

FACT SHEET
Authorization to Discharge under the
National Pollutant Discharge Elimination System
For the
Nacogdoches Oil and Gas, Inc. - English Lease Boundary Butte Field
NPDES Permit No. NN0020133*

Applicant address: Nacogdoches Oil and Gas, Inc.
English Lease Boundary Butte, Utah
P.O. Box 632418
Nacogdoches, TX 75963

Application contact: Taylor Matthews
(936) 560-4747

Facility Address: English Lease Boundary Butte
(Nacogdoches Oil and Gas, Inc.)
San Juan County, UT.

Facility Contact: Tom Fox, Pumper
(970)903-8833

I. Summary

The existing National Pollutant Discharge Elimination System ("NPDES") permit was issued to Mountain States Petroleum Corporation ("MSPC") English Lease Boundary Butte Field in San Juan County in Utah, on September 14, 2004 and expired on September 16, 2009. In the interim there was a name change from Mountain State Petroleum Corporation to Nacogdoches Oil and Gas, Inc ("NOGI"). An application to renew the permit from NOGI was received by USEPA on July 23, 2009. EPA requested additional information from the applicant which was then submitted on or about October 26, 2009. The applicant is seeking renewal of its NPDES permit for its Oil and Natural Gas Exploration and Extraction operations to manage the day-to-day oil and gas production operations.

II. Description of Facility

NOGI now owns and operates the Battery No. 1 and Battery No. 3 on the English Lease within the Boundary Butte oil field, which is located on the Navajo Nation in southeastern Utah.

* The National Pollutant Discharge Elimination System (NPDES) permit number for this facility was changed from UT0020133 to NN0020133 in December 2005. The discharger was notified of the change. The original two-letter prefix of the permit number was replaced with NN to facilitate more efficient data management.

Wastewater discharges from the two Batteries via Outfall No.001 and Outfall No. 002. Water is separated from oil using heat treaters then allowed to settle in a series of settling ponds before being discharged into an unnamed tributary which flows approximately 10.5 miles to Chinle Wash, itself a tributary to the San Juan River. The average flow from Outfall No. 001 is 12,000 gallons per day, with a maximum flow of 80,000 gallons or 0.08 million gallons (MGD) per day recorded. There is no measureable flow from Outfall No. 002, most of the time, however a maximum flow of about 40,000 gallons or 0.04 million gallons (MGD) per day has been recorded.

III. Basis of Proposed Permit Requirements

The permit limitations in this permit are based on the following:

- A. The 2007 Navajo Nation Surface Water Quality Standards (“NNSWQS”) as adopted by the Navajo Nation and approved by U.S. EPA.
- B. U.S. EPA’s best professional judgment (“BPJ”) based on effluent guidelines for the onshore segment of the Oil and Gas Extraction Point Source Category (40 CFR Part 435, Subpart E), the Colorado River Basin Salinity Policy, and the State of Utah Wastewater Disposal Regulations. The discharge location is in the State of Utah, and this permit continues to use these standards, used to develop the permit previously, to ensure no backsliding occurs.

IV. Navajo Nation Surface Water Quality Standards

In accordance with 40 CFR 122.44(d), the need for discharge limitations for all pollutants that may impact applicable water quality criteria and water quality standards must be evaluated. As part of this evaluation, discharge limitations are based on applicable water quality standards. USEPA approved the 1999 Navajo Nation Surface Water Quality Standards (“NNSWQS”), on March 23, 2006. The NNSWQS were revised in 2007 and approved by USEPA on March 26, 2009. The approved 1999 NNSWQS and the 2007 revisions will be used on a best professional judgment (“BPJ”) basis for purposes of developing water quality based effluent limitations. The requirements contained in the proposed permit are necessary to prevent violations of applicable water quality standards.

V. Designated Uses Of The Receiving Water

In the previous permit, the designated uses of the receiving water (San Juan River and its tributaries) as defined by the State of Utah Department of Health are as follows:

- 1C - Protected for domestic purposes with prior treatment by treatment processes as required by the Utah Department of Health;
- 2B - Protected for boating, water skiing, and similar uses, excluding recreational bathing (swimming);
- 3B - Protected for warm water species of game, fish, and other warm water aquatic life, including the necessary aquatic organisms in their food chain; and,
- 4 - Protected for agricultural uses including irrigation of crops and stock watering.

In the proposed permit, the designed uses of the receiving water unnamed wash and the Chinle wash, a tributary to the San Juan River (Lower San Juan Four Corners) are defined by the NNSWQS as secondary human contact, fish consumption, aquatic and wildlife habit, and livestock watering (Table 205.1, page 24).

VI. Determination of Effluent Limitations, Monitoring, and Reporting Requirements

A. Water Quality Based Effluent Limitations (“WQBELS”)

Water quality-based effluent limitations, or WQBELS, are required in NPDES permits when the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to an excursion above any water quality standard. (40 CFR 122.44(d)(1)).

When determining whether an effluent discharge causes, has the reasonable potential to cause, or contributes to an excursion above narrative or numeric criteria, the permitting authority shall use procedures which account for existing controls on point and non point sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity) and where appropriate, the dilution of the effluent in the receiving water [40 CFR 122.44 (d)(1)(ii)].

EPA evaluated the reasonable potential to discharge toxic pollutants according to guidance provided in the *Technical Support Document for Water Quality-Based Toxics Control* (TSD) (Office of Water Enforcement and Permits, U.S. EPA, March 1991) and the *U.S. EPA NPDES Permit Writers Manual* (Office of Water, U.S. EPA, December 1996). These factors include:

1. Applicable standards, designated uses and impairments of receiving water
2. Dilution in the receiving water
3. Type of industry
4. History of compliance problems and toxic impacts
5. Existing data on toxic pollutants - Reasonable Potential analysis

1. Applicable standards, designated uses and impairments of receiving water

The 2007 NNSWQS established water quality criteria for the following beneficial uses (Chinle Wash and the San Juan River) are defined by the NNSWQS secondary human contact, fish consumption, aquatic and wildlife habit, and livestock watering (Table 205.1, page 24)

2. Dilution in the receiving water

Discharge from Outfall No. 001 and No. 002 is to an unnamed wash, which may have no natural flow during certain times of the year. Therefore, no dilution of the effluent has been considered in the development of water quality based effluent limits applicable to the discharge.

3. Type of industry

Typical pollutants of concern in treated wastewater from oil and gas operations include, oil and grease, organics found in petroleum products, as well as total dissolved solids, and total suspended solids. pH and BOD may also be of concern due to the treatment operations.

4. History of compliance problems and toxic impacts

The DMR data showed some reporting deficiencies of BOD₅ in 2011 and sporadic elevated concentrations of total dissolved solids (TDS) between 2007 and the present time.

5. Existing data on toxic pollutants

No existing data is available on toxic pollutants.

B. Rationale for WQBELS

1. Flow Rates

Under the proposed permit, there are no flow limits but the flow must be monitored and reported. The monitoring frequency is once per month, same as the previous permit.

2. Five-Day Biochemical Oxygen Demand (BOD₅)

The BOD₅ of 25 mg/L monthly average and 35 mg/L weekly average, respectively, are based on the State of Utah Wastewater Disposal Regulations. The monitoring frequency is once per quarter. These limits are consistent with those in the previous permit. Under 40 CFR Section 122.45(f), mass limits are required for BOD₅. Based upon the design flow of 0.08 MGD at Battery No. 1 (Discharge Outfall 001), the mass limits for BOD₅ are based on the following calculations:

$$\begin{array}{c} \text{Monthly average} \\ \frac{0.08 \text{ MG}}{\text{day}} \times \frac{25 \text{ mg}}{1} \times \frac{8.345 \text{ lb/MG}}{1 \text{ mg/l}} \times \frac{0.45 \text{ kg}}{\text{lb}} = 7.5 \text{ kg/day} \end{array}$$

$$\begin{array}{c} \text{Weekly average} \\ \frac{0.08 \text{ MG}}{\text{day}} \times \frac{35 \text{ mg}}{1} \times \frac{8.345 \text{ lb/MG}}{1 \text{ mg/l}} \times \frac{0.45 \text{ kg}}{\text{lb}} = 10.5 \text{ kg/day} \end{array}$$

Using the design flow of 0.04 MGD at Battery No. 3 (Discharge Outfall 002), the monthly and weekly mass limits for BOD₅ are 3.75 kg/day and 5.26 kg/day, respectively. TSS limits are identical to those of BOD₅.

3. Total Suspended Solids (TSS)

The TSS limitations of 25 mg/L monthly average and 35 mg/L weekly average, respectively, are based on the State of Utah Wastewater Disposal Regulations. The monitoring frequency is once per quarter. These limits are consistent with those in the previous permit.

Based upon the design flow of 0.08 MGD at Battery No. 1 (Discharge Outfall 001), the mass limits for TSS are based on the following calculations:

$$\begin{array}{c} \text{Monthly average} \\ \frac{0.08 \text{ MG}}{\text{day}} \times \frac{25 \text{ mg}}{1} \times \frac{8.345 \text{ lb/MG}}{1 \text{ mg/l}} \times \frac{0.45 \text{ kg}}{\text{lb}} = 7.5 \text{ kg/day} \end{array}$$

$$\begin{array}{c} \text{Weekly average} \\ \frac{0.08 \text{ MG}}{\text{day}} \times \frac{35 \text{ mg}}{1} \times \frac{8.345 \text{ lb/MG}}{1 \text{ mg/l}} \times \frac{0.45 \text{ kg}}{\text{lb}} = 10.5 \text{ kg/day} \end{array}$$

Using the design flow of 0.04 MGD at Battery No. 3 (Discharge Outfall 002), the monthly and weekly mass limits for BOD₅ are 3.75 kg/day and 5.26 kg/day,

respectively. TSS limits are identical to those of BOD₅.

4. Oil and Grease (O&G)

Consistent with the previous permit, the O&G maximum limitations is 10 mg/L and the monitoring frequency is once per month.

5. Total Dissolved Solids (TDS)

The TDS daily maximum concentration of 1200 mg/L is based on the NNSWQS for both these discharge outfalls. The mass limit is also well below the 1 ton/day maximum guideline as set by the Colorado River Basin Salinity Policy. The TDS limitation for the permit is based on present and past performances of the facility. The monitoring frequency is once per quarter. These limits are consistent with those in the previous permit.

6. pH

The proposed permit requires that effluent pH not fall below 6.5 or above 9.0 standard pH units, identical to those in the previous permit. They are based on NNSWQS. The monitoring frequency is once per quarter.

7. Priority Pollutant Scan

The permittee discharges process wastewater from Oil and Gas extraction operations. The wastewater is treated to separate the oily components from water using heat, chemicals and settling. The water thus treated is then discharged from the two permitted Outfalls to an unnamed wash from where it flows either on the surface or subsurface for about 10.5 miles to the Chinle Wash. The receiving water is used by local livestock and wildlife for drinking and also provides habitat for several species including aquatic invertebrates. To ensure that the discharge is fully protective of the various designated beneficial uses of the receiving water, the permittee is required to monitor for the full list of priority pollutants found in the Code of Federal Register (CFR) at 40 CFR Part 423, Appendix A. is required. No permit limit has been set for any of the pollutants at this time. Should the results reveal levels below the NNSWQS and EPA's National Water Quality Criteria for priority pollutants, no further monitoring or testing for these pollutants shall be required for the remainder of the permit cycle.

VII. Reporting

The proposed permit requires discharge data obtained during the previous three months to be summarized on monthly DMR forms and reported quarterly. If there is no discharge for the month, indicate "C" in the No Discharge box on the DMR form for that month. These reports are due January 28, April 28, July 28, and October 28 of each year. Duplicate signed copies of these, and all other reports required herein, shall be submitted to the U.S. EPA, the Navajo Nation EPA, and Utah Department of Health--Bureau of Water Pollution Control.

VIII. General Standards

The proposed permit sets general standards that are narrative water quality standards contained in the Navajo Nation Surface Water Quality Standards, Section 203, as well as that contained in Utah's Standards of Quality for Waters of the State. These general standards are set forth in Section B. (General Discharge Specifications) of the permit.

IX. Permit Reopener

At this time, there is no reasonable potential to establish any other water quality-based limits. Should any monitoring indicate that the discharge causes, has the reasonable potential to cause, or contributes to excursions above a water quality criterion, the permit may be reopened for the imposition of water quality-based limits and/or whole effluent toxicity limits. This permit may be modified, in accordance with the requirements set forth at 40 CFR '122.44 and '124.14, to include appropriate conditions or limits to address demonstrated effluent toxicity based on newly available information, or to implement any new EPA-approved water quality standards.

X. Threatened and Endangered Species and Critical Habitat

A. Background:

Section 7 of the Endangered Species Act (ESA) of 1973 requires Federal agencies such as EPA to ensure, in consultation with the U.S. Fish and Wildlife Service (FWS), that any actions authorized, funded or carried out by the Agency are not likely to jeopardize the continued existence of any Federally-listed endangered or threatened species or adversely modify or destroy critical habitat of such species. Since the issuance of NPDES permits by EPA is a Federal action, consideration of a permitted discharge and its effect on any listed species is appropriate.

The proposed NPDES permit authorizes the discharge of treated domestic wastewater into an unnamed tributary to Chinle wash, which eventually reaches the San

Juan River, a water of the United States. The information below is listed in the Navajo Nation's Department of Fish & Wildlife – Natural Heritage Program (NHP) database. The FWS has deferred all of its survey and information collection in the Navajo Nation to the Navajo Nation NHP. The Navajo Nation NHP had identified seven (7) listed, proposed or candidate T or E species that may potentially occur in the project boundaries. The listed species are as follows:

| Names (common and scientific) | Status |
|--|------------|
| Mountain Plover (<i>Charadrius montanus</i>) | Proposed T |
| Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>) | E |
| Bald Eagle (<i>Haliaeetus leucocephalus</i>) | T |
| Black-footed ferret (<i>Mustela nigripes</i>) | E |
| Colorado pikeminnow (<i>Ptychocheilus lucius</i>) | T |
| Razorback sucker (<i>Xyrauchen texanus</i>) | E |
| Mesa Verde cactus (<i>Sclerocactus mesae-verdae</i>) | T |

In a letter dated May 05, 2010, the Navajo Nation NHP had also identified several species in addition to the Federally listed T & E species identified above as follows:

| |
|---|
| Names (common and scientific) |
| Ferruginous Hawk (<i>Bueto regalis</i>) |
| Kit Fox (<i>Vulpes macrotis</i>) |
| Parish's alkali Grass (<i>Puccinellia parishii</i>) |
| Peregrine Falcon (<i>Falco peregrinus</i>) |

B. EPA's Finding:

This permit authorizes the discharge of treated wastewater in conformance with the federal secondary treatment regulations and the Navajo Nation Surface Water Quality Standards. These standards are applied in the permit both as numeric and narrative limits. The standards are designed to protect aquatic species, including threatened and endangered species, and any discharge in compliance with these standards should not adversely impact any threatened and endangered species.

EPA believes effluent released in compliance with this permit will have no effect on any federally-listed threatened or endangered species or its critical habitat that may be present in the

vicinity of the discharge. The treatment facility has been in existence for some time, and no new construction or modifications will be made to it due to the proposed NPDES permit. Therefore, no requirements specific to the protection of endangered species are proposed in the permit. EPA may decide that changes to the permit may be warranted based on receipt of new information. A re-opener clause has been included should new information become available to indicate that the requirements of the permit need to be changed.

XI. Administrative Information -- Public Notice, Public Comments, and Requests for Public Hearings

In accordance with 40 CFR 124.10, public notice shall be given by the U.S. EPA Director that a draft NPDES permit has been prepared by mailing a copy of the notice to the permit applicant and other Federal and State agencies, and through publication of a notice in a daily or weekly newspaper within the area affected by the facility. The public notice shall allow at least 30 days for public comment on the draft permit.

In accordance with 40 CFR 124.11 and 12, during the public comment period, any interested person may submit written comments on the draft permit, and may request a public hearing if no hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. In accordance with 40 CFR 124.13, all persons must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position within thirty (30) days from the date of the public notice. Comments may be received either in person or mailed to:

U.S. Environmental Protection Agency, Region IX
NPDES Permits Office (WTR-5)
Attn: Gary Sheth
75 Hawthorne Street
San Francisco, CA 94105
Telephone: (415) 972-3516

Interested persons may obtain further information, including copies of the draft permit, fact sheet/statement of basis, and the permit application, by contacting Gary Sheth (WTR-5) at the U.S. EPA address, above. Copies of the administrative record (other than those which U.S. EPA maintains as confidential) are available for public inspection between 8:00 a.m. and 4:30 p.m., Monday through Friday (excluding federal holidays).

In accordance with 40 CFR 124.12, the U.S. EPA Director shall hold a public hearing when she finds, on the basis of requests, a significant degree of public interest in the draft permit. The Director may also hold a public hearing when, for instance, such a hearing might clarify one or more issues involved in the permit decision. Public notice of such hearing shall be given as specified in 40

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CFR 124.10.