

STATE OF ALASKA
ALASKA OIL AND GAS CONSERVATION COMMISSION
333 West 7th Avenue, Suite 100
Anchorage Alaska 99501

Re: THE APPLICATION OF ConocoPhillips) Docket Number: CO-14-003
Alaska, Inc. to modify the vertical and) Conservation Order No. 406C
areal limits of the West Sak Oil Pool,)
Kuparuk River Field , North Slope, Alaska) Kuparuk River Field
) Kuparuk River Unit
) West Sak Oil Pool
)
) June 19, 2014

IT APPEARING THAT:

1. By application dated January 30, 2014, and received by the Alaska Oil and Gas Conservation Commission (AOGCC) on January 31, 2014, ConocoPhillips Alaska, Inc. (CPAI) requested the pool definition of the West Sak Oil Pool (WSOP) be expanded vertically to include the Schrader Bluff N Sands and that the northern and eastern extents of the pool be modified to coincide with the current unit boundaries.
2. Pursuant to 20 AAC 25.540, the AOGCC tentatively scheduled a public hearing for April 1, 2014. On February 28, 2014, the AOGCC published notice of the opportunity for that hearing on the State of Alaska's Online Public Notice website and on the AOGCC's website, electronically transmitted the notice to all persons on the AOGCC's email distribution list, and mailed printed copies of the Notice of Public Hearing to all persons on the AOGCC's mailing distribution list. On March 1, 2014, the notice was published in the ANCHORAGE DAILY NEWS. The hearing was convened on April 1, 2014, and recessed until April 23, 2014.
3. The hearing was reconvened on April 23, 2014, and the AOGCC received testimony from CPAI.
4. The hearing record was held open until May 7, 2014, to allow CPAI an opportunity to respond to questions raised by AOGCC during the hearing.
5. By letter dated and received on May 7, 2014, CPAI responded to those questions.

FINDINGS:

1. CPAI is the operator of the WSOP within the Kuparuk River Unit (KRU).
2. The WSOP is currently defined as only containing the West Sak Sands that correlate with the "O" Sands in the Schrader Bluff Oil Pools in the adjacent Milne Point Unit, Nikaitchuq Unit, and Prudhoe Bay Unit.

3. In the Prudhoe Bay, Milne Point, and Nikaitchuq Units, the Schrader Bluff N Sands and O Sands are being developed together as a single oil pool (collectively called Schrader Bluff Oil Pools or SBOPs). The affected areas for the SBOPs are adjacent to the affected area of the WSOP.
4. The unit boundaries have changed since the WSOP was originally defined in 1997 and now there are areas that are defined as both being part of the WSOP and as part of one of the SBOPs. Likewise there are areas that lie within the current KRU boundaries that should be a part of the WSOP affected area that aren't currently included in the pool description.

CONCLUSIONS:

1. The existing vertical limits of the WSOP do not reflect the current understanding of how to effectively develop the Schrader Bluff Formation sands (N Sands and West Sak Sands/O Sands).
2. The existing areal extent of the WSOP creates areas where there are two sets of pool rules covering the same pool and areas where there are no pool rules where they should exist.

NOW THEREFORE IT IS ORDERED:

Conservation Order 406B is superseded and its record incorporated by reference into this order. The following rules apply to the WSOP within the following affected area:

Umiat Meridian

Township	Range	Sections
T8N	R7E	Sections 1-18
T9N	R11E	Sections 5-8, 17-20, 29-32
T9N	R10E	All
T9N	R9E	All
T9N	R8E	All
T9N	R7E	All
T10N	R11E	Sections 3-10, 15-22, 29-32
T10N	R10E	All
T10N	R9E	All
T10N	R8E	All
T10N	R7E	All
T11N	R11E	Sections 5-8, 16-22, 27-34
T11N	R10E	All
T11N	R9E	All
T11N	R8E	All
T11N	R7E	All
T12N	R11E	Section 31
T12N	R10E	Sections 3-10, 14-23, 25-36
T12N	R9E	All
T12N	R8E	All
T12N	R7E	All
T13N	R9E	SW1/4 Section 2, W1/2& SE1/4 Section 11, Sections 3-10, 15-22, 25-36
T13N	R8E	Sections 1-3, 10-12, 13-15, 19-36

Rule 1 Field and Pool Name (Restated from CO 406B)

The field is the Kuparuk River Field. Hydrocarbons underlying the affected area and within the herein defined interval of the Schrader Bluff Formation constitute a single oil and gas reservoir called the West Sak Oil Pool.

Rule 2 Pool Definition (Revised this order)

The West Sak Oil Pool is defined as the accumulation of hydrocarbons common to and correlating with the interval between the measured depths of 3,552 feet and 4,156 feet in the West Sak No. 1 well.

Rule 3 Well Spacing (Restated from CO 406B)

There shall be no restrictions as to well spacing except that no pay shall be opened in a well closer than 500 feet to an external property line where ownership or landownership changes.

Rule 4 Casing and Cementing Practices (Restated from CO 406B)

- a. Conductor casing will be set at least 75 feet below ground level and cemented to surface.

- b. Where required for annular disposal, surface casing will be set at least 500 feet measured depth below the permafrost and be cemented to surface.
- c. Combination surface-production casing will be set where applicable through the producing or injection intervals and be cemented to surface.

Rule 5 Injection Well Completion (Restated from CO 406B)

Injection wells may be completed with tapered casing provided a seal bore, packer, or other isolation device is positioned not over 200 feet above the top of the producing or perforated interval.

Rule 6 Automatic Shut-in Equipment (Revised by Other Order 66)

- a. Injection wells (excluding disposal injectors) must be equipped with;
 - i. a double check valve arrangement; or
 - ii. a single check valve and a SSV. A subsurface-controlled injection valve or SCSSV satisfies the requirements of a single check valve.
- b. The Low Pressure Pilot may be defeated on West Sak water injectors with surface injection pressure less than 500psi.

Rule 7 Common Production Facilities and Surface Commingling (Restated from CO 406B.011)

- a. Production from the West Sak Oil Pool may be commingled with production from the Tarn, Tabasco, Meltwater, and Kugaruk River oil pools in surface facilities prior to custody transfer.
- b. The allocation factor for the West Sak Oil Pool produced fluids will be based on West Sak well tests. The allocation factor will be calculated on a monthly basis utilizing the Satellite Allocation Technique detailed on Exhibit 18 of the written testimony dated April 26, 2001 (“Testimony for Meltwater Oil Pool Rules – Revision 1”) and will be capped at 1.02000.
- c. Each producing well must be tested at least once monthly.
- d. The AOGCC may require more frequent or longer tests if the allocation quality deteriorates.
- e. The operator shall submit a monthly report and electronic file(s) containing daily allocation data and daily test data for agency surveillance and evaluation.
- f. The operator shall provide the AOGCC with a well test and allocation review report in conjunction with an annual reservoir surveillance report.

Rule 8 Reservoir Pressure Monitoring (Restated from CO 406B)

- a. A bottom-hole pressure survey shall be taken on each well prior to initial sustained production or injection.
- b. The Operator shall obtain pressure surveys as needed to effectively manage hydrocarbon recovery processes subject to an annual plan outlined in paragraph (e) of this rule.
- c. The reservoir pressure datum will be 3500 feet subsea.
- d. Pressure surveys may consist of stabilized static pressure measurements at bottomhole or

extrapolated from surface under single-phase conditions, pressure fall-off, pressure buildup, multi-rate tests, drill stem tests, and open-hole formation tests.

- e. Data from the surveys required in this rule shall be filed with the AOGCC by April 1 of the subsequent year in which the surveys are conducted. Along with the survey submittal, the operator will provide a proposed survey plan for the upcoming year. The proposed plan shall be deemed accepted if the operator has not received written correspondence from the AOGCC within 45 days.
- f. Reservoir Pressure Report, Form 10-412 shall be utilized for all surveys with attachments for complete additional data. Data submitted shall include, but are not limited to rate, pressure, depth, fluid gradient, temperature, and other well conditions necessary for complete analysis of each survey being conducted.
- g. Results and data from special reservoir pressure monitoring tests or surveys shall also be submitted in accordance with paragraph (e) of this rule.

Rule 9 Gas-Oil Ratio Exemption (Restated from CO 406B)

Wells producing from the West Sak Pool are exempt from the gas-oil-ratio limits of 20 AAC 25.240(b) so long as the provisions of 20 AAC 25.240(c) apply.

Rule 10 Pressure Maintenance Project (Restated from CO 406B)

A pressure maintenance waterflood must be initiated within six months after the start of regular production from the West Sak Pool.

Rule 11 Reservoir Surveillance Report (Restated from CO 406B)

The Unit Operator shall submit an Annual Reservoir Surveillance Report by April 1 of each year documenting operations for the previous calendar year. The report shall include but is not limited to the following:

- a. Reservoir management summary including a description of progress of enhanced recovery project implementation and results of reservoir simulation techniques;
- b. Voidage balance by month of produced fluids and injected fluids on a standard and reservoir volume basis with yearly and cumulative volumes;
- c. Summary and analysis of reservoir pressure surveys within the pool;
- d. Results and, where appropriate, analysis of production and injection log surveys, tracer surveys, observation well surveys, and any other special monitoring;
- e. Review of pool production allocation factors and issues over the prior year; and
- f. Updated future development plans including an estimated development schedule, progress report and basis of timeline for the complete pool development.

Rule 12 Production Anomalies (Restated from CO 406B)

In the event of oil production capacity proration at or from the Kuparuk facilities, all commingled reservoirs produced through the Kuparuk facilities will be prorated by an equivalent percentage of oil production, unless this will result in surface or subsurface equipment damage.

Rule 13 Sustained Casing Pressure (Restated from CO 406B)

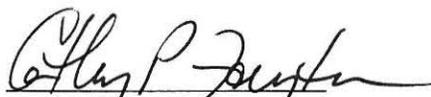
- a. The operator shall conduct and document a pressure test of tubulars and completion equipment in each development well at the time of installation or replacement that is sufficient to demonstrate that planned well operations will not result in failure of well integrity, uncontrolled release of fluid 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 AOGCC inspection.
- c. The operator shall notify the AOGCC within three working days after the operator identifies a well as having (1) sustained inner annulus pressure that exceeds 2000 psig or (2) sustained outer annulus pressure that exceeds 1000 psig.
- d. The AOGCC 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 c of this rule. The AOGCC may approve the operator's proposal or may require other corrective action or surveillance. The AOGCC may require that corrective action be verified by mechanical integrity testing or other AOGCC approved diagnostic tests. The operator shall give AOGCC sufficient notice of the testing schedule to allow AOGCC 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 AOGCC within three working days and take corrective action. Unless well conditions require the operator to take emergency corrective action before AOGCC approval can be obtained, the operator shall submit in an Application for Sundry Approvals (Form 10-403) a proposal for corrective action. The AOGCC may approve the operator's proposal or may require other corrective action. The AOGCC may also require that corrective action be verified by mechanical integrity testing or other AOGCC approved diagnostic tests. The operator shall give AOGCC sufficient notice of the testing schedule to allow AOGCC to witness the tests.
- f. Except as otherwise approved by the AOGCC under paragraph (d) or (e) of these rules, 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 paragraph (c), but not paragraph (e), of these rules may reach an annulus pressure at operating temperature that is described in the operator's notification to the AOGCC under paragraph (c), unless the AOGCC prescribes a different limit.
- g. For purposes of these rules,
 - “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;

“sustained pressure” means pressure that (1) is measurable at the casing head of an annulus, (2) is not caused solely by temperature fluctuations, and (3) is not pressure that has been applied intentionally.

Rule 14 Administrative Actions (Restated from CO 406B)

Unless notice and public hearing is otherwise required, upon proper application the AOGCC may administratively waive the requirements of any rule stated herein or administratively amend this order 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 June 19, 2014.


Cathy P. Foerster
Chair, Commissioner


Daniel T. Seamont, Jr.
Commissioner



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 AOGCC grants for good cause shown, a person affected by it may file with the AOGCC 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 AOGCC 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 AOGCC 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 AOGCC mails, **OR 30** days if the AOGCC 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 AOGCC 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 AOGCC, and it may be appealed to superior court. That appeal **MUST** be filed within **33** days after the date on which the AOGCC mails, **OR 30** days if the AOGCC otherwise distributes, the order or decision on 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.