



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

Department of Natural Resources

DIVISION OF OIL & GAS

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July 5, 2016

CERTIFIED MAIL

RETURN SERVICE REQUESTED

David W. Duffy, Landman
Hilcorp Alaska, LLC
3800 Centerpoint Drive, Suite 1400
Anchorage, AK 99503

RE: Northstar Unit 13th Plan of Development—Approved

Dear Mr. Duffy:

The Alaska Department of Natural Resources (DNR), Division of Oil and Gas (Division) and the U.S. Department of Interior, Bureau of Safety and Environmental Enforcement (BSEE) jointly manage the Northstar Unit (NSU). On May 2, 2016, the Division timely received the proposed NSU 13th Plan of Development (13th POD) from NSU Operator Hilcorp Alaska, LLC (Hilcorp). On May 6, 2016, Hilcorp amended its proposed 13th POD to clarify certain aspects of the submission. After receipt of the amended POD, the Division notified Hilcorp via email on May 9, 2016 that its submission of the proposed POD was complete. On June 15, 2016, the Division met with Hilcorp for a technical meeting. This decision approves the 13th POD.

Unit History

The formation of the NSU, approved by the Division effective January 23, 1990, and by BSEE effective January 24, 1990 is comprised of five state oil and gas leases and two federal leases. The NSU produces from the Northstar (NPA), Hooligan (HPA), and Fido (FPA) Participating Areas (PAs). The Division approved the NPA effective September 4, 2002 and the HPA effective February 24, 2015. The BSEE approved the FPA, contained entirely on federal lands, effective June, 2012.

The NSU is located on a man-made island in the Beaufort Sea, 12 miles north of Prudhoe Bay and 6 miles offshore. The Northstar pool was discovered by the Shell Island BF-47 No.1 exploration well in 1984. Northstar island is connected to onshore processing facilities by a pipeline that is buried 7–11 feet below the seafloor. Sustained production began in November 2001 and peaked at 70,000 Barrels of Oil Per Day (BOPD) in June 2003, but then declined. The unit cumulatively produced 165.7 million Stock Tank Barrels of Oil (STBO) through April 2016. For the month of April 2016, the unit produced 160,220 STBO.

On November 13, 2014, BPXA transferred all of its interest in the DIU to Hilcorp. Effective November 18, 2014, BPXA resigned as NSU Operator and Hilcorp was approved as successor

NSU Operator. Hilcorp submitted the 12th POD on April 2, 2015, and a revised POD on April 27, 2015. On June 18, 2015, the Division approved the 12th POD, effective July 1, 2015 through July 31, 2016.

12th POD Activities

During the 12th POD period no new wells or sidetrack wells were drilled. In terms of workover projects at the Northstar PA, Hilcorp isolated the Ivishak and then flow tested the Sag River Formation in December 2015 in well NS-24. Current perforations have low permeability or are damaged and resulted in no Sag River production. The Operator also completed several perforation/re-perforation projects at the Northstar PA (NS-05, NS-11, and NS-30), and the Fido PA (NS-34A). For the Hooligan PA, a Kuparuk recompletion operation in NS-18 was delayed until the Third Quarter of 2016 due to rig limitations.

During the 12th POD period Hilcorp's facility projects included:

- Installed Vapor Pressure Analyzer on Crude Export Line during April 2015.
- Completed Fin-Fan Cooling Improvements resulting in increased air flow through plant fin-fan exchangers to maximize NGL production during the warmer ambient months.
- Changed out Turbine engine (Mars 90) on a unit electrical generator and the HP-B Compressor engine during the summer of 2015.
- Replaced HP-B Compressor bundles were replaced during the summer of 2015.

Proposed 13th POD

During the 13th POD Period Hilcorp does not anticipate drilling any new or sidetracks but anticipates several workover projects at the NSU: At the Northstar PA, the Operator will perform surface casing leak repair on NS-22 and convert NS-13 into a gas injector in the Ivishak reservoir; and at the Hooligan PA, NS-18, the Operator will abandon the Ivishak reservoir and recomple to the Kuparuk sand. No well workover projects are planned for the Fido PA.

During the 13th POD period Hilcorp anticipates several facility projects to include:

- Controls upgrade for HP-B and LP compressors is planned for summer 2016.
- HP-A compressor controls will be upgraded during summer of 2017.
- LM2500 Power Turbine is to be replaced during the summer of 2017.
- In Line Inspection (Smart Pig) on the Crude Export Line is planned for summer of 2017.
- Turbine engine (Mars 90) on C unit electrical generator is planned to be swapped during the summer of 2017.

In addition to maintaining the unit and PA production, Hilcorp as the Operator will continue to evaluate and execute additional wells work opportunities at the NSU. During the POD period Hilcorp will continue to seek prudent reservoir management and maintenance of operations.

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 of all interested parties including the state, environmental costs and benefits, geological and engineering characteristics of 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 NSU, 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. This 13th POD will continue and increase production for existing wells, increase efficiencies, and continue to bring economic benefit to the state.

Having considered the 11 AAC 83.303(a) and (b) criteria, the Division finds the 13th POD complies with the provisions of 11 AAC 83.303. Accordingly, the 13th POD is approved for the period August 1, 2016 through July 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 14th POD is due on May 2, 2017, ninety (90) days before the 13th 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 Andy Mack, 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