STATE OF ALASKA

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF WATER
WASTEWATER DISCHARGE AUTHORIZATION PROGRAM

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January 10, 2012

DEC File No.: 395.48.001

Mr. Mike Lidgard, NPDES Unit Manager
US Environmental Protection Agency, Region 10
1200 Sixth Avenue, Suite 900, OWW-130
Seattle, Washington 98101

Re: DEC Section (§) 401 Certification of NPDES Permit AKG-28-2100 for Oil and Gas Exploration Facilities on the Outer Continental Shelf and Contiguous State Waters in the Beaufort Sea

On November 30, 2011 the United States Environmental Protection Agency (EPA) requested a §401 certification for the issuance of a National Pollutant Discharge Elimination System (NPDES) General Permit AKG282100 for Oil and Gas Exploration Facilities on the Outer Continental Shelf and Contiguous State Waters in the Beaufort Sea.

In accordance with §401 of the Clean Water Act and §402(o)(2) exceptions, as well as Alaska Administrative Codes (AAC) 18 AAC 15 (Administrative Procedures), 18 AAC 70 (Water Quality Standards), and 18 AAC 72 (Wastewater Discharge), the Department of Environmental Conservation (DEC or the department) has prepared the enclosed Certificate of Reasonable Assurance for NPDES General Permit AKG282100 for Oil and Gas Exploration Facilities on the Outer Continental Shelf and Contiguous State Waters in the Beaufort Sea. DEC will accept and review any comments received during the public notice period of the NPDES permit and the draft certification for this activity.

The draft permit proposes several changes from the expired Arctic General Permit. Most notably the Environmental Monitoring Program (EMP) requirement has been expanded for each drill site, as well as increased scope of the evaluations and monitoring (such as initial drill site assessment, physical sea bottom survey, and bioaccumulation studies). In addition, the end of well report requires several new submissions, including a total discharge volume for each discharge, details of drilling dates, time periods, estimated hourly discharge rates for each discharge, and the chemical additives inventory (of which requirements have been expanded as well). Finally, test fluid discharges have been removed from the draft permit, based on the

fact that none of the current Notice of Intents (NOIs) include a request for authorization to discharge test fluid.

The department has both an informal review process and a formal administrative appeal process for final permit decisions. An informal review request must be delivered within 15 days after receiving the department's decision to the Director of the Division of Water at the following address:

Director, Division of Water
Alaska Department of Environmental Conservation
555 Cordova Street
Anchorage, AK 99501-2617

Interested persons can review 18 AAC 15.158 for the procedures and substantive requirements regarding a request for an informal review. See http://www.dec.state.ak.us/commishiReviewGuidance.htm for information regarding appeals of department decisions.

An adjudicatory hearing request must be delivered to the Commissioner of the department within 30 days of the permit decision or a decision issued under the informal review process, whichever is later. An adjudicatory hearing will be conducted by an administrative law judge in the Office of Administrative Hearings within the Department of Administration. A written request for an adjudicatory hearing must be delivered to the Commissioner at the following address:

Commissioner
Alaska Department of Environmental Conservation
410 Willoughby Avenue, Suite 303
Juneau, AK 99811-1800

Interested persons can review 18 AAC 15.200 for the procedures and substantive requirements regarding a request for an adjudicatory hearing. See http://www.dec.state.ak.us/commish/ReviewGuidance.htm for information regarding appeals of department decisions.

Please be advised that, pursuant to 18 AAC 15.120(c), the certification of this NPDES permit constitutes the permit required under Alaska Statue 46.03.100.
18 AAC15.120(c) also 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 concerning the certification, please contact Adele Fetter at adele.fetter@alaska.gov or (907) 269-7235.

Sincerely,

Sharon Morgan
Program Manager

Enclosure: Certificate of Reasonable Assurance

Copies: Hanh Shaw, EPA Region 10, Seattle
Marc Bentley, DEC Anchorage
Adele Fetter, DEC Anchorage

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STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
CERTIFICATE OF REASONABLE ASSURANCE
AKG282100

A Certificate of Reasonable Assurance, as required by Section (§) 401 of the Clean Water Act, was requested by the United States Environmental Protection Agency (EPA) for National Pollutant Discharge Elimination System (NPDES) General Permit (the permit) No. AKG282100 for Oil and Gas Exploration Facilities on the Outer Contenental Shelf and Contiguous State Waters in the Beaufort Sea on November 30, 2011. Water Quality Certification is required for the activity, because the activity will be authorized by the permit, and discharge(s) to state waters will result from the activity. Discharge(s) regulated by the effluent limits may result from the proposed activities under the permit.

The area of coverage includes state and federal waters for the following proposed discharges:

Discharge Number	Discharge Name
001	Drilling Fluids and Drilling Cuttings
002	Deck Drainage
003	Sanitary Wastes
004	Domestic Wastes
005	Desalination Unit Wastes
006	Blowout Preventer Fluid
007	Boiler Blowdown
008	Fire Control System Test Water
009	Non-contact Cooling Water
010	Uncontaminated Ballast Water
011	Bilge Water
012	Excess Cement Slurry
013	Mud, Cuttings, Cement at Seafloor

Public notice of the application for this certification has been made in accordance with 18 Alaska Administrative Code (AAC) 15.140.

The Department of Environmental Conservation (DEC or the department) reviewed the NPDES permit and certifies that there is reasonable assurance that the activities and the resulting discharges are in compliance with the requirements of §401 of the Clean Water Act, which includes the Alaska Water Quality Standards (WQS) 18 AAC 70, as amended through June 26, 2003, provided that the terms and conditions of this certification are adhered to. Through this certification, in

accordance with 18 AAC 15.120, the final NPDES permit will constitute the permit required under AS 46.03.100.
DEC is specifying the following permit stipulations under authority of AS 46.03.110(d):

1. **Plan Review for all Discharges (Discharge 001 – Discharge 013)** Permittees must submit an engineering plan to DEC and receive written approval before constructing, installing, or modifying a domestic or nondomestic wastewater treatment works (per 18 AAC 72.200 and 18 AAC 72.600).

2. **Table 1. Effluent Limitations and Monitoring Requirements for Drilling Fluids and Drill Cuttings (Discharge 001)** DEC authorizes a 100 meter radius mixing zone that extends from the sea's surface to the seabed for Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Iron, Mercury (total/methyl), Nickel, Selenium, Silver, Thallium, Tin, Titanium, Zinc, and Lead.

3. **Drilling Fluids and Drill Cuttings (Discharge 001)** Permittees who propose to discharge drilling fluids and drill cuttings may apply for a zone of deposit from DEC. Permittees who propose to discharge drilling fluids and drill cuttings to stable ice must submit a detailed alternatives analysis demonstrating that there are no technically feasible land-based disposal alternatives and means to transport these waste streams to alternative land-based disposal sites.

4. **Sanitary Wastes (Discharge 003) and Domestic Wastes (Discharge 004)** Permittees who propose to discharge sanitary or domestic wastes may apply for a maximum 100 meter mixing zone from DEC by submitting DEC Form 2M.

5. **Mud, Cuttings, and Cement at Seafloor (Discharge 013)** DEC authorizes 100 meter mixing zone and a 100 meter zone of deposit around the well casing to accommodate only fluids that are inadvertently discharged when the well casing is set and when the well is abandoned.

ANTIDEGRADATION ANALYSIS UNDER 18 AAC 70.015
CERTIFICATE OF REASONABLE ASSURANCE

The Antidegradation Policy of the Alaska Water Quality Standards (WQS) at 18 AAC 70.015 states that the existing water uses and the level of water quality necessary to protect existing uses must be maintained and protected. This analysis provides rationale for the Alaska Department of Environmental Conservation (DEC or department) decisions required under §401 of the Clean Water Act (CWA) with respect to the Antidegradation Policy.

Antidegradation determination:

DEC's approach to implementing the Antidegradation Policy, found in 18 AAC 70.015, is based on the requirements in 18 AAC 70 and the department's July 14, 2010, *Policy and Procedure guidance for Interim Antidegradation Implementation Methods (Intermim Methods).* Using these requirements and policies, the department determines whether a water body or portion of a water body is classified as Tier 1, Tier 2, or Tier 3. The permit potentially covers discharges in all state waters of the Beaufort Sea. Relevant information on the entire water body was reviewed for the determination.

Tier 3 water bodies are those high quality water bodies that constitute Outstanding National Resources, and states must assure that the quality of such waters shall be maintained and protected (18 AAC 70.015(a)(3)). This is consistent with *the Interim Methods* recommendations. Alaska has not currently identified any Tier 3 water bodies. However, the permit excludes discharge into certain environmentally sensitive areas, such as within 1000 meters of the Steffansson Sound Boulder Patch or Thetis Island and the Colville River Delta.

Tier 1 protection (18 AAC 70.015(a)(1)) applies to water bodies whose existing water quality is no better than the Clean Water Act's "fishable/swimmable" uses, and existing water uses, and the level of water quality necessary to protect such uses must be maintained and protected (see 18 AAC 70.020(a)(1)(C) and 18 AAC 70.020(a)(1)(B)(i)). The Beaufort Sea as a whole is of higher quality than Tier 1 classification.

DEC has determined that Tier 2 applies to the receiving waters in Beaufort Sea using the DEC antidegradation *Interim Guidance* and DEC's knowledge of the water body covered by the permit.

The Antidegradation Policy of the WQS (18 AAC 70.015(a)(2)) states that, if the quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife in and on the water, that quality must be maintained and protected, unless the department finds that the five specific requirements of the Antidegradation Policy at 18 AAC 70.015(a)(2)(A)-(E) are satisfied. The department's findings are:

- *18 AAC 70.015(a)(2)(A). Allowing lower water quality is necessary to accommodate important economic or social development in the area where the water is located.*

Treatment methods for these types of discharges include reinjection and additional treatment, as well as those required by the permit. The alternatives of reinjection and additional treatment are discussed in the section below that addresses 18 AAC 70.015(a)(2)(D). The level of treatment as required by the permit is the appropriate treatment.

The Alaska Department of Natural Resources (ADNR) tracks oil and gas activity in the State when it develops findings for lease sales. The following includes excerpts from the 2009 Beaufort Sea Areawide Oil and Gas Lease Sale finding:

> Alaska's economy depends heavily on revenues related to oil and gas production and government spending resulting from those revenues. Total oil revenue totaled 11.2 billion in fiscal year (FY) 2008. Revenue in FY 2009 is expected to drop to 5.8 billion due to declining oil prices and production.
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> Unrestricted oil revenue comprised approximately 93 percent of the State's general fund unrestricted revenue in FY 2009. Such revenues finance the State's education funding, operating budget, and capital budget. State spending supports nearly one out of every three jobs, and $3 of every $10 of personal income result from State spending. Nearly one of every two local government jobs (including school district jobs) in Alaska relies on State funding.
>
> The energy industry is Alaska's largest industry, spending 2.1 billion annually in the State. The industry directly spends $422 million on payroll in Alaska and 1.7 billion on goods and services in-state. Overall, this spending generates 33,600 jobs, $1.4 billion in payroll, and adds 1.8 billion in value to the Alaska economy, for a total output of 3.1 billion. The oil and gas industry accounts for 12 percent of private sector jobs and 20 percent of private sector payroll. The oil and gas industry has the highest average wage in Alaska. The average producer company pays a monthly wage of $7,754, which is 2.8 times higher than the statewide average of $2,798.
>
> The finances of the North Slope Borough (NSB) government depend predominately on tax revenues from oil properties. Approximately 98 percent of all local property tax collections come from oil producers. For fiscal year 2008/2009, property tax receipts are anticipated to be $248 million.
>
> Local government is the largest employer of borough residents and the median household income is $61,173. Barrow is a hub and economic center of the

NSB. Borough, State, and Federal agencies provide 57 percent of total employment.

As exploration takes place, and if development occurs in the lease sale area, jobs will be added to the local economy. These jobs would not be limited to the petroleum industry, but would be spread throughout the trade, service, and construction industries. The number of jobs produced would depend on whether commercial quantities of oil and gas are discovered and developed. Discovery and development of commercial quantities of petroleum or natural gas in the sale area would bring direct economic benefits to the local and regional economy.

The standard of living of North Slope communities depends largely on a steady flow of money related to oil and gas activities. This way of life will be impossible to maintain unless significant revenues continue to come into those communities from outside; the prospect of other sources of revenue appear to be modest. Painful adjustments can and probably will be postponed for as long as oil and gas are being extracted, but eventual adjustment is unavoidable. The nature and extent of these adjustments will be determined by the adaptations North Slope residents have made to the cash economy made possible by oil and gas and other activities.

Alaska Oil and Gas Association's (AOGA) 2011 Economic Impact Report states that the oil and gas industry generated 1,500 jobs held by residents in the NSB and total an annual 100 million in payroll, including direct, indirect, and induced effects.

Oil and gas is an important economic component of revenues to support government services to Alaskans. In FY 2011, approximately 92 percent of the State's unrestricted revenue was attributable to oil and is forecasted to contribute at least 90 percent for FY 2012 through FY 2016. Oil and gas exploration, development, and production activities have important social and economic significance.

DEC finds that the authorization of these discharges require the lowering of water quality, that this lowering of water quality is necessary to accommodate important economic development, and finds that this requirement is met.

- *18 AAC 70.015(a)(2)(B). Except as allowed under this subsection, reducing water quality will not violate the applicable criteria of 18 AAC 70.020 or 18 AAC 70.235 or the whole effluent toxicity limit in 18 AAC 70.030.*

The permit requires development and implementation of an Enviromental Management Plan (EMP), Best Management Practices Plan, Quality Assurance Project Plan, and Drilling Fluids Plan. The permit limits and conditions are established after comparing technology-based and water quality-based effluent limits and applying the more restrictive of these limits in the permit. The permit includes effluent limits and

requirements based on the best conventional pollutant control technology and best available technology economically feasible effluent limitation guidelines (ELGs). In the absence of specific ELGs for waste streams, limitations and related requirements are established using best professional judgment (BPJ). The permit contains both technology-based limits based on BPJ and limitations and related requirements based on the ELG Offshore Subcategory of the Oil and Gas Extraction Point Source Category (40 CFR Part 435, Subpart A) to ensure compliance with the applicable water quality standards in State waters.

The permit requires visual monitoring of the discharge where appropriate and has requirements to monitor and limit potential pollutants. The department has determined facilities operating under the terms and conditions of the permit and the department's policies will maintain water quality and protect existing uses.

DEC concludes that the final permit limits will not violate the applicable criteria. The department finds that this requirement is met.

- *18 AAC 70.015(a)(2)(C). The resulting water quality will be adequate to fully protect existing uses of the water.*

Waters covered under this general permit are protected for the following uses, per 18 AAC 70.020(a)(2)(A-D) and 18 AAC 70.020: Water supply for seafood processing, aquaculture, and industrial activities; contact and secondary recreation; the growth and propagation of fish, shellfish, other aquatic life and wildlife; and the harvesting for consumption of raw mollusks or other raw aquatic life. The permit limits and conditions are established after comparing technology-based and water quality-based effluent limits and applying the more restrictive of these limits to the permit. The required limits and monitoring in the permit will ensure that water quality criteria are not exceeded at the point of discharge, or if applicable, at or beyond the boundary of a mixing zone.

An ocean discharge criteria evaluation (ODCE) was conducted for the permit and concluded that no unreasonable degradation was expected to occur for all of the 10 criteria that were required to be analyzed. In addition, if at any time on the basis of new data, a determination is made that the continued discharges may cause unreasonable degradation of the marine environment, coverage under the permit shall be modified or revoked. If exploration is conducted under the permit, then the data provided by the EMP will offer more site-specific information on water quality, sediment quality, and physical and biological parameters to make a better determination of the effects of the authorized activities.

Based on department policy, the above information, and a review of the expected volumes of discharge, the types and amounts of regulated pollutants including their fate, transport, and available dilution, the DEC finds that existing uses of the water will be fully protected and that this requirement is met.

- *18 AAC 70.015(a)(2)(D). The methods of pollution prevention, control, and treatment found by the department to be most effective and reasonable will be applied to all wastes and other substances to be discharged.*

Advanced alternative treatment methods were investigated, such as further treatment, reinjection, and disposal off-site, as means of waste disposal of the discharges. The permit contains requirements for all discharges for pollution control (Section II.A of the permit). The requirements include, but are not limited to:

- Discharge of only those pollutants that are expressly identified in a permit application or notice of intent.
- The permittee is prohibited from discharging floating solids, debris, sludge, deposits, foam, scum, or other residues of any kind.
- The permittee must minimize the discharge of surfactants, dispersants, and detergents.
- The permittee is prohibited from discharging diesel oil, halogenated phenol compounds, trisodium nitrilotriacetic acid, sodium chromate, or sodium dichromate.
- If any discharges are comingled, the strictest effluent limitations among the individual discharges are applied to the resulting comingled discharge.
- The permittee is prohibited from discharging in areas where the water depth is less than 5 meters.
- The permittee must design and implement an EMP at each drill site, including a plan for four phases of operation (baseline site characterization, during active drilling, post drilling, and no later than 15 months after drilling operations cease at the drilling site).
- The permittee must submit two EMP Reports (Section II.A.6.f.).
- The permittee is limited to drilling discharges from no more than five wells in a lease block.

Further requirements are included for individual discharges. In addition, the permittee is prohibited from discharging drilling fluids and drill cuttings, sanitary waste, and domestic waste to stable ice unless authorized. The applicant is required to submit a detailed written alternatives analysis demonstrating that there are no technically feasible land-based disposal alternatives and means to transport these waste streams to those sites.

DEC finds that the methods of pollution prevention, control, and treatment included in the permit are the most effective and reasonable and that this requirement is met.

- *18 AAC 70.015(a)(2)(E). All wastes and other substances discharged will be treated and controlled to achieve (i) for new and existing point sources, the highest statutory and regulatory requirements; and (ii) for nonpoint sources, all cost-effective and reasonable best management practices.*

The highest statutory and regulatory requirements are defined in the 2003 version of the WQS at 18 AAC 70.990(30) as

(A) Any federal technology-based effluent limitation identified in 40 CFR §125.3 and 40 CFR §122.29, as amended through August 18, 1997, adopted by reference;
(B) Minimum treatment standards in 18 AAC 72.040; and
(C) Any treatment requirement imposed under another state law that is more stringent then a requirement of this chapter.

(A) Federal technology-based ELGs have been developed by EPA for particular categories of industrial dischargers and have been applied in this permit. The ELGs for the oil and gas extraction industry and applied to this permit are found in 40 CFR Part 435 Subpart A – the Offshore Subcategory.

(B) The reference in 18 AAC 70.990(30)(B) (2003) appears to be in error, as 18 AAC 72.040 describes discharge to sewers and not minimum treatment. The correct reference appears to be 18 AAC 72.050, Minimum treatment of domestic wastewater. DEC has reviewed the requirements for domestic wastewater and has determined that the permit meets the minimum treatment standards in 18 AAC 72.050 and that those requirements will protect public health, public and private water systems, and the environment.

(C) Other regulations beyond 18 AAC 70 that apply to this permitting action include 18 AAC 15 and 18 AAC 72. Neither the regulations in 18 AAC 15 and 18 AAC 72 nor another state law that DEC is aware of impose more stringent treatment requirements than those found in 18 AAC 70.

DEC finds that the treatment of the discharges conforms to the highest statutory and regulatory requirements and that this requirement is met.

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Date

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Sharon Morgan, Program Manager
Wastewater Discharge Authorization Program

REFERENCES

Alaska Department of Environmental Conservation. July 14, 2010. *Policy and Procedure Number 05.03.103. Interim Antidegradation Implementation Methods.*

Alaska Department of Natural Resources, November 9, 2009. *BEAUFORT SEA AREAWIDE OIL AND GAS LEASE SALE Final Finding of the Director.*

Alaska Department of Revenue – Tax Division, Fall 2011. *REVENUE SOURCES BOOK.*

McDowell Group, prepared for Alaska Oil and Gas Association, October 2011. *The Role of the Oil and Gas Industry in Alaska's Economy.*