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May 2, 2016

Mrs. Corri A. Feige, Director Oil and Gas Division Alaska Department of Natural Resources 550 W. 7<sup>th</sup> Avenue, Suite 1100 Anchorage, AK 99501

RECEIVED

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DIVISION OF OIL AND GAS

Re: Proposed 13<sup>th</sup> Northstar Unit Plan of Development

Dear Mrs. Feige,

Hilcorp Alaska, LLC ("Hilcorp"), as Operator of the Northstar Unit ("NU"), hereby submits the proposed 13<sup>th</sup> Northstar Unit Plan of Development ("POD"). This plan will be effective July 1, 2016 through July 31, 2017.

### I. FIELD OVERVIEW

The Northstar Unit is jointly managed by the Alaska Department of Natural Resources Division of Oil and Gas ("DNR") and the U.S. Department of Interior, Bureau of Safety and Environmental Enforcement ("BSEE").

The Northstar Unit is comprised of three oil sand accumulations: the Ivishak sands in the Northstar PA; the Ivishak sands in the Fido PA; and the Kuparuk C sands in the Hooligan PA. To date, 30 wells have been drilled. There are 20 producing wells (two shut in), seven gas injection wells (1 shut in), two disposal wells and one suspended well (NS-26).

### II. 12<sup>th</sup> PLAN REVIEW

On December 4, 2014, the State of Alaska, Department of Natural Resources, Division of Oil and Gas ("DNR") approved Hilcorp as successor operator. On June 18, 2015, DNR approved Hilcorp's proposed 12<sup>th</sup> POD.

# A. 12<sup>th</sup> POD Production Summary

During calendar year 2015, the Northstar Unit produced approximately 199,146,888 MMcf gas and 3,625 Mbbl oil. The field entered 2015 producing 328,019 BOPM in January and exited 2015 producing 319,825 BOPM in December. During 2016 (YTD), the average daily production rate is approximately 10,006 BOPD.

## B. 12<sup>th</sup> POD Drilling Program

No new grassroots wells or sidetrack projects were drilled at the Northstar Unit during the 12<sup>th</sup> POD period.

### C. 12<sup>th</sup> POD Workover Program

Hilcorp completed the following well projects:

- Northstar PA
  - o NS-24 Recomplete to Sag testing completed (Dec 2015)
    - Current perforations are low perm or damaged.
    - Well will naturally flow (slugging) only 5-10bfpd into depressurized separator.
    - Produced 49.5API gravity oil during temporary flow test
  - o NS-05 add perf/reperf Ivishak with indications of scale. (March 2016)
  - o NS-11 reperforate Ivishak with indications of scale. (March 2016)
  - o NS-30 reperforate Ivishak with indications of scale. (March 2016)
- Fido PA
  - o NS-34A reperforate Ivishak with indications of scale.
- Hooligan PA
  - o NS-18 Kuparuk recompletion delayed until Q3 2016 due to rig limitations.

# D. 12<sup>th</sup> POD Major Facility Projects

Key activities included:

- Vapor Pressure Analyzer installed on Crude Export line was installed during April 2015. The analyzer allows the optimization of NGL's into Sales Crude stream while maintaining Pump Station 1 required limits.
- Summer-time NGL Fin-Fan Cooling Improvements during the summer of 2015 improvements were made that increased in air flow through plant fin-fan exchangers to maximize NGL production during warmer ambient months
- Turbine engine (Mars 90) on A unit electrical generator was swapped during summer 2015.
- HP-B Compressor engine was swapped during the summer 2015. Hot Gas Path Inspection was conducted on the engine removed.
- HP-B Compressor bundles were replaced during the summer of 2015.

## III. 13<sup>th</sup> PLAN OF DEVELOPMENT AND OPERATIONS

Throughout the 13<sup>th</sup> POD Period, Hilcorp anticipates current unit production will be maintained and increased through the following activities:

#### A. Proposed Drilling Program

No new grass-roots wells or sidetracks are anticipated during the pending POD Period.

#### **B.** Proposed Workover Program

During the 13<sup>th</sup> POD Period, Hilcorp anticipates the following workover projects:

- Northstar PA
  - o NS-22 Perform surface casing leak repair.
  - NS-13 Convert into a gas injector in the Ivishak reservoir. This project will reduce injection pressure in the field and allow for compressor horsepower optimization.
- Fido PA
  - o No new well projects are planned for the Fido PA during the 13<sup>th</sup> POD period.
- Hooligan PA
  - NS-18 Abandon the Ivishak reservoir and recomplete to the Kuparuk sand.

In addition to maintaining unit and PA production, Hilcorp will evaluate and execute additional well work opportunities as they arise. During the 13<sup>th</sup> POD period, Hilcorp will continue to pursue efficiencies through various well optimizations, including the evaluation of shut-in wells utility and their potential return to service.

### C. Major Facility Projects

Key facility projects anticipated to be undertaken during the 13<sup>th</sup> POD period include:

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

Hilcorp, as Unit Operator, reserves the right to propose modifications to this Plan should conditions so warrant; however, no modifications will be made without first obtaining necessary approval from the appropriate governmental agencies.

Your approval of the submitted plan is respectfully requested. Should you have questions, please contact the undersigned at 777-8414.

Northstar Unit 13<sup>th</sup> Plan of Development Page 4 of 4

Sincerely,

David W. Duffy, Landman

Hilcorp Alaska, LLC

cc: Division of Oil and Gas (via email to king.kathleen@alaska.gov);

BSEE (kevin.pendergast@bsee.gov)
BOEM (david.johnston@boem.gov)