

**STATE OF ALASKA**  
**ALASKA OIL AND GAS CONSERVATION COMMISSION**  
**333 West 7<sup>th</sup> Avenue, Suite 100**  
**Anchorage Alaska 99501**

Re: THE APPLICATION OF BPXA ) Docket Number: CO-09-23  
EXPLORATION (ALASKA) INC. ) Conservation Order No. 505B  
for an order to expand the affected )  
area of the Orion Oil Pool, Prudhoe ) Prudhoe Bay Field  
Bay Field, North Slope, Alaska. ) Schrader Bluff Oil Pool  
 ) May 4, 2010  
 )

**IT APPEARING THAT:**

1. On June 30, 2009, BP Exploration (Alaska), Inc. (BPXA) requested the Alaska Oil and Gas Conservation (Commission) grant an expansion of the Prudhoe Bay Field, Schrader Bluff Oil Pool as currently defined in Conservation Order 505A.
2. Pursuant to 20 AAC 25.540, on October 22, 2009 the Commission published in the Anchorage Daily News notice of the opportunity for a public hearing on December 1, 2009.
3. No protest to the application or request for hearing was received.
4. Because BPXA provided sufficient information upon which to make an informed decision, the request can be resolved without a hearing.
5. The hearing was vacated on November 18, 2009.

**FINDINGS**

1. CO 505 issued January 5, 2004 defined the Schrader Bluff Oil Pool and set out rules governing development and operations within a specified area.
2. CO 505A issued April 28, 2006 superseded CO 505 and authorized underground injection of enriched hydrocarbon gas in the OOP.
3. This amendment action should properly apply to CO 505A.
4. BPXA proposes to expand the operation and development of the pool beyond the area specified in CO 505A.
5. Subsurface wireline log data, pressure measurements, and newly reprocessed seismic data all indicate that the Schrader Bluff Oil Pool extends beyond the area specified in CO 505A.
6. No testimony was presented that warrants a change in the governing rules set out in CO 505A.

**CONCLUSIONS:**

1. Conservation Order No. 505B supersedes and replaces CO 505 dated January 5, 2004, and CO 505A, dated April 28, 2006 only insofar as CO 505B concerns the Schrader Bluff Oil Pool. Conservation Order No. 505B has no effect on CO 505 and CO 505A as to any other pools.
2. The area subject to pool rules governing the development and operation of the Schrader Bluff Oil Pool should be expanded to encompass the additional area proposed for development.
3. All prior rules and approvals issued by the Commission for Schrader Bluff Oil Pool operation and development should be consolidated into this conservation order.

**NOW, THEREFORE, IT IS ORDERED:**

This Conservation Order supersedes and replaces CO 505A dated April 28, 2006. The findings, conclusions and administrative record for Conservation Order 505A are adopted by reference and incorporated in this decision. The following rules, in addition to the statewide requirements under 20 AAC 25 as set forth below, apply to the Schrader Bluff Oil Pool within the following affected area:

**Umiat Meridian**

<u>Township</u> <u>Range, UM</u>	<u>Lease</u>	<u>Sections</u>
T12N-R10E	ADL 025637	13 and 24 N/2
T12N-R11E	ADL390067	14: S/2 S/2, 23: ALL, 24: SW/4, SW/4, NW/4 (expansion area this order)
	ADL 047446	17, 18, 19, and 20
	ADL 047447	16 S/2 and NW/4 and S/2 NE/4, 21, and 22
	ADL 028238	25 SW/4, 26, 35, and 36
	ADL 028239	27, 28, 33 E/2 and N/2 NW/4, and 34
	ADL 047449	29 N/2 and SE/4, and 30 N/2 NE/4
T11N-R11E	ADL 028240	1, 2, 11 E/2 and E/2 NW/4, and 12
	ADL 028241	3 N/2 and N/2 S/2, and 4 NE/4 N/2 SE/4
	ADL 028245	13 N/2 and SE/4, 14 E/2 NE/4, and 24 E/2

		NE/4
T11N-R12E	ADL 047450	7, and 8 S/2 and NW/4

**Rule 1: Well Spacing (Source CO 505)**

Spacing units shall be a minimum of 10 acres. The Schrader Bluff Oil Pool shall not be opened in any well closer than 500' to an external boundary where ownership changes.

**Rule 2: Casing and Cementing Practices (Source CO 505)**

- a. In addition to the requirements of 20 AAC 25.030, conductor casing must be set at least 75' below surface.
- b. In addition to the requirements of 20 AAC 25.030, surface casing must be set at least 500' TVD below the base of permafrost.

**Rule 3: Automatic Shut-in Equipment (Source CO 505)**

- a. All wells must be equipped with a fail-safe automatic surface safety valve system capable of preventing an uncontrolled flow.
- b. All wells must be equipped with landing nipple at a depth below permafrost, which is suitable for the future installation of a downhole flow control device. The Commission may require such installation by administrative action.
- c. Operation and performance tests must be conducted at intervals and times as prescribed by the Commission to confirm that the safety valve systems are in proper working condition.

**Rule 4: Common Production Facilities and Surface Commingling (Source CO 505)**

- a. Production from the Schrader Bluff Oil Pool may be commingled with production from Prudhoe Bay Oil Pool, and other oil pools located in the Prudhoe Bay Unit in surface facilities prior to custody transfer.
- b. The Prudhoe Bay Unit Western Operating Metering Plan, described by letter from BPXA dated April 23, 2002 and detailed within the PBU Western Satellite Production Metering Plan – Policies and Procedures Document" dated August 1, 2002 is approved for allocation of production from Schrader Bluff Oil Pool wells .
- c. All Schrader Bluff Oil Pool wells must use the Gathering Center 2 well allocation factor for oil, gas, and water.
- d. All wells must be tested a minimum of once per month. All new wells must be tested a minimum of two times per month during the first three months of production. The Commission may require more frequent or longer tests if the allocation quality deteriorates.
- e. Technical process review meetings shall be held at least annually.
- f. The operator shall submit a monthly report and file(s) containing daily allocation data and daily test data for agency surveillance and evaluation.

**Rule 5: Reservoir Pressure Monitoring (Source CO 505)**

- a. Prior to regular production or injection, an initial pressure survey must be taken in each well.
- b. A minimum of one bottom-hole pressure survey per producing governmental section shall be run annually. The surveys in part (a) of this rule may be used to fulfill the minimum requirements.
- c. The reservoir pressure datum will be 4400' TVDss.
- d. Pressure surveys may be stabilized static pressure measurements at bottom-hole or extrapolated from surface (single phase fluid conditions), pressure fall-off, pressure buildup, multi-rate tests, drill stem tests, and open-hole formation tests.
- e. Data and results from pressure surveys shall be submitted with the annual reservoir surveillance report. All data necessary for analysis of each survey need not be submitted with the report but must be available to the Commission upon request.
- f. Results and data from special reservoir pressure monitoring tests shall also be submitted in accordance with part (e) of this rule.

**Rule 6: Gas-Oil Ratio Exemption (Source CO 505)**

Wells producing from the Schrader Bluff Oil Pool are exempt from the gas-oil-ratio limits of 20 AAC 25.240 (a) so long as requirements of 20 AAC 25.240 (b) are met.

**Rule 7: Enhanced Oil Recovery or Reservoir Pressure Maintenance Operations (Source CO 505A)**

Waterflood is required and enriched gas injection is approved for purposes of pressure maintenance and enhanced oil recovery in the Schrader Bluff Oil Pool,. Production and injection operations must ensure the average reservoir pressure is maintained above the bubble point.

**Rule 8: Multiple Completion of Injection Wells (Source CO 505.001)**

- a. Injectors may be completed to allow for simultaneous injection in multiple pools within the same wellbore so long as mechanical isolation between pools is demonstrated and approved by the Commission.
- b. Prior to initiation of co-mingled injection, the Commission must approve methods for allocation of injection to separate pools.
- c. Results of logs or surveys used for determining the allocation of water injection between pools, if applicable, must be supplied in the annual reservoir surveillance report.
- d. An approved injection order is required prior to commencement of injection in each pool.

**Rule 9: Annual Reservoir Review (Source CO 505A)**

An annual report must be filed by September 15 of each year. The report must include future development plans, reservoir depletion plans, and surveillance information for the period July 1 of the prior calendar year through June 30 of the current calendar year (except the report due on September 15, 2006 must cover the period from January 2005 through June 30, 2006), and must include:

- a. voidage balance by month of produced and injected fluids, and cumulative status;
- b. reservoir pressure map at datum, summary and analysis of reservoir pressure surveys within the pool;
- c. results and, where appropriate, analysis of production and injection surveys, tracer surveys, observation well surveys, and any other special monitoring;
- d. review of pool production allocation factors and issues over the prior year;
- e. progress of enhanced recovery project implementation and reservoir management summary including results of reservoir simulation studies;
- f. progress of plans and tests to expand the productive limits of the pool, including any work within the Prince Creek formation; and
- g. results of monitoring to determine enriched gas injectant breakthrough to offset producers.

The Operator shall schedule and conduct a yearly technical review meeting, on or about November 1, with the Commission to discuss the report contents and to review items that may require Commission action during the coming year. The Commission may conduct audits of technical data and analyses used in support of surveillance conclusions and reservoir depletion plans.

**Rule 10: Waiver of "Application for Sundry Approvals" Requirement for Workover Operations (Source CO 556)**

- a. Except as provided in (d) and (e) of this rule, the requirement to submit an Application for Sundry Approvals (Form 10-403) and supporting documentation for workover activities described in 20 AAC 25.280 (a) (1), (2), (3) and (5) is waived or modified for development wells as provided in the Commission document entitled "Well Work Operations and Sundry Notice/Reporting Requirements for Pools Subject to Sundry Waiver Rules," dated July 15, 2005 (referred to below as "Sundry Matrix"). This waiver and modification does not affect the Operator's responsibility to submit a Report of Sundry Well Operations (Form 10-404) within 30 days following the completion of a workover operation.
- b. Except as provided in (d) and (e) of this rule, the requirement to submit an Application for Sundry Approvals (Form 10-403) and supporting documentation for workover activities described in 20 AAC 25.280 (a) (1) and (5) is modified for service wells as provided in the Sundry Matrix. This modification does not affect the Operator's responsibility to submit a Report of Sundry Well Operations (Form 10-404) within 30 days following the completion of a workover operation.
- c. The Sundry Matrix summarizes the sundry approval and reporting requirements that apply to various categories of operations in the specific well types under

Commission regulations as modified by these rules.

- d. The waivers provided under (a) of this rule do not apply to wells that are required to be reported to the Commission under the provisions of Rule 11.
- e. The Commission reserves the discretion to require an operator to submit an Application for Sundry Approvals for a particular well or for a particular operation on any well.
- f. Each week the Operator shall provide the Commission with a report of workover operations performed the previous week that did not require submission of a Form 10-403. (These operations are listed in Column 2 of the Sundry Matrix.) The report must include the date, well, permit to drill number, nominal operation completed, and a brief description of that operation including depths of perforations, reperforations, and stimulated zones.
- g. Nothing in this rule precludes an Operator from filing an Application for Sundry Approvals (Form 10-403) in advance of any well work or from including Sundry authorized operations (listed in column 3 of the Sundry Matrix) in the weekly report required by (f) of this rule.
- h. Unless notice and public hearing are otherwise required, the Commission may administratively waive the requirements of any provision of this rule or administratively amend any provision including the Sundry Matrix, as long as the change does not promote waste or jeopardize correlative rights, is based on sound engineering and geoscience principles, and will not result in an increased risk of fluid movement into freshwater.

**Rule 11: Annular Pressures (Sources CO 505, CO 492)**

- a. At the time of installation or replacement the Operator shall conduct and document a pressure test of tubulars and completion equipment in each development well that is sufficient to demonstrate that planned well operations will not result in failure of well integrity, uncontrolled release of fluid or pressure, or threat to human safety.
- b. The Operator shall monitor each development well daily to check for sustained pressure, except if prevented by extreme weather conditions, emergency situations, or similar unavoidable circumstances. Monitoring results shall be made available for Commission inspection.
- c. The Operator shall notify the Commission within three working days after the Operator identifies a well as having (a) sustained inner annulus pressure that exceeds 2500 psig for wells processed through the Lisburne Processing Center and 2000 psig for all other development wells, or (b) sustained outer annulus pressure that exceeds 1000 psig.
- d. The Commission may require the Operator to submit in an Application for Sundry Approvals (Form 10-403) a proposal for corrective action or increased surveillance for any development well having sustained pressure that exceeds a limit set out in paragraph 3 of this rule. The Commission may approve the Operator's proposal or may require other corrective action or surveillance. The Commission may require that corrective action be verified by mechanical integrity testing or other Commission approved diagnostic tests. The Operator

- shall give the Commission sufficient notice of the testing schedule to allow the Commission to witness the tests.
- e. If the Operator identifies sustained pressure in the inner annulus of a development well that exceeds 45% of the burst pressure rating of the well's production casing for inner annulus pressure, or sustained pressure in the outer annulus that exceeds 45% of the burst pressure rating of the well's surface casing for outer annulus pressure, the Operator shall notify the Commission within three working days and take corrective action. Unless well conditions require the Operator to take emergency corrective action before Commission approval can be obtained, the Operator shall submit in an Application for Sundry Approvals (Form 10-403) a proposal for corrective action. The Commission may approve the Operator's proposal or may require other corrective action. The Commission may also require that corrective action be verified by mechanical integrity testing or other Commission approved diagnostic tests. The Operator shall give the Commission sufficient notice of the testing schedule to allow Commission to witness the tests.
  - f. Except as otherwise approved by the Commission under (d) or (e) of this rule, before a shut-in well is placed in service, any annulus pressure must be relieved to a sufficient degree (1) that the inner annulus pressure at operating temperature will be below 2000 psig, and (2) that the outer annulus pressure at operating temperature will be below 1000 psig. However, a well that is subject to (c) but not (e) of this rule may reach an annulus pressure at operating temperature that is described in the Operator's notification to the Commission under (c) of this rule, unless the Commission prescribes a different limit.
  - g. For purposes of this rule,
    - “inner annulus” means the space in a well between tubing and production casing;
    - “outer annulus” means the space in a well between production casing and surface casing; and
    - “sustained pressure” means pressure that (a) is measurable at the casing head of an annulus, (b) is not caused solely by temperature fluctuations, and (c) is not pressure that has been applied intentionally.

**Rule 12: Use of Multiphase Flowmeters in Well Testing (Sources CO 547.004 and 547.005)**

For purposes of satisfying well test measurement requirements of 20 AAC 25.230, the use of the Weatherford Generation 2.0 Multiphase Metering System and FMC Technologies multiphase Flow Meter System (EMS MPM) is approved in accordance with the respective administrative approvals.

**Rule 13: Administrative Action**

Unless notice and public hearing are otherwise required, the Commission may administratively waive the requirements of any rule stated above or administratively amend any rule as long as the change does not promote waste or jeopardize correlative rights, is based on sound engineering and geoscience principles, and will not result in an increased risk of fluid movement into freshwater.

**DONE at Anchorage, Alaska and dated May 4, 2010.**



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Daniel T. Seamount, Jr. Commissioner, Chair  
Alaska Oil and Gas Conservation Commission

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John K. Norman, Commissioner  
Alaska Oil and Gas Conservation Commission

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Cathy P. Foerster, Commissioner  
Alaska Oil and Gas Conservation Commission

**RECONSIDERATION AND APPEAL NOTICE**

As provided in AS 31.05.080(a), within **20** days after written notice of the entry of this order or decision, or such further time as the Commission grants for good cause shown, a person affected by it may file with the Commission an application for reconsideration of the matter determined by it. If the notice was mailed, then the period of time shall be **23** days. An application for reconsideration must set out the respect in which the order or decision is believed to be erroneous.

The Commission shall grant or refuse the application for reconsideration in whole or in part within 10 days after it is filed. Failure to act on it within 10-days is a denial of reconsideration. If the Commission denies reconsideration, upon denial, this order or decision and the denial of reconsideration are **FINAL** and may be appealed to superior court. The appeal **MUST** be filed within **33** days after the date on which the Commission mails, **OR 30** days if the Commission otherwise distributes, the order or decision denying reconsideration, **UNLESS** the denial is by inaction, in which case the appeal **MUST** be filed within **40** days after the date on which the application for reconsideration was filed.

If the Commission grants an application for reconsideration, this order or decision does not become final. Rather, the order or decision on reconsideration will be the **FINAL** order or decision of the Commission, and it may be appealed to superior court. That appeal **MUST** be filed within **33** days after the date on which the Commission mails, **OR 30** days if the Commission otherwise distributes, the order or decision on reconsideration. As provided in AS 31.05.080(b), "[t]he questions reviewed on appeal are limited to the questions presented to the Commission by the application for reconsideration."

In computing a period of time above, the date of the event or default after which the designated period begins to run is not included in the period; the last day of the period is included, unless it falls on a weekend or state holiday, in which event the period runs until 5:00 p.m. on the next day that does not fall on a weekend or state holiday.