



FACT SHEET

PUBLIC COMMENT ISSUANCE DATE: JUNE 14, 2012

PUBLIC COMMENT EXPIRATION DATE: JULY 16, 2012

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The U.S. Environmental Protection Agency (EPA) plans to issue 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:

**Eni UNITED STATES OPERATING CO., INC.
SPY ISLAND DRILLSITE WASTEWATER TREATMENT PLANT**

EPA Proposes NPDES Permit Issuance

EPA proposes to issue a NPDES permit to Eni United States Operating Co., Inc. (Eni). The permit is for the discharge of wastewater from Eni's wastewater treatment plant at the Spy Island Drillsite, as a contingency option, when routine discharge to its Class I underground injection control well is not available. The proposed permit sets conditions on the discharge of pollutants from Eni's wastewater treatment plant to Simpson Lagoon of the Beaufort Sea off Alaska's North Slope. The treatment plant is located at latitude 70°33'16"N, longitude 149°53'2"W approximately three miles north of Oliktok Point. To protect water quality and human health, the permit limits 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 Eni wastewater treatment plant;
- A description of the proposed discharges, including a map and description of the discharge locations;
- A listing of proposed effluent limitations and other conditions; and
- Technical material supporting the conditions in the draft permit.

401 Certification for Facilities that Discharge to State Waters

EPA requested that the Alaska Department of Environmental Conservation (DEC) certify the NPDES permit for this facility, under Clean Water Act (CWA) §401. DEC may, as a condition of certification, require that the permit include more stringent limitations or monitoring requirements needed to comply with the CWA or State law. EPA is required to include any such limitation or requirement in the final permit pursuant to CWA § 401(d). A draft CWA §401 certification has been issued concurrently with this proposed permit. Comments regarding this certification should be directed to:

Gerry Brown
Alaska Department of Environmental Conservation
Division of Water
555 Cordova Street
Anchorage, Alaska 99501-2617
gerry.brown@alaska.gov

Alaska Coastal Management Program

The Alaska Coastal Management Program (ACMP) expired on June 30, 2011 by operation of Alaska Statutes 44.66.020 and 44.66.030. As of July 1, 2011, there is no longer a Coastal Zone Management Act (CZMA) program in Alaska. Because a federally approved CZMA program must be administered by a state, NOAA withdrew the ACMP from the National Coastal Management Program. See 76 Fed. Reg. 39,857 (July 7, 2011). As a result, the CZMA consistency provisions at 16 USC § 1456(c)(3) and 15 CFR Part 930 no longer apply in Alaska. Accordingly, federal agencies are no longer required to provide the State of Alaska with CZMA consistency determinations.

Public Comment

EPA will consider all substantive comments on the draft NPDES permit and fact sheet before issuing the final NPDES permit. Persons wishing to comment on, or request a public hearing for, the proposed permit action may do so in writing by the expiration date of the public notice 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 should include name, address, phone number, a concise statement of basis of comment and relevant facts upon which it is based. All written comments should be addressed to:

Ms. Dru Keenan
USEPA, Region 10
1200 Sixth Avenue Suite 900, OWW-130
Seattle, WA 98101
Fax: (206) 553-0165
E-mail: keenan.dru@epa.gov

After the Public Notice period has ended and the public comments have been considered, EPA Region 10's Director of the Office of Water and Watersheds will make a final decision regarding permit reissuance. If no substantive comments are received, the conditions in the proposed permit will become final and the permit will become effective upon issuance. If substantive comments are received, EPA will respond to the comments and the permit will become effective 30 days after its issuance date, unless an appeal is submitted to the Environmental Appeals Board within 30 days.

Persons wishing to comment on the draft CWA §401 certification should submit written comments by the public notice expiration date to the DEC contact listed above.

Documents Are Available For Review

Pursuant to 40 CFR § 124.9, the Administrative Record for the draft Eni NPDES permit, which consist of the draft permit, fact sheet, and the documents referenced in this fact sheet. These are available upon request by contacting Dru Keenan at (206) 553-1219 or keenan.dru@epa.gov.

The draft NPDES permit, fact sheet, draft 401 certification, and related documents can be reviewed or obtained by visiting or contacting EPA's Office in Seattle and Anchorage between 8:30 a.m. and 4:00 p.m., Monday through Friday (see addresses below). The draft permit, fact sheet, and other information can also be found by visiting the Region 10 website at <http://yosemite.epa.gov/r10/WATER.NSF/NPDES+Permits/DraftPermitsAK>.

U.S.EPA Region 10
1200 6th Avenue, Suite 900
Seattle, Washington 98101
(206) 553-0523

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I. Applicant

This fact sheet provides information on the draft NPDES permit issuance for:

Eni United States Operating Co. Inc.

Mailing Address:

Eni United States Operating Co. Inc.,
3800 Centerpoint Dr., Suite 300
Anchorage, Alaska 99503.

Facility Address:

Spy Island Drillsite
Lat= 70°33'16"N,
Long = 149°53'2"W
Approximately three miles north of Oliktok Point, Simpson Lagoon of Beaufort Sea

Facility Contact:

Larry Burgess
3800 Centerpoint Dr., Suite 300
Anchorage, AK 99503
(907) 865-3352

II. Background Information

A. Facility Overview

Eni is an Italian multi-national oil and gas company.¹ Eni has operated in the U.S. since 1966. Eni engages in the exploration and production of hydrocarbons, in the natural gas, in the oil products and oilfield services, construction and engineering sectors.²

Eni applied for a NPDES permit for contingency discharges of sanitary/domestic and desalination wastewaters from its wastewater treatment plant on the Spy Island Drillsite (see Appendix A) into the Beaufort Sea. Eni currently discharges sanitary/domestic and desalination wastewaters from the treatment plant into a Class I Underground Injection Control (UIC) well. The proposed NPDES permit would allow Eni to discharge sanitary/domestic and desalination wastewaters into the Beaufort Sea when the UIC well is unavailable either due to routine maintenance activities or due to circumstances beyond the operator's control. These instances may include annual Mechanical Integrity Testing (MIT), well work-over activity to maintain compliance with injection rates and pressures, or mechanical breakdowns associated with any of the injection machinery (i.e. pumps, motors, meters/gauges or valves/piping).. The discharge would be allowed only the UIC well is back online and operational.

¹ Alaska Oil & Gas Association

² Eni website

The Spy Island Drillsite (SID) is located at Latitude 70 33' 16"N, Longitude 149 53' 2"W in Beaufort Sea, Alaska³. The SID is approximately 3 miles north of Oliktok Point on an offshore, man-made, gravel pad located near Spy Island. Previously, the SID was utilized as an exploration site, which has subsequently been converted to a production facility. The gravel pad comprising the SID falls under the jurisdiction of the State of Alaska Department of Natural Resources (ADNR).

Eni has obtained a Class I injection permit (AK-11011-A) for injection of facility waste and wastewaters.⁴ The SID is a potential generator of hazardous waste and has a Resource Conservation and Recovery Act (RCRA) identification number AKR 00020 2804.

B. Process Description

Discharges authorized under this proposed permit will occur into Simpson Lagoon, within the Beaufort Sea. The wastewater treatment plant combines a desalination module and a sewage treatment module. The two modules are incorporated into one treatment plant. The process description is as follows:

- Seawater will be withdrawn from a brine groundwater well.
- Particulates are removed from the brine through a filter feed strainer system, which is periodically backwashed. Filtered water is processed through a reverse osmosis treatment unit to create potable water. This unit is backwashed periodically. Desalination wastewaters will be discharged under Outfall 002 – Desalination Wastewater.
- The potable water is piped for use in toilets, urinals, showers, eye-wash stations, sinks, kitchen sinks and drains, and other domestic uses. Potable water is also piped for use in drilling. Once water enters the drilling process, it is no longer applicable to discharge under this permit application.
- Used water from toilets, urinals, showers, eye wash stations, sinks, kitchen sinks, and other domestic areas is piped to the sewage treatment plant module for treatment. Sources of domestic/sanitary wastewater are comingled and cannot be separated prior to treatment. After primary (strainer) and secondary (bioreactor) treatments, wastewater is disinfected by means of ultraviolet light and will be discharged under Outfall 001 – Domestic/Sanitary Wastewater.⁵

As described above, the wastewaters will be discharged through two outfalls. Outfall 001 will be used for domestic and sanitary wastewater discharges and desalination plant wastewater will be discharged through Outfall 002.

³ Eni Letter to M.Bussell, 3/24/2011 Re: NPDES Permit Application

⁴ Eni Letter to M.Bussell, 3/24/2011 Re: NPDES Permit Application

⁵ Eni Permit Application 3/24/2011 Section VII.

III. Proposed Discharges

A. Nature, Amount, and Composition of Discharges

The treatment plant at SID is designed to treat 111,500 gallons per day (gpd) of seawater withdrawn from the Beaufort Sea. The treatment process produces two waste streams, as discussed in further detail, below. A simplified water mass balance is as follows:

Name	Description	Volume	Running Water Balance
Water Withdrawn	Total daily water	162,300	162,300
Outfall 001	Sanitary/domestic wastewaters	(20,800)	141,500
Outfall 002	Filter backwash + brine	(111,500)	30,000
Drilling	Water used by drilling	(30,000)	--

Outfall 001 – Domestic/Sanitary Wastewater: Piping for black water (toilets and urinals) and gray water (showers and sinks) is not separated within the facility, and thus the wastewater streams are comingled when they enter the treatment plant. The volume of wastewater that is expected to be discharged from Outfall 001 is 20,800 gpd. The volume is calculated based on the following assumptions:

- 60 gallons per day per person sanitary (toilets)
- 100 gallons per day per person gray water, and
- A maximum population of 130 people.

The composition of the combined wastewater stream is similar to the domestic wastewater regulated under similar NPDES permits on the North Slope. Wastewater will be treated by a Sanitherm treatment plant. The potential pollutants of concern for the Outfall 001 discharge include biochemical oxygen demand (BOD), total suspended solids (TSS), pH, fecal coliform, enterococci and dissolved oxygen. Since the applicant is using UV light as the disinfection method, total residual chlorine is not a concern because it is not a potential pollutant authorized for discharge.

Outfall 002 – Desalination Wastewater: The treatment process results in two components of the discharge comingled in one pipe. The first component is filter backwash, which consists of sediments entrained in brine groundwater. The second component is desalination brine. The volume of desalination wastewater expected to be discharged is 111,500 gpd. The chemical constituency of the wastewater from Outfall 002 includes sediments entrained in the brine, desalination brine, temperature, and pH.

IV. Receiving Water

A. Nature of Beaufort Sea – Simpson Lagoon - Oliktok Point, North Slope Alaska⁶

Within the Beaufort Sea, the nearshore relatively shallow shelf acts like a convergence area for the Colville, Sagavanirktok, Putuligayuk, and other rivers and off-shore waters. The nearshore areas of the Beaufort Sea are fresher and more turbid compared to the deeper off-shore areas, which are clearer, colder and more saline.

Oliktok Point is similar to numerous other Arctic Ocean coastal embayments and barrier island systems that have at least two distinct seasonal changes each year. Consequently, for three to four months each year nearshore waters are generally ice-free, which allows wind and wave forces to reach their highest activity levels. Freeze-up of nearshore areas occurs between mid-September and mid-October when water temperatures drops to about 1.8°C. By late March to April, the ice layer reaches its maximum thickness and large areas of the water column in the bay are frozen solid and ice is about 2 meters (6.56 ft) thick (and occasionally as thick as 2.6 meters). Break-up and melting in the nearshore area usually begins in early June. On average, the nearshore waters are open and generally ice free in late July or early August. During this time, pack ice is located 10 to 20 kilometers (32.8 – 65.6 ft) offshore. The transition periods between open-water and ice-cover are characterized by broken and mobile ice flows that scour and grind the nearshore seafloor at depths of 12 ft, and sometimes in excess of 20 ft mean lower low water (MLLW).

B. Beneficial Uses of the Beaufort Sea

The receiving waters are the marine waters of the Beaufort Sea. These waters are classified in 18 AAC 70 as Classes 2 A(i)(ii)(iii), B(i)(ii), C and D for the following uses: aquaculture, seafood processing, industrial water supply, water contact and secondary recreation, growth and propagation of fish, shellfish, other aquatic life and wildlife; and for harvesting for consumption of raw mollusks or other raw aquatic life uses.

C. Receiving Water Environment⁷

Arctic marine waters are characterized by fewer species, with larger numbers of individuals per species than in temperate waters. Shorter food chains, i.e., less complex food webs, result in Arctic marine systems being less biologically diverse, and therefore, more susceptible to environmental disruption and fluctuation. Dramatic changes in community composition are more likely related to the harsh Arctic environment than to the intrinsic lack of biodiversity.

Phytoplankton forms the base of the Arctic food web. A massive phytoplankton bloom during the short open-water season sustains the biological communities throughout the year, including the winter months when most invertebrates are in a "resting stage." In addition to phytoplankton, terrestrial plant material that erodes into the marine ecosystem is also a fundamental component of the Arctic food web. Beyond the shallow nearshore zone where ice scouring occurs, sessile and other long-lived organisms such as kelps, sponges, mollusks, and soft corals exist.

⁶ NPDES Fact Sheet ConocoPhillips Alaska, Inc., Kuparuk Seawater Treatment Plant, pg 9

⁷ NPDES Fact Sheet ConocoPhillips Alaska, Inc. – Kuparuk Seawater Treatment Plant pg 11

Distribution, abundance, and species diversity of the macro invertebrates of the Beaufort Sea is strongly influenced by the physical-chemical environment. The following factors particularly important to the macro invertebrate community:

- Sediment character and distribution;
- Ice scouring out to the middle continental shelf;
- Water and routes of organic material input to the sea floor;
- Uniformly cold temperatures; and
- Stability of the overlying water column

Annelids, mollusks, and arthropods dominate the macro infauna community in the western Beaufort Sea. Among that group, annelids were the most abundant, comprising between 32 to 87 percent of the community. After annelids, mollusks and arthropods ranked equally in their abundance. The density of macro infauna species increases across the continental shelf and down the upper continental slope to a depth of 700 meters.

Fish in Simpson Lagoon can be classified into three general categories:

- Marine species live in the marine or brackish environment. Marine species in the Simpson Lagoon region include Arctic cod, Arctic flounder, Pacific sand lance, slender eel blenny, snailfish, capelin, and four-horn sculpin. Of these, only the Arctic cod and four-horn sculpin have been captured in large numbers.
- Freshwater species, which occasionally move into the Beaufort Sea when salinity is low, may live in the plumes of large rivers. However, such freshwater species do not occur in Simpson Lagoon in significant numbers.
- Anadromous species are freshwater forms that migrate to the sea in summer and return to freshwater to overwinter or spawn. Several species of anadromous fishes have been taken from Simpson Lagoon. Least and Arctic cisco and Dolly Varden char are considered to be "key" species. Both species of cisco prey on mysids and amphipods. Dolly Varden char in Simpson Lagoon prey on amphipods, juvenile Arctic cod, and mysids.

Approximately 60 fish species have been reported in the Alaskan Beaufort Sea, as compared to over 300 in the Bering Sea and Gulf of Alaska. This relatively low diversity is attributed to low temperature, low productivity, and severe ice conditions in the nearshore area during the winter. Approximately 30 species occur in nearshore areas, including 16 anadromous species. During the open-water period, anadromous species become concentrated in the warmer, less saline waters around the Sagavanirktok and other major river deltas for feeding, particularly within 100 meters of the shoreline. Certain anadromous fish, such as whitefish and least cisco, spawn in the Sagavanirktok River and do not appear to disperse far from their river of origin.

Marine mammals commonly found in the Beaufort Sea include the beluga whale, ringed seal, spotted seal, bearded seal, walrus, and polar bear. Less common marine mammals include the harbor porpoise, killer whale, narwhal, and hooded seal, which occur in much greater concentrations in the western Beaufort Sea.

V. Effluent Limitations

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 an NPDES permit. Section 402 of the CWA, 33 USC § 1342, authorizes EPA, or an approved state NPDES program, to issue an 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; and (2) comply with the EPA-approved state water quality standards in state waters.

In general, the CWA requires that the effluent limits for a particular pollutant be the more stringent of either technology-based limits or water quality-based limits. Technology-based effluent limits are set according to the level of treatment that is achievable using currently available treatment technologies. A water quality-based effluent limit is designed to ensure that a state's water quality standards for a water body are being met and may be more stringent than technology-based effluent limits.

Technology-Based Effluent Limits

There are two general approaches for developing technology-based effluent limits for industrial facilities: (a) using 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 industrial 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 industrial 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 industrial 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.

Water-Quality Based Effluent Limits

Section 301(b)(1)(C) of the CWA, 33 USC § 1311(b)(1)(C), requires that NPDES permits include any effluent limitations necessary to meet the EPA-approved state water quality standards in state waters. Section 303(c) of the CWA, 33 USC § 1313(c), require states to develop and periodically revise water quality standards applicable to waters of the United States that are in the jurisdiction of the state.

For Alaska, the state water quality standards are found at Title 18, Chapter 70 of the Alaska Administrative Code (18 AAC 70). The applicable criteria are determined based on the beneficial uses of the receiving water. As noted above, the beneficial uses for the state marine waters of the Beaufort Sea are aquaculture, seafood processing, industrial water supply, water contact and secondary recreation, growth and propagation of fish, shellfish, other aquatic life and wildlife; and for harvesting for consumption of raw mollusks or other raw aquatic life uses. For

any given pollutant, different uses may have different criteria. To protect all beneficial uses, the permit limits are based on the most stringent of the water quality criteria applicable to those uses.

Anti-degradation of Water Quality

Prior to reissuing the final permit, EPA will review the State's anti-degradation analysis contained in the CWA § 401 certification. The State's anti-degradation policy is located at 18 AAC 70.015. DEC determined in accordance with its interim anti-degradation implementation methods that the limits in the draft permit are consistent with the State's anti-degradation policy; that the draft permit is protective of State water quality standards and the water quality of the receiving water; and that the draft permit will not result in a reduction of water quality in the receiving waters.

B. Proposed Effluent Limitations for Outfall 1 (Domestic/Sanitary Wastewater)

The following are the applicable national effluent guidelines for domestic wastewater:

Best Practical Control Technology Currently Achievable (BPT) Requirements. [40 CFR §435.42 separately defines sanitary and domestic wastewater]

Floating solids: For sanitary wastes, the BPT level of treatment prohibits floating solids for facilities continuously manned by 9 or fewer persons or intermittently manned by any number of persons.

Floating solids, foam or garbage: For domestic wastes (materials discharged from sinks, showers, laundries, safety showers, eyewash stations and galleys), the BPT level of treatment prohibits floating solids, foam or garbage.

Secondary Treatment: [18 AAC 72.040 and 18 AAC 72.990(64)]

BOD: The regulations for secondary treatment require that BOD meet a 7 day average of 45 mg/L, a 30 day average of 30 mg/L and the arithmetic mean of the values for effluent samples collected in a 24-hour period does not exceed 60 mg/L.

TSS: The regulations for secondary treatment require that TSS meet a 7 day average of 45 mg/L, a 30 day average of 30 mg/L and the arithmetic mean of the values for effluent samples collected in a 24-hour period does not exceed 60 mg/L.

The following are the applicable Alaska water quality standards (AWQS). Based upon Eni's projected effluent from Outfall 001, water quality-based limits include flow, pH, fecal coliform, enterococci, and dissolved oxygen. The following are the applicable water quality based limitations:

Fecal Coliform: The AWQS state, "Based on a 5-tube decimal dilution test, the fecal coliform median most probable number (MPN) may not exceed 14 fecal coliform/100ml, and not more than 10% of the samples may exceed a fecal coliform median MPN of 43 fecal coliform/100ml. The permit incorporates the water quality-based criteria of 14 FC/100 mL and 43 FC/100 mL as end-of-pipe limits to protect the beneficial uses of the

marine environment (e.g., harvesting for consumption of raw mollusks or other raw aquatic life).

Enterococci: Under the BEACH Act of 2000, EPA promulgated enterococci criteria for the protection of coastal waters designated for contact recreation. Alaska is covered by the promulgation. The applicable criterion is a geometric mean of 35 enterococci /100ml. (40 CFR Part 131 Volume 69, Number 220, Page 67217-67243). The criteria are a geometric mean of 35 per 100 ml and a single sample maximum of 501 per 100 ml.

pH: AWQS require that pH shall not be less than 6.5 nor greater than 8.5 standard units.

Dissolved Oxygen (DO): The AWQS for DO is for the protection of aquaculture, recreation, growth and propagation of fish, shellfish, other aquatic life, and wildlife, and harvesting for consumption of raw mollusks or other raw aquatic life. The standard states, “surface DO concentration in coastal water may not be less than 6.0 mg/l for a depth of one meter except when natural conditions cause this value to be depressed. DO may not be reduced below 4 mg/l at any point beneath the surface. DO concentrations in estuaries and tidal tributaries may not be less than 5.0 mg/l except where natural conditions cause this value to be depressed. In no case may DO levels exceed 17 mg/l. The concentration of total dissolved gas may not exceed 100% of saturation at any point of sample collection.”

Oil and Grease: AWQS state that oil and grease are limited to “shall not cause a film, sheen, or discoloration on the surface or floor of the water body or adjoining shorelines.” The potential source of oil and grease in this discharge would be excess cooking oils. While the ordinary cleaning of utensil and cooking appliances is acceptable, the discharge of excess cooking oil is not. EPA has determined that the state criteria can be met by visual monitoring and the best management practice that kitchen oils from food preparation are properly disposed of.

Chlorine: The facility will not be discharging chlorine as it is using ultra-violet technology to disinfect its wastewater. As such, EPA will not impose a chlorine limit.

The proposed effluent limits for Outfall 001 are summarized in Table 1 below. Monitoring and recording are required during periods of discharge only.

Table 1. Effluent Limitations and Monitoring Requirements for Outfall 001 Domestic/Sanitary Wastewater						
Effluent Parameter	Units	Effluent Limitations			Monitoring Requirements	
		Average Monthly Limit	Maximum Daily Limit	Minimum Daily Limit	Sample Frequency	Sample Type
Flow	gpd	---	20,800	---	Daily	Measured/ recorded
BOD ₅	mg/l	30	60	---	Monthly	Grab ^{note 1}
TSS	mg/l	30	60	---	Monthly	Grab ^{note 1}
Floating Solids & Garbage		no discharge			Daily	Visual ^{note 2}
Foam		no discharge			Daily	Visual ^{note 2}
Oily Sheen		no discharge			Daily	Visual ^{note 2}
pH ^{note 3}	s.u.	6.5 – 8.5			Monthly	Grab
Fecal Coliform Bacteria	#/100mL	14 ^{note 4}	43 ^{note 5}	---	Monthly	Grab
Enterococci	#/100mL	35 ^{note 4}	501 ^{note 5}	---	Monthly	Grab
Dissolved Oxygen	mg/l	---	17	6	Monthly	Grab

Note 1 Composite samples may be collected in lieu of grab samples and must consist of at least four equal volume grab samples, two of which must be taken during periods of peak flow.

Note 2 The permittee must monitor by observing the surface of the receiving water in the vicinity of the outfall(s) during daylight at the time of maximum estimated discharge and during conditions when observations on the surface of the receiving water are possible in the vicinity of the discharge. The observations and time of day must be recorded. The numbers of days floating solids, garbage, foam or oily sheen are observed must be recorded and reported in the DMR.

Note 3 The limitation shall be 6.5 to 8.5 standard units and within 0.2 standard units of the receiving water.

Note 4 Must be reported as the monthly geometric mean.

Note 5 Instantaneous maximum limit.

C. Proposed Effluent Limitations for Outfall 002 (Desalination Unit Wastewater)

EPA has not established national effluent guidelines for seawater treatment facilities; therefore, has imposed the Alaska Water Quality Standards for flow, temperature, and salinity. EPA has also imposed effluent limit for TSS based on Best Professional Judgment (BPJ).

Temperature: Alaska Water Quality Standards require that the temperature of a discharge “may not exceed 15°C or cause the weekly average to increase by more than 1°C, and that normal daily temperature cycles may not be altered in amplitude or frequency.” Desalination unit wastes may have elevated temperatures; therefore, the permit requires monitoring of intake and effluent temperatures.

Salinity: The Alaska Water Quality Standards have water quality criteria for salinity in marine waters (18 AAC 70.020(b)(16)). The salinity of the wastewater from the desalination unit will be higher than that of the intake (ambient) water.

pH: AWQS require that pH shall not be less than 6.5 nor greater than 8.5 standard units.

The proposed effluent limits for Outfall 002 are summarized in Table 2 below. Monitoring and recording are required during periods of discharge only.

Table 2. Effluent Limitations and Monitoring Requirements for Outfall 002					
Desalination Unit Wastewater					
Parameter	Units	Average Monthly	Maximum Daily	Sampling Method and Frequency	Reported Values
Flow	gpd	--	111,500	Calculation or meter, daily	Average monthly and maximum daily
TSS	mg/L	30	60	Grab, monthly	Average monthly and maximum daily
pH ^{note 1}	s.u.	6.5 – 8.5		Grab, monthly	Minimum and maximum monthly values
Temperature ^{note 2}	°C	--	Not to exceed 15°C	Recording or meter, daily	Maximum daily
Salinity ^{note 3}	ppt	--	--	Grab, monthly	Intake and effluent

Note 1 The limitation shall be 6.5 to 8.5 standard units and within 0.2 standard units of the receiving water.

Note 2 May not cause the weekly average temperature to increase more than 1°C. Normal daily temperature cycles may not be altered in amplitude or frequency.

Note 3 See Table 3.

Table 3. Maximum Allowable Variation Above Natural Salinity	
Natural Salinity (ppt)	Human-Induced Salinity (ppt)
0.0 to 3.5	1
Greater than 3.5 to 13.5	2
Greater than 13.5 to 35.0	4

VI. Monitoring and Reporting Requirements

A. Basis for Effluent and Surface Water Monitoring

CWA § 308 and federal regulation 40 CFR § 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather effluent and 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 for reporting results to EPA.

B. Summary of Effluent Monitoring

1. Basis for Effluent and Other Monitoring.

- a) Section 308 of the CWA and federal regulation at 40 CFR § 122.44(i) require and authorize monitoring in NPDES permits to determine compliance with effluent limitations and other applicable provisions. Monitoring may also be required to gather effluent and surface water data to determine if additional effluent limitations or other requirements are needed and/or to monitor effluent impacts on receiving water quality.

2. Sample Type.

- a) Measured/Recorded. The permit requires actual measurement or recording of daily discharge volume from Outfall 001 and daily calculation or measurement of the discharge volume from Outfall 002.
- b) Visual.
 - (1) Oil Sheen. Compliance with the no film, sheen, or discoloration on the surface limitation will be through daily visual monitoring of the receiving water surface.
 - (2) Floating solids, garbage and foam. The only practical measurement of this requirement is to conduct a visual analysis of the receiving water to determine the presence or absence of floating solids, garbage and foam.
- c) Grab. Grab samples are appropriate because most of the discharges are expected to be intermittent, and the flows and characteristics being sampled will likely be relatively constant during the discharge itself.

3. Proposed Effluent and Other Monitoring. The following discussion summarizes the sampling and monitoring requirements in the draft permit.

- a) 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. Permittees have the option of taking more frequent samples than are required under the permit (Section I.B.). These samples must be used for limitation averaging, if they are conducted using the EPA-approved test methods (generally found in 40 CFR Part 136).
- b) Section I.C.2. requires that all effluent samples must be collected from the effluent stream of each discharge after the last treatment unit prior to discharge into the receiving waters.
- c) Section I.B.1. requires visual monitoring of the receiving water be conducted in the vicinity of the outfall(s) at a time of maximum estimated or measured discharge.
- d) Sections I.C.1 and III.A. require that the permittee must ensure samples and measurements are representative of the monitored activity.
- e) The effluent limitations and monitoring requirements tables identify the measurement frequency and sample type for each specific effluent parameter.

VII. Other Permit Conditions

A. Monitoring and Reporting

The permit includes new provisions to require the permittee to submit Discharge Monitoring Reports (DMR) data electronically using NetDMR. NetDMR is a national web-based tool that allows the electronic submittal of DMRs via a secure Internet application to EPA through the Environmental Information Exchange Network. NetDMR allows participants to discontinue mailing in paper forms under 40 CFR § 122.41 and § 403.12.

Under NetDMR, all discharge monitoring reports are submitted to the EPA electronically. EPA currently conducts free training on the use of NetDMR. Further information about NetDMR, including upcoming trainings and contacts for the EPA Region 10, is provided on the following website: <http://www.epa.gov/netdmr>.

B. Best Management Practices (BMP)

The CWA and federal regulations authorize EPA to require best management practices (BMPs) in NPDES permits. See 40 CFR § 122.44(k). BMPs are measures for controlling the generation of pollutants and their release to waterways. For many facilities, these measures are typically included in the facility Operation & Maintenance (O&M) plans. BMPs are important tools for waste minimization and pollution prevention. EPA encourages facilities to incorporate BMPs into their O&M plans and to revise them as new practices are developed. The proposed permit requires the permittee to submit to EPA and DEC, within 90 days of the effective date of the permit, a letter certifying that a BMP Plan has been developed or updated and is being implemented at the SID facility. The permittee must maintain a copy of the BMP Plan at the facility and make the BMP Plan available upon the EPA's request.

C. Quality Assurance Project Plan (QAPP)

The federal regulation at 40 CFR § 122.41(e) requires the permittee to develop a QAPP to ensure that the monitoring data submitted is accurate and to explain data anomalies, if they occur. Under the draft permit, the permittee will be required to develop a QAPP for all monitoring required by the permit. The permittee must give written notice to the EPA that the QAPP is complete and the date it was completed. The written notice is due within 90 days of the effective date of the permit. The QAPP must consist of standard operating procedures the permittee must follow for collecting, handling, storing and shipping samples, laboratory analysis, and data reporting.

In addition to facility-specific requirements, most of sections B, C, D, and E of the draft permit contain standard regulatory language. Standard regulatory language applies to all permittees and must be included in NPDES permits. Because they are regulations, standard regulatory language 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.

VIII. Other Legal Requirements

A. State Water Quality Standards and Certification

Section 401 of the CWA requires EPA to seek State certification before issuing a final permit. As a result of the certification, the State may require more stringent permit conditions or additional monitoring requirements to ensure that the permit complies with State water quality standards or other applicable State law requirements. EPA obtained DEC's draft certification on May 31, 2012.

B. Endangered Species Act

The Endangered Species Act requires federal agencies to consult with the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) and the U. S. Fish and Wildlife Service (USFWS) if their actions could beneficially or adversely affect any threatened or endangered species and/or their critical habitat. EPA has determined that the issuance of the draft permit for emergency discharges of sanitary, domestic, and desalination unit wastes at SID may affect, but are not likely to adversely affect, any of the threatened or endangered species or their critical habitat in the vicinity of the discharges. EPA will request concurrence from NMFS and USFWS regarding the effect determinations. This Fact Sheet, the draft permit, and the Biological Evaluation (BE) are sent to NMFS and the USFWS for review during the public notice period.

Species	ESA Status	Jurisdictional Agency	Critical Habitat	Effect Determinations
Bowhead Whale (<i>Balaena mysticetus</i>)	Endangered	NMFS	No	NLAA ¹
Polar Bear (<i>Ursus maritimus</i>)	Threatened	USFWS	Designated	NLAA ¹
Spectacled eider (<i>Somateria fischeri</i>)	Threatened	USFWS	Designated	NLAA ¹
Steller's eider (<i>Polysticta stelleri</i>)	Threatened	USFWS	No	NLAA ¹
Yellow-billed Loon (<i>Gavia adamsii</i>)	Candidate	USFWS	No	NLJCE ²
Pacific walrus (<i>Odobenus rosmarus divergens</i>)	Candidate	USFWS	No	NLJCE ²

¹ May affect, but are not likely to adversely affect.

² Not likely to jeopardize the continued existence.

C. Essential Fish Habitat

Essential fish habitat (EFH) includes waters and substrate necessary for fish to spawn, breed, feed, or grow to maturity. The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) requires EPA to consult with NMFS when a proposed discharge has the potential to adversely affect EFH. The EFH regulations define an adverse effect as any impact which 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 action.

EPA has prepared an EFH assessment, which concludes that the issuance of the permit will not adversely affect EFH.

D. National Environmental Policy Act (NEPA)

In compliance with the Council on Environmental Quality's (CEQ) NEPA requirements at 40 CFR Parts 1500-1508 and EPA's NEPA implementing regulations at 40 CFR Part 6, EPA has determined that the proposed issuance of the permit is categorically excluded. EPA made this determination based on the following factors:

- 1) Eni received permit coverage from EPA on June 23, 2011 under the Arctic NPDES General Permit for discharges of sanitary wastes, domestic wastes, and desalination unit wastes (Permit No. AKG280035). The discharges occurred in the summer and fall of 2011 during construction of a Class I underground injection control well at Spy Island Drillsite. The well was completed in October 2011 and all wastes produced are currently injected down hole.
- 2) EPA's permit action is considered a reissuance of existing coverage; however, the effluent limits and monitoring requirements will be more stringent, thus, environmentally protective and will not result in degradation of the receiving waters.
- 3) The sanitary, domestic, and desalination waste discharges are currently injected to the Class I well, and will only occur during emergency situations at the drillsite. The NPDES permit is only needed as a contingency discharge option.

Based on these factors and consideration of proposed permit conditions, EPA has concluded that the proposed contingency discharges will not result in a significant effect on the environment. EPA's issuance of the NPDES permit is eligible for exclusion and the proposed action does not involve any extraordinary circumstances pursuant to 40 CFR Part 6.204.

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 that will address the provisions of the Pollution Prevention Act.

F. Oil Spill Requirements

Section 311 of the CWA prohibits the discharge of oil and hazardous materials in harmful quantities. Discharges specifically controlled by the draft permit are excluded from the provisions of Section 311 because these discharges will occur only during emergency situations when the Class I injection well is not operational, and are limited to amounts and concentrations which are deemed to be protective of State water quality standards. However, the permit does not preclude federal enforcement of or relieve the permittee from any responsibilities, liabilities, or penalties for other unauthorized discharges of toxic pollutants under Section 311 of the Act.

G. Executive Order 12898 – Environmental Justice

EPA has determined that the discharges authorized by the draft permit will not have a disproportionately high and adverse human health or environmental effects with respect to the discharge of pollutants on minority or low-income populations living on the North Slope, including coastal communities near Olitok Point. 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. The draft permit implement existing water pollution prevention and control requirements, such as applicable water quality standards, to ensure compliance with the CWA and protection of the receiving water and the marine environment.

H. Executive Order 13175 – Tribal Consultation

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, the EPA issued the “EPA Policy on Consultation and Coordination with Indian Tribes” which established national guidelines and institutional controls for consultation.

Consistent with EPA’s policy, we have invited the Inupiat Community of the Arctic Slope (ICAS), the Native Village of Nuiqsut, and the Native Village of Kaktovik to initiate government to government consultation with the agency on this permit action.

IX. 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 (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, minor modifications may be made without public notice and review.

X. 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 continued remain fully effective and enforceable.

XI. List of Acronyms and Definitions

§ means section or subsection.

AAC means Alaska Administrative Code.

ADNR means Alaska Department of Natural Resources.

AWQS means Alaska Water Quality Standards.

Active discharge, for the purposes of this permit, means discharges to surface water under conditions or circumstances beyond the control of the operator which prevents the discharge of sanitary/domestic and desalination wastewaters to the UIC well. Circumstances may include required annual Mechanical Integrity Testing of the UIC well; mechanical breakdowns associated with any of the injection machinery (i.e. pumps, motors, meters/gauges or valves/piping).

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.

BOD means biochemical oxygen demand.

BPJ means Best Professional Judgment.

BPT means Best Practical Control Technology Currently Achievable.

CEQ means Council on Environmental Quality.

CFR means Code of Federal Regulations. *CV* means coefficient of variation.

CWA means the Clean Water Act.

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.

DEC means the Alaska Department of Environmental Conservation.

DO means dissolved oxygen.

DMR means Discharge Monitoring Report.

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.

EFH means Essential Fish Habitat.

ELG means Effluent Limitation Guidelines.

Eni means Eni United States Operating Co., Inc.

EPA means U.S. Environmental Protection Agency.

ESA means the Endangered Species Act.

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.

FC means Fecal Coliform.

gpd means gallons per day.

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

ICAS means Inupiat Community of the Arctic Slope.

MDL means Maximum Daily Limit.

mg/L means milligrams per liter.

MLLW means mean lower low water.

MPN means most probable number.

MSFCMA means Magnuson-Stevens Fishery Conservation and Management Act.

NEPA means National Environmental Policy Act.

NLAA means May Affect, but are Not Likely to Adversely Affect.

NLJCE means Not Likely to Jeopardize the Continued Existence.

NMFS means National Marine Fisheries Service.

NOAA means National Oceanic and Atmospheric Administration.

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.

ppt means parts per thousand.

QAPP means Quality Assurance Project Plan.

RCRA means Resource Conservation and Recovery Act.

RO means reverse osmosis.

Sanitary wastes means human body waste discharged from toilets and urinals.

SID means Spy Island Drillsite.

Sewage means human body wastes and the wastes from toilets and other receptacles intended to receive or retain body wastes.

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

TSS means total suspended solids.

UIC means Underground Injection Control.

USFWS means U.S. Fish and Wildlife Service.

XII. References

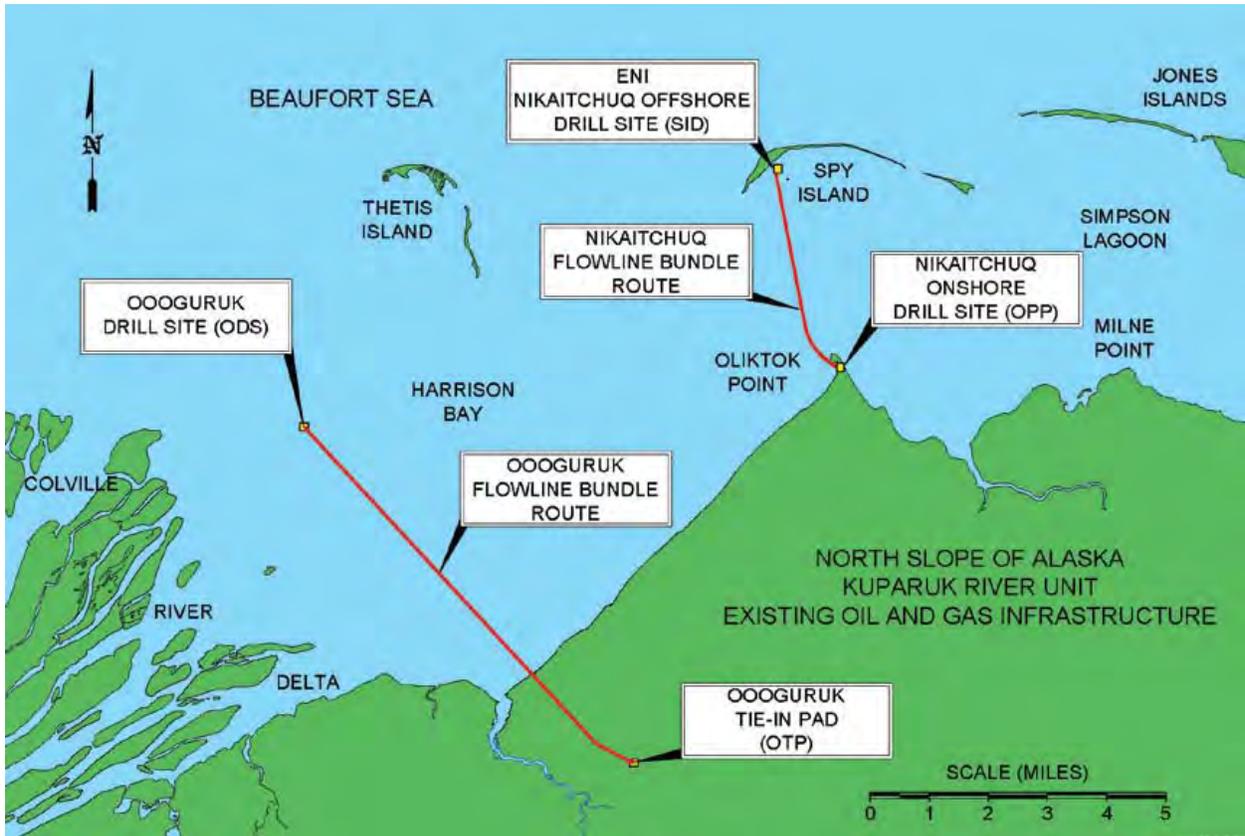
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Appendix A. Maps



General Overview (Source: INTECSEA, Quarterly Journal Q2-2010)



Aerial view of Spy Island Drillsite (Source: Eni Petroleum)

Appendix B. Basis for Water Quality-Based Effluent Limitations

Table B-1: Water Quality Criteria Applicable to the Eni SID Discharges		
DISCHARGE	POLLUTANT PARAMETER	CRITERIA
Discharge 001	Fecal Coliform Bacteria ¹	14 FC/100 mL
		43 FC/100 mL ²
	Enterococci	geometric mean of 35 enterococci /100ml
		single sample maximum of 501 per 100 ml
	pH	6.5 - 8.5 ³
Dissolved Oxygen	No less than 6.0mg/L; may not exceed 17mg/L	
Discharge 002	Temperature	not to exceed 15°C or cause the weekly average to increase by more than 1°C
<p><u>Footnotes:</u></p> <p>¹ Based on the median most probable number (MPN) from a 5-tube decimal dilution test.</p> <p>² Based on not more than 10% of the samples exceeding this value.</p> <p>³ May not vary more than 0.1 pH unit from natural conditions.</p>		

The most stringent narrative criteria based on the beneficial uses for state waters in the Beaufort Sea are summarized in the following paragraphs:

1. Residues. Floating solids, debris, sludge, deposits, foam, scum, or other residues may not, alone or in combination with other substances or wastes, make the water unfit or unsafe for the use; cause acute or chronic problem levels as determined by bioassay or other appropriate methods; cause a film, sheen, or discoloration on the surface of the water or adjoining shorelines; cause leaching of toxic or deleterious substances; or cause a sludge solid, or emulsion to be deposited beneath or upon the surface of the water, within the water column, on the bottom, or upon adjoining shorelines.
2. Oils and Grease. Surface waters, floor of the waterbody, and adjoining shorelines must be virtually free from floating oil, film, sheen, or discoloration.
3. Odor or Taste to Fish or Aquatic Organisms. Substances may not be present in concentrations that individually or in combination impart undesirable odor or taste to fish or other aquatic organisms based on bioassay or organoleptic tests.

A. Determination of Reasonable Potential

To determine if there is “reasonable potential” to cause or contribute to an exceedance of water quality criteria in a state water quality standard for a given pollutant (and therefore whether a water quality-based effluent limit based on a state water quality standard is needed), EPA compares the maximum projected receiving water concentration to the criteria for that pollutant. If the projected receiving water concentration exceeds the criteria, there is “reasonable potential,” and a limit must be included in the permit. EPA uses the recommendations in Chapter 3 of the EPA’s Technical Support Document for Water Quality-based Toxics Control (TSD, 1991) to conduct this “reasonable potential” analysis.

B. Water Quality Based Effluent Limit Derivation.

EPA must establish provisions that are protective of the narrative criteria (40 CFR 122.44(d)(1)(vi)) in the absence of state numeric criteria and when there is reasonable potential for the discharge to cause or contribute to an excursion that results in the violation of the narrative water quality standard. In order to determine this, EPA must use the best information available to characterize the conditions of the receiving water body and the point source discharge (effluent).

- a. Fecal Coliform Bacteria. Since a mixing zone has not been requested by Eni or authorized by DEC, EPA is applying the criteria of 14 and 43 FC/100 mL as end-of-pipe limits to protect the beneficial uses of the marine environment (e.g., harvesting for consumption of raw mollusks or other raw aquatic life).
- b. Enterococci. Pursuant to the Beach Act, EPA is applying a geometric mean of 35 enterococci /100ml and single sample maximum of 501 per 100 ml.
- c. pH. Since the state’s water quality standards require a pH range of 6.5 - 8.5, and DEC has not authorized a mixing zone, there would be no dilution ratio for pH in the sanitary discharge so there is reasonable potential for this discharge. This criterion must be met when the effluent is discharged to the receiving water.
- d. Residues. The domestic waste discharge has a technology-based effluent limitation that prohibits the discharge of floating solids. All discharges are required to contain no free oil. Since the water quality standards prohibit the discharge floating solids, debris, sludge, deposits, foam, scum, or other residues of any kind in concentrations causing nuisance, objectionable, or detrimental conditions, EPA has determined that there is reasonable potential for these discharges to violate this state’s water quality standard. The draft permit prohibits any discharge of floating solids, debris, sludge, deposits, foam, scum, or other residues of any kind