

**ALASKA OIL AND GAS
CONSERVATION COMMISSION**

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February 9, 2007

Mr. Harry Engel
Staff Engineer
BP Exploration (Alaska) Inc.
P.O. Box 196612
Anchorage, AK 99519-6612

Re: Investigation of Allegations
BP-Operated North Slope Wells

Dear Mr. Engel:

Attached you will find a copy of "*Report of Investigation Findings in Response to Allegations Raised by Mr. Charles Hamel in June 2006*". This document is the final investigation report prepared for the Alaska Oil and Gas Conservation Commission ("Commission") addressing allegations made by Mr. Charles Hamel in a letter dated June 28, 2006. Mr. Hamel alleged that unsatisfactory conditions exist in North Slope fields operated by BP Exploration (Alaska) Inc. ("BPXA"). Mr. Ed Morgan, a contract Investigator, led the field inspection and data gathering effort for the Commission. The attached document is his compiled report addressing nine specific allegations.

Investigation consisted of field inspections of BPXA-operated North Slope wells (including wellhead, well cellar, wellhouse and associated equipment) and surroundings, review of well files, and a survey of BPXA field operating personnel responsible for well operation, monitoring and maintenance. Personnel representing the Commission and Alaska Department of Environmental Conservation ("ADEC") accompanied Mr. Morgan during all fieldwork. BPXA staff provided onsite support to ensure a safe environment existed for investigative personnel to enter well houses. Environmental contract staff representing AWARE and Oasis collected and evaluated samples under the direction of the AOGCC investigative team.

The report's clear organization and formatting makes it unnecessary to reiterate all finding in this cover. Instead, you are directed to the report for the specific allegations, findings and recommendations. Report appendices include primer information about well construction and well integrity. Photographs have been included in strategic places within the report for descriptive and documentary purposes.

This investigation included a questionnaire directed at BPXA and BPXA contractor personnel with the following job titles: Pad Operators, Drill Site Operators, Field Operators, and Well Tenders. The purpose of this questionnaire was to gain additional insight into the allegations. Information was gathered in a manner that keeps the identity of those responding anonymous. Approximately fifty percent of the personnel provided with a copy of the survey took time to answer the questions and provide additional feedback. A brief overview of the results follows:

- A large majority of respondents viewed their work environment positively;
- Several wells were identified in responses as having fluids in well cellars; most were part of the list of wells inspected as part of this investigation; wells newly identified were inspected once the concerns were identified;
- Concern was raised by a small number of individuals that the Commission's regulations regarding well integrity are not adequate; they suggested wells with casing leaks should not be allowed to continue operating;¹
- Most responders expressed confidence in the health, safety and environment reporting structure in existence for BPXA's North Slope operations;
- Many expressed concerns about the timing to address deficiencies reported by field personnel.

The Commission inspected nearly 100 wells during the investigation with the major focus on fluids contained in the well cellars and if these fluids had migrated to the tundra and tundra ponds adjacent to the wells. A wide range of fluids was found in the cellars, including hydrocarbon-based fluids. There was evidence that in several instances fluids had flowed out of well cellars and onto the gravel pads within the well houses. The Commission found no evidence to suggest that the fluids accumulating in the cellars had migrated to the tundra and tundra ponds adjacent to operating wells, however this could not be ruled out. Numerous wells inspected did have indications of casing leaks, yet none of the fluids found in the well cellars are indicative of reservoir fluids migrating to the surface. The more likely explanation based on the preponderance of information (gathered from the investigation; based on review of well mechanics; and the Commission's engineering judgment) is that the hydrocarbon-based fluids found in well cellars are due to the thermally induced release of freeze protect fluids from the outer annulus of a well or due to spills that have occurred during well maintenance and repair activities. Release of fluids from the outer annulus of a well into the well cellar does not constitute a violation of Commission regulatory requirements. A review of well mechanical integrity for these wells indicates at least 2 competent barriers exist between the producing reservoir and the surface, which is consistent with good oilfield engineering practice.

This investigation did confirm several issues requiring attention (additional details in the report):

- Confusion exists about the installation and proper design of well cellar liners in many of the wells inspected. This is discussed in more detail below;
- General housekeeping in and around many wells requires the attention of BPXA; tools, trash and debris found in well cellars, graffiti on walls, pressure gauges out of

¹ Commission allows continued operation of a well provided there are at least two competent barriers to prevent escapement of fluids.

calibration, damaged drip pans and wells not properly labeled with caution and danger tags are just a few of the observations;

- The investigation team confirmed personnel safety concerns in some well houses; one example was an improperly braced elevated work platform used to gain access to valves near the top of the production tree.

The remainder of this cover is devoted to addressing several of the recommendations in the investigation report:

1. Reporting requirements for fluids in well cellars. The Commission's investigator found that there is confusion pertaining to reporting requirements when fluids are observed in a well cellar. The Commission defers to ADEC regarding reporting requirements for fluids released to a well cellar. However, any uncontrolled release greater than 10 barrels of oil, 1 million cubic feet of gas, or any uncontrolled release that results in a shutdown of operations at a production facility must be reported to the Commission (20 AAC 25.205). ADEC has recommended a meeting with BPXA personnel to discuss findings from this investigation, and compliance issues and solutions specific to ADEC regulatory responsibilities. Reporting requirements should be part of that discussion.
2. Well Cellar Liner. The investigation revealed that not all well cellars have liners. Moreover, there is no current guideline for well cellar liner design, installation, and performance (integrity). As reported by ADEC, 96 percent of well cellar liners inspected were found to be deficient – inadequate for the intended purpose of containing fluids that may be released from the wellhead during routine operations (normal production; well work such as maintenance and repairs). Given the fact that not all well cellars are lined, there are no clear criteria for what mandates the installation of a well cellar liner.

ADEC regulations that became effective in December 2006 (specifically 18 AAC 75.045(d) (2)) require well sumps (cellars) for new wells after December 2008 to be “designed and installed to be sufficiently impermeable”. Existing wells remain without a regulatory performance standard. Well cellar fluids should be captured and managed in a way that mitigates potential impacts to the pad and surroundings. ADEC and AOGCC have initiated discussions about well cellar issues and requirements. A performance standard addressing the design, installation, and performance requirements enabling operators to ensure the integrity of secondary containment in a well cellar (new and existing wells) is the objective of these discussions.

3. Operation of wells with casing communication. A small number of respondents to the Investigator's written questionnaire said wells with casing communication should not be allowed to remain in operation. Mr. Hamel also suggested wells leaking to surface should remain shut in until repaired because of the dangers they represent to personnel and the environment.

Rules, policies and guidelines established for the oversight of sustained annular pressures in North Slope development wells aim to prevent failure of well integrity, uncontrolled release of fluid or pressure, or threat to human and environmental safety, and to conserve Alaska's

valuable petroleum resources. Annular pressure management policies internal to BPXA supplemented with Commission rules in Conservation Orders provide a sound basis for regulating annular pressure consistent with the objectives of these rules.

Fluids captured in the cellars of wells inspected are not indicative of a loss of well integrity that would expose the workforce and environment to hazardous conditions. None of the fluids observed are energized production fluids from the reservoir. Instead, they are most certainly freeze protect fluids purposely and properly placed in the outer annulus of the well that can flow into the well cellar if a well has a shallow surface casing leak. Numerous mechanical and pressure barriers exist to prevent the flow of fluids to surface along any path other than inside the intended production tubing. Redundant strings of concentric pipe, cement, other mechanical barriers, and hydrostatic pressures exerted by completion fluids and annulus fluids purposely placed in the well assure the confinement of reservoir fluids.

4. Health Safety and Environmental (HSE) deficiencies outside agency jurisdiction.

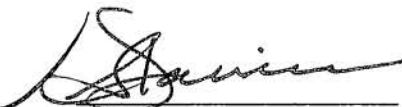
Commission Inspectors occasionally encounter safety and environmental concerns and potential violations that are outside of their authority. There are no guidelines that provide direction to Inspectors as they encounter deficiencies outside the Commission's responsibilities. The Commission will work with other regulatory agencies that have jurisdiction over operations that may overlap with Commission Inspector activities to determine how best to address any noted deficiencies. A system for addressing deficiencies will be developed to track actions relating to the deficiencies noted by Commission Inspectors which are outside the Commissions area of oversight.

The Commission finds no basis to take enforcement actions against BPXA as a result of the findings of this investigation. It appears BPXA is operating wells exhibiting annulus pressure communication within the regulatory boundaries established by the Commission and in accord with BPXA internal policies. BPXA has proactively shut in wells exhibiting surface casing leaks and is evaluating repair options for those wells that justify continued operation.

This report will be reviewed at the Commission's next meeting on February 28, 2007 with a view toward identifying any gaps in regulatory agency oversight.

Sincerely,


John K. Norman
Chairman


for Daniel T. Seamount, Jr.
Commissioner


Cathy P. Foerster
Commissioner

Attachments

cc: Honorable Sarah Palin, Governor
John Katz, Director of State/Federal Relations and Special Counsel
Office of the Governor
Larry Dietrick, Director
Alaska Department of Environmental Conservation
Leslie Pearson, Program Manager
Alaska Department of Environmental Conservation
Ed Meggert, Program Manager
Alaska Department of Environmental Conservation
Charles Hamel

Edward L. Morgan Consulting

PO Box 81585, Fairbanks, AK 99708

November 6, 2006

Mr. James Regg
AOGCC
333 W. 7th Ave.
Anchorage, AK 99501

Dear Mr. Regg,

This letter forwards the Investigation Report you requested as a result of allegations raised by Mr. Charles Hamel. The report is provided in binder format as well as on a computer disc for easier reproduction and distribution. A second disc is provided that contains additional photographs of the wells inspected and the actual individual well inspection forms.

Please call if you have any questions or difficulty with the electronic formats. It has been a pleasure working with you and the AOGCC staff.

The assistance provided on site by Mr. Lou Grimaldi was outstanding and contributed in large measure to the success of the investigation efforts.

Sincerely,

E. L. Morgan