



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

Department of Natural Resources

DIVISION OF OIL & GAS

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December 1, 2017

CERTIFIED MAIL

Katrina Garner
Fieldwide Manager
BP Exploration (Alaska) Inc.
PO Box 196612
Anchorage, AK 99519-6612

Re: 2018 Plan of Development for the Prudhoe Bay Unit Western Satellite PAs

Dear Ms. Garner:

BP Exploration (Alaska) Inc. (BP) submitted a proposed 2018 Plan of Development (POD) for the Prudhoe Bay Unit (PBU) Western Satellites Participating Areas (PAs) to the Department of Natural Resources, Division of Oil and Gas (Division) on September 28, 2017. BP's proposed POD provides information about development and operational activities as prescribed by 11 AAC 83.343. Accordingly, the Division notified BP by email on October 3, 2017 that the Division had deemed the POD submittal complete. BP provided a technical presentation prior to submitting the POD, on September 21, 2017. This decision approves the 2018 POD.

The Western Satellites consist of five PAs: Aurora, Borealis, Midnight Sun, Orion, and Polaris. The Aurora, Borealis, and Midnight Sun PAs produce primarily from the Kuparuk River Formation, while the Orion and Polaris PAs produce oil with higher viscosity from the Schrader Bluff Formation. Production from the Western Satellites PAs during the latest report period, ending June 2017 was approximately 19,079 BOPD.

Orion PA

For the 2017 POD period, BP planned to continue evaluation and studies, work on dynamic models, and conduct engineering work to address sand handling capabilities. BP did not plan any wells, but did plan to continue a wellwork program and to evaluate plans for re-drilling L-200 and L-205 as vertical wells with frac-pack completions.

BP reported that in the 2017 period it injected six wells with miscible injectant for enhanced recovery. BP also performed waterflood-regulating value changeouts on five injection wells and completed 55 wellwork jobs on producers and injectors, nine of which were rate-adding jobs. BP began sidetrack drilling operations on the L-200A well, but encountered difficulties and suspended drilling operations to address them. BP also progressed planning for sidetracks for the L-200 and L-205 wells and plans to drill the L-205A in late 2017.

Production for the period July 1, 2016 through June 30, 2017 was 3469 BOPD, down from 4747 BOPD during the same period the prior year.

For the 2018 POD period, BP plans to continue its wellwork program, including waterflood regulating valve changeouts, gas lift optimizations, and injection logs. BP notes that the working interest owners are also considering drilling a horizontal undulating frac pack producer. As a general matter, if an operator determines that it will conduct additional work not included as a work commitment in its POD, it should submit a POD amendment for the Division's review.

BP will also continue work to optimize the separation system efficiency at its GC-2 facility and start a subsurface work program to evaluate field managements, well design, and future developments.

Polaris PA

For the 2017 POD period, BP planned to work on the dynamic model for the M- and S-Pad areas, test an alternative sand control technology, and continue its wellwork program. BP did not plan any wells and has not drilled in Polaris since 2011.

BP reported that it injected two wells with miscible injectant for enhanced recovery, which was fewer wells than last year because a flowline was out of service for a period due to corrosion. BP plans to replace a section of this flowline in late 2017. BP also performed waterflood-regulating value changeouts on four injection wells. BP completed 11 wellwork jobs on producers and injectors, two of which were rate-adding. BP began work on evaluating technologies and potential locations for sand control.

Production for the period July 1, 2016 through June 30, 2017 was 3891 BOPD, down from 4306 BOPD during the same period the prior year.

For the 2018 POD period, BP plans to continue its wellwork program, including waterflood regulating valve changeouts, gas lift optimizations, and injection logs. As discussed above in relation to the Orion PA, BP will continue work to optimize the separation system efficiency at its GC-2 facility. BP will also start a subsurface work program to evaluate field managements, well design, and future developments.

Midnight Sun PA

For the 2017 POD period, BP planned to continue production and reservoir surveillance.

BP reported that it conducted three rate-sustaining well work jobs: (1) placing the P1-122i well on injection at the end of the prior POD period (after its 2017 POD would have been submitted for review); (2) changing out the E-101 tree; and (3) installing a mechanical stop in E-102.

Production for the period July 1, 2016 through June 30, 2017 was 983 BOPD, down from 1134 BOPD during the same period the prior year.

For the 2018 POD period, BP plans to continue production and reservoir surveillance.

Borealis PA

For the 2017 POD period, BP planned to continue a wellwork program.

BP reported that it completed 61 wellwork jobs, 12 of which were rate-adding. These include tree change out, gas lift optimization, hot oil treatments, surface and subsurface safety valve work, and VSM repairs. BP injected miscible injectant into seven water-alternating gas injectors and repaired a booster pump at Z-504A.

Production for the period July 1, 2016 through June 30, 2017 was 6040 BOPD, down from 8517 BOPD during the same period the prior year.

For the 2018 POD period, BP plans to continue its wellwork program.

Aurora PA

For the 2017 POD period, BP planned to continue a wellwork program.

BP reported that it placed the S-113B1 sidetrack on production at the end of the prior POD period, after it would have submitted its 2017 POD. BP completed 42 wellwork jobs, four of which were rate-adding. These included tree change out, gas lift optimization, hot oil treatments, surface and subsurface safety valve work and VSM repairs.

Production for the period July 1, 2016 through June 30, 2017 was 4696 BOPD, down from 6303 BOPD during the same period the prior year.

For the 2018 POD period, BP plans to continue its wellwork program.

Consideration of the 2018 PODs

When reviewing 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 the 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 prior PODs for the PBU Western Satellite PAs, the Division considered 11 AAC 83.303 and found the POD(s) promoted conservation of natural resources, promoted prevention of waste, and protected the parties' interests. The Division incorporates by reference those findings.

Production is down in each of the Western Satellite PAs, dropping nearly 24 percent for the area as a whole. BP has not proposed any drilling for the 2018 POD period to address this drop in production. BP has, however, proposed continued wellwork to maximize production from existing wells. And, of course, BP is continuing to produce from each of these PAs. Continued production from the Western Satellites protects the State's interests in developing its oil and gas resources.

Having considered the 11 AAC 83.303 (a) and (b) criteria, the Division finds that the 2018 POD complies with the provisions of 11 AAC 83.303. Accordingly, the 2018 POD is approved for the period January 1, 2018 through December 31, 2018.

The Division and BP have discussed holding an additional technical meeting for an update on these PAs. That meeting is tentatively planned for the first quarter of 2018. The Division will contact BP with further details about the substance of the meeting.

This approval is only for a general plan of development. Specific field operations will require an approved Plan of Operations. Under 11 AAC 83.343, the 2019 POD is due on October 2, 2018, ninety (90) days before the 2018 POD expires.

A 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 Andrew 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 questions regarding this decision, contact Becky Kruse with the Division at 907-269-8799 or via email at Becky.Kruse@Alaska.gov.

Sincerely,



Chantal Walsh
Director