

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

Re:)
)
Proposed Rules Regulating Sustained Casing) Milne Point Field: All Pools
Pressures in Development Wells in All Pools)
Within the Milne Point Field.) September 8, 2003
)
) Conservation Order No. 496

IT APPEARING THAT:

1. On its own motion, the Alaska Oil and Gas Conservation Commission ("Commission" or "AOGCC") proposed to adopt rules regulating sustained annulus pressures in Milne Point Field development wells.
2. Notice of opportunity for a public hearing on the proposal was published in the Anchorage Daily News on June 30, 2003.
3. No request for a hearing was received.
4. No written comments on the proposal were received.

FINDINGS

1. In considering proposed rules regulating sustained casing pressures in Milne Point Field development wells, the Commission reviewed: the annular pressure management policies submitted by the operator, BP Exploration (Alaska) Inc. (BPXA); *Applied Drilling Engineering* by Bourgoyne, *et al.*; the Halliburton Cementing Tables; the Commission well files for the wells on BPXA's "A-B3" status list and on BPXA's waived well list; an annular pressure simulator developed by the Commission staff as contained in an MS Excel spreadsheet; information on well pressures provided by the operator; and the hearing record in connection with Conservation Order No. 492.
2. Annulus pressure is common in development wells. Pressures may be purposely imposed, thermally induced or the result of leaks in tubing, casing, packer or other well components.
3. Excessive annular pressure can develop in wells as a result of thermal effects. Well startup can involve significant annular pressure increases due to fluid expansion as a well heats above ambient temperature. Changing produced fluid characteristics and production mechanisms can also create thermal conditions that affect annular pressures.

4. For service (injection) wells, AOGCC regulations require, unless superseded by a Commission order, an operator to notify the Commission by the next working day if an injection rate, operating pressure observation, or pressure test indicates pressure communication or leakage in any casing, tubing, or packer. The operator must implement corrective action or increased surveillance, as the Commission requires (20 AAC 25.252(e) and 20 AAC 25.402(f)).
5. Unless specifically authorized by the Commission, AOGCC regulations require all producing wells capable of unassisted flow to be completed with suitable tubing and packer that effectively isolates the tubing-casing annulus from fluids being produced. Wellhead equipment must include appropriate gauges and valves on the tubing, casing-tubing annulus and casing-casing annuli to show surface pressures and control flow for the range of conditions expected (20 AAC 25.200(c) and (d)).
6. No current AOGCC regulation or Commission order for the Milne Point Field establishes annular pressure management requirements for producing wells, similar to those for injection wells. However, Conservation Order No. 492 establishes such requirements for producing wells in the Prudhoe Bay Field.
7. Several practicable techniques are available to manage annular pressures including manual pressure bleeding and engineered solutions such as pressure controls and pressure relief systems.
8. Values of “burst pressure rating” and “minimum internal yield pressure” of well tubulars are numerically equal.
9. Pertinent characteristics of well construction in the Milne Point Field are similar to those in the Prudhoe Bay Field.
10. Pressure in an active Milne Point Field well not exceeding 45% of the burst pressure rating, or minimum internal yield pressure, of well tubulars is within the range of pressure that will not result in failure of well integrity, uncontrolled release of fluid or pressure, or threat to human safety.
11. The operator relies on a well pressure limit waiver process to continue operating Milne Point Field wells that exhibit inner annulus pressure exceeding 2000 psig with two pressure bleeds per week, or outer annulus pressure exceeding 1000 psig with two pressure bleeds per week.

CONCLUSIONS

1. There is a need for regulatory oversight of the management of Milne Point Field wells that exceed specific pressure thresholds, by administering rules regulating annular pressures. This methodology is consistent with similarly intended efforts by other regulatory agencies.
2. The objectives of rules regulating sustained annular pressures in Milne Point Field development wells are to conserve Alaska petroleum resources and protect human safety and the environment, through proper management of annular pressures. Proper annular pressure management aims to prevent failure of well integrity, uncontrolled release of fluid or pressure, or threat to human safety.

3. Milne Point Field annular pressure rules should recognize the variety of well completions and development well characteristics in the Milne Point Field.
4. Well heating-induced annular pressure increases must be taken into account before initiating well start-up, to ensure that annular pressures at well operating temperature will not result in failure of well integrity, uncontrolled release of fluid or pressure, or threat to human safety.
5. The annular pressure rules adopted in this order are practicable and appropriate to the objectives stated in Conclusion 2.

NOW THEREFORE IT IS ORDERED that each of the Conservation Orders Nos. 347, 423, and 477 is amended to add the following rules:

1. 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.
2. 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.
3. The operator shall notify the AOGCC within three working days after the operator identifies a well as having (a) sustained inner annulus pressure that exceeds 2000 psig or (b) sustained outer annulus pressure that exceeds 1000 psig.
4. 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 3 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.
5. 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.

6. Except as otherwise approved by the AOGCC under paragraph 4 or 5 of these rules, before a shut-in well is placed in service, any annulus pressure must be relieved to a sufficient degree (a) that the inner annulus pressure at operating temperature will be below 2000 psig and (b) that the outer annulus pressure at operating temperature will be below 1000 psig. However, a well that is subject to paragraph 3, but not paragraph 5, of these rules may reach an annulus pressure at operating temperature that is described in the operator's notification to the AOGCC under paragraph 3, unless the AOGCC prescribes a different limit.

7. 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 (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.

DONE at Anchorage, Alaska and dated September 8, 2003.

Sarah Palin, Chair
Alaska Oil and Gas Conservation Commission

Randy Ruedrich, Commissioner
Alaska Oil and Gas Conservation Commission

AS 31.05.080 provides that within 20 days after receipt of written notice of the entry of an order, a person affected by it may file with the Commission an application for rehearing. A request for rehearing must be received by 4:30 PM on the 23rd day following the date of the order, or next working day if a holiday or weekend, to be timely filed. The Commission shall grant or refuse the application in whole or in part within 10 days. The Commission can refuse an application by not acting on it within the 10-day period. An affected person has 30 days from the date the Commission refuses the application or mails (or otherwise distributes) an order upon rehearing, both being the final order of the Commission, to appeal the decision to Superior Court. Where a request for rehearing is denied by nonaction of the Commission, the 30-day period for appeal to Superior Court runs from the date on which the request is deemed denied (i.e., 10th day after the application for rehearing was filed).