

STATE OF ALASKA

**DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF WATER
WASTEWATER DISCHARGE AUTHORIZATION PROGRAMS**

SEAN PARNELL, GOVERNOR
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August 4, 2009

ADEC File No.: 300.48.004

Mr. Tom Barrett
BP Exploration Alaska Inc.
P.O. Box 196612
900 East Benson Blvd.
Anchorage, Alaska 99519

**Certified Mail # 7006 0100 0001 0226 3060
Return Receipt Requested**

**RE: DEC Final Section 401 Certification of NPDES Permit AK-003866-1,
BP Exploration (Alaska) Endicott Waterflood Operations**

Dear Mr. Barrett:

On June 9, 2009, EPA requested a final 401 certification for the issuance of NPDES Permit AK-003866-1 regulating discharges from Endicott Waterflood Operations located at Duck Island, Stefansson Sound, Beaufort Sea, Alaska.

The draft 401 certification was publically noticed in conjunction with the NPDES draft permit and fact sheet from March 12, 2009 through April 13, 2009. After reviewing the comments received during the public notice period, DEC is issuing the final certification in accordance with Section 401 of the Clean Water Act and with Alaska Administrative codes 18 AAC 15, 18 AAC 70 (Water Quality Standards) and 18 AAC 72 (Wastewater Discharge) for NPDES Permit AK-003866-1.

ADEC regulations provide that any person who disagrees with this decision may request an adjudicatory hearing in accordance with 18 AAC 15.195-18 AAC 15.340 or an informal review by the Division Director in accordance with 18 AAC 15.185. Informal review requests must be delivered to the Director of Water, 555 Cordova Street, Anchorage, Alaska 99501, within 15 days of receipt of the permit decision. Adjudicatory hearing requests must be delivered to the Commissioner of the Department of Environmental Conservation, 410 Willoughby Avenue, suite 303, P.O. Box 111800 Juneau, Alaska 99811-1800, within 30 days of the permit decision. If a hearing is not requested within 30 days, the right to appeal is waived.

Be advised, pursuant to 18 AAC 15.120(c), the certification of the NPDES permit constitutes the permit required under AS 46.03.100. Also, 18 AAC 15.120(c) states, "Any rights or privileges inuring to the benefit of EPA in the NPDES permit, including any right to enter, inspect, sample, and have access to records, also inure to the benefit of the department. Any reports or other information filed with EPA in accordance with the NPDES permit must be contemporaneously filed with the department."

If you have any technical questions regarding this final certification, please contact Marc H. Bentley at 907-269-6287 or marc.bentley@alaska.gov.

Sincerely,

A handwritten signature in blue ink that reads "Shawn Stokes". The signature is written in a cursive style with a large initial "S" and a stylized "Stokes".

Shawn Stokes
Industrial Permitting Manager

Enclosures: Final Certificate for NPDES Permit AK-003866-1
Response to comments on Draft Certification

cc: Shawn Stokes, ADEC/Anchorage
Sharmon Stambaugh, ADEC/Anchorage
Kenwyn George, ADEC/Juneau
Hahn Shaw, EPA/Seattle

STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
CERTIFICATE OF REASONABLE ASSURANCE

A Certificate of Reasonable Assurance, as required by Section 401 of the Clean Water Act, has been requested by EPA for BP Exploration; Endicott Waterflood Operations to discharge wastewaters to Stefansson Sound, Beaufort Sea, Alaska, for National Pollutant Discharge Elimination System (NPDES) Permit No. AK-003866-1. These wastewater discharges are necessary for activities associated with the development and production of offshore oil and gas located at Latitude 70° 21'09" north, longitude 147°57'25" west. This certification is for the following discharges:

- 1) Discharge Outfall 001 – Combined Wastewater Discharge from Seawater Treatment Plant and Potable Water Unit
- 2) Discharge Outfall 001A – Sanitary Wastewater
- 3) Discharge Outfall 002 – Continuous Flush System

Public notice of the application for this certification was made in accordance with 18 AAC 15.180.

Water quality certification is required for these activities because these discharges will be authorized by NPDES permit No. AK-003866-1.

Having reviewed the permit, ADEC certifies there is reasonable assurance the activities, and the resultant discharge, are in compliance with the requirements of Section 401 of the Clean Water Act and the Alaska Water Quality Standards (18 AAC 70) provided that the terms and conditions of the final certification are adhered.

State of Alaska Certification Stipulations:

1. A mixing zone is designated in Stefansson Sound for discharge 001. The mixing zone is defined as the area of a 100 meter radius circle, centered at the discharge point, from the sea floor to the surface. This mixing zone will provide a minimum dilution of 40:1 at the outside edge of the mixing zone. All water quality standards must be met outside the designated mixing zone boundary. Within this mixing zone, the water quality criteria may be exceeded for the following parameters:
 - a. Fecal Coliform Bacteria
 - b. pH
 - c. Turbidity
 - d. Temperature
 - e. Sediment
 - f. Toxic and other Deleterious Organic and Inorganic Substances (including Total Residual Chlorine)

- g. Residues
- h. Whole Effluent Toxicity (WET)
- i. Dissolved Inorganic Substances (Salinity)

Rationale:

In accordance with State Regulation 18 AAC 70.240 as amended through June 26, 2003, the department will, in its discretion, authorize a mixing zone in a discharge permit if the department finds that the available evidence reasonably demonstrates that:

- a. The applicable requirements of the chapter will be met.*
- b. The mixing zone will be as small as practicable.*
- c. An effluent or substance will be treated to remove, reduce, and disperse pollutants, using methods found by the department to be the most effective, technologically, and economically feasible, consistent with the highest statutory and regulatory requirements.*
- d. Ongoing compliance with 18 AAC 70.240-18 AAC 70.270 is a condition of any permit authorizing a mixing zone.*

The department finds that the size of the mixing zone authorized for discharge in this certification is appropriate and provides reasonable assurance that existing uses of the Beaufort Sea outside of the mixing zone are maintained and fully protected. In determining the 100 meter radius mixing zone size, conformance with parts a-d above is demonstrated as follows.

- Modeling using Cormix and Plume programs has shown that a 100 meter radius mixing zone would suffice as being as small as practicable. The determination of the mixing zone for various seasonal conditions gave a conservative dilution ratio of 40:1. This dilution ratio allows acceptable dispersion during critical periods.*
- The technology employed by the facility to reduce regulated pollutants conforms to industry standards and represents available technology that is economically achievable.*

The mixing zone will ensure that the most stringent water quality standards are met at all points outside of the mixing zone for:

- Fecal Coliform - Based on a 5-tube decimal dilution test, the fecal coliform median MPN may not exceed 14 FC/100 ML, and not more than 10% of the samples may exceed a fecal coliform median MPN of 43 FC/100 ML.*
- pH- May not be less than 6.5 or greater than 8.5, and may not vary more than 0.2 pH unit outside of the naturally occurring range.*

- *Turbidity - May not exceed 25 nephelometric turbidity units (NTU). May not reduce the depth of the compensation point for photosynthetic activity by more than 10%. May not reduce the maximum secchi disk depth by more than 10%.*
- *Temperature- May not cause the weekly average temperature to increase more than 1°C. The maximum rate of change may not exceed 0.5°C per hour. Normal daily temperature cycles may not be altered in amplitude or frequency. Also, may not exceed 15°C.*
- *Sediment - No measureable increase in concentration of settleable solids above natural conditions, as measured by the volumetric Imhoff cone method.*
- *The concentration of substances in water may not exceed the criteria shown in Table IV and in Table V, column B of the Alaska Water Quality Criteria Manual (2003), or any chronic and acute criteria established in this chapter, for a toxic pollutant of concern, to protect sensitive and biologically important life stages of resident species of this state. There may be no concentrations of toxic substances in water or in shoreline or bottom sediments, that, singly or in combination, cause, or reasonably can be expected to cause, adverse effects on aquatic life or produce undesirable or nuisance aquatic life, except as authorized by this chapter. Substances may not be present in concentrations that individually or in combination impart undesirable odor or taste to fish or other aquatic organisms, as determined by either bioassay or organoleptic tests. (The Chlorine Aquatic Life Saltwater Chronic numeric criteria is 7.5 ug/l (micrograms per liter) as listed in Table IV of the Alaska Water Quality Criteria Manual (2003))*
- *Residues - May not, alone or in combination with other substances or wastes, make the water unfit or unsafe for the use; 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.*
- *WET - May not impart chronic toxicity to aquatic organisms, expressed as 1.0 chronic toxic unit, at the point of discharge, or if the department authorizes a mixing zone, at or beyond the mixing zone boundary, based on the minimum effluent dilution achieved in the mixing zone.*
- *Dissolved Inorganic Substances-Maximum allowable variation above natural salinity.*

<i>Natural Salinity (parts per thousand)</i>	<i>Human-Induced Salinity (parts per thousand)</i>
<i>0.0 to 3.5</i>	<i>1</i>
<i>Greater than 3.5 to 13.5</i>	<i>2</i>
<i>Greater than 13.5 to 35.0</i>	<i>4</i>

2. Monitoring for the difference in the continuous flush system influent temperature as compared to the continuous flush system effluent temperature is required for Outfall 002. The minimum sampling frequency shall be 3 times per week, while there is a discharge through Outfall 002, and the sampling method shall be an instantaneous or continuous reading. The average weekly temperature difference shall be reported as the mean weekly effluent temperature minus the mean weekly influent temperature.

Rationale:

In accordance with 18 AAC 15.090 Permit terms and conditions. As the department considers necessary to ensure that applicable criteria will be met, the department will attach terms and conditions to a permit, variance, or approval, including (1) operating, monitoring, inspection, sampling, and reporting requirements. In accordance with AS 46.03.110 (d), the Department may specify in a permit the terms and conditions under which waste material may be disposed of.

In accordance with 18 AAC 70.020(b) Temperature- May not cause the weekly average temperature to increase more than 1°C. The maximum rate of change may not exceed 0.5°C per hour. Normal daily temperature cycles may not be altered in amplitude or frequency. Also, the temperature may not exceed 15°C.

3. Monitoring for Whole Effluent Toxicity at Outfall 001 shall be conducted at least once per year, while clarifying agents are in use, if clarifying agents are used during the calendar year. This monitoring requirement shall be waived if the facility demonstrates that the selection of clarifying agents to be used at the facility and the application rate for the clarifying agent demonstrates reasonable assurance that the Whole Effluent Toxicity standard of 1 chronic toxic unit (TU) will be met at the edge of the mixing zone. A record of the specific (name) clarifying agent used, the amount of clarifying agent used in a 24 hour period, and the volume of water treated in that 24 hour period shall be recorded daily. This information shall be submitted with the monthly Discharge Monitoring Report.

Rationale:

- *In accordance with 18 AAC 15.090. Permit terms and conditions. As the department considers necessary to ensure that applicable criteria will be met, the department will attach terms and conditions to a permit, variance, or approval, including (1) operating, monitoring, inspection, sampling, and reporting requirements.*
- *In accordance with AS 46.03.110 (d), the Department may specify in a permit the terms and conditions under which waste material may be disposed.*
- *In accordance with 18 AAC 70.030. Whole effluent toxicity limit.*

(a) An effluent discharged to a water may not impart chronic toxicity to aquatic organisms, expressed as 1.0 chronic toxic unit, at the point of discharge, or if the department authorizes a mixing zone in a permit, approval, or certification, at or beyond the mixing zone boundary, based on the minimum effluent dilution achieved in the mixing zone. If the department determines that an effluent has reasonable potential to cause or contribute to exceedence of the whole effluent toxicity limit, the department will require whole effluent toxicity testing as a condition of a permit, approval, or certification. The department will reduce the frequency of, or eliminate, whole effluent toxicity testing if

- (1) the results of a sufficient database of testing conclusively demonstrate that an effluent does not have a reasonable potential to exceed the whole effluent toxicity limit;*
- (2) significant changes in effluent quality are not expected over the life of the permit; and*
- (3) the department determines that aquatic life will be adequately protected.*

(b) In this section, "chronic toxic unit" means an expression of the chronic toxicity of an effluent, determined as (100/NOEC), where NOEC, the "No Observed Effects Concentration," is the highest tested percentage concentration of an effluent, established by direct testing of toxicity to aquatic organisms, that causes no observable adverse effects, including effects on growth, development, behavior, reproduction, or survival, over a test duration that generally is one-tenth or more of the lifespan of the test organism.



Signature

August 4, 2009

Date

Sharmon M. Stambaugh

Printed Name

Environmental Program Manager III

Title

RESPONSE TO COMMENTS
Certificate of Reasonable Assurance for
Endicott Operations
NPDES PERMIT # AK-003866-1

A public notice for the proposed reissuance of National Pollutant Discharge Elimination System (NPDES) permit for Endicott Operations, permit number AK-003866-1, a preliminary finding of no significant impact, and state certification was issued on March 12, 2009. The public notice initiated a 30-day public comment period which ended on April 13, 2009 at 5:00 pm. DEC received comments on the state certification from the North Slope Borough.

Response to comments received during the public comment period.

1. The North Slope Borough states on page 3 of its letter dated April 13, 2009 “the use of a mixing zone will not eliminate the potential for effluent discharge contact with ringed and bearded seals, which are both known to be present in the Liberty project area.”

Response – DEC agrees with the commenter that ring and bearded seals have the potential to come into contact with the effluent discharge. However, the size of the mixing zone is negligible in comparison to the overall habitat available to the ring and bearded seals and DEC does not believe the mixing zone will result in a significant adverse affect on the marine mammals. DEC will authorize a mixing zone only if the department finds that available evidence reasonably demonstrates that:

- (1) The applicable requirements of this chapter will be met;
- (2) The mixing zone will be as small as practicable; and
- (3) An effluent or substance will be treated to remove, reduce, and disperse pollutants, using methods found by the department to be the most effective and technologically and economically feasible, consistent with the highest statutory and regulatory treatment requirements.

DEC is authorizing a mixing zone for the discharges from this facility as detailed in the 401 certification.