



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

Department of Natural Resources

DIVISION OF OIL & GAS

550 W 7th Avenue, Suite 1100

Anchorage, AK 99501-3560

Main: 907.269.8800

Fax: 907.269.8939

June 23, 2016

**CERTIFIED MAIL
RETURN SERVICE REQUESTED**

Dale Hoffman
Manager, Land & External Affairs
Caelus Natural Resources Alaska, LLC
700 G Street, Suite 600
Anchorage, AK 99501

RE: Tenth (10th) Plan of Development, Oooguruk Unit—Approved

Dear Mr. Hoffman:

On June 1, 2016 the Division of Oil and Gas (Division) timely received the proposed Oooguruk Unit (OU) Tenth (10th) Plan of Development (POD). The Division met with Caelus Energy Alaska, LLC (Caelus) on June 8, 2016 for a technical meeting. On June 9, 2016 the Division notified Caelus that the 10th POD submission was complete.

Unit History

The OU was formed effective July 11, 2003 with Pioneer Natural Resources Alaska, Inc. as the Operator with 70% working interest and ENI with 30% working interest ownership. The OU comprises 25 state leases for a total of approximately 53,344 acres. On April 15, 2014 Caelus succeeded Pioneer as operator of the Unit. Based on production reports submitted to AOGCC, cumulative oil production from OU is approximately 24.7 million barrels through April 2016.

Forty-three wells have been drilled within OU, including two Nuna Torok appraisal wells, one exploration well (Sikumi 1), and one Class I and II disposal well. Twenty-eight development wells are in the Oooguruk Nuiqsut Participating Area (ONPA); five development wells are in the Oooguruk Kuparuk Participating Area (OKPA); and four development wells are in the Oooguruk Torok Participating Area (OTPA).

9th POD Activities

Drilling

For the 9th POD Caelus planned to drill 3 additional long horizontal wells and complete ODSN-22i in the Nuiqsut targeting areas of the PA that needed injection support. Caelus also planned on sidetracking and fracture stimulating additional wells. During this period Caelus drilled 3 wells and one sidetrack: ODSN-06i, ODSN-10i, and ODSN-07i; and ODSN-01A and completed ODSN-22i. All 5 wells were hydraulically fracture stimulated. Caelus drilled

ODSN-20 down to an intermediate casing point of 6460' measured depth prior to suspending drilling operations. In addition, Caelus conducted workover operations on 3 wells: ODSN 10i (fixed damaged 4 ½" completion); ODST-45A (installed a gas lift completion); and ODSK-41 (replaced ESP). Although ODSN-06i and ODSN-10i are ultimately planned as injection wells, they are currently being pre-produced for an extended period of time to assess reservoir performance in the eastern and western areas, respectively, where there are no other wells close by.

Facilities

During the 9th POD Caelus planned several facility upgrades, including gas filter, compressor, and gas turbine engine replacements; software and hardware upgrades to the separator control systems; along with additional maintenance on piping and valve systems as well as optimizing and debottlenecking existing equipment and control system optimization to ensure measurement system accuracy. During this period Caelus completed engineering on a coalescing filtration system for the gas supply flow line at the Oooguruk Drill Site (ODS). The grind and inject disposal pumps were upgraded to improve disposal operations. The gas turbine engine and gearbox in the second power generation unit was replaced. Upgrades to the production separator control system at OTP were completed to improve liquid and gas flow control. Caelus continued work on planned hardware and software upgrades to the Distributed Control System (DCS). Caelus completed a Measurement Technical Review to ensure that all process metering met or exceeded industry standards. Caelus commenced a 5-year Process Hazard Analysis (PHA) revalidation engineering study. Caelus also performed general and routine maintenance such as replacing, critical oil, gas, and water valves, testing safety systems, and preparing future wells for tie-in to ODS. Caelus continues to optimize and debottleneck partial gas processing and injection water supply options at OTP.

Reservoir Management

Caelus continues to expand the water and immiscible gas flood in the ONPA and waterflood for secondary recovery in the OKPA and OTPA. Caelus continues to maintain and update their simulation model to assist in reservoir and flood management as well.

Proposed 10th POD Activities

During the 10th POD period, Caelus will continue evaluation of facility upgrades, including a new variable frequency drive on OTP Compressor A. Caelus will complete the five-year PHA revalidation engineering effort during the 10th POD. A seven-day field shut-down is planned for September 2016 to upgrade hardware and software on the DCS. Internal inspections will occur in the waste heat recovery system, production water system, production heater, production separator, and tank farm at OTP. In terms of reservoir management at OU, during the POD

Caelus will continue to optimize OKPA waterflood, expand ONPA Under-Saturated WAG and continue the OTPA enhanced recovery operation.

When considering a POD, the Division must consider the criteria in 11 AAC 83.303(a) and (b). Accordingly, the Division considered the public interest, conservation of natural resources, prevention of economic and physical waste, protection all interested parties including the state, environmental costs and benefits, geological and engineering characteristics or reservoirs or potential hydrocarbon accumulations, prior exploration activities, plans for exploration or development, economic costs and benefits to the state, and any other relevant factors, including mitigation measures. 11 AAC 83.303(a), (b).

In approving earlier PODs for the OU, the Division considered 11 AAC 83.303 and found that the PODs promoted conservation of natural resources, promoted prevention of waste, and protected the parties' interests. The Division incorporates those findings by reference.

From the time the 9th POD was proposed in June 2015 to the early part of 2016, along with the rest of the industry Caelus saw a dramatic drop in crude oil prices. As a result, Caelus made significant cost reductions at OU, suspended near-term drilling operations, and reduced its work force by 25%. Along with the curtailing of the operations, the module fabrication phase of the Nuna Torok development has also been delayed. Caelus states that when the crude oil prices recover and "investor confidence" improves, Caelus will recommence long term OU development.

Based on the Division's prior POD approvals and analysis of the 11 AAC 83.303(b) factors for the additional development work proposed here, the Division finds that the 10th POD protects the public interest, promotes conservation, prevents waste, and protects the parties' interests.

Having considered the 11 AAC 83.303(a) and (b) criteria, the Division finds the 10th POD complies with the provisions of 11 AAC 83.303. Accordingly, the 10th POD is approved for the period September 1, 2016 through August 31, 2017.

This approval is only for a general plan of development. Specific field operations require separate approval under 11 AAC 83.346, Unit Plan of Operations. Under 11 AAC 83.343, the 11th POD is due on June 1, 2017, ninety (90) days before the 10th POD expires.

An eligible person affected by this decision may appeal it, in accordance with 11 AAC 02. Any appeal must be received within 20 calendar days after the date of "issuance" of this decision, as defined in 11 AAC 02.040(c) and (d), and may be mailed or delivered to Marty Rutherford, Acting Commissioner, Department of Natural Resources, 550 W. 7th Avenue, Suite 1400, Anchorage, Alaska 99501; faxed to 1-907-269-8918, or sent by electronic mail to dnr.appeals@alaska.gov. This decision takes effect immediately. An eligible person must first appeal this decision in accordance with 11 AAC 02 before appealing this decision to Superior

Court. A copy of 11 AAC 02 May be obtained from any regional information office of the Department of Natural Resources.

If you have any questions regarding this decision, you may contact Hak Dickenson with the Division at 907-269-8799 or via email to hak.dickenson@alaska.gov.

Sincerely,



Corri A. Feige
Director

cc: DOL