and their designated critical habitat under Section 7 of the Endangered Species Act would be re-initiated with the resource agencies under separate cover as appropriate. The project may affect but is not likely to adversely affect the following species and their designated critical habitat within the action area:

- Beringia Distinct Population Segment (DPS) bearded seals (*Erignathus barbatus*) and proposed critical habitat
- Arctic ringed seals (*Phoca hispida*) and proposed critical habitat
- Steller's eider (*Polysticta stelleri*)
- Spectacled eider (*Somateria fischeri*)
- Polar Bear (*Ursus Maritimus*) and designated critical habitat

Enclosures

- May 3, 2021 NWP #6 Verification

cc:
Beau Epstein, Applicant: beau@ecological-restoration.org
Bill Burnett, Agent: billburnett@yukuskokon.com
ADEC: allan.nakanishi@alaska.gov
ADEC: nicholas.dallman@alaska.gov
ADEC: teri.buck@alaska.gov
ADEC: james.rypkema@alaska.gov
AK-DF&G-DH, Fairbanks: audra.brase@alaska.gov
AK-DNR-Mining: david.charron@alaska.gov
SHPO: oha.revcomp@alaska.gov
USEPA: LaCroix.Matthew@epa.gov
USEPA: mccracken.betsy@epa.gov
USFWS: bob_henszey@fws.gov
USFWS: charleen_buncic@fws.gov
USFWS: Sarah_Conn@fws.gov
USFWS: amal_ajmi@fws.gov
USFWS: jeff_williams@fws.gov
USFWS: FW7_POANotices@fws.gov
NMFS: greg.balogh@noaa.gov
NMFS: ellen.wilt@noaa.gov
NMFS Anchorage: nmfs.akr.habitat@noaa.gov
NMFS: stefanie.coxe@noaa.gov
NMFS: seanbob.kelly@noaa.gov
Kawerak, Inc.: bahmasuk@kawerak.org
Kawerak, Inc.: bjames@kawerak.org
Kawerak, Inc.: tweyiouanna@kawerak.org
Village of Solomon: Liz@villageofsolomon.org
Village of Solomon: president@villageofsolomon.org
Nome Eskimo Community: Jacob.martin@necalaska.org
Bering Straits Native Corporation: mganley@beringstraits.com
Bering Straits Native Corporation: lpederson@beringstraits.com
Solomon Native Corporation: solomonnativecorporation@gmail.com
Sitnasuak Native Corporation: CFagerstrom@snc.org
Norton Sound Economic Development Corporation: Wes@nsedc.com



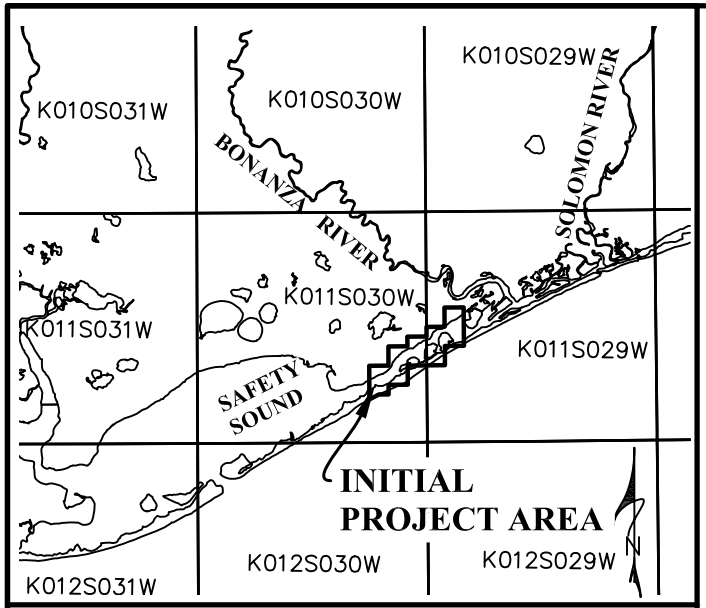
Plan Sheet 1 **of 26** **LOCATION MAP**	DATE 07/30/2020

APPLICANT: IPOP, LLC
FILE NO.: POA–2018–0123 . APMA 2875
WATERWAY: BONANZA CHANNEL
PROPOSED ACTIVITY: MINING (DREDGE AND FILL)

POA-2018-00123, Sheet 2 (July 19, 2021)

NOTES

1 VALID EXTENTS OF STATE MINING CLAIMS EXCLUDE FEDERAL AND PRIVATE PROPERTY (SEE OWNERSHIP MAP).



VICINITY MAP
SOURCE: USGS QUADRANGLES, 1950

SCALE: 1"=5 MI.
0 5mi 10mi

13
18
19
24
23
30
25
26
K011S030W
K011S029W
DKSN 39
DKSN 37
DKSN 34
DKSN 33
DKSN 36
DKSN 31
DKSN 32
DKSN 35
DKSN 30
DKSN 29
DKSN 27
DKSN 30
MP:29
MP:28
MP:27
CHANNEL
MINING
5-YEAR
PROPOSED
NORTON SOUND
NOME - COUNCIL HIGHWAY
(APPROXIMATE ROAD CENTERLINE)

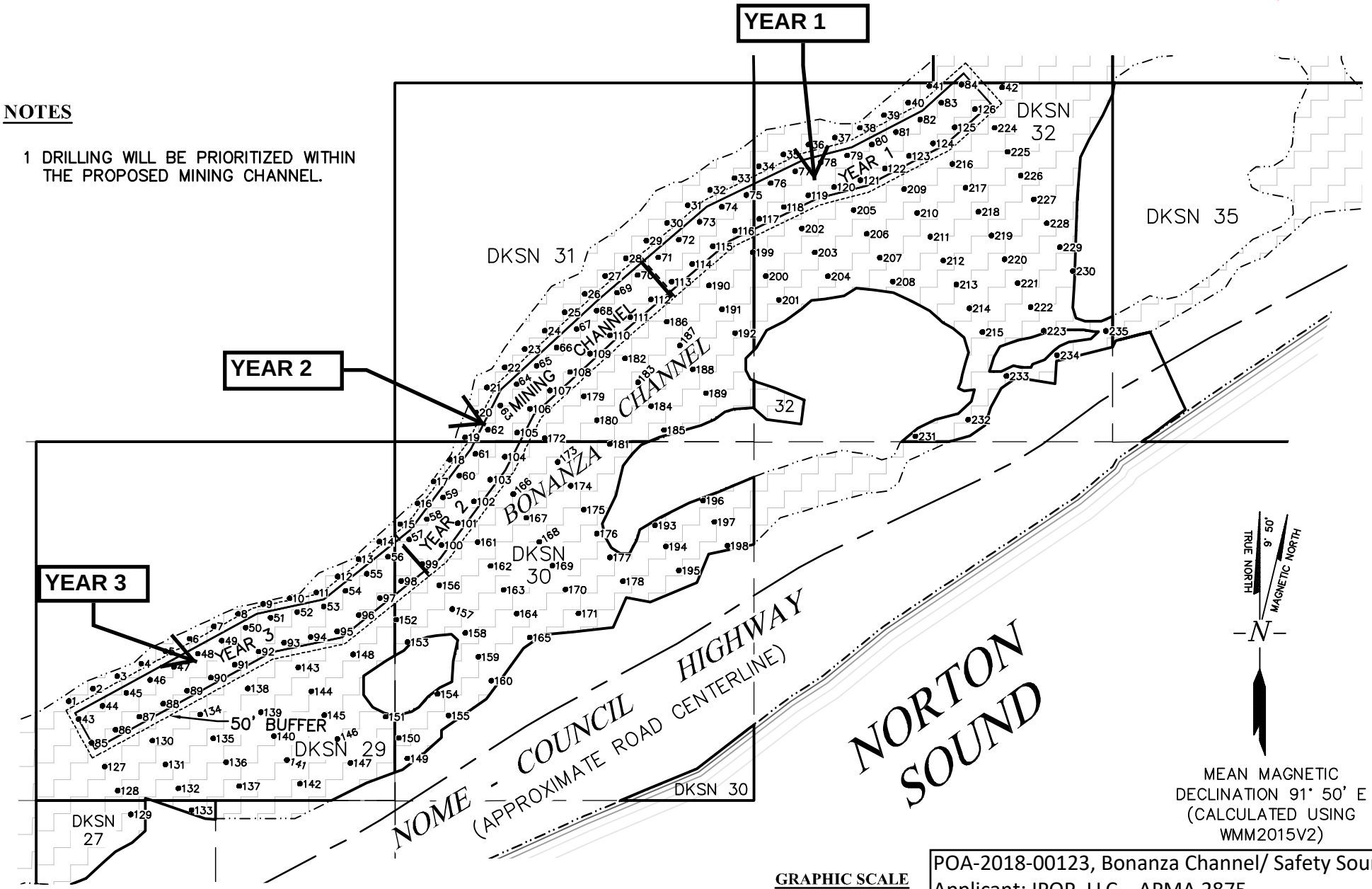
N
MAGNETIC DECLINATION 91° 50' E

GRAPHIC SCALE
0 750 1500
U.S. SURVEY FEET
1"= 1500'

LEGEND:

———	VALID EXTENTS OF STATE MINING CLAIMS
##	PLSS SECTION NUMBER
DKSN ##	STATE OF ALASKA MINING CLAIM NAME
○ MP:##	HIGHWAY MILE POST
	WATER SURFACE
·····	DIGITIZED MEAN HIGH WATER LINE (SOURCE: ALASKA DNR GIS)

VICINITY MAP, NWP 6	DATE 3/4/2020
	PAGE 1 OF 7
APPLICANT: IPOP, LLC FILE NO.: POA-2018-0123 WATERWAY: BONANZA CHANNEL PROPOSED ACTIVITY: MINING (DREDGE AND FILL)	LATITUDE LONGITUDE

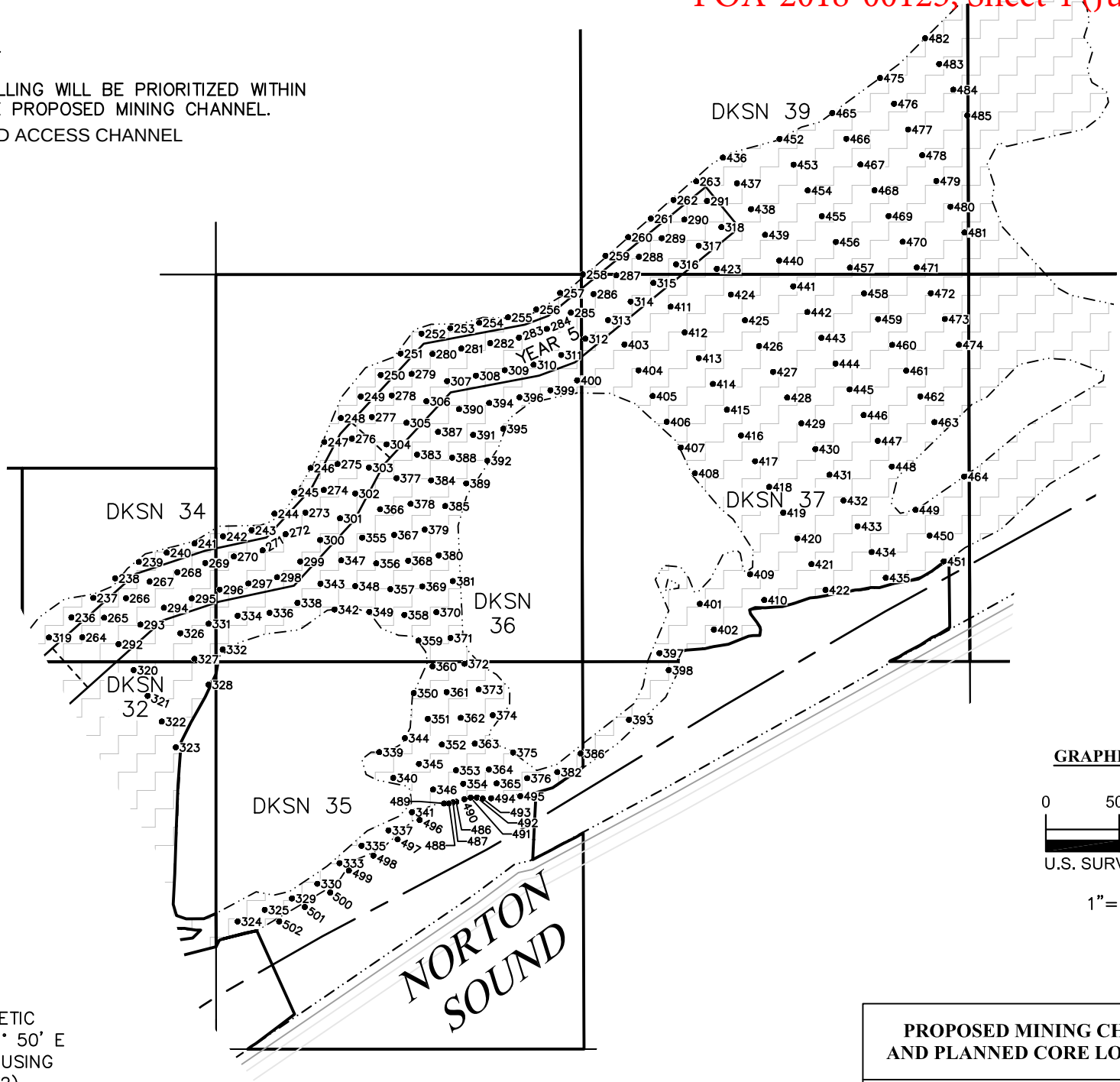


POA-2018-00123, Bonanza Channel/ Safety Sound
Applicant: IPOP, LLC , APMA 2875
PROJECT: NWP 6, Survey Activities
Location: , Lat. 64.5160º N, Long.164.5924º W.
P 2 of 7 Feb. 21, 2020

EXPLORATION PLAN

NOTES

1 DRILLING WILL BE PRIORITIZED WITHIN THE PROPOSED MINING CHANNEL. AND ACCESS CHANNEL



TRUE NORTH
9° 50'
MAGNETIC NORTH
N

MEAN MAGNETIC DECLINATION 91° 50' E (CALCULATED USING WMM2015V2)

GRAPHIC SCALE

0 500 1000

U.S. SURVEY FEET

1"=1000'

PROPOSED MINING CHANNEL AND PLANNED CORE LOCATIONS	DATE 11/6/2020
	PAGE 1 OF 3
APPLICANT: IPOP, LLC	LATITUDE N64°31'00"
FILE NO.: POA-2018-0123	LONGITUDE W164°34'54"
WATERWAY: BONANZA CHANNEL	
PROPOSED ACTIVITY: MINING (DREDGE AND FILL)	

CORE LOCATIONS

POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE
1	N64°30'29.25"	W164°36'55.30"	16	N64°30'43.59"	W164°35'56.72"	31	N64°31'05.18"	W164°35'11.29"	46	N64°30'30.79"	W164°36'41.63"	61	N64°30'47.17"	W164°35'46.96"
2	N64°30'30.15"	W164°36'51.24"	17	N64°30'45.17"	W164°35'53.99"	32	N64°31'06.28"	W164°35'07.55"	47	N64°30'31.74"	W164°36'37.62"	62	N64°30'48.91"	W164°35'44.86"
3	N64°30'31.05"	W164°36'47.18"	18	N64°30'46.75"	W164°35'51.27"	33	N64°31'07.14"	W164°35'03.43"	48	N64°30'32.68"	W164°36'33.62"	63	N64°30'50.67"	W164°35'42.80"
4	N64°30'31.96"	W164°36'43.12"	19	N64°30'48.37"	W164°35'48.70"	34	N64°31'07.99"	W164°34'59.32"	49	N64°30'33.63"	W164°36'29.61"	64	N64°30'52.21"	W164°35'40.06"
5	N64°30'32.86"	W164°36'39.06"	20	N64°30'50.17"	W164°35'46.87"	35	N64°31'08.85"	W164°34'55.21"	50	N64°30'34.57"	W164°36'25.60"	65	N64°30'53.54"	W164°35'36.70"
6	N64°30'33.76"	W164°36'35.00"	21	N64°30'51.97"	W164°35'45.04"	36	N64°31'09.57"	W164°34'50.98"	51	N64°30'35.29"	W164°36'21.40"	66	N64°30'54.87"	W164°35'33.33"
7	N64°30'34.66"	W164°36'30.93"	22	N64°30'53.42"	W164°35'42.05"	37	N64°31'10.07"	W164°34'46.55"	52	N64°30'35.70"	W164°36'16.93"	67	N64°30'56.20"	W164°35'29.97"
8	N64°30'35.57"	W164°36'26.87"	23	N64°30'54.75"	W164°35'38.69"	38	N64°31'10.78"	W164°34'42.33"	53	N64°30'36.11"	W164°36'12.46"	68	N64°30'57.53"	W164°35'26.60"
9	N64°30'36.29"	W164°36'22.66"	24	N64°30'56.09"	W164°35'35.33"	39	N64°31'11.69"	W164°34'38.27"	54	N64°30'37.25"	W164°36'08.79"	69	N64°30'58.83"	W164°35'23.17"
10	N64°30'36.70"	W164°36'18.20"	25	N64°30'57.42"	W164°35'31.96"	40	N64°31'12.60"	W164°34'34.22"	55	N64°30'38.48"	W164°36'05.23"	70	N64°31'00.12"	W164°35'19.70"
11	N64°30'37.11"	W164°36'13.73"	26	N64°30'58.75"	W164°35'28.60"	41	N64°31'13.81"	W164°34'30.65"	56	N64°30'39.72"	W164°36'01.67"	71	N64°31'01.40"	W164°35'16.24"
12	N64°30'38.28"	W164°36'10.12"	27	N64°31'00.05"	W164°35'25.16"	42	N64°31'13.71"	W164°34'18.43"	57	N64°30'40.95"	W164°35'58.11"	72	N64°31'02.68"	W164°35'12.77"
13	N64°30'39.55"	W164°36'06.62"	28	N64°31'01.33"	W164°35'21.69"	43	N64°30'27.95"	W164°36'53.65"	58	N64°30'42.43"	W164°35'55.14"	73	N64°31'03.96"	W164°35'09.30"
14	N64°30'40.81"	W164°36'03.11"	29	N64°31'02.61"	W164°35'18.22"	44	N64°30'28.90"	W164°36'49.64"	59	N64°30'44.01"	W164°35'52.41"	74	N64°31'05.05"	W164°35'05.54"
15	N64°30'42.07"	W164°35'59.61"	30	N64°31'03.89"	W164°35'14.76"	45	N64°30'29.84"	W164°36'45.64"	60	N64°30'45.59"	W164°35'49.69"	75	N64°31'05.91"	W164°35'01.43"

POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE
76	N64°31'06.77"	W164°34'57.32"	91	N64°30'31.90"	W164°36'27.41"	106	N64°30'50.43"	W164°35'37.80"	121	N64°31'06.99"	W164°34'42.26"	136	N64°30'24.83"	W164°36'28.85"
77	N64°31'07.63"	W164°34'53.21"	92	N64°30'32.84"	W164°36'23.41"	107	N64°30'51.76"	W164°35'34.43"	122	N64°31'07.84"	W164°34'38.15"	137	N64°30'23.10"	W164°36'26.65"
78	N64°31'08.28"	W164°34'48.91"	93	N64°30'33.49"	W164°36'19.14"	108	N64°30'53.09"	W164°35'31.07"	123	N64°31'08.74"	W164°34'34.10"	138	N64°30'30.17"	W164°36'25.22"
79	N64°31'08.77"	W164°34'44.49"	94	N64°30'33.90"	W164°36'14.67"	109	N64°30'54.42"	W164°35'27.71"	124	N64°31'09.65"	W164°34'30.04"	139	N64°30'28.45"	W164°36'23.03"
80	N64°31'09.57"	W164°34'40.33"	95	N64°30'34.31"	W164°36'10.20"	110	N64°30'55.76"	W164°35'24.34"	125	N64°31'10.82"	W164°34'26.41"	140	N64°30'26.72"	W164°36'20.83"
81	N64°31'10.47"	W164°34'36.28"	96	N64°30'35.49"	W164°36'06.58"	111	N64°30'57.07"	W164°35'20.93"	126	N64°31'12.13"	W164°34'23.01"	141	N64°30'24.99"	W164°36'18.64"
82	N64°31'11.38"	W164°34'32.22"	97	N64°30'36.72"	W164°36'03.02"	112	N64°30'58.35"	W164°35'17.47"	127	N64°30'24.50"	W164°36'49.26"	142	N64°30'23.27"	W164°36'16.45"
83	N64°31'12.59"	W164°34'28.66"	98	N64°30'37.96"	W164°35'59.46"	113	N64°30'59.63"	W164°35'14.00"	128	N64°30'22.77"	W164°36'47.07"	143	N64°30'31.69"	W164°36'16.74"
84	N64°31'13.91"	W164°34'25.26"	99	N64°30'39.19"	W164°35'55.90"	114	N64°31'00.91"	W164°35'10.53"	129	N64°30'21.05"	W164°36'44.87"	144	N64°30'29.97"	W164°36'14.54"
85	N64°30'26.23"	W164°36'51.46"	100	N64°30'40.56"	W164°35'52.67"	115	N64°31'02.20"	W164°35'07.07"	130	N64°30'26.39"	W164°36'41.25"	145	N64°30'28.24"	W164°36'12.35"
86	N64°30'27.17"	W164°36'47.45"	101	N64°30'42.14"	W164°35'49.94"	116	N64°31'03.32"	W164°35'03.36"	131	N64°30'24.66"	W164°36'39.06"	146	N64°30'26.51"	W164°36'10.16"
87	N64°30'28.12"	W164°36'43.44"	102	N64°30'43.72"	W164°35'47.22"	117	N64°31'04.18"	W164°34'59.25"	132	N64°30'22.94"	W164°36'36.86"	147	N64°30'24.79"	W164°36'07.96"
88	N64°30'29.06"	W164°36'39.44"	103	N64°30'45.30"	W164°35'44.49"	118	N64°31'05.04"	W164°34'55.14"	133	N64°30'21.35"	W164°36'34.66"	148	N64°30'32.64"	W164°36'07.52"
89	N64°30'30.01"	W164°36'35.43"	104	N64°30'46.95"	W164°35'42.04"	119	N64°31'05.90"	W164°34'51.02"	134	N64°30'28.28"	W164°36'33.23"	149	N64°30'25.10"	W164°35'58.41"
90	N64°30'30.95"	W164°36'31.42"	105	N64°30'48.71"	W164°35'39.98"	120	N64°31'06.49"	W164°34'46.68"	135	N64°30'26.56"	W164°36'31.04"	150	N64°30'26.59"	W164°35'59.83"

POA-2018-00123, Bonanza Channel/ Safety Sound, APMA 2875
Applicant: IPOP, LLC. PROJECT: NWP 6, Survey Activities
Location: Lat. 64.5160º N., Long. 164.5924º W.
P 3 of 7 Feb. 21, 2020
List of Core Locations, Page 1

CORE LOCATIONS

POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE
151	N64°30'28.13"	W164°36'02.04"	166	N64°30'44.25"	W164°35'40.61"	181	N64°30'47.88"	W164°35'24.38"	196	N64°30'43.79"	W164°35'08.71"	211	N64°31'02.89"	W164°34'30.52"
152	N64°30'35.14"	W164°36'00.29"	167	N64°30'42.53"	W164°35'38.41"	182	N64°30'54.08"	W164°35'21.83"	197	N64°30'42.24"	W164°35'06.81"	212	N64°31'01.16"	W164°34'28.33"
153	N64°30'33.53"	W164°35'58.37"	168	N64°30'40.80"	W164°35'36.22"	183	N64°30'52.35"	W164°35'19.64"	198	N64°30'40.52"	W164°35'04.62"	213	N64°30'59.44"	W164°34'26.14"
154	N64°30'29.78"	W164°35'53.33"	169	N64°30'39.07"	W164°35'34.03"	184	N64°30'50.62"	W164°35'17.45"	199	N64°31'01.77"	W164°35'00.34"	214	N64°30'57.71"	W164°34'23.94"
155	N64°30'28.22"	W164°35'51.49"	170	N64°30'37.34"	W164°35'31.83"	185	N64°30'48.90"	W164°35'15.25"	200	N64°31'00.04"	W164°34'58.15"	215	N64°30'55.98"	W164°34'21.75"
156	N64°30'37.65"	W164°35'53.05"	171	N64°30'35.62"	W164°35'29.64"	186	N64°30'56.74"	W164°35'14.80"	201	N64°30'58.31"	W164°34'55.96"	216	N64°31'08.16"	W164°34'26.79"
157	N64°30'35.92"	W164°35'50.86"	172	N64°30'48.30"	W164°35'35.34"	187	N64°30'55.01"	W164°35'12.61"	202	N64°31'03.48"	W164°34'52.11"	217	N64°31'06.43"	W164°34'24.60"
158	N64°30'34.20"	W164°35'48.67"	173	N64°30'46.58"	W164°35'33.14"	188	N64°30'53.29"	W164°35'10.41"	203	N64°31'01.76"	W164°34'49.91"	218	N64°31'04.71"	W164°34'22.41"
159	N64°30'32.47"	W164°35'46.47"	174	N64°30'44.85"	W164°35'30.95"	189	N64°30'51.56"	W164°35'08.22"	204	N64°31'00.03"	W164°34'47.72"	219	N64°31'02.98"	W164°34'20.22"
160	N64°30'30.74"	W164°35'44.28"	175	N64°30'43.12"	W164°35'28.76"	190	N64°30'59.36"	W164°35'07.71"	205	N64°31'04.83"	W164°34'43.39"	220	N64°31'01.25"	W164°34'18.03"
161	N64°30'40.77"	W164°35'46.61"	176	N64°30'41.40"	W164°35'26.56"	191	N64°30'57.64"	W164°35'05.52"	206	N64°31'03.10"	W164°34'41.20"	221	N64°30'59.52"	W164°34'15.83"
162	N64°30'39.05"	W164°35'44.41"	177	N64°30'39.67"	W164°35'24.37"	192	N64°30'55.91"	W164°35'03.33"	207	N64°31'01.37"	W164°34'39.01"	222	N64°30'57.80"	W164°34'13.64"
163	N64°30'37.32"	W164°35'42.22"	178	N64°30'37.94"	W164°35'22.18"	193	N64°30'41.99"	W164°35'16.77"	208	N64°30'59.64"	W164°34'36.82"	223	N64°30'56.07"	W164°34'11.45"
164	N64°30'35.59"	W164°35'40.03"	179	N64°30'51.33"	W164°35'28.76"	194	N64°30'40.46"	W164°35'14.96"	209	N64°31'06.34"	W164°34'34.90"	224	N64°31'10.77"	W164°34'19.69"
165	N64°30'33.87"	W164°35'37.83"	180	N64°30'49.60"	W164°35'26.57"	195	N64°30'38.73"	W164°35'12.76"	210	N64°31'04.62"	W164°34'32.71"	225	N64°31'09.04"	W164°34'17.50"

POINT #	LATITUDE	LONGITUDE
226	N64°31'07.32"	W164°34'15.31"
227	N64°31'05.59"	W164°34'13.11"
228	N64°31'03.86"	W164°34'10.92"
229	N64°31'02.13"	W164°34'08.73"
230	N64°31'00.41"	W164°34'06.54"
231	N64°30'48.44"	W164°34'33.02"
232	N64°30'49.65"	W164°34'24.14"
233	N64°30'52.80"	W164°34'17.72"
234	N64°30'54.31"	W164°34'09.22"
235	N64°30'56.06"	W164°34'01.01"

CORE LOCATIONS

POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE
236	N64°31'17.00"	W164°34'22.38"	251	N64°31'34.70"	W164°33'31.08"	266	N64°31'18.29"	W164°34'13.88"	281	N64°31'35.03"	W164°33'21.63"	296	N64°31'18.86"	W164°33'59.29"
237	N64°31'18.31"	W164°34'18.97"	252	N64°31'36.03"	W164°33'27.83"	267	N64°31'19.40"	W164°34'10.20"	282	N64°31'35.39"	W164°33'17.13"	297	N64°31'19.28"	W164°33'54.82"
238	N64°31'19.62"	W164°34'15.57"	253	N64°31'36.39"	W164°33'23.33"	268	N64°31'20.03"	W164°34'05.87"	283	N64°31'35.76"	W164°33'12.64"	298	N64°31'19.69"	W164°33'50.35"
239	N64°31'20.72"	W164°34'11.87"	254	N64°31'36.76"	W164°33'18.84"	269	N64°31'20.65"	W164°34'01.53"	284	N64°31'36.34"	W164°33'08.29"	299	N64°31'20.75"	W164°33'46.73"
240	N64°31'21.34"	W164°34'07.54"	255	N64°31'37.12"	W164°33'14.35"	270	N64°31'21.08"	W164°33'57.07"	285	N64°31'37.44"	W164°33'04.55"	300	N64°31'22.20"	W164°33'43.63"
241	N64°31'21.96"	W164°34'03.20"	256	N64°31'37.65"	W164°33'09.96"	271	N64°31'21.50"	W164°33'52.61"	286	N64°31'38.68"	W164°33'01.02"	301	N64°31'23.64"	W164°33'40.53"
242	N64°31'22.44"	W164°33'58.77"	257	N64°31'38.75"	W164°33'06.23"	272	N64°31'22.58"	W164°33'49.03"	287	N64°31'39.93"	W164°32'57.48"	302	N64°31'25.31"	W164°33'38.16"
243	N64°31'22.85"	W164°33'54.30"	258	N64°31'40.00"	W164°33'02.70"	273	N64°31'24.03"	W164°33'45.93"	288	N64°31'41.18"	W164°32'53.94"	303	N64°31'27.05"	W164°33'36.03"
244	N64°31'23.95"	W164°33'50.75"	259	N64°31'41.25"	W164°32'59.16"	274	N64°31'25.54"	W164°33'43.05"	289	N64°31'42.42"	W164°32'50.40"	304	N64°31'28.60"	W164°33'33.28"
245	N64°31'25.40"	W164°33'47.65"	260	N64°31'42.49"	W164°32'55.62"	275	N64°31'27.28"	W164°33'40.91"	290	N64°31'43.67"	W164°32'46.87"	305	N64°31'30.05"	W164°33'30.17"
246	N64°31'27.02"	W164°33'45.11"	261	N64°31'43.74"	W164°32'52.08"	276	N64°31'28.99"	W164°33'38.68"	291	N64°31'44.92"	W164°32'43.33"	306	N64°31'31.49"	W164°33'27.07"
247	N64°31'28.76"	W164°33'42.98"	262	N64°31'44.99"	W164°32'48.55"	277	N64°31'30.44"	W164°33'35.57"	292	N64°31'15.21"	W164°34'15.04"	307	N64°31'32.85"	W164°33'23.84"
248	N64°31'30.37"	W164°33'40.39"	263	N64°31'46.23"	W164°32'45.01"	278	N64°31'31.88"	W164°33'32.46"	293	N64°31'16.52"	W164°34'11.63"	308	N64°31'33.21"	W164°33'19.35"
249	N64°31'31.81"	W164°33'37.29"	264	N64°31'15.67"	W164°34'20.69"	279	N64°31'33.33"	W164°33'29.36"	294	N64°31'17.65"	W164°34'07.98"	309	N64°31'33.57"	W164°33'14.86"
250	N64°31'33.25"	W164°33'34.18"	265	N64°31'16.98"	W164°34'17.29"	280	N64°31'34.67"	W164°33'26.12"	295	N64°31'18.27"	W164°34'03.64"	310	N64°31'33.94"	W164°33'10.37"

POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE
311	N64°31'34.60"	W164°33'06.06"	326	N64°31'15.94"	W164°34'05.41"	341	N64°31'03.93"	W164°33'29.34"	356	N64°31'20.62"	W164°33'34.89"	371	N64°31'15.61"	W164°33'23.33"
312	N64°31'35.68"	W164°33'02.31"	327	N64°31'14.21"	W164°34'03.22"	342	N64°31'17.53"	W164°33'41.39"	357	N64°31'18.89"	W164°33'32.70"	372	N64°31'13.89"	W164°33'21.14"
313	N64°31'36.93"	W164°32'58.77"	328	N64°31'12.49"	W164°34'01.03"	343	N64°31'19.26"	W164°33'43.58"	358	N64°31'17.16"	W164°33'30.51"	373	N64°31'12.16"	W164°33'18.95"
314	N64°31'38.18"	W164°32'55.24"	329	N64°30'58.15"	W164°33'48.05"	344	N64°31'08.90"	W164°33'30.44"	359	N64°31'15.44"	W164°33'28.32"	374	N64°31'10.43"	W164°33'16.76"
315	N64°31'39.42"	W164°32'51.70"	330	N64°30'59.13"	W164°33'44.09"	345	N64°31'07.17"	W164°33'28.25"	360	N64°31'13.71"	W164°33'26.13"	375	N64°31'07.93"	W164°33'13.59"
316	N64°31'40.67"	W164°32'48.16"	331	N64°31'16.57"	W164°34'01.01"	346	N64°31'05.44"	W164°33'26.06"	361	N64°31'11.98"	W164°33'23.94"	376	N64°31'06.20"	W164°33'11.40"
317	N64°31'41.92"	W164°32'44.63"	332	N64°31'14.84"	W164°33'58.82"	347	N64°31'20.82"	W164°33'40.36"	362	N64°31'10.25"	W164°33'21.74"	377	N64°31'26.34"	W164°33'31.73"
318	N64°31'43.16"	W164°32'41.09"	333	N64°31'00.51"	W164°33'40.63"	348	N64°31'19.09"	W164°33'38.17"	363	N64°31'08.53"	W164°33'19.55"	378	N64°31'24.61"	W164°33'29.54"
319	N64°31'15.65"	W164°34'25.88"	334	N64°31'17.11"	W164°33'56.48"	349	N64°31'17.37"	W164°33'35.97"	364	N64°31'06.80"	W164°33'17.36"	379	N64°31'22.88"	W164°33'27.35"
320	N64°31'13.47"	W164°34'12.69"	335	N64°31'01.68"	W164°33'37.20"	350	N64°31'11.92"	W164°33'29.06"	365	N64°31'05.85"	W164°33'16.16"	380	N64°31'21.16"	W164°33'25.16"
321	N64°31'11.74"	W164°34'10.50"	336	N64°31'17.30"	W164°33'51.52"	351	N64°31'10.19"	W164°33'26.87"	366	N64°31'24.25"	W164°33'34.29"	381	N64°31'19.43"	W164°33'22.96"
322	N64°31'10.01"	W164°34'08.31"	337	N64°31'02.71"	W164°33'33.00"	352	N64°31'08.46"	W164°33'24.68"	367	N64°31'22.52"	W164°33'32.10"	382	N64°31'06.61"	W164°33'06.71"
323	N64°31'08.28"	W164°34'06.12"	338	N64°31'17.97"	W164°33'47.16"	353	N64°31'06.74"	W164°33'22.49"	368	N64°31'20.80"	W164°33'29.91"	383	N64°31'27.92"	W164°33'28.53"
324	N64°30'56.60"	W164°33'56.50"	339	N64°31'07.96"	W164°33'34.45"	354	N64°31'05.83"	W164°33'21.35"	369	N64°31'19.07"	W164°33'27.72"	384	N64°31'26.19"	W164°33'26.33"
325	N64°30'57.38"	W164°33'52.28"	340	N64°31'06.23"	W164°33'32.26"	355	N64°31'22.35"	W164°33'37.08"	370	N64°31'17.34"	W164°33'25.53"	385	N64°31'24.46"	W164°33'24.14"

PROPOSED MINING CHANNEL AND PLANNED CORE LOCATIONS

DATE 11/6/2020

PAGE 2 OF 3

APPLICANT: IPOP, LLC
FILE NO.: POA-2018-0123
WATERWAY: BONANZA CHANNEL
PROPOSED ACTIVITY: MINING (DREDGE AND FILL)

LATITUDE	LONGITUDE
N64°31'00"	W164°34'54"

POINT #	LATITUDE	LONGITUDE
386	N64°31'07.86"	W164°33'03.08"
387	N64°31'29.44"	W164°33'25.25"
388	N64°31'27.71"	W164°33'23.06"
389	N64°31'25.99"	W164°33'20.87"
390	N64°31'30.96"	W164°33'21.97"
391	N64°31'29.24"	W164°33'19.78"
392	N64°31'27.51"	W164°33'17.59"
393	N64°31'10.12"	W164°32'55.54"
394	N64°31'31.37"	W164°33'17.28"
395	N64°31'29.65"	W164°33'15.09"
396	N64°31'31.76"	W164°33'12.56"
397	N64°31'14.59"	W164°32'50.78"
398	N64°31'13.45"	W164°32'49.34"
399	N64°31'32.23"	W164°33'07.74"
400	N64°31'32.89"	W164°33'03.58"

POINT #	LATITUDE	LONGITUDE
401	N64°31'17.89"	W164°32'44.49"
402	N64°31'16.16"	W164°32'42.30"
403	N64°31'35.29"	W164°32'56.21"
404	N64°31'33.56"	W164°32'54.02"
405	N64°31'31.83"	W164°32'51.82"
406	N64°31'30.11"	W164°32'49.63"
407	N64°31'28.38"	W164°32'47.44"
408	N64°31'26.65"	W164°32'45.25"
409	N64°31'19.88"	W164°32'36.64"
410	N64°31'18.15"	W164°32'34.45"
411	N64°31'37.83"	W164°32'49.01"
412	N64°31'36.10"	W164°32'46.82"
413	N64°31'34.37"	W164°32'44.63"
414	N64°31'32.64"	W164°32'42.44"
415	N64°31'30.92"	W164°32'40.24"

POINT #	LATITUDE	LONGITUDE
416	N64°31'29.19"	W164°32'38.05"
417	N64°31'27.46"	W164°32'35.86"
418	N64°31'25.73"	W164°32'33.67"
419	N64°31'24.01"	W164°32'31.48"
420	N64°31'22.28"	W164°32'29.29"
421	N64°31'20.55"	W164°32'27.10"
422	N64°31'18.82"	W164°32'24.91"
423	N64°31'40.37"	W164°32'41.81"
424	N64°31'38.64"	W164°32'39.62"
425	N64°31'36.91"	W164°32'37.43"
426	N64°31'35.18"	W164°32'35.24"
427	N64°31'33.46"	W164°32'33.05"
428	N64°31'31.73"	W164°32'30.86"
429	N64°31'30.00"	W164°32'28.66"
430	N64°31'28.27"	W164°32'26.47"

POINT #	LATITUDE	LONGITUDE
431	N64°31'26.54"	W164°32'24.28"
432	N64°31'24.82"	W164°32'22.09"
433	N64°31'23.09"	W164°32'19.90"
434	N64°31'21.36"	W164°32'17.71"
435	N64°31'19.63"	W164°32'15.52"
436	N64°31'47.83"	W164°32'40.86"
437	N64°31'46.10"	W164°32'38.66"
438	N64°31'44.37"	W164°32'36.47"
439	N64°31'42.64"	W164°32'34.28"
440	N64°31'40.92"	W164°32'32.09"
441	N64°31'39.19"	W164°32'29.90"
442	N64°31'37.46"	W164°32'27.71"
443	N64°31'35.73"	W164°32'25.52"
444	N64°31'34.01"	W164°32'23.33"
445	N64°31'32.28"	W164°32'21.14"

POINT #	LATITUDE	LONGITUDE
446	N64°31'30.55"	W164°32'18.95"
447	N64°31'28.82"	W164°32'16.76"
448	N64°31'27.09"	W164°32'14.56"
449	N64°31'24.19"	W164°32'10.88"
450	N64°31'22.46"	W164°32'08.69"
451	N64°31'20.73"	W164°32'06.50"
452	N64°31'49.08"	W164°32'32.02"
453	N64°31'47.35"	W164°32'29.83"
454	N64°31'45.62"	W164°32'27.64"
455	N64°31'43.89"	W164°32'25.45"
456	N64°31'42.17"	W164°32'23.26"
457	N64°31'40.44"	W164°32'21.07"
458	N64°31'38.71"	W164°32'18.88"
459	N64°31'36.98"	W164°32'16.69"
460	N64°31'35.26"	W164°32'14.50"

POINT #	LATITUDE	LONGITUDE
461	N64°31'33.53"	W164°32'12.30"
462	N64°31'31.80"	W164°32'10.11"
463	N64°31'30.07"	W164°32'07.92"
464	N64°31'26.42"	W164°32'03.30"
465	N64°31'50.81"	W164°32'23.80"
466	N64°31'49.08"	W164°32'21.61"
467	N64°31'47.36"	W164°32'19.42"
468	N64°31'45.63"	W164°32'17.23"
469	N64°31'43.90"	W164°32'15.04"
470	N64°31'42.17"	W164°32'12.85"
471	N64°31'40.45"	W164°32'10.66"
472	N64°31'38.72"	W164°32'08.47"
473	N64°31'36.99"	W164°32'06.28"
474	N64°31'35.26"	W164°32'04.09"
475	N64°31'53.16"	W164°32'16.36"

POINT #	LATITUDE	LONGITUDE
476	N64°31'51.43"	W164°32'14.17"
477	N64°31'49.70"	W164°32'11.98"
478	N64°31'47.98"	W164°32'09.79"
479	N64°31'46.25"	W164°32'07.60"
480	N64°31'44.52"	W164°32'05.41"
481	N64°31'42.79"	W164°32'03.22"
482	N64°31'55.83"	W164°32'09.33"
483	N64°31'54.10"	W164°32'07.14"
484	N64°31'52.37"	W164°32'04.95"
485	N64°31'50.64"	W164°32'02.75"
486	N64°31'04.62"	W164°33'22.45"
487	N64°31'04.58"	W164°33'22.95"
488	N64°31'04.51"	W164°33'23.60"
489	N64°31'04.51"	W164°33'24.35"
490	N64°31'04.80"	W164°33'21.19"

POINT #	LATITUDE	LONGITUDE
491	N64°31'04.91"	W164°33'20.21"
492	N64°31'04.91"	W164°33'19.24"
493	N64°31'04.84"	W164°33'18.34"
494	N64°31'04.86"	W164°33'17.01"
495	N64°31'05.00"	W164°33'12.47"
496	N64°31'03.40"	W164°33'28.15"
497	N64°31'02.11"	W164°33'31.58"
498	N64°31'01.02"	W164°33'35.36"
499	N64°31'00.01"	W164°33'39.18"
500	N64°30'58.54"	W164°33'42.08"
501	N64°30'57.57"	W164°33'46.05"
502	N64°30'56.60"	W164°33'50.03"

PROPOSED MINING CHANNEL AND PLANNED CORE LOCATIONS

DATE 11/6/2020

PAGE 3 OF 3

APPLICANT: IPOP, LLC
FILE NO.: POA-2018-0123
WATERWAY: BONANZA CHANNEL
PROPOSED ACTIVITY: MINING (DREDGE AND FILL)

LATITUDE	LONGITUDE
N64°31'00"	W164°34'54"

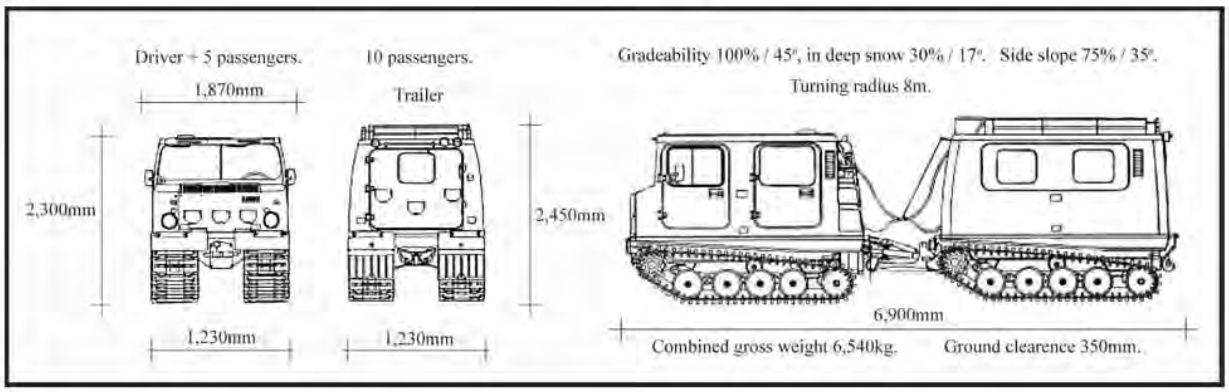


Figure 2. Specifications of Hagglund BV206 proposed to be used for site access.

Figure 3. Pontoon sled for transporting the GeoProbe coring machinery.

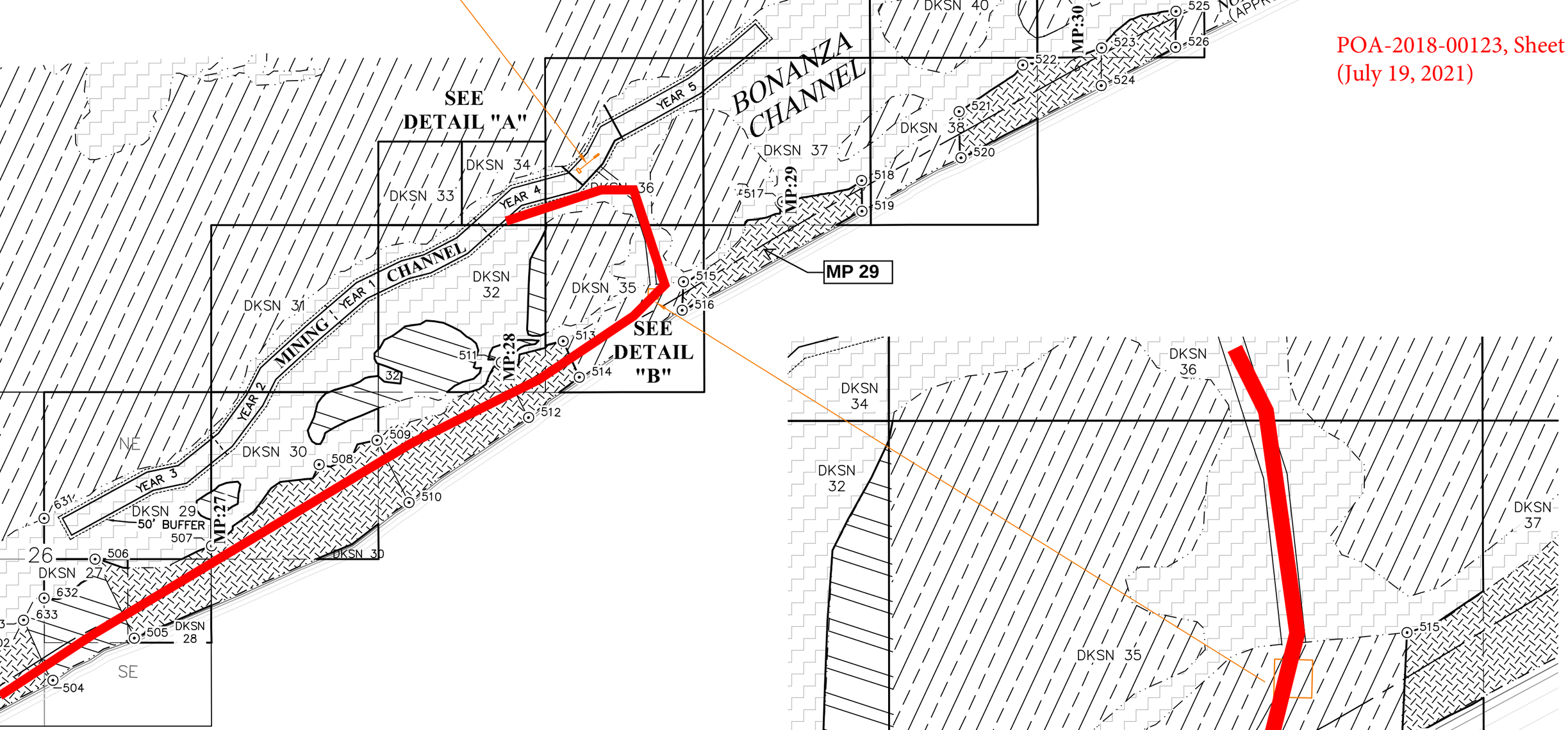
All sites will be cored with a 2.25-inch external diameter GeoProbe® 540MT (Figure 4) to a depth of 31 feet, or refusal, at a rate of two to four core holes per day. Cores will be retained in the coring sleeve, contained on the boat deck, and shipped offsite for assay when coring is complete. Any excess drilling muds or cuttings will be disposed of in an upland location. Although the previous consultation included dredging, dredging has been removed from the project description.

Note: During May 2021 submittal, request to use unspecified drilling equipment with up to a 4.5-inch diameter AND coring rate estimated to be up to six cores per day

Figure 4. GeoProbe ® 540MT which will be used for coring.

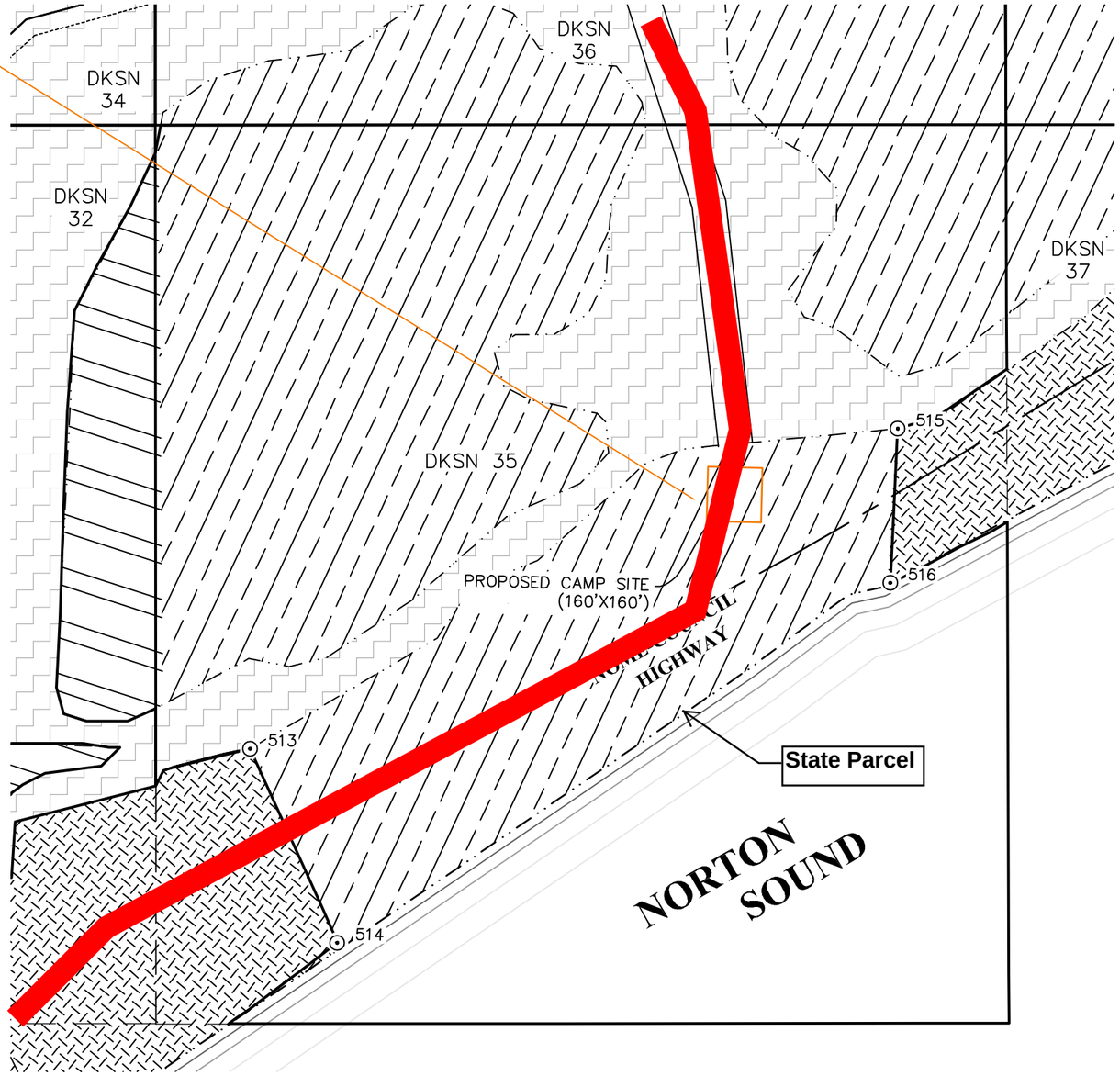
Note: During May 2021 submittal, request to use unspecified drilling equipment with up to a 4.5-inch diameter

Survey Drilling Proposed Access Routes



Winter Access Route West Drilling

POA-2018-00123, Bonanza Channel/Safety Sound
Applicant: IPOP, LLC Project: NWP 6
Location: Lat. 645160º N. , Long. 164.5924º W.
P 7 of 7
ACCESS ROUTE



DETAIL "B"
1"=400'

DEPARTMENT OF THE ARMY
ALASKA DISTRICT, U.S. ARMY CORPS OF ENGINEERS
REGULATORY DIVISION
2175 UNIVERSITY AVE S. SUITE #201E
FAIRBANKS, AK 99709

May 3, 2021

Regulatory Division
POA-2018-00123
APMA 2875

IPOP, LLC
Attention: Mr. Beau Epstein
9811 West Charleston Blvd. #2-444
Las Vegas, Nevada 89117

Dear Mr. Epstein:

This is in response to your November 9, 2020, application for a Department of the Army (DA) permit, to conduct exploratory drilling in Bonanza Channel/Safety Sound by directly impacting approximately 0.000318 acre (13.9 square feet) of wetland waters of the United States (U.S.) by extracting 502 core survey samples from the ice-bound Bonanza Channel in IPOP's western block of mining claims. These activities would be conducted using a 2.25-inch diameter GeoProbe drill to a depth of 31 feet or refusal for the purpose of generating a mineral resource map, providing information to exclude uneconomic areas and minimize project impacts from full-scale mining operations. The holes are configured on a grid with surveying anticipated to start in mining claim DKSN 35 and 36. Production rate would depend upon weather conditions and ice conditions. All drill holes would eventually be drilled. The actual locations of core samples in the field will be selected to be as close as possible to locations proposed in the plans. Given GPS error, visual monitoring may be used to adjust the location of the drill sites as practicable. Depending on results, multiple cores (cluster sampling) may be collected; borings will be spaced as closely as possible given conditions and access. Cluster sample sites will not exceed 10 feet in diameter. Work would be conducted in up to three 30-day continuous work intervals, up to 12-24 hours per day. The access for the project would remain the same as in the May 2020 verification – i.e. traveling along the Nome-Council Highway and utilizing the location of the proposed individual permit access channel in mining claim DKSN 35, at approximately Mile Post 28.5. The equipment would remain unchanged from the May 2020 verification – i.e. the 2.25-inch diameter GeoProbe, a Hagglund BV206 for site access, and a pontoon sled for transporting the GeoProbe machinery, and snow machines. It has been assigned file number POA-2018-00123, Safety Sound/Bonanza Channel, which should be referred to in all future correspondence with this office. The project site is located within Section 24, T. 11 S., R. 30 W., Kateel River Meridian (DKSN 32 and 34); and within Sections 18 and 19, T. 11 S., R. 29 W, Kateel River Meridian (DKSN 39; DKSN 36, 37, and 35); generally between approximately Latitude 64.521014º N., Longitude 164.573856º W. and approximately and Latitude 64.524006º N., Longitude 164.53425º W.; approximately 30 miles East of Nome, Alaska.

Based on our review of the information you furnished and available to us, we have preliminarily determined the above project area contains waters of the U.S., including wetlands, under the Corps of Engineers (Corps) regulatory jurisdiction. See the attached Preliminary Jurisdictional Determination (PJD) Form. Please sign and return the form to our office. A PJD is not appealable. At any time, you have the right to request and obtain an Approved Jurisdictional Determination (AJD), which can be appealed. If it is your intent to request an AJD, do not begin work until one is obtained.

DA authorization is necessary because your project will involve work in or placement of structures or dredged or fill material into waters of the U.S. under our regulatory jurisdiction.

Based upon the information and plans you provided, we hereby verify that the work described above, which would be performed in accordance with the enclosed plan (sheets 1-10), dated January 2021, is authorized by Nationwide Permit (NWP) No. 6, Survey Activities. NWP 6 and the 2017 General Conditions are also available on our website at: www.poa.usace.army.mil/Missions/Regulatory/Permits. You must comply with all terms and conditions associated with NWP No. 6, as well as with the special conditions listed below:

1. **Construction Timing:**

    a. Activities shall be limited to ice-bound conditions between January 1 and May 31 and limited to a maximum of three (3) consecutive 30-day periods.

    b. Operations are prohibited from June 1 to September 15 unless otherwise authorized by the Alaska Department of Fish and Game (ADFG).

2. **Contractors and Permit Posting:** All contractors involved in this permitted activity shall be provided copies of this permit in its entirety. A copy shall remain on site at all times during construction.

3. **Commencement Notification**: At least 14 days prior to the date of initiating the work authorized by this permit, the Permittee shall provide a written notification of the date of commencement of authorized work to the Corps (Tiffany Kwakwa, phone: 907-474-2167; email: Tiffany.D.Kwakwa@usace.army.mil) and the National Oceanic and Atmospheric Administration (Jenna Malek, phone: 907-271-1332; email: Jenna.Malek@noaa.gov). The timing may be adjusted due to changing ice conditions. For the 2021 winter season (present to May 31, 2021), notification five (5) business days prior to commencement of authorized work is needed to the contacts identified above.

4. **Endangered Species**: The permittee shall comply with the Federal Endangered Species Act, implementing all of the mitigating measures identified in the U.S. Fish and Wildlife Service (USFWS) letter of concurrence (dated March 23, 2021), specifically the enclosed January 2021 USFWS Polar Bear Interaction Guidelines, and National Marine Fisheries Service (NFMS) enclosed letter of concurrence (Number AKRO-2021-00753, dated April 9, 2021), including those ascribed to the Corps therein. If you are unable to implement any of these measures, you must immediately notify the Corps (Tiffany Kwakwa, phone: 907-474-2167; email: Tiffany.D.Kwakwa@usace.army.mil), the USFWS Office (Amal Ajmi, phone: 907-687-1922; email: amal_ajmi@fws.gov), and the NMFS (Jenna Malek, phone: 907-271-1332; email: Jenna.Malek@noaa.gov) so we may consult as appropriate, prior to initiating the work, in accordance with Federal law.

5. **Winter Drilling Reclamation**: Cores shall be retained in the coring sleeve, contained on the deck of the drill sledge, and shipped offsite for assay when coring is complete. Upon completion of each drill hole, any excess drilling material or other debris shall be removed from the ice and disposed of offsite in a designated upland disposal site, such as the Nome Solid Waste site.

6. **Reporting**:

   a. The purpose of conducting the NWP activities is to support the DA Individual Permit application for a larger project (POA-2018-00123, Safety Sound/Bonanza Channel). The permittee shall submit results of their core test program to the Corps (Tiffany Kwakwa, phone: 907-474-2167; email: Tiffany.D.Kwakwa@usace.army.mil) no later than 30 days after the conclusion of the public notice comment period on May 17, 2021. This information is considered to be "other information" necessary to complete an analysis for an individual permit, pursuant to 33 CFR 325.1(d).

   b. The permittee shall follow industry best management procedures for quality assurance and quality control of drill core sampling and assay result reporting, such as is outlined in the "CIM Mineral Exploration Best Practice Guidelines" prepared by the Canadian Institute of Mining, Metallurgy and Petroleum, 2018. This document may be found at: https://mrmr.cim.org/media/1080/cim-mineral-exploration-best-practice-guidelines-november-23-2018.pdf.

   c. The applicant shall assess and quantify heavy metal concentrations within the core samples using standardized methods with Quality Assurance/Quality Control (QA/QC) parameters. The metals include the "RCRA 8" [i.e. arsenic (As), barium (Ba), cadmium (Cd), chromium (Cr), lead (Pb), mercury (Hg), selenium (Se), and silver (Ag)] and copper (Cu). Additionally, alkalinity should be reported with the results. The results shall include a statement from the

laboratory indicating if the samples were not dried or partially dried during transport.

d. The results shall include a written document clearly describing the collection protocol and analysis methods. The written document shall include a description of where and how the samples should be collected, the number of samples, a monitoring schedule, and a description of the QA/QC (e.g. how will chain of custody be maintained and documented, etc.).

7. **Avoidance**: The applicant shall avoid all Refuge lands during all activities unless permitted by the Alaska Maritime National Wildlife Refuge.

8. **Control of Invasive Species**: The applicant shall implement Best Management Practices (BMPs) to reduce the introduction and spread of invasive species. The BMPs can include thoroughly washing equipment before entering the project area to remove dirt and debris that may harbor invasive plant seeds and propagules to minimize their introduction and spread throughout areas that would not otherwise be exposed. The BMPs may also include invasive species education for staff and contractors, using weed-free erosion control products, employing management strategies that anticipate and suppress secondary invaders while rapidly restoring native plants to fill the space vacated by invasive species control, and developing a monitoring and treatment plan. The applicant shall submit a list of BMPs implemented to the USFWS (Amal Ajmi, phone: 907-687-1922; email: amal_ajmi@fws.gov) within 30 days of the conclusion of work each winter season.

Further, please note General Condition 30 requires that you submit a signed certification to us once any work and required mitigation are completed. Enclosed is the form for you to complete and return to our office.

Unless this NWP is modified or revoked, it expires on March 18, 2022. If you commence or are under contract to commence this activity before the date that the 2017 NWPs are modified or revoked, you will have 12 months from the date of the modification or revocation of the NWPs to complete the activity under the present terms and conditions of these nationwide permits. It is incumbent upon you to remain informed of the changes to the NWPs. Nothing in this letter excuses you from compliance with other Federal, State, or local statutes, ordinances, or regulations.

Please contact me via email at: Tiffany.D.Kwakwa@usace.army.mil, by mail at the address above, or by phone at (907) 474-2167 if you have questions or to request paper copies of the 2017 regional and/or general conditions. For more information about the Regulatory Program, please visit our website at: www.poa.usace.army.mil/Missions/Regulatory.

Sincerely,

Tiffany Kwakwa
Project Manager

Enclosures

cc:

Applicant	beau@environmental-restoration.com
Agent	billburnett@yukuskokon.com

ENCLOSURE

US Army Corps of Engineers
Alaska District

Permit Number: POA-2018-00123

Name of Permittee: Beau Epstein, IPOP LLC

Date of Issuance: May 3, 2021

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to Ms. Tiffany Kwakwa at: Tiffany.D.Kwakwa@usace.army.mil, or the following address:

U.S. Army Corps of Engineers
Alaska District
Regulatory Division
2175 University Avenue, Suite 201E
Fairbanks, Alaska 99709-4927

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of the said permit, and required mitigation was completed in accordance with the permit conditions.

_____ _____
Signature of Permittee Date

Preliminary Jurisdictional Determination Form

This preliminary JD find that there "*may be*" waters of the United States on the subject project site that could be affected by the proposed activity based on the following information:

District Office: Fairbanks Field Office | File/ORM #: POA-2018-00123 | PJD Date: Jan 6, 2021

State: AK | City/County: Nome

Nearest Waterbody: Bonanza Channel

Project Location: Section(s): 24-26, 18, 19 | Township: 11 S | Range: 29, 30 W | Meridian: Kateel River Meridian

Name and Address of Person Requesting PJD:
William (Bill) Burnett
Yukuskokon Professional Services
PO Box 870507
Wasilla, AK 99687

USGS Quad Map: Solomon C-6 | Latitude: 64.518332 N | Longitude: 164.573129 W

Subdivision Name, Block, Lot, Directions to Project Site: Travel from Nome, AK along the Nome-Council Highway to approximately MP 28.5; parcels are within Bonanza Channel to the North

Identify (Estimate) Amount of Waters in the Review Area

Non-Wetland Waters:

Linear ft	Width	Acres	Stream Flow
			N/A

Wetlands

Acres	Cowardin Class:
823	Estuarine

Name of Any Water Bodies on the Site Identified as Section 10 Waters:
Tidal: Bonanza Channel
Non-Tidal:

☒ Office (Desk) Determination
☐ Field Determination
Date of Site Visit:

SUPPORTING DATA: Data Review for Preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below)

- ☐ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
- ☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☐ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data Sheet prepared by the Corps
- ☐ Corps navigable waters' study:
  - ☐ USGS NHD Data.
  - ☐ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s) Cite quad name: Solomon C-6
- ☐ USDA Natural Resources Conservation Service Soil Survey. Citation:
- ☒ National Wetlands Inventory map(s): POA-2018-00123, Solomon C-6 (1/6/2021)
- ☐ State/Local Wetland Inventory map(s):
- ☐ FEMA/FIRM map(s):
- ☐ 100-year Floodplain Elevation:
- ☒ Photographs:
  - ☒ Aerial (Name & Date): Google Earth (7/6/2012)
  - ☐ Other (Name & Date):
- ☒ Previous determination(s). File # and date of response letter: POA-2018-00123 (August 27, 2018)
- ☐ Other Information:

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Signature and Date of Regulatory Project Manager (REQUIRED)

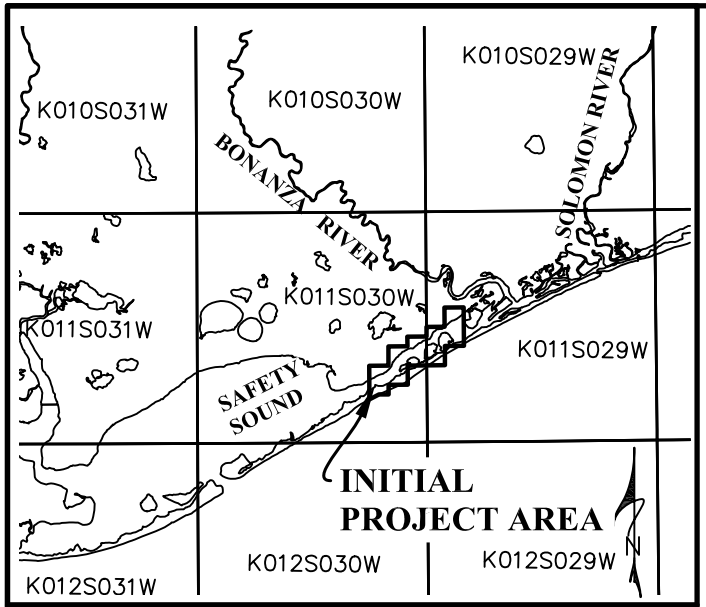
Signature and Date of Person Requesting Preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS: 1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time. 2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

POA-2018-00123, Plan Sheet 1
(January 2021)

NOTES

1 VALID EXTENTS OF STATE MINING CLAIMS EXCLUDE FEDERAL AND PRIVATE PROPERTY (SEE OWNERSHIP MAP).



VICINITY MAP
SOURCE: USGS QUADRANGLES, 1950

SCALE: 1"=5 MI.
0 5mi 10mi

13
18
19
24
23
30
25
26

K011S030W
K011S029W

DKSN 39
DKSN 37
DKSN 34
DKSN 33
DKSN 36
DKSN 31
DKSN 32
DKSN 35
DKSN 30
DKSN 29
DKSN 27

MP:29
MP:28
MP:27

CHANNEL
5-YEAR MINING
PROPOSED

NORTON SOUND

NOME - COUNCIL HIGHWAY
(APPROXIMATE ROAD CENTERLINE)

N

MAGNETIC DECLINATION
91° 50' E

GRAPHIC SCALE

0 750 1500
U.S. SURVEY FEET

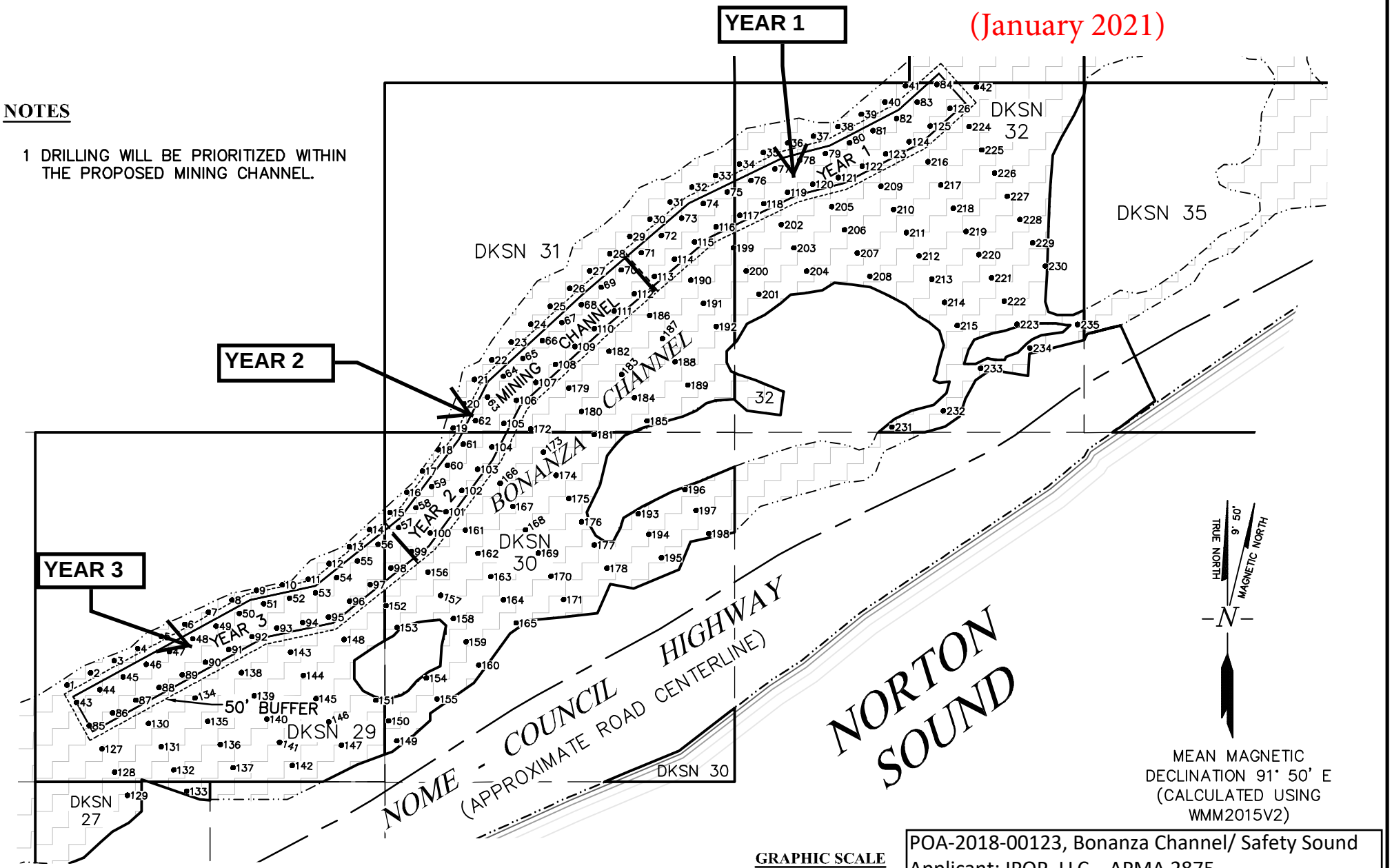
1"= 1500'

LEGEND:

———	VALID EXTENTS OF STATE MINING CLAIMS
##	PLSS SECTION NUMBER
DKSN ##	STATE OF ALASKA MINING CLAIM NAME
○ MP:##	HIGHWAY MILE POST
	WATER SURFACE
·····	DIGITIZED MEAN HIGH WATER LINE (SOURCE: ALASKA DNR GIS)

VICINITY MAP, NWP 6	DATE 3/4/2020
	PAGE 1 OF 7
APPLICANT: IPOP, LLC FILE NO.: POA-2018-0123 WATERWAY: BONANZA CHANNEL PROPOSED ACTIVITY: MINING (DREDGE AND FILL)	LATITUDE LONGITUDE

POA-2018-00123, Plan Sheet 2
(January 2021)



NOTES

1 DRILLING WILL BE PRIORITIZED WITHIN THE PROPOSED MINING CHANNEL.

MEAN MAGNETIC DECLINATION 91° 50' E (CALCULATED USING WMM2015V2)

GRAPHIC SCALE

0 500 1000

U.S. SURVEY FEET

1"=1000'

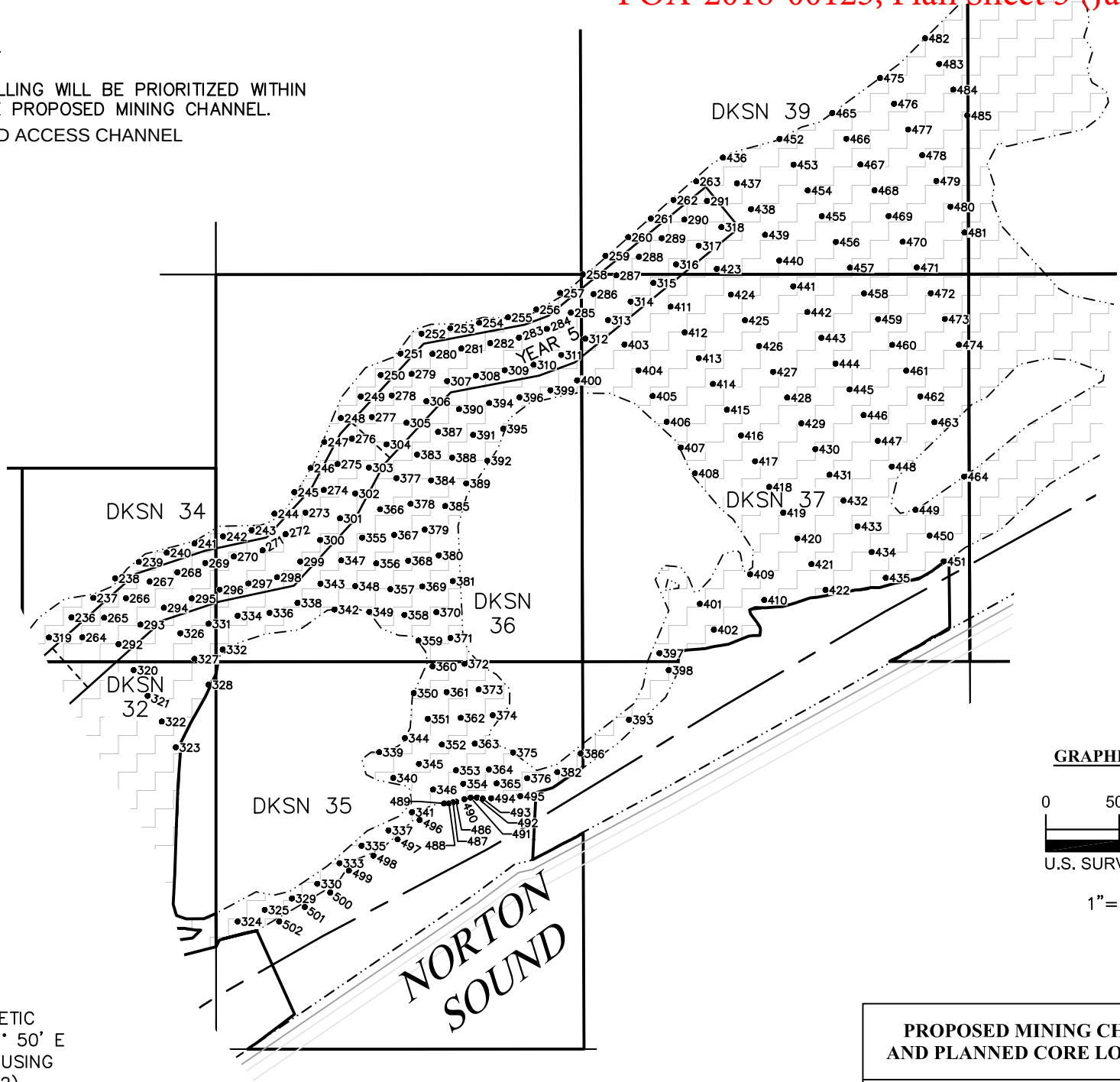
POA-2018-00123, Bonanza Channel/ Safety Sound
Applicant: IPOP, LLC , APMA 2875
PROJECT: NWP 6, Survey Activities
Location: , Lat. 64.5160º N, Long.164.5924º W.
P 2 of 7 Feb. 21, 2020

EXPLORATION PLAN

POA-2018-00123, Plan Sheet 3 (January 2021)

NOTES

1 DRILLING WILL BE PRIORITIZED WITHIN THE PROPOSED MINING CHANNEL. AND ACCESS CHANNEL



TRUE NORTH
9° 50'
MAGNETIC NORTH
N

MEAN MAGNETIC DECLINATION 91° 50' E (CALCULATED USING WMM2015V2)

GRAPHIC SCALE

0 500 1000

U.S. SURVEY FEET

1"=1000'

PROPOSED MINING CHANNEL AND PLANNED CORE LOCATIONS	DATE 11/6/2020
	PAGE 1 OF 3
APPLICANT: IPOP, LLC	LATITUDE N64°31'00"
FILE NO.: POA-2018-0123	LONGITUDE W164°34'54"
WATERWAY: BONANZA CHANNEL	
PROPOSED ACTIVITY: MINING (DREDGE AND FILL)	

CORE LOCATIONS

POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE
1	N64°30'29.25"	W164°36'55.30"	16	N64°30'43.59"	W164°35'56.72"	31	N64°31'05.18"	W164°35'11.29"	46	N64°30'30.79"	W164°36'41.63"	61	N64°30'47.17"	W164°35'46.96"
2	N64°30'30.15"	W164°36'51.24"	17	N64°30'45.17"	W164°35'53.99"	32	N64°31'06.28"	W164°35'07.55"	47	N64°30'31.74"	W164°36'37.62"	62	N64°30'48.91"	W164°35'44.86"
3	N64°30'31.05"	W164°36'47.18"	18	N64°30'46.75"	W164°35'51.27"	33	N64°31'07.14"	W164°35'03.43"	48	N64°30'32.68"	W164°36'33.62"	63	N64°30'50.67"	W164°35'42.80"
4	N64°30'31.96"	W164°36'43.12"	19	N64°30'48.37"	W164°35'48.70"	34	N64°31'07.99"	W164°34'59.32"	49	N64°30'33.63"	W164°36'29.61"	64	N64°30'52.21"	W164°35'40.06"
5	N64°30'32.86"	W164°36'39.06"	20	N64°30'50.17"	W164°35'46.87"	35	N64°31'08.85"	W164°34'55.21"	50	N64°30'34.57"	W164°36'25.60"	65	N64°30'53.54"	W164°35'36.70"
6	N64°30'33.76"	W164°36'35.00"	21	N64°30'51.97"	W164°35'45.04"	36	N64°31'09.57"	W164°34'50.98"	51	N64°30'35.29"	W164°36'21.40"	66	N64°30'54.87"	W164°35'33.33"
7	N64°30'34.66"	W164°36'30.93"	22	N64°30'53.42"	W164°35'42.05"	37	N64°31'10.07"	W164°34'46.55"	52	N64°30'35.70"	W164°36'16.93"	67	N64°30'56.20"	W164°35'29.97"
8	N64°30'35.57"	W164°36'26.87"	23	N64°30'54.75"	W164°35'38.69"	38	N64°31'10.78"	W164°34'42.33"	53	N64°30'36.11"	W164°36'12.46"	68	N64°30'57.53"	W164°35'26.60"
9	N64°30'36.29"	W164°36'22.66"	24	N64°30'56.09"	W164°35'35.33"	39	N64°31'11.69"	W164°34'38.27"	54	N64°30'37.25"	W164°36'08.79"	69	N64°30'58.83"	W164°35'23.17"
10	N64°30'36.70"	W164°36'18.20"	25	N64°30'57.42"	W164°35'31.96"	40	N64°31'12.60"	W164°34'34.22"	55	N64°30'38.48"	W164°36'05.23"	70	N64°31'00.12"	W164°35'19.70"
11	N64°30'37.11"	W164°36'13.73"	26	N64°30'58.75"	W164°35'28.60"	41	N64°31'13.81"	W164°34'30.65"	56	N64°30'39.72"	W164°36'01.67"	71	N64°31'01.40"	W164°35'16.24"
12	N64°30'38.28"	W164°36'10.12"	27	N64°31'00.05"	W164°35'25.16"	42	N64°31'13.71"	W164°34'18.43"	57	N64°30'40.95"	W164°35'58.11"	72	N64°31'02.68"	W164°35'12.77"
13	N64°30'39.55"	W164°36'06.62"	28	N64°31'01.33"	W164°35'21.69"	43	N64°30'27.95"	W164°36'53.65"	58	N64°30'42.43"	W164°35'55.14"	73	N64°31'03.96"	W164°35'09.30"
14	N64°30'40.81"	W164°36'03.11"	29	N64°31'02.61"	W164°35'18.22"	44	N64°30'28.90"	W164°36'49.64"	59	N64°30'44.01"	W164°35'52.41"	74	N64°31'05.05"	W164°35'05.54"
15	N64°30'42.07"	W164°35'59.61"	30	N64°31'03.89"	W164°35'14.76"	45	N64°30'29.84"	W164°36'45.64"	60	N64°30'45.59"	W164°35'49.69"	75	N64°31'05.91"	W164°35'01.43"

POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE
76	N64°31'06.77"	W164°34'57.32"	91	N64°30'31.90"	W164°36'27.41"	106	N64°30'50.43"	W164°35'37.80"	121	N64°31'06.99"	W164°34'42.26"	136	N64°30'24.83"	W164°36'28.85"
77	N64°31'07.63"	W164°34'53.21"	92	N64°30'32.84"	W164°36'23.41"	107	N64°30'51.76"	W164°35'34.43"	122	N64°31'07.84"	W164°34'38.15"	137	N64°30'23.10"	W164°36'26.65"
78	N64°31'08.28"	W164°34'48.91"	93	N64°30'33.49"	W164°36'19.14"	108	N64°30'53.09"	W164°35'31.07"	123	N64°31'08.74"	W164°34'34.10"	138	N64°30'30.17"	W164°36'25.22"
79	N64°31'08.77"	W164°34'44.49"	94	N64°30'33.90"	W164°36'14.67"	109	N64°30'54.42"	W164°35'27.71"	124	N64°31'09.65"	W164°34'30.04"	139	N64°30'28.45"	W164°36'23.03"
80	N64°31'09.57"	W164°34'40.33"	95	N64°30'34.31"	W164°36'10.20"	110	N64°30'55.76"	W164°35'24.34"	125	N64°31'10.82"	W164°34'26.41"	140	N64°30'26.72"	W164°36'20.83"
81	N64°31'10.47"	W164°34'36.28"	96	N64°30'35.49"	W164°36'06.58"	111	N64°30'57.07"	W164°35'20.93"	126	N64°31'12.13"	W164°34'23.01"	141	N64°30'24.99"	W164°36'18.64"
82	N64°31'11.38"	W164°34'32.22"	97	N64°30'36.72"	W164°36'03.02"	112	N64°30'58.35"	W164°35'17.47"	127	N64°30'24.50"	W164°36'49.26"	142	N64°30'23.27"	W164°36'16.45"
83	N64°31'12.59"	W164°34'28.66"	98	N64°30'37.96"	W164°35'59.46"	113	N64°30'59.63"	W164°35'14.00"	128	N64°30'22.77"	W164°36'47.07"	143	N64°30'31.69"	W164°36'16.74"
84	N64°31'13.91"	W164°34'25.26"	99	N64°30'39.19"	W164°35'55.90"	114	N64°31'00.91"	W164°35'10.53"	129	N64°30'21.05"	W164°36'44.87"	144	N64°30'29.97"	W164°36'14.54"
85	N64°30'26.23"	W164°36'51.46"	100	N64°30'40.56"	W164°35'52.67"	115	N64°31'02.20"	W164°35'07.07"	130	N64°30'26.39"	W164°36'41.25"	145	N64°30'28.24"	W164°36'12.35"
86	N64°30'27.17"	W164°36'47.45"	101	N64°30'42.14"	W164°35'49.94"	116	N64°31'03.32"	W164°35'03.36"	131	N64°30'24.66"	W164°36'39.06"	146	N64°30'26.51"	W164°36'10.16"
87	N64°30'28.12"	W164°36'43.44"	102	N64°30'43.72"	W164°35'47.22"	117	N64°31'04.18"	W164°34'59.25"	132	N64°30'22.94"	W164°36'36.86"	147	N64°30'24.79"	W164°36'07.96"
88	N64°30'29.06"	W164°36'39.44"	103	N64°30'45.30"	W164°35'44.49"	118	N64°31'05.04"	W164°34'55.14"	133	N64°30'21.35"	W164°36'34.66"	148	N64°30'32.64"	W164°36'07.52"
89	N64°30'30.01"	W164°36'35.43"	104	N64°30'46.95"	W164°35'42.04"	119	N64°31'05.90"	W164°34'51.02"	134	N64°30'28.28"	W164°36'33.23"	149	N64°30'25.10"	W164°35'58.41"
90	N64°30'30.95"	W164°36'31.42"	105	N64°30'48.71"	W164°35'39.98"	120	N64°31'06.49"	W164°34'46.68"	135	N64°30'26.56"	W164°36'31.04"	150	N64°30'26.59"	W164°35'59.83"

POA-2018-00123, Bonanza Channel/ Safety Sound, APMA 2875
Applicant: IPOP, LLC. PROJECT: NWP 6, Survey Activities
Location: Lat. 64.5160º N., Long. 164.5924º W.
P 3 of 7 Feb. 21, 2020
List of Core Locations, Page 1

CORE LOCATIONS

POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE
151	N64°30'28.13"	W164°36'02.04"	166	N64°30'44.25"	W164°35'40.61"	181	N64°30'47.88"	W164°35'24.38"	196	N64°30'43.79"	W164°35'08.71"	211	N64°31'02.89"	W164°34'30.52"
152	N64°30'35.14"	W164°36'00.29"	167	N64°30'42.53"	W164°35'38.41"	182	N64°30'54.08"	W164°35'21.83"	197	N64°30'42.24"	W164°35'06.81"	212	N64°31'01.16"	W164°34'28.33"
153	N64°30'33.53"	W164°35'58.37"	168	N64°30'40.80"	W164°35'36.22"	183	N64°30'52.35"	W164°35'19.64"	198	N64°30'40.52"	W164°35'04.62"	213	N64°30'59.44"	W164°34'26.14"
154	N64°30'29.78"	W164°35'53.33"	169	N64°30'39.07"	W164°35'34.03"	184	N64°30'50.62"	W164°35'17.45"	199	N64°31'01.77"	W164°35'00.34"	214	N64°30'57.71"	W164°34'23.94"
155	N64°30'28.22"	W164°35'51.49"	170	N64°30'37.34"	W164°35'31.83"	185	N64°30'48.90"	W164°35'15.25"	200	N64°31'00.04"	W164°34'58.15"	215	N64°30'55.98"	W164°34'21.75"
156	N64°30'37.65"	W164°35'53.05"	171	N64°30'35.62"	W164°35'29.64"	186	N64°30'56.74"	W164°35'14.80"	201	N64°30'58.31"	W164°34'55.96"	216	N64°31'08.16"	W164°34'26.79"
157	N64°30'35.92"	W164°35'50.86"	172	N64°30'48.30"	W164°35'35.34"	187	N64°30'55.01"	W164°35'12.61"	202	N64°31'03.48"	W164°34'52.11"	217	N64°31'06.43"	W164°34'24.60"
158	N64°30'34.20"	W164°35'48.67"	173	N64°30'46.58"	W164°35'33.14"	188	N64°30'53.29"	W164°35'10.41"	203	N64°31'01.76"	W164°34'49.91"	218	N64°31'04.71"	W164°34'22.41"
159	N64°30'32.47"	W164°35'46.47"	174	N64°30'44.85"	W164°35'30.95"	189	N64°30'51.56"	W164°35'08.22"	204	N64°31'00.03"	W164°34'47.72"	219	N64°31'02.98"	W164°34'20.22"
160	N64°30'30.74"	W164°35'44.28"	175	N64°30'43.12"	W164°35'28.76"	190	N64°30'59.36"	W164°35'07.71"	205	N64°31'04.83"	W164°34'43.39"	220	N64°31'01.25"	W164°34'18.03"
161	N64°30'40.77"	W164°35'46.61"	176	N64°30'41.40"	W164°35'26.56"	191	N64°30'57.64"	W164°35'05.52"	206	N64°31'03.10"	W164°34'41.20"	221	N64°30'59.52"	W164°34'15.83"
162	N64°30'39.05"	W164°35'44.41"	177	N64°30'39.67"	W164°35'24.37"	192	N64°30'55.91"	W164°35'03.33"	207	N64°31'01.37"	W164°34'39.01"	222	N64°30'57.80"	W164°34'13.64"
163	N64°30'37.32"	W164°35'42.22"	178	N64°30'37.94"	W164°35'22.18"	193	N64°30'41.99"	W164°35'16.77"	208	N64°30'59.64"	W164°34'36.82"	223	N64°30'56.07"	W164°34'11.45"
164	N64°30'35.59"	W164°35'40.03"	179	N64°30'51.33"	W164°35'28.76"	194	N64°30'40.46"	W164°35'14.96"	209	N64°31'06.34"	W164°34'34.90"	224	N64°31'10.77"	W164°34'19.69"
165	N64°30'33.87"	W164°35'37.83"	180	N64°30'49.60"	W164°35'26.57"	195	N64°30'38.73"	W164°35'12.76"	210	N64°31'04.62"	W164°34'32.71"	225	N64°31'09.04"	W164°34'17.50"

POINT #	LATITUDE	LONGITUDE
226	N64°31'07.32"	W164°34'15.31"
227	N64°31'05.59"	W164°34'13.11"
228	N64°31'03.86"	W164°34'10.92"
229	N64°31'02.13"	W164°34'08.73"
230	N64°31'00.41"	W164°34'06.54"
231	N64°30'48.44"	W164°34'33.02"
232	N64°30'49.65"	W164°34'24.14"
233	N64°30'52.80"	W164°34'17.72"
234	N64°30'54.31"	W164°34'09.22"
235	N64°30'56.06"	W164°34'01.01"

CORE LOCATIONS

POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE
236	N64°31'17.00"	W164°34'22.38"	251	N64°31'34.70"	W164°33'31.08"	266	N64°31'18.29"	W164°34'13.88"	281	N64°31'35.03"	W164°33'21.63"	296	N64°31'18.86"	W164°33'59.29"
237	N64°31'18.31"	W164°34'18.97"	252	N64°31'36.03"	W164°33'27.83"	267	N64°31'19.40"	W164°34'10.20"	282	N64°31'35.39"	W164°33'17.13"	297	N64°31'19.28"	W164°33'54.82"
238	N64°31'19.62"	W164°34'15.57"	253	N64°31'36.39"	W164°33'23.33"	268	N64°31'20.03"	W164°34'05.87"	283	N64°31'35.76"	W164°33'12.64"	298	N64°31'19.69"	W164°33'50.35"
239	N64°31'20.72"	W164°34'11.87"	254	N64°31'36.76"	W164°33'18.84"	269	N64°31'20.65"	W164°34'01.53"	284	N64°31'36.34"	W164°33'08.29"	299	N64°31'20.75"	W164°33'46.73"
240	N64°31'21.34"	W164°34'07.54"	255	N64°31'37.12"	W164°33'14.35"	270	N64°31'21.08"	W164°33'57.07"	285	N64°31'37.44"	W164°33'04.55"	300	N64°31'22.20"	W164°33'43.63"
241	N64°31'21.96"	W164°34'03.20"	256	N64°31'37.65"	W164°33'09.96"	271	N64°31'21.50"	W164°33'52.61"	286	N64°31'38.68"	W164°33'01.02"	301	N64°31'23.64"	W164°33'40.53"
242	N64°31'22.44"	W164°33'58.77"	257	N64°31'38.75"	W164°33'06.23"	272	N64°31'22.58"	W164°33'49.03"	287	N64°31'39.93"	W164°32'57.48"	302	N64°31'25.31"	W164°33'38.16"
243	N64°31'22.85"	W164°33'54.30"	258	N64°31'40.00"	W164°33'02.70"	273	N64°31'24.03"	W164°33'45.93"	288	N64°31'41.18"	W164°32'53.94"	303	N64°31'27.05"	W164°33'36.03"
244	N64°31'23.95"	W164°33'50.75"	259	N64°31'41.25"	W164°32'59.16"	274	N64°31'25.54"	W164°33'43.05"	289	N64°31'42.42"	W164°32'50.40"	304	N64°31'28.60"	W164°33'33.28"
245	N64°31'25.40"	W164°33'47.65"	260	N64°31'42.49"	W164°32'55.62"	275	N64°31'27.28"	W164°33'40.91"	290	N64°31'43.67"	W164°32'46.87"	305	N64°31'30.05"	W164°33'30.17"
246	N64°31'27.02"	W164°33'45.11"	261	N64°31'43.74"	W164°32'52.08"	276	N64°31'28.99"	W164°33'38.68"	291	N64°31'44.92"	W164°32'43.33"	306	N64°31'31.49"	W164°33'27.07"
247	N64°31'28.76"	W164°33'42.98"	262	N64°31'44.99"	W164°32'48.55"	277	N64°31'30.44"	W164°33'35.57"	292	N64°31'15.21"	W164°34'15.04"	307	N64°31'32.85"	W164°33'23.84"
248	N64°31'30.37"	W164°33'40.39"	263	N64°31'46.23"	W164°32'45.01"	278	N64°31'31.88"	W164°33'32.46"	293	N64°31'16.52"	W164°34'11.63"	308	N64°31'33.21"	W164°33'19.35"
249	N64°31'31.81"	W164°33'37.29"	264	N64°31'15.67"	W164°34'20.69"	279	N64°31'33.33"	W164°33'29.36"	294	N64°31'17.65"	W164°34'07.98"	309	N64°31'33.57"	W164°33'14.86"
250	N64°31'33.25"	W164°33'34.18"	265	N64°31'16.98"	W164°34'17.29"	280	N64°31'34.67"	W164°33'26.12"	295	N64°31'18.27"	W164°34'03.64"	310	N64°31'33.94"	W164°33'10.37"

POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE	POINT #	LATITUDE	LONGITUDE
311	N64°31'34.60"	W164°33'06.06"	326	N64°31'15.94"	W164°34'05.41"	341	N64°31'03.93"	W164°33'29.34"	356	N64°31'20.62"	W164°33'34.89"	371	N64°31'15.61"	W164°33'23.33"
312	N64°31'35.68"	W164°33'02.31"	327	N64°31'14.21"	W164°34'03.22"	342	N64°31'17.53"	W164°33'41.39"	357	N64°31'18.89"	W164°33'32.70"	372	N64°31'13.89"	W164°33'21.14"
313	N64°31'36.93"	W164°32'58.77"	328	N64°31'12.49"	W164°34'01.03"	343	N64°31'19.26"	W164°33'43.58"	358	N64°31'17.16"	W164°33'30.51"	373	N64°31'12.16"	W164°33'18.95"
314	N64°31'38.18"	W164°32'55.24"	329	N64°30'58.15"	W164°33'48.05"	344	N64°31'08.90"	W164°33'30.44"	359	N64°31'15.44"	W164°33'28.32"	374	N64°31'10.43"	W164°33'16.76"
315	N64°31'39.42"	W164°32'51.70"	330	N64°30'59.13"	W164°33'44.09"	345	N64°31'07.17"	W164°33'28.25"	360	N64°31'13.71"	W164°33'26.13"	375	N64°31'07.93"	W164°33'13.59"
316	N64°31'40.67"	W164°32'48.16"	331	N64°31'16.57"	W164°34'01.01"	346	N64°31'05.44"	W164°33'26.06"	361	N64°31'11.98"	W164°33'23.94"	376	N64°31'06.20"	W164°33'11.40"
317	N64°31'41.92"	W164°32'44.63"	332	N64°31'14.84"	W164°33'58.82"	347	N64°31'20.82"	W164°33'40.36"	362	N64°31'10.25"	W164°33'21.74"	377	N64°31'26.34"	W164°33'31.73"
318	N64°31'43.16"	W164°32'41.09"	333	N64°31'00.51"	W164°33'40.63"	348	N64°31'19.09"	W164°33'38.17"	363	N64°31'08.53"	W164°33'19.55"	378	N64°31'24.61"	W164°33'29.54"
319	N64°31'15.65"	W164°34'25.88"	334	N64°31'17.11"	W164°33'56.48"	349	N64°31'17.37"	W164°33'35.97"	364	N64°31'06.80"	W164°33'17.36"	379	N64°31'22.88"	W164°33'27.35"
320	N64°31'13.47"	W164°34'12.69"	335	N64°31'01.68"	W164°33'37.20"	350	N64°31'11.92"	W164°33'29.06"	365	N64°31'05.85"	W164°33'16.16"	380	N64°31'21.16"	W164°33'25.16"
321	N64°31'11.74"	W164°34'10.50"	336	N64°31'17.30"	W164°33'51.52"	351	N64°31'10.19"	W164°33'26.87"	366	N64°31'24.25"	W164°33'34.29"	381	N64°31'19.43"	W164°33'22.96"
322	N64°31'10.01"	W164°34'08.31"	337	N64°31'02.71"	W164°33'33.00"	352	N64°31'08.46"	W164°33'24.68"	367	N64°31'22.52"	W164°33'32.10"	382	N64°31'06.61"	W164°33'06.71"
323	N64°31'08.28"	W164°34'06.12"	338	N64°31'17.97"	W164°33'47.16"	353	N64°31'06.74"	W164°33'22.49"	368	N64°31'20.80"	W164°33'29.91"	383	N64°31'27.92"	W164°33'28.53"
324	N64°30'56.60"	W164°33'56.50"	339	N64°31'07.96"	W164°33'34.45"	354	N64°31'05.83"	W164°33'21.35"	369	N64°31'19.07"	W164°33'27.72"	384	N64°31'26.19"	W164°33'26.33"
325	N64°30'57.38"	W164°33'52.28"	340	N64°31'06.23"	W164°33'32.26"	355	N64°31'22.35"	W164°33'37.08"	370	N64°31'17.34"	W164°33'25.53"	385	N64°31'24.46"	W164°33'24.14"

PROPOSED MINING CHANNEL AND PLANNED CORE LOCATIONS

DATE 11/6/2020

PAGE 2 OF 3

APPLICANT: IPOP, LLC
FILE NO.: POA-2018-0123
WATERWAY: BONANZA CHANNEL
PROPOSED ACTIVITY: MINING (DREDGE AND FILL)

LATITUDE	LONGITUDE
N64°31'00"	W164°34'54"

POINT #	LATITUDE	LONGITUDE
386	N64°31'07.86"	W164°33'03.08"
387	N64°31'29.44"	W164°33'25.25"
388	N64°31'27.71"	W164°33'23.06"
389	N64°31'25.99"	W164°33'20.87"
390	N64°31'30.96"	W164°33'21.97"
391	N64°31'29.24"	W164°33'19.78"
392	N64°31'27.51"	W164°33'17.59"
393	N64°31'10.12"	W164°32'55.54"
394	N64°31'31.37"	W164°33'17.28"
395	N64°31'29.65"	W164°33'15.09"
396	N64°31'31.76"	W164°33'12.56"
397	N64°31'14.59"	W164°32'50.78"
398	N64°31'13.45"	W164°32'49.34"
399	N64°31'32.23"	W164°33'07.74"
400	N64°31'32.89"	W164°33'03.58"

POINT #	LATITUDE	LONGITUDE
401	N64°31'17.89"	W164°32'44.49"
402	N64°31'16.16"	W164°32'42.30"
403	N64°31'35.29"	W164°32'56.21"
404	N64°31'33.56"	W164°32'54.02"
405	N64°31'31.83"	W164°32'51.82"
406	N64°31'30.11"	W164°32'49.63"
407	N64°31'28.38"	W164°32'47.44"
408	N64°31'26.65"	W164°32'45.25"
409	N64°31'19.88"	W164°32'36.64"
410	N64°31'18.15"	W164°32'34.45"
411	N64°31'37.83"	W164°32'49.01"
412	N64°31'36.10"	W164°32'46.82"
413	N64°31'34.37"	W164°32'44.63"
414	N64°31'32.64"	W164°32'42.44"
415	N64°31'30.92"	W164°32'40.24"

POINT #	LATITUDE	LONGITUDE
416	N64°31'29.19"	W164°32'38.05"
417	N64°31'27.46"	W164°32'35.86"
418	N64°31'25.73"	W164°32'33.67"
419	N64°31'24.01"	W164°32'31.48"
420	N64°31'22.28"	W164°32'29.29"
421	N64°31'20.55"	W164°32'27.10"
422	N64°31'18.82"	W164°32'24.91"
423	N64°31'40.37"	W164°32'41.81"
424	N64°31'38.64"	W164°32'39.62"
425	N64°31'36.91"	W164°32'37.43"
426	N64°31'35.18"	W164°32'35.24"
427	N64°31'33.46"	W164°32'33.05"
428	N64°31'31.73"	W164°32'30.86"
429	N64°31'30.00"	W164°32'28.66"
430	N64°31'28.27"	W164°32'26.47"

POINT #	LATITUDE	LONGITUDE
431	N64°31'26.54"	W164°32'24.28"
432	N64°31'24.82"	W164°32'22.09"
433	N64°31'23.09"	W164°32'19.90"
434	N64°31'21.36"	W164°32'17.71"
435	N64°31'19.63"	W164°32'15.52"
436	N64°31'47.83"	W164°32'40.86"
437	N64°31'46.10"	W164°32'38.66"
438	N64°31'44.37"	W164°32'36.47"
439	N64°31'42.64"	W164°32'34.28"
440	N64°31'40.92"	W164°32'32.09"
441	N64°31'39.19"	W164°32'29.90"
442	N64°31'37.46"	W164°32'27.71"
443	N64°31'35.73"	W164°32'25.52"
444	N64°31'34.01"	W164°32'23.33"
445	N64°31'32.28"	W164°32'21.14"

POINT #	LATITUDE	LONGITUDE
446	N64°31'30.55"	W164°32'18.95"
447	N64°31'28.82"	W164°32'16.76"
448	N64°31'27.09"	W164°32'14.56"
449	N64°31'24.19"	W164°32'10.88"
450	N64°31'22.46"	W164°32'08.69"
451	N64°31'20.73"	W164°32'06.50"
452	N64°31'49.08"	W164°32'32.02"
453	N64°31'47.35"	W164°32'29.83"
454	N64°31'45.62"	W164°32'27.64"
455	N64°31'43.89"	W164°32'25.45"
456	N64°31'42.17"	W164°32'23.26"
457	N64°31'40.44"	W164°32'21.07"
458	N64°31'38.71"	W164°32'18.88"
459	N64°31'36.98"	W164°32'16.69"
460	N64°31'35.26"	W164°32'14.50"

POINT #	LATITUDE	LONGITUDE
461	N64°31'33.53"	W164°32'12.30"
462	N64°31'31.80"	W164°32'10.11"
463	N64°31'30.07"	W164°32'07.92"
464	N64°31'26.42"	W164°32'03.30"
465	N64°31'50.81"	W164°32'23.80"
466	N64°31'49.08"	W164°32'21.61"
467	N64°31'47.36"	W164°32'19.42"
468	N64°31'45.63"	W164°32'17.23"
469	N64°31'43.90"	W164°32'15.04"
470	N64°31'42.17"	W164°32'12.85"
471	N64°31'40.45"	W164°32'10.66"
472	N64°31'38.72"	W164°32'08.47"
473	N64°31'36.99"	W164°32'06.28"
474	N64°31'35.26"	W164°32'04.09"
475	N64°31'53.16"	W164°32'16.36"

POINT #	LATITUDE	LONGITUDE
476	N64°31'51.43"	W164°32'14.17"
477	N64°31'49.70"	W164°32'11.98"
478	N64°31'47.98"	W164°32'09.79"
479	N64°31'46.25"	W164°32'07.60"
480	N64°31'44.52"	W164°32'05.41"
481	N64°31'42.79"	W164°32'03.22"
482	N64°31'55.83"	W164°32'09.33"
483	N64°31'54.10"	W164°32'07.14"
484	N64°31'52.37"	W164°32'04.95"
485	N64°31'50.64"	W164°32'02.75"
486	N64°31'04.62"	W164°33'22.45"
487	N64°31'04.58"	W164°33'22.95"
488	N64°31'04.51"	W164°33'23.60"
489	N64°31'04.51"	W164°33'24.35"
490	N64°31'04.80"	W164°33'21.19"

POINT #	LATITUDE	LONGITUDE
491	N64°31'04.91"	W164°33'20.21"
492	N64°31'04.91"	W164°33'19.24"
493	N64°31'04.84"	W164°33'18.34"
494	N64°31'04.86"	W164°33'17.01"
495	N64°31'05.00"	W164°33'12.47"
496	N64°31'03.40"	W164°33'28.15"
497	N64°31'02.11"	W164°33'31.58"
498	N64°31'01.02"	W164°33'35.36"
499	N64°31'00.01"	W164°33'39.18"
500	N64°30'58.54"	W164°33'42.08"
501	N64°30'57.57"	W164°33'46.05"
502	N64°30'56.60"	W164°33'50.03"

PROPOSED MINING CHANNEL AND PLANNED CORE LOCATIONS

DATE 11/6/2020

PAGE 3 OF 3

APPLICANT: IPOP, LLC
FILE NO.: POA-2018-0123
WATERWAY: BONANZA CHANNEL
PROPOSED ACTIVITY: MINING (DREDGE AND FILL)

LATITUDE	LONGITUDE
N64°31'00"	W164°34'54"

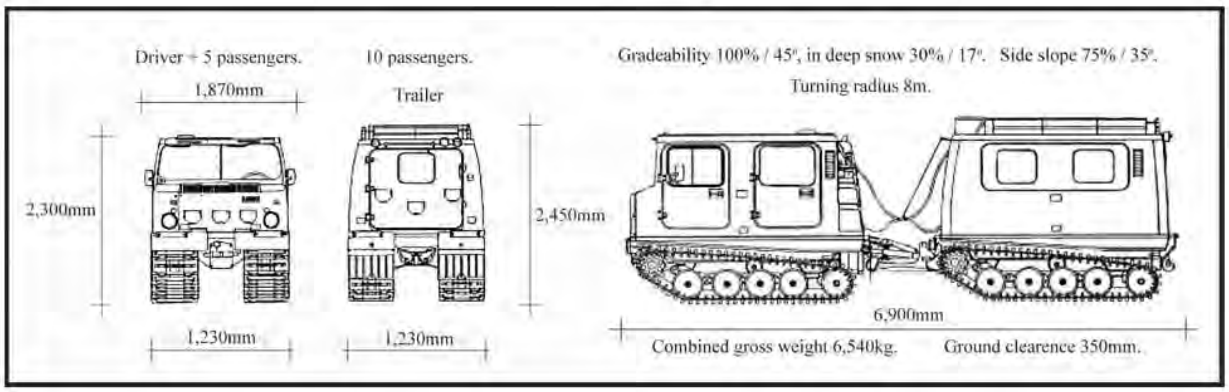


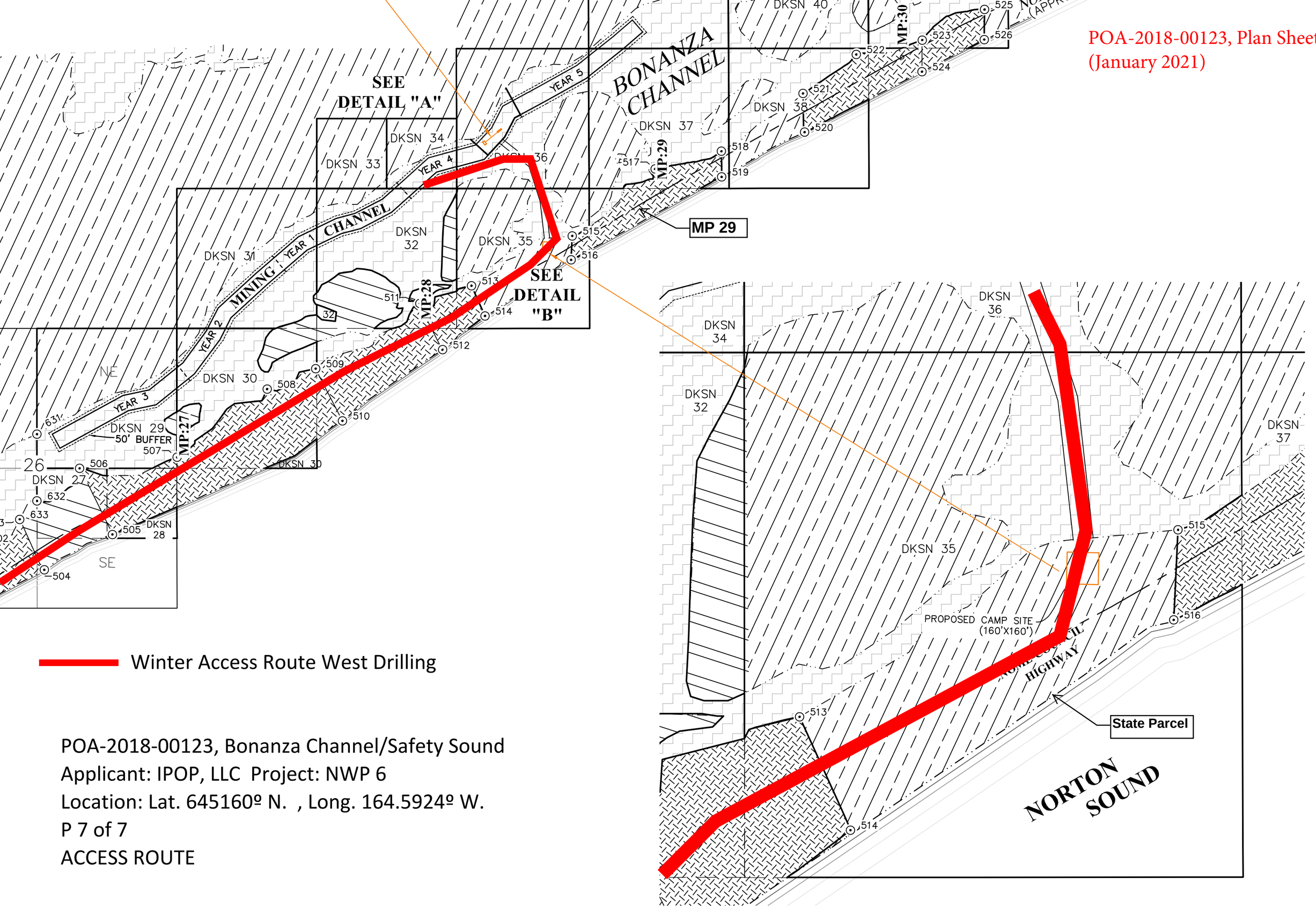
Figure 2. Specifications of Hagglund BV206 proposed to be used for site access.

Figure 3. Pontoon sled for transporting the GeoProbe coring machinery.

All sites will be cored with a 2.25-inch external diameter GeoProbe® 540MT (Figure 4) to a depth of 31 feet, or refusal, at a rate of two to four core holes per day. Cores will be retained in the coring sleeve, contained on the boat deck, and shipped offsite for assay when coring is complete. Any excess drilling muds or cuttings will be disposed of in an upland location. Although the previous consultation included dredging, dredging has been removed from the project description.

Figure 4. GeoProbe ® 540MT which will be used for coring.

POA-2018-00123, Plan Sheet 10
(January 2021)



Winter Access Route West Drilling

POA-2018-00123, Bonanza Channel/Safety Sound
Applicant: IPOP, LLC Project: NWP 6
Location: Lat. 645160º N. , Long. 164.5924º W.
P 7 of 7
ACCESS ROUTE

DETAIL "B"
1"=400'

POLAR BEAR INTERACTION GUIDELINES
January 2021

These Polar Bear Interaction Guidelines were developed to help ensure that human activities in polar bear habitat are conducted in a manner that minimizes conflicts with polar bears. Polar bears are protected under the Marine Mammal Protection Act (MMPA), and were listed as a threatened species under the Endangered Species Act (ESA) in 2008. The MMPA and ESA both prohibit the "take" of polar bears without authorization, unless it is necessary for human safety. Take includes disturbance to polar bears, as well as injuring and killing polar bears.

Polar bears use sea ice, marine waters and terrestrial areas in northern and northwestern Alaska for resting, feeding, denning, and seasonal movements. They are most likely to be encountered within 25 miles of the coastline, especially along barrier islands during July-October. Polar bears may also be encountered farther inland, especially females during the denning period (November -April). Be aware that polar bears also occur within human settlements such as villages, camps, and work areas.

Polar bears react differently to human presence, depending on a variety of biological and environmental factors, as well as their previous experience with humans. Hungry (skinny) bears can be particularly dangerous. The general strategy for minimizing human-bear conflicts is to: 1) be prepared; 2) avoid encounters; and 3) know how to respond if an encounter occurs.

Unusual sightings or questions/concerns can be referred to Polar Bear Program staff at the Marine Mammals Management Office (MMM) at 1-800-362-5148; or to the Fairbanks Fish & Wildlife Field Office (FFWFO) at (907) 456-0499. *Given pandemic-related restrictions, MMM staff are currently working remotely, so please reach out via email to either Lindsey Mangipane (lindsey_mangipane@fws.gov) or Dave Gustine (david_gustine@fws.gov).*

When traveling on land or sea ice:

- Be prepared. Have a human-bear safety plan that includes information on how to avoid and respond to bear encounters. Carry deterrents, and practice/know how to use them.

- Avoid surprise encounters. Travel in groups, make noise, and be vigilant - especially on barrier islands, in river drainages, along bluff habitat or ice leads/polynyas, near whale or other marine mammal carcasses, or in the vicinity of fresh tracks.

- Minimize attractants. Avoid carrying strongly scented attractants such as meat or fish while away from camp, or place them in air-tight containers to minimize odor transmission.

- Avoid disturbing denning bears. Between November and April, special care is needed to avoid disturbance of denning bears. If activities are to take place during that time period, MMM should be contacted to determine if any additional mitigation is required. In general, activities are not permitted within one mile of known den sites.

When camping:

- Avoid high use areas. If possible, avoid camping or lingering in bear high-use areas such as river drainages, coastal bluffs and barrier islands, or along ice leads/polynyas.

- Minimize and prevent access to attractants. Store food, garbage, and other attractants in a manner that minimizes odors and prevents access by bears. Do not allow a bear(s) to receive a food reward in your camp; a rewarded bear is likely to become a problem for you or someone else in the future.

  - Use bear-resistant containers to store food, garbage, and other attractants. Containers should be approved and certified by the Interagency Grizzly Bear Committee as "bear-resistant" (see information at http://www.igbconline.org/html/bear-resistant-products).

  - Consider the use of an electric fence and/or alarm system as additional protection.

If a polar bear(s) is encountered:

- Prepare your deterrent(s). Do not run from or approach polar bears. If the bear is unaware of you, allow it to continue what it was doing before you encountered it. Move to safe shelter (e.g. vehicle or building) if available, and wait until it is safe to proceed.
- Group up. If no safe shelter is available, group up with others and stand positioned to allow for safe deployment of deterrents (e.g. firearm, pistol launcher, bear pepper spray) – until the bear leaves.
- Observe bear behavior. Polar bears that stop what they are doing to turn their head or sniff the air in your direction have likely become aware of your presence. These animals may exhibit various behaviors:

  - C*urious* polar bears typically move slowly, stopping frequently to sniff the air, moving their heads around to catch a scent, or holding their heads high with ears forward. They may also stand up.
  - *A threatened or agitated* polar bear may huff, snap its jaws together, stare at you (or the object of threat) and lower its head to below shoulder level, pressing its ears back and swaying from side to side.
  - A *predatory* bear may sneak up on an object it considers prey. It may also approach in a straight line at constant speed without exhibiting curious or threatened behavior.

If a polar bear(s) approaches you or your camp:

- Defend your group/camp. Any bear that approaches within range of your deterrents should be deterred. Stand your ground; do not run. Defend your group or camp, increasing the intensity of your deterrence efforts as necessary. Be aware that lethal take of polar bears is permissible if such taking is imminently necessary in defense of human life. Defense of life kills must be reported to the Service within 48 hours.

- If bear makes physical contact, fight back. If deterrence/lethal efforts have failed and a polar bear attacks (makes physical contact), **do not "play dead"**. Fight back using any deterrents available, aiming fists or objects at the bear's nose and face.

When operating aircraft (including unmanned aircraft systems/drones):

Unless taking off from or landing at an airport/airstrip, pilots should maintain a minimum of 1,500 feet flight altitude and ½ mile horizontal distance from polar bears in the water, and on ice or land. Avoid circling or turning aircraft near polar bears.

When operating watercraft:

Be especially vigilant for swimming bears. If a swimming bear(s) is encountered, allow it to continue unhindered. Never approach, herd, chase, or attempt to lure swimming bear(s). Reduce speed when visibility is low and avoid sudden changes in travel direction.

FOR DEPARTMENT OF INTERIOR EMPLOYEES ONLY

Use of Deterrents

In addition to following the Interaction Guidelines above, all U.S. Fish and Wildlife Service (Service) employees must have completed the Department of the Interior's (DOI) Bear Awareness training course. To use less-lethal or lethal deterrents, employees must also have completed the Firearm Safety training course and be current in certification before engaging in field activities. Service staff must practice with and know how to use deterrents prior to conducting field work. If working in polar bear habitat, Service staff must anticipate and plan for possible scenarios of encountering polar bears, and identify appropriate responses, prior to initiating field work. Use of less-lethal polar bear deterrents by Service staff is only permissible if it is done in a humane manner and is for the purposes of protection or welfare of the bear or the public. Service staff has the right to use lethal methods to protect the public from polar bears in defense of life situations, and may do so when all reasonable steps to avoid killing the bear(s) have been taken.

Notification of Use of Deterrents

The Department of the Interior Bear Incident Report Form (Attachment 1) will be used to record and report human-polar bear incidents that involve taking or attempting to take a bear in defense of life or property; use of less lethal or non-lethal deterrents; human injury or death; or damage to camp or equipment by bear(s). These incidents must be reported to the MMM Office within 48 hours. This information will be used to track incidents over time and improve polar bear conservation and management.

Attachment 1. Bear Incident Report

Goal: To use field experiences to learn how to create working conditions or modify human interactions with bears that will result in fewer harmful incidents where either bears, people, or equipment are injured or damaged.

Objective: To analyze bear incidents for trends and avoidance strategies.

Bear Incident: Taking or attempting to take a bear in defense of life or property; use of non-lethal deterrents; human injury or death; or damage to camp or equipment by bear(s).

Please review the instructions before filling out the report.

1. Name and duty station of person reporting incident: _____
   _____
2. Names of others involved in or present during incident: _____
   _____
3. Incident location (please be as specific as possible): _____
   _____
4. Date of incident: _____
5. Time of incident: _____
6. Duration of the incident: _____
7. Species involved:
   ☐ Black Bear ☐ Brown/Grizzly Bear ☐ Polar Bear ☐ Unidentified
8. Number and age category of bears (if known):
   ___ Adult Male ___ Adult Female ___ Adult – sex unknown ___ Subadult
   ___ Female with cubs of the year ___ Female with older offspring

   Please describe any identifying features of the bear(s) involved: _____
   _____
9. When this incident occurred, what was your primary reason for being there?
   _____
   _____

10. What were you doing at the time you first became aware of the bear(s)? _____

11. What was the distance to the bear(s) when first observed (specify units)? _____

12. What was the closest distance that the bear(s) approached (specify units)? _____

13. What was the bear doing at the time you first became aware of it? _____

14. What were you doing immediately before you first became aware of the bear(s)?

15. Describe any avoidance measures taken when the bear(s) was first encountered:

16. How did the bear(s) react to avoidance measures? _____

17. What was the total group size? _____

18. What was the group size throughout the incident? _____

19. Did the bear(s) ever charge? ☐ Yes ☐ No ☐ Not Applicable
    If yes, from what distance did it charge (specify units)? _____
    How many times did the bear(s) charge? _____

20. What do you feel was the probable cause of the incident? _____

21. Number and types of firearms in the group
    Available _____
    Used _____
    Bullet type and weight _____
    Number of shots fired _____
    Number of hits _____

Number of shots required to stop bear _____

Number of shots required to kill bear _____

22. Non-lethal deterrents:

Available ☐ Air horn ☐ Whistle ☐ Flare ☐ Screamer ☐ Banger
☐ Cracker ☐ Rubber Bullet ☐ Bean bag ☐ Bear pepper spray

other _____

Used ☐ Air horn ☐ Whistle ☐ Flare ☐ Screamer ☐ Banger
☐ Cracker ☐ Rubber Bullet ☐ Bean bag ☐ Bear pepper spray

other _____

Distance(s) deterrent(s) used: _____

Effect(s): _____

23. Were you making noise or doing something to let the bear(s) know of your presence prior to the incident? ☐ Yes ☐ No ☐ Not Applicable

If so, describe: _____

24. Were any of the following present at the incident location?

Camp with
☐ Cabin
☐ Weatherport
☐ Tent

Transportation
☐ Metal Boat
☐ Inflatable Boat
☐ Canoe
☐ Kayak
☐ Aircraft
☐ Other: _____

25. Was fuel recently spilled at the incident location?

☐ Yes ☐ No ☐ Unknown/Not Applicable

If Yes, what type of fuel? _____

26. Was human food present? ☐ Yes ☐ No ☐ Unknown/Not Applicable

If present, how was food stored?
☐ Metal Drum ☐ BRFC ☐ Cooler ☐ Plastic Bag ☐ Open
Other _____

If present, where was food stored?
☐ Cabin ☐ Weatherport ☐ Tent ☐ Pack ☐ Ground Cache ☐ Boat ☐ Aircraft
Other _____

27. Was garbage present? ☐ Yes ☐ No ☐ Unknown/Not Applicable
If present, how was garbage stored?
☐ Metal Drum ☐ BRFC ☐ Cooler ☐ Plastic Bag ☐ Open
Other _____

If present, where was garbage stored?
☐ Cabin ☐ Weatherport ☐ Tent ☐ Pack ☐ Ground Cache ☐ Boat ☐ Aircraft
Other _____

28. Did incident occur at a camp? ☐ Yes ☐ No
If yes, what was distance between food storage site and (specify units)
Cooking Area _____ Sleeping Area _____

Camp deterrent systems in use and active at the time of incident
☐ None ☐ Electric Fence ☐ Perimeter Alarm
Other _____

29. Did bear(s) receive a food reward? ☐ Yes ☐ No ☐ Unknown/Not Applicable

30. Was natural food present? ☐ Yes ☐ No ☐ Unknown/Not Applicable
If yes, please describe
☐ Carrion ☐ Spawning Fish ☐ Berries
Other _____

Distance to known food source(s) (specify units)? _____
_____

31. Describe the incident environment

Terrain	Vegetation	Visibility	Weather
___ Flat	___ Tundra	___ <5 m	___ Fog
___ Hills/Dunes	___ Grass	___ 5 – 10 m	___ Rain / Snow
___ Mountains	___ Brush	___ 10 – 25 m	___ Clear

___ Beach/Lake Shore	___ Closed Forest	___ 25 – 50 m	___ Partly Cloudy
___ River/Stream	___ Open Forest	___ 50 – 100 m	___ Overcast
___ Other	___ Riparian	___ >100 m	___ Wind Speed
	___ Other		___ Wind Direction

32. Was property damaged? ☐ Yes ☐ No
If yes, describe: _____
Estimated value: _____

33. Did human injuries result from the incident? ☐ Yes ☐ No
If yes, describe extent of injuries _____

Was hospitalization required? ☐ Yes ☐ No

34. Detailed narrative of incident (use extra sheets if necessary)

Bear Incident Report Form Instructions

Complete this form if: you took a bear in defense of life of property; a person or bear was injured or died; non-lethal deterrents were used; you had an interaction with a bear showing aggressive behavior(s); or if damage to a camp or equipment was caused by bears.

Forward a copy of the completed report to your station bear awareness instructor and the Regional Safety Manager as soon as possible (U.S. Fish and Wildlife Service, Safety Office, 1011 E. Tudor Road, Anchorage, Alaska 99503). In the case of polar bears, also provide a copy to the Marine Mammals Management Office (U.S. Fish and Wildlife Service, Marine Mammals Management, 1011 E. Tudor Road, Anchorage, Alaska 99503; 1-800-362-5148).

If a bear was killed or wounded under Defense of Life and Property provisions, completion of this form **does not** satisfy the requirement to complete a Defense of life and Property report to Alaska Department of Fish and Game. Attach a copy of the Defense of Life and Property Report to this report.

1. Self-explanatory.
2. Provide full names only.
3. Be as specific as possible when describing the location; provide GPS coordinates (including the datum of the GPS). Attach a map with the incident location if possible.
4. Self-explanatory. Complete a separate form for each incident even if you believe the same bear was involved (e.g., an incident at camp at 2200 hrs and then another at 0400 hrs the next day would be 2 separate incidents that would need separate reports).
5. Use military time.
6. Provide your best estimate.
7. Check the appropriate box.
8. Indicate the number of bears in the appropriate category; for example, a 3 in *Female with cubs of the year* would indicate a female with 2 cubs.
   Provide any identifying features of the bear in order to help determine repeat instances or patterns.
9. Describe the activity that took you to the incident location (e.g., operating fish weir, salmon escapement survey, waterfowl brood survey, moose browse survey, recreation).
10. Describe your activities, or the activities of the group (e.g., “We had just completed securing the raft on the gravel bar when …”).
11. Provide your best estimate on distance. Be sure to indicate units.
12. Provide your best estimate on distance. Be sure to indicate units.
13. Describe the bear(s) activities and sequence of behaviors, if any (e.g., the bear was watching us, then it began swaying from side to side, and then it began huffing).
14. Describe your activities, or the activities of the group, immediately prior to becoming aware of the presence of the bear(s) (e.g., “We were rafting down a quite stretch of the Winding River talking in normal voices.”).
15. Describe your actions, or the actions of the group, in the sequence that they occurred. Use additional space if necessary.
16. Describe how the bear(s) responded to your actions, in the sequence that they occurred. Use additional space if necessary.

17. Indicate the total number of people in the group, not just those directly involved with the bear interaction. (This information is being gathered and analyzed by others looking at the influence of other people near the incident site, but not directly involved in the incident.)
18. Indicate the number of people visible to the bear at the beginning of the incident. If the number of people changed during the incident, then indicate the changed number(s) as well (e.g., 2 at beginning, joined by 2 more, then the last member of party).
19. Check the appropriate box.
    Provide your best estimate on distance for each charge; be sure to include units (e.g., 30 m, 25 m, and 20 m).
    Be sure to indicate the total number of charges.
20. Provide your best estimate on the cause or causes that contributed to the incident occurring (e.g., surprise encounter, stumbled onto food cache, ambient noise covering human sounds, etc.). When analyzing information, it is import to understand your perceptions on contributing factors.
21. Indicate the number and types of firearms available in the incident group and which, if any, were actually used. Use can include non-lethal devices.
    If lethal rounds were used: indicate the bullet type and weight (e.g., Brenneke 600 gr); the total number of rounds fired; total number of hits (if this is an estimate the please indicate that the number is an estimate); the number of shots (or hits if known) that were required to stop the bear; and the number of shots (or hits if known) that were required to kill the bear.
22. Check or describe all non-lethal deterrents available in the incident group and those used. If no non-lethal deterrents were used, please indicate this on the Other line under the Used subsection.
    Provide your best estimate on the distance between the incident group and the bear(s) for each deterrent used (be sure to include distance units). Indicate each distance for each deterrent used if more than 1 deterrent was used or if the same deterrent was used multiple times.
    Describe the action/reaction of the bear(s) to each deterrent action. Use additional space if needed.
23. Describe noises, if any, that the incident group was making prior to the incident.
24. Check all applicable boxes.
25. Check appropriate box. Recently means up to 5 days prior to the incident.
    Please identify the type of fuel spilled, if known (e.g., unleaded gas, AvGas, Jet A, White Gas, Propane, etc.).
26. Check all applicable boxes and describe as appropriate.
27. Check all applicable boxes and describe as appropriate.
28. Check appropriate box.
    Provide best estimated distances; be sure to include distance units.
    Check or describe any camp deterrent system in place **and active** during the incident.
29. Check appropriate box.
30. Check appropriate box.
    If present, check and describe food source(s) and indicate distance(s) between food source(s) and incident location; be sure to include distance units.
31. Check all appropriate boxes and provide description if needed to properly describe the incident environment. Be sure to identify primary vegetation present.

32. Check appropriate box. Identify the equipment damaged and describe the damage. Provide your best estimate on repair or replacement cost.
33. Check appropriate box. Provide brief description of types of injuries and locations of injuries (e.g., bites on left leg, cuts on back). Indicate if hospitalization was required to treat injuries.
34. Provide a detailed narrative of the incident in the sequence that it occurred. Include a discussion of those factors, controllable or not, such as poor visibility, campsite location, etc., that may have contributed to this incident. Describe what additional (if any) precautions could have been used to prevent or minimize this incident. Also, please provide any information you feel would be useful in learning from this incident, how to prevent or avoid future bear incidents, or increase employee safety while working in bear country. Attach photos of damaged equipment or facilities, the encounter site, and any other photos that would assist the Bear Safety Committee in reviewing this incident.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

April 9, 2021

Col. Damon Delarosa
US Army Corps of Engineers, Alaska District
Regulatory Division
PO Box 6898
JBER, Alaska 99506-0898

Re: Reinitiation of IPOP Bonanza Channel Coring Project, POA-2018-00123, AKRO-2021-00753

Dear Col. Delarosa:

This letter responds to your request for concurrence from the National Marine Fisheries Service (NMFS) pursuant to Section 7 of the Endangered Species Act (ESA) for the proposed modifications to the exploratory drilling of bore holes within the Bonanza Channel, Safety Sound estuary area, Alaska by IPOP LLC. Informal consultation for this project has previously been completed by NMFS on February 6, 2019, December 10, 2019, and April 22, 2020. A new reinitiation of consultation was requested on February 18, 2021 by IPOP LLC, as the non-federal representative designated by the U.S. Army Corps of Engineers, because of additional modifications to the project since April 2020. Modifications include: increasing the number of holes to be drilled from 235 to 502; increasing the work window from one 30-day continuous window to three 30-day windows; and expanding the daily operation hours from daylight hours only, to up to 24 hours per day. Upon review of the request it was determined that with the inclusion of some additional information, it would be appropriate for expedited informal consultation. Expedited consultation for this proposed action commenced on April 7, 2021.

We reviewed the consultation request documents and related materials. Based on our knowledge, expertise, and the materials provided, we concur with the conclusions that the proposed actions are not likely to adversely affect Arctic ringed seals (*Phoca hispida hispida*) or Beringia bearded seals (*Erignathus barbatus nauticus)*. A complete administrative record of this consultation is on file at the Anchorage NMFS office.

Reinitiation of consultation is required where discretionary federal involvement or control over the action has been retained or is authorized by law and if (1) take of listed species occurs, (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered, (3) the action is subsequently modified in a manner that causes an effect to the listed species or critical

habitat that was not considered in this concurrence letter, or (4) a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR 402.16).

Please direct any questions regarding this letter to Jenna Malek at Jenna.Malek@noaa.gov or 907-271-1332.

Sincerely,

Jonathan M. Kurland
Assistant Regional Administrator
for Protected Resources

cc: Tiffany Kwakwa Tiffany.D.Kwakwa@usace.army.mil
William Burnett billburnett@yukuskokon.com
Mac Shoulders macshoulders@gmail.com
Edwin Epstein ed@svjets.com
William Goulet wmgoulet@oteroengineering.com
Beau Epstein beau@ecological-restoration.org

YUKUSKOKON PROFESSIONAL SERVICES, LLC.

P.O. Box 870507, Wasilla, AK 99687 U.S.A PH: 907-373-4000, Fax: 907-373-4010

February 18, 2021

Via email: jon.kurland@noaa.gov

Jon Kurland
Director
National Marine Fisheries Service, Alaska Region
PO Box 21668
Juneau, Alaska 99802

Re: Bonanza Channel Placer Project – Request for re-initiation of a previous informal consultation under Section 7(a)(2) of the Endangered Species Act (ESA) for POA-2018-00123 (APMA 2785), Bonanza Channel/Safety Sound

Dear Mr. Kurland,

As agent for IPOP, LLC for the Bonanza Channel Placer Project (BCPP), this letter is to request re-initiation of informal consultation under Section 7(a)(2) of the Endangered Species Act (ESA) for the amended Nationwide Permit (NWP) 6 authorization (POA-2018-00123, Amendment #5 to APMA 2835), described below.

INTRODUCTION

Amendment #5 to POA-2018-00123 (Attachment 1) is for additional drill holes and similar activities in the claim area as previously approved per the US Army Corps of Engineers (USACE) authorization under NWP #6, Survey Activities, May 4, 2020.

The proposed Amendment #5 is similar to that previously approved; therefore, we look forward to expedited informal consultation under Section 7 of the ESA.

Previous informal consultation for the BCPP by National Marine Fisheries Service (NMFS) was conducted February 6, 2019; December 10, 2019; and April 22, 2020 for modifications to the project. On November 8, 2020, IPOP, LLC submitted an additional modification to the project: Amendment #5 to POA-2018-00123.

The key correspondence or actions pertaining to the current request for consultation are listed below.

January 8, 2021: Ms. Tiffany Kwakwa (Project Manager, USACE) sent an email to NMFS and US Fish and Wildlife Service (USFWS) for general permit agency coordination (GPAC) and requesting comments on Amendment #5 to POA-2018-00123 within 10 days of the email notification. The email described the changes to the previously approved NWP #6 verification. IPOP acknowledges that GPAC excludes consultation under Section 7 of the ESA.

January 13, 2021: Ms. Tiffany Kwakwa emailed that she was in the process of composing consultation re-initiation letters for NMFS and USFWS.

P.O. Box 870507, Wasilla, AK 99687 U.S.A PH: 907-373-4000, Fax: 907-373-4010

January 28, 2021: USACE designated IPOP, LLC as the non-federal representative for Section 7 consultation for the BCPP.

February 1, 2021: IPOP permitting agent (Yukuskokon) and consultants held a conference call with Tiffany Kwakwa (USACE), Jenna Malek and Greg Balogh (both NMFS) to address questions from NMFS on the proposed amendment.

February 10, 2021: IPOP submitted a Biological Assessment (BA) for the BCPP - Seasonal Exploration Drilling (Attachment 2) to the USACE prepared by Otero Engineering, Inc., 13902 N. Dale Mabry Highway, Suite 230, Tampa, Florida 33618). The BA addresses Amendment #5, file POA-2018-00123. The findings are listed in Table 1. The BA is currently being reviewed by the USACE for concurrence with the determination. Written concurrence is requested if USACE agrees with the determination.

Table 1. Project Actions and Determinations of Effects for NMFS ESA-Listed Species

NMFS-Listed Species					
SPECIES	**Latin Name**	**ESA Status**	**Population**	**Critical Habitat**	**Seasonal Exploration Drilling***
Arctic Ringed Seal	*Phoca hispida*	Threatened	Arctic subspecies	Not in Action Area, but in Norton Sound	May affect, not likely to adversely affect
Bearded Seal	*Erignathus barbatus*	Threatened	Beringia DPS	No	May affect, not likely to adversely affect

*Activity window for Seasonal Exploration Drilling: November 1 – May 31
DPS = Distinct Population Segment

PROJECT DESCRIPTION

Purpose

The purpose of the BCPP is to further define the gold resource within the project area (consisting of ADL726981 through ADL726991 (DKSN 29 through DKSN 37) and ADL 726993 (DKSN 39), and will support the following actions:

- generate a mineral resource map
- provide information to exclude uneconomic areas and minimize future project environmental impacts
- further define the hydrogeology of the project area down to the nominal mining depth,
- gather subsurface water chemistry data from the sediments.

These actions support the IPOP Individual Permit application for mining in Safety Sound/Bonanza Channel (POA-2018-00123).

P.O. Box 870507, Wasilla, AK 99687 U.S.A PH: 907-373-4000, Fax: 907-373-4010

Table 2 compares the previous authorization to the proposed activities described in Amendment #5. The information in Table 2 was extracted from the USACE GPAC letter (Attachment 3).

Table 2. Comparison of the Requested Activities (Amendment #5) to the Existing NWP Authorization (issued May 4, 2020

Activity	Requested Authorization (New)	Existing Authorization (issued May 4, 2020)
Number of Cores	502	235
Depth of Cores	31 feet	31 feet
Equipment	2.25-inch diameter GeoProbe® 540MT	2.25-inch diameter GeoProbe® 540MT
Access	Following the Nome-Council Highway, from the state-owned parcel in DKSN 35 (same as May 4, 2020 authorization)	Following the Nome-Council Highway, from the state-owned parcel in DKSN 35
Work Window(s)	Three 30-day continuous work windows	One 30-day continuous work window
Activity Window	January 1 through May 31	January 1 through May 31
Daily Operation	12-24 hours per day	Restricted to daylight hours

Drilling Locations

Figure 1 shows the approximate additional proposed drilling locations in claims DKSN 32 and DKSN 34 in Section 24, T. 11 S., R. 30 W, and claims DKSN 35 through DKSN 37 and DKSN 39 in Sections 19, 20 and 21, T. 11 S., R. 29 W. Note that Amendment #5 includes 267 new *potential* drill hole locations in addition to the 235 drill hole locations previously approved (May 4, 2020) (See Table 2).

Because of winter conditions and limited daylight hours, IPOP expects to complete a limited number of drill holes each winter but is requesting this variance to provide operational flexibility as to adjust the drilling program based on information gathered from the cores and changing environmental conditions (e.g., weather). IPOP intends to prioritize holes in claims DKSN 35, DKSN 36, and holes located within the proposed 2021 mining and access channel.

P.O. Box 870507, Wasilla, AK 99687 U.S.A PH: 907-373-4000, Fax: 907-373-4010

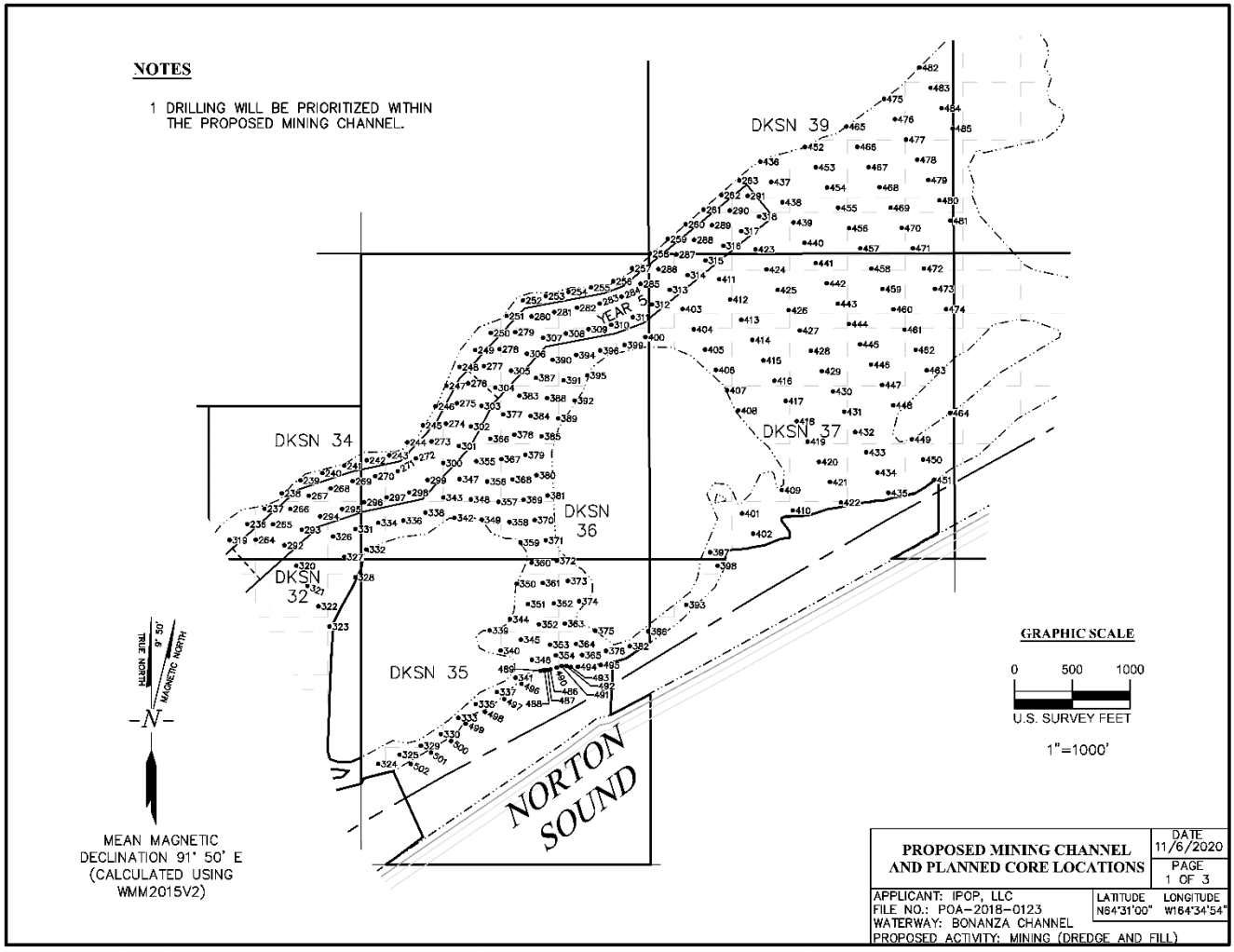


Figure 1. Winter 2021 Exploration Drilling Locations included in Amendment #5

The exploration drill holes would be of various spacing and designed on a grid. The drill hole spacing is planned to be 100 to 400 feet and spacing would be adjusted as necessary to determine the extent of the gold resource while adequately characterizing the substrate to inform construction of the access channel and subsequent mining plans. IPOP proposes to drill an array of up to 200 holes during winter/spring 2021 before breakup. Drilling is expected to start on the uplands in DKSN 35 and proceed to the north. All work will be performed in accordance with the Amendment #5 project plan.

Work Area

Total area of proposed work would encompass up to 19.7 square feet of wetland Waters of the U.S. (0.000452 acres).

P.O. Box 870507, Wasilla, AK 99687 U.S.A PH: 907-373-4000, Fax: 907-373-4010

Crew Size

The crew will consist of 3 to 8 people. All staff accommodations will be in Nome.

Fuels and Fueling Operations

During winter activities, bulk fuel storage will be off-site in Nome. The only on-site fueling operations would be to fuel the drill unit. Fuel would be transported in 30-gallon (gal) metal fuel drums to the site via snowmachine or Hagglund tracked vehicle. Anticipated petroleum product consumption to support drilling include gasoline (10 gal per day), diesel (20 to 40 gals per day), motor oil, hydraulic oil (<30 gal total), and grease. The pontoon sled will be equipped with portable basins to provide secondary containment for the drill unit and a spill response kit (e.g., absorbent pads and socks, "oily waste" bags, personal protective equipment).

Drill Unit and Equipment

Equipment is the same as authorized May 4, 2020. A tracked Hagglund BV206 pulling a specially built, fully enclosed pontoon sled that will transport and house A GeoProbe® 540MT drill unit. Both the pontoon sled and the Hagglund are amphibious to protect personnel/equipment and provide spill protection in the unlikely event of breaking through the ice. Snowmachines would also be used to support the operation.

Mitigation Measures Modifications

IPOP requests the stipulation limiting drilling operations to daylight hours be expanded to 12 to 24 hours per day. The Protected Species Observer (PSO) will be supplied with SiOnyx Aurora infrared night vision camera with a 16 millimeter scope for identifying marine mammals in low-light or nighttime conditions. In addition, IPOP will conduct a marine mammal survey of Safety Sound and Bonanza Channel to document signs of marine mammals (e.g. breathing holes) outside the immediate work area to inform future operations and resource protection mitigation measures.

Description of the Action Area

The action area is defined in the ESA regulations (50 CFR 402.02) as the area within which all direct and indirect effects of the project will occur. The action area is distinct from, and larger than, the project footprint because some elements of the project may affect ESA-listed species some distance from the project footprint. Therefore, the action area extends out to a point where no measurable effects from the project are expected to occur.

The action area during coring activities includes the area where ringed or bearded seals could be exposed to underwater noise at 120 dB or louder according to the NMFS acoustic threshold guidance (NMFS 2018[1]),

[1] https://www.fisheries.noaa.gov/national/marine-mammal-acoustic-technical-guidance

P.O. Box 870507, Wasilla, AK 99687 U.S.A PH: 907-373-4000, Fax: 907-373-4010

depending upon the time of year (not in the winter). In-air sound from vehicles (e.g., Hagglund BV206 vehicle) is also included in the action area.

According to GeoProbe®, the operating level of the 540MT through air at a frequency of 60 Hertz is approximately 120 dB at 1m and 80 dB at 100 m. According to EPD, the typical sound levels for air rotary drills are documented at 110 dB(A)[2].

Decibels cited for in-air are not equivalent to underwater dB due to many variables (e.g., temperature, salinity, density) but primarily because of a difference in reference pressures. However, a rough conversion between air to water can be performed by adding 26 dB to the in-water sound level (NRC 1994)[3]. Using this basic conversion, IPOP estimates the GeoProbe® 540MT has an approximate underwater operating dB level of 146 dB at 1 m and 106 dB at 100 m. In-air sound pressure levels from utility vehicles are unlikely to contribute significantly to this estimate.

Daily data from the NOAA National Weather Service Sea Ice Program website (NOAA 2021) [4] indicate fast ice (bottom-fast ice) throughout the project area, Safety Sound and offshore Norton Sound adjacent to the barrier islands. Due to the prevalence of fast ice, underwater sounds generated by the project would not be expected to propagate into Norton Sound where marine mammals may be present. Therefore, the action area radius for coring activities will be conservatively set at 100 m.

In coordination with NMFS, IPOP will perform a sound source verification study to determine the actual area that would be ensonified to at least 120 dB rms re 1µPa (or above background noise levels, if those are higher) in anticipation that the size of the action area (and thus the area within which effects to listed species are expected) may be altered to reflect those site-specific measurements.

ESA-Listed Species and Critical Habitat in the Action Area

Table 1 lists NMFS-jurisdiction ESA-listed species within range of the action area. Daily data from the NOAA National Weather Service Sea Ice Program website (NOAA 2021) currently indicate fast ice (bottom fast ice) throughout the project area, Safety Sound and offshore Norton Sound adjacent to the barrier islands. Historical annual data from the National Snow and Ice Data Center (NSIDC) show 100% sea ice concentration in Norton Sound by the end of December [5]. Because of the shoalness of the Safety Sound inlet and the Bonanza/Solomon rivers inlets, access to the Sound and the Bonanza Channel would likely be unavailable habitat for Arctic ringed seals and bearded seals during the revised project activity window of January 1 to May 31.

[2] www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf

[3] National Research Council (NRC). 1994. Low-Frequency Sound and Marine Mammals. The National Academies Press. Washington, DC. 1994. https://www.nap.edu

[4] National Oceanic and Atmospheric Administration (NOAA). 2021. www.weather.gov/afc/ice

[5] https://earthdata.nasa.gov/eosdix/daacs/nsidc

P.O. Box 870507, Wasilla, AK 99687 U.S.A PH: 907-373-4000, Fax: 907-373-4010

Mitigation Measures

No effect is anticipated for marine mammals from the exploration drilling; however, IPOP will employ mitigation measures as required by the previous authorization of May 4, 2020 as described below.

1) Coring activities will not be initiated until the action area is thoroughly inspected by a qualified PSO and no marine mammals have been observed in the area for 30 minutes. Qualified PSO is defined as a trained, independent (i.e. not construction personnel) observer, with prior experience working as a marine mammal observer during construction activities.

2) A qualified PSO will continuously monitor and document observations in the action area throughout coring activities. This will include scanning the area with binoculars range finder and night vision devices. PSO qualifications and reporting requirements are provided in Attachment 4.

3) A shut-down zone of 100-m radius centered on coring activities will be established. All activities will halt if a marine mammal enters, or appears likely to enter, the shut-down zone. Activities will resume once the animal has exited the shut-down zone on its own accord and the area has remained clear of marine mammals for 30 minutes.

EFFECTS OF THE ACTION

Acoustic Disturbance from Seasonal Exploration Drilling

The first stressor involves acoustical disturbance from coring and operation of utility vehicles. The coring process is expected to produce underwater noise at 120 dB out to 100 m from the drill rig. As described in Section 10 (Avoidance and Minimization), all activities will be halted if a marine mammal enters the established 100 m shut-down zone. Therefore, the applicant does not anticipate that the project will expose bearded seals or ringed seals to noise levels above 120 dB. However, acoustical noise generated by the coring process will extend beyond this zone and may alter the behavior of marine mammals (e.g., attraction to or avoidance of the area). The seasonal coring activities (up to six borings per day), combined with restricted access to the coring locations due to the presence of thick ice in a shallow channel, make it unlikely that any individual seals will encounter acoustic noise generated by the project. Therefore, acoustic disturbance from coring is believed to be extremely unlikely to occur. In addition, the acoustic disturbance generated by in-air sound from utility vehicles is expected to be extremely unlikely to occur.

Disturbance due to Physical Presence

The presence of the vehicles, equipment, and personnel associated with the exploration drilling has the potential to cause disturbance to, Arctic ringed seals, or bearded seals.

If animals are disturbed due to physical presence, these species may alter their behavior and movements. However, any change in behavior is not expected to be a significant disruption of behavior, and is expected to be short in duration, and therefore would not rise to the level of take.

P.O. Box 870507, Wasilla, AK 99687 U.S.A PH: 907-373-4000, Fax: 907-373-4010

The resulting impact of disturbance due to physical presence of vehicles, equipment, and personnel would be very minor, and thus any adverse effects to polar bears, Arctic ringed seals, or bearded seals would not be measureable.

Habitat Alteration of Seasonal Exploration Drilling

The on-ice seasonal exploration drilling may result in temporary habitat alteration from the turbidity. However, the small diameter of the drill pipe and coring tools will not likely result in a turbidity plume large enough to significantly affect the habitat. The generation of turbidity may temporarily alter movement of fish species that are prey for ringed and bearded seals. However, the turbidity plume generated during the coring process will settle out with little to no significant repercussions to fish habitat. In addition, it is likely that the majority of the lagoon is completely ice bound and that no lens of free liquids thick enough to accommodate seals and the like is present. The presence, or lack thereof, of water between the benthic surface of the lagoon and the ice will be recorded during the coring event.

Summary

Re-initiation of consultation is required where discretionary federal involvement or control over the action has been retained or is authorized by law and if (1) take of listed species occurs, (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered, (3) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this concurrence letter, or (4) a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR § 402.16).

Based on this analysis, IPOP has determined that the proposed action may affect, but not likely to adversely affect Arctic ringed or bearded seals. There is no designated critical habitat for these species at this time. If critical habitat is formally designated during the anticipated project period for seasonal exploration drilling, it will be considered and the effects of the action on critical habitat will be assessed.

We have used the best scientific and commercial data available to complete this analysis. We request your concurrence with this determination.

Thank you in advance for your assistance. Should you require additional information please contact William Burnett at 907-373-4000 or billburnett@yukuskokon.com.

Sincerely,

William Burnett

President, Yukuskokon Professional Services, LLC

Cc: Tiffany Kwakwa (USACE)

P.O. Box 870507, Wasilla, AK 99687 U.S.A PH: 907-373-4000, Fax: 907-373-4010

ATTACHMENTS

Attachment 1	Amendment #5 to POA-2018-00123 dated November 8, 2021
Attachment 2	BCPP Biological Assessment – Seasonal Exploration Drilling
Attachment 3	USACE GPAC letter POA-2018-00123.20210108.GPAC.pdf
Attachment 4	Protected Species Observer Qualifications and Documentation Requirements

MARINE MAMMAL MITIGATION AND MONITORING PLAN

Protected Species Observer Qualifications, Procedures, and Reporting Requirements

INTRODUCTION

This document comprises a project-specific Marine Mammal Mitigation and Monitoring Plan and describes the qualifications for the Protected Species Observer(s), procedures, and reporting and notification requirements for the BCCP seasonal exploration drilling.

PROJECT NOTIFICATION TO NATIONAL MARINE FISHERIES SERVICE

NMFS will be notified at least 14 calendar days prior to the start of construction activities in each year coring activities occur, with the exception of 2021 for which the notification requirement is two business days prior to the start of work. This exception is in recognition of the limited time remaining for coring activities before the required cessation for the season on May 31, 2021.

Notification will be sent to:

Jenna Malek
Consultation Biologist
email: jenna.malek@noaa.gov
telephone: 907-271-1332
NMFS Protected Resources Division
Anchorage Office, 222 W 7th Ave #14
Anchorage, AK 99513

PSO QUALIFICATIONS

The qualified PSO will meet the following requirements.

a. Visual acuity in both eyes (correction is permissible) enough for discernment of moving targets at the water's surface with ability to estimate target size and distance.

b. Physical capability of performing essential duties, including sitting or standing for periods of up to four hours, using binoculars or other field aid, and documenting observations.

c. Experience and ability to conduct field observations and collect data according to assigned protocols.

d. Experience or training in the field for identification of marine mammals and marine mammal behavior, including the ability to accurately identify marine mammals specific to Alaska waters.

e. Sufficient training, orientation, or experience with the construction operation to provide for identification of concurrent activities and for personal safety during observations.

f. Writing skills sufficient to prepare reports of observations.

g. Ability to communicate orally, by radio and in person, with project personnel to provide real-time information on marine mammals observed in the area and the appropriate mitigation response for the circumstances.

MITIGATION MEASURES

1) Daily coring activities will not be initiated until the action area is thoroughly inspected by a qualified PSO and no marine mammals have been observed in the area for 30 minutes.

2) PSOs will monitor during all drilling activity and may take breaks in observation during down time or during transit between coring locations to reduce eye fatigue from extended monitoring periods.

3) A qualified PSO will continuously monitor and document observations in the action area throughout coring activities. This will include scanning the area with binoculars range finder and night vision devices. See "Daily Logbook" below for types of observations and reporting required by the PSO.

4) A shut-down zone of 100-m radius centered on coring activities will be established. All activities will halt if a marine mammal enters, or appears likely to enter, the shut-down zone. Activities will resume once the animal has exited the shut-down zone on its own accord and the area has remained clear of marine mammals for 30 minutes.

REPORTING

Daily Reporting and Forms
The PSO will maintain a detailed daily logbook for marine mammal observations. The logbook reporting shall include the following information for each ESA-listed species observation, or "sighting event" if repeated sightings are made of the same animal(s).

a. Monitoring effort of PSO including start and end time and total time of observation period.

b. Species, date, and time for each sighting event.

c. Number of animals per sighting event; and number of adults/juveniles/calves per sighting event.

d. Primary, and, if observed, secondary behaviors of the marine mammals in each sighting event.

e. Geographic coordinates for the observed animals, with the position recorded by using the most precise coordinates practicable (coordinates must be recorded in decimal degrees, or similar standard, and defined coordinate system).

f. Time of the most recent project activity prior to marine mammal observation.

g. Environmental conditions as they existed during each sighting event, including sea state, weather conditions, visibility (km/mi), lighting conditions, and percent ice cover.

For consistency of reporting, printable electronic forms (and Instructions) will be used as provided by NMFS (03/29/2021). Monitoring Data Sheets for Informal Consultation are follows:

1. Daily Monitoring Effort, Environmental Conditions, and Project Activities Log
2. Marine Mammal Sighting Log
3. PSO Monitoring Effort Daily Log
4. In-Water Activities Log

Monthly Reporting
Copies of the logbook/forms will be provided each month to NMFS and USACE. The reporting period for each monthly PSO report will be the entire calendar month, and reports will be submitted by close of business on the fifth day of the month following the end of the reporting period (e.g., the monthly report covering April 1 to April 30 will be submitted to NMFS by close of business on May 5).

Final PSO Report
A Final PSO Report will be provided to NMFS and USACE within 90 days after the activities have been concluded for the project.

Report and Data Format

The Final Report will include PSO observations and records and results of ESA-listed species monitoring conducted during the in-water project activities (See "PSO Reporting Forms" at end of this document). The Final Report will be provided in a usable, digital, queryable format.

Required Information in Final PSO Report

The report will include items from the monthly reports and the following.

a. Summaries of monitoring efforts including total hours, total distances, and ESA-listed species distribution through the study period, accounting for sea state and other factors that affect visibility and detectability of listed species.

b. A description of any factors that may have influenced detectability of listed species (e.g., sea state, number of observers, fog, glare, etc.).

c. Species composition, occurrence, and distribution of listed species sightings, including date, water depth, numbers, age/size/gender categories (if determinable), group sizes, and ice cover.

d. Number of listed species observed (by species) during periods with and without project activities (and other variables that could affect detectability), such as:

- Initial listed species sighting distances versus project activity at time of sighting.
- Observed listed species behaviors and movement types versus project activity at time of sighting.
- Numbers of listed species sightings/individuals seen versus project activity at time.
- Distribution of listed species around the action area versus project activity at time of sighting.

Take Report
Though take is not authorized or anticipated, if an ESA-listed species is taken (e.g., an ESA- listed species is observed entering the exclusion zone before project operations can be shut down), re-initiation of consultation is required, and the take must be reported to NMFS within one business day.

Unauthorized Take

If an ESA-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 injured or killed or is observed entering a shut-down zone before operations can be shut down), it will be reported to NMFS within one business day (AKR.section7@noaa.gov) (or USFSW, as appropriate for the species). These PSO records will include:

a. information to be provided in the Final Report

b. number and species of listed animals affected

c. date, time, and location of each event (provide geographic coordinates)

d. description of the event

e. the time the animal(s) was first observed or entered the shut-down zone, and, if known, the time the animal was last seen or exited the shut-downzone, and the fate of the animal

f. mitigation measures implemented prior to and after the animal was taken

g. if a vessel struck a marine mammal, the contact information for the PSO on duty will be provided, or the contact information for the individual piloting the vessel if there was no PSO on duty

h. photographs or video footage of the animal(s) if available.

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

If PSOs observe an injured, sick, or dead marine mammal (i.e., stranded marine mammal), they will notify the Alaska Marine Mammal Stranding Hotline at 877-925-7773. The PSOs will submit photos and data that will aid the appropriate agency in determining how to respond to the stranded animal. Data submitted to the agency in response to stranded marine mammals will 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

If PSOs observe marine mammals being disturbed, harassed, harmed, injured, or killed (e.g., feeding or unauthorized harassment), these activities will be reported to NMFS Alaska Region Office of Law Enforcement at (1-800-853-1964). For polar bear, report would be made to USFWS.

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

AGENCY CONTACT INFORMATION

NMFS and USFWS contact information is provided in Table 1.

Table 1: NMFS and USFWS Contact Information for BCPP

NATIONAL MARINE FISHERIES SERVICE	
REASON FOR CONTACT	**CONTACT INFORMATION**
Consultation Questions and Unauthorized Take	Greg Balogh: greg.balogh@noaa.gov and Jenna Malek, Consultation Biologist: jenna.malek@noaa.gov
Reports and Data Submittal *(includes monthly and final reports)*	AKR.section7@noaa.gov (please include NMFS AKRO tracking number in subject line)
Stranded, Injured, or Dead Marine Mammal *(not related to project activities)*	Stranding Hotline (24/7 coverage): 1-877-925-7773
Oil Spill & Hazardous Materials Response	U.S. Coast Guard National Response Center: 1-800-424-8802 and AKRNMFSSpillResponse@noaa.gov
Illegal Activities *(not related to project activities; e.g., feeding, unauthorized harassment, or disturbance to marine mammals)*	NMFS Office of Law Enforcement (AK Hotline): 1-800-853-1964
In the event that this contact information becomes obsolete	NMFS Anchorage Main Office: 907-271-5006 OR NMFS Juneau Main Office: 907-586-7236
US FISH AND WILDLIFE SERVICE	
All contacts	Marine Mammals Management Office (MMM): 1-800-362-5148 OR Fairbanks Fish and Wildlife Field Office (FFWFO): 907-456-0499 OR Lindsey Mangipane lindsey_magipane@fws.gov or Dave Gustine David_gustine@fws.gov

PSO reports for the ESA-listed species taken by the project activities must include the following.

a. All the information that must be listed in the PSO reports (i.e., daily logbook, monthly, and final report).
b. Number of listed species taken
c. Date and time of each take
d. Cause of the take
e. The time the listed species entered the exclusion zone, and, if known, the time it exited the zone.
f. Mitigation measures implemented prior to and after the listed species entered the exclusion zone.

PSO REPORTING FORMS

(attached as provided by NMFS)

EXAMPLE Monitoring Data Sheets for Informal Consultations

Instructions

The tabs in this spreadsheet contain printable observation forms as well as tabs that can be used for data entry. There is a daily overview log that covers data collection of monitoring effort, project activities, & environmental conditions. There is also a marine mammal sighting form that covers data collection when marine mammals are observed. These are example forms and therefore can be modified to be project specific. Below outlines each data attribute and the corresponding definition. If additional attributes are added or definitions are alternate, please make sure the make the updates below. It is ideal that all fields be filled out each day on the printable observation forms to help ensure that information isn't forgotten. Use a "dash" if the information is unknown or n/a is the field

Data Attribute	Definition
Project Name	Indicate the name of the project.
Location	Specify the project location or observation station. This is extremely important if there are multiple observation stations.
Observer(s)	Indicate the observer(s) at the station during monitoring effort. If the observer(s) switch in the middle of the day indicate the time of the switch.
	Monitoring Effort
Start and end times	Record start and end times of all monitoring effort in a given day. Breaks in the middle of the day when monitoring does not occur should be recorded. The total time includes only on effort monitoring time. Military time is preferable.
	Project Activities
Start and end times	Record start and end times of all in-water activities. Make sure to record breaks in any in-water activities. Military time is preferable.
Type of Activity	Specify the type of in-water activity and make sure to indicate specifics specifics such as bubble curtain use. Types of activities may include soft-start, impact pile installation (w/ or w/o bubble curtain), vibratory pile installation or removal (w/ or w/o bubble curtain), down the hole drilling, dredging, vessel activity, anchor handling, fill placement, or other sources of in-water disturbance.
	Environmental Conditions (Record every 30 minutes or as conditions change)
Time	Time in which the environmental condition was recorded. Military time is preferable.
Overall monitoring conditions	Indicate on a scale of 1 - 10 ((1) poor, (5) moderate, (10) excellent) the monitoring conditions.
Weather conditions	(S) Sunny, (PC) Partly Cloudy, (OC) Overcast, (L) Light Rain, (R) Steady Rain, (F) Fog, (LS) Light Snow, (SN) Snow
Light conditions	(1) Light, (2) Twilight, (3) Dark
Beaufort sea state	Beaufort Sea State - (0) calm, mirror like; (1) ripples, wave height <1/2 ft; (2) small wavelets (1/2 to 1 ft); (3) large wavelets (up to 2 ft), crests begin to break; (4) small waves (up to 3 ft), fairly frequent white caps; project activities should shutdown if the beaufort sea state is > 4
Visibility	Distance the observer could reliably detect a marine mammal.
Glare	Percent of monitoring area obsecured by glare.
	Daily Total Marine Mammal Count
Species, # of groups, & # of animals	Indicate the species observed that day, the total number of groups seen and the total number of animals observed.
	QA/QC Data
Initial and Date	Each datasheet should be double checked that all the information is included and accurate on a daily basis. The individual that QA/QCs the form should initial/date the form.

EXAMPLE Monitoring Data Sheets for Informal Consultations

Marine Mammal Sighting	
Group Identifier	Each group of marine mammals will be given a unique identifier. This group indentifer is not species specific. This identifier can be used to identify a group, requiring the use of multiple data sighting rows.
Initial and final sighting time	Time the group was initial sighting and the time the group was last observed.
Species	Identify the species observed. If multiple species are observed to be interacting, give each species a different group number but indicate in the notes the interaction with the other species. (BE) beluga whale, (HW) humpback whale, (FW) fin whale, (GW) gray whale, (KW) killer whale, (SW) sperm whale, (BW) bowhead whale, (NW) North Pacific right whale, (HP) harbor porpoise, (SL) Steller sea lion, (RS) ringed seal, (BS) bearded seal, (SS) spotted seal, (HS) harbor seal, (FS) fur seal, (UW) unidentified cetacean, (UP) unidentified pinniped
# of animals (age class)	If possible, indicate the number of adults, juveniles, and calves in the group. If the age class is undeterminable, use the unknown field. The total represents the total number of animals in the group. Cook Inlet beluga whales - adults are typically large write to dull white in color, juveniles are light to medium gray, and calves are dark gray, relatively small (<2/3) the total length of white belugas), almost always swimming within 1 body length of larger whale.
Behavior	(T) traveling - moving in a linear or near-linear direction without interruption (M) milling - moving in a non-linear, weaving or circular pattern within an area (HO) hauled out - hauled out on land (D) diving - moving downward through the water column (rapidly or slowly), often showing tail fluke before dive (V) vocalizing - snorting, whistling, or chirping (BR) breaching - leaps clear out of water (SH) spyhopping - holding body vertically with head out of water for several seconds or more (ST) startled - rapidly changing behavior, dispersing or travelling that indicates a response to external event (**must describe disturbance in the notes**) (F) flush from haulout - enters water in response to disturbance (**must describe disturbance in the notes**) (CH) change direction - sudden change in direction that may be caused by disturbance (**must describe in notes**) (A) avoidance - avoiding an area (**must describe in notes**) (O) unclassified behavior (**must describe in notes**) (U) unknown - behavior indistinguishable due to monitoring conditions and/or lack of ability to watch marine mammal for length of time to determine (no comment is necessary) **(All behavioral changes caused by the project activities or other activities must be described in the notes. Incldue a detailed description of of activities/animals behavior before and after potential project related behavior change)**
Initial Distance	Distance from marine mammal(s) to project activities when animals were first observed.
Closest Distance	Closest distance marine mammals were to project activities.
In-water work occurring at initial	Indicate if in-water work was occurring when the marine mammals were initially sighted (i.e. yes or no).

EXAMPLE Monitoring Data Sheets for Informal Consultations

Type of Activity	If in-water work was occurring when marine mammals were observed, indicate the type of activity.
Shutdown or Delay Implemented	Indicate if a shutdown or delay was implemented due to marine mammals being observed.
Animal(s) inside Level B zone prior to shutdown?	Indicate if animals were inside the Level B zone prior to shutdown.
Duration of Shutdown or Delay	If a shutdown or delay occurred due to marine mammal presence, indicate how long the shutdown or delay lasted.
Sighting Notes	Include any additional information, include specifics about marine mammal behavioral changes from project activities.

Date: _____ **Daily Monitoring Effort, Environmental Conditions,**
(DD MMM YY, Example 05 MAY 20) **and Project Activities Log**

(fill it all data fields, use a "dash" if unknown or n/a for not applicable)

Project Name:	Location:	Observer(s):

Monitoring Effort

(indicate new start and stop times if there are breaks in the day that monitoring is not occurring)

Start Time	End Time	Start Time	End Time	Start Time	End Time	Start Time	End Time	**Total Time**

In-water Activities

Start Time	End Time	Type of Activity	Comments (explain the reason for shutdowns)

Type of Activity - soft-start, impact pile installation (w/ or w/o bubble curtain), vibratory pile installation or removal (w/ or w/o bubble curtain), down the hole drilling, dredging, vessel activity, anchor handling, fill placement, or other sources of in-water disturbance

Environmental Conditions

(Record every 30 minutes or as conditions change)

Time	Overall Conditions	Weather	Light	Beaufort Sea State	Visibility (km)	Glare (%)	Comments (include ice coverage)

Overall Monitoring Condition - Scale 1 - 10; (1) poor, (5) moderate, (10) excellent
Weather Condition - (S) Sunny, (PC) Partly Cloudy, (OC) Overcast, (L) Light Rain, (R) Steady Rain, (F) Fog, (LS) Light Snow, (SN) Snow
Light Condition - (1) Light, (2) Twilight, (3) Dark
Beaufort Sea State - (0) calm, mirror like; (1) ripples, wave height <1/2 ft; (2) small wavelets (1/2 to 1 ft); (3) large wavelets (up to 2 ft), crests begin to break; (4) small waves (up to 3 ft), fairly frequent white caps; project activities should shutdown if the beaufort sea state is > 4
Glare - percent of monitoring area covered by glare

Daily Total Marine Mammal Count

Species	# of Groups	# of Animals	Species	# of Groups	# of Animals	QA/QC Data (Initial/Date)

Date: ____________________

(DD MMM YY, Example 05 MAY 20)

Marine Mammal Sighting Log

(fill it all data fields, use a "dash" if unknown or n/a)

Project Name:						Location:					Observer(s):				
Group Id	Initial Sighting Time	Final Sighting Time	Species	# of Animals					Behavior	Initial Distance (m)	Closest Distance (m)	Environmental Conditions			
				Adults	Juveniles	Calves	Unknown	Total				Weather	Sea State	Visibility	Glare (%)
	Project Activities during Sighting										Sighting Notes				
	In-water work occurring at initial sighting time? (y or n)		Type of Activity			Shutdown or Delay Implemented		Animal(s) inside Level B zone prior to shutdown?		Duration of Shutdown or Delay					
Group Id	Initial Sighting Time	Final Sighting Time	Species	# of Animals					Behavior	Initial Distance (m)	Closest Distance (m)	Environmental Conditions			
				Adults	Juveniles	Calves	Unknown	Total				Weather	Sea State	Visibility	Glare (%)
	Project Activities during Sighting										Sighting Notes				
	In-water work occurring at initial sighting time? (y or n)		Type of Activity			Shutdown or Delay Implemented		Animal(s) inside Level B zone prior to shutdown?		Duration of Shutdown or Delay					
Group Id	Initial Sighting Time	Final Sighting Time	Species	# of Animals					Behavior	Initial Distance (m)	Closest Distance (m)	Environmental Conditions			
				Adults	Juveniles	Calves	Unknown	Total				Weather	Sea State	Visibility	Glare (%)
	Project Activities during Sighting										Sighting Notes				
	In-water work occurring at initial sighting time? (y or n)		Type of Activity			Shutdown or Delay Implemented		Animal(s) inside Level B zone prior to shutdown?		Duration of Shutdown or Delay					
Group Id	Initial Sighting Time	Final Sighting Time	Species	# of Animals					Behavior	Initial Distance (m)	Closest Distance (m)	Environmental Conditions			
				Adults	Juveniles	Calves	Unknown	Total				Weather	Sea State	Visibility	Glare (%)
	Project Activities during Sighting										Sighting Notes				
	In-water work occurring at initial sighting time? (y or n)		Type of Activity			Shutdown or Delay Implemented		Animal(s) inside Level B zone prior to shutdown?		Duration of Shutdown or Delay					

Species - (BE) beluga whale, (HW) humpback whale, (FW) fin whale, (GW) gray whale, (KW) killer whale, (SW) sperm whale, (BW) bowhead whale, (NW) North Pacific right whale, (MW) minke, (HP) harbor porpoise, (DP) dall's porpoise, (SL) Steller sea lion, (RS) ringed seal, (BS) bearded seal, (SS) spotted seal, (HS) harbor seal, (FS) fur seal, (UW) unidentified cetacean, (UP) unidentified pinniped (O) other (indicate species in notes) **Behavior** - (T) traveling, (M) milling, (HO) hauled out, (D) diving (V) vocalizing, (BR) breaching, (SH) spyhopping, (ST) startled - describe in notes, (F) flush from haulout - describe in notes, (CH) change direction - describe in notes, (A) avoidance - describe in notes, (O) other - unclassified behavior, (U) unknown, **(All behavioral changes caused by the project activities or other activities must be described in detail in the notes. Including activities/animals behavior before/after behavior change**).	QA/QC Data (Date/Initial)

Draw estimated tracklines for each group on hardcopy map, indicate the group number with each line, and the initial sighting location.

Monitoring Effort			
Date	Monitoring Start Time	Monitoring End Time	Total Time

In-water Activities				
Date	Start Time	End Time	Type of Activity	Comments (explain the reason for shutdowns)

Environmental Conditions (Recorded every 30 minutes or as conditions change)							
Time	Overall Conditions	Weather	Light	Beaufort Sea State	Visibility (km)	Glare (%)	Comments

Marine Mammal Sightings																					
Date	Group #	Initial Sighting Time	Final Sighting Time	Species	# of Animals					Behavior	Initial Distance (m)	Closest Distance (m)	Environmental Conditions				Project Activities during Sighting				Notes
					Adults	Juveniles	Calves	Unknown	Total				Weather	Sea State	Visibility (km)	Glare (%)	In-water work occurring at initial sighting time?	Type of Activity	Shutdown or Delay Implemented	Animal(s) inside Level B zone prior to shutdown?	Duration of Shutdown	