



FACT SHEET

The U.S. Environmental Protection Agency (EPA) plans to reissue a National Pollutant Discharge Elimination System (NPDES) permit to the following facility pursuant to the provisions of the Clean Water Act, 33 U.S.C. §1251 et seq:

**UNITED STATES NAVY ARCTIC ICE CAMP
NPDES PERMIT NO. AK0053783**

PUBLIC COMMENT START DATE: JULY 30, 2021
PUBLIC COMMENT EXPIRATION DATE: AUGUST 30, 2021

TECHNICAL CONTACT:

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EPA PROPOSES TO REISSUE NPDES PERMIT

EPA proposes to reissue the NPDES permit for the facility referenced above. The permit places conditions on the discharge of pollutants from the United States Navy Arctic Ice Camp to the Beaufort Sea at a location approximately 100 to 300 nautical miles north of Deadhorse, Alaska. In order to ensure protection of water quality and human health, the permit places limits on the types and amounts of pollutants that can be discharged and places other conditions on the facility.

This Fact Sheet includes:

- information on public comment, public hearings and appeal procedures
- a description of the facility and proposed discharge
- a listing of proposed effluent limitations, and other conditions for the facility
- a map and description of the discharge location
- technical material supporting the conditions in the draft permit

PUBLIC COMMENT

Because of the COVID-19 virus, access to the Region 10 EPA building is limited. Therefore, we request that all comments on EPA's draft permits or requests for a public hearing be submitted via email to Erin Seyfried (seyfried.erin@epa.gov). If you are unable to submit comments via email, please call 206-553-1448.

Persons wishing to comment on or request a Public Hearing for the draft permit for this facility may do so by the expiration date of the Public Comment period. A request for a Public Hearing must state the nature of the issues to be raised as well as the requester's name, address and telephone number. All comments and requests for Public Hearings must be submitted to EPA as described in the Public Comments Section of the attached Public Notice.

After the Public Notice expires, and all comments have been considered, EPA's regional Director for the Water Division will make a final decision regarding permit issuance. If no substantive comments are received, the tentative conditions in the draft permit will become final, and the permit will become effective upon issuance. If substantive comments are received, EPA will address the comments and issue the permit. The permit will become effective no less than 30 days after the issuance date, unless an appeal is submitted to the Environmental Appeals Board within 30 days pursuant to 40 CFR 124.19.

401 CERTIFICATION FOR FACILITIES THAT DISCHARGE TO STATE WATERS

The area of coverage of the draft Arctic Ice Camp Permit is located within federal waters of the Beaufort Sea. As the permit does not authorize discharges to Alaska State waters, it is not subject to CWA Section 401 certification.

DOCUMENTS ARE AVAILABLE FOR REVIEW

The draft permit, fact sheet, and other information can also be found by visiting the Region 10 NPDES website at: '<https://www.epa.gov/npdes-permits/alaska-npdes-permits>' or '<https://www.epa.gov/publicnotices/notices-search/location/Alaska>'. Because of the COVID-19 virus and limited building access, we cannot make hard copies available for viewing at our offices.

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I. BACKGROUND INFORMATION

A. GENERAL INFORMATION

This Fact Sheet provides background information on the draft NPDES permit for the United States Navy (U.S. Navy) Arctic Ice Camp (hereafter “Arctic Ice Camp”). When issued, the permit will provide Clean Water Act (CWA) authorization to discharge wastewater to the Beaufort Sea from the Arctic Ice Camp.

NPDES Permit No.	AK0053783
Applicant	United States Navy – Arctic Submarine Laboratory
Type of Ownership	Federal
Mailing Address	140 Sylvester Road San Diego, CA 92106
Facility Contact	Mr. H. A. Estrada Director, Arctic Laboratory Phone: (619) 553-7441
Receiving Water	Beaufort Sea

B. PERMIT HISTORY

The most recent NPDES permit for the U.S. Navy Arctic Ice Camp was issued on December 14, 2015, became effective on January 1, 2016, and expired on December 31, 2020. EPA issued permit modifications on December 21, 2017 and November 21, 2019 to authorize wastewater discharges from the facility within an expanded area of operations to account for increased ice movement during the operational period. A NPDES application for permit issuance was submitted by the permittee on July 1, 2020. EPA determined that the application was timely and complete. Therefore, pursuant to 40 CFR § 122.6, the permit has been administratively continued and remains fully effective and enforceable.

II. FACILITY OVERVIEW

A. GENERAL INFORMATION

The U.S. Navy is the operator of the temporary Arctic Ice Camp (the “facility”), located approximately 100 – 300 nautical miles north of Deadhorse, Alaska. The facility provides support for a variety of submarine training and testing, and research activities. The general location of the facility is depicted in Figure A-1 (Appendix A of this Fact Sheet). The exact location of the facility cannot be predicted in advance as it will depend upon ice conditions at the start of the exercise. The location will also change over the course of the exercise as the ice floe on which the camp is built drifts due to wind and ocean currents.

The U.S. Navy operated the Arctic Ice Camp in February 2016 and 2018 and March 2020

at locations approximately 197 nautical miles north of Deadhorse, Alaska. During both the 2016 and 2018 seasons, ice floe drift was observed to be greater than anticipated and the Arctic Ice Camp moved close to the boundary authorized by the original Permit. As a result, EPA modified the Permit (2017 and 2019) to expand the permitted area of potential camp operations where the discharges could occur (Appendix A). EPA is proposing to authorize discharges to the same permitted area as defined in the last permit modification for this permit reissuance.

The U.S. Navy constructs the facility on multiyear ice, which is structurally more stable than first-year ice. Multiyear ice has distinct properties that distinguish it from first-year ice based on processes that occur during the summer melt. When ice crystals form on the sea surface, salt accumulates into droplets called *brine*, which are typically expelled back into the ocean. This raises the salinity of the near-surface water. Some brine droplets become trapped in pockets between the ice crystals. These droplets are saline, whereas the ice around them is not. The brine remains in a liquid state because much cooler temperatures would be required for it to freeze. At this stage, the sea ice has a high salt content. Over time, the brine drains out, leaving air pockets, and the salinity of the sea ice decreases. Brine can move out of sea ice in different ways, though generally aided by gravity, the brine migrates downward through holes and channels in the ice, eventually emptying back into the ocean. Therefore, multiyear ice contains much less brine and more air pockets than first-year ice making it structurally more stable.

The U.S. Navy operates the facility during a six (6) week period, from approximately late February to early April timeframe, and the facility is expected to be operated every other year. Once constructed, the facility consists of approximately 15 to 20 buildings (housing, dining facility and command hut), a runway, and a heliport. The completed facility, including the runway, is approximately one mile in diameter. The camp population hosts an average of 48 people with a maximum population of 65 people over two separate two-day periods. During facility construction and demobilization, the camp population will consist of about 15 people.

All materials, fuel, and food for the facility will be transported from Deadhorse, Alaska by aircraft that range in size from small, twin-engine aircraft, to large LC-130 military transport aircraft. Upon completion of activities at the facility, the facility will be demobilized and removed from the ice floe, including all construction materials, solid waste, hazardous waste, and sanitary waste.

The operation of the facility results in the discharge of graywater (Outfall 001) and reverse osmosis reject water (Outfall 002). Sanitary/human waste (i.e. black water) generated at the camp will be collected and treated at zero-discharge sanitary facilities, such as incinerating toilets. If sanitary facilities do not operate as planned, sanitary/human wastes will be containerized and transported to Deadhorse, Alaska for disposal.

B. PROCESS DESCRIPTION

1. OUTFALL 001: GRAYWATER

For purposes of this permit, graywater is defined as wastewater discharged from sinks, kitchens or galleys, or other domestic sources that do not contain excrement, urine, or combined stormwater. Discharges of graywater are intermittent and vary in volume based on the number of people at the facility.

The reported maximum daily flow of greywater ranged from 6 to 110 gallons per day during the operational periods in 2016, 2018, and 2020. The facility uses a 1/16-inch mesh screening system to filter solids from the graywater waste stream prior to discharge. As a best management practice, camp personnel will be directed to scrape dishes clean of any solids prior to turning them in for washing.

Dishwashing will involve the use of a biodegradable, chlorine and phosphate-free detergents.

2. OUTFALL 002: REVERSE OSMOSIS REJECT WATER

Freshwater for food preparation, dishwashing, and for human consumption will be generated at the facility via ice mining of multiyear sea ice, and through the desalination of first-year sea ice and/or seawater.

Ice mining and melting of multiyear ice will be the primary means of generating fresh water at the facility. When saltwater freezes, crystalline irregularities cause enough salt to leach slowly out over several years to make it safe to consume. This multiyear, or “aged,” ice tends to be bluish in color and must be melted and tested to ensure it is safe to drink. This process of producing freshwater will not result in a wastewater discharge (WHOI, 2015).

In addition to ice mining, the U.S. Navy intends to test a portable desalination system to determine if it can function effectively in the Arctic environment. The discharge of wastewater from the portable system would be through Outfall 002. Desalination is the process of removing dissolved salts from water, thereby producing fresh water from seawater or brackish water.

The U.S. Navy has selected a portable reverse osmosis (RO) system manufactured by Ampac USA. RO is a water treatment process that utilizes pressure and semipermeable membranes to remove impurities, such as dissolved salts and organics, from water. As feed water (influent) enters the RO membrane under pressure, the water molecules pass through the semipermeable membrane while the salts and other impurities are discharged through the reject wastewater stream. Unlike most filtration processes, impurities are not captured by the RO membrane, but rather swept across the membrane and discharged, therefore back filtering is not

necessary in maintaining the functionality of the membrane. Most RO systems, including the Ampac system, incorporate a pre-filtration process designed to capture colloidal materials, such as sediments, sand and silt, which are capable of fouling the membrane.

RO is capable of removing 90 – 99% of the dissolved salts, particles, organics and bacteria from the water, therefore the reject water is generally a highly concentrated brine solution. The quantity of reject water (i.e. wastewater) can be greater than that of the potable water produced (AMPAC USA Website, Seawater Desalination Data Sheet, accessed May 20, 2015). The discharge of reject water from the camp’s portable reverse osmosis system will occur for a four-week period during the camp’s six weeks of operation. Treatment chemicals will not be used in the desalination process and the salinity of the reject water is expected to be three times that of the feed seawater.

The RO system was not operational during the 2016 camp. The reported maximum daily flow of RO ranged from 270 to 350 gallons per day during the operational periods in 2018 and 2020.

C. EFFLUENT CHARACTERIZATION

To characterize the effluent, EPA evaluated the facility’s application forms, discharge monitoring report (DMR) data, and additional data provided by the Permittee. The effluent quality is summarized in the **Error! Reference source not found.**

Table 1. Summary of DMR Data for Outfall 001 (greywater discharge).

PARAMETER	MAXIMUM REPORTED VALUE	MINIMUM REPORTED VALUE
Flow	110 gpd	6 gpd
pH	8.25 s.u.	5.9 s.u.
Total Suspended Solids	1200 mg/L	44 mg/L
Biological Chemical Demand	5700 mg/L	291 mg/L
Oil and Grease	49 mg/L*	10 mg/L

Under the 2015 Permit, the Permittee was only required to collect oil and grease samples if a visual sheen was observed. The Navy did sample for oil and grease on two separate occasions (March 11, 2020 and March 12, 2020) although a visual sheen was never observed in the discharge. After the samples had been sent for analysis, it was realized that the samples were not collected at the compliance point (the point of discharge), but rather collected from water in the wash bins, prior to excess food and oil being removed and being commingled with rinse water. Therefore, it is likely that the maximum reported value is representative of the most concentrated levels of oil and grease. This inadvertent sampling was explained in a letter sent to the Enforcement and Compliance Assistance Division (dated 4/20/2020).

Table 2. Summary of DMR Data for Outfall 002 (RO Reject Wastewater).		
PARAMETER	MAXIMUM REPORTED VALUE	MINIMUM REPORTED VALUE
Flow	450 gpd	270 gpd
pH	8.28 s.u.	8.2 s.u.

D. COMPLIANCE HISTORY

Overall, the facility has had a good compliance record and submitted required documents on time.

E. THE RECEIVING WATERS

The Arctic Ice Camp is established approximately 100 – 300 nautical miles north of Deadhorse, Alaska in the Beaufort Sea, and is operated for a six-week period during the winter months, from late February to early April. During this period, the Beaufort Sea is covered almost exclusively by sea ice. Once sea ice forms into sheet ice, it continues to grow through the winter. If the ice does not grow thick enough over the winter, it will completely melt during the summer when the air temperatures increase. If the ice thickness grows over the winter, and it thins but does not completely melt over the summer, then it is classified as multiyear ice.

Annual formation and decay of sea ice greatly influence the oceanographic dynamics of the Beaufort Sea, regulating heat, moisture, and salinity. Sea ice insulates the relatively warm ocean water from the cold polar atmosphere, except where cracks or leads (areas of open water between large pieces of ice) in the ice allow exchange of heat and water vapor from ocean to atmosphere in winter. Sea ice impacts virtually all of the physical, biological, and cultural aspects of life of the region. In the Beaufort Sea, sea ice generally begins forming in late September or early October, with full ice coverage by mid-November or early December. Ice begins melting in early May in the southern part of Beaufort Sea, and early to mid-June in the northern region. Maximum open water occurs in September (MMS 2008).

Detailed descriptions of the physical and biological characteristics and environments of the Beaufort Sea can be found in the ODCE for the 2015 Permit.

III. EFFLUENT LIMITATIONS AND DISCHARGE REQUIREMENTS

A. BASIS FOR PERMIT EFFLUENT LIMITS

Section 301(a) of the CWA, 33 USC § 1311(a), prohibits the discharge of pollutants to waters of the United States unless the discharge is authorized pursuant to a NPDES permit. Section 402 of the CWA, 33 USC § 1342, authorizes EPA, or an approved state NPDES program, to issue a NPDES permit authorizing discharges subject to limitations and

requirements imposed pursuant to CWA Sections 301, 304, 306, 401 and 403, 33 USC §§ 1311, 1314, 1316, 1341 and 1343. Accordingly, NPDES permits typically include effluent limits and requirements that require the permittee to (1) meet national standards that reflect levels of currently available treatment technologies; (2) comply with the EPA-approved state water quality standards in state waters; and (3) prevent unreasonable degradation of the marine environment in the territorial seas, the contiguous zone and the oceans.

In general, the CWA requires that the limits for a particular pollutant be the more stringent of either technology-based effluent limits or water quality-based effluent limits. Technology-based limits are set according to the level of treatment that is achievable using available technology. A water quality-based effluent limit is designed to ensure that the water quality standards of a waterbody are being met and they may be more stringent than technology-based effluent limits. Due to the 100 – 200 nautical mile-offshore location of the proposed discharges from the Arctic Ice Camp, state water quality standards do not apply.

Monitoring requirements must also be included in the permit to determine compliance with effluent limitations. Effluent and ambient monitoring may also be required to gather data for future effluent limitations or to monitor effluent impacts on receiving water quality.

B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Section 301(b) of the CWA, 33 USC § 1311(b), requires technology-based controls on effluents. All permits must contain effluent limitations which: (a) control toxic pollutants and nonconventional pollutants through the use of “best available technology economically achievable” (BAT), and (b) control conventional pollutants through the use of “best conventional pollutant control technology” (BCT). In no case may BAT or BCT be less stringent than “best practical control technology currently achievable” (BPT), which is the minimum level of control required by Section 301(b)(1)(A) of the CWA, 33 USC § 1311(b)(1)(A).

There are two general approaches for developing technology-based effluent limits: (a) using applicable national effluent limitations guidelines (ELGs), and (b) using Best Professional Judgment (BPJ) on a case-by-case basis. The intent of a technology-based effluent limitation is to require a minimum level of treatment for point sources based on currently available treatment technologies while allowing the discharger to use any available control technique to meet the limitations.

ELGs are developed on a national scale and reflect a reasonable level of treatment that is within the economic means of specific categories of facilities. Where national ELGs have not been developed or did not consider specific pollutant parameters in discharges, the same performance-based approach is applied to a specific facility based on the permit writer’s BPJ. In some cases, technology-based effluent limits based on ELGs and BPJ may be included in a single permit.

EPA has not established ELGs for discharges from portable reverse osmosis treatment facilities, or for graywater (e.g. domestic waste) discharges from temporary ice camps.

C. OCEAN DISCHARGE CRITERIA EVALUATION

Section 403 of the CWA, 33 USC § 1343, prohibits issuing a NPDES permit for discharges into the territorial seas, the contiguous zones, and the oceans except in compliance with the ocean discharge guidelines, 40 CFR Part 125, Subpart M. The guidelines set out criteria that EPA must evaluate to ensure that point source discharges do not cause unreasonable degradation to the marine environment. Unreasonable degradation is defined as follows (40 CFR § 125.121(e)):

- Significant adverse changes in ecosystem diversity, productivity, and stability of the biological community within the area of discharge and surrounding biological communities;
- Threat to human health through direct exposure to pollutants or through consumption of exposed aquatic organisms;
- Loss of aesthetic, recreational, scientific, or economic values that are unreasonable in relation to the benefit derived from the discharge.

40 CFR § 125.122 sets out ten criteria to consider when conducting an Ocean Discharge Criteria Evaluation (ODCE). The original ODCE developed by EPA during the 2015 NPDES Permit issuance process concluded that there would be no unreasonable degradation of the marine environment as a result of the authorized wastewater discharges (US EPA, 2015) due to the limited discharge quantities, the remote offshore location, and short duration of the ice camp activities. EPA has reviewed the original analysis and determined that the proposed NPDES permit reissuance does not change the conclusion based on the following factors:

- 1) There is no change in the quantities, composition, or potential for bioaccumulation or persistence of the pollutants to be discharged.
- 2) The proposed permit does not change the composition of the discharges, therefore there is no risk of increased potential transport of such pollutants by biological, physical, or chemical processes.
- 3) The composition and vulnerability of the biological communities, which may be exposed to such pollutants has not changed (i.e. all listed species and critical habitats) were previously considered.
- 4) The proposed permit does not change the importance of the receiving water area to the surrounding biological community.

- 5) There are no new special aquatic sites not previously considered.
- 6) Since the composition, duration, and frequency of discharge has not changed, the potential impacts on human health through direct and indirect pathways does not change.
- 7) All impacts to existing or potential recreational and commercial fishing, including finfishing and shellfishing, were previously considered.
- 8) The CZMA consistency provisions do not apply to Alaska.
- 9) The proposed permit does not change the other factors relating to the effects of the discharge that were previously considered.
- 10) The proposed permit does not change the applicable marine water quality criteria developed pursuant to CWA § 304(a)(1).

Pursuant to 40 CFR § 125.123(d)(4), EPA can modify or revoke a permit at any time if, on the basis of new data, EPA determines that continued discharges may cause unreasonable degradation of the marine environment.

D. PROPOSED EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

EPA is proposing to retain the same prohibitions, monitoring, and reporting requirements as required under the 2015 Permit, but is removing the monitoring triggers for biochemical oxygen demand (BOD₅) and total suspended solids (TSS)

BOD₅ and TSS are conventional pollutants and, therefore, the factors considered are the same as those used in the development of best practicable control technology currently available (BPT) and best conventional pollutant control technology (BCT) effluent limits. Factors considered in the BPT analysis include the age of equipment and facilities involved, the process(es) employed, the engineering aspects of the types of control technologies, process changes, non-water quality environmental impacts, and the cost of the technology versus the effluent reduction benefits. EPA has considered these factors and determined that the current proposed screening treatment technology using a 1/16-inch mesh (see Section II.B.1.) is the most appropriate technology.

As the Arctic Ice Camp is not a publicly-owned treatment works (POTW), federally promulgated secondary treatment requirements do not apply to the discharge, nor are there any applicable ELGs for BOD₅ and TSS discharged from graywater facilities.

In the 2015 Permit, EPA included numeric monitoring triggers for BOD₅ and TSS. This requirement included collection of no less than two (2) samples of BOD₅ and TSS per operating season. If there were no exceedances of the triggers established by the permit after five (5) samples had been analyzed, then the Permittee could stop monitoring for

BOD₅ and TSS. The Navy collected six total samples, all of which were within the expected range for similarly operated greywater facilities. However, four out of six samples exceeded the trigger value. Therefore, since there were exceedances, EPA is retaining the requirement to conduct monitoring and is no longer including the option to cease monitoring.

Permit Part I.B. lists all prohibitions and requirements applicable to both discharges. Permit Part I.C. contains the prohibitions and requirements for the greywater discharge (Outfall 001). Permit Part I.D. contains the prohibitions and requirements for the reverse osmosis reject water waste stream (Outfall 002). The Permittee must monitor the grey water discharges from Outfall 01 and the reverse osmosis reject water discharges from Outfall 002 as specified in Tables 3 and 4, below. The Permittee must comply with the requirements in these tables at all times, unless otherwise indicated, regardless of the frequency of monitoring or reporting required by other provisions of this permit. These requirements are retained from the 2015 Permit.

TABLE 3: Graywater Effluent Limitations and Monitoring Requirements (Outfall 001).

PARAMETER	EFFLUENT LIMITATIONS	SAMPLING FREQUENCY ¹	SAMPLE TYPE	REPORTED VALUES ⁴
Flow	--	Daily	Estimate ³ or Meter	Average Weekly and Maximum Daily; <i>gpd</i>
pH	--	Weekly	Grab	Minimum and Maximum Values; <i>s.u.</i>
Total Suspended Solids (TSS)	--	Twice per year ²	Grab	<i>mg/L</i>
Biological Oxygen Demand (BOD ₅)	--	Twice per year ²	Grab	<i>mg/L</i>
Oil and Grease	No Discharge	Daily	Observation	<i>Report⁵</i>
		When visual sheen observed	Grab	Average Monthly and Maximum Daily; <i>mg/L</i>
Floating Solids	No Discharge	Daily	Observation	<i>Report⁵</i>
Foam	No Discharge	Daily	Observation	<i>Report⁵</i>
Garbage	No Discharge	Daily	Observation	<i>Report⁵</i>
Oily Sheen	No Discharge	Daily	Observation	<i>Report⁵</i>

NOTES: ¹ Required during periods of discharge.

² The Permittee must monitor TSS and BOD₅ no less than twice (2) per year. All samples must be collected during maximum occupancy at the facility and during periods of maximum discharge.

³ Any estimation of effluent flow must include a narrative discussion of how the estimate is derived and a description of the procedures in the QAP (Permit Part II.B.).

⁴ Refer to Permit Part I.B.2.

⁵ The daily observations must occur during periods of maximum discharge.

TABLE 4: Reverse Osmosis Reject Water Effluent Limitations and Monitoring Requirements (Outfall 002)			
PARAMETER	SAMPLING METHOD	FREQUENCY¹	REPORTED VALUES³
Flow	Estimate ² or Meter	Daily	Average Weekly and Maximum Daily; <i>gpd</i>
pH	Meter	Weekly	Maximum and Minimum; <i>s.u.</i>

NOTE: ¹ Required during periods of discharge.

² Any estimation of effluent flow must include a narrative discussion of how the estimate is derived and a description of the procedures in the QAPP (Permit Part II.B.).

³ See Permit Part I.B.2.

IV. MONITORING AND REPORTING REQUIREMENTS

A. BASIS FOR EFFLUENT AND SURFACE WATER MONITORING

Section 308 of the CWA and 40 CFR § 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather effluent and/or surface water data to determine if additional effluent limitations are required and/or to monitor effluent impacts on receiving water quality. The Permittee is responsible for conducting the monitoring and reporting the results on Discharge Monitoring Reports (DMRs) to EPA. Table 3 and Table 4 present the proposed monitoring requirements based on the minimum sampling necessary to adequately monitor the facility's performance.

Sampling of bypass and upset. The proposed permit requires sampling whenever a bypass, spill, or non-routine discharge of pollutants occurs, if such a discharge could cause a violation of an effluent limit.

B. EFFLUENT MONITORING

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. The Permittee has the option of taking more frequent samples than are required under the permit. These samples can be used for averaging if they are conducted using EPA approved test methods (generally found in 40 CFR Part 136) and if the Method Detection Limits (MDLs) are less than the effluent limits.

Table 3 and Table 4 present the monitoring requirements for the facility covered under this

draft permit. The sampling location must be after the last treatment unit and prior to discharge to the receiving water. If no discharge occurs during the reporting period, “no discharge” shall be reported on the DMR.

V. OTHER PERMIT CONDITIONS

A. BEST MANAGEMENT PRACTICES PLAN (BMP)

Pursuant to Section 402(a)(1) of the Clean Water Act, development and implementation of BMP Plans may be included as a condition in NPDES permits. Section 402(a)(1) authorizes EPA to include miscellaneous requirements in permits on a case-by-case basis, which are deemed necessary to carry out the provisions of the Act. BMPs, in addition to numerical effluent limitations, are required to control or abate the discharge of pollutants in accordance with 40 CFR § 122.44(k). The BMP Plan requirement has also been incorporated into this permit in accordance with EPA BMP guidance (EPA, 1993).

The draft permit requires the development and implementation of a BMP Plan, which prevents or minimizes the generation and potential release of pollutants from the facility to the waters of the United States through best management practices. This includes, but is not limited to, material storage areas, process and material handling areas, loading or unloading operations, spillage or leaks, sludge and waste disposal, or drainage from raw material storage. The BMP Plan should incorporate elements of pollution prevention as set forth in the Pollution Prevention Act of 1990. (42 U.S.C. 13101).

The BMP Plan must be amended whenever there is a change in the facility or in the operation of the facility that materially increases the potential for an increased discharge of pollutants. The BMP Plan will become an enforceable condition of the permit; a violation of the BMP Plan is a violation of the permit.

The BMP Plan must be consistent with the following objectives and the general guidance contained in the publication entitled *Guidance Manual for Developing Best Management Practices* (EPA 833-B-93-004, October 1993) or any subsequent revisions to this guidance document:

1. Be documented in narrative form, and shall include any necessary plot plans, drawings or maps, and shall be developed in accordance with good engineering practices.
2. The number and quantity of pollutants and the toxicity of effluent generated, discharged or potentially discharged at the facility must be minimized by the Permittee to the extent feasible by managing each influent waste stream in the most appropriate manner.
3. The Permittee must establish specific objectives for the control of pollutants by conducting the following evaluations:

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- (a) Each facility component or system must be exemplified for its waste minimization opportunities and its potential for causing a release of significant amounts of pollutants to waters of the United States due to equipment failure, improper operation, and natural phenomena such as rain or snowfall, etc. The examination must include all normal operations and ancillary activities including loading or unloading operations or spillage or leaks.
- (b) Where experience indicates a reasonable potential for equipment failure, natural condition (e.g. precipitation), or other circumstances to result in significant amounts of pollutants reaching the surface waters, the Plan should include prediction of the rate of flow and total quantity of pollutants that could be discharged from the facility as a result of each condition or circumstance.
4. Ensure that the requirements of the BMP Plan are considered as part of planned facility modifications, and that construction and supervisory personnel are aware of and take into account possible spills or releases of pollutants during facility construction or demobilization.
 5. Ensure no debris is left on the ice during the end-of-season demobilization of the Arctic Ice Camp.
 6. Establish specific best management practices for each component or system capable of generating or causing a release of significant amounts of pollutants, and identify specific preventative or remedial measures to be implemented.
 7. Ensure proper management of solid and hazardous waste in accordance with regulations promulgated under the Resource Conservation and Recovery Act (RCRA). Management practices required under RCRA regulations shall be referenced in the BMP Plan.
 8. Ensure that solids, sludges, or other pollutants removed in the course of treatment or control of water and wastewaters are disposed of in a manner such as to prevent any pollutant from such materials from entering navigable waters.
 9. Use of local containment devices such as liners, dikes, drip pans and other structures where chemicals, fuels, and/or oils are being managed or stored.
 10. Include the following provisions concerning BMP Plan review:
 - (a) Annual review by engineering staff and the responsible manager.
 - (b) Annual review and endorsement by the permittee's BMP Committee.

- (c) Include a statement that the above annual review has been completed and that the BMP Plan fulfills the requirements set forth in this permit. The statement must include the dated signatures of each BMP Committee member as certification of the annual reviews.
- (d) The Permittee must submit a copy of the annual certification statement and a report of all changes in the BMP Plan to the Director at least 14 calendar days prior the commencing activities at the facility.

B. QUALITY ASSURANCE PLAN (QAP)

40 CFR § 122.41(e) require Permittees to properly operate and maintain their facilities, including “adequate laboratory controls and appropriate quality assurance procedures.” To implement this requirement, the draft permit requires that the Permittee develop or update a Quality Assurance Plan (QAP) to ensure that the monitoring data submitted is complete, accurate, and representative of the environmental or effluent condition. The QAP must contain standard operating procedures that the Permittee must follow for collecting, handling, storing and shipping samples for laboratory analysis and data reporting. The facility is required to prepare (or update) a Quality Assurance Plan (QAP) within 60 days of the effective date of the final permit. The QAP shall be prepared in accordance with EPA guidance documents, EPA QA/R-5 (EPA Requirements for Quality Assurance Project Plans) and EPA QA/G-5 (Guidance for Quality Assurance Project Plans). The QAP must be retained on site and made available to EPA upon request.

C. ADDITIONAL PERMIT PROVISIONS

In addition to facility specific requirements, most of Parts II, III, IV and V of the draft permit contain standard regulatory language that must be included in all NPDES permits. Because they are federal regulations, they cannot be challenged in the context of an NPDES permit action. The standard regulatory language covers requirements such as monitoring, recording, and reporting requirements, compliance responsibilities, and other general requirements.

VI. OTHER LEGAL REQUIREMENTS

A. ENDANGERED SPECIES ACT

Consultation History

Pursuant to 40 C.F.R. § 122.49(c), during the 2015 NPDES permit issuance process, EPA determined that the proposed permit action was *not likely to adversely affect* the ringed seal (Arctic species, *Phoca hispida hispida*). EPA’s effect determination was made based on the Informal Consultation Document developed by the Navy in close coordination with

EPA. The Informal Consultation Document evaluated the proposed ice camp activities, including the potential effects from the wastewater discharges proposed to be authorized by EPA. The Informal Consultation Document served as the consultation document with the National Marine Fisheries Service (NMFS) for both agencies under the Endangered Species Act (ESA) Section 7. On December 10, 2015, NMFS provided a letter of concurrence with this determination.

EPA also made the determination that the proposed discharges would have *no effect* on the polar bear (*Ursus naritimus*). EPA's analysis supporting this conclusion is included in the Administrative Record.

Consultation Reinitiation

The ESA Section 7 regulations at 50 CFR § 402.16 outline four general conditions for reinitiating consultation: (1) the amount or extent of incidental take is exceeded; (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 modified in a manner causing effects to listed species or critical habitat not previously considered; (4) a new species is listed or critical habitat designated that may be affected by the action.

EPA has determined that the proposed permit reissuance does not require reinitiating consultation under the ESA. EPA reached this conclusion based on the following factors: (1) The proposed permit modification does not change the composition, duration, and frequency of the two authorized wastewater discharges; and (2) While the operational area of the Arctic Ice Camp was expanded during the 2017 and 2019 permit modifications, no new species or critical habitat areas were affected, i.e. all listed species and critical habitats have been previously considered. As such, the Information Consultation Document and consultation process conducted during the 2015 NPDES permit issuance process is valid and reinitiation of ESA consultation is not necessary for the Permit reissuance process.

B. ESSENTIAL FISH HABITAT

Under the Magnuson-Stevens Fishery Conservation and Management Act, NMFS and various fisheries management councils must identify and protect "essential fish habitat" (EFH) for species managed under the Act. The EFH regulations define an *adverse effect* as any impact that reduces quality and/or quantity of EFH and may include direct (e.g. contamination or physical disruption), indirect (e.g. loss of prey, reduction in species fecundity), site-specific, or habitat wide impacts, including individual, cumulative, or synergistic consequences of actions.

The Arctic cod exists in the nearshore Beaufort Sea and will not be adversely affected by the permit action.

C. ENVIRONMENTAL JUSTICE (EXECUTIVE ORDER 12898)

EPA has determined that the discharges authorized by the draft Arctic Ice Camp Permit will not have a disproportionately high and adverse human health or environmental effects on minority or low-income populations living on the North Slope, including coastal communities along the Beaufort Sea, due to the remote location of the discharges (100 – 300 nautical miles north of Deadhorse, Alaska); the requirements placed on the discharges; and the short-term nature of the activity (a six week period in late February through April). In making this determination, EPA considered the potential effects of the discharges on the communities, including subsistence areas, and the marine environment.

Executive Order 12898 entitled “Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations” states in relevant part that “each Federal agency shall make achieving environmental justices part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations...” The order also provides that federal agencies are required to implement the order consistent with and to the extent permitted by existing law. In addition, EPA Region 10 adopted its “North Slope Communications Protocol: Communications Guidelines to Support Meaningful Involvement of the North Slope Communities in EPA Decision-Making” in May 2009. Consistent with the North Slope Communications Protocol, EPA sent informational letters to the following tribal governments: Native Village of Kaktovik, Native Village of Nuiqsut, and the Inupiat Community of the Arctic Slope.

Finally, EPA will notify these tribal governments and communities of the opportunity to provide public comment on the draft permit during the public comment period.

D. TRIBAL CONSULTATION (EXECUTIVE ORDER 13175)

Executive Order 13175 (November, 2000) entitled “Consultation and Coordination with Indian Tribal Governments” requires federal agencies to have an accountable process to assure meaningful and timely input by tribal officials in the development of regulatory policies on matters that have tribal implications and to strengthen the government-to-government relationship with Indian tribes. In May, 2011, EPA issued the “EPA Policy on Consultation and Coordination with Indian Tribes” which established national guidelines and institutional controls for consultation.

Pursuant to EPA Region 10’s Tribal Consultation Procedures, in determining which tribal governments to invite for consultation, EPA considered whether the action could potentially affect a tribe’s resources, rights, or traditional way of life. EPA has sent an invitation for tribal consultation to the following tribal governments: Native Village of Kaktovik, Native Village of Nuiqsut, and the Inupiat Community of the Arctic Slope. Included with the invitation for tribal consultation were copies of the preliminary-draft permit and supporting fact sheet. Consistent with the executive order and EPA’s tribal

consultation policies, EPA will honor requests for consultation meetings via teleconferences on the draft Arctic Ice Camp Permit from federally-recognized tribal governments.

E. POLLUTION PREVENTION ACT

It is national policy that, whenever feasible, pollution should be prevented or reduced at the source, that pollution which cannot be prevented should be recycled in an environmentally safe manner, and that disposal or release into the environment should be employed only as a last resort and should be conducted in an environmentally safe manner. The Permittee will discharge at the facility in accordance with best management practices which will address the provisions of the Pollution Prevention Act.

VII. MODIFICATION OF PERMIT LIMITS OR OTHER CONDITIONS

When EPA receives information that demonstrates the existence of reasonable cause to modify a permit in accordance with 40 CFR § 122.62(a), EPA may modify the permit. “Reasonable cause” includes alterations or additions to the facility or activity, new federal regulations or standards, new state water quality standards, the completion or modification of total maximum daily loads or wasteload allocations for the receiving water of the facility (also, see 40 CFR § 122.44(d)((1)(vii)(B))), failure of the permit to protect state water quality standards, a change in a Permittee’s qualification for net limits, any relevant compliance schedule, the need to incorporate or revise a pretreatment or land application plan, when pollutants which are not limited in the permit exceed the level which can be achieved by technology-based treatment, the correction of technical mistakes and legal misinterpretations of law made in determining permit conditions, and the receipt of new information relevant to the determination of permit conditions. Minor modifications to a permit may be made by EPA with the consent of a Permittee in order to correct typographical errors, change an interim compliance schedule, allow for a change in ownership, change a construction schedule, or delete an outfall. Pursuant to 40 CFR § 122.63, such minor modifications may be made without public notice and review.

VIII. PERMIT EXPIRATION

The permit will expire five years from its effective date. In accordance with 40 CFR § 122.6(a), the conditions of an expired permit continue in force under 5 U.S.C. § 558(c) until the effective date of a new permit, when a Permittee submits an application for permit reissuance 180 days before the expiration of the permit. Permits that are administratively continued remain fully effective and enforceable.

IX. LIST OF ACRONYMS AND DEFINITIONS

§ means section or subsection.

Act means the Clean Water Act.

Administrator means the Administrator of the EPA, or an authorized representative.

AML means average monthly limit; "monthly average limit" is synonymous.

Annual means once per calendar year

Average Monthly Discharge Limitation means the average of "daily discharges" over a monitoring month, calculated as the sum of all daily discharges measured during a monitoring month divided by the number of daily discharges measured during that month. It may also be referred to as the "monthly average discharge."

Best Management Practices ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of "waters of the United States." BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Biochemical Oxygen Demand (BOD₅) means the amount, in milligrams per liter, of oxygen used in the biochemical oxidation of organic mater in five days at 20oC.

BOD₅ means five-day biochemical oxygen demand.

BPJ means Best Professional Judgment as described within 40 CFR §§ 122.43, 122.44 and 125.3.

Bypass means the intentional diversion of waste streams from any portion of a treatment facility.

°C means degrees Celsius.

CFR means Code of Federal Regulations.

CV means coefficient of variation.

CWA means the Clean Water Act, (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Public Law 92-500, as amended by Public Law 95-217, Public Law 95-576, Public Law 96-483 and Public Law 97-117, 33 U.S.C. 1251 et seq.

Daily Discharge means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Daily Maximum Discharge means the highest allowable "daily discharge" and is also referred to as the "maximum daily discharge."

Director means the Director of the Office of Water and Watersheds, or Director of the Office of Compliance and Enforcement, EPA, or authorized representatives.

Discharge of a Pollutant means any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source" or any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation.

Discharge Monitoring Report ("DMR") means the EPA uniform national form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by permittees. DMRs must be used by "approved States" as well as by EPA.

Effluent Limitation means any restriction imposed by the Director on quantities, discharge rates, and concentrations of "pollutants" which are "discharged" from "point sources" into "waters of the United States," the waters of the "contiguous zone," or the ocean.

EPA means U.S. Environmental Protection Agency.

ESA means the Endangered Species Act.

°F means degrees Fahrenheit.

Facility or activity means any NPDES "point source" or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program.

gpd means gallons per day.

gpm means gallons per minute.

Ice Floe means a cohesive sheet of ice floating in the water.

LTA means longterm average.

MA/NLAA means "may affect, but not likely to adversely affect".

Maximum means the highest measured discharge or pollutant in a waste stream during the time period of interest.

Maximum Daily Discharge Limitation means the highest allowable "daily discharge."

MDL means Method Detection Limit.

MGD means million gallons per day.

mg/L means milligrams per liter.

ML means the minimum level of detection, which is defined as the lowest concentration that gives recognizable signals and an acceptable calibration point for laboratory analysis.

Month means the time period from the 1st of a calendar month to the last day in the month.

Monthly Average means the average of daily discharges over a monitoring month calculated as the sum of all daily discharges measured during a monitoring month divided by the number of daily discharges measured during that month.

Multiyear ice means ice that has survived at least one melt season; it is typically 2 – 4 meters (6.6 – 13.1 feet) thick and thickens as more ice grows on its underside.

NMFS means National Marine Fisheries Service.

National Pollutant Discharge Elimination System (“NPDES”) means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of CWA.

O&M means Operation and Maintenance.

OWW means EPA Region 10’s Office of Water and Watersheds.

Point source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water.

Process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

QAP means Quality Assurance Plan.

Regional Administrator means the Regional Administrator of Region 10 of the EPA, or the authorized representative of the Regional Administrator.

Report means report results of an analysis.

Reverse Osmosis means a water purification technology that uses a semipermeable membrane to remove dissolved solids (e.g. salts) from water. Reverse osmosis is commonly used to purify drinking water and desalinate seawater to produce potable water.

R.O. means reverse osmosis.

Reverse Osmosis Reject Water means the concentrated waste stream that does not pass through the reverse osmosis membrane and is discharged from the system. The reject water consists of dissolved solids (e.g. salts) and a portion of the source water.

Sheen means an iridescent appearance on the water or ice surface.

s.u. means standard units for pH measurements.

Technology-based effluent limit means a permit limit or condition based upon EPA's technology-based effluent limitation guidelines or EPA's best professional judgment.

Total Suspended Solids (TSS) means a measure of the filterable solids present in a sample, as determined by the method specified in 40 CFR Part 136.

TSD means Technical Support Document.

USFWS means U.S. Fish and Wildlife Service.

µg/L means micrograms per liter.

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

Water quality-based effluent limit (WQBEL) means a permit limit derived from a state water quality standard or an appropriate national water quality criteria.

WLA means wasteload allocation.

WQBEL means water-quality-based effluent limitation.

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APPENDIX A. MAP OF FACILITY LOCATION

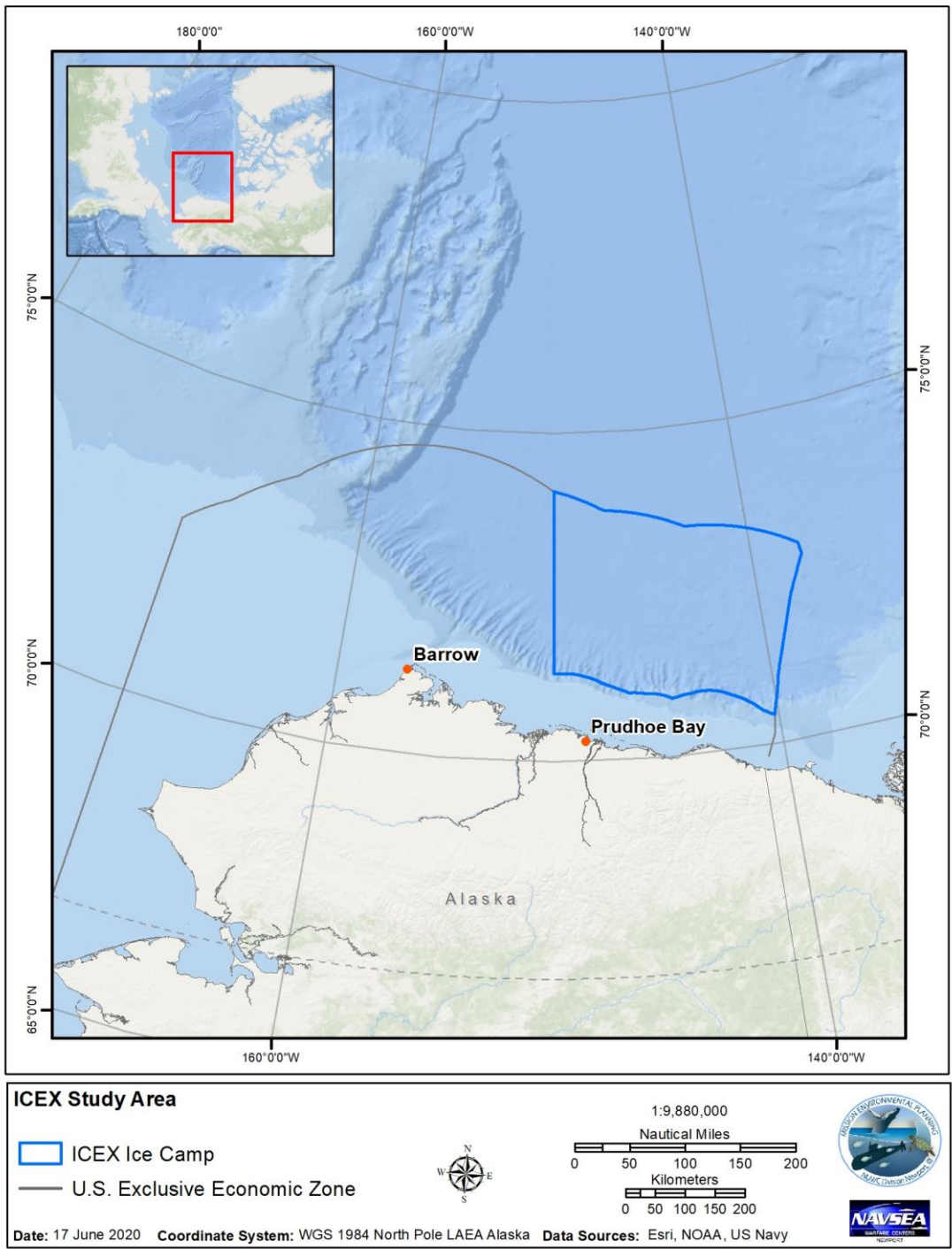


FIGURE A-1: Activity area of the U.S. Navy Arctic Ice Camp.